# AGENDA

## LAST FRONTIER HEALTHCARE DISTRICT

## BOARD OF DIRECTORS

### Thursday, September 26, 2024, 1:00 pm
### City Council Chambers; Alturas City Hall; Alturas, California

Parties with a disability, as provided by the American Disabilities Act, who require special accommodations or aids in order to participate in this public meeting should make requests for accommodation to the Modoc Medical Center Administration at least 48 hours prior to the meeting. Board Agenda packets are available to the public online at www.modocmedicalcenter.org or at the MMC Administration offices.

**1:00 pm - CALL TO ORDER – J. Cavasso, Chair**

**1. PLEDGE OF ALLEGIANCE TO THE FLAG OF THE UNITED STATES OF AMERICA – J. Cavasso, Chair**

**2. AGENDA APPROVAL - Additions/Deletions to the Agenda – J. Cavasso, Chair**

**3. PUBLIC COMMENT** - *This is the time set aside for citizens to address the Board on matters not on the Agenda or Consent Agenda. Comments should be limited to matters within the jurisdiction of the Board. If your comment concerns an item shown on the Agenda, please address the Board after that item is open for public comment.* ***By law, the Board cannot act on matters that are not on the Agenda.*** *The Chairperson reserves the right to limit the duration of each speaker to* ***three minutes.*** *Speakers may not cede their time. Agenda items with times noted, will be considered at that time. All other items will be considered as listed on the Agenda, or as deemed necessary by the Chairperson.*

**4. DISCUSSION**

**A.) A. Willoughby – SNF and HA Project Monthly Report** **Attachment A**

**B.) A. Willoughby – Revenue Cycle Update – Cerner** **Attachment B**

***REGULAR SESSION***

**5. CONSENT AGENDA** - *Items under the Consent Agenda heading do not require discussion before a vote. If discussion is needed, that item needs to be moved to the Consideration/Action part of the Agenda where discussion is allowed.*

**A.) D. King - Adoption of LFHD Board of Directors Regular Meeting Minutes – August 29, 2024,** **Attachment C**

**B.) D. King – Adoption of LFHD Board of Directors Special Meeting Minutes – September 19, 2024,** **Attachment D**

**C.) T. Ryan - Medical Staff Committee Meeting Minutes – August 28, 2024.** **Attachment E**

- **Medical Staff Committee Meeting Minutes – July 31, 2024.**
- **Pathology Report – July 2, 2024**
- **New Business**
  - **Policy Review – August 2024**

**D.) E. Johnson – Policy and Procedures** **Attachment F**

- **Alturas and Canby Clinic Business Office**
- **Central Supply**
- **Dietary SNF Emergency Department**
- **Engineering Infection Control – SNF**
- **Information Technology**
- **Infusion Laboratory**

- Operating Room
- Physical Therapy
- Radiology
- Radiology CT
- Radiology IR
- Radiology Ultrasound

6. CONSIDERATION/ACTION

A.) E. Johnson – Departmental Policy Manuals — Attachment G
- Canby Clinic – Medical and Dental
- Alturas Clinic

B.) J. Lin – August 2024 LFHD Financial Statement *(unaudited)* — Attachment H

C.) J. Cavasso – Board Meeting Time Change

7. VERBAL REPORTS

A.) K. Kramer – CEO Report to the Board
B.) E. Johnson – CNO Report to the Board
C.) J. Lin – FD Report to the Board
D.) A. Vucina – CHRO Report to the Board
E.) A. Willoughby – COO Report to the Board
F.) Board Member Reports

## *EXECUTIVE SESSION*

8. CONSIDERATION / ACTION

A.) T. Ryan – Medical Executive Committee Minutes & Credentialing Items –August 28, 2024 — Attachment I
*(Per Evidence Code 1157)*
- Medical Executive Committee Minutes & Credentialing Items OPPE 2019B – July 31, 2024

## *REGULAR SESSION*

9. CONSIDERATION / ACTION

A.) T. Ryan – Medical Executive Committee Minutes & Credentialing Items –August 28, 2024.
*(Per Evidence Code 1157)*
- Medical Executive Committee Minutes & Credentialing Items OPPE 2019B –July 31, 2024.

8. MOTION TO ADJOURN – J. Cavasso – Chair

**POSTED AT:** MODOC COUNTY COURTHOUSE / ALTURAS CITY HALL / MMC WEBSITE / MMC FRONT ENTRANCE - (www.modocmedicalcenter.org) ON September 20, 2024.

# ATTACHMENT A

# SNF and HA Project Monthly Report

**Project Name:** Modoc Medical Center Skilled Nursing Facility & Hospital Addition
**Date: September 9,2024**
**Title: Project MMC August 2024 Month End**

**Schedule Data Date: 9/8/2024**
**Reporting Period:** 8-4-2024 thru 9-8-2024

## 1. SCHEDULE SUMMARY

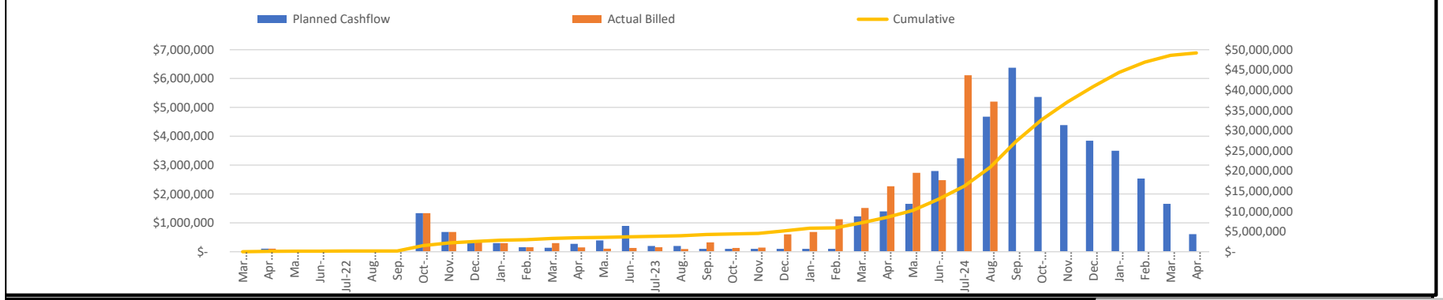
| | Contract | Last Month | Current | Contract Var (cd behind/ahead) |
|---|---|---|---|---|
| Start Date | 1-Feb-22 | 1-Feb-22 | 1-Feb-22 | |
| Current Substantial Completion (GN-MI-390) | 7-Apr-25 | 2-May-25 | 2-May-25 | (25) |
| Completion of Construction Work - SNF (GN-MI-440) | 3-May-25 | 30-May-25 | 30-May-25 | (27) |
| Project Final Completion Date (GN-MI-430) | 3-Jun-25 | 30-Jun-25 | 30-Jun-25 | (27) |
| Total Duration (calendar days) | 1219 | 1246 | 1225 | (6) |
| Percent Complete (based on remaining calendar days) | | 70% | 70% | |
| Construction Percent Complete (based on remaining calendar days) | | 39% | 52% | |

## 2. CONTRACT SUMMARY

| | | | |
|---|---|---|---|
| Original GMP Budget | $ | 49,616,662.00 | **Pending CO Summary** |
| Current Budget | $ | 52,599,195.00 | OCO's 7 & 8 all are fully excuted |
| Approved CO | $ | 2,750,000.00 | Amendment 5 cost impacts received by trade partner. OCO being finalize for mid September. |
| Pending/Submitted CO | $ | - | |
| Target Budget | $ | 53,151,564.00 | |

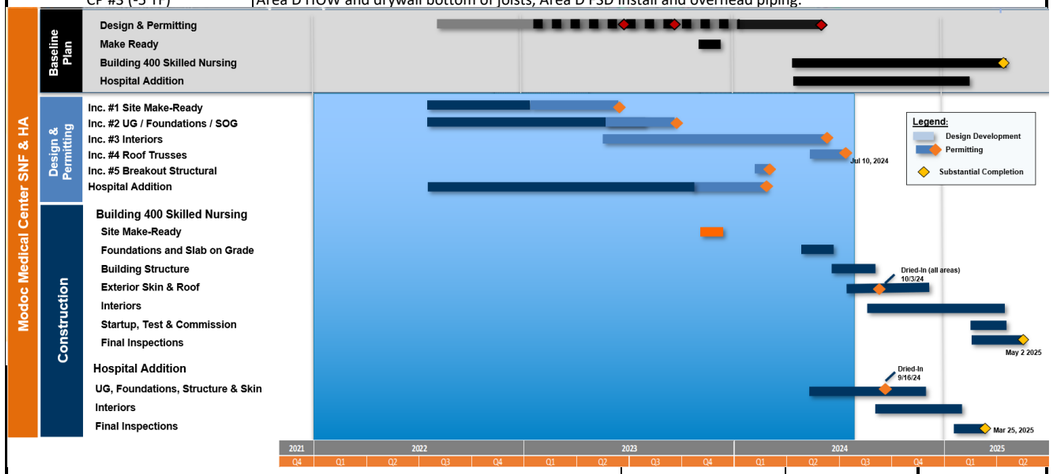
| Contract Time Extensions | Days (cd) | | Pending Time Extension Summary |
|---|---|---|---|
| Submitted | 0 | | |
| Approved | 0 | | |
| Pending | 0 | | |

## 3. PROJECT CASHFLOW - Revised




## 4. CRITICAL PATH SUMMARY

| | |
|---|---|
| CP #1 (-19 TF) | Area B FSD Install, Area B overhead rough, soffit and ceiling framing and interior finishes. |
| CP #2 (-5 TF) | Area C FSD Install and plumbing overhead piping, 2nd pass framing and backing. |
| CP #3 (-5 TF) | Area D HOW and drywall bottom of joists, Area D FSD Install and overhead piping. |




## 6. SCHEDULE HOT LIST / CONSTRAINTS

| | Impacted Activity(s) |
|---|---|
| 1. | |
| 2. | |
| 3. | |

## 7. WEATHER ALLOWANCE

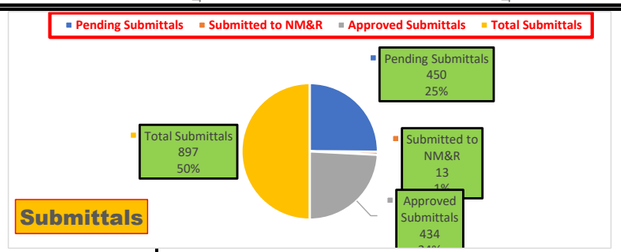
| | |
|---|---|
| Planned | 20 |
| Used This Period | 0 |
| Used To Date | 19 |
| Remaining | 1 |

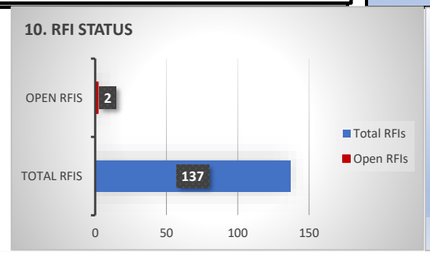
## 8. CONSTRUCTION DAILY REPORT STATISTICS

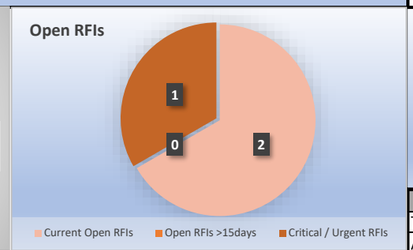
| | TOTAL |
|---|---|
| Status Through (date) | 8/30/2024 |
| Project Work Day Since NTP | 101 |
| Total Daily Reports Prepared | 101 |
| Total Daily Reports Submitted | 101 |

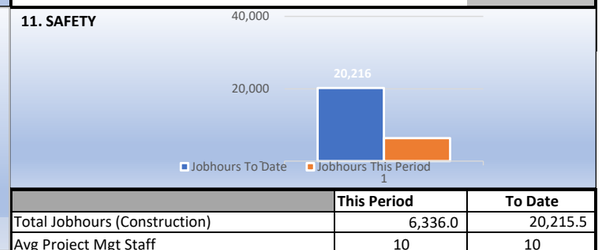
Submittal Statistics:

| Submittals | | Status | |
|---|---|---|---|
| Drawings | 141 | Pending Submittals | 450 |
| Data | 580 | Submitted to NM&R | 13 |
| Closeout | 176 | Approved Submittals | 434 |
| Total Submittals | 897 | Total Submittals | 897 |
| | | % Completed | 50% |



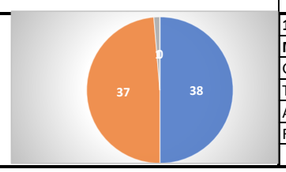

| | This Period | To Date |
|---|---|---|
| Total Jobhours (Construction) | 6,336.0 | 20,215.5 |
| Avg Project Mgt Staff | 10 | 10 |
| Avg Field Craft | 82 | 92 |
| Recordable Incidents | 0 | 0 |
| First Aid | 1 | 2 |
| Lost Time Injuries | 0 | 0 |

| Priority Submittals (Top 3) | Date Initiated |
|---|---|
| | |
| | |
| | |

| Priority RFIs (Top 3) | Date Initiated |
|---|---|
| 1. Alternate Tray Cart - Tray Size and Caddy Conveyor | |
| 2. Conflict Resolution for 24" Storm Drain and New 18" HDPE Pipe | |
| | |

## 12. SUBCONTRACTOR BUY-OUT STATUS

| | |
|---|---|
| Total Anticipated Subcontracts | 38 |
| Executed Contracts | 37 |
| In Process | 1 |
| Remaining | 0 |




## 13. MAJOR LONG LEAD & CRITICAL PROCUREMENTS

| Major Procurement Item | Submital Approval | Anticipated Delivery | Actual Delivery |
|---|---|---|---|
| Generator | 9/6/2023 | 6/20/2024 | TBD |
| Transfer Switches | 9/6/2023 | 12/30/2024 | TBD |
| Air Handlers | 2/6/2024 | 11/15/2024 | TBD |
| Fans, Boiler, Rooftop Units | 2/6/2024 | 11/15/2024 | TBD |
| | | | |

**Project Name: Modoc Medical Center Skilled Nursing Facility & Hospital Addition**
**Date: September 9,2024**
**Title: Project MMC August 2024 Month End**

**EXECUTIVE SUMMARY**

| Design & Permitting Milestones | | | | |
|---|---|---|---|---|
| GN-MI-220 | Receive Site Make Ready Permit | 0d | 0d | 6-21-23 A |
| GN-MI-160 | Receive Building 400 Increments 1 & 2 Permit (UG / Foundations / SOG) | 0d | 0d | 9-14-23 A |
| GN-MI-180 | Receive Hospital Addition (Bldg 120) HCAI Permit - Alt 2B | 0d | 0d | 2-15-24 A |
| GN-MI-190 | Receive Skilled Nursing Facility (Bldg 400 / 410) Increment 5 HCAI Permit | 0d | 0d | 2-16-24 A |
| GN-MI-150 | Receive Skilled Nursing Facility (Bldg 400 / 410) Increment 3 HCAI Permit | 0d | 0d | 6-25-24 A |
| GN-MI-170 | Receive Skilled Nursing Facility (Bldg 400 / 410) Increment 4 HCAI Permit | 0d | 0d | 7-10-24 A |

SWINERTON

Buyout of Division 10 scopes are complete.
Site activites in progress: Site grade for parking areas and loop road, sheathing of roof & concrete placement of SOG for link to HA, joisting of SNF, joisting and decking of HA, Sto gold coat water proofing Densglass exterior sheathing for SNF 7 HA, elcectrical yard under progress. In-wall rough and above ceiling rough-in going in SNF and HA
Billings: May and June have been funded and July's is in USDA review. August's will be submitted 9-10-24.
After months of compiling and analyzing the data, an Owner Change Order for material & labor escalation amounting to $2.75M was agreed upon. Swinerton has submitted OCO's #7 (material escalation) & #8 (labor escalation) to the Owner and received approval, it has now been sent to USDA for approval. Local USDA sent it to the State office and we are waiting for change order to be formally processed. Both OCOs 7&8 are fully excuted as of 9-3-24

**OWNER PROJECT MANAGER REPORT**

As can be seen by comparing the photos from last month's report to the photos herein the construction is progressing at an exceptional pace. Quality is being assured by a collaboration of the Swinerton quality engineer, the MMC IOR and special inspectors and the HCAI field staff. The 2 large change orders pending with the USDA State office mentioned in the last report have been concurred by the USDA. Otherwise, there are no pending contractual issues to report. Purchase orders for equipment will be let in September. Furniture and signage will be bid out in early September. The district Board has approved the plan and amount of interim financing and is in the market for the financing. With the potential of lower interest rates in the near future, MMC leadership has determined it might be to the District's advantage to delay closing on the financing until early October. The District still has significant cash on hand. The State HCAI field staff is pleased with the progression and quality of the construction. Project completion is still scheduled for April of 2025.

PROGRESS PHOTOS




# ATTACHMENT B

# Revenue Cycle Update – Cerner

The Revenue Cycle Summary dashboard provides summary information around your top KPIs as well as trend alerting information.

## 6 Month Environment Summary Trend as of Thursday, 19-Sep-2024

Download Billing Entity Level Data

**Select Billing Entities**
All

Download Facility Level Data

| | Historical Avg | Mar-2024 | Apr-2024 | May-2024 | Jun-2024 | Jul-2024 | Aug-2024 | Sep-2024 |
|---|---|---|---|---|---|---|---|---|
| Charges | $4,175,319 | $4,543,465 | $4,865,083 | $5,119,697 | $4,520,993 | $5,025,494 | $4,544,891 | $2,695,800 |
| Payments | ($2,227,224) | ($2,841,499) | ($3,443,993) | ($3,164,974) | ($2,070,390) | ($3,319,482) | ($2,645,768) | ($779,388) |
| Adjustments | ($892,203) | ($1,774,239) | ($1,691,230) | ($2,527,606) | ($1,884,859) | ($1,924,109) | ($1,952,102) | ($751,435) |
| Net Change in A/R | $34,083,572 | ($72,273) | ($270,139) | ($572,883) | $565,744 | ($218,097) | ($52,979) | $1,164,976 |
| Average Daily Revenue | $ 136,754 | $151,756 | $153,011 | $157,166 | $160,439 | $158,525 | $155,274 | $151,674 |
| A/R Balance | $ 13,177,081 | $13,434,426 | $13,164,286 | $12,591,403 | $13,157,148 | $12,939,051 | $12,886,072 | $14,051,049 |
| A/R Days | 96.36 | 88.53 | 86.03 | 80.12 | 82.01 | 81.62 | 82.99 | 92.64 |
| A/R > 90 Days | | $3,052,094 | $3,530,918 | $3,928,407 | $4,210,897 | $4,517,704 | $4,752,578 | $5,100,060 |
| A/R > 90 Days % | 30.76% | 22.72% | 26.82% | 31.20% | 32.00% | 34.92% | 36.88% | 36.30% |
| DNFB Dollars | $ 579,473 | $4,814,920 | $3,932,924 | $3,087,521 | $2,201,856 | $2,592,099 | $3,402,500 | $2,774,067 |
| DNFB Days | 4.24 | 31.73 | 25.70 | 19.64 | 13.72 | 16.35 | 21.91 | 18.29 |

## 60 Day Summary

### Accounts Receivable

View A/R Summary

A/R Balance
**$14.05M** △

A/R Days
**92.64** △

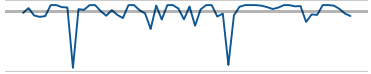
A/R > 90 Days
**$5.10M** △

A/R > 90 Days %
**36.30%** △

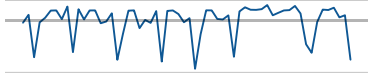
### Transactions

Charges
**$168.89K** △

Payments
**($120.29K)** ▽



Adjustments
**($257.64K)** ▽

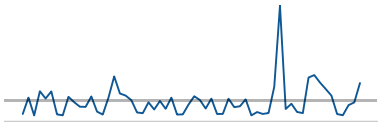


Net Change in A/R
**($209.04K)** △

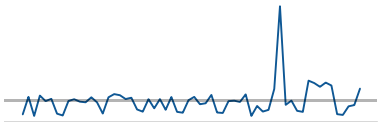
Average Daily Revenue
**$151.67K** ▽

### Claims

Claims Submitted Dollars
**$969.46K** △



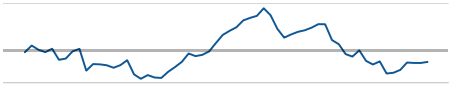
Claims Submitted Count
**393** △



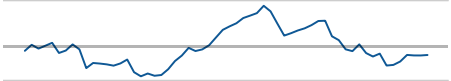
### Discharged Not Final Billed

View DNFB Summary

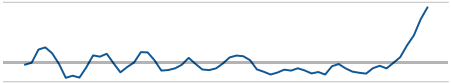
DNFB Dollars
**$2.77M** ▽



DNFB Days
**18.29** ▽



Standard Delay Dollars
**$1.20M** △



Standard Delay Days
**7.91** △

Held In Scrubber Dollars
**$347.73K** ▽

Held In Scrubber Days
**2.29** ▽

Waiting For Coding Dollars
**$125.13K** ▽

Waiting For Coding Days
**0.82** ▽

Correction Required Dollars
**$347.38K** △

Correction Required Days
**2.29** △

Ready to Bill Dollars
**$389.79K** ▽

Ready to Bill Days
**2.57** ▽

# ATTACHMENT C

# LFHD BOARD OF DIRECTORS REGULAR MEETING MINUTES (draft) August 29, 2024

# REGULAR MEETING MINUTES
## LAST FRONTIER HEALTHCARE DISTRICT BOARD OF DIRECTORS
### Thursday August 29, 2024, at 1:00 pm
### City Hall Chambers, 200 W North St.
### Alturas, California

Directors present: **Edouard (Jim) Cavasso, Rose Boulade, Mike Mason, Paul Dolby, Carol Madison**
Directors absent:
Staff in attendance: **Kevin Kramer, CEO; Edward Johnson, CNO; Jin Lin, Finance Director;Adam Willoughby, COO; Amber Vucina, CHRO, Denise King, LFHD Clerk.**
Staff absent:

**CALL TO ORDER**

**Jim Cavasso, Chair** called the meeting of the Last Frontier Healthcare District (LFHD) Board of Directors (Board) to order at 1:00 pm. The meeting location was City Hall, at 200 W. North Street in Alturas, California.

**1. PLEDGE OF ALLEGIANCE TO THE FLAG OF THE UNITED STATES OF AMERICA**

**2. AGENDA – Additions/Deletions to the Agenda**

**Paul Dolby** moved that the agenda be approved as presented, **Carol Madison** seconded, and the motion carried with all present voting "aye."

**3. PUBLIC COMMENT**

**4. DISSCUSSION**

**A.) A. Willoughby – SNF and HA Project Monthly Report**

**Adam Willoughby, COO** advised the Board of the progress for the New SNF and HA and answered any questions the Board had.

**Jim Cavasso, Chair** would like drone footage to be sent to the Board Members when that is taken.

**B.) A. Willoughby – Revenue Cycle Update – Cerner**

**Adam Willoughby, COO** provided the Board with the Lights On Dashboard and answered any questions they had.

**C.) K. Kramer – Geothermal Update for New SNF and Hospital Addition Project**

**Kevin Kramer, CEO** advised the Board of the most current update on the Geothermal for the New SNF and HA project that there is no contractor at this time for the High School well. **Tom O'Malley, Superintendent,** also attended the meeting and advised the Board at the last School Board Meeting he spoke with the Board and until they see a solid capital investment from the Hospital they don't feel comfortable adjusting our pricing formula for geothermal water.

**D.) K. Kramer – New SNF and Hospital Addition Topping Out Ceremony**

**Kevin Kramer, CEO** had **Denise King, Executive Assistant/Board Clerk** provide an update on the New SNF and HA Topping Out Ceremony. **Denise** advised the Board that the Topping Out Ceremony would take place on September 12th at 11:30 am and lunch will follow at the Niles.

## ***REGULAR SESSION***

**5. CONSENT AGENDA** - *Items under the Consent Agenda heading do not require discussion before a vote. If discussion is needed, that item needs to be moved to the Consideration/Action part of the Agenda where discussion is allowed.*

**A.) D. King - Adoption of LFHD Board of Directors Regular Meeting Minutes – July 25, 2024**

**B.) D. King - Adoption of LFHD Board of Directors Special Meeting Minutes – July 11, 2024**

**C.) T. Ryan - Medical Staff Committee Meeting Minutes –July 31, 2024.**

- **Medical Staff Committee Meeting Minutes –June 26, 2023.**
- **Pathology Report – June 6, 2024**
- **Policy Review – June 2024**

**C.) E. Johnson – Policy and Procedures**

- **Business Office**
- **Central Supply**
- **Emergency Department**
- **Emergency Management**
- **Engineering**
- **Information Technology**
- **Infusion**
- **Operating Room**
- **Physical Therapy**

**Archived Policies**

- **Business Office**
- **Dietary – SNF**
- **Emergency Department**
- **Emergency Department, Med/Surge**
- **Information Technology**
- **Physical Therapy**
- **Radiology**

**Carol Madison** moved that the Consent Agenda be approved as presented, **Rose Boulade** seconded, and the motion carried with all present voting "aye."

**6. CONSIDERATION/ACTION**

**A.) E. Johnson – Departmental Policy Manuals**

- **Dietary – Skilled Nursing Facility**
- **Dietary – Acute**
- **Environmental Services/Laundry**

**Ed Johnson, CNO** introduced **Raven Sparks, Skilled Nursing Facility Dietary Manager, Tim Reynolds, Acute Dietary Manager,** and **Michael Appletoft, EVS Manager** to the Board of Directors. **Raven** expressed how she is slowly trying to change her manuals over for the transition for when the New SNF is completed. **Michael** advised that he has already completed the changes that would need to be made with the help of **Dick Steyer** from when the plans first occurred for the New SNF to be built.

**Mike Mason** moved to approve the Departmental Policy Manuals as presented, **Paul Dolby** seconded, and the motion carried with all present voting "aye".

**B.) J. Lin – July 2024 LFHD Financial Statement *(unaudited).***

**J. Lin, Finance Director** presented the *unaudited* Last Frontier Healthcare District Financial Statement for July 2024, from the narratives and financial statements provided in the Board meeting packet.

**Carol Madison** moved to accept the July 2023 LFHD Financial Statement (unaudited) as presented, **Mike Mason** seconded, and the motion carried with all present voting "aye."

**C.) K. Kramer – Resolution #24-07 Bank Signature Cards**

**Paul Dolby** moved to approve **Resolution #24-07 – Bank Signature Cards,** and **Mike Mason** seconded. **Jim Cavasso, Chair,** called for a roll call vote:

- **Edouard (Jim) Cavasso** Aye
- **Carol Madison** Aye
- **Paul Dolby** Aye
- **Mike Mason** Aye
- **Rose Boulade** Abstain

The motion to approve **Resolution #24-07 – Bank Signature Cards** as presented carried with all present voting "aye" and one "abstain" as shown in the roll call vote above.

## 7. VERBAL REPORTS

### A.) K. Kramer – CEO Report to the Board

**Provider Recruitment**

- **Dr. Chen** is currently providing dental services in Canby through the end of the calendar year. We do have a couple of potential permanent candidates that I have screening calls with next week.
- **Ryan Ciantar** is now licensed as an RN in California, he is still trying to get scheduled for his exams and then will come as soon as he is licensed in California as a FNP. As soon as he is here **Ruth** will start picking up more hospitalist shifts (one every three weeks).
- **Wendy Richardson** has applied for the walk-in clinic provider job in the Alturas Clinic. We are currently looking for another permanent provider for Canby to accommodate that switch for **Wendy.** As soon as we find a permanent provider for Canby, **Wendy** will transition to the Alturas Clinic as the walk-in provider.

**SNF Project**

- Interim Financing has been bumped to mid-October for a few reasons. Interest rates for the financing are expected to decrease over the next couple of weeks. Our bond counsel attorney requested that we delay a little bit because he had a planned trip to Europe. We are still financially able to cover the pay applications from Swinerton, so delaying will save us interest on the interim financing. For these reasons we have bumped that back.
- USDA has approved the escalation change orders and those are back in their hands for final execution. These change orders will be added into the project budget and shown as funded by the District through reserves.

QIP Project

- We are in the middle of the audit for this funding opportunity. So far things seem to be going alright. Will let you know final results once we are completely through the process. We should be eligible for a little over half the potential funding based on our performance.

340B Compliance

- Working with MacroHelix to ensure that our dispense data is correct. There were some quantities dispensed that are not correct and we are not sure why. We have asked MacroHelix to validate the quantities of drugs accumulated prior to sending letters to drug manufacturers.

Ambulance Donation

- **Dr. Appel** has approached me to see if we would be willing to donate an older ambulance to his church so that he can start up a homeless medical service in the Chico/Paradise area. We have an older ambulance that has been sitting for quite some time that might be a good one for this. I will talk with our EMS director but wanted to see what the board's thoughts were on this prior to pursuing it.

Customer Service Training

- We are planning on doing two waves of training. First wave will be front facing staff. Next wave will be rest of the staff. Amber is currently vetting customer service trainings that would be a good fit for our organization.

Regional CEO Meeting

- Attended a meeting with Seneca, Plumas, Eastern Plumas, Mayers CEOs and discussed opportunities to collaborate and common challenges. Among the things discussed were the following:
- Shared Mobile MRI unit and operational expense. All the facilities would like to purchase our own mobile MRI machine and have it provide service to our facilities. Estimated return on investment is 2 years and the machine would be paid off. After that we just need to share the operational expenses and we would be making pretty good money.

- Cerner Implementation Issues. Pretty much every facility that implemented Cerner has had the same experience as us, except for Plumas, who implemented long ago prior to Cerner getting bought out by Oracle. We are the only facility pursuing a writeoff/credit from Cerner due to huge implementation issues. Other facilities asked that we keep them informed on whether or not Cerner does this, as they would also like to recoup some of their implementation fees.
- There is a bill that may require us to put metal detectors at public entrances for the hospital. Nobody is excited about this and having to then hire security and figure out what to do with guns, knives, etc. that are found. More to come on this as I gather more information.

**Provider Relief Funds**

- We have had to pay back some of the provider relief funds we received during COVID-19 because we failed to report to HRSA on the use of those funds. The most recent repayment we have had to make was on some money received by the retail pharmacy. Total we paid back was around $86k. This included administrative fees, interest fees, and the original amount funded to the retail pharmacy through the provider relief fund. We have already had to pay back some funds related to the Canby Clinic due to reporting this under the umbrella of our tax id, when the funds were technically issued to ISOT when we were managing the clinic, so HRSA would not accept our report for the Canby Clinic at that time. We expect that there are more funds received by the retail pharmacy that may have to be paid back as well.

**B.) E. Johnson – CNO Report to the Board**

**Warnerview**

- Currently at a 3-star CMS rating
- Current census is at 48.
  - o With one death and two discharges to home.
  - o We were expecting one more patient from a Nursing Home in Lassen. She is a local resident.
- Mealtime changes – the process is getting better. We are going back to the Union with a nursing department schedule change. Currently, the shifts start at 6:00 am – 7:00 pm and 6:30 pm – 7:00 am The proposed change will be 5:30 am – 6:00 pm and 5:30 pm – 6:00 am.
- CNA in the dining room
  - o We have started this phase of improvement.
  - o It is still a work in progress, but we have submitted a new position to the Union of Activity CNA. They will continue with the same rate as a CNA but would be required to interact with residents encouraging them to be active.
  - o The idea is to move the residents from sitting around the nurse's station.
  - – Read the newsletter to them.
  - – Turn on the TV in the morning, news or game shows
  - – Read the newspaper on Thursdays
- Resident activities
  - o County Jam
  - o County Drives
  - o Modoc County Fair, we had 13 residents attend the fair.

**Acute**

- Current census is at one today – we have been running a daily census of three patients.
  - o Inpatient – Census 1.90
  - – ALOS – 3.33
  - o Swing – Census 1.16
  - – ALOS – 6.00
- Zero Isolation patients on the floor at this time.
- Admissions
  - o 27 Acute
  - o Six Swing
- Surgeries
  - o 26 Surgeries

**ER**

- **Total of 526**
- Census average at 17 per day with an increase in acuity level.

**Ambulance**

- 133 runs for the month.

**Lab**

- 5290 total tests drawn.
- The lab is now traveler free. Our last CLS traveler signed on with us per diem.

**Pharmacy**

- **Darryl Moore** is our new Retail Pharmacist that started on July 9th.
- 2,624 Scripts filled.
- We are starting cycle fill medication in the SNF starting September 1st.
  o The short hall will be filled on the 1st and long hall will be filled on 16th.
  o Bubble packing will be the project.

**Physical Therapy**

- **Jay Dunn,** our new PT Director, is scheduled to start September 9th. He is now licensed in California.
- Total of 700 Sessions.

Radiology

- Total services performed for the month:
  - 303 X rays.
  - 78 Ultrasounds
  - 195 CT scans
  - 18 MRIs

**Wound Care Nurse**

- We are looking to relocate this program from outpatient to the clinic.
- They will be moving into the old LCSW office.
- Currently they are seeing patients in Outpatient PT, Acute and SNF.
- Month of July total of 91 visits.

**B.) J. Lin - FD Report to the Board**

**Accounting**

- Busy working on Audit items due by the end of the month.
- We are still looking for an Accounting Tech to replace Julie Carrilo who is transferring to Canby Clinic.
- Auditors will be on site from 9/16-9/20.

**Purchasing**

- Doing well.

**D.) A. Willoughby – COO Report to the Board**

**Ellkay – Archival Solution**

- Ellkay is working on the final consolidated archive as we speak and I'm hoping that will be completed asap.

**Canby**

- Julie Carrillo has started working full-time as our Canby Clinic Manager as of this week. She is simultaneously taking on AP duties as well.
- Dr. Chen is back working as a Dentist for us as of last Tuesday. He's scheduled to work through the end of the calendar year at this point.
- Permanent Dentist search is still underway.

**Alturas Clinic**

- Alturas Clinic is rolling along nicely and has been pretty quiet, which is a good thing.
- Jon Crnkovic has been coordinating with PHP and Surprise Valley for a Mobile Mammography event that will take place near the end of October so that is in the works.
- Chelsea Pearson's last day is this Friday, so the Clinic is having a going away party today (due to the fact a majority of Clinic staff are here on Thursdays).

**Revenue Cycle**

- The focus within Revenue Cycle for us is our AR > 90 days as it is still increasing by about $300k each month.
- We're having some R1 resources allocated to the 90+ bucket as well as the 61 – 90-day bucket as those are the encounters that will roll into the 90+ bucket next. It's a two-fold process as you could work $1 million out of the 90+ bucket but if $1.5 million is about to roll into that bucket then the AR >90 will still increase by $500k.

- The R1 team and our internal Revenue Cycle team are focusing on the highest dollar encounters in those aging buckets.
- The good news with the current AR>90 is that $1.4million is Partnership and $1.2 million is Medicare and those payers have a 1-year timely filing limit so we're nowhere near untimeliness. Another $400k is self pay.
- I'm confident that we'll collect on a majority of the AR>90 outside of the self pay as that is uncontrollable.
- We have a Revenue Cycle Aide that is starting on Monday who will be able to help out on multiple fronts and will allow us to have a little more bandwidth on the rev cycle front.
- We have a big issue between Cerner and our claims processing clearinghouse, SSI, currently that we are caught in the middle of and trying to navigate as best we can. The issue is affecting about $3 million worth of claims right now. This has been escalated to the highest levels possible both on the Cerner side and SSI side of the fence.

**New SNF & Hospital Addition**

- The progress on this project is still continuing at an incredible pace and they are working towards the building being dried in by October so they can beat the unpredictable weather.
- I'm getting the ball rolling on the transition planning side of this project as Eric Schnebly with JL Transitions, which was the outfit we used for the new facility transition, has reached back out now that we're getting closer to the end of the year.
- Eric's brother, Jon Schnebly, was the one that headed up the new facility transition but his brother Eric was involved with that whole transition so we should be in good hands.
- Also, the transition will entail a little less complexity this time as the SNF is mainly one big department.
- The caveat to that is that we will have more residents to move than we had with the new facility move as we only had 4 inpatients to move during that transition.

**IT**

- Andy hired a new IT Tech to backfill after Keegan's departure and we got pretty lucky as Jason Moeller, who was the Deputy Director of IT for the County, ended up being the selected candidate.
- Being that he was essentially the IT Director for the County, we got really lucky as his knowledge and skills are pretty close to Andy's (per Andy himself) and he's a great addition to the team.

**Marketing**

- Rylee has been out on medical leave but has started working again remotely although she won't be able to physically attend the Topping Out Ceremony.
- Denise has graciously stepped up to the plate in Rylee's stead. The Topping Out Ceremony is scheduled for Thursday 9/12, which is just two Thursdays from now.

**C.) A. Vucina – CHRO Report to the Board**

**Permanent/Travel Staff**

- 259 total staff
- 32 travel staff (excluding SNF registry)

**Compliance**

- Performance Evaluations 80% compliant
- TB 89% compliant
- Physicals 96% compliant

**Open Enrollment**

- Current renewal has been presented at a 3.74% increase for 2025 health (medical and GAP) insurance
- Rest of the benefits are out for proposals (dental, vision and lie insurance) and should be presented by our broker by the end of August.
- Also, will be evaluating moving from fully insured to self-funded for our health insurance for 2025.

Union

- Pending
    - Adding language to MOU that allows EMS staff to use a max of 48 hours of PTO per pay period to match up with their 24-hour shifts over the two weeks in a pay period.
    - Removal of bonus shift stipends for applicable job classifications. Originally put in place during Covid-19 to help encourage staff to pick up extra shifts and drive down the usage of travel staff to work those open shifts.
    - Proposed new job classification, Physical Therapy Lead Office Worker.

**F.) Board Member Reports**

- **Jim Cavasso –** Proposed the idea of changing the Board Meeting start time 3:30 pm – would like to put it is as an Agenda Item for the next meeting. Would also like to start implementing the Board going to the different Modoc Medical Center locations and touring the facilities and having lunch with the staff to get to know them.
- **Carol Madison** – September 14th is the Alzheimer Awareness Run – there will be a DJ in the SNF parking lot and they will finish at the park. Also requested the 2019 Home Health/Hospice documents.
- **Paul Dolby –** Nothing to report.
- **Mike Mason –** Nothing to report.
- **Rose Boulade –** Jin is doing a great job.

**Paul Dolby** moved to close the Regular Session of the Board of Directors, **Carol Madison** seconded, and the motion carried with all voting "aye."

The Regular Session of the Last Frontier Healthcare District Board of Directors was adjourned at 2:33 pm.

## *EXECUTIVE SESSION*

Executive Session was called to order by **Jim Cavasso, Chair**, at 2:35 pm.

**7. CONSIDERATION / ACTION**

**A.) T. Ryan – Medical Executive Committee Minutes & Credentialing Items – July 31, 2024– (*Per Evidence Code 1157).***

- **Medical Executive Committee Minutes & Credentialing Items OPPE 2019B –June 26, 2024.**

Based upon character, competence, training, experience and judgment, favorable recommendation by peers and credentialing criteria fulfillments, the Medical Executive Committee recommended the following appointments for Last Frontier Healthcare District Board of Directors' acceptance:

- Serena Ackerman, CRNA – Recommend appointment of Allied Health status/privileges in the Anesthesia category.
- Mark Faltaous, MD – Recommends appointment of Telemedicine status/privileges in the Direct Radiology Category.
- William Pace, MD – Recommends appointment of Telemedicine status/privileges in the Direct Radiology Category.
- Jad Al Danaf, MD – Recommends appointment of Telemedicine status/privileges in Renown Cardiology.
- Mike Khieu, MD – Recommends appointment of Telemedicine status/privileges in Renown Cardiology.
- Abhilash Akinapelli, MD – Recommends reappointment of Telemedicine status/privileges in Renown Cardiology.
- Jake Ichino, MD - Recommends reappointment of Telemedicine status/privileges in Renown Cardiology.
- Jayson Morgan, MD - Recommends reappointment of Telemedicine status/privileges in Renown Cardiology.
- Rober Swackhamer, MD - Recommends reappointment of Telemedicine status/privileges in Renown Cardiology.

**Mike Mason** moved to close the Executive Session and resume the Regular Session of the LFHD Board of Director's meeting, **Carol Madison** seconded, and the motion carried with all voting "aye."

The Executive Session of the Board of Directors was adjourned at 2:36 pm.

## *RESUME REGULAR SESSION*

The Regular Session of the Board of Directors was called back to session by **Jim Cavasso, Chair**, at 2:38 pm.

**8. CONSIDERATION / ACTION**

**A.) T. Ryan – Medical Executive Committee Minutes & Credentialing Items –July 31, 2024.**
***(Per Evidence Code 1157)***

- **Medical Executive Committee Minutes & Credentialing Items OPPE 2019B – June 26, 2024.**

**Carol Madison** moved to approve and accept Minutes, Credentialing, and Privileging items as outlined above, **Rose Boulade**seconded, and the motion carried with all members voting "aye."

**11.) MOTION TO ADJOURN**

**Mike Mason** moved to adjourn the meeting of the Last Frontier Healthcare District Board of Directors at 2:39 pm**, Carol Madison** seconded, and the motion carried with all present voting "aye."

The next meeting of the Last Frontier Healthcare District's Board of Directors will be held on September 26, 2024, at 1:00 pm in the Alturas City Council Chambers at City Hall in Alturas, California.

**Respectfully Submitted:**

_____ _____

**Denise R. King** **Date**
**Last Frontier Healthcare District Clerk**

# ATTACHMENT D

# LFHD BOARD OF DIRECTORS SPECIAL MEETING MINUTES (draft) SEPTEMBER 19, 2024

# SPECIAL MEETING MINUTES

## LAST FRONTIER HEALTHCARE DISTRICT BOARD OF DIRECTORS

**Thursday September 19, 2024 at 3:30 pm**
**Modoc Medical Center Cafe**
**Alturas, California**

Directors present: **Edouard (Jim) Cavasso, Carol Madison, Mike Mason, Rose Boulade, and Paul Dolby**
Directors absent:
Staff in attendance: **Kevin Kramer; CEO, Denise King; LFHD District Clerk**
Staff absent:

**CALL TO ORDER**

**Jim Cavasso, Chair** called the special meeting of the Last Frontier Healthcare District (LFHD) Board of Directors (BOD) to order at 3:35 pm. The meeting location was in the Café at Modoc Medical Center in Alturas, California.

**1. PLEDGE OF ALLEGIANCE TO THE FLAG OF THE UNITED STATES OF AMERICA**

**2. AGENDA – Additions/Deletions to the Agenda**

**Mike Mason** moved that the agenda be approved as presented, **Rose Boulade** seconded, and the motion carried with all present voting "aye."

**3. PUBLIC COMMENT**

No Public Comment.

**4. DISCUSSION**

**A.) K. Kramer – Updated Last Frontier Preliminary Statement**

**Kevin Kramer, CEO,** advised the Board that the document was presented to the Board approximately two months ago, and it had some changes that needed to be made. Patrick Fields and Chris Perlitz updated it together and sent it out to investors before the Board reviewed the changes.

The Board had a few questions pertaining to the rates that Chris Perlitz had provided to Kevin. Kevin was able to have a phone call with Chris Perlitz during the Board meeting to confirm the bond anticipation notes will have a fixed yield of 5% and the coupon will have a fixed yield of 6%. The 6% interest rate results from a portion of the cost of issuance being rolled up into the rate. Chris Perlitz also relayed to the Board that the investor for this interim financing will be Vangaurd.

***REGULAR SESSION***

**4. CONSIDERATION / ACTION**

**A.) K. Kramer - K. Kramer – Interim Financing Documents**

- **Indenture**
- **Note Purchase Agreement**
- **Bond Counsel Opinion**
- **Continuing Disclosure Certificate**

**Kevin Kramer, CEO** presented the documents to the Board and answered questions they had. **Mike Mason** moved that the **Interim Financing Documents** be approved as presented, **Paul Dolby** seconded, and the motion carried with all present voting "aye."

**5.) MOTION TO ADJOURN**

**Carol Madison** moved to adjourn the Special Meeting of the Last Frontier Healthcare District Board of Directors at 4:03 pm, **Rose Boulade** seconded, and the motion carried with all present voting "aye."

The next regular meeting of the Last Frontier Healthcare District's Board of Directors will be held on Thursday, September 26, 2024, at 1:00 pm in the Alturas City Council Chambers at City Hall in Alturas, California.

**Respectfully Submitted:**

_____ _____

**Denise King** **Date**
**Last Frontier Healthcare District Clerk**

# ATTACHMENT E

# MEDICAL STAFF COMMITTEE MINUTES

MODOC MEDICAL CENTER
A Public Entity
Healing Hands Close To Home
Last Frontier Healthcare District

DATE: SEPTEMBER 26, 2024

TO: GOVERNING BOARD

FROM: T.RYAN – CREDENTIALING AIDE

SUBJECT: MEDICAL STAFF COMMITTEE MINUTES

*The following Medical Staff Committee Minutes were reviewed and accepted at the August 28, 2024, meeting and are presented for Governing Board review:

**A. REVIEW OF MINUTES**

1. Medical Staff Committee – July 31, 2024

**B. PATHOLOGY REPORT** – 07/02/2024

**C. NEW BUSINESS**

1. Policy Review – August 2024

MODOC MEDICAL CENTER
A Public Entity
Healing Hands Close To Home
Last Frontier Healthcare District

# MEDICAL STAFF COMMITTEE MEETING
## July 31, 2024 – Education Building
## MINUTES

In Attendance

Matthew Edmonds, MD Chief Medical Officer
Edward Richert, MD Vice Chief Medical Officer
Lisanne Burkholder, MD
Landin Hagge, DO
Barbara Howe, RDN
Mike Gracza, Pharmacist

Kevin Kramer- CEO
Ed Johnson- CNO
Alicia Doss- Risk Management
Maria Morales- MSC/H.I.M Director
Taylor Ryan- Credentialing Aide

| SUBJECT | DISCUSSION | ACTION |
|---|---|---|
| I.<br>CALL TO ORDER | After noting that the required members were present to constitute a quorum, the regularly scheduled Medical Staff Committee Meeting was called to order at 1210 by Dr. Edmonds, MD Chief Medical Officer. | |
| II.<br>CONSENT AGENDA ITEMS | 1. The following minutes were reviewed:<br>A. Medical Staff Committee Meeting of June 26, 2024. | Minutes approved by motion, second, and vote. Forward to Governing Board. |
| III.<br>PATHOLOGY REPORT | Review of Report, 06/06/2024. | Report at next meeting |
| IV.<br>CHIEF MEDICAL OFFICER REPORT | Recently, had a QIP Meeting with Medi-Cal and it seems like a lot of the issues that we were having meeting QIP goals and tracking things could be more easily addressed through the 'Health Care Maintenance' section of the EMR. Unfortunately, that is not super functional and from our understanding, cannot be fixed due to our different version of Cerner. Therefore, we discussed what we could do to obtain effective reporting and tracking. With that said, we have a meeting with an outside vendor next week to go over what they could | Report at next meeting |

| SUBJECT | DISCUSSION | ACTION |
|---|---|---|
| | possibly offer us as this is not the first time they have heard about this issue with Cerner. Also, looking at possibly a new walk-in provider, maybe moving somebody from a different position, so that will be coming down the plank in the near future. Lastly, still planning to get Ryan Ciantar to join us in September but will follow up on that as well. | |
| V. EMERGENCY ROOM REPORT | Nothing to report. | |
| VI. CEO REPORT | As of current, the new SNF Building is moving along just fine. Working on getting the interim financing in place for that as well and thinking that will be in place by Mid-September. Dr. Chen is going to come back to Canby after Dr. Zollman leaves and work with us for a couple months, still working out details, but believe he will work through November. Also, currently working on the Tax Role as that is due August 10th. Lastly, Ryan Ciantar is engaging, so we have a good feeling he is still planning to come down and join us. | Report at next meeting |
| VII. CNO/SNF REPORT | Currently at the SNF, we have 49 patients. Our 50th patient will be there on Tuesday. We have started our new mealtimes at the SNF, and we are about three weeks in with this transition, phase 1. However, we are experiencing some growing pain with this. We are working on phase 2, which is to clear the nurses' station of patients and have them doing something, occupied in the dining room during that time. The other phase is we are looking at making meal choices at the Skilled Nursing Facility and at the Hospital. Ideally, we want to give a menu so patients can choose what they want to eat, specifically meals with different choices of meat. We are trying to put all the pieces in place with starting mealtimes first, and now we are moving away from the nurses' station, and then we are going to do meals of choice with the hospitality, so those are the 3 phases we are working on over at the SNF. | Report at next meeting |
| VIII. PHARMACY REPORT | Our new Retail Pharmacy Manager Darryl has been here for a few weeks now, and we think it is working out well. We have heard some good feedback from staff and customers. A couple of weeks ago we had our meeting and would like to | Report at next meeting |

| SUBJECT | DISCUSSION | ACTION |
|---|---|---|
| | share some highlights we went over. To our formulary we added a new potassium binder called Lokelma, replacing Kayexalate. Relatively expensive, around $27 dollars a dose our cost, but it works so it is likely worth it. We also added Acetazolamide Injection as we had a couple requests in the past for this, so we decided to add it to the formulary. Added Olanzapine 5mg-odt and Olanzapine Injection as we have heard a bit better patient experience from this. We took off Fluocinonide Cream and now we have Triamcinolone Cream for the higher potency cream. To note, even if we delete, if it is something needed for a specific patient, we can still do that. The whole thing is making sure the patient is being taken care of. We are starting to collect data now for the Antibiotic Stewardship Program, aside from education and information, we are now starting to implement monitoring of use of antibiotics. With the data we collected from the last quarter, we have as far as appropriate an indication, which is basically looking at the empiric use. From that, 42 out of 42 was judged appropriate, culture collection was 21 out of 42, in the 72-hour de-escalation, 31 out of 42 were de-escalated within 72-hours, sensitivity guided de-escalation was too 31 out of 42 so it was probably the same ones, another was 30 out of 42, also looking at Prophylactic Antibiotics and there were 0 cases where it was used. Another thing we discussed and approved was Vancomycin dosing protocol. We have calculated a loading dose for most every patient. For this, we have a chart that has the weights and the doses that are available. The pharmacy involvement is making sure that the levels are drawn appropriately, not too early, not mid-dose, and ensuring it is useful. Looking to standardize this by using the policy and procedures. Lastly, we have been reading a lot on MRSA Nasal Swabs to de-escalate antibiotic therapy. Findings show that because there have been high negative correlations, about 96-98% with respiratory infections and a negative swab, we can then de-escalate and not use any specific agents for MRSA. That being, we are starting to follow this and as long as the MRSA Swabs are available, we are asking at admission to do a nasal swab with the thought we can take away their Linezolid or their | |

| SUBJECT | DISCUSSION | ACTION |
|---|---|---|
| | Vancomycin or something like that at the 72-hour mark or however long it will take. | |
| NEW BUSINESS<br>IX.<br>POLICY REVIEW & APPROVAL | The following New Business was presented for review/approval:<br>1. Policies of June 2024 | After review and discussion, a recommendation was made to implement the June 2024 Policies. The recommendation was ratified by motion, second, and vote. Recommendations will be forwarded to the Governing Board for final approval. |
| X.<br>ADJOURNMENT | The meeting was adjourned at 1250. | |

Matthew Edmonds, MD Chief Medical Officer — Date: 08/28/2024

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PATHOLOGIST ON-SITE VISIT REPORT
DATE OF VISIT: 07/02/2024

During the pathology on-site visit and visit to Canby Clinic, I spent approximately 6 – 61/2 hours in Medical Records, and at the Canby Clinic.

While in medical records, I reviewed 8 surgical path reports compared with the clinical histories which were for the month of May. I reviewed an additional 3 surgical path reports and compared them to the clinical histories. In addition, there were 2 autopsy reports review, and 7 transfusions reviewed. There were no issues identified in any of these reports.

I spoke with Walter in the laboratory. The three new permanent clinical lab scientists are working out well and are adjusting to familiarizing themselves with the laboratory. Walter has applied to have Brenda promoted to a CLS3 position; this is in the process of being evaluated. The last of the travelers will be staying for another month as the 3 permanent CLS continue to acquaint themselves with the laboratory and equipment. In addition, I reviewed the seamen's coagulation QAP program for Hemostatic for June. The nova biomedical data for May. The American Proficiency Institute (API) results for microbiology second event 2024. The competency testing results for Walter Dimarucut. The CBC correlations for June. The compacity testing for Brenda Lewis. The American proficiency Institute (API) chemistry miscellaneous First event 2024. The competency testing for Jahaziel Grimaldo. The competency testing for Levi Lostritto. The QC chart for the XN-550 instrument for the month of April. The QC chart for the XN-L instrument for the month of May. The QC Data for the XN-550 instrument for May. The QC chart for the XN-L instrument for the month of April. The safety Data sheet for the Vacuette Z-serum plot activator blood collection tube. The group coordinator report for the ISED ESR controls for the Month of May. The seamen's hemostasis QAP program for the month of May. The UA Control urinalysis levels 1 and 2 for May. The cases where there were issues with several specimens not being ran within a timely manner. The MMC transfusion reaction report. The correlation studies for the SYSMEX. XN-550 hematology machine. The API results from chemistry chore 2nd event 2024. And the QAP for April.

I spoke with Dr. Farson in the emergency room, and he felt that the laboratory was doing an excellent job, and he had no suggestion at this time for improvement.

I spoke with Kevin concerning staffing in the laboratory. The concern is with Cerner interacting with Istat and Biofire.

Robert James 8/21/24

ROBERT JAMES, MD, PhD
CONSULTING PATHOLOGIST

Date

# August 2024 Medical Staff Policy Approval

| Department | Title | Approved |
|---|---|---|
| | | ☐ |
| Emergency Department | 7010.24.07 Registration of the Emergency Department Patient.docx | ☐ |
| Emergency Department | 7010.24.08 Ethical Dilemmas in Patient Care.docx | ☐ |
| Emergency Department | 7010.24.09 HOME MEDICATIONS .docx | ☐ |
| Emergency Department | 7010.24.09 Procedural Sedation .docx | ☐ |
| Emergency Department | 7010.24.10 Legal Blood Draw.docx | ☐ |
| Alturas and Canby Clinic | 7070.24.02 SUICIDE THREAT OR SELF HARM VIA TELEPHONE.docx | ☐ |
| Operating Room | 7420.24.01 OPERATING ROOM POLICY.docx | ☐ |
| Operating Room/ Surgery | 7420.24.02 OUT-PATIENT SURGERY CHART ORDER AND CONTENST.docx | ☐ |
| Radiology IR | 7430.24.02 CONTRAST ENEMA IN PEDIATRIC PATIENT.docx | ☐ |
| Radiology IR | 7430.24.03 Barium Small Bowel Examination in Adults .docx | ☐ |
| Operating Room | 7430.24.03 Surgical site infection prevention.docx | ☐ |
| Radiology IR | 7430.24.04 ENDOVASCULAR MANAGEMENT OF THE THROMBOSED OR DYSFUNCTIONAL DIALYSIS ACC | ☐ |
| Radiology IR | 7430.24.05 ENEMA EXAMINATION IN ADULTS.docx | ☐ |
| Radiology IR | 7430.24.06 ESOPHAGRAM AND UPPER GASTROINTESTINAL (UGI) EXAMINATION IN INFANTS AND CHILI | ☐ |
| Radiology IR | 7430.24.07 ESOPHAGRAMS AND UPPER GASTROINTESTINAL (UGI) EXAMINATIONS IN ADULTS.docx | ☐ |
| Radiology;#Radiology IR | 7430.24.09 IMAGE-GUIDED EPIDURAL STEROID INJECTION.docx | ☐ |
| Radiology IR | 7430.24.11 MODIFIED BARIUM SWALLOW.docx | ☐ |
| Radiology IR | 7430.24.12 Myelography and or Cisternography.docx | ☐ |
| Radiology IR | 7430.24.13 SMALL BOWEL EXAMINATION.docx | ☐ |
| Laboratory | 7500.24.05 MEDTOXScan PROFILE-V .docx | ☐ |
| Laboratory | 7500.24.06 Proficiency Testing Procedure .docx | ☐ |
| Radiology | 7630.24.01 Emergent Radiology Procedures.docx | ☐ |
| Radiology | 7630.24.02 SCHEDULING RADIOLOGY EXAMS .docx | ☐ |
| Radiology | 7630.24.03 Patient EMR Records and Reports .docx | ☐ |
| Radiology | 7630.24.04 Duplication and Transfer of Radiology Studies.docx | ☐ |
| Radiology | 7630.24.05 DIGITAL RECEPTOR (DR) IMAGING PLATE INFECTION CONTROL .docx | ☐ |
| Radiology | 7630.24.07 PORTABLE RADIOGRAPHIC EXAMINATIONS.docx | ☐ |
| Radiology | 7630.24.08 Radiologic Examination of the Extremities .docx | ☐ |
| Radiology | 7630.24.09 REPEAT OF X-RAY IMAGES.docx | ☐ |
| Radiology | 7630.24.10 REGISTRATION OF RADIOLOGY PATIENTS.docx | ☐ |
| Radiology | 7630.24.10 Scheduling and Transporting of Wheelchair Residents for Radiology Examinations.docx | ☐ |
| Radiology | 7630.24.11 AUTOMATED EXTERNAL DEFIBRILLATOR.docx | ☐ |
| Radiology | 7630.24.11 Radiologic Examination of the Head and Neck.docx | ☐ |
| Radiology | 7630.24.12 Lead Apron Inspection .docx | ☐ |
| Radiology | 7630.24.12 RADIOLOGIST COVERAGE .docx | ☐ |

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| Radiology | 7630.24.13 AUTOMATED EXTERNAL DEFIBRILLATOR .docx | ☐ |
| Radiology IR | 7620.24.01 INTERVENTIONAL RADIOLOGY TIME OUT .docx | ☐ |
| Radiology;#Radiology CT | 7680.24.01 Patient Labs Prior to CT Exam with IV Contrast .docx | ☐ |
| Radiology CT | 7680.24.02 CT Quality Control.docx | ☐ |
| Radiology;#Radiology CT | 7680.24.03 CT LOW DOSE LUNG CANCER SCREENING.docx | ☐ |
| Radiology Ultrasound | 7690.24.05 ANKLE BRACHIAL INDEX.docx | ☐ |
| Physical Therapy | 7770.24.13 Cleaning the Paraffin Wax Bath.docx | ☐ |
| Physical Therapy | 7770.24.14 Ramp Protocol Policy .docx | ☐ |
| Physical Therapy | 7770.24.15 Documentation Procedure.docx | ☐ |
| Physical Therapy | 7770.24.17 Parallel Walkway | ☐ |
| Physical Therapy | 7770.24.18 Patient Privacy .docx | ☐ |
| Physical Therapy | 7770.24.19 Patient Treatment .docx | ☐ |
| Physical Therapy | 7770.24.21 Rehab Services for Skilled Nursing Policy.docx | ☐ |
| Physical Therapy | 7770.24.22 Scope of Practice and policy for the Provision of Care Policy .docx | ☐ |
| Physical Therapy | 7770.24.23 Tens policy.docx | ☐ |
| Dietary - SNF | 8840.24.10 Meal Times .docx | ☐ |
| Infection Control - SNF | 8753 -SNF.24.09 Prevention and control of scabies and other parasite and vector borne infections .docx | ☐ |
| Infection Control -SNF | 8753 SNF.24.05 SNF SURVEILLANCE .docx | ☐ |
| Infection Control -SNF | 8753 SNF.24.06 Employee Illness and Absence Tracking .docx | ☐ |
| Infection Control -SNF | 8753 SNF.24.07 CDI Policy | ☐ |
| Infection Control -SNF | 8753 SNF.24.08 Standard and Transmission Precautions SNF .docx | ☐ |
| Infection Control - SNF | 8753 SNF .24.09 Cl ring NoroVirus Policy .docx | ☐ |

## Policies Scheduled for Archival

| Department | Title |
|---|---|
| Emergency Department;#Med/Surge | 6-2024 Archive Blood Blood Components Patients Guide to Blood Transfusions.pdf |
| Emergency Department;#Med/Surge | 6-2024 Archive Blood Blood Components Patients Guide to Blood Transfusions(1).pdf |
| Emergency Department;#Med/Surge | 6-2024 Archive Boussignac Continuous Positive Airway Pressure System.pdf |
| Emergency Department;#Med/Surge | 6-2024 Archive Cardiac Arrest-Code Blue.pdf |
| Emergency Department;#Med/Surge | 6-2024 Archive Cardiopulmonary Resuscitation Old Versions.pdf |
| Emergency Department;#Med/Surge | 6-2024 Archive Confidentiality of Information-Optional Issues.pdf |
| Emergency Department;#Med/Surge | 6-2024 Archive Continuous Positive Airway Pressure.pdf |
| Emergency Department;#Med/Surge | 6-2024 Archive Dressing Supply for Wound Vacuum.pdf |
| Emergency Department;#Med/Surge | 6-2024 Archive Educational Day Off.pdf |
| Emergency Department;#Med/Surge | 6-2024 Archive Elder Abuse Allegations.pdf |

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| Emergency Department;#Med/Surge | 6 2024 Archive Emergency Coronary Care Orders.pdf |
| Emergency Department;#Med/Surge | [illegible] |
| Emergency Department;#Med/Surge | 6 2024 Archive Fire Safety.pdf |
| Emergency Department;#Med/Surge | [illegible] |
| Emergency Department;#Med/Surge | 6 2024 Archive Hazardous Materials and Waste Training.pdf |
| Emergency Department;#Med/Surge | [illegible] |
| Emergency Department;#Med/Surge | 6 2024 Archive Nasogastric Intubation-Levine Tube or Salem Sump.pdf |
| Emergency Department;#Med/Surge | [illegible] |
| Emergency Department;#Med/Surge | 6 2024 Archive Sentinel Event Policy.pdf |
| Emergency Department;#Med/Surge | [illegible] |
| Emergency Department;#Med/Surge | 6 2024 Archive Transfer Regulations .pdf |
| Radiology IR | [illegible] |
| Physical Therapy | 7770.24.12 Patient Treatment Process.docx |
| Physical Therapy | [illegible] |
| Physical Therapy | 7770.24.20 Post Op Total Joint Screening Tool .dotx |
| Information Technology | [illegible] |
| Information Technology | Analog_ISDN Line Security Policy archive.pdf |
| Information Technology | [illegible] |
| Dietary - SNF | Authorized personnel archive .pdf |
| Dietary - SNF | [illegible] |
| Physical Therapy | Billing Procedures -archive.pdf |
| Central Supply | [illegible] |
| Physical Therapy | Cleaning the Paraffin Wax Bath- Archive.pdf |
| Emergency Department | [illegible] |
| Information Technology | Dial-In Access Policy archive.pdf |
| Emergency Department | [illegible] |
| Emergency Department | Discharge Planning - Archive.pdf |
| Emergency Department | [illegible] |
| Emergency Department | DISCHARGE POLICY TRANSFER ADMISSION TO SKILLED NURSING FACILITY_Archive.pdf |
| Dietary - SNF | [illegible] |
| Emergency Department | ENDOCTRACHEAL TUBE AND TRACHEOSTOMY (2).pdf |
| Central Supply | [illegible] |
| Business Office | Fair Pricing Policy Revised and Redlined.doc |
| Dietary - SNF | [illegible] |
| Radiology | HAND HYGEINE RADIOLOGY -Archive.docx |
| Med/ Surg | [illegible] |
| Emergency Department | immune goblin policy -archive .pdf |
| Infusion | [illegible] |

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|---|---|
| Central Supply | INSTRUMENT CLEANING.docx |
| Information Technology | IT - Email Retention Archive.pdf |
| Dietary - SNF | Manual Dishwashing - archive.pdf |
| Dietary - SNF | Manual Dishwashing archive.pdf |
| Emergency Department | NASOPHARYNGEAL SUCTIONING (2).pdf |
| Emergency Department | OXYGEN BY FACE MASK.pdf |
| Emergency Department | OXYGEN BY NASAL CANNULA/CATHETER.pdf |
| Physical Therapy | Patient Privacy During Physical Therapy Archive.pdf |
| Emergency Department | Poison Control - Archive.pdf |
| Radiology | DEPT AT OF X-RAY IMAGES (2).doc |
| Dietary - SNF | sanitary practices archive.pdf |
| Emergency Department | SUCTIONING-TRACHEOSTOMY.pdf |
| Emergency Department | SUSPECTED CHILD, ADULT, DISABLED.pdf |
| Dietary - SNF | Use of plastic gloves - archive.pdf |
| Dietary - SNF | Waste Disposal Archive.pdf |
| Physical Therapy | Wound Care - Archive.pdf |

**Reviewed by the Medical Staff on 8/28/2024**

MD

Dr. Edmonds

08/28/2024

# ATTACHMENT F

# POLICY AND PROCEDURES

MODOC MEDICAL CENTER
A Public Entity
Healing Hands Close To Home
Last Frontier Healthcare District

# MEMORANDUM

**DATE:** 9/18/2024
**TO:** Board of Directors
**FROM:** Samantha Farr
**SUBJECT:** Review of Departmental Policies

The following policies are submitted for your review and approval:

| | |
|---|---|
| Alturas and Canby Clinic Business Office | 7070.24.02 Suicide Threat or Self Harm VIA Telephone |
| | 8350.24.02 Discharge Notice Policy |
| | 8350.24.04 Administrative Write-Off Guidelines |
| Central Supply | 7470.24.05 Equipment and Supplies |
| | 7470.24.06 Central Supply Responsibilities |
| | 7470.24.03 Autoclaving of Equipment and Supplies |
| | 7470.24.04 Instrument Cleaning |
| Dietary - SNF | 8340.24.10 Mealtimes |
| Emergency Department | 7010.24.07 Registration of the Emergency Department Patient |
| | 7010.24.08 Ethical Dilemmas in Patient Care |
| | 7010.24.09 HOME MEDICATIONS |
| | 7010.24.10 Legal Blood Draw |
| | 7010.24.09 Procedural Sedation |
| | 7010.24.05 Suctioning Endotracheal Nasotracheal Nasopharyngeal Oropharyngeal |
| | 7010.24.04 Poison Control.docx |
| | 7010.24.02 Oxygen Administration Mask Nasal Cannula High Flow Nasal Cannula |
| | 7010.24.03 Ancillary Support Services |
| Emergency Management | 8770.24.10 Code Yellow. |

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| Engineering | 8450.24.20 Security Management Plan |
| Infection Control - SNF | 8753.-SNF.24.09 Prevention and control of scabies and Other Parasite and Vector Borne Infections |
| | 8753-SNF.24.05 SNF Surveillance |
| | 8753-SNF.24.06 Employee Illness and Absence Tracking |
| | 8753-SNF.24.07 CDIFF |
| | 8753-SNF.24.08 Standard and Transmission Precautions SNF |
| | 8753-SNF-.24.09 GI and Norovirus Policy |
| Information Technology | 8480.24.02 IT Support Ticket Documentation |
| | 8480.24.01 Acceptable Computer Use |
| Infusion | 6170-I.24.01 Treatment of Adverse Reactions |
| Laboratory | 7500.24.05 MEDTOXScan PROFILE-V |
| | 7500.24.06 Proficiency Testing Procedure |
| Operating Room | 7420.24.01 Operating Room |
| | 7420.24.02 Out-Patient Surgery Chart Order and Consent |
| | 7430.24.03 Surgical Site Infection Prevention |
| | 7420.24.02 Surgical Privileges |
| Physical Therapy | 7770.24.15 Documentation Procedure |
| | 7770.24.18 Patient Privacy |
| | 7770.24.23 Tens policy |
| | 7770.24.17 Paraffin Wax |
| | 7770.24.14 Billing Procedure Policy |
| | 7770.24.21 Rehab Services for Skilled Nursing Policy |
| | 7770.24.22 Scope of Practice and Plan for the Provision of Care Policy |
| | 7770.24.13 Cleaning the Paraffin Wax Bath |
| | 7770.24.19 Patient Treatment |
| | 7770.24.14 Patient Privacy During Physical Therapy Treatment |
| | 7770.24.15 Billing Procedure |
| Radiology | 7630.24.12 Radiologist Coverage |
| | 7630.24.03 Patient EMR Records and Reports |
| | 7630.24.04 Duplication and Transfer of Radiology Studies |
| | 7630.24.05 Digital Receptor (DR) Imaging Plate Infection Control |
| | 7630.24.07 Portable Radiographic Examinations |
| | 7630.24.08 Radiologic Examination of the Extremities |
| | 7630.24.09 Repeat of X-RAY Images |
| | 7630.24.10 Registration of Radiology Patients |
| | 7630.24.10 Scheduling and Transporting of Warnerview Residents for Radiology Examinations |
| | 7630.24.11 Automated External Defibrillator |
| | 7630.24.01 Emergent Radiology Procedures |
| | 7630.24.11 Radiologic Examination of the Head and Neck |
| | 7630.24.02 Scheduling Radiology Exams |
| | 7630.24.12 Lead Apron Inspection |

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| | 7630.24.13 Automated External Defibrillator |
| Radiology CT | 7680.24.02 CT Quality Control |
| | 7680.24.03 CT Low Dose Lung Cancer Screening |
| | 7680.24.01 Patient Labs Prior to CT Exam with IV Contrast |
| Radiology IR | 7430.24.05 Enema Examination in Adults |
| | 7430.24.06 Esophagram and Upper Gastrointestinal (UGI) Examination in Infants and Children |
| | 7430.24.07 Esophagrams and Upper Gastrointestinal (UGI) Examinations in Adults |
| | 7430.24.09 Image-Guided Epidural Steroid Injection |
| | 7430.24.11 Modified Barium Swallow |
| | 7430.24.12 Myelography and or Cistemography |
| | 7430.24.13 Small Bowel Examination |
| | 7430.24.02 Contrast Enema in Pediatric Patients |
| | 7430.24.03 Barium Small Bowel Examination in Adults |
| | 7680.24.01 Interventional Radiology Time Out |
| | 7430.24.04 Endovascular Management of the Thrombosed or Dysfunctional Dialysis |
| Radiology Ultrasound | 7680.24.05 Ankle Brachial Index |

Respectfully Submitted,

Samantha Farr
Policy Coordinator

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|---|---|---|---|
| REFERENCE # | 6170-I.24.01 | EFFECTIVE | |
| SUBJECT: | TREATMENT OF ADVERSE REACTIONS | REVISED | |
| DEPARTMENT: | INFUSION | | |

**PURPOSE:**
The purpose of this policy is to outline treatment for mild adverse medication reactions in the Infusion Department

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center (MMC) that only mild adverse medication reactions will be treated in the Infusion Department.

**PROCEDURE:**
If a patient is receiving an Outpatient medication in the Infusion Department, they will be continuously monitored for any adverse reactions. Examples of mild adverse reactions are as follows:

- Mild Nausea
- Mild Headache
- Mild Chills
- Mild Rash

All Allergies to medications should be reviewed before any of the listed medications are administered.

Medications used to treat the above reactions are as follows:

- Zofran 4mg ODT Sublingual x1 for nausea
- Zofran 4mg IVP every 6 hours for nausea
- Tylenol 650mg po x1 for headache
- Motrin 400mg po x1 for headache
- Benadryl 25mg po x1 for rash

If an adverse reaction is observed the prescribing physician should be notified. Also notify the physician if there is no response to the reaction after medications have been administered.

For all moderated to severe adverse reactions, the patient should be transferred to the ER department.

**REFERENCES:**
None

**ATTACHMENTS:**
None





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| REFERENCE # | 7010.24.02 | EFFECTIVE: | 9/2006 |
| SUBJECT: | OXYGEN ADMINISTRATION: MASK, NASAL CANNULA, HIGH FLOW NASAL CANNULA | REVISED: | 5/2024 |
| DEPARTMENT: | EMERGENCY DEPARTMENT | | |

**PURPOSE:**
The purpose of this policy is to provide general guidelines for supplemental oxygen administration.

**AUDIENCE:**
Department Wide

**TERMS/DEFINITION:**
**Oxygen Therapy:** the administration of supplemental oxygen at concentrations greater than ambient air to treat or prevent hypoxemia, decrease breathing work, or decrease myocardial work.

**Neptune Heated Humidifier/High Flow Oxygen:** a device with a built-in oxygen blender which delivers high-flow oxygen therapy to patients with conditions such as acute respiratory failure, increased work of breathing, hypercapnia, refractory hypoxemia, or those who are intolerant to non-invasive positive pressure ventilation. This device is contraindicated in patients with apnea, or those who are unable to protect their airways or tolerate the high flow.

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to administer supplemental oxygen safely with appropriate monitoring and management.

**PROCEDURE:**

- An order for oxygen therapy is required for all patients receiving oxygen using any device.
- In an emergency, such as a rapid response, oxygen may be administered without an order. An order must be written by the provider once the patient has been stabilized.
- Only licensed healthcare providers who have been trained in oxygen therapy may connect or disconnect oxygen, connect, disconnect or adjust a mask, nasal cannula, or other oxygen delivery devices, or adjust the flow of oxygen to carry out a medical order.
- Perform hand hygiene and use universal precautions to avoid contact with or transmission of respiratory pathogens.
- Educate the patient, family, significant other or designated caregiver about the rationale for supplemental oxygen use and the expected results for the patient.
- Offer support and reassurance. Answer any questions.
- Document the time of the initiation of therapy, the device used, and assessment findings (including relevant vital signs, oxygen saturation, and capnography readings) before and after initiation of oxygen therapy in the electronic medical record. Observe for patient's tolerance or worsening of symptoms. Communicate with the provider the patient's response to treatment and whether any adjustments might be needed.





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| REFERENCE # | 7010.24.02 | EFFECTIVE: | 9/2006 |
| SUBJECT: | OXYGEN ADMINISTRATION: MASK, NASAL CANNULA, HIGH FLOW NASAL CANNULA | REVISED: | 5/2024 |
| DEPARTMENT: | EMERGENCY DEPARTMENT | | |

- Ensure humidification is maintained when more than two (2) liters per minute of oxygen is delivered.
- Adjust the oxygen device to the patient's face to maintain security, comfort, and minimize pressure injury.
- Verify the liter flow is correct for the device and the patient's needs.
- Confirm that there is oxygen flow from the device by testing for leaks, loose connections, and proper operation of the pressure relief valve by pinching the tubing close to the mask or cannula.
- Assess the patient's ability to tolerate the device and collaborate with the care team if the patient's condition deteriorates and an alternative therapy is warranted.

**Oxygen Delivery via Simple Oxygen Mask**

- Connect the flow meter to the oxygen source, then attach the connective tubing and mask.
- Turn the flow meter to a minimum of six (6) liters perminute and verify the oxygen flow.

**Oxygen Delivery via Non-Rebreathing Mask**

- Connect the flow meter to the oxygen source.
- Attach the connecting tube and mask.
- Verify there is oxygen flow from the mask.
- Set the flow meter to a minimum flow of 10 liters per minute.
- Observe the non-rebreathing bag for collapse. If there is complete collapse of the bag, increase the oxygen flow rate until there is some degree of bag inflation throughout each respiratory cycle.

**Oxygen Delivery via Nasal Cannula**

- Connect the flow meter to the oxygen source and the humidifier (if administering more than 2 liters per minute of oxygen); attach the connecting tubing and nasal cannula.
- Verify there is oxygen flow from the cannula.
- Turn off the flowmeter.
- Gently place the cannula in the patient's nostrils and adjust the fit for maximum comfort and security.





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| SUBJECT: | OXYGEN ADMINISTRATION: MASK, NASAL CANNULA, HIGH FLOW NASAL CANNULA | REVISED: | 5/2024 |
| DEPARTMENT: | EMERGENCY DEPARTMENT | | |

- Turn the flowmeter on to the dose prescribed by the provider's order.

**Neptune Heated/Humidifier High Flow Oxygen**

- Set up the Neptune Device in accordance with the manufacturer's instructions, using a liter flow between 10 to 60 liters per minute.

- Collaborate with the provider to adjust the flow in accordance with the patient's response, tolerance, oxygen saturation, and blood gas results.

**REFERENCES:**

Ilene M Rosen, M. M. (2023, December). Oxygen delivery and consumption. Up to Date.
RCI, H. (2007, June). Neptune Heated Humidifier User's Manual. Teleflex Medical.

**ATTACHMENTS:**

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|---|---|---|---|
| REFERENCE # | 7010.24.03 | EFFECTIVE | 10/20/2007 |
| SUBJECT: | ANCILLARY SUPPORT SERVICES | REVISED | 04/2024 |
| DEPARTMENT: | EMERGENCY DEPARTMENT | | |

**PURPOSE:**
The purpose of this policy is to ensure timely services and treatment to all patients seeking access to care at Modoc Medical Center (MMC). In addition to the primary care, treatment, and services provided by the Emergency Department personnel, support services will be available to Emergency Department patients.

**AUDIENCE:**
Department Wide

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of MMC to provide timely service and treatment to all patients.

**PROCEDURE:**
The Emergency Department will have ancillary services available 24 hours a day, except as noted below for supportive patient care:

- The Pharmacy or a Pharmacist is available Monday through Friday from 0700 to 1600. There is a pharmacist on call after hours, and on weekends.
- Clinical Laboratory Services are available from 0600 to 0030 daily. After 0030, a Clinical Laboratory Specialist (CLS) is on call.
- Pathology testing is available 24 hours a day however, the specimen will be sent out the following afternoon. Shasta Pathology will pick up the specimen around 1600 Monday through Friday. Laboratory staff will notify Shasta Pathology if there is a specimen to be picked up.
- Imaging Services are available 24 hours a day. Technicians work Monday through Friday from 0730 to 2100. Technicians are on call from 2100 to 0730 during the week (Monday through Friday), and all day on the weekends (Saturday and Sunday).
- Environmental Services (housekeeping) is available Monday through Friday from 0600 to 2230. On the weekends, housekeeping is available from 0600 to 1430.

Tests and services requested for Emergency Department patients will receive priority over routine tests and services ordered for the inpatient or outpatient population.





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| SUBJECT: | ANCILLARY SUPPORT SERVICES | REVISED | 04/2024 |
| DEPARTMENT: | EMERGENCY DEPARTMENT | | |

Emergency Department tests and services will be performed with results reported on an emergency basis.

**REFERENCES:**

None

**Attachments:**

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| REFERENCE # | 7010.24.04 | EFFECTIVE | 10/2007 |
| SUBJECT: | POISON CONTROL NOTIFICATION | REVISED | 04/2024 |
| DEPARTMENT: | EMERGENCY DEPARTMENT | | |

**PURPOSE:**
The purpose of this policy is to provide guidance to the nursing staff when a patient presents to the Emergency Department complaining of accidental or intended ingestion of a substance.

**AUDIENCE:**
Department Wide

**TERMS/DEFINITION:**

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to contact the Poison Control Center for any patient that presents to the Emergency Department complaining of accidental or intended ingestion of a substance.

**PROCEDURE:**

The Poison Control Center will be notified of any patient that arrives to the Emergency Department with complaints of accidental or intended ingestion of a substance.

Poison Control Center phone number is: 1-800-222-1222.

Document the following information in the patient's electronic medical record (EMR).

- Type of substance ingested if known.
- Time and amount of ingestion if known.
- Patient weight.
- Current vital signs.
- Time Poison Control Center was contacted.
- The recommended treatment/guidance given by Poison Control.

**REFERENCES:**
(Poison Control, 2024).webPOISONCONTROL.
**ATTACHMENTS:**
None





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|---|---|---|---|
| REFERENCE # | 7010.24.05 | EFFECTIVE | 09/2006 |
| SUBJECT: | SUCTIONING: ENDOTRACHEAL; NASOTRACHEAL; NASOPHARYNGEAL; OROPHARYNGEAL | REVISED | 2015, 2024 |
| DEPARTMENT: | EMERGENCY DEPARTMENT | | |

**PURPOSE:**

The purpose of this policy is to provide guidelines for clearing secretions and maintaining a patent airway in patients with respiratory problems or to prevent pulmonary aspiration of secretions, blood, or vomitus.

**AUDIENCE:**
Department Wide

**POLICY:**
It is the policy of Modoc Medical Center (MMC) that all licensed staff be oriented to and be knowledgeable in suctioning techniques, as well as safety and infection control practices, before suctioning on a patient.

**PROCEDURE:**
Suctioning is indicated when the patient cannot clear secretions or when there is audible or visible evidence of secretions in the large or central airways that persist despite the patient's best cough effort. Need for suctioning is evidenced by one or more of the following:

- Visible secretions in the airway.
- Chest auscultation of coarse, gurgling breath sounds, rhonchi, or diminished breath sounds.
- Suspected aspiration of gastric or upper airway secretions.
- Clinically apparent increased work of breathing.

Suction only when clinically indicated and for up to 15 seconds at a time to decrease the risk of respiratory complications.

Hyperoxygenation and hyperventilation should be performed prior to the nasal and tracheal procedures to avoid the most common hazards of suctioning (hypoxemia, arrhythmias, and atelectasis).

For nasal suctioning, increase the amount of oxygen the patient is receiving for a few minutes prior to the procedure and instruct the patient to take several deep breaths.

For tracheal suctioning, do the same.

If the patient is on a ventilator, either hyperoxygenate and ventilate with an Ambu bag or provide a few extra machine assisted breaths prior to the procedure. Allow the patient to recover, hyperventilate, and hyperoxygenate between each passing of the suction catheter. The patient should recover for 30-60 seconds between passes of the suction catheter.

In emergent situations, a provider order is not necessary for suctioning to maintain a patient's airway. However, routine suctioning does require a provider order.

Respiratory assessments via auscultation will precede and follow any suctioning procedure unless an emergency exists. Document the assessment in the patient electronic medical record.

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| REFERENCE # | 7010.24.05 | EFFECTIVE | 09/2006 |
| SUBJECT: | SUCTIONING: ENDOTRACHEAL; NASOTRACHEAL; NASOPHARYNGEAL; OROPHARYNGEAL | REVISED | 2015, 2024 |
| DEPARTMENT: | EMERGENCY DEPARTMENT | | |

**Endotracheal Suctioning:**

1. Check and verify the order.
2. Identify the patient using two identifiers (name and birthdate).
3. Introduce yourself and explain the procedure to the patient.
4. Assemble equipment and supplies at the bedside. Put on personal protective equipment (PPE).
5. Assess the airway, breathing, and the circulation of the patient prior to the procedure.
6. Unlock the suction control valve, depress the valve completely, and adjust the vacuum regulator so that the suction pressure is less than 150 mm Hg. (Use only the amount of suction necessary to remove secretions effectively. High negative-pressure settings may increase tracheal mucosal damage).
7. Release the suction control valve.
8. Consider administering 100% oxygen via the ventilator for 30-60 seconds before suctioning. (Administer 100% oxygen to prevent a decrease in oxygen saturation during the suctioning procedure).
9. Pause the ventilator alarm and the monitoring alarms as needed.
10. Using the nondominant thumb and forefinger, stabilize the patient's artificial airway and ventilator tubing.
11. With the dominant hand, gently but quickly insert the catheter into the artificial airway without depressing the suction control valve.
12. Using the dominant thumb, depress the suction control valve to apply continuous suction while withdrawing the catheter into the sterile catheter sleeve within 15 seconds. Using the nondominant thumb and forefinger, stabilize the airway while withdrawing the catheter. (Ensure that each suction pass lasts less than 15 seconds to minimize decreases in oxygen saturation).
13. Stop the withdrawal when the black marker ring on the catheter appears inside the sleeve. Release the suction control valve.
14. Perform an additional pass of the suction catheter if secretions remain in the airway and the patient is tolerating the procedure. (Do not exceed four passes per suctioning procedure to minimize oxygen desaturation and cardiopulmonary complications. Allow adequate time between passes for the patient to recover before the next pass).
15. Consider administering 100% oxygen for at least 60 seconds after suctioning.
16. Monitor the patient for adverse reactions.
17. Rinse the catheter and connect tubing with a sterile 0.9% sodium chloride solution.
18. Continue to irrigate until the catheter and tubing are clear.
19. Lock the suction control valve.
20. Verify the fraction of inspired oxygen (Fi02) is returned to the previous level.
21. Enable the ventilator alarm and the monitoring alarms as needed.
22. Assess the volume, consistency, and color of the airway secretions.
23. Reassess the patient's respiratory status, including respiratory rate, effort, oxygen saturation, and lung sounds.
24. Assist the patient to a comfortable position.
25. Ensure safety measures are in place before leaving the room; the call light is within reach, the bed is low and in the locked position, the side rails are up and secured, a table is within reach, and the room is free of clutter.

Commented [SF1]: @Susan Sauerheber do these have to be completed in a certain order?

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| REFERENCE # | 7010.24.05 | EFFECTIVE | 09/2006 |
|---|---|---|---|
| SUBJECT: | SUCTIONING: ENDOTRACHEAL; NASOTRACHEAL; NASOPHARYNGEAL; OROPHARYNGEAL | REVISED | 2015, 2024 |
| DEPARTMENT: | EMERGENCY DEPARTMENT | | |

26. Notify the provider of changes in airway secretions, which could be a sign that the patient is developing pneumonia or other adverse effects.
27. Discard supplies, remove PPE, and perform hand hygiene.
28. Document the procedure and the results in the patient's electronic medical record.

**Oropharyngeal and Nasopharyngeal Suctioning:**

- For oropharyngeal suctioning, a Yankauer suction tip is used to suction mouth secretions.
- Use caution and protect the patient's soft mucous membranes to prevent unnecessary trauma.
- Remove secretions from the nasal cavity, pharynx, and throat by inserting a flexible, soft suction catheter through the nares. This type of suction is performed when oral suctioning with a Yankauer is ineffective.

1. Gather supplies: Yankauer or suction catheter, suction machine or wall suction device, suction canister, connecting tubing, pulse oximeter, stethoscope, PPE, sterile gloves for suctioning with sterile suction catheter, towel or disposable paper drape, nonsterile basin and normal saline or tap water.
2. Perform hand hygiene.
3. Introduce yourself and explain the procedure to the patient.
4. Identify the patient using two identifiers.
5. Assess the airway, breathing, and the circulation of the patient prior to the procedure.
6. Position the patient. Adjust the bed to a comfortable working height. (If patient is unconscious, place the patient in the lateral position, facing you. If the patient is conscious, place the patient in a semi-Fowler's position.
7. Adjust the suction to the appropriate pressure.
8. Don clean gloves and occlude the end of the connection tubing to check suction pressure.
9. Open the sterile suction package using aseptic technique. (The open wrapper or container becomes a sterile field to hold other supplies.) Carefully remove the sterile container, touching only the outside surface. Set it up on the work surface and fill it with sterile saline using the sterile technique.
10. Place a small amount of water-soluble lubricant on the sterile field, while avoiding the sterile field with the lubricant package.
11. Increase the patient's supplemental oxygen level or apply supplemental oxygen per the provider's orders.
12. Don additional PPE. Put on a face shield or goggles and mask.
13. Don sterile gloves. The dominant hand will manipulate the catheter and must remain sterile. The nondominant hand is considered clean rather than sterile and will control the suction valve on the catheter.
14. Moisten the catheter by dipping it into the container of sterile saline. Occlude the suction valve on the catheter to check for suction.
15. Encourage the patient to take deep breaths.
16. Apply lubricant to the first 2 to 3 inches of the catheter, using the lubricant that was placed on the sterile field.
17. Remove the oxygen delivery device, if appropriate. Do not apply suction as the catheter is inserted. Hold the catheter between your thumb and forefinger.



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**Commented [BP2]:** Some of this doesn't seem appropriate for a step-by-step list. @Susan Sauerheber

**Commented [SF3R2]:** @Brandi Polley has this been resolved? Have you contacted the manager to resolve your comment?

The document needs to reflect the changes that the manger and the Tech Reader agree upon.

Comments need to be actionable so the manager will know what the suggested changes are and what needs to be done to resolve those changes.

**Commented [BP4R2]:** Unfortunately, this was not allowing me to provide comments directly to the manager, therefore this wasn't resolved previously, nor was it made clear who submitted the policy.

**Commented [SF5R2]:** @Brandi Polley Emergency would be Susan.

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18. Insert the catheter. For nasopharyngeal suctioning, gently insert the catheter through the naris and along the floor of the nostril toward the trachea. Roll the catheter between your fingers to help advance it. Advance the catheter approximately 5 to 6 inches to reach the pharynx. For oropharyngeal suctioning, insert the catheter through the mouth, along the side of the mouth toward the traches. Advance the catheter 3 to 4 inches to reach the pharynx.
19. Apply suction by intermittently occluding the suction valve on the catheter with the thumb of your nondominant hand and continuously rotate the catheter as it is being withdrawn. (Suction only on withdrawal and do not suction for more than 10 to 15 seconds at a time to minimize tissue trauma.)
20. Replace the oxygen delivery device using your nondominant hand, if appropriate, and have the patient take several deep breaths.
21. Flush the catheter with saline. Assess the effectiveness of suctioning by auscultating lung sounds; repeat, as needed, and according to the patient's tolerance. Wrap the suction catheter around your dominant hand between attempts. Repeat the procedure up to three times until gurgling sounds stop and respirations are quiet. Allow 30 seconds to 1 minute between passes to allow reoxygenation and reventilation.
22. When suctioning is complete, remove gloves from the dominant hand over the coiled catheter, pulling them off inside out.
23. Remove the glove from the nondominant hand and dispose of gloves, catheter, and the container with solution in the appropriate receptacle.
24. Assist the patient to a comfortable position. Raise the bed rail and place the bed in the lowest position.
25. Turn off the suction. Remove the supplemental oxygen placed for suctioning, if appropriate.
26. Remove face shield or goggles and mask; perform hand hygiene.
27. Perform oral hygiene on the patient after suctioning.
28. Reassess the patient's respiratory status, including respiratory rate, effort, oxygen saturation, and lung sounds.
29. Assist the patient to a comfortable position.
30. Ensure safety measures are in place prior to leaving the room: the call light is within reach, the bed is low and in the locked position, the side rails are up and secured, the table is within reach, and the room is free of clutter.
31. Document the procedure and related assessment findings. Report any concerns or abnormalities to the provider.

**Nasotracheal Suctioning:**

1. Perform hand hygiene.
2. Identify the patient using two identifiers.
3. Introduce yourself and explain the procedure to the patient.
4. Assemble equipment and supplies at the bedside. Put on PPE.
5. Place a pulse oximeter on the patient and leave it in place for the procedure.
6. Place the patient in a semi-Fowler's position.
7. Perform hand hygiene, put on a mask, goggles, or a face shield if splashing is likely.
8. Connect one end of the connecting tubing to the suction machine or wall mount and place the other end in a convenient location near the patient. Turn on the suction device or wall mount and set the

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suction pressure as low as possible to effectively clear secretions. Occlude one end of the connecting tubing to check the pressure.

9. Prepare the one-time-use suction catheter.
   a. Using aseptic technique, open the suction kit or catheter. Place a drape on the patient's chest or on the overbed table. Do not allow the suction catheter to touch any nonsterile surfaces.
   b. Unwrap or open the sterile basin and place it on the bedside table. Be careful not to touch the inside of the basin. Fill the basin with about 100 milliliters of sterile normal saline solution.
   c. Open the lubricant. Squeeze a small amount of the lubricant onto the open sterile catheter package without touching the package.
10. Apply a sterile glove to each hand or apply a nonsterile glove to your nondominant hand and a sterile glove to your dominant hand.
11. Pick up the suction catheter with your dominant hand without touching any nonsterile surfaces. Pick up the connecting tubing with your nondominant hand. Secure the catheter to the tubing.
12. Check that the equipment is functioning properly by suctioning a small amount of normal saline solution from the basin.
13. Suction the airway.
14. Increase the oxygen flow rate for face masks, as ordered by the provider. Have the patient take slow, deep breaths.
15. Lightly coat the distal end of the catheter 6 to 8 centimeters with water-soluble lubricant.
16. Remove the oxygen delivery device, if applicable, with your nondominant hand. Without applying suction, and using your dominant thumb and forefinger, gently but quickly insert the catheter into one of the patient's nares. Instruct the patient to inhale deeply while you insert the catheter following the natural course of the nares. Slightly slant the catheter downward. Do not force the catheter through the nares.
17. Turning the patient's head improves suction efficacy. If you feel resistance after inserting the catheter, use caution. The catheter has probably hit the carina. Pull the catheter back 1 to 2 centimeters before applying suction.
18. Without applying suction, insert the catheter about 20 centimeters (8 inches) for adults, 16-20 centimeters (6-8 inches) in older children, or 8-14 centimeters (3-5 ½ inches) in infants and young children. A rule of thumb is to insert the catheter the distance from the tip of the nose to the angle of the mandible.
19. Apply continuous suction by placing your nondominant thumb over the vent of the catheter for 15 seconds or less and slowly withdrawing the catheter while rotating it back and forth between your dominant thumb and forefinger. Encourage the patient to cough. Replace the patient's oxygen device, if applicable, and have the patient breathe deeply.
20. Assess the need to repeat the suctioning procedure. Do not perform more than two passes with the catheter. Be alert for alterations in the patient's cardiopulmonary status. When possible, allow adequate time between suction passes for ventilation and oxygenation. (At least one minute.) Encourage the patient to breathe deeply and cough with the oxygen mask in place.
21. Rinse the catheter and connect tubing with normal saline or water until it is cleared.
22. When suctioning is complete, disconnect the catheter from the connecting tubing. Roll the catheter around the fingers of your dominant hand. Pull the glove off inside out so that the catheter remains

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coiled inside of the glove. Pull off the other glove over the first glove in the same way. Discard the gloves with the used catheter and other supplies in the appropriate receptacle. Turn off the suction.

23. Reposition the patient for comfort.
24. Readjust the patient's oxygen to the original level, if indicated. The patient's blood oxygen level should have returned to baseline.
25. Discard the remainder of the normal saline in the appropriate receptacle.
26. Place an unopened suction kit in the room for easy access.
27. Ensure safety measures are in place before leaving the room: the call light is within reach, the bed is low and in the locked position, the side rails are up and secured, the table is within reach, and the room is free of clutter.
28. Document the procedure and related assessment findings. Report any concerns or abnormalities to the provider.

**Tracheostomy Suctioning**:

1. Perform hand hygiene.
2. Identify the patient using two identifiers.
3. Explain the procedure to the patient.
4. Assemble equipment and supplies at the bedside. Put on PPE.
5. Attach the suction catheter to the suction machine or wall mount.
6. Rinse the catheter by suctioning sterile water.
7. Hyperoxygenate the patient by having them take 3 or 4 deep breaths (or if ventilated, provide 3 or 4 ventilated breaths).
8. Gently insert the catheter into the tracheostomy tube until it reaches the end of the tube, or until the patient coughs.
9. Cover the thumb hole on the catheter to suction.
10. Slowly remove the catheter while rolling it between your thumb and forefinger. Also pulse the suctioning by covering and uncovering the thumb hole of the catheter. (Start to finish, this process should take no longer than 10 seconds).
11. If more suctioning is needed, rinse the catheter first, and have the patient take another 3 or 4 deeps breaths (or if ventilated, provide 3 or 4 ventilated breaths), then repeat the suctioning stage. (Allow enough time between each catheter insertion for normal breathing or ventilator support to reoxygenate the patient.)
12. Discard supplies, remove personal protective equipment, (PPE) and perform hand hygiene.
13. Ensure safety measures are in place before leaving the room: the call light is within reach, the bed is low and in the locked position, the side rails are up and secured, the table is within reach, and the room is free of clutter.
14. Document the procedure and related assessment findings in the patient's electronic medical record. Report any concerns or abnormalities to the provider.

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**REFERENCES:**


American Association for Respiratory Care. (2010). AARC clinical practice guideline: Endotracheal suctioning of mechanically ventilated patients with artificial airways 2010. *Respiratory Care, 55*(6), 758-764. www.rcjournal.com/cpgs/pdf/06.10.0758.pdf

Endotracheal and Tracheostomy Suction:

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**ATTACHMENTS:**
None

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| REFERENCE # | 7010.24.07 | EFFECTIVE |
| SUBJECT: | REGISTRATION OF THE EMERGENCY DEPARTMENT PATIENT | REVISED 8/2024 |
| | | REVIEWED |
| DEPARTMENT: | EMERGENCY DEPARTMENT | PRIOR REVISIONS: 10/2007 |

**PURPOSE:**
The purpose of this policy is to provide guidelines on the registration process for any patient presenting to the Emergency Department for treatment.

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**AUDIENCE:**
Department Wide

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to provide a uniform registration process and maintain an electronic medical record of patients presenting to the emergency department.

**PROCEDURE:**

All patients will be evaluated by the triage nurse and a medical screening examination will be conducted by the emergency room (ER) provider prior to the completion of the registration process.

<u>During business hours</u>

- Patient checks in at the front desk.
- The front desk clerk will complete a quick registration of the patient. (This includes name, birthdate, and reason for visit.)
- The patient will be given an emergency room registration packet to complete.
- The front desk clerk will then notify the ER nurse of patient arrival.
- The ER nurse/ER technician will bring the patient to a room for the triage process.
- After the patient has been triaged by the ER nurse, the ER provider will complete a medical screening examination.
- After the medical screening examination is complete and any necessary treatment provided, the registration process will be completed by either the ER nurse or ER technician.

If at any time during this process an emergent medical condition arises, the patient will be treated without delay.

<u>Afterhours and weekends</u>

- Patient arrives and pushes the ER intercom button located outside the ER main door.
- ER nurse/ER technician will bring the patient to the triage room and complete a quick registration of the patient. (This includes name, birthdate, and reason for visit.)

- After the quick registration is completed, the ER nurse will triage the patient.
- The patient will be given an emergency room registration packet to complete.
- After the patient has been triaged by the ER nurse, the ER provider will complete a medical screening examination.
- After the medical screening examination is complete and any necessary treatment provided, the registration process will be completed by either the ER nurse or ER technician.

If at any time during this process an emergent medical condition arises, the patient will be treated without delay.

| SUBJECT: ETHICAL DILEMMAS IN PATIENT CARE | REFERENCE #7010.24.08 |
|---|---|
| DEPARTMENT: MEDICAL SURGICAL/EMERGENCY DEPARTMENT | PAGE: 1 OF: 2 |
| | EFFECTIVE: 09/2006 |
| | REVISED: 02/2022 |

**PURPOSE**

The purpose of this policy is to create an ethical culture grounded in the organization's mission and values that foster ethical clinical practice through the application of a systematic ethics decision-making process.

**TERMS/DEFINITIONS**

Ethical dilemma: A situation in which a difficult choice must be made between two courses of action, neither of which is unambiguously acceptable nor preferable.

**POLICY**

It is the policy of Modoc Medical Center to promote an ethical culture, support the organization's mission and values, and set expectations and accountabilities.

**PROCEDURE**

The following steps should be followed by the team discussing the ethical dilemma and ultimately responsible for making a decision that is in the best interest of the patient:

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- Identify the problem
- Gather relevant medical information and documentation:
  - ❖ Medical facts of the situation:
    - Patient's condition.
    - Diagnosis.
    - Prognosis.
    - Mental and emotional status.
    - Patient's decision-making capacity.
    - Benefits and burdens of treatment options.
    - Probabilities of success of treatment.
  - ❖ Considerations of patient's individual circumstances:
    - Goals and preferences for treatment.
    - Advance directives.
    - Cooperation with medical treatment.
    - Family dynamics and confidentiality.
    - Respect for patient autonomy, values, and preferences.
    - Ability to communicate and competency to make decisions.
  - ❖ Religious beliefs or cultural principles.
  - ❖ Guardian or medical power of attorney considerations.
  - ❖ History of traumatic events (e.g., domestic violence, war violence, serious injury).
  - ❖ Quality of life considerations:
    - Assessing quality.
    - Forgoing of treatment

    - Comfort and palliative care (e.g., quality of life as opposed to longevity in palliative care).
  - ❖ Potential legal ramifications of decisions.
  - ❖ Conflicts of interest.
  - ❖ Practitioner's personal biases.
- Conduct brainstorming sessions on key subjects.
- Analyze the situation carefully and look at alternative solutions.
- Make a list of possible actions with their positive and negative consequences.
- Consider any medical and/or legal implications.
- Consult with colleagues
- Discuss the ethical dilemma at clinical meetings to ensure a shared understanding and consistent approach.
- Ensure outcomes will be legal and meet the requirements of professional principles.

**REFERENCES**

| SUBJECT: HOME MEDICATIONS | REFERENCE # |
|---|---|
| | PAGE: 1 OF: 1 |
| DEPARTMENT: ACUTE/ EMERGENCY DEPARTMENT | EFFECTIVE: 07/2023 |
| | REVISED: |

## PURPOSE

The purpose of this policy is to ensure that medications brought from home by patients and utilized during inpatient hospitalizations are correct and stored properly.

## POLICY

Medications brought into the hospital by patients may be utilized upon an order from the healthcare provider. All medication brought into the hospital and utilized by the emergency department and inpatients will be verified by a pharmacist and stored properly.

## PROCEDURE

1. Only upon an order from the provider may a patient use his/her home medications. The usual information for a drug order is required (i.e., drug name, strength, dose, directions). For their safety, patients cannot keep any medications at their bedside. “Patient may take own med” is not considered a valid order and will be revised with the healthcare provider.
2. If the item is non-formulary and not in the electronic record, the medication will be ordered as non-formulary patient using own medication in the electronic record.
3. A nurse will bring the home medication(s) to the Pharmacy for verification of proper drug and strength.
4. Medication brought from home not being utilized will be sent home with a family member or stored in the pharmacy until patient discharge.
5. Controlled substances will be stored in the pharmacy unless the medication is utilized during hospitalization.
    a. If the controlled substance is utilized during hospitalization, the medication will be stored in the Omnicell under “Patient Own Medication Bin.”
    b. Each dose provided to the patient will be removed from the patient’s supply stored in the Omnicell bin using a Narcotic Log Sheet. Dispensed doses will be accounted for on the discharge Patient Narcotic Inventory form.
    c. Upon admission, a Narcotic Inventory sheet must be filled out with the name of the drug and the number of pills in the bottle.
    d. The initial count will be done in front of the patient. This must be counted and witnessed by two nurses or a nurse and pharmacist. The form is kept in the patient chart until discharge.
    e. At discharge, the medication must be counted and witnessed by two nurses or a nurse and pharmacist. The patient is given the form to sign and witness as to receipt of the medication.

## REFERENCE

22 CA Code of Regs 70263

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| REFERENCE # | LEAVE BLANK | EFFECTIVE:10/2007 |
| SUBJECT: | PROCEDURAL SEDATION | REVISED:8/2024 |
| | | REVIEWED |
| DEPARTMENT: | EMERGENCY DEPARTMENT | PRIOR REVISIONS:7/2008; 7/2018 |

**PURPOSE:**
The purpose of this policy is to outline the management of patients receiving procedural sedation.

**AUDIENCE:**
Emergency Department

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**TERMS/DEFINITION:**
Procedural sedation: is a technique of administering sedatives or dissociative agents with or without analgesics to induce a state that allows the patient to tolerate unpleasant procedures. Procedural sedation improves the quality and safety of patient care by decreasing the length of time necessary to perform a procedure, increasing the likelihood of success, and reducing risk of injury to the patient.

Minimal sedation: is a drug-induced state during which patients respond normally to verbal commands. Although cognitive function and coordination may be impaired, ventilatory and cardiovascular functions are unaffected.

Moderate sedation: is a drug-induced depression of consciousness during which patients respond purposefully to verbal commands (reflex withdrawal from a painful stimulus is not considered a purposeful response), either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.

Deep sedation: is a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

**POLICY:**

It is the policy of Modoc Medical Center (MMC) to ensure that patients receive safe and effective levels of procedural sedation. Procedural sedation encompasses a continuum of altered levels of consciousness (including minimal, moderate, and deep), and dissociative sedation.

The decision to provide sedation and the selection of the specific pharmacologic agents should be individualized for each patient by the emergency room (ER) physician/surgeon/anesthesia provider.

ER physicians, surgeons, anesthesia providers and licensed staff are expected to be familiar with the pharmaceutical agents used and be prepared to manage any potential complications.

The licensed provider administering moderate/procedural sedation must be qualified to rescue patients from deep sedation and must be competent to manage a compromised airway and provide adequate oxygenation and ventilation.

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| REFERENCE # | LEAVE BLANK | EFFECTIVE:10/2007 |
| SUBJECT: | PROCEDURAL SEDATION | REVISED:8/2024 |
| | | REVIEWED |
| DEPARTMENT: | EMERGENCY DEPARTMENT | PRIOR REVISIONS:7/2008; 7/2018 |

Patients must sign an informed consent for administration of moderate/procedural sedation.

Patients and family will receive education regarding the appropriate types of moderate/procedural sedation. It is important to reduce patient anxiety prior to the procedure. The more relaxed the patient is, the less sedation he/she is likely to require.

**PROCEDURE:**

Preparation Phase

- Ensure all supplies and equipment to be used for the administration and monitoring of procedural sedation and emergency management are fully stocked and functional.
- Ensure crash cart with defibrillator, supplemental oxygen, airway, bag/valve mask device, carbon dioxide sensor (CO2), mask with one-way valve, intubation equipment, suction, patent intravenous (IV) access, electrocardiogram (ECG) monitor and reversal agents are immediately available.
- Review patient's history and physical information to determine current condition, chief complaint, reason for procedural sedation, and any risk factors or contraindications to receiving procedural sedation including concurrent medical problems and drug allergies.
- Informed consent is required prior to administering procedural sedation. The responsible physician/provider will provide the patient with all information considered necessary for obtaining informed consent.
- The physician/provider must be present during the initial and continued administration of sedation.
- Assess/review the following prior to medication administration and document:

  Respiratory assessment.

  Physical assessment.

  Current medications.

  Ability to communicate.

  Pain intensity.

  Baseline vital signs (including blood pressure (BP), temperature, heart rate (HR), respirations, oxygen saturation, height, weight, and ECG strip.

  Skin condition.

Understanding of procedure and sedation.

- Prepare all drugs to be administered, including readying reversal agents for possible administration.
- Assure continuous ECG monitoring.
- Immediate Reassessment

  In addition, the physician performing the procedure will assure that a reassessment of the patient's readiness to receive sedation is conducted immediately prior to the procedure. Documentation of an acceptable pulse, respiration, blood pressure and oxygen saturation will be considered the immediate reassessment.

- A Time-Out is performed and documented on the Procedural Sedation Form immediately prior to the start of the procedure.

Administration Phase

- Administer pharmacological agents under direct supervision of responsible physician. Begin administration of sedative drugs only when responsible physician is present.
- Assess and monitor the following a minimum of every five minutes during medication administration:

  ECG, BP, HR, and oxygen saturation.

  Observation of respiratory depth and rate.

  Level of sedation and mental status.

  Pain intensity.

- If the use of a reversal agent is required for respiratory distress or excessive sedation, the patient must be monitored for at least an additional two hours after the administration of the agent.

Recovery Phase- Adults (17 year and older)

- Continue monitoring: ECG, BP, HR, respirations, and oxygen saturation.
- Assess and document blood pressure, respiration, skin color, level of consciousness, activity, and pain every 5 minutes for at least 30 minutes after the last sedative or analgesic drug dose is given and until discharge criteria are met. (Aldrete score of 8 or greater or pre-procedural level).
- Review discharge instructions.

Recovery Phase- Infant/Child/Adolescent (0-16 years)

- Continue monitoring: ECG, BP, HR, respirations, and oxygen saturation.
- Assess airway- Airway patent, coughs, and breathes deep.
- Breathing- Maintains oxygen saturation greater than 92% on room air or maintains oxygen saturation greater than 92% on pre-procedure supplemental oxygen level.
- Cardiovascular - HR and BP stable (within patient's normal pre-sedation range).
- Neurological - Protective reflexes intact, moves all extremities (return of purposeful activity), patient can talk (age appropriate) or, for very young or handicapped child incapable of the usually expected responses, the pre-sedation level of consciousness or a level as close as possible to the normal level for the child has been achieved.

Discharge Criteria

- Aldrete score of 8 or greater or pre-procedural level.
- Stable vital signs.
- Able to retain oral fluids, or pre-existing means of fluid intake such as nasogastric or percutaneous endoscopic gastrostomy (PEG) tube.
- Under observation of a responsible adult, and have transportation provided by a fully licensed driver.
- Written discharge instructions will be given to the patient/responsible adult.

Discharge Instructions

- Review of new prescriptions.
- Diet and activity restrictions, including a warming that the patient is not to drive or operate dangerous machinery for at least 24 hours.
- Plan for follow-up care (emergency numbers, physical appointment date).
- Ensure that a responsible person is available to drive the patient home after recovery and that a responsible person will remain with the patient the length of two half-lives of the drugs administered for procedural sedation.
- For pediatric patients: Provide the parents with the above information.

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| REFERENCE # | LEAVE BLANK | EFFECTIVE:10/2007 |
| SUBJECT: | PROCEDURAL SEDATION | REVISED:8/2024 |
| | | REVIEWED |
| DEPARTMENT: | EMERGENCY DEPARTMENT | PRIOR REVISIONS:7/2008; 7/2018 |

**ATTACHMENTS:**
Aldrete Score Chart
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**Commented [SF2R1]:** @Susan Sauerheber

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| REFERENCE # | 7010.24.01 | EFFECTIVE |
| SUBJECT: | LAW ENFORCEMENT REQUEST FOR LEGAL BLOOD DRAWS | REVISED |
| | | REVIEWED |
| DEPARTMENT: | EMERGENCY DEPARTMENT | PRIOR REVISIONS: |

**PURPOSE:**
The purpose of this policy is to establish guidelines for collecting blood samples at the request of law enforcement to determine blood alcohol content.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center obtain blood specimens from a person in custody that is not admitted as a patient, per request of a law enforcement officer for legal purposes.

**PROCEDURE:**

California law states that a person who drives a motor vehicle is deemed to have given consent to chemical testing of his or her blood, breath, or urine to determine the alcohol and/or drug content.

Testing can be completed if a request is presented in writing from a peace officer under the following circumstances:

Testing must be incidental to a lawful arrest and administered at the direction of a peace officer having reasonable cause to believe the person was driving under the influence of alcohol or drugs. (CA Vehicle Code Section 23612 and 13384)

Per California law, the person obtaining the specimen will not be liable if the test is performed reasonably and "without violence by the person conducting the test."

In accordance with California Penal Code 295, law enforcement officers are allowed to obtain blood specimens from adults and juveniles who are convicted or adjudicated of any felony crime or submit them to the DNA databank.

Blood samples obtained from a person involved in a traffic accident or traffic violation will be collected, handled, and preserved as required by Sections 1219 and 1219.1 of Title 17 of the California Code of Regulations.

**Law Enforcement Request Must Be:**

- In writing
- Signed by the officer.
- Valid warrant (if collection is considered a forced blood draw).

The test will not be performed if the officer refuses to sign the request.

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**Written Consent:**

- Make every effort to obtain written consent from the patient.

| REFERENCE # | 7010.24.01 | EFFECTIVE |
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| SUBJECT: | LAW ENFORCEMENT REQUEST FOR LEGAL BLOOD DRAWS | REVISED |
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| DEPARTMENT: | EMERGENCY DEPARTMENT | PRIOR REVISIONS: |

- Patient refuses to sign the consent, the blood may still be drawn.
- Document in the medical record.
- Exception: Blood drawing for DNA sample does not require consent.

**Reasonable Force:**

- Law Enforcement may use to gain compliance of the patient
- Staff **will not** participate in the use of restraint unless the peace officer's safety is in jeopardy.

**Court Rulings**

Law Enforcement Personnel

- May use reasonable force on the subject to obtain a blood sample.
  - Holding the subject
  - Holding the subject's arm

- May not use violence
  - Beatings
  - Excessive or unreasonable force.

Hospital Personnel

- May decline to withdraw blood if the subject refuses to consent.
- Will decline to withdraw blood from any violent or struggling subject.
- Law enforcement personnel will be so advised.

**Staffing**

Draw during normal business hours.

- Lab personnel
- Emergency room nurse
- Paramedic on duty

Draw after normal business hours.

- Emergency room nurse
- Paramedic on duty

**Specimen Packet**

Location

- Provided by law enforcement agency
- Additional kits in the laboratory (are we just having law enforcement bring in the kits?) The additional kits are in the event that law enforcement does not have a kit available.

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| REFERENCE # | 7010.24.01 | EFFECTIVE |
| SUBJECT: | LAW ENFORCEMENT REQUEST FOR LEGAL BLOOD DRAWS | REVISED |
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| DEPARTMENT: | EMERGENCY DEPARTMENT | PRIOR REVISIONS: |

Blood Collection Tube Label Must Contain:

- Full name of subject.
- Date and time blood is drawn.
- Initials of person drawing blood.
- Initials of witnessing officer.
- Sealed in a blood alcohol envelope

Blood Alcohol Envelope Must Contain:

- Full name of subject.
- Subject driver's license number.
- Submitting agency.
- Geographical location where blood sample was drawn, i.e., name and/or address of hospital, jail, or other facility.
- Name of person drawing blood sample.
- Date blood sample drawn.
- Time blood sample drawn.
- Signature of witnessing officer
- Chain of custody: for all persons handling the evidence
- Copy of the chain of custody form will be filed in the laboratory.

The witnessing/arresting officer is to seal flap with provided evidence tape then initial and date across the tape seal.

Documentation

- All legal blood draws will be registered as outpatient laboratory unless a medical screening is required.
- All legal blood draws must be documented in the EMR.
- Legal blood draw encounters should be added if the patient does not what to be seen in the ER to include but not limited to: Name, date, and site of the blood draw.

**REFERENCES:**

California Code of Regulations Title 17, Section 1219.1 – Blood Collection and Retention

Lipton, M. S. (2018). EMTALA. In M. S. Lipton, *California Hospital EMTALA Manual. A guide to patient anti-dumping laws.* (p. 2.15). Sacramento: California Hospital Association.

**ATTACHMENTS:**

None

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| REFERENCE # | Click or tap here to enter text. | EFFECTIVE 08/2024 |
| SUBJECT: | SUICIDE THREAT OR SELF HARM VIA TELEPHONE | REVISED |
| | | REVIEWED |
| DEPARTMENT: | CLINIC -ALTURAS | PRIOR REVISIONS: |

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**PURPOSE:**
The purpose of this policy is to provide guidelines on responding to, and managing, telephone calls received by clinic staff from people threatening suicide or self-harm.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
Suicidal Ideation: The thought process of having ideas, or ruminations about the possibility of self-harm that may result in the death of the person (or persons)

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**POLICY:**
It is the policy of Modoc Medical Center – Family Practice Clinic (MMC-FPC) to provide proper guidance on the procedures to follow to ensure that a person (or persons) making a threat of suicide or self-harm via telephone receives the proper support from the receiving staff.

**PROCEDURE:**

- Treat all reports (self-reported or otherwise) of self-harm, suicidal ideation, or suicidal attempts as serious.
- Keep the person (or persons) on the phone as long as possible, and obtain details, (i.e., name, address, telephone number, primary care provider, and the person's current location)
- Offer the contact information to the National Suicide Prevention Lifeline 1-800-273-8255, or the local crisis line 530-233-6312should the person (or persons) seek this assistance.
- Obtain assistance from clinic staff to call 911 immediately.
- Do not attempt to counsel the person or make a judgement about whether you think the person will carry out the threat of suicide or self-harm.
- Notify your manager or next immediate supervisor, if the manager is unavailable, immediately and outline the course of action you have taken.
- If the person is a patient of an MMC-FPC provider, inform the provider of the situation and outline for them the steps that you have taken.

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| REFERENCE # | Click or tap here to enter text. | EFFECTIVE 08/2024 |
| SUBJECT: | SUICIDE THREAT OR SELF HARM VIA TELEPHONE | REVISED |
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| DEPARTMENT: | CLINIC -ALTURAS | PRIOR REVISIONS: |

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| REFERENCE # | 7420.24.01 | EFFECTIVE | 3/2012 |
| SUBJECT: | OPERATING ROOM | REVISED<br>REVIEWED | 04/2024 |
| DEPARTMENT: | OPERATING ROOM | PRIOR REVISIONS: 2013, 2015, 2016 | |

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**PURPOSE:**
This policy's purpose is intended to provide a process for scheduling surgical procedures, surgical chart contents, and the requirements for informed consents.

**AUDIENCE:**
Department Wide

**TERMS/DEFINITION:**

**POLICY:**
It is the policy of Modoc Medical Center (MMC) that:

- No surgical procedure shall be performed without the written informed consent of the patient or his legal representative.
- Emergency surgeries will only be performed when all the Operating Room, (OR) staff are present and it is within normal business hours. There are no on call surgery staff.
- A member of the associate staff shall not be permitted to treat major surgical cases without an active staff member unless approved as qualified by the administrator or the Executive Committee.
- On all surgical procedures the use of a surgical assistant will be determined by characteristics of the patient and characteristics of the operation. Safety and quality of care are always a priority when deciding to use a surgical assistant.

Commented [SF1]: @Delinda Gover can you summarize the policy statement into 1-2 sentences?

Commented [SF2R1]: Add the details below in the procedures

Commented [3R1]: I think it should be left as it clearly defines what can and can't be done in the surgery department.

**PROCEDURE:**
A complete chart consists of:

- Signed surgical permit and conditions of admission.
- Complete History and Physical examination prior to surgery within 24 hours. If the H/P was done greater than 24 hours or within 30 days prior to surgery an addendum with a physical exam reevaluation must be made including any changes to the original H/P. If the H/P was completed greater than 30 days prior, a new H/P must be documented and be on the chart prior to surgery.
- Tentative diagnosis
- Laboratory tests prior to surgery will be ordered by the performing surgeon or an associate staff member.
- A pregnancy test on all D&C and hysterectomy surgeries, and on all females undergoing sedation or general anesthesia if the patient is of childbearing age, unless rendered sterile.
- Consultation when required and indicated.
- Surgical check lists
- Allergies listed.

Consultations:

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| REFERENCE # 7420.24.01 | EFFECTIVE 3/2012 |
| SUBJECT: OPERATING ROOM | REVISED<br>~~REVIEWED~~ 04/2024 |
| DEPARTMENT: OPERATING ROOM | PRIOR REVISIONS: 2013, 2015, 2016 |

- The consultant preferably should be a member of the active staff and shall make and sign a record of his findings and recommendations in every case.
- Consultations with another qualified physician, such as the Emergency Room Physician on duty, are required in:
    - Curettages or other procedures in which a pregnancy is suspected.
    - Curettages and hysterectomies by members not on the active staff.
    - Cases in which, according to the judgment of the physician;
- The patient is not a good risk for operations or treatment.
- There is doubt as to the best therapeutic measures to be utilized.
    - A member of the associate staff may not sign consultation sheets, except in the cases of those physicians who have special qualifications within a given specialty as approved by the Executive Committee. Consultation may be requested by the hospital administrator on any patient not considered a good surgical risk, or on any procedure deemed necessary by the Surgical and Executive Committee.
- Well-documented telephone consultations are acceptable.

Consent required to operate:

- A consent obtained from a person under the influence of narcotics or alcohol is of no value.
- Unmarried adult-the patient himself/herself may sign.
- Married adult-the patient himself/herself may sign.
- Minor-a patient who is married is deemed an adult for consent purposes.
- Unmarried, pregnant minor-no parental consent is necessary to give medical treatment concerning the pregnancy if the consent of the minor is obtained.
- Emancipated minor-is to sign a “Self Sufficient Minor-Information Form” to proclaim emancipation.
- Incompetent persons-court appointed guardians, if any.
- Unconscious persons-Nearest relative or court order.
- Permits are valid for the duration of hospitalization.

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| SUBJECT: | OPERATING ROOM | REVISED<br>REVIEWED | 04/2024 |
| DEPARTMENT: | OPERATING ROOM | PRIOR REVISIONS: 2013, 2015, 2016 | |

- Associate staff members must have an active staff member to assist on all major cases, unless granted special active staff privileges by the Executive Committee.
- All new staff members must adhere to the monitoring policy as set up by the Surgical Committee and approved by the Executive Committee.
- On major surgical procedures, the anesthetic may not be started until the surgeon is present and the assistant is in the hospital. On minor cases the anesthetic may not be started until the surgeon is present.
- No surgical procedure is to be done in the patient's room. Absolutely no visitors are permitted in the operating room during surgery without permission from the OR Manager, Nurse Anesthetist, and Surgeon. Only one visitor per room is allowed. The Consent for Observers in the operating room during surgery must be completed and signed by the observer and all administrative and surgery staff prior to the visitor's admission to the operating room.

**REFERENCES:**

Operating Room and Surgery Manual

**ATTACHMENTS:**

None



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| SUBJECT: | OUT-PATIENT SURGERY CHART ORDER AND CONTENTS | REFERENCE # | LEAVE BLANK |
| DEPARTMENT: | OPERATING ROOM | EFFECTIVE: | 04/2009 |
| APPROVED BY:<br>**Leave Blank**<br>Once approved the director or department manager will sign. | | REVISED: | 06/2024 |
| | | PRIOR REVISIONS: 04/2013 | |
| | | REVIEWED: | Click or tap to enter a date. |

**PURPOSE:**
The purpose of this policy is to describe the Surgery Chart Order and its contents.

TERMS/DEFINITION:
History and Physical: (H&P)Post Anesthesia Care Unit: (PACU)

**POLICY:**
It is the policy of Modoc Medical Center to maintain a current copy of the Surgical Chart Order and its contents.

**PROCEDURE:**

Chart Contents:

- Pre-Procedure Check List
- Admission Face Sheet and patient ID band
- Conditions of Admission consent form
- Blank Physician's Progress note
- H&P, updated H&P, or new H&P depending on what is required
- Surgical Consent

Anesthesia Forms:

- Pre-Anesthesia Evaluation
- Informed Anesthesia Consent
- Anesthesia Record
- Post Anesthesia Orders
- Post-Anesthesia Progress Note
- Anesthesia Charge Form

Electronic Forms:

- Pre-Op Admission Assessment Checklist.
- Physician Order set for the specific surgery.
- Intraoperative Notes
- PACU notes and assessments.
- Discharge Instructions

**REFERENCES:**
No References

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**Commented [BP3]:** @Delinda Gover is this actually kept in the chart?

**Commented [4R3]:** Hi Brandy, this is a pre-made paper chart in case we don't have computer access. I have it in the back of the Surgery Manual.

**Commented [BP5R3]:** Great, thanks for the clarification! Sorry if this has already gone through committee & I was late to the party!

**Commented [6R3]:** No worries. :)

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| REFERENCE # | 7420.24.02 | EFFECTIVE: | 04/2009 |
| SUBJECT: | SURGICAL PRIVILEGES | REVISED: | |
| | | REVIEWED | 03/2017 |
| DEPARTMENT: | OPERATING ROOM | | |

**PURPOSE:**
The purpose of this policy is to define the requirements for surgical privileges that Modoc Medical Center (MMC) can perform.

**AUDIENCE:**
Department Wide

**POLICY:**
It is the policy of MMC to determine the surgical privileges of each surgeon that will be approved by the Medical Staff and placed on file in the Operating Room Department. These privileges will be reviewed, approved, and updated annually by the Medical Staff.

**PROCEDURE:**

The surgical procedures that MMC are generally qualified to perform are as follows:

- Most general surgeries, some gynecological surgeries, laparoscopic procedures, minor plastic surgery, and minor orthopedic surgery.
- Endoscopy procedures include, but not limited to, upper endoscopy and lower endoscopy procedures.
- Cataract and other ophthalmic procedures as deemed by the Ophthalmologist.

Surgical procedures that MMC is not equipped to perform are as follows:

- Newborn, major ophthalmic procedures, major chest procedures, vascular, neurological, spinal, major urological, ear and nose, except for minor procedure.

**REFERENCES:**
None

**ATTACHMENTS:**
None



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| SUBJECT: FLUOROSCOPIC CONTRAST ENEMA EXAMINATION IN PEDIATRIC PATIENT | REFERENCE # |
|---|---|
| DEPARTMENT: RADIOLOGY IR | PAGE: 1 OF: 12 |
| | EFFECTIVE: 09/2021 |
| | REVISED: MM/YYYY |

**PURPOSE**

The purpose of this policy is to provide guidance in performing high quality pediatric fluoroscopic contrast enema examinations.

**POLICY**

It is the policy of Modoc Medical Center to provide pediatric fluoroscopic contrast enema examinations in concordance with the parameters as set forth by the American College of Radiology (ACR).

**PROCEDURE**

**I. Introduction**

This practice parameter was revised collaboratively by the American College of Radiology (ACR) and the Society for Pediatric Radiology (SPR).

Examination of the pediatric colon by fluoroscopically guided contrast enema is a proven and useful technique. This practice parameter was developed to guide physicians in the performance of contrast enema examinations for evaluating the colon in pediatric patients.

**II. Indications and Contraindications**

Specific indications for fluoroscopic enema in infants and children include, but are not limited to:

- Potential causes:
  - Abdominal pain
  - Constipation
- Known or suspected congenital and acquired disease of the colon and distal intestine, including:
  - Complications of inflammatory bowel disease or its treatment
  - Postoperative or other iatrogenic conditions
  - Preoperative evaluations (such as for ostomy takedown or for colon abnormalities prior to small bowel surgery)
  - Intraprocedural evaluation (such as percutaneous gastrostomy or cecostomy procedures)
  - Trauma

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- Lower intestinal obstruction in the neonate (such as Hirschsprung disease, meconium ileus, small left colon syndrome [meconium plug], and ileal or colonic atresia), infant, child, or adolescent

- Intussusception (including reduction)

Contraindications for contrast enema evaluations include evidence of colonic perforation (unless being performed to assess for perforation), ischemic colon, toxic megacolon, hypovolemic shock, peritonitis, or other potentially unstable clinical condition.

## III. Specifications of the Examination

The written or electronic request for a pediatric contrast enema examination should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation.

Documentation that satisfies medical necessity includes signs and symptoms or relevant history (including known diagnoses). Additional information regarding the specific reason for the examination or a provisional diagnosis would be helpful and may at times be needed to allow for the proper performance and interpretation of the examination.

The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or question and consistent with the state's scope of practice requirements. (ACR Resolution 35, adopted in 2006).

The contrast enema examination should be performed only for an appropriate clinical indication. A qualified imaging physician, as described in section III.A, who is familiar with the anatomy and disorders of the pediatric gastrointestinal tract, should be available to help the clinician decide the most appropriate way to evaluate the child's problem(s).

Digital pulsed fluoroscopy last image hold and screen save features help to reduce radiation dose and should be used when available. If of adequate quality, screen saves are preferable to spot images or overhead radiographs to diminish radiation dose. Attention to collimation also aids in decreasing dose. Fluoroscopy times should be minimized and recorded. When possible, other parameters relative to radiation dose, such as dose area product (DAP), dose rate, or air kerma, should also be recorded.

A. Conventional Diagnostic Contrast Enema

The following examination protocols are general guidelines. The procedure should be tailored to the individual patient's needs based on clinical circumstances and the age and condition of the patient. The imaging physician exercises professional judgment in the choice of contrast media based on the clinical setting and his/her professional training and experience.

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Pediatric contrast enemas are performed with single-contrast technique. With the improvement of pediatric endoscopic technique, indications for double-contrast technique in children no longer exist.

The child should be prepared for the procedure with an explanation appropriate to the developmental stage. Immobilization of the infant or young child may be helpful to facilitate performance of the procedure, minimize radiation exposure to the child and the personnel, and stabilize the child's position during the procedure. Appropriate gonadal shielding and beam filtration should be used when possible. A preliminary image may be obtained if indicated; it could be a fluoroscopic image or a direct exposure. A positional view (cross-table lateral or decubitus) should be obtained if there is a possibility of perforation.

Rectal catheterization should be performed or monitored by those with experience in pediatric rectal catheterization.

- Examination Preparation
  - There is no specific preparation for contrast enema in most patients.
- Examination Technique

a. Unless required by the study, the smallest possible catheter permitting adequate contrast flow is used. A balloon or cuff is not typically needed in the pediatric patient and should never be used in certain specific conditions, such as investigation for Hirschsprung disease. If a balloon catheter is used, the balloon may be inflated under fluoroscopic observation to confirm its position and the proper degree of inflation.

b. In neonates being evaluated for distal bowel obstruction, water-soluble contrast media are preferred as there may be potential for bowel perforation; water-soluble media should be used cautiously, verifying that the concentration is iso-osmolar to slightly hyperosmolar (i.e., 400 mOsm/kg) with serum. High-osmolality media are only indicated in specific cases, such as treatment of meconium ileus, that should be undertaken only with appropriate surgical input and backup.

c. Rectal administration of a sufficient volume of contrast agent (barium or water-soluble contrast) is used to provide colonic distension. The patient is then positioned to visualize flexures and the entire colon. Filling of the entire colon in children with normal anatomy is confirmed by reflux into the small bowel, filling of the appendix, or conclusive identification of the ileocecal valve.

d. Colonic distension positioning for optimal visualization of flexures, as in adults, is not always necessary in pediatric patients, particularly in the neonate, and cannot be achieved in certain cases, such as in patients with microcolon or in evaluating for Hirschsprung disease (section IV.D).

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e. High kVp technique is preferred (appropriate kVp will depend on contrast used and patient size).

f. Images should be obtained of the rectum in the lateral and frontal projections. Lateral rectal images obtained for evaluation of possible Hirschsprung disease should be obtained at early filling to avoid false-negative exams. Images of the cecum should be obtained to document its position.

g. The last image hold (or "fluoro store") functions can be used to document colonic findings. If necessary, limited large-format images, including a frontal view and lateral view including the rectum, may be obtained but are often not necessary.

h. Post-evacuation or post-drain images and, if needed, delayed post-evacuation images or lateral rectal views may also be obtained.

B. Intussusception

1. Examination Preparation

No bowel preparation is indicated. A physician member of the surgical department should be notified prior to beginning the procedure and should be available in case of emergency. Contraindications for examination include free intraperitoneal air, peritonitis, or shock. Other factors including atypical patient age, longer duration of symptoms, small-bowel obstruction, interloop fluid, free intraperitoneal fluid, and lack of blood flow to the intussusceptum on Doppler evaluation may portend a more difficult reduction with greater risk of perforation. These factors should be discussed with the referring clinical service. Risks and benefits of the procedure should be explained to the patient's parents or guardian. Informed consent may be obtained (see the ACR–SIR Practice Parameter on Informed Consent for Image-Guided Procedures [12]). Antibiotics may be administered pre-procedure at the discretion of the clinical service. Ideally, the patient should have an intravenous line. The patient should receive intravenous fluids prior to the enema if there is evidence of significant dehydration. Preferably, the child is monitored throughout the procedure by a nurse or physician separate from the technologist and radiologist performing the procedures.

2. Examination Preliminaries

Sonography is helpful in establishing the diagnosis of intussusception prior to beginning a reduction procedure. Sonography may be obviated by a highly suggestive abdominal radiograph, although it may be useful to perform for other reasons that include prediction of reducibility and the presence of a lead point. Sonography may also be used in image-guided reduction with isotonic fluid, such as saline, and to confirm reduction or lack thereof post-procedure. Ultrasound may also be used to guide air reductions. Preliminary supine and upright or cross-table lateral or left lateral decubitus images of the abdomen

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should be considered to identify free peritoneal air, which would be a contraindication to the examination.

If an air enema for pneumatic reduction of an intussusception is performed, the equipment used should include a manometer to measure insufflation pressure and a filtration system to protect any reusable portions of the equipment. An appropriate gauge needle (usually 18 gauge), large-capacity syringes, and sterile preparation material should be immediately available for paracentesis in case a tension pneumoperitoneum were to develop during a pneumatic reduction technique.

3. Examination Technique

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Either pneumatic or hydrostatic reduction techniques are acceptable for intussusception reduction.

a. Pneumatic Reduction

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i. Investigations indicate that pneumatic technique can lead to faster reduction (resulting in lower radiation exposure) and can have fewer complications in the rare case of perforation compared to hydrostatic techniques. Air, CO2, or O2 may be used for a fluoroscopically guided enema for intussusception.

ii. The rectum should be catheterized with a soft catheter, and the catheter tubing should be securely taped to the patient's buttocks. The buttocks should be firmly taped to provide as tight a seal as possible. An external plug made by winding soft tape around the catheter approximately 1 to 2 inches from the tip, in conjunction with a thin anal occluder, is helpful. An assistant who can hold the child's buttocks together during the procedure is also helpful. Alternatively, a balloon may be inflated in the rectum as needed to maintain a closed system during reduction of an intussusception. The balloon should be inflated under fluoroscopic observation to confirm its position and the proper degree of inflation.

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iii. The pressure must be monitored as the gaseous contrast is insufflated into the colon. The pressure chosen depends on patient size and clinical circumstances. The recommended range is 80 to 120 mm Hg. The pressure may fluctuate during insufflation or when the patient is crying or straining, and it can also drop between insufflations. Rapid, constant insufflations tend to maintain even colonic pressure. Fluoroscopic images (or screen saves) should be obtained judiciously to document findings while limiting the radiation dose; with fluoroscopy store, more detailed documentation of the progress of reduction can be obtained. Intermittent but frequent fluoroscopy should be performed to identify the intussusception, possible mass as a lead point, free reflux of air into the small bowel, and resolution of soft tissue mass

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identifying successful reduction, or development of free intraperitoneal air, signifying perforation.

iv. The length of time spent on a continuous reduction attempt or intermittent filling is at the discretion of the individual physician. A rough guideline is that if there is no progress after 3 separate 5-minute attempts, the procedure is likely to be unsuccessful, but other clinical factors, such as patient age, presence or absence of high-grade small-bowel obstruction also need to be considered. If the intussusception is reduced, the intussusceptum should disappear (there is often swelling of the ileocecal valve) and air should reflux, often rapidly, into the distal small bowel. The physician should search for a residual filling defect to suggest a lead point or incomplete reduction of the intussusception. There is literature supporting waiting an hour or more after unsuccessful reduction.

v. If a tension pneumoperitoneum occurs, paracentesis should be performed immediately in the midline supraumbilical location. Additional resuscitative measures may be needed to stabilize the child.

vi. Large-format or fluoroscopic imaging or sonography of the abdomen may be performed at the completion of air sufflation. This may identify spontaneous reduction of a previously irreducible intussusception or immediate recurrence of a reduced re-intussusception. Documentation of the absence of pneumoperitoneum as a complication of the procedure is accomplished by radiography.

b. Hydrostatic Reduction

i. Water-soluble near-isotonic or iso-osmolar contrast media are preferred for hydrostatic reduction (see the section on Contrast Media in Children in the ACR Manual on Contrast Media.

ii. The rectum should be catheterized with a soft catheter in a manner similar to the procedure outlined in the section on air reduction above. A balloon may be inflated in the rectum as needed to maintain a closed system during reduction of an intussusception. The balloon should be inflated under fluoroscopic observation to confirm its position and the proper degree of inflation.

iii. The colon should be filled by gravity infusion. There are no absolute criteria for the height of the infusion bag, but it is typically kept approximately 3 feet above the table. The duration of each attempt at reduction and the number of attempts is at the discretion of the physician; typically, if there is no movement of the intussusception after 5 minutes, consideration may be given to stopping the reduction attempts. Fluoroscopic images (or screen saves)

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should be obtained judiciously, balancing the need for documentation with maintaining radiation dose at a minimum. A continuous hydrostatic reduction is maintained during each attempt at reduction. If the intussusception is reduced, contrast should fill the distal small bowel. The physician should search for a residual filling defect in the contrast column to detect a possible lead point or an ileoileal component of the intussusception. The contrast should then be drained, or evacuation allowed.

iv. Large-format or fluoroscopic imaging or sonography of the abdomen may be performed at the completion of filling and after evacuation or gravity drainage of the colon; this may identify spontaneous reduction of a previously irreducible intussusception or re-intussusception of a previously reduced intussusception.

C. Distal Bowel Obstruction in Neonates

1. Examination

Neonates with a distal bowel obstruction may present with failure to pass meconium, abdominal distention, or vomiting. As the point of obstruction is distal to the ampulla of Vater, the vomiting may be bilious. Clinical examination and plain radiographs guide further imaging evaluation. Imperforate anus is diagnosed clinically. The presence of multiple distended bowel loops suggests a distal obstructive process. Differential considerations for a distal bowel obstruction in a neonate include small bowel atresia, meconium ileus (associated with cystic fibrosis), meconium plug syndrome (also known as small left colon syndrome or functional immaturity of the colon), and Hirschsprung disease.

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2. Examination Preparation

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There should be no bowel preparation prior to the enema and preferably no digital rectal examination.

3. Examination Preliminaries

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Preceding radiographs or scout images should include a positional view of the abdomen (usually cross-table lateral) to assess for free intraperitoneal air. Scout images will also show the degree of bowel dilatation and obstruction, associated abnormalities of the spine, and intra-abdominal calcifications. Intraperitoneal calcifications may be present due to meconium peritonitis as a consequence of in utero perforation from complicated small-bowel atresia or complicated meconium ileus.

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4. Examination Technique

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a. Contrast enema for distal bowel obstruction in a neonate is performed with water-soluble contrast material. Barium should not be used due to the possibility of an occult perforation. Water-soluble contrast also aids in relieving obstructing meconium. Near-iso-osmolar water-soluble contrast is preferred to avoid fluid shift (dehydration and electrolyte abnormalities).

b. A soft small-gauge catheter is utilized. If a balloon catheter is used, the balloon should not be inflated until the rectum is evaluated and Hirschsprung disease excluded. During initial filling, consideration is given to the possible diagnosis of Hirschsprung disease, as discussed below in section IV.D. Initial filling in the lateral projection allows for early filling evaluation of rectal caliber. Once evaluated in the lateral projection, the infant is turned supine (or prone at the operator's preference) to evaluate the rectum and sigmoid colon in the anteroposterior projection.

c. Contrast is introduced via gravity to opacify the entire colon retrograde. The cecum is identified by opacification of the terminal ileum or appendix. If necessary, after evaluation of the rectum, the catheter balloon can be carefully inflated under fluoroscopic evaluation to achieve a better seal. Contrast is introduced until a point of obstruction is identified, an occult perforation causes intraperitoneal spill of contrast, or after opacification of the entire colon and distal small bowel with exclusion of or definition of an obstructing process.

d. With meconium plug syndrome (also known as small left colon syndrome or functional immaturity of the colon), a relatively smaller caliber of the descending and sigmoid colon is encountered, with a plug-like filling defect of the meconium. Ideally, contrast is refluxed into the dilated colon proximal to the meconium. The contrast will facilitate passage of the meconium plug after removal of the catheter. However, Hirschsprung disease may appear identical at enema. If the baby does not clinically improve, the baby should undergo rectal biopsy.

e. With colonic or small-bowel atresia, contrast inflow may cease once the blunt point of obstruction is encountered.

f. With meconium ileus, contrast may opacify the distal ileum, demonstrating obstructing meconium. Water-soluble contrast enema may be therapeutic in resolving the obstruction. This is discussed below in section IV.E.

g. Either an atresia or meconium ileus may uncover a pre-existing perforation or be complicated by a procedural perforation. Surgical consultation prior to the enema is recommended. When performing the enema, fluoroscopic

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collimators are kept reasonably wide to monitor for intraperitoneal spillage of contrast. When perforation is detected, no further contrast is administered.

h. A very small-caliber colon (so-called "microcolon") may be the consequence of atresia, meconium ileus, total colonic aganglionosis (Hirschsprung disease), or the rare entity megacystis microcolon intestinal hypoperistalsis syndrome. The degree of anatomy of the colon and findings at the distal ileum that the enema provides may aid in differentiating these processes.

D. Hirschsprung Disease

1. Examination Preparation

Patients do not need to fast prior to this examination. There should be no bowel preparation prior to the enema, including oral or rectal cleansing medications, and preferably no recent digital examination. If the patient has had a recent rectal biopsy, the type and the time interval since the biopsy should be considered prior to scheduling the enema.

2. Examination Preliminaries

Preliminary images or fluoroscopic assessment of the abdomen can be helpful in evaluating the amount of stool in the colon, the presence of obstruction, abnormalities of the spine, and in planning the extent of the contrast enema. A supine view of the abdomen may suffice; however, a positional view (upright, cross-table lateral, or decubitus) may be helpful and should be performed if the enema is following a recent biopsy.

3. Examination Technique

a. Either barium or water-soluble contrast can be used for evaluating childhood Hirschsprung disease. In the neonate or infant water-soluble media diluted to near-isotonic or iso-osmolar concentration are preferred.

b. The rectum should be catheterized with a soft catheter with the tip just inside the rectum. The caliber of the catheter should be small for the patient's size to avoid effacing a transition zone. No balloon or retention device should be inflated in the rectum during the examination.

c. The examination should be performed under fluoroscopic guidance with positioning to adequately demonstrate the transition zone, if present. The child is imaged initially in the lateral position when the rectum and sigmoid colon first fill with contrast. Images are obtained immediately upon early filling and during distension (to avoid under- or overdistension); this will maximize the detection of Hirschsprung disease.

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d. The colon should be gravity filled with contrast. The extent of filling depends on the fluoroscopic findings. Once a transition zone is demonstrated, it is desirable to avoid complete colonic filling, particularly if the colon is dilated, to prevent complications such as fluid and electrolyte disturbances. If the rectum and distal sigmoid appear normal or dilated and the proximal colon is not disproportionately distended, it is also not necessary to opacify the entire colon.

e. Fluoroscopic images (or screen saves) of the abdomen should be obtained following colonic filling. Large-format radiographs are occasionally helpful. Following catheter removal, post-evacuation views in the frontal and lateral projections may assist in evaluation but are not required in most cases.

f. In children with a high clinical suspicion, rectal biopsy is still required regardless of enema findings.

E. Meconium Ileus of the Neonate

1. Examination Preparation

Surgical evaluation should precede attempted nonoperative management of uncomplicated meconium ileus. Contraindications to the performance of a therapeutic enema include clinical or radiologic evidence of complicated meconium ileus, including perforation and pseudocyst formation. These may be manifested clinically by a palpable abdominal mass, discoloration of the abdominal wall, and signs of peritonitis, and radiographically by intraperitoneal calcifications (with or without mass effect) or free intraperitoneal air.

2. Examination Preliminaries

Supine and left lateral decubitus or cross-table lateral views are evaluated for evidence of complicated meconium ileus or other etiologies of neonatal bowel obstruction requiring operative intervention. If the images remain compatible with a diagnosis of uncomplicated meconium ileus, a diagnostic contrast enema usually employing a near-isotonic or iso-osmolar water-soluble agent is performed to diagnose simple meconium ileus and exclude other causes of distal intestinal obstruction, such as ileal atresia, Hirschsprung disease, small left colon syndrome (meconium plug), or colonic atresia. If the diagnosis of meconium ileus is made by the contrast enema, the examination may proceed to a therapeutic contrast enema.

3. Therapeutic Enema Technique

a. A wide variety and concentration of water-soluble contrast media have been recommended for therapeutic enema for meconium ileus, including ionic and

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nonionic water-soluble contrast media, typically in a moderately hyperosmolar concentration.

b. An appropriately sized catheter is placed in the rectum, and the catheter and buttocks are secured in the usual manner. A balloon may be inflated in the rectum as needed to achieve better distention. The balloon should not be distended prior to evaluating the rectum and excluding Hirschsprung disease and should only be inflated if deemed necessary. The balloon should be inflated under fluoroscopic observation to confirm its position and the proper degree of inflation.

c. Under fluoroscopic control, contrast material is preferably infused via gravity until it reaches the dilated small bowel or until significant resistance is met.

d. The duration and number of attempts and the intervals between attempts to reflux contrast material into the meconium-filled ileum are left to the discretion of the physician. In general, repeated attempts at therapeutic enema for meconium elimination and bowel decompression are useful as long as the infant remains stable and under continued surgical and radiologic evaluation. The neonate should be kept warm and dry during the procedure and should be carefully monitored for dehydration during and in the post-procedure period due to fluid shifts as described below. Immediate postprocedural large-format or fluoroscopic images should be obtained. Follow-up abdominal radiographs should be obtained as needed to assess for relief of obstruction and for potential perforation.

e. Fluid shifts created by intraluminal hyperosmolar contrast and systemic absorption of hyperosmolar contrast may lead to dehydration and hypovolemic shock. Continued clinical surveillance and communication with the health care team are essential.

F. The following steps are suggested for a quality control program:

1. Correlation of radiologic, endoscopic, and pathologic findings where available.
2. Correlation of radiologic and pathologic diagnosis of Hirschsprung disease.
3. Monitoring the reduction rate and complication rate of enema for intussusception.

## IV. Documentation

An official interpretation (final report) of the examination should be included in the patient's medical record. Reporting should be in accordance with the ACR Practice Parameter for Communication of Diagnostic Imaging Findings.

## REFERENCES

ACR-SPR PRACTICE PARAMETER FOR THE PERFORMANCE OF PEDIATRIC FLUOROSCOPIC CONTRAST ENEMA EXAMINATIONS, Revised 2016 (Resolution 9)

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| SUBJECT: BARIUM SMALL BOWEL EXAMINATION IN ADULTS | REFERENCE # |
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| | PAGE: 1 |
| DEPARTMENT: RADIOLOGY IR | OF: 4 |
| | EFFECTIVE: 09/2021 |
| | REVISED: MM/YYYY |

**PURPOSE**

The purpose of this policy is to provide guidance in performing high quality barium small bowel examinations.

**POLICY**

It is the policy of Modoc Medical Center to provide barium small bowel examinations in adults in concordance with the parameters as set forth by the American College of Radiology (ACR).

**PROCEDURE**

**I. Introduction**

Radiographic examination of the small bowel after oral ingestion of barium is a proven and useful procedure. The purpose is to establish the presence or absence of a disease and its nature by opacifying the small bowel with contrast and taking sequential images. The goal is to obtain a diagnostic quality study visualizing the small bowel with the minimum radiation dose necessary. Peroral pneumocolon is an adjunct technique that involves retrograde insufflation of air into the terminal ileum via a rectal tube.

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Computed Tomography (CT) is often selected as the imaging examination of choice for patients with suspected small bowel obstruction since it does not rely on contrast reaching the site of obstruction to allow identification of its location and is considerably quicker than barium small bowel series. A small bowel examination with water soluble contrast has been suggested as a predictor of nonoperative resolution of small bowel obstruction and as a therapeutic agent. For some indications, such as inflammatory bowel disease and unexplained gastrointestinal (GI) bleeding, the barium small bowel examination has been largely supplanted by CT enterography or MR enterography and is no longer the examination of choice.

In some situations, enteroclysis may also be chosen over the barium small bowel examination to provide better bowel distention and mucosal detail (see the ACR–SAR Practice Parameter for the Performance of an Enteroclysis Examination in Adults).

**II. Indications**

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A. Indications for barium small bowel examination include, but are not limited to:

1. Suspected or known small bowel obstruction.
2. Evaluation for presence of primary or secondary neoplasm(s).
3. Inflammatory bowel disease.
4. Unexplained GI bleeding.

5. Malabsorption.
6. Evaluation of postsurgical anatomy.
7. Evaluation of enteric fistula.
8. Evaluation for an asymptomatic stricture prior to capsule enteroscopy.
9. History of small bowel disease.
10. Protein losing enteropathy.

B. Pertinent history and symptoms serving as indications for a barium small bowel examination include, but are not limited to:

1. Abdominal pain.
2. Diarrhea.
3. Unexplained GI bleeding or anemia.
4. Abdominal masses.
5. Possible small bowel obstruction.
6. Enteric fistula.
7. Possible postoperative leak.

For the pregnant or potentially pregnant patient, see the ACR–SPR Practice Parameter for Imaging Pregnant or Potentially Pregnant Adolescents and Women with Ionizing Radiation.

## III. Specifications of the Examination

The written or electronic request for a barium small bowel examination should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation.

Documentation that satisfies medical necessity includes but is not limited to signs and symptoms and relevant history (including known diagnoses). Additional information regarding the specific reason for the examination or a provisional diagnosis is helpful and may at times be needed to allow for the proper performance and interpretation of the examination.

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The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or

question and consistent with the state scope of practice requirements. (ACR Resolution 35, adopted in 2006.)

A. Patient Preparation

The patient should be instructed to refrain from taking anything by mouth after midnight the night before the procedure. Patients may generally take scheduled medications on the morning of the examination. Examinations may be performed with shorter fasting times as clinically indicated. If a peroral pneumocolon is planned, a bowel preparation to remove any intraluminal particulate material should be performed.

B. Examination Preliminaries

An appropriate medical history should be available, including results of laboratory tests and prior imaging, endoscopic, and surgical procedures as applicable.

C. Examination Technique

The physician should tailor the barium small bowel examination procedure to the individual patient, as warranted by clinical circumstances and the condition of the patient, to produce a diagnostic quality examination.

1. The procedure should include:

   a. Oral ingestion of a minimum of 16 ounces of a well-suspended barium preparation, with additional barium ingestion as needed to maintain uniform distension of all barium-opacified small bowel loops. This is best accomplished by maintaining a barium-filled stomach for the duration of the procedure. Because of dilution and absorption, the use of water-soluble contrast media is not the preferred method for small bowel contrast examination and imaging. However, water-soluble contrast is sometimes preferred by referring physicians if there is suspicion of bowel leak or obstruction.

   b. Fluoroscopy with compression of all accessible small bowel loops, including the terminal ileum, with appropriate images to demonstrate any abnormality.

   c. After obtaining preliminary images of the abdomen, serial large-format overhead images of the abdomen are obtained in the prone position, when possible, each labeled with the individual time of acquisition. These overhead images are obtained as the ingested barium progresses through the small bowel to the colon and allow documentation of transit time.

   d. If peroral pneumocolon is needed to better visualize the terminal ileum, the patient is then placed in the lateral decubitus position on the fluoroscopy table. Pneumocolon is achieved by introducing a flexible enema catheter tip connected to a hand-held bulb insufflator into the rectum and insufflating room air.

Gas is introduced in a retrograde manner under intermittent fluoroscopic guidance. The patient can be placed in prone position to encourage reflux of gas into the terminal ileum.

2. Techniques specific to this examination are:

   a. Use of a large volume of an appropriate barium suspension.

   b. Compression and spot imaging of all accessible small bowel loops.

   c. Image exposure sufficient to penetrate filled segments of the small bowel.

   d. Use of special maneuvers to attempt to visualize small bowel loops in the pelvis.

3. The following quality control indicators should be applied to all barium small bowel examinations:

   a. When examinations are completed, patients should be held in the fluoroscopic area until the physician has reviewed all images.

   b. An attempt should be made to resolve questionable radiographic findings before the patient leaves. Repeat fluoroscopy of segments in question or special maneuvers, such as per oral pneumocolon, should be performed as necessary.

## IV. Documentation

Reporting should be in accordance with the ACR Practice Parameter for Communication of Diagnostic Imaging Findings.

## REFERENCES


ACR PRACTICE PARAMETER FOR THE PERFORMANCE OF A BARIUM SMALL BOWELL EXAMINATION IN ADULTS, Revised 2013 (Resolution 26).


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| REFERENCE # | 216C | EFFECTIVE | 04/20/2010 |
| SUBJECT: | SURGICAL SITE INFECTION PREVENTION NO. 2 | REVISED | 07/30/2024 |
| DEPARTMENT: | OPERTATING ROOM | | |

**PURPOSE:**
The purpose of this policy is to identify the risk of surgical site infections related to the maintenance of normal thermia in all surgical patients. Factors that can cause a temperature drop include patient age, anesthesia type, surgery type and ambient temperatures in the operating room.

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**AUDIENCE:**
Department Wide

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to regularly monitor patient temperature and take steps to maintain normal thermia throughout the patient's care in the operating room.

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**PROCEDURE:**
Pre-Operative Area

- During the pre-op phase of the admission to out-patient surgery each patient will have their vital signs checked and recorded including a temperature. If the temperature is 96.8 or less warming devices should be applied. Blankets from the warmer can be used or the Bair Hugger can be used for lower temperatures.
- AORN recommends keeping the OR thermostats set between 68 F and 73 F to help regulate patient's core temperatures. During the intra-operative phase, the temperature should be monitored by the staff member performing anesthesia. Temperatures can be adjusted with warm blankets, warming mattress pads, warm intravenous fluids, or the Bair Hugger. The goal is to prevent prolonged hypothermic surgical events. Forced-air warming is a clinically proven technique for preventing hypothermia. Warming intravenous fluids is also an effective intervention when more than 2 liters of fluid per hour is administered. A warming mattress pad is also effective. Heating irrigation fluids help maintain normal thermia but should be employed in conjunction with other modalities of warming techniques. Intravenous and irrigation fluids should be warmed to normal body temperature (98.6) F or (37) C.
- During the post-operative phase, the patient's temperature needs to be assessed on admission to the Post Anesthesia Care Unit (PACU), and appropriate warming should be initiated if needed. The ideal temperature reading in the PACU is to reach (97) F or (36.1) C.

**REFERENCES:**

**AORN 2021 Edition Guidelines for Perioperative Practice, Hypothermia. Page 328, 1-1.4, page 330, 2-2.6, and page 331, 4-4.1**

| SUBJECT: ENDOVASCULAR MANAGEMENT OF THE THROMBOSED OR DYSFUNCTIONAL DIALYSIS ACCESS | REFERENCE # |
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| | PAGE: 1<br>OF: 11 |
| DEPARTMENT: RADIOLOGYIR | EFFECTIVE: 09/2021 |
| | REVISED: MM/YYYY |

**PURPOSE**

The purpose of this policy is to provide guidance in performing high-quality management of thrombosed or dysfunctional dialysis access.

**TERMS/DEFINITIONS**

For the purposes of this practice parameter, the following definitions apply:

**Thrombosed hemodialysis access:**
An autogenous fistula or prosthetic graft/biologic graft that has no significant blood flow. The thrombus may extend into the runoff veins or the arterial-venous anastomosis. Autogenous fistulae, particularly those with aneurysmal segments, may harbor significantly larger amounts of thrombus than prosthetic grafts. The diagnosis of a thrombosed access is most frequently made by physical examination.

**Dysfunctional hemodialysis access:**
Access with an abnormal hemodynamic or clinical indicator precluding effective dialysis and an autogenous fistula that has failed to mature over adequate time, or an access that cannot be successfully punctured to perform dialysis.

**Functionally significant stenosis:**
An anatomically significant stenosis (>50% reduction of normal vessel diameter) accompanied by a hemodynamic or clinical abnormality such as:

1) Change in physical examination characteristics of the thrill
2) Elevated venous pressures recorded during hemodialysis (static and dynamic pressures) or measured within the vascular access during a diagnostic study (static pressures)
3) Detection of decreased intra-access blood flow at dialysis
4) Swollen extremity
5) Unexplained reduction in dialysis kinetics
6) Clinical parameters such as prolonged bleeding after needle withdrawal, altered physical examination characteristics of vascular access, or thrombosis
7) Elevated negative arterial pre-pump pressures that prevent increasing to acceptable blood flow
8) Inability to puncture to perform hemodialysis
9) Abnormal recirculation values [1].

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Note: Prospective trend analysis is more valuable than isolated abnormalities in the above hemodynamic and clinical parameters. Abnormalities should be persistent over time to prompt treatment of the access.

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Anatomically significant stenoses include:

1. Inflow problems
    a. Stenosis of the inflow artery to the access, including central arterial stenosis, such as a brachiocephalic, subclavian, or axillary arterial stenosis
    b. Stenosis at the anastomotic site of an autogenous fistula
    c. Stenosis at the juxta-anastomotic segment of an autogenous fistula
    d. Stenosis at the arterial anastomosis of synthetic grafts
2. Access problems
    a. Stenosis of the hypertrophied venous segment of an autogenous fistula
    b. Intra-graft stenosis within prosthetic grafts
    c. The great majority of anatomic causes are intrinsic to the graft or vessel. Rarely, however, extrinsic compression can contribute to access dysfunction (e.g., prosthetic graft kinking, pseudoaneurysm compression of the access, or compression from a peri access hematoma).
3. Outflow problems
    a. Stenoses of the venous runoff from the venous anastomosis to the central veins
    b. Failure to mature. In the case of the autogenous fistula, multiple venous runoff channels that divert blood flow away from the primary outflow vein can prevent the development of a hypertrophied outflow vein suitable for puncture [1].
    c. Venous anastomotic stenosis of prosthetic grafts
    d. Central vein stenosis that may occur following the placement of a central venous catheter ipsilateral to the site of the access. These can also be caused by fibrous bands, clavicular fractures, pacemaker wires, etc.

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Note: Although >90% of access thromboses and dysfunction are due to underlying anatomic stenoses, a physiologic process such as low cardiac output, post-dialysis hypotension, access site infection, dehydration, or a hypercoagulable state can result in thrombosis of a prosthetic graft or autogenous fistula in the absence of an anatomic cause or can have a synergistic effect with an anatomic stenosis to accelerate failure of the hemodialysis access.

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**Fistulogram:**
A specific type of angiogram to evaluate an autogenous fistula or prosthetic graft used as vascular access for hemodialysis treatment. A fistulogram should include imaging the entire vascular access circuit, including the arterial anastomosis, the fistula or graft, the runoff veins, the ipsilateral central veins, and the superior/inferior vena cava. Oblique projections are often needed to optimize visualization and characterization of arterial and venous stenoses. Evaluation of the inflow arteries may be necessary when hemodynamic indicators or clinical symptoms are not explained by fistulography.

**EMDA (endovascular management of the thrombosed or dysfunctional hemodialysis access):**
The use of catheter based endovascular techniques to restore or maintain adequate blood flow within an access to support effective hemodialysis [1,31].

**Endovascular thrombus removal:**
The removal of an occlusive thrombus from within the graft or fistula, including the outflow veins and inflow arteries, to restore blood flow to the access. Removal of the thrombus may be accomplished by any of several catheter-directed methods, such as thrombolysis, aspiration thrombectomy, balloon thrombectomy, clot maceration, and mechanical thrombectomy devices.

**Endovascular treatment of a stenosis:**
The restoration of an acceptable luminal diameter to the segment (anatomic success) and resolution of the functional abnormality [1]. Stenosis may be treated with balloon angioplasty. In selected instances, stents, stent grafts, or cutting balloons may be required to improve luminal dimensions or repair a vascular injury. Prospective intervention is currently warranted for anatomical stenoses found in hemodialysis accesses and draining veins that also have an associated hemodynamic or clinical abnormality [1,31].

**Anatomic success of a treated stenosis:**
Restoration of luminal diameter with <30% residual diameter stenosis. For treatment of thrombosed accesses, both restoration of flow and <30% residual diameter stenosis for any significant underlying stenosis is required to report anatomic success {32,33}. However, several studies have reported that there is poor correlation between the degree of stenosis and the rate of blood flow through a prosthetic graft [34-36]. Depending on the rate of blood flow through the vascular access and the location of the treated lesion, a 30% or more residual stenosis may be hemodynamically significant.

**Clinical success:**
The resumption of normal hemodialysis for a minimum of at least 1 session. After treatment of stenosis, clinical success is defined as the improvement of clinical and hemodynamic parameters. After treatment of either thrombosed access or an access-related stenosis, a continuous palpable thrill with minimal or no pulsatility extending from the arterial anastomosis can be considered one indicator of clinical success [32,33,37]. Physical examination of the access has the advantage of being easily performed in the interventional suite, unlike most of the monitoring tests.

**Hemodynamic success:**
The restoration of hemodynamic parameters. Increase of volume flows to above predefined threshold values or reduction of venous dialysis or static pressures to below the predefined threshold values can be

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considered evidence of hemodynamic success. Blood flow rates are not universally available in interventional suites [38] or dialysis clinics but have been correlated with degree of stenosis for a single lesion [35]. Static pressures are easily obtained in the interventional suite at minimal additional cost (transducer, tubing) but need to be interpreted in the context of their known limitations. It is the true intra-access static pressure that correlates with the degree of stenosis. Therefore, a reduction of the ratio between static intragraft venous limb systolic pressure and cuffed brachial systolic pressure to below predefined thresholds can be considered evidence of hemodynamic success.

Measurement of intra-graft pressures to determine the hemodynamic significance of stenoses has been described by Sullivan and Besarab (see Appendix A). This study used a ratio of 0.4 to give 91% sensitivity for identifying synthetic access graft stenoses of at least 50% [39]. However, there are currently no uniformly accepted criteria of percent reduction from pretreatment values to determine hemodynamic success [37]. Further, accesses with high intra-access volume flows frequently have high venous systolic pressure ratios and no venous outflow lesions [40]. Some have questioned the use of pressures as an endpoint [32].

**Procedural success:**
Anatomic success and at least 1 indicator of hemodynamic or clinical success [32,33].

**Postintervention primary patency:**
Uninterrupted patency after intervention until the next access thrombosis or reintervention. Primary patency ends with treatment of a lesion anywhere within the access circuit, from the arterial inflow to the superior vena cava–right atrial junction [32,33].

**Postintervention assisted primary patency (APP):**
Patency following intervention until access thrombosis or a surgical intervention that excludes the treated lesion from the access circuit. Percutaneous treatments of restenosis or a new arterial or venous outflow stenosis/occlusion (excluding access thrombosis) are compatible with APP. APP ends with percutaneous thrombolysis/thrombectomy or simple surgical thrombectomy [32].

**Postintervention secondary patency:**
Patency until the access is surgically de-clotted, revised, or abandoned because the patient undergoes renal transplant, is lost to follow-up, etc. Thrombolysis and percutaneous thrombectomy are compatible with secondary patency, as are multiple repetitive treatments [32].

**Cumulative patency rate (CP):**
The total time that the access remains patent (regardless of the number of primary interventions or thrombectomies) during a given period. CP begins at the time that the graft is first placed [1].

**Postintervention lesion patency:**
The interval following intervention until the next reintervention at or adjacent to the original treatment site or until the extremity is abandoned for permanent access because of a surgeon's choice, transplant, loss of follow-up, etc. Endovascular or surgical treatments of other lesions in the access circuit and creation of a

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new prosthetic graft or autogenous fistula that incorporates the original lesion into the access circuit are compatible with lesion patency.

**Mature arteriovenous fistula:**
A fistula suitable for use when the diameter of a vein is sufficient to allow successful cannulation 4 to 6 weeks after construction [1].

**Steal syndrome:**
Ipsilateral extremity ischemia symptoms [41] in the presence of a functional graft or fistula. Etiologies include atherosclerotic arterial stenosis [42], diffuse disease in the native arteries of the extremity, and excessive blood flow through the fistula or graft [43]. High-flow fistulae with 20% to 50% of the cardiac output shunted through the access [44] can also result in cardiac overload [43].

**POLICY**

It is the policy of Modoc Medical Center to provide management of thrombosed or dysfunctional dialysis access in concordance with the parameters set forth by the American College of Radiology (ACR)

**PROCEDURE**

**Indications**

A. Indications for EMDA include, but are not limited to:

1. Stenoses without thrombosis occurring in a hemodialysis graft or fistula if the stenosis is >50% reduction in luminal diameter and is considered functionally significant (see definitions above). The percent stenosis reported can vary considerably depending on the reference chosen, that is, the smaller graft or vein upstream to the lesion (relative to direction of blood flow) versus a larger vein downstream (relative to direction of blood flow). Percent stenosis may also be affected by the presence or absence of blood flow in the access at the time of measurement [32].

2. Stenosis associated with thrombosis. Thrombosis is associated with underlying venous stenosis in >85% of cases [8].

3. Central vein stenosis >50% lumen reduction, when the vascular access is hemodynamically compromised and clinical parameters such as arm swelling, or frequently failing access are present. Endovascular intervention with transluminal angioplasty is the preferred treatment of central vein stenosis [1].

4. Autogenous fistulae that have failed to mature after 4 to 6 weeks. Treatments include:

   a. Balloon angioplasty of the inflow artery, arteriovenous anastomosis, juxta-anastomotic segment, or outflow segments to increase blood flow to the native vein. Multiple areas of stenoses may exist in non-maturing fistulae [45-50].

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b. Interruption of venous tributaries that divert blood flow from the primary venous segment improves blood flow and thereby promotes maturation of the fistula [45,46,48,51].

B. Indications for Endoluminal Stent Placement

Several studies have demonstrated acceptable patencies for stent deployment following unsuccessful balloon angioplasty, especially for central vein lesions [24,25,52,53]. However, several prospective, randomized trials have failed to show a benefit of bare stents over percutaneous transluminal angioplasty alone in the treatment of perianastomotic stenoses [26,54]. Current indications for endoluminal stent placement include:

1. Persistence of a significant venous stenosis that has failed balloon angioplasty and surgical access is difficult, surgery is contraindicated, or there are limited remaining access sites

2. A significant central vein stenosis that has either failed balloon angioplasty or recurred within a three-month period following an initially successful balloon angioplasty [1]

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3. Rupture of an outflow vein following balloon angioplasty that cannot be controlled with balloon tamponade.

The threshold for these indications is 95%. When <95% of procedures are for these indications, the department will review the process of patient selection.

Stent grafts may provide longer patency than bare stents for the venous anastomosis of grafts. Prospective, randomized, multicenter studies show better primary target lesion and circuit patencies after stent graft placement at the venous anastomosis of grafts and fistulas and in stent restenosis than after angioplasty alone [55,56]. Stent grafts have also been used to treat intra-access pseudoaneurysms in case reports and small series.

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C. Indications for Treatment of Steal

Steal can manifest by cardiac failure [43] or ischemic symptoms, including paresthesia's, pain, motor weakness, sensory loss, or tissue loss. When ischemic symptoms occur in the presence of an atherosclerotic stenosis in the native arterial supply to the extremity, arterial angioplasty can relieve the symptoms [42]. When there is no arterial lesion, decreasing the flow in the graft or fistula by placing a flow-restricting band across the access near the arterial anastomosis can also improve or relieve symptoms of steal. Because of access thrombosis complications after surgical banding [57], a modified banding technique using an inflated angioplasty balloon to accurately size the residual lumen has been used [47]. A more complicated surgical procedure known as distal revascularization with interval ligation (DRIL) can also relieve symptoms. It involves ligation of the artery just distal to the anastomosis of the autogenous fistula or prosthetic graft and an arterial bypass from the artery proximal to the arteriovenous anastomosis to the artery distal to the ligation. DRIL has a low reported rate of access thrombosis [58]. Radiocephalic fistulae complicated by steal have been treated by distal radial artery occlusion, either ligation [59] or endovascular occlusion [60].

Current indications for treatment of steal include:

1. Clinical symptoms or signs of steal ipsilateral to a functional fistula or graft
2. 2. High-flow fistula with signs or symptoms of heart failure IV.

**Contraindications**

The decision to treat a hemodialysis access with endovascular techniques is always made in light of the patient's clinical condition, the number of alternative access sites available, and the expertise of the treating physician.

A. Absolute Contraindication

1. Active infection of the vascular access

B. Relative Contraindications

1. Severe contrast allergy
2. Severe hyperkalemia, acidosis, or other life-threatening abnormality of blood chemistry that requires immediate dialysis
3. Known right-to-left shunt
4. Severe cardiopulmonary disease

**Specification of the Examination**

A. Angiographic Equipment and Facilities

The following are considered the minimum equipment requirements for performing EMDA. In planning facilities for EMDA angiography, equipment and facilities more advanced than those outlined below may be desired to produce higher-quality studies with reduced risk and time of study. In general, the facility should include at a minimum:

1. A high-resolution image intensifier and television chain or flat panel detector with standard angiographic imaging capabilities. Use of last image hold and pulsed fluoroscopy is recommended for dose reduction. The use of cineradiography or small-field mobile image intensifiers is inappropriate for the routine recording of noncoronary angiography because these methods have an unacceptably high patient and operator radiation dose.
2. Adequate angiographic supplies such as catheters, guidewires, needles, and introducer sheaths

3. An angiography suite that is large enough to allow easy transfer of the patient from the bed to the table and to allow room for the procedure table, monitoring equipment, and other hardware such as intravenous pumps, respirators, anesthesia equipment, and oxygen tanks. Ideally, there should be adequate space for the operating team to work unencumbered on either side of the patient and for the circulation of other technical staff in the room without contaminating the sterile conditions.

4. An area for preprocedural preparation and postprocedural observation and monitoring of the patient. At this location, there should be personnel to provide care as outlined in the Patient Care section below, and there should be immediate access to emergency resuscitation equipment.

B. Physiologic Monitoring and Resuscitation Equipment

1. Sufficient equipment should be present in the angiography suite to allow for monitoring the patient's heart rate, cardiac rhythm, and blood pressure. For facilities using moderate sedation, a pulse oximeter or an end-tidal carbon dioxide monitor should be available (see the ACR–SIR Practice Parameter for Sedation/Analgesia [64]).

2. There should be ready access to emergency resuscitation equipment and drugs, including the following: oxygen supply and appropriate tubing and delivery systems, suction equipment, tubes for endotracheal intubation, laryngoscope, ventilation bag-mask-valve apparatus, and central venous line sets. Drugs for treating cardiopulmonary arrest, contrast reaction, vasovagal reactions, narcotic or benzodiazepine overdose, bradycardia, and ventricular arrhythmias should also be readily available. Resuscitation equipment should be monitored on a routine basis in compliance with institutional policies.

C. Support Personnel

1. Radiologic technologists properly trained in the use of the arteriographic equipment should assist in performing and imaging the procedure. They should demonstrate appropriate knowledge of patient positioning, arteriographic image recording, angiographic contrast injectors, angiographic supplies, and physiologic monitoring equipment. Certification as a vascular and interventional radiologic technologist is one measure of appropriate training. The technologists should be trained in basic cardiopulmonary resuscitation and in the function of the resuscitation equipment.

2. If the patient does not receive moderate sedation, one of the staff assisting in the procedure should be assigned to periodically assess the patient's status. If the patient is to undergo moderate sedation, a nurse or other appropriately trained individual should monitor the patient as his/her primary responsibility. This person should maintain a record of the patient's vital signs, time and dose of medications given, and other pertinent information. Nursing personnel should be qualified to administer moderate sedation (see the ACR–SIR Practice Parameter for Sedation/Analgesia [64]).

D. Surgical Support

Although complications of EMDA only rarely require urgent surgery, these procedures should be performed in an environment where operative repair can be instituted promptly. Ideally, this would be an acute-care hospital with adequate surgical, anesthesia, and ancillary support. When these procedures are performed in a freestanding outpatient center, detailed protocols for the rapid transport or admission of patients to an acute-care hospital should be formalized in writing.

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E. Patient Care

1. Pre-procedure care

   The physician performing the procedure must have knowledge of the following:

   a. Clinically significant history, including indications for the procedure

   b. Clinically significant physical examination findings, including an awareness of clinical or medical conditions that may necessitate specific care

   c. Possible alternative methods, such as surgical or medical treatments, to obtain the desired therapeutic result

   d. Exposure factors, including kVp, mA, magnification factor, and dose rate. Additional parameters such as collimation, field of view, fluoroscopic frame rates, and last image hold should be considered.

2. Procedural care

   a. Adherence to the Joint Commission's Universal Protocol for Preventing Wrong Site, Wrong Procedure, Wrong Person Surgery™ is required for procedures in nonoperating room settings, including bedside procedures. The organization should have processes and systems in place for reconciling differences in staff responses during the "time out."

   b. All patients should have cardiac monitoring continuously during the procedure, with intermittent blood pressure monitoring. A record of vital signs should be maintained.

   c. If the patient is to receive moderate sedation, pulse oximetry should be used. A registered nurse or other appropriately trained personnel should be present, and his/her primary responsibility should be to monitor the patient. A record should be kept of medication doses and times of administration.

   d. A physician should be available during the immediate post-procedure period.

3. Post-procedure care

    a. A written summary of the major findings of the study and any immediate complications should be documented and included in the patient's medical records. This note may be brief if a formal report will be available within a few hours. However, if the typed report is not likely to be on the chart the same day, a more detailed summary of the study should be written in the chart at the conclusion of the procedure. In all cases, pertinent findings should be communicated to the referring physician in a timely manner.

    b. All patients should be observed during the post-procedure period. The length of this period will depend on the type and extent of the procedures and the patient's medical condition.

    c. Qualified, trained personnel should periodically monitor the patient's vascular access during the initial post-procedure period.

    d. The operating physician or a qualified designee should evaluate the patient during the postoperative period. If moderate sedation was administered prior to and during the procedure, recovery from the sedation must be documented. The physician or designee should be available for continuing care during hospitalization and after discharge. The designee may be another physician or a nurse. See the ACR–SIR Practice Parameter for Sedation/ Analgesia [64].

Informed consent must be in compliance with all state laws and the ACR–SIR Practice Parameter on Informed Consent for Image-Guided Procedures [65].

F. Selection Criteria for Short-Term Observation

The duration of post-procedure observation is variable and depends on the type and extent of the procedure and the condition of the patient.

**Documentation**

Documentation and reporting should be in accordance with the ACR–SIR–SPR Practice Parameter for the Reporting and Archiving of Interventional Radiology Procedures [66].

**REFERENCES**


ACR-SIR PRACTICE PARAMETER FOR ENDOVASCULAR MANAGEMENT OF THE THROMBOSED OR DUSFUNCTIONAL DIALYSIS ACCESS, Revised 2017 (Resolution 13)*

| SUBJECT: ENEMA EXAMINATION IN ADULTS | REFERENCE # |
|---|---|
| | PAGE: 1 OF: 7 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 09/2021 |
| | REVISED: MM/YYYY |

**PURPOSE**

The purpose of this policy is to provide guidance in performing high quality enema examinations in adults.

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**POLICY**

It is the policy of Modoc Medical Center to provide enema examinations in adults in concordance with the parameters as set forth by the American College of Radiology (ACR).

**PROCEDURE**

**Introduction**

The purpose of this examination is to establish the presence or absence of disease and its nature by distending the colonic lumen and the coating of the mucosa of the colon. The goal is to obtain a diagnostic quality study by visualizing the colon in multiple projections with the minimum radiation dose necessary.

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**Indications**

The indications for a fluoroscopic contrast enema examination include, but are not limited to:

- Diverticular disease
- Inflammatory bowel disease
- Colon cancer screening
- Incomplete colonoscopy
- Distal intestinal obstruction syndrome or meconium ileus equivalent in cystic fibrosis patients
- Evaluation of questionable findings on other imaging examinations such as computed tomography
- Colonic volvulus
- Assessing integrity of rectal anastomosis prior to take down of diverting colostomy or ileostomy
- Assessment of possible colonic fistulae
- Diseases involving the colon with familial inheritance pattern
- Perioperative evaluation of the colon for surgical planning and follow-up
- History of previous colon polyp or neoplasm
- Bowel fistulas

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The fluoroscopic contrast enema may also be helpful in diagnosing almost all disease states intrinsically or extrinsically affecting the colon.

Pertinent symptoms for the fluoroscopic contrast enema examination include, but are not limited to:

- Abdominal pain
- Diarrhea
- Constipation
- Other changes is bowel habits
- Gastrointestinal bleeding (only if colonoscopy is not available or cannot be performed)
- Anemia (only if colonoscopy is not available or cannot be performed)
- Abdominal masses
- Intestinal obstruction
- Weight loss
- Fever or sepsis

The possible contraindications for a fluoroscopic contrast enema examination include, but are not limited to:

- Unexplained pneumoperitoneum or pneumoretroperitoneum
- Acute colitis, including toxic megacolon
- Combative, uncooperative patient
- In the setting of recent endoscopic intervention, there should be a 7 day interval between the fluoroscopic contrast enema examination and the performance of large forceps biopsy through a rigid colonoscope or proctoscope, snare polypectomy, hot biopsy, or biopsy of any size or type in infectious or active inflammatory bowel disease.

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**Specifications of Examination**

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The written or electronic request for a fluoroscopic contrast enema examination should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation.

Documentation that satisfies medical necessity includes, but not limited to:

- Signs and symptoms
- Relevant history (including known diagnosis)
- Additional information regarding the specific reason for the examination or a provisional diagnosis would be helpful and may at times be needed to allow for the proper performance and interpretation of the examination.

The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or question and consistent with the state scope of practice requirements. (ACR Resolution 35, adopted in 2006-revised in 2016, Resolution 12-b)

Colon Preparation

- The preparation should consist of an effective combination of dietary restrictions, hydration, osmotic laxatives, contact laxatives, and cleansing enemas. These preparations are intended to rid the colon of fecal material and excess fluid as much as possible. In appropriate clinical situations, preparation may be limited and, in the setting of suspected bowel obstruction or colonic volvulus, should be omitted. There is also no routine need for colonic preparation in case of existing ileal or colonic diversion.

Examination Preliminaries

- An appropriate medical history should be available, including results of laboratory tests and imaging, endoscopic, and surgical procedures as applicable.
- The enema tip should be inserted by a physician or a trained assistant (eg, technologist, radiologist assistant, nurse, or physician assistant). A retention cuff may be used. It should be inflated carefully in accordance with the manufacturer's guidelines and under fluoroscopic guidance and after instillation of a small amount of barium for better visualization of the balloon whenever possible. A retention cuff should be avoided for recent low rectal anastomoses (in rare instances it may be inflated under extreme care and under strict fluoroscopic guidance to avoid anastomotic dehiscence), following pelvic radiation therapy and in chronic inflammatory bowel disease.
- Medications (eg, glucagon) may be administered to facilitate the examination

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Examination Technique

The following fluoroscopic contrast examination procedures should be tailored by the physician to the individual patient, as warranted by clinical circumstances and the condition of the patient, to produce a diagnostic quality examination.

- Single contrast examination

  A sufficient volume of an appropriate low density (ie, 15% to 25% weight/volume) barium suspension or water-soluble iodinated contrast should be administered to provide colonic distention.

  In early postsurgical patients, if perforation is suspected or if preparation is contraindicated or not possible for other reasons, water-soluble contrast should be used. Blind-ending colonic segments (eg, rectal remnant following the Hartmann procedure or J-pouch) may also be studied with water-soluble contrast. Water-soluble contrast contains 300 to 700 mg of iodine/mL, equivalent to 60% to 76% density. It may be diluted with water to 20% to 30%, depending on the indication. Water-soluble contrast is also recommended in patients with suspected colonic obstruction or volvulus.

- For barium studies, kilovoltage of 100 kVp or greater should be used (depending on patient size) during image acquisition. A lower kVp of 70 to 80 optimizes iodine contrast visualization on water-soluble contrast studies.

- Manual or mechanical compression should be applied as appropriate to all accessible segments of the colon during fluoroscopy.

- Spot large-format images should demonstrate all fluoroscopically identified suspicious findings as well as those segments of the colon in profile that may not routinely be demonstrated on overhead projections.

- Images should include frontal and oblique views of the entire filled colon, an angled-beam view of the sigmoid colon, and a lateral view of the rectum. Whenever possible, the lateral rectal view should include an image obtained after the enema tip has been removed.

- Post-evacuation images should be obtained when possible and should always be obtained in the evaluation for leak.

- The quality assurance indicators specific to the single contrast enema examination are:

  - Compression views may be helpful
  - Each accessible segment of the colon is seen during fluoroscopy
  - Each segment of the entire colon should be seen without overlap, if possible
  - Imaging technique should optimize visualization of all segments of the colon

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- Complete visualization of the entire colon should be ensured through demonstration of the ileocecal valve, terminal ileum, or appendix

- In the setting of distal intestinal obstruction syndrome/meconium ileus equivalent in patients with cystic fibrosis, a water-soluble contrast enema examination can demonstrate the level of the obstruction and possibly be therapeutic. The water-soluble contrast material enema procedure has became an accepted supplement to other nonsurgical therapeutic measures, and multiple enemas with water-soluble contrast agents over several days may be required to mobilize the tenacious stool plugs. Repeat enemas in this setting may be performed without fluoroscopic guidance.

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Double Contrast Barium Examination

- Commercially prepared high density (80% weight/volume or greater) barium suspension is used
- Kilovoltage of 90 kVp or greater, depending on the patient's size, is used
- Barium suspension and air are introduced under fluoroscopic control to achieve adequate coating and distention of the entire colon
- The entire colon should be examined fluoroscopically during the course of the examination. Images should be taken to attempt to demonstrate all segments of the colon in double contrast.
- Suggested views include the following:
    - Spot images of the rectum, sigmoid colon, flexures, and cecum in double contrast.
    - Large format images, including prone and supine views on the entire colon, an angled-beam view of the sigmoid colon, and a lateral view of the rectum, either cross table lateral or vertical beam, preferably with the enema-tip removed
    - Both lateral decubitus views of the entire colon using a horizontal beam (a wedge filter is recommended)
    - Erect or semierect flexure views, and post-evacuation views, when possible, may be helpful
- The quality assurance indicators specific to the double contrast barium enema examination are as follows:
    - Adequate barium coating of the entire colon has been achieved
    - The colon is well distended with air
    - Each segment of the colon is seen in double contrast on at least 2 images taken in different positions, whenever possible

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  - Complete visualization of the entire colon is ensured through demonstration of the ileocecal valve, terminal ileum, or appendix.

- Colostomy or colonic mucous fistula fluoroscopic contrast enema

  - These procedures are indicated when disease is suspected involving a colostomy or colonic mucous fistula or to delineate anatomy in preparation for colostomy revision/takedown. The ostomy should be examined by the radiologist or a trained assistant. An appropriate device should be inserted into the ostomy. Examples of appropriate devices include, but are not limited to:

    - Foley catheter
    - Red rubber catheter
    - Cone colostomy tip

    If a Foley catheter is used, the balloon should be inflated on the outside of the stoma and held firmly against the stoma by the patient's gloved hand. Alternatively, the Foley balloon may be inflated under care inside the stoma and under strict fluoroscopic guidance to avoid injury.

  - Low density barium or water-soluble contrast should be instilled into the ostomy through the device under fluoroscopic observation. The examination should attempt to answer the clinical question and should be recorded on spot radiographs.

Quality Assurance

The following quality assurance indicators should be applied as appropriate to all fluoroscopic contrast enema examinations:

- Colon preparation should be adequate for the clinical indication
- When examinations are completed, patients should be held in the fluoroscopic area until the physician has reviewed the images
- An attempt should be made to resolve questionable radiographic findings before the patient leaves. Repeat fluoroscopy of the patient should be performed as necessary.

The following steps are suggested for a quality assurance and continuing quality improvement program:

- Correlation of radiologic, endoscopic, and pathologic findings
- In high volume centers, determination of detection rates for colorectal cancer and polyps measuring 1 cm or greater.

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**REFERENCES**


ACR PRACTICE PARAMETER FOR THE PERFORMANCE OF FLUOROSCOPIC CONTRAST ENEMA EXAMINATION IN ADULS, Revise 2018 (Resolution2)*


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| SUBJECT: ESOPHAGRAMS AND UPPER GASTROINTESTINAL EXAMINATIONS IN INFANTS AND CHILDREN | REFERENCE # |
|---|---|
| DEPARTMENT: RADIOLOGY | PAGE: 1 OF: 6 |
| | EFFECTIVE: 08/2024 |
| | REVISED: MM/YYYY |

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## PURPOSE

The purpose of this policy is to provide guidance in performing high quality esophagrams and upper gastrointestinal examinations in infants and children.

## POLICY

It is the policy of Modoc Medical Center (MMC) to provide esophagrams and upper gastrointestinal (UGI) examinations in concordance with the parameters as set for by the American College of Radiology (ACR).

## PROCEDURE

### I. Introduction

This practice parameter was revised collaboratively by the American College of Radiology (ACR) and the Society for Pediatric Radiology (SPR).

Radiographic examination of the esophagus and the upper gastrointestinal (GI) tract by single-contrast or double-contrast technique is a proven method to establish the presence or absence of disease and to define the nature and extent of disease with a diagnostic-quality study using the minimum radiation dose necessary. The following outline indicates key elements in the performance of single-contrast and double-contrast (biphasic) esophagrams and upper GI examinations in infants and children. Typically, single-contrast technique is used in infants and children; occasionally, double-contrast technique is indicated.

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### II. Indications and Contraindications

A. Esophagram

1. Pertinent history, signs, and symptoms including, but not limited to, the following:
   a. Dysphagia
   b. Odynophagia
   c. Noncardiac chest pain
   d. Recurrent pneumonia or chronic tracheobronchial inflammation

2. Evaluation of suspected or known conditions, including, but not limited to, the following:
   a. Great-vessel anomalies
   b. H-type tracheoesophageal fistula
   c. Evaluation following repair of esophageal atresia and/or tracheoesophageal fistula
   d. Esophageal strictures
   e. Motility disorders
   f. Esophagitis
   g. Foreign bodies
   h. Pneumomediastinum with clinical/imaging findings of esophageal injury
   i. Suspected esophageal perforation

j. Neoplasm
k. Varices

B. Upper GI Examinations

1. Pertinent history, signs, and symptoms including, but not limited to, the following:
   a. Vomiting
   b. Abdominal pain
   c. Weight loss or failure to thrive
   d. Congenital syndromes or anomalies associated with intestinal malrotation
   e. Chronic or recurrent respiratory disease, including cough
   f. Preoperative evaluation prior to gastrostomy tube placement
   g. Postoperative evaluation such as to exclude leak or obstruction

2. Evaluation of suspected or known conditions including, but not limited to, the following:
   a. Intestinal malrotation anomalies
   b. Hiatal hernia
   c. Gastritis or duodenitis
   d. Pyloric stenosis when ultrasound is not available
   e. Gastric outlet or upper intestinal obstruction
   f. Peptic ulcer disease
   g. Duodenal laceration or intramural hematoma
   h. Additional hernias (diaphragmatic, paraesophageal), including recurrent diaphragmatic hernia
   i. Neoplasms

In reviewing indications for a contrast study of the stomach and duodenum, alternative imaging and non-imaging methods of examining these structures should be considered.

## III. Specifications of the Examination

The written or electronic request for pediatric contrast esophagram or upper gastrointestinal examination should provide sufficient information to demonstrate the medical necessity of the examination and allow for the proper performance and interpretation of the examination.

Documentation that satisfies medical necessity includes 1) signs and symptoms and/or 2) relevant history (including known diagnoses). The provision of additional information regarding the specific reason for the examination or a provisional diagnosis would be helpful and may at times be needed to allow for the proper performance and interpretation of the examination.

The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or question and consistent with the state scope of practice requirements. (ACR Resolution 35 adopted in 2006 – revised in 2016, Resolution 12-b)

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A. Patient Selection

1. For a routine esophagram, the patient should not have ingested anything by mouth for a minimum of 2 to 3 hours. For upper GI examinations, oral feeding should be withheld for a time period appropriate for the patient's age: approximately 2 to 3 hours for neonates and young infants and 4 hours for older infants and children. Adolescents should fast for at least 6 to 8 hours prior to the examination. Emergency examinations may be performed with shorter fasting times as determined by the radiologist in concert with the referring physician.

B. Examination Preliminaries

1. An appropriate medical history should be available, including results of laboratory tests and imaging, endoscopic, and surgical procedures as applicable.

2. Use of a child life specialist and/or parent may be helpful in enabling young patients to cooperate for the examination. Immobilization devices may be helpful in patient positioning. These devices may help limit repeat radiographic exposures and unnecessary radiation dose to patients, parents, technologists, and other personnel.

3. Routine scout imaging prior to upper GI series in the outpatient setting, unless specifically requested by the ordering physician, can be replaced by a brief, initial fluoroscopic assessment, as the risk of radiation outweighs the benefit because the addition of a clinically significant finding that would change management is unlikely in outpatients. A scout image should be obtained for inpatients if there has been no recent radiograph as well as in postoperative patients and in those with an acute abdomen. Preliminary images should be assessed for calcifications, skeletal abnormalities, anomalies of situs, bowel gas pattern, pneumoperitoneum, residual intraluminal contrast, evidence of prior surgery, catheters, and monitoring devices.

4. A scout image of the chest should be assessed for pneumomediastinum and pleural effusion, especially in cases where an esophagram is performed. A dependent image (upright or decubitus views) should be performed if the patient has an underlying condition that might predispose to GI tract perforation. In the absence of preceding abdominal imaging, scout images are especially helpful in the workup of neonatal bowel obstruction because they may influence the choice of initial fluoroscopic study and GI contrast (eg, upper GI for proximal bowel obstruction and contrast enema for distal small bowel or colonic obstruction).

C. Examination Technique

The examination procedure should be tailored by the radiologist to the individual patient to produce a diagnostic quality examination as warranted by clinical circumstances and the condition of the patient. Preliminary findings during the examination may indicate a need to alter technique in subsequent portions of the examination.

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The contrast medium should be delivered in a manner that is appropriate for the patient's age. Neonates and infants may be fed contrast from a baby bottle with a nipple. Alternatively, an

orogastric tube passed through a nipple may be used to deliver the contrast into the mouth or an enteric tube may be placed directly into the stomach tube placement should be performed under fluoroscopic control to ensure correct positioning. Older infants able to bottle feed themselves may be allowed to do so. In the older child, the contrast may be given by straw, taken directly from a cup, or administered by syringe; flavoring agents may be added. A gastrostomy tube or jejunostomy tube may be used as appropriate.

In neonates or young infants with a history of bilious emesis, a nasogastric tube can be placed with the tip in the distal stomach so that a controlled upper GI with a small amount of contrast and air can effectively evaluate for malrotation and/or volvulus using the least amount of contrast and fluoroscopic time.

The amount and type of contrast material given are determined by the child's age and the indications for the study. Barium is the preferred contrast medium for most studies. Nonionic, isosmotic, or iodinated contrast media may be used to assess the integrity of an esophageal anastomosis, diagnose duodenal obstruction or perforation, or diagnose intestinal malrotation/volvulus in select critically ill patients. Isosmotic or near-isosmotic solutions are important in cases in which there is risk of aspiration [8], particularly in critically ill premature neonates and infants to avoid serum electrolyte shifts. Diatrizoic acid, a very highly osmotically active water-soluble contrast agent, should not be administered in neonates and young infants as this patient population has a higher risk of gastroesophageal reflux and aspiration. Diatrizoic acid may result in pulmonary edema and chemical pneumonitis.

Sufficient still images and/or fluoroscopic image clips should be recorded to adequately evaluate normal anatomy and characterize abnormalities. Anteroposterior and lateral projections of all anatomic structures should be obtained and complemented by oblique images when indicated for adequate assessment. Although fluoroscopic store/last image-hold images do not have the same resolution as spot images, they may be adequate for documentation, depending upon the study circumstances, and can markedly reduce patient dose compared with spot images.

1. Single-contrast esophagram

    a. The anatomic structure and motility of the entire esophagus should be evaluated fluoroscopically. Appropriate images should be obtained to document normal and abnormal findings. The examination is optimally performed in the lateral and anteroposterior projections, with visualization of the nasopharynx to the gastric fundus.

    b. Esophagrams performed in infants with a suspected H-type tracheoesophageal fistula are optimally performed with the infant in a left or right lateral position, with full distension of the esophagus, achieved with normal drinking in patients who drink contrast readily. In patients who do not drink sufficient contrast to distend the esophagus, the contrast can be administered in small amounts at various points in the esophagus from the level of the carina to the level of the thoracic inlet through a small feeding tube placed prior to the examination. This requires careful fluoroscopic monitoring of the contrast as it exits the tube to prevent

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aspiration. If no fistula is identified on the early images, the study may be completed with standard oral administration of contrast. Fluoroscopic observation from hypopharynx to carina in the lateral view throughout contrast instillation usually will allow differentiation of contrast in the trachea due to aspiration versus a fistula.

c. Imaging of the esophagus should include an assessment of swallowing in the lateral view, especially if the patient has symptoms suggesting swallowing dysfunction, such as coughing and choking and/or gagging during feeding. This should include imaging from the base of the tongue through the lower esophageal sphincter. Modified barium swallow is a more detailed evaluation of the oral, pharyngeal, and upper esophageal phases of swallowing with variable consistency materials, usually performed in conjunction with a speech pathologist or occupational therapist. Please refer to the ACR-SPR Practice Parameter for the Performance of the Modified Barium Swallow for additional information.

2. Double-contrast (biphasic) esophagram

Double-contrast esophagrams are seldom performed in pediatric patients, but they may help to evaluate mucosal integrity in adolescents. (See the ACR Practice Parameter for the Performance of Esophagrams and Upper Gastrointestinal Examinations in Adults, section IV.C.)

3. Single-contrast upper GI examination

a. Fluoroscopic assessment of swallowing and the anatomic structure and motility of the entire esophagus, stomach, and duodenum should be performed, and appropriate images should be obtained to document normal and abnormal findings. Suggested images include frontal and lateral views of the barium distended esophagus, stomach, and duodenum and images of the partially filled esophagus. Initial passage of contrast through the duodenum should be observed directly with fluoroscopy to confirm the position of the duodenojejunal junction (DJJ). This can be documented with serial multiple fluor capture images or fluoroscopy video capture where available. On the first upper GI examination in an infant or child, the position of the DJJ should be documented on both frontal and lateral positions to diagnose or exclude malrotation. The lateral view is important to ensure the retroperitoneal position of the normally rotated duodenum and the normal height of the DJJ at the level of the duodenal bulb; additionally, the straight anteroposterior (AP), non-obliqued frontal view ensures the normal position of the DJJ at or to the left of the left pedicle of the vertebral bodies and at a height approximately at the level of the duodenal bulb.

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b. Images of gastroesophageal reflux should be recorded by last image-hold if reflux occurs during the examination. However, because reflux is a physiologic phenomenon and more sensitive tests exist, neither provocation of reflux nor prolonged fluoroscopic monitoring for detection is recommended.

c. A final image documenting gastric emptying and the progress of contrast through small-bowel loops may be obtained at the conclusion of the examination.

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4. Double-contrast (biphasic) upper GI examination

   Double-contrast upper GI examinations are seldom performed in pediatric patients, but they may help to evaluate mucosal integrity in adolescents and to detect subtle strictures because of the better esophageal distention that can often be achieved with the gas produced by swallowing Sodium Bicarbonate, Citric Acid, and Simethicone Effervescent Granule Pkt (e.g., EZ gas crystals). (See the ACR Practice Parameter for the Performance of Esophagrams and Upper Gastrointestinal Examinations in Adults [11], section IV.C.)

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5. Quality control indicators

   The following quality control indicators should be applied to all esophagram and upper GI examinations:

   a. When examinations are completed, patients should be held in the fluoroscopic area until the physician has reviewed the images.

   b. An attempt should be made to resolve questionable radiologic findings before the patient leaves. Repeat fluoroscopy should be performed as necessary.

   c. Correlation of radiologic, endoscopic, surgical, and pathologic findings is valuable for quality improvement whenever feasible.

## IV. Documentation

An official interpretation (final report) of the examination should be included in the patient's medical record. Reporting should be in accordance with the ACR Practice Parameter for Communication of Diagnostic Imaging Findings.

## REFERENCES


ACR-SPR PRACTICE PARAMETER FOR THE PERFORMANCE OF CONTRAST ESOPHAGRAMS AND UPPER GASTROINTESTINAL (UGI) EXAMINATIONS IN INFANTS AND CHILDREN, Revised 2020 (Resolution 46)*

| SUBJECT: ESOPHAGRAMS AND UPPER GASTROINTESTINAL (UGI) EXAMINATIONS IN ADULTS | REFERENCE # |
|---|---|
| | PAGE: 1 OF: 7 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 08/2024 |
| | REVISED: MM/YYYY |

**PURPOSE**

The purpose of this policy is to provide guidance in performing high quality esophagrams and upper gastrointestinal (UGI) examinations in adults.

**POLICY**

It is the policy of Modoc Medical Center to provide esophagrams and UGI examinations in adults in concordance with the parameters as set for by the American College of Radiology (ACR).

**PROCEDURE**

- Post-operative assessment: to assess for leak or abnormal connection to bowel, such as a fistula, and treatment of achalasia or other severe motility disorders.

**Specifications of the examination**

The written or electronic request for an esophagram and UGI examination should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation.

Documentation that satisfies medical necessity include, but not limited to:

- Signs and Symptoms
- Relevant history (including known diagnoses)
- Additional information regarding the specific reason for the examination or a provisional diagnosis would be helpful and may at times be needed to allow for the proper performance and interpretation of the examination

The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or question and consistent with the state scope of practice requirements. (ACR Resolution 35, adopted in 2006-revised in 2016, Resolution 12-b).

Patient Preparation

For a routine esophagram, the patient should be instructed to refrain from taking anything by mouth for a minimum of two hours before the procedure. For an UGI examination, the patient should be instructed to refrain from taking anything by mouth after midnight the night before or at least six hours before the procedure. Examinations may be performed with shorter fasting times as clinically indicated. Patients may generally take scheduled medications on the morning of the examination with a small cup of water.

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**Deleted: Introduction¶**
An esophagram is the radiologic examination of the esophagus guided by fluoroscopy. It includes an evaluation of the swallowing, esophageal emptying, when using timed barium swallow (TBS), esophageal morphology and motility, evaluation of the gastroesophageal (GE) junction, and assessment for gastroesophageal reflux (GER). An upper gastrointestinal (UGI) series is the radiologic contrast examination of the esophagus (identical to the routine esophagram), stomach, and duodenum guided by fluoroscopy.¶
Single contrast and double contrast (biphasic) examinations are proven and useful procedures for evaluating the esophagus and the UGI tract. Their goal is to establish the presence or absence, nature, and extent of disease with a diagnostic quality study, using the minimum radiation dose necessary. The following practice parameters are for performing these examinations in adults.¶
**Indications and Contraindications**

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Indications for an esophagram¶
Pertinent history and symptoms for an esophagram include, but are not limited to:¶
Dysphagia and atypical chest pain¶
Symptomatic or suspected GER¶
Suspected foreign body in the esophagus¶
The esophagram helps diagnose and evaluate many conditions including, but not limited to:¶
Suspected or known motility disorders. The examination should include a TBS in most patients with suspected or known motility disorder, especially achalasia, to assess ...

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**Deleted:** Indications for an UGI examination¶
History and symptoms for an UGI examination include, but are not limited to:¶
Symptomatic or suspected GER (

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**Deleted:** i.e., dysphagia, chest pain, heartburn, or regurgitation)¶
Abdominal pain¶
Epigastric distress or discomfort¶ ...

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Examination Preliminaries

An appropriate medical history should be available, including the findings of laboratory tests and imaging and the results of endoscopic and surgical procedures as applicable.

A preliminary ("scout") image of the abdomen is often useful, particularly in postsurgical patients for delineation of staple lines. A preliminary image of the chest may be obtained prior to an esophagram, particularly if there is history of prior intervention (stent, surgery, or endoscopic treatment).

Examination Technique

The physician should tailor the examination procedure to the individual patient, as warranted by clinical circumstances and the condition of the patient to produce a diagnostic quality examination. Images should be taken with an appropriate field of view, manually collimated as much as possible, so that radiation exposure to the patient is limited.

- Single Contrast Esophagram
  - Using a low density (60% weight per volume [weight/volume]) barium suspension, the anatomic structure and motility of the entire esophagus should be evaluated fluoroscopically. Appropriate spot images should be obtained to document normal and abnormal findings. The examination should include barium distended and, when appropriate, collapsed mucosal relief views of the esophagus, including fluoroscopic evaluation of motility. This is optimally performed with the patient in the prone or prone right anterior oblique (RAO) position, depending on the patient's condition and the presence of risk factors, such as the potential for aspiration. Specific, appropriate small field-of-view (FOV) images of the esophagogastric junction should also be included.
  - With the patient in the semi prone position (RAO), using single, small swallows, esophageal motility should be assessed. Four to five separate swallows of barium should be observed, with each swallow separated by 25 to 30 seconds.

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  - Fluoroscopic assessment for GER should be performed. This may include patient, motion, Valsalva maneuver, legs raised, and water siphon test.
  - If the patient has symptoms suggesting oropharyngeal or swallowing dysfunction, the rapid sequence images or video recording for evaluating the pharynx and cervical esophagus should be considered.
  - For a patient with solid food dysphagia, a barium tablet or other solid food bolus should be given whenever possible, and passage should be observed with the patient in an upright position. Water or barium may be given to assist passage. Any symptoms the patient experiences from ingesting the solid material should be reported. Care should be taken not to bias or lead the patient. Before starting the examination, many experienced fluoroscopists will ask the patient to report any symptoms experienced during the examination. In some patients where the dysphagia is only to a

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specific food (bolus specific dysphagia), the patients should be requested to bring the offending food during the examination; otherwise, a re-evaluation with the specific food should be recommended. If the patient has achalasia, the barium tablet will obstruct at the lower esophageal sphincter.

- For a patient with liquid dysphagia, one should strongly consider starting the examination with TBS. Liquid dysphagia is almost always caused by a severe motility disorder, such as/most often achalasia. If the patient has achalasia, flooding the poorly emptying esophagus with gas producing crystals and high-density barium may compromise the remainder of the examination. Furthermore, most gastroenterologists and esophageal surgeons request the timed study for assessing the effect of treatment. Once the barium has emptied from the esophagus, a motility examination can be performed to confirm the presence or absence of dysmotility.

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- At the end of the fluoroscopic examination, "overhead" images can be obtained as part of the routine protocol when using non-remote control fluoroscopic units (conventional table side control). Overhead images are taken while the patient is drinking low density barium in the RAO position.

- The quality control indicators specific to this study are, but not limited to:

    - Fluoroscopic observation of the entire esophagus while distended with barium, with appropriate spot images to document normal and abnormal findings.

    - Sufficient radiographic technique to penetrate the barium filled esophagus on images.

    - Visualization of the GE junction to exclude local pathology.

    - Evaluation of the entire esophagus during single swallows to assess esophageal motility.

    - In patients with liquid dysphagia or in patients with suspected dysmotility disorder, esophageal emptying should be assessed with TBS.

    - In cases with penetration or frank aspiration, the study should be terminated and a modified barium swallow study suggested.\

- Double Contrast (biphasic) Esophagram

    - An effervescent agent that releases carbon dioxide into the lumen of the stomach should be administered to provide distention if the patient can tolerate this agent.

    - Fluoroscopic observation of the esophagus and gastric cardia should be performed in double contrast using a high density (210% -250% weight/volume) barium suspension with the patient in an upright oblique position. Appropriate spot images should be taken to document normal and abnormal findings.

- Fluoroscopic observation of esophageal motility and the distended esophagus should be performed using the single contrast technique while the patient is drinking barium and is in a prone oblique position. Appropriate spot images should be obtained as described previously.
- Fluoroscopic assessment for GER should be performed (see above).
- If the patient has symptoms suggesting a swallowing dysfunction abnormality, then rapid sequence imaging or video recording for evaluating the pharynx and cervical esophagus should be considered.
- For a patient with solid food dysphagia, a barium tablet or other solid food bolus may be given whenever possible, and passage should be observed with the patient in an upright position. Water or barium may be given to assist passage. Symptoms should be reported.
- For a patient with liquid dysphagia, one should strongly consider not performing a double contrast (biphasic) esophagram and start the examination with a TBS (see above). If the effervescent agent and high-density barium is given to a patient with achalasia, the patient may aspirate or immediately regurgitate the ingested agents as the esophagus is often partially or completely filled with foam, saliva, fluid, and/or food. Furthermore, once these agents are ingested, any subsequent examination that day will be hampered.
- The quality control indicators specific to this study are as follows:
    - Fluoroscopic observation of the entire esophagus by both single contrast and double contrast techniques, with appropriate spot images to document normal and abnormal findings.
    - A double contrast view of the gastric cardia and fundus to exclude pathologic conditions in this adjacent anatomic region.
    - Sufficient radiographic technique to penetrate the barium filled esophagus.

- Single Contrast UGI Examination
    - Fluoroscopic assessment of the morphology and function of the entire esophagus, stomach, and duodenum should be performed. Although the protocol for a single contrast examination may be tailored to the specific indication, it is best to start the patient in the upright position. The stomach should be palpated after the patient has ingested two to three swallows of barium. Palpation can be achieved with a lead gloved hand, paddle, or spoon. This process can identify mucosal abnormalities, including ulcers and masses.
    - The patient should be rotated, keeping the portion of the stomach palpated overlying the spine, allowing for compression of the stomach between the compressing device or gloved hand and the spine. After palpation and rotation, more barium should be ingested to distend the stomach to assess for contour abnormalities and extrinsic masses.

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- After this point of the examination, the patient is placed in the horizontal position, where other portions of the stomach are assessed. Suggested views include barium distended and, when appropriate, collapsed mucosal relief views of the esophagus, as well as barium distended, mucosal relief, and/or compression views of the stomach and duodenum. Many fluoroscopists place the patient in the prone position, placing a paddle underneath the epigastric area.

- Insufflation of the paddle balloon will compress the stomach and facilitate identification of mucosal abnormalities. At the end of the examination, it is important to examine the gastric fundus in the barium-filled and gas-filled views. Gas filled views are facilitated by placing the patient right side down/left side up in the horizontal position, or 45° erect positions. Sometimes, maximum gas distention is achieved with the patient totally upright.

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- A sufficient number of spot images should be obtained to adequately document normal and abnormal findings. Suggested views include barium distended and, when appropriate, collapsed mucosal relief views of the esophagus as well as barium distended, mucosal relief, and/or compression views of the stomach and duodenum.

- At the end of the examination, overhead images can be obtained as part of the routine protocol when using non-remote control fluoroscopic units. (Overhead images are taken posteroanterior (PA), RAO, and right lateral positions).

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- The quality control indicators specific to this study are radiographic technique and graded compression that permit radiographic penetration of the barium suspension in the areas being. Examined.

- Double Contrast (biphasic) UGI Examination

  - A hypotonic agent may be used to induce gastric and duodenal hypotonia.

  - An effervescent agent that releases carbon dioxide into the lumen of the stomach should be administered to provide distention.

  - After ingestion of high-density barium, fluoroscopy should be used to visualize all segments of the esophagus, stomach, and duodenum in double contrast. Appropriate spot images should be obtained to document normal and abnormal findings.

  - Fluoroscopy may be used to evaluate the esophagus, stomach, and duodenum after ingestion of low-density barium without and with palpation and rotation (see above). Additional spot images may be used to document normal and abnormal findings. Manual or mechanical compression of the accessible portions of the stomach and duodenum may be used.

  - At the end of the examination, overhead images can be obtained as part of the routine protocol when using non-remote control fluoroscopic units (see above).

  - The quality control indicators specific to this study are:

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- Adequate barium coating of the esophagus, stomach, and duodenum.
- Adequate gaseous distention of the esophagus, stomach, and duodenum. Double contrast views may be supplemented by prone and/or upright compression views of the stomach and the duodenum.
- If quality control indicators demonstrate that adequate barium coating of the stomach and duodenum cannot be achieved, compression views should be included in the examination to display as much anatomy and pathology as possible.

- Water-Soluble Contrast Examination

Water-soluble contrast may be preferred to barium when there is concern for subdiaphragmatic bowel perforation into the peritoneal cavity and in the patients who are not a risk for aspiration when there is concern for tracheoesophageal communication.

If the patient is at risk for aspiration, iso-osmolar nonionic, or low-osmolar contrast agents are recommended for use by many. However, in patients with possible esophageal perforation who are at risk for aspiration, barium is used by some, as there has been no proven harm related to the presence of extravasated barium within the mediastinum.

- Water-soluble contrast in concentration sufficient for fluoroscopic and plain radiographic visualization should be used. The risks of aspiration should be considered prior to the study.
- Fluoroscopic observation of the esophagus, stomach, and duodenum should be performed, with specific attention to any areas of suspected leakage.
- If no leak is identified or the study is inconclusive in patients with possible esophageal leak, a single contrast barium examination may provide additional diagnostic information. In addition, prone, supine, and both lateral decubitus positioning of the patient may be helpful to detect a leak.
- Appropriate spot images should be taken to document normal and abnormal findings. At the end of the examination, overhead images can be obtained as part of the routine protocol when using non-remote control fluoroscopic units.

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- Portable Technique

Portable technique may be used only when the patient is too unstable for examination in the fluoroscopy suite and when portable technique will not compromise examination accuracy:

- The images must be reviewed by the radiologist prior to using the tube. It is important to obtain a plain radiograph before injecting the contrast. After contrast injection, some sites obtain both a frontal and a cross table lateral image of the abdomen, which provide orthogonal images for detection of potential leak(s) and determine the tube position. Good quality, portable, cross table

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lateral images, without Bucky grid, are a challenge for a technologist. Dedicated initial evaluation in the fluoroscopy suite should be encouraged assuming the patient is medically stable for such an examination.

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- The following quality control indicators should be applied to all esophagram and UGI examinations:

  -When examinations are completed, patients should be held in the fluoroscopic area until the images have been reviewed by the physician.

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  An attempt should be made to resolve questionable radiographic findings before the patient leaves. If necessary, repeat targeted fluoroscopy should be performed for problem solving.

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  Radiologic, endoscopic, and pathologic findings should be correlated whenever possible.

**REFERENCES**


ACR PRACTICE PARAMETER FOR THE PERFORMANCE OF ESOPHAGRAMS AND UPPER GASTROINTESTINAL (UGI) EXAMINATIONS IN ADULTS, Revised 2019 (Resolution 8) *


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| SUBJECT: IMAGE-GUIDED EPIDURAL STEROID INJECTION | REFERENCE # |
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| | PAGE: 1 OF: 17 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 08/2024 |
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**PURPOSE**

The purpose of this policy is to provide guidance in performing high quality image-guided epidural steroid injections.

**TERMS/DEFINITIONS**

*Epidural space:*
The epidural space is essentially continuous from the craniocervical junction to the second sacral segment, with some anatomic compartmentalization by dorsal median connective tissue [7]. It is filled with compressible fat and venous structures [8]. The epidural space can be accessed using different approaches (e.g., caudal, interlaminar, and transforaminal). Once the needle is in the epidural space, the medication is injected and epidurography with contrast media is usually performed to verify the proper needle position, and subsequently navigates cranially and caudally within the epidural space. ESIs are performed in the cervical and lumbar spine and less often in the thoracic spine.

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*Interlaminar ESI:*
The epidural needle can be advanced in the midline between adjacent spinous processes or paramidline between the target laminae to traverse the ligamentum flavum and enter the dorsal epidural space. Although usually possible in all cases, in those patients with ossification of the supraspinous ligament or Baastrup disease, the paramidline approach may be preferred. Blunt-tip needles have been advocated for overall safety (e.g., decrease risk of dural puncture [9]). Bevel tip orientation may result in inadvertent nonepidural needle penetration during fluoroscopically guided lumbar interlaminar ESI (ILESI), particularly if the needle is directed toward the superior lamina approach and the bevel tip is caudally orientated [10].

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During an ILESI, inadvertent intrafacet injection [11] can occur because of needle entry into the retrodural space of Okada, an anatomic space located dorsal to the ligamentum flavum that allows communication between bilateral facet joints and the interspinous bursa at a single spinal level [12,13]. Needle entry into this space can mimic the loss of resistance normally felt during entrance into the epidural space. However, this nontarget delivery of medication results in decreased effectiveness of the procedure as the medication is not treating the intended pathology. The incidence of inadvertent intrafacet injection during attempted ILESI by using fluoroscopic guidance is reportedly 0.75% to 1.2% [14,15], which may be an underestimation, whereas that of ILESI performed under CT guidance is 7.5% [15]. Recognizing this false-positive position is important for redirection and appropriate needle tip placement. As such, CT-guidance can be of benefit in situations where conventional fluoroscopic guidance may be challenging or has proven unsuccessful.

The multispecialty FDA Safe Use Initiative Expert Working Group proposed that cervical ILESI be performed at C7-T1, which is based on reports that at other segmental levels the cervical epidural space is often narrow, making the dural sac and spinal cord more susceptible to penetration and injury [16-19].

*Transforaminal ESI:*
Although ESIs are effective in managing lumbar disc herniation regardless of the approach used (interlaminar, caudal, or transforaminal), the basic principle is to select the approach that will allow injection closest to the source of the pain. Corticosteroids delivered as close as technically feasible to the site of the lesion will generally obtain optimal results (and allows for lowest dose of medication for clinical

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effectiveness). The transforaminal approach for ESIs is a target-specific approach allowing maximal delivery of medication to the relevant nerve root. With this approach, the injectate flow is directed toward the anterior and lateral epidural space (e.g., the inflammatory site between the herniated disc and the anterior nerve root dural sleeve) and may extend over 1 to 2 spinal levels [20,21]. For a lateralized lumbar disc herniation, a preganglionic transforaminal ESI (TFESI) (at the supra-adjacent intervertebral disc level or one level superior) is preferred by some over a paramidline interlaminar injection [22,23]. If there is migration of the disc, ganglionic TFESI (at the exiting nerve root level) may be useful [24].

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In a lumbar TFESI, the needle may be placed in an intervertebral foramen via a subpedicular/supraneural or infraneural/retrodiscal approach. With the subpedicular approach, the needle is advanced inferior to the pedicle and superolateral to the spinal nerve of interest, toward the "safe triangle" [25]. The supraneural approach decreases risk of damage to the nerve, dorsal root ganglion, and dural sleeve [26,27]. The disadvantages of this approach include intraneural injection, neural trauma, technical difficulty in the presence of fusion or hardware, intravascular injection, intradiscal injection, and spinal cord trauma [28-35].

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The infraneural/retrodiscal approach is an alternative TFESI trajectory using Kambin's triangle, which is defined as a right triangle over the dorsolateral disc [36]. In addition to avoiding epidural bleeding and scarring, the advantage of this approach is the decreased risk of intravascular penetration. Murthy et al., reported that the artery of Adamkiewicz (or artery) runs through the "safe triangle," and this may result in injection of medications within the artery or directly damage a feeding vessel [37]. By spinal angiography, the radiculomedullary artery is located in the superior half of the intervertebral foramen in 97% of cases and is never seen in the inferior one-fifth of the intervertebral foramen [37]. The authors concluded that the safest needle placement for a TFESI, particularly at L3 and above, may be in an inferior and slightly posterior position within the foramen and relative to the nerve. Although there is decreased risk of injuring a radiculomedullary artery, this approach still carries 6.6% risk of vascular injections [38]. Although some authors have found the risk of inadvertent vascular injection during lumbosacral transforaminal injections comparable between blunt-tip and pencil-point needles [39], others have found that blunt needles had decreased incidence of vascular penetration and paresthesia [40]. Other risks of infraneural/retrodiscal TFESI include inadvertent intradiscal penetration (4.7%) [38,41] and subarachnoid or subdural extra-arachnoid injection (3.1%) [38].

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In the cervical spine, a TFESI is performed by inserting the needle posteriorly along the neural foraminal axis, which avoids the anteriorly positioned vertebral artery and the intraforaminal spinal nerve. The interventionalist must be aware of spinal segmental arteries arising from the deep or ascending cervical artery, which enter at variable locations and often course through the foramen, penetrate the dura, and join the anterior and posterior spinal arteries. In addition to the risk of exiting nerve or vessel injury, injection of the particulate steroid directly into one of these vessels can lead to catastrophic spinal cord injury [4].

Given the potential of catastrophic neurologic complications after cervical TFESI, some authors have questioned the continued use of TFESI in this setting [42] and advocate interlaminar midline or paramidline approaches in the cervical spine regardless of disease categories or laterality of symptoms because of the overall safety of an interlaminar approach and possible greater patient comfort [24]. Choi et al found no statistically significant difference in symptom improvement between interlaminar and transforaminal approaches [43] and lower inadvertent vascular uptake and patient discomfort with the latter. Others advocate technical strategies to improve the safety of the procedure [44,45] or alternative approaches, which

potentially carry fewer risks [42,46]. One such alternative is intra-articular facet steroid injections [46,47]. Anatomically, the facet joint ventral recess is in close proximity to the exiting spinal nerve root, and leakage of contrast into the foramen can be seen during a facet injection. Therefore, using a facet joint injection approach to deliver corticosteroids in the vicinity of the target spinal nerve root may be a viable alternative to the riskier transforaminal approach [46,48].

*Selective nerve root block*: A selective nerve root block has a similar approach as a TFESI; however, the needle tip is not advanced as medially into the neural foramen. Rather, the goal of this approach is to cover the target nerve, particularly when isolated spinal nerve root irritation is suspected. Selective nerve blocks are often requested to provide more specific diagnostic information via delivery in a selective fashion [49].

*Caudal ESI:* The epidural space is accessed via the sacral canal through the sacral hiatus coccygeal ligament using fluoroscopic guidance [50]. With the caudal/interlaminar route, the flow of injectate is predominantly into the posterior epidural space [20]. This is an alternative approach when transforaminal or interlaminar approaches are technically challenging or contraindicated.

## POLICY

It is the policy of Modoc Medical Center to provide image-guided epidural steroid injection examinations in concordance with the parameters set forth by the American College of Radiology (ACR).

## PROCEDURE

### Indications and Contraindication

Indications include, but are not limited to, the following:

1. Radiculopathy: complex of symptoms that can arise from nerve root pathology, including paresthesia, hypoesthesia, anesthesia, motor loss, and pain [90]; specific observable physical examination and electrophysiologic findings. Radiculopathy may be confined to a single nerve root distribution (mono-), or more than one (poly-).

2. Radicular pain: single symptom of pain that can arise from one or more cervical, thoracic, or lumbar spinal nerve roots [90], which are inflamed and irritated [91]; diagnosed by a combination of physical examinations (e.g., straight leg test) and controlled selective nerve blocks. Radicular pain and radiculopathy that are due to nerve root compression from local malignancy may also be amendable by palliative treatment with ESIs.

3. Spinal stenosis: mechanical pressure on the spinal cord, dura, or nerve roots that is due to a multitude of degenerative causes; pain, numbness, or upper- or lower-extremity weakness have a gradual onset and improve with forward flexion, “shopping cart sign” [92].

4. Axial pain: symptoms exacerbated by forward flexion [92]; sources of axial LBP include the facet joint, sacroiliac joint, intervertebral disc, vertebral end plates, paraspinal muscles, and fascia. These various targets are beyond the scope of this document.



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This practice parameter was developed collaboratively by the American College of Radiology (ACR), the American Society of Neuroradiology (ASNR), the American Society of Spine Radiology (ASSR), the Society of Interventional Radiology (SIR), and the Society of NeuroInterventional Surgery (SNIS).¶
Interventional spine procedures comprise a broad spectrum of treatment techniques (e.g., facet joint and sacroiliac joint injections, vertebral augmentation) that are beyond the scope of this manuscript. This document focuses on epidural steroid injections (ESIs), which are commonly performed for the nonsurgical treatment of neck and low back pain (LBP) after other conservative and noninvasive treatments, such as physical therapy and oral medications, have failed [1]. It is critical to determine appropriate utilization of ESI and to identify optimal techniques. An added challenge in evaluating spinal interventional techniques is that the practices of different specialties are highly variable even for the commonly performed procedures and treatable conditions. ¶
Although numerous studies pertaining to all aspects of interventional pain management have been published, there is still some controversy concerning the effectiveness of ESIs because of the variability of the methods in various studies [2] (FDA Drug Safety Communication: FDA requires label changes to warn of rare but serious neurologic problems after epidural corticosteroid injections for pain. Available at: http://www.fda.gov/downloads/Drugs/DrugSafety/UCM394286.pdf). Additionally, there have been technical advances in procedures that enable precise needle placement to a 1- to 2-mm target zone in 3-D space with confirmation of placement with the flow of contrast prior to the administration of the ...

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Deleted: on April 23, 2014, that “injection of corticosteroids into the epidural space of the spine may result in rare but serious adverse events, including loss of vision, stroke, paralysis, and death” (https://www.fda.gov/Drugs/DrugSafety/), and a

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Deleted: et al. emphasized alternate techniques to traditional teachings, including avoidance of particulate steroids and utilization of a blunt needle, and understanding of the risk factors of approach, particularly transforaminal ESIs, to improve safety [5]. With ESIs, as with any invasive procedure, the optimal outcome for the patient is when the ...

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5. Post-surgery syndrome or failed back surgery syndrome (FBSS): residual or recurrent back pain and disability after surgical intervention, which reportedly accounts for up to 40% of patients with chronic LBP. It may be possible to manage some etiologies with interventional techniques, including epidural fibrosis, sacroiliac joint pain, disc herniation, discogenic pain, spinal stenosis, recurrent synovial cysts, seromas, other collections, and facet joint pain [93-100]. Caudal ESIs have been reported to be effective in managing FBSS [101,102], with long-term pain relief achieved by adding hyaluronidase [102].

6. Persistent/incomplete pain relief following vertebral augmentation (kyphoplasty, vertebroplasty).

Contraindications [103,104]: Prior to performing an interventional spine procedure, pre-existing conditions must be evaluated to avoid complications.

Absolute contraindications:

1. Coagulopathy not correctible
2. Concurrent systemic infection
3. Infectious spondylitis
4. Acute spinal cord compression
5. Myelopathy or cauda equina syndrome
6. Inability to obtain informed consent
7. Infection at the skin puncture site

Relative contraindications:

1. Uncorrected antiocoagulation therapy – ILESIs and TFESIs are considered intermediate-risk procedures with moderate risk of bleeding [105]
2. Hypersensitivity to administered agents – allergy to contrast may be treated with premedication with antihistamine agents or an alternative approach (such as using CT guidance with air as the contrast medium may be considered.
3. Pregnancy – Although such interventions may be performed without image guidance in pregnant patients, there is a 30% rate of incorrect placement [106]. Other options include MRI-guided injections and ultrasound-guided injections as image-guided procedures have a significantly greater margin of safety and should be utilized when feasible [107].
4. Hepatitis – When performing neuraxial blockade in hepatitis C patients, thrombocytopenia must be excluded to avoid hematoma formation and its associated neurologic complications [108].

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5. Uncontrolled diabetes mellitus- Insulin-dependent diabetics are at risk of elevated blood sugars after steroid injections.
6. Congestive heart failure- The steroid may lead to fluid retention

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7. Immunosuppressed state- Preprocedural antibiotics may be considered
8. Patient improving on medical and physical therapy
9. Severe spinal canal stenosis
10. No response to previous well-performed ESI
11. Complication to steroid therapy (Cushings, etc.)

Factors have been reported that negatively affect outcomes of ESIs: smoking, chronic pain syndrome, axial-only pain or diffuse pain, opioid dependence, and patients undergoing personal injury legal and disability claims [109].

**Specifications of the Procedure**

Technical Requirements:

A. Guidance

1. No image guidance: Historically, ESIs were performed without any imaging guidance, resulting in erroneous placement in up to 30% of injections [106]. Because of this and the potential for intrathecal and intravascular injections, image guidance is strongly recommended for spine interventions.

2. Fluoroscopic guidance: According to the multi-specialty FDA Safe Use Initiative Expert Working Group, image guidance for all cervical and lumbar interlaminar injections is recommended to avoid inadvertent spinal cord penetration, intra-vascular, or intrathecal placement. Lateral or oblique views are recommended to gauge depth of needle insertion [4]. Fluoroscopic guidance allows accurate needle placement when combined with contrast medium injection [106,112,113]. Both C-arm and bi-plane fluoroscopy provide multiplanar imaging of the target anatomy, which can help reduce procedural time [114] and are important to perform the procedure safely.

3. CT/CT fluoroscopic guidance (CTF): CT guidance and CT-fluoroscopic guidance is being increasingly used for various procedures, including biopsies, drainages, ESIs and TFESIs, as this allows for highly accurate needle guidance. CT guidance delineates the soft tissue (eg, nerve, vessels, dura, fat, and muscle) and osseous structures unlike fluoroscopic guidance which only provides visualization of bony landmarks. Radiation dose to the patient and interventionalist can be minimized with the use of intermittent fluoroscopy and a low mA [115-117]. Additionally, modification of planning CT can reduce the radiation exposure in CTF lumbar spine injections

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[118]. CTF guidance enables real-time cross-sectional visualization of needle placement into the epidural space to avoid neural and vascular structures as well as osseous structures, particularly when there is spinal stenosis or interlaminar narrowing [119]. In addition, CT and CTF enable the evaluation of spinal canal and paraspinal regions before insertion of the needle, to permit diagnosis of synovial cysts or cysts of the ligamentum flavum, severe spinal stenosis, epidural scarring and postoperative thecal sac deformity in patients, which may be potential causes of inaccurate needle placement or procedure failure. CTF is the recommended approach for cervical ESI.

The overall radiation dose from CTF is small compared with a diagnostic CT scan. Tube current selection for CTF procedures ideally balances the need for adequate anatomic visualization against the desire for individual patient dose reduction. Patient body habitus affects the radiation dose from such procedures, decreasing body size results in increases in organ dose during CTF-guided interventions. Therefore, small patients should have tube current reduced compared to average patients to avoid relatively increased organ dose. Tube current of 30 to 40 mA is adequate for lumbar interventions in most average sized patients. Modified tube current settings of 10 to 20 mA and 50 to 70 mA would be appropriate for small and oversized patients, respectively [120]. However, dose considerations must not supersede the need for adequate anatomic visualization sufficient to allow for technical success and to minimize procedural complications.

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4. Ultrasound (US): Ultrasonography is highly effective in accurately guiding the epidural needle placement and produces comparative treatment outcome as fluoroscopy [50]. US-guidance offers the advantages of delineating vessels in the needle trajectory [121] and no radiation exposure. However, US has significant limitations based on body habitus and pathology, and operator dependent skills, and is typically not used for performing these procedures.

B. Technique

With conventional fluoroscopy, the loss of resistance technique is used to determine if the needle is in the epidural space after traversing the ligamentum flavum in ILESI. However, this technique can be unreliable, compared with use of injections of contrast material [122-125]. To confirm needle placement in the epidural space, a dose of contrast agent is injected (1 to 5 mL). Myelographically safe contrast is used in case there is inadvertent intrathecal injection. Contrast is advocated in TFESIs, in particular, because of the increased risk of intravascular injections [31]. Intravascular uptake is reported at a rate of 8% for all lumbar injections, 2% for ILESI, 11% for TFESI, and 21% for TFESI at the S1 level [126]. Negative aspiration will fail to detect intravascular penetration ~50% of the time [31]. Some authors have cautioned that the lack of vessel opacification after contrast administration during a spine intervention with CT/CTF guidance may give a false sense of security [127] because it may be that intravascularly injected contrast is washed away by the time CT is performed and/or that the given vessel enters the cord at a different level and is therefore not imaged [128]. This may be a theoretical disadvantage of CT/CTF. To reliably exclude inadvertent direct vessel puncture, some have advocated real-time imaging with digital subtraction angiography when performed with fluoroscopy [129-131].

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In patients that have had a severe or anaphylactic reaction to contrast media, CO2 air can be used in the same way as iodinated contrast. Air can be injected to verify that the needle is within the epidural space and not intrathecal. Although air can be used with conventional fluoroscopy, CT-guidance provides exquisite discrimination between air and soft-tissue [132].

The choice of image guidance is a matter of operator preference and patient characteristics. In either case, there are several technical requirements to ensure safe and successful ESIs. These include adequate institutional facilities, imaging and monitoring equipment, and support personnel. The following are minimum requirements for any institution in which interventional spine pain management procedures are to be performed:

1. A procedural suite large enough to allow safe and straightforward transfer of the patient from bed to procedural table with sufficient space for appropriate positioning of patient monitoring equipment, anesthesia equipment, respirators, etc. There should be adequate space for the operating team to work unencumbered on either side of the patient and for the circulation of other staff within the room without contaminating the sterile conditions.

2. The majority of these procedures are performed under fluoroscopic guidance. A high-resolution image intensifier or flat-panel detector and video system with adequate shielding, capable of rapid imaging in orthogonal planes and with capabilities for permanent image recording is strongly recommended. The fluoroscope should be compliant with IEC 601-2-43 [133]. Imaging findings are acquired and stored either on conventional film or digitally on computerized storage media. Imaging and image recording must be consistent with the "as low as reasonably achievable" (ALARA) radiation safety guidelines.

3. The facility must provide adequate resources for observing patients during and after spine pain interventional procedure. Physiologic monitoring devices appropriate to the patient's needs—including blood pressure monitoring, pulse oximetry, and electrocardiography—and equipment for cardiopulmonary resuscitation must be available in the procedural suite.

C. Medications

1. The steroids used in ESIs may be particulate versus nonparticulate preparations, which is based on the solubility of the synthetic corticosteroids within water and on their aggregation characteristics. Particulate corticosteroids, such as triamcinolone acetonide, triamcinolone hexacetonide, methylprednisolone acetate, and prednisolone acetate, are esters and can precipitate out of solution and crystallize within a hydrophilic environment. Most of the particles range in size between 0.5 and 100 µm [134]. Particulate steroids have a delayed but sustained anti-inflammatory effect [135]. In contrast, nonparticulate steroids dissolve immediately and are taken up rapidly by cells [135]. Dexamethasone sodium phosphate, a non-particulate steroid with a typical particle size of 0.5 µm [56,75,134], is freely water soluble. Betamethasone preparations are commonly a mixture of betamethasone acetate (insoluble needing esterase activation) and betamethasone sodium phosphate (in solution) and have characteristics of both particulate and nonparticulate steroids [56,75,134].

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The propensity of different corticosteroid particles to aggregate into larger particles depends on the chemical ingredient (esters have larger particulate size), on the varying concentrations, on the drug vehicle, or on the drug mixtures with local anesthetics and/or contrast media prepared in situ for pain treatment [75]. These aggregates, particularly the larger particle sizes, have the potential to embolize with risk for occlusion of small vessels and subsequent neural ischemic injury [136]. Of the different steroids used for ESIs, dexamethasone sodium phosphate is considered safer because its particles have been shown to be the smallest size, approximately one-tenth the size of a red blood cell, and the particles do not aggregate, even in mixtures [56,136]. Given this pharmacokinetic profile, the multispecialty FDA Safe Use Initiative Expert Working Group has recommended dexamethasone as the first-line agent for lumbar transforaminal injections rather than particulate steroids [4], which have been implicated in all cases of severe neurologic complications. However, there has been a case of conus medullaris infarction after TFESI using dexamethasone [137].

The differences in steroid doses and the effectiveness of various types have been evaluated in multiple observational studies. Methylprednisolone acetate, available in 40- and 80-mg/mL doses, and triamcinolone are equivalent [139] with relative strength approximately 5 times that of hydrocortisone. Bethamethasone combines a short- and long-acting form and has approximately 30 times the strength of hydrocortisone. A minimal effective dose of corticosteroid is recommended to expose the patient to the least adverse effects. For example, a study comparing 40 and 80 mg of methylprednisolone found comparable results, with a less adverse profile with the 40-mg dosage [140]. Similarly, there was equivalency of 10, 20, and 40 mg of triamcinolone in TFESI for lumbar radicular pain that was due to a herniated disc, such that the 10-mg dose was recommended by the authors [141].

**Deleted:** Although it may be speculated that patients obtain longer lasting relief of symptoms after epidural injection of particulate steroids compared with nonparticulate steroids, the literature is not strongly supportive of this at this time. The particulate nature and the added preservatives in the particulate mixtures pose the additional risk of intravascular emboli. Therefore, especially in the cervical spine, nonparticulate steroids are considered the safest. Recently, nonparticulate steroids (dexamethasone) have also been shown to have fewer systemic effects compared with particulate steroids in which suppression of the pituitary axis can occur for up to 3 weeks [138]. ¶

There are numerous studies suggesting timing and frequency for ESI. A systematic review of literature by Manchikanti et al. provides guidelines for frequency of interventions, regardless of approach [80]. The evidence is scanty for repeated injections at regular intervals if there is partial response to the initial ESI. Resolution of pain does not warrant a second injection.

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Preservative-free local anesthetics inhibit nerve excitation and conduction. Local anesthetics act mainly through inhibition of sodium-specific ion channels on neuronal cell membranes, preventing the development of an action potential in the neuron, thus inhibiting signal conduction. They are administered to induce cutaneous analgesia at the time of a procedure and are also given for local relief at sites of spinal and musculoskeletal pain. Local anesthetics are often administered in conjunction with corticosteroids both as a diagnostic tool but also to provide the patient with immediate relief of symptoms.

There are two groups of local anesthetics: esters (e.g., cocaine and procaine) and amides (lidocaine, bupivacaine, ropivacaine). The ester preparations are associated with a risk of severe allergic reactions secondary to the breakdown product paraaminobenzoic acid, whereas true allergic reactions are much less common with amide preparations. Increasing the dose of administered local anesthetic increases the degree of anesthesia and duration of action but does not change the time of onset of anesthesia. Nearly all these preparations can be formulated with epinephrine to prolong their duration of action by approximately 50% [142].

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A review of corticosteroids and local anesthetics by MacMahon et al. [75] provides an overview on the potencies of local anesthetics used in spine interventions. Lidocaine is approximately half as potent as PRACTICE PARAMETER 13 Epidural Steroid Injection bupivacaine. Although lidocaine has a quicker onset, it has a shorter duration of action than does bupivacaine. Ropivacaine is similar in potency to bupivacaine. The most commonly administered local anesthetic in spine procedures is bupivacaine because of its greater potency and longer duration of action as compared with lidocaine. Typical doses of bupivacaine range from 0.5 to 2.0 mL in concentrations of 0.25% or 0.50%. Recommendations for maximum doses, although not evidence based, are meant to prevent toxicity. The maximum dose of lidocaine is 300 mg, and if there is added epinephrine, then the maximum dose increases to 500 mg. For bupivacaine, the maximum safe dose is approximately 150 mg (2 mg/kg) and that for ropivacaine is 375 mg. It is important to note that the plasma concentration of the anesthetic is affected by the site of injection, which is not taken into account by these doses.

The use of amide-type anesthetics in patients with known hypersensitivity is contraindicated. The most well-known and established adverse effects from local anesthetics are neuro- and cardiotoxicity after intravascular or inadvertent intrathecal injection [143]. Bupivacaine has greater neuro- and cardiotoxicity as compared to lidocaine and ropivacaine [75]. In the experimental setting, all local anesthetics are myotoxic in clinical concentrations, with a dose-dependent rate of toxicity [144,145] that is in part due to a fast and permanent increase in intracellular calcium levels [146]. However, in the clinical setting, myotoxicity is relatively rare because of rapid and complete recovery with complete tissue regeneration. Because most local anesthetics are vasodilators at clinical doses, epinephrine, a vasoconstrictor, is added in some mixtures to reduce the rate of drug absorption and increase the duration of anesthetic effect [147]. Mixtures with epinephrine and ropivacaine, which is vasoconstrictive, should be avoided in TFESI as this could potentially result in intravascular or perivascular injection and cause significant vasoconstriction of arterioles with increased risk of central nervous system (CNS) infarction.

Surgical and Emergency Support:

Although serious complications of ESIs are infrequent, there should be prompt access to advanced imaging for diagnosis, surgical, interventional, and medical management of complications.

A. Patient Care

1. Preprocedural care

a. The clinical history and findings, including the indications for the procedure, must be reviewed and recorded in the patient's medical record by the physician performing the procedure. Specific inquiry should be made with respect to relevant medications, prior allergic reactions, and bleeding/clotting status. Refer to multisociety guidelines for interventional spine procedures in patients on antiplatelet and anticoagulant medications [148].

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b. The vital signs and the results of physical and neurological examinations may be obtained and recorded.

c. The indication(s) for the procedure, including (if applicable) documentation of 6 weeks of physical therapy and failed medical therapy, must be recorded.

d. Preprocedure imaging should be reviewed.

e. Informed consent obtained prior to any sedation

f. A formal "time out" and verification of the correct patient, along with a checklist introducing each member of the team, correct patient, correct consent, marking of site, anticipated blood loss, fire risk, medications, imaging, etc., is mandated to ensure proper patient site and location

Preprocedure imaging assessment of the posterior epidural space is important to determine that there is sufficient epidural space at the target segmental level to allow safe needle placement. Contents of the epidural space include the epidural fat, spinal nerves, extensive venous plexuses, lymphatics, and connective tissue (e.g., plica mediana dorsalis and scar tissue after previous surgical intervention). The amount of posterior epidural fat increases with caudal progression, measuring approximately 0.4 mm at C7 to T1, 7.5 mm in the upper thoracic spine, 4.1 mm at the T11 to T12, and 4 to 7 mm in the lumbar regions [149,150]. Age and body weight affect the amount of posterior epidural fat [151,152], which decreases with age. Epidural lipomatosis (e.g., excessive hypertrophy and abnormal accumulation of epidural fat) may also be seen with long-term exogenous steroid use, obesity, and ESIs.

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There are important indications for reviewing imaging prior to performing an ESI. Although the randomized controlled trial by Cohen et al. found that MRI does not improve outcomes in patients who are clinical candidates for ESI and has only a minor effect on decision making [153], cross-sectional imaging, particularly MRI, is helpful to exclude "red flags," such as fracture, tumor, and instability, which would be unsafe conditions for injections. Secondly, MRI may help decide whether a patient will benefit from an ESI and improve outcomes by delineating the site of pathology for appropriate targeting [154]. A retrospective observational study examining the associations between imaging characteristics of compressive lesions and patient outcomes after lumbar TFESI found more favorable outcomes for disc herniations over fixed lesions and single lesions more than tandem lesions [155]. In a small prospective study of 34 patients with degenerative lumbar stenosis confirmed by MRI who received fluoroscopically guided lumbar TFESI at the presumed symptomatic nerve root, 75% had > 50% reduction in pain scores between pre- and postinjection at 1-year follow-up [26]. In patients with radiculopathy that is due to multilevel stenosis, MRI may steer one toward surgery or other treatment options rather than ESI. Lastly, MRI reveals features, such as central and foraminal stenosis, disc herniations that compromise canal diameter, ligamentum flavum hypertrophy, epidural fibrosis, and previous surgical scaring that can alter the level of procedural difficulty [156]. Previous surgical and epidural interventions (e.g., epidural blood patch) at the targeted level may also alter the epidural space and surrounding tissue. The resulting inflammatory changes can cause connective tissue proliferation and adhesions between the dura mater and the ligamentum flavum and granulation changes in the ligamentum flavum [157].

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2. Procedural Care

   a. Prior to the initiation of the procedure, a time-out verifying the correct patient, correct procedure and correct site must be performed. The organization should have processes and systems in place for reconciling differences in staff responses during the time-out.

   b. The multispecialty FDA Safe Use Initiative Expert Working Group recommends extension tubing after needle placement in a safe location to avoid dislodging it when syringes are connected [4]. As per guidelines of aseptic technique, face masks and sterile gloves should be worn [158].

   c. Vital signs may be obtained at regular intervals during the procedure depending on the preference of the interventionalist, and a record of these measurements should be maintained.

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   d. Some interventionalists may prefer that patients have intravenous access in place for the administration of fluids and medications as needed.

   e. Monitoring of vital signs and pulse oximetry is recommended whether or not sedation is being given for the ESI procedure. Administration of sedation for ESI should be in accordance with the ACR–SIR Practice Parameter for Sedation/Analgesia [159]. A registered nurse or other appropriately trained personnel should be present and have primary responsibility for monitoring the patient. A record of medication doses and times of administration should be maintained. For cervical procedures, heavy sedation or unresponsiveness at the time of injection is not recommended [4]. Analysis of closed claims has revealed that cervical procedures under heavy sedation are significantly associated with an increased risk of spinal cord injury [160]. There is agreement by all societies that sedation should be light enough to allow the patient to communicate pain or other adverse sensations or events during the procedure, especially when performed in the cervical region [4].

3. Postprocedural Care

   a. A procedural note should be written in the patient's medical record summarizing the course of the procedure and what was accomplished, any immediate complications, and the patient's status at the conclusion of the procedure (see complications section below). This information should be communicated to the referring physician in a timely manner.

   b. All patients should be monitored after the procedure by skilled nurses or other appropriately trained personnel. The length of this period will depend on the patient's medical condition and is at the discretion of the performing physician.

   c. Initial ambulation of the patient must be carefully supervised.

   d. The operating physician or a qualified designee (another physician or a nurse) should evaluate the patient after the initial postprocedural period, and these findings should be summarized in a progress note on the patient's medical record. The physician or designee

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must be available for continuing postprocedural care at the facility and after discharge. Follow-up visits should be arranged prior to the patient leaving the facility.

**Equipment Quality Control**

Each facility should have documented policies and procedures for monitoring and evaluating the effective management, safety, and proper performance of imaging and interventional equipment. The quality control program should be designed to maximize the quality of the diagnostic information. This may be accomplished as part of a routine preventive maintenance program.

**Quality Improvement and Documentation**

A. Documentation:

Results of ESI procedures should be monitored on a continuous basis. Records should be kept of both immediate results and complications by the physician performing the procedure. If the patient is seen in follow-up, long-term results should be recorded. The number and type of complications should be documented. A permanent record of ESI procedures should be maintained in a retrievable image storage format.

1. Imaging labeling should include permanent identification containing:
    a. Facility name and location
    b. Examination date
    c. Patient's first and last names
    d. Patient's identification number and/or date of birth.
2. Separate preprocedure and postprocedure notes should include:
    a. Procedure undertaken and its purpose
    b. Type of anesthesia used (local or moderate)
    c. Listing of level(s) treated and amount of medication (contrast, steroid, and local anesthetic) injected at each level
    d. Evaluation of injection site and focused neurologic examination
    e. Immediate complications, if any, including treatment and outcome
    f. Radiation dose estimate (or fluoroscopy time and the number of images obtained on equipment that does not provide direct dosimetry information) [161-163]

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3. Follow-up documentation:

   a. Postprocedure evaluation to assess patient response (pain relief, mobility improvement). Standardized assessment tools, such as the Visual Analog Scale, Short Form (36) Health Survey, and the Roland-Morris disability scale, may be useful for both preoperative and postoperative patient evaluation

   b. Evaluation of injection site and focused neurologic examination

   c. Delayed complications, if any, including treatment and outcome

   d. Record of communications with patient and referring physician

   e. Patient disposition

Reporting should be in accordance with the ACR–SIR–SPR Practice Parameter for the Reporting and Archiving of Interventional Radiology Procedures [164].

B. Informed Consent and Procedural Risk:

Informed consent or emergency administrative consent must be obtained and must comply with the ACR–SIR–SPR Practice Parameter on Informed Consent for Image-Guided Procedures [165].

Risks cited may include, but are not limited to, infection, bleeding (including epidural hematoma), allergic reaction, vessel injury, worsening pain or paralysis, spinal cord or nerve injury, arachnoiditis, or death. The potential need for immediate surgical intervention should be discussed. The possibility that the patient may or may not experience significant pain relief should also be discussed.

C. Success and Complication Thresholds:

Procedure thresholds or overall thresholds, for example, major complications, may be used as part of ongoing quality assurance programs. When measures such as indications or success rates fall below a minimum threshold or when complication rates exceed a maximum threshold, a review should be performed to determine causes and to implement changes if necessary. For example, if the incidence of infection is one measure of the quality of ESI, values in excess of the defined threshold (1% to 2%) [126] should trigger a review of policies and procedures within the department to determine the causes and to implement changes to lower the incidence of the complication. Patient referral patterns and selection factors may dictate a different threshold value for a particular indicator at a particular institution. Therefore, setting universal thresholds is very difficult, and each department is urged to alter the thresholds as needed to higher or lower values to meet its own quality assurance program needs.

Complications can be stratified based on outcome. Major complications result in admission to a hospital for therapy (for outpatient procedures), an unplanned increase in the level of care, prolonged hospitalization, permanent adverse sequelae, or death. Minor complications result in no sequelae but may require nominal therapy or a short hospital stay for observation (generally overnight; see Appendix A). Routine tracking and periodic review of all cases having less than perfect outcomes is strongly

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encouraged. Although serious complications of ESIs are infrequent, a review for all instances of infection, significant bleeding, symptomatic nerve injury, or death, is recommended.

Success:
When an ESI is performed, success is defined as achievement of significant pain relief, reduced disability, and/or improved quality of life. These should be measured by at least one of the relevant and validated measurement tools, such as the ten-point numerical pain rating scale score or a visual analogue scale score (Roland-Morris Back Pain score, Oswestry Disability Index, The Short Form (36) Health Survey, or similar outcome tool to measure pain, disability, and/or quality of life). It is generally accepted that a minimum of 20% change in pain scores is clinically meaningful, based upon previous trials and FDA requirements [166,167]. However, interventional pain management trials have adopted robust outcome measures defined as significant improvement with at least 50% improvement in pain and functional status rather than 10% or 20% improvement [101,168-186].

Complications:
Despite its acceptance as a relatively safe procedure, an ESI is not without risk [187,188]. ESIs can be associated with a number of minor or temporary complications and side effects, such as exacerbation of pain, vasovagal reaction, headache, and unintentional dural puncture [29,189-193]. Vasovagal syncope occurs in 1% to 2% of lumbar ESI and 8% with cervical ESI [194]. Flushing can occur in 2.6% to 11% of patients undergoing ESIs [195-198]. Transient weakness and numbness may be related to the local anesthetic (e.g., lidocaine).

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Arachnoiditis:
Although arachnoiditis has frequently been cited as a potential complication of ESI, there is no direct evidence to support this premise. The arachnoid villi allow microscopic communication between the subarachnoid and epidural spaces. In addition, macroscopic communications may pre-exist or be created by prior surgery. Inadvertent subarachnoid drug injection may occur via these routes or by improper needle placement. Thus, it has been postulated that subarachnoid injection of glucocorticoids may occur during ESI and thereby lead to the development of arachnoiditis. Published references to the potential development of arachnoiditis after ESI are based upon historic reports of patients developing arachnoiditis after receiving intrathecal methylprednisolone injections for the treatment of multiple sclerosis [199,200]. Arachnoiditis was not, however, reported in a large and more recent series of patients treated for herpetic neuralgia by intrathecal methylprednisolone injection [201]. Multiple large series of patients treated with ESI have not reported arachnoiditis as a complication [55,202]. Preservatives in the glucocorticoid solution, such as polyethylene glycol and benzyl alcohol [135,203,204], have also been questioned as potential cause of arachnoiditis, but direct causation has never been proven.

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In contrast to intrathecal glucocorticoids, spinal surgery and subarachnoid hemorrhage are well documented as potential causes of arachnoiditis [205,206]. Arachnoiditis developing after a single lumbar puncture without any other known cause has also been reported [207]. Some of the patients treated for multiple sclerosis with intrathecal methylprednisolone received more than fifty such injections, and these injections were performed long before image guidance became widely used. It seems reasonable to conclude that iatrogenic subarachnoid hemorrhage occurred in at least some of these patients and that such hemorrhage might have caused arachnoiditis [199,200]. Notable by its

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absence is "arachnoiditis" among the multiple specific warnings for ESI mandated by the FDA [208]. The FDA does acknowledge 41 submitted reports of arachnoiditis allegedly occurring after ESI [209] but concluded that these reports "did not provide sufficient clinical detail to make a reasonable assessment regarding causality." We were unable to identify any published report of arachnoiditis occurring after ESI in the absence of contemporaneous spinal surgery or subarachnoid hemorrhage.

Bleeding:
Spinal hematoma is a rare but serious complication following epidural puncture (incidence less than 1:150,000) [210,211]. The pressure effects of epidural hematoma can lead to compression and/or ischemia of the spinal cord and/or nerve roots [212]. Particular care is needed in individuals with coagulopathy either from intrinsic medical problems or due to medication. There is a risk of 0.0% to 0.4% for hemorrhagic complications when continuing anticoagulants and 0.0% to 0.6% when continuing antiplatelet medications [213,214]. The risk of hemorrhagic complications in anticoagulated patients undergoing ILESIs [215-221] may not be the same for lumbar TFESI. As there may actually be more risk in discontinuing anticoagulants, thus increasing the risk for vascular or cerebrovascular events, the benefits and risks of an ESI should be considered on an individual patient basis and after discussion with the clinician prescribing the anticoagulant [188,222].

Infection:
Even with the use of proper sterile technique, infection can occur with spine interventions. Goodman et al. noted an infection rate of 1% to 2%, with severe infections noted in 0.01% of all spinal injections, varying among meningitis, epidural abscess, osteomyelitis, and discitis [126].

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Vascular Injury:
The penetrating needle may cause vascular dissection. Embolic occlusion of a vessel with steroid aggregates, the majority of which are the particulate type, may occur. A rare, devastating complication of cervical and lumbar ESIs is spinal cord infarction, which is hypothesized to be due to embolization of particulate steroids, needle-induced vasospasm, compression from an epidural hematoma or abscess, and mechanical disruption of radiculomedullary arteries [56,223-225]. Preservatives, such as benzyl alcohol, in commercial preparations may be neurotoxic with reports of paraplegia, neural degeneration, and demyelination [226-229].

Nerve Injury:
A theoretical risk of ESIs is nerve injury by the procedural needle. Intraneural hematoma may occur from puncture of the nerve root with the needle. Intraneural injection of the medication can be neurotoxic. An awake patient will be able to notify the interventionalist if the needle tip is too close to the nerve.

Dural Puncture:
Dural puncture may occur, particularly with ILESI. The incidence of dural puncture in a prospective, observational study of 10,000 procedures was 0.5%, with 1% in the cervical region [202]. Intrathecal injection of local anesthetic may result in variable levels of spinal block. Intrathecal injection in the cervical region may lead to respiratory depression; therefore, appropriate equipment should be readily available to treat the patient. As stated previously, the effects of intrathecal injection of corticosteroid remain of uncertain significance.

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Systemic Effects:
Corticosteroid therapy can have systemic effects, such as bone loss and osteoporosis [230]. This steroid effect on bone health is particularly concerning in patients with predisposition to osteoporosis, such as postmenopausal women, receiving ESIs. Retrospective evaluation of postmenopausal women with LBP who were treated with or without ESI showed decreased bone mineral density (BMD) in patients treated with ESI. However, there was no significant difference between or within the groups in terms of mean percentage change from baseline BMD [231]. These authors concluded that a maximum cumulative triamcinolone dose of 200 mg in one year would be a safe treatment method with no significant impact on BMD. Kim and Hwang showed that multiple ESIs with a cumulative triamcinolone dose of approximately 400 mg can reduce BMD in postmenopausal women treated for LBP [232]. Underlying patient characteristics may be an important factor in developing osteoporotic fracture or lower BMD post-ESI. Yi et al. found that older age and lower BMD were associated with osteoporotic fracture in postmenopausal women treated for LBP with ESI [233].

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The effect of steroids used in spine procedures remains controversial, with some studies showing that patients treated with high-dose glucocorticoid therapy are at risk for lower BMD [230,234,235], whereas others find no change with low-dose administration of neuraxial steroids [33]. A retrospective cohort study comparing patients receiving lumbar ESIs with a control group showed that an increasing number of injections was associated with an increasing likelihood of fractures. Each successive injection increased the risk of fracture by 21% [236]. A recent analysis of the Medicare data revealed that although acute exposure to exogenous steroids via the interlaminar or transforaminal epidural space does not seem to increase the risk of an osteoporotic fracture (spine, hip, or wrist), the prolonged steroid exposure was found to increase the risk of spine fracture for ESI patients [237].

The steroids in ESIs can have endocrinological effects. They can increase blood glucose levels in diabetic patients for 2 to 3 days after an ESI [238-240]. Similarly, ESIs can suppress the hypothalamic-pituitary-adrenal (HPA) axis for up to 3 weeks [241,242]. Maillefert et al. found decreased serum cortisol, Adrenocorticotropic hormone (ACTH), and urinary cortisol after the single epidural injection of 15 mg of dexamethasone acetate [243]. The levels returned to normal at day 21. This effect may be dose dependent. Hsu et al. found that a single epidural injection of 40 mg of triamcinolone markedly decreased plasma cortisol for only 24 hours, whereas 80 mg resulted in a decrease for up to 14 days posttreatment; HPA axis function returned to normal within 35 days in both groups [244]. A recent article demonstrated fewer systemic effects (e.g., suppression of the pituitary axis for up to 3 weeks) with dexamethasone compared with particulate steroids [138].

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Less common side effects have included elevated temperature, euphoria, depression, mood swings, transient changes in sleep pattern, local fat atrophy, depigmentation of the skin, and pain flare [187]. Several authors have reported cases of symptomatic epidural lipomatosis following epidural injections of corticosteroids [245-250]. Insomnia (39%), facial erythema (20%), nausea (20%), and rash and pruritus (8%) have been observed following betamethasone injection [187]. Finally, ESIs does not induce weight gain [251].

**REFERENCES**

| SUBJECT: IMAGE-GUIDED EPIDURAL STEROID INJECTION | REFERENCE # |
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ACR-ASNR-ASSR-SIR-SNIS PRACTICE PARAMETER FOR THE PERFORMANCE OF IMAGE-GUIDED EPIDURAL STEROID INJECTION, 2019 (Resolution 14)

| SUBJECT: MODIFIED BARIUM SWALLOW | REFERENCE # |
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**PURPOSE**

The purpose of this policy is to provide guidance in performing high quality modified barium swallows.

**POLICY**

It is the policy of Modoc Medical Center to provide modified barium swallows in concordance with the parameters as set for by the American College of Radiology (ACR).

**PROCEDURE**

**Specifications of the Examination**

The written or electronic request for a modified barium swallow should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation.

Documentation that satisfies medical necessity includes, but not limited to:

- Signs and symptoms
- Relevant history (including known diagnosis)
- Additional information regarding the specific reason for the examination or a provisional diagnosis would be helpful and may at times be needed to allow for the proper performance and interpretation of the examination.
- The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider with the patient's clinical problem or question and consistent with the state's scope of practice requirements. (ACR Resolution 35, adopted in 2006).

Patient Selection, Preparation, and Positioning

- The patient must have sufficient cognitive awareness to cooperate with the study
- The patient should have nothing by mouth for several hours prior to the study and should not smoke or chew gum for the same period of time.
- The oral and pharyngeal regions are usually evaluated initially in the lateral plane with the patient upright
- Special chairs are available to assist with patient positioning but are not necessary to perform an adequate study.



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The modified barium swallow (MBS) is a proven and useful procedure for evaluating the oral pharyngeal phases of swallowing. Although it is primarily for evaluation of function, structural abnormalities may also be revealed and may be a primary cause of swallowing dysfunction. A tailored MBS focusing primarily on function is often performed alone. A complete patient evaluation may also include spot images of the pharynx for structural assessment and an esophagram, as symptoms of dysphagia are often poorly localized. This policy focuses on assessment of the pharynx.¶
The MBS may be performed because of known or suspected swallowing dysfunction or because of the presence of conditions that are strongly associated with swallowing dysfunction. The MBS should be performed only for a valid medical reason and with minimum radiation dose necessary to achieve a study of diagnostic quality. Additional or specialized examinations may be required to complete the patient's assessment.¶
Although it is not possible to detect all structural and functional swallowing abnormalities using the MBS, adherence to the following practice parameter will maximize the probability of their detection.¶
**Indications**¶
Indications for the MBS include, but are not limited to:¶
Oropharyngeal dysphagia¶
Coughing, choking, or drooling with swallowing¶
Known or suspected aspiration pneumonia¶
Frequent respiratory tract infections¶
Neurologic disorders likely to affect swallowing¶
Myopathy involving the pharynx and cervical esophagus¶
Masses of the tongue, pharynx, larynx, or retropharyngeal region that may affect swallowing¶
Follow up post treatment (operative, radiation, and/or chemotherapy) evaluation of the mouth, pharynx, larynx, or retropharyngeal area.¶
Follow up of known oropharyngeal swallowing dysfunction¶
Follow up assessment of dietary restrictions and protective maneuvers to limit or prevent aspiration¶
Follow up assessment of patients recovering from trauma and/or coma¶
Oral feeding assessment for ventilator dependent patients¶
Poor feeding (neonate)¶
Patients with basilar pulmonary fibrosis¶

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- Patients who cannot be placed upright may be examined with cross table lateral fluoroscopy or in the lateral decubitus position.

- For infants, the MBS should be performed with the patient upright and sitting supported in a secured chair/seat preferentially designed for oropharyngeal motility studies.

Personnel

- The examination may be performed by a physician alone for diagnostic evaluation or by a physician and speech-language pathologist for both diagnosis and recommendation regarding therapy and technique to promote swallowing with the least risk of aspiration.

Method of Recording

- For functional assessment, the fluoroscopic portion of the examination should be recorded on a high-resolution video-fluorographic (VF) and/or rapid digital fluoroscopic imaging.

- For morphologic assessment, spot images and/or rapid digital fluoroscopic imaging with double contrast or single contrast technique should be used (single contrast usually suffices in children).

Modified Barium Swallow Technique Examination

- The examination should include evaluation of oral and pharyngeal function and morphology in the lateral projection. Evaluation in the frontal projection may be useful to further evaluate an abnormality identified on the lateral projection. An esophagram may be required to complete the assessment of the patient. Evaluation is the frontal projection is not necessary in infants and young children.

- Video-fluorographic and/or rapid digital fluorographic recording is performed while the patient swallows a variety of consistencies of barium or barium-impregnated food with varying bolus volumes. Assessment includes all phases of swallowing from the preparatory oral phase through the oral transfer phase and pharyngeal phase. The esophageal phase may be assessed on other swallows. The viscosity and volume of each bolus may be varied by the clinical judgement of the speech-language pathologist, or the radiologist based on the patient's presenting symptoms. If aspiration occurs, the patient's response to aspiration and ability to clear the aspirated materials and his or her response to protective and therapeutic maneuvers should be assessed wherever possible.

  In some instances, continuous fluoroscopy may not be indicated. For example, in assessing the ability of the patient to protect the airway once fatigue occurs following progressive feedings, interval fluoroscopy should be used. Fluoroscopic screening should be restarted once the patient's swallow appears to slow.

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- Spot radiographs are not needed for all patients. When obtained, double contrast spot radiographs and/or rapid digital fluoroscopic images of the pharynx may include lateral views during both suspended respiration and phonation and frontal views during both suspended respiration and modified Valsalva maneuver. Single contrast radiographs and/or rapid digital fluorographic images

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may be substituted if warranted by the patient's clinical condition. For pediatric patients, spot radiographs and double contrast examinations are seldom necessary. The examination should be performed with a pulsed fluoroscopy unit using a frame rate sufficient for diagnostic quality and in keeping with the principles of ALARA. Images and/or cine clips may be stored with the image capture feature rather than using full exposures.

- For evaluation of the esophagus, see the policy on esophagrams. In the case of significant aspiration, the esophagram may be performed with injection of barium directly into the esophagus through a feeding tube, either pre-existing or placed by the radiologist. A dedicated evaluation of the esophagus in children is often part of an upper gastrointestinal study (UGI) and can be performed before the modified barium swallow or at a later time after the MBS, as ingestion of different consistencies of barium impregnated foods may impact the diagnostic quality of the UGI.

Tailored Examination

- The method of examination will often vary based on the patient's history, the clinical questions to be answered, and the findings during the study. Many institutions tailor the majority of examinations to VF in the lateral projection to assess for the presence or absence of aspiration and the effects of protective maneuvers to limit aspiration. The examination may need to be terminated prematurely if the patient demonstrates severe aspiration (such as aspiration below the sternal notch) and does not respond to protective or therapeutic maneuvers.

Protective and Therapeutic Maneuvers

- When aspiration does occur, the effect of maneuvers to limit or prevent aspiration may be assessed. These may include changes in neck or body position or other special maneuvers. If swallowing dysfunction is present, additional compensatory strategies may be assessed to improve swallow physiology. Additional consistencies of food may be assessed based on the patient's usual or expected diet.

Protective Maneuvers

- When the patient's symptoms are not explained by the basic examination, provocative or helpful maneuvers based on the history may be needed. Changes in body position may be used to evoke subtle change in position of an infant's head (flexion) may also be useful, once aspiration has been shown, to determine if head position eliminates aspiration.

  In the event of aspiration during the study, frontal chest radiography may be helpful at the end of the examination to document or determine the extent of aspiration.

Radiographic Quality Control

- Proper functioning of the imaging equipment should be assured prior to beginning the examination. If spot images are obtained, image quality should be checked by a qualified technologist or physician

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before the patient is dismissed. Images not of diagnostic quality should be repeated as necessary. Provision should be made for recording all available radiation dose data in the patient's medical record. If cumulative air kerma or air kerma-area-product data are not available, the fluoroscopic exposure time and the number of acquired images (radiograph or cine) should be recorded in the patient's medical record, according to the ACR-AAPM Technical Standard for Management of the Use of Radiation in Fluoroscopic Procedures.

**Documentation**

Comparison to prior MBS studies should be performed when relevant, particularly when the examination is performed to follow up previously demonstrated abnormalities. Patient identity (using name and/or a unique identifying number) and examination date should be recorded on the VF recording medium.

**REFERENCES**


**ACR-SPR PRACTICE PARAMETER FOR THE PERFORMANCE OF THE MODIFIED BARIUM SWALLOW (MBS), Revised 2017 (Resolution 4)***


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| SUBJECT: MYELOGRAPHY and/or CISTERNOGRAPHY | REFERENCE # |
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**PURPOSE**

The purpose of this policy is to provide guidance in performing myelography and perform high quality exams.

**POLICY**

It is the policy of Modoc Medical Center to provide quality Myelography examinations in concordance with the practice parameters as set forth by the American College of Radiology (ACR).

**PROCEDURE**

Indications for myelography include but are not limited to:

- Demonstration of the site of a cerebral spinal fluid (CSF) leak post lumbar puncture headache, post spinal surgery headache, orthostatic headache, rhinorrhea or otorrhea, or cerebrospinal venous fistula.
- Symptoms or signs of spontaneous intracranial hypotension
- Surgical planning, especially in regard to the nerve roots.
- Evaluation of suspected brachial plexus or nerve root injury in the neonate.
- Evaluation of intraspinal arachnoid webs or cysts.
- Evaluation of the bony and soft tissue components of spinal degenerative changes.
- Radiation therapy planning.
- Diagnostic evaluation of spinal or basal cisternal disease.
- Nondiagnostic MRI studies of the spine or skull base.
- Poor correlation of physical findings with MRI studies.
- Use of MRI precluded because of claustrophobia, technical issues, eg, patient size, safety reasons, eg, pacemaker, and surgical hardware.
- Delineation of congenital anomalies, eg, diastematomyelia, when MRI is insufficient.

**Qualifications and Responsibilities of Personnel**

**Physician:**

Certification in Radiology, Diagnostic Radiology, Interventional Radiology/Diagnostic Radiology (IR/DR), Nuclear Radiology, or Nuclear Medicine by one of the following organizations: the American Board of Radiology (ABR), the American Osteopathic Board of Radiology, the Royal College of Physicians and Surgeons of Canada, or the College des Medecins du Quebec, and the performance of myelography with acceptable success and complication rates.

or

Completion of a residency or fellowship training program approved by the Accreditation Council for Graduate Medical Education (ACGME), the Royal College of Physicians and Surgeons of Canada, the College des Medecins du Quebec, or the American Osteopathic Association (AOA) to include evidence of training and competency in myelography. Adequate training should include the performance of a sufficient number of myelographic procedures to become facile in the technique.

and

Instruction in all of the following areas should be substantiated by the director of the training program:

- Anatomy, physiology, and pathophysiology of the central and peripheral nervous systems.
- Physics of ionizing radiation including an understanding of its production, detection, and risks and of techniques to minimize radiation exposure.
- Pharmacology and dosage of contrast media used in myelography. Use only those agents approved for intrathecal use.
- Indications for myelography and cisternography, and indications for alternative imaging studies, including MRI.
- Preprocedural assessment of the patient.
- Conduct of the myelographic examination. This includes spinal puncture, patient positioning, and fluoroscopic and filming techniques.
- Conduct of the postmyelogram CT examination. This includes timing, patient positioning, and technical factors.
- Postprocedural patient management, especially the recognition and initial management of the complications.
- Interpretation of lumbar, thoracic, and cervical myeloggrams and cisternograms, as well as interpretation of postmyelogram CT scans.
- Contraindications to myelography.

Knowledge of the drugs that can increase the risk of myelographic adverse events.

Maintenance of Competence

To maintain privileges, physicians must perform a sufficient number of myelographic procedures to maintain their skills with acceptable success and complication rates.

Continuing Medical Education

Continuing education should be in accordance with the ACR Practice Parameter for Continuing Medical Education (CME) [18].

**Registered Radiologist Assistant**

A registered radiology assistant is an advanced level radiographer who is certified and registered as a radiologist assistant by the American Registry of Radiologic Technologists (ARRT) after having successfully completed an advanced academic program encompassing an American College of Radiology/American Society of Radiologic Technologists (ACT/ASRT) radiologist assistant curriculum and a radiologist directed clinical preceptorship. Under radiologist supervision, the radiologist assistant may perform patient assessment, patient management and selected examinations as delineated in the Joint Policy Statement of the ACR and the ASRT titled "Radiologist Assistant Roles and responsibilities" and as allowed by state law. The radiologist assistant transmits to the supervising radiologist those observations that have a bearing on diagnosis. Performance of diagnostic interpretations remains outside the scope of practices of the radiologist assistant. (ACR Resolution 34, adopted in 2006 – revised in 2016, Resolution 1-c).

**Radiologic Technologist**

Certification by the American Registry of Radiologic Technologists or unrestricted state licensure is required. In addition, the radiologic technologist should have training in and be skilled in performing fluoroscopic examinations on patients with intrathecal contrast media, including patient positioning, fluoroscopic beam limitation, and methods of applying safe physical restraint during table tilting. Continuing education programs and on the job training under the supervision of a qualified physician should be available.

**Equipment Specifications**

- High quality radiographic/fluoroscopic imaging equipment with a capability for film or digital recording of selected portions of the examination. A tilt table and a proper support device for securing the patient on it should be available.

- An adequate selection of spinal needles and appropriate ninionic contrast media approved for intrathecal use.

- Appropriate facilities and equipment for treating adverse reactions (eg, seizure, vasovagal reaction, and/or cardiorespiratory collapse).

- Appropriately trained personnel to provide proper patient care and operation of the equipment.

- A multidetector CT scanner to perform post myelogram CT myelographic and/or cisternographic studies. A multiplanar reconstruction capability for CT is highly desirable.

**Surgical and Emergency Support**

Although serious complications of myelography are infrequent, there should be prompt access to surgical and interventional management of complications.

**Specifications of the Examination**

**Procedural Patient Care**

The written or electronic request for myelography should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation.

Documentation that satisfies medical necessity includes but not limited to:

- Signs and symptoms

- Relevant history, including known diagnoses.

- Additional information regarding the specific reason for the examination or a provisional diagnosis would be helpful and may at times be needed to allow for the proper performance and interpretation of the examination.

The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or question consistent with the state scope of practice requirements. (ACR Resolution 35, adopted in 2006 – revised in 2016, Resolution 12-b).

The clinical history and findings are to be reviewed by the performing physician.

- Prior to myelography, any prior pertinent imaging studies, including spinal images, CT, and/or MRI, should be reviewed. The review should include evaluation for the position of the conus as well as for the presence of cervical stenosis, cisternal narrowing or lumbar stenosis, operative hardware, or any other potential hazard prior to choosing the level for lumbar, cervical, or cisternal puncture for myelography.

- Appropriate prior medical history should include questions about relevant medications, especially those that can increase risk of adverse events, prior seizures, prior allergic reactions, and clotting ability.

- Patients who are on anticoagulant therapy (eg, warfarin {Coumadin}, heparin, clopidogrel {Plavix}, ticlopidine {Ticlid}) should discontinue these drugs for a period of time indicated in the consensus guideline of the American Society of Regional Anesthesia and Pain Medicine (see Table 1) prior to undergoing myelography. However, as there are now many marketed anticoagulation medications, each agent has a recommended period for which it should be continued, and if possible, the decision should be made after discussion with the physician who prescribed such medication. If the risks of discontinuing the anticoagulation are deemed greater than the risk of myelography, consideration should be given to bridging with intravenous heparin, if appropriate for the specific therapy, or delaying the myelogram until such time as it is reasonably safe to hold the anticoagulation (eg, patient who has recently undergone coronary artery stenting and is on clopidogrel).

- For patients with hematologic disorders or other conditions affecting blood coagulation, a platelet count and international normalized ratio (INR), prothrombin time (PT), and a partial thromboplastin time (PTT) values within one week of the procedure should be available.

- Medications known to decrease the seizure threshold should be carefully evaluated. While the contributory role of these medications has not been established, physicians may withhold some of these medications for 48 hours pre- and 24 hours post myelography, based on consideration of the potential risks and benefits. Of note, medications that lower the antiseizure threshold, such as monoamine oxidase inhibitors, and certain antidepressant medications could in theory precipitate a seizure, per the medication's manufacturers, and should be considered carefully if not withheld for an appropriate time to allow adequate clearance, typically at least 24 t0 48 hours pre-myelography. Antiseizure medications should not be withheld, as, in theory, they may prevent a seizure or their non-tapered absence may make the patient more susceptible to having a seizure secondary to the myelography contrast instillation.

- Informed consent should be obtained and documented. The risk and benefits of the procedure and of possible alternative procedures that may provide the needed information should be addressed.

- The patient should be appropriately hydrated both prior to and after the procedure.

- If sedation is used, it should be administered in accordance with the ACR-SIR Practice Parameter for Sedation/Analgesia.

Table 1:

| **Recommended guidelines for performing procedures in anticoagulated patients** | |
|---|---|
| Warfarin | Discontinue chronic warfarin therapy 4-5 days before spinal procedure and evaluate INR. INR should be within the normal range at the time of the procedure to ensure adequate levels of all vitamin K-dependent factors. |
| Antiplatelet medications (clopidogrel | No contraindications with aspirin or NSAIDs. Thienopyridine derivatives and ticlopidine) should be discontinued 7 days and 14 days, respectively, prior to procedure. GP llb/llla inhibitors should be discontinued to allow recovery of platelet function prior to procedure (8 hours for tirofiban and eptifibatide, 24-48 hours for abciximab). |
| Thrombolytics/fibrinolytics | There are no available data to suggest a safe interval between procedure and initiation or discontinuation of these medications. Follow fibrinogen level and observe for signs of neural compression. |
| LMWH | Delay procedure at least 12 hours from the last dose of thromboprophylaxis LMWH dose. For "treatment" dosing of LMWH, at least 24 hours should elapse prior to procedure. LMWH should not be administered within 24 hours after the procedure. |
| Unfractionated SQ heparin | There are no contraindications to neuraxial procedure if total daily dose is less than 10,000 units. For higher dosing regimens, manage according to intravenous heparin guidelines. |
| Unfractionated IV heparin | Delay spinal puncture 2-4 hours after last dose, document normal aPTT. Heparin may be restarted 1 hour following procedure. |

**Note:**NSAIDs indicates nonsteroidal anti-inflammatory drugs: GP llb/llla, platelet glycoprotein receptor llb/llla inhibitors; INR, international normalized ratio; LMWH, low-molecular-weight heparin; aPTT, activated partial thromboplastin time. *Adapted from:* Horlocker TT, Wedel DJ, Benzon H. et al. **Regional anesthesia in the anticoagulated patient: defining the risks (the second ASRA Consensus Conference on Neuraxial Anesthesia and Anticoagulation).** *Reg Anesth Pain Med 2003;172-97.*

## Relative Contraindications to Myelography

- Known space occupying intracranial process with increased intracranial pressure.
- Historical or laboratory evidence of bleeding disorder or coagulopathy.
- Recent myelography performed within 1 week.
- Previous surgical procedure in anticipated puncture site; can choose alternative puncture site.
- Generalized septicemia.
- History of adverse reaction to iodinated contrast media and/or gadolinium base MR contrast agents.\History of seizures; patient may be premedicated.
- Grossly bloody spinal tap, may proceed when benefit outweighs risk.
- Hematoma or localized infection at region of puncture site.

- Pregnancy.

**Myelogram Examination**

- The patient is placed prone or lateral decubitus on the tabletop, and the skin of the mid-lumbar back is prepped and draped in standard sterile technique.

- Using the lumbar approach, typically, the L2-L3 or L3-L4 interlaminar space is localized. Subcutaneous and intramuscular local anesthetic is administered. Generally, diagnostic myelography is performed with a styletted small bore (22 or 25 guage) spinal needle introduced through the anesthetized region and directed toward the midline. Smaller needles are associated with lower risk of bleeding and post-tap headache. Occasionally, because of body habitus or specific pathology, larger guage needles may be required. The needle is advanced under intermittent image guidance. If a beveled needle is used, the bevel may be utilized to control the direction of the needle. If possible, the bevel of the needle should be parallel to the vertical plane of the dura in-order to minimize transverse cutting of the dural fibers. When the dura is traversed, a change in resistance is often, but not always, perceived. The stylet is then slowly removed to check for CSF return. At this point, opening pressure can be measured, and/or CSF sampling can be performed prior to contrast injection.

- A nonionic iodinated contrast medium for intrathecal use is slowly administered intrathecally through the lumbar needle under intermittent imaging. An appropriate amount of contrast is injected, not to exceed the manufacturer's recommendations.

- Prior to removing the needle, imaging may be obtained to document the needle position.

- The needle is then removed from the back, and the patient is secured to the tabletop by a support device prior to being tilted into Trendelenburg or reverse Trendelenburg positions.

- Transforaminal puncture for myelography: recent preliminary reports suggest that the transforaminal puncture (rather than interspinous, interlaminar, or lateral C1-C2 approach) may be utilized in patients with extremely difficult access, complete posterior fusion, or spinomuscular disorders preventing access. Further experience is needed to evaluate the utility and indications for this technique in a wider array of disorders.

- Using intermittent imaging, table tilting, and patient rotation, anteroposterior, oblique, and cross table lateral images of the region in question are documented on digital media. For lumbar myelography, if the conus medullaris has not been recently visualized by other means, evaluation of that area should be included in the study.

- For cervical myelography, and, in some instances, thoracic myelography with the patient prone, the head is hyperextended on the neck, thus creating a lordotic "trough", and the table is then gradually and slowly tilted head downward until the opacified CSF "column" flows through the area of

interest. The myelographic table must have adequate and secure shoulder support for the patient's safety. The patient's chin is supported in a chin rest to prevent rapid ascent of the contrast into the intracranial basal cisterns. The lead gloved hands of the technologist may also support the positioning of the patient's head and neck. As in the lumbar region, anteroposterior, oblique, and cross-table lateral images can be documented on digital media.

- If cisternography is requested, with the opacified CSF "column" in the cervical spine canal, the table is restored to the horizontal position, and then the hyperextended head is gradually and slowly lowered (flexed) into a neutral position under image guidance. Imaging for cisternography is typically obtained with CT, conventional radiographs are not usually obtained.

- In the lateral C1-C2 approach, the patient is ideally positioned prone on the table-top, and the head is secured in a neutral position. The supine position may be used in situations where the prone position is not feasible, such as cases involving general anesthesia, sedation, or hardware. Using image guidance, the head and neck are positioned in the true lateral projection, and local anesthesia is administered subcutaneously and intramuscularly in the side of the neck at a point overlying the posterior aspect of the C1-C2 interlaminar space slightly anterior to the spinolaminar junction line and inferior to the arch of C1.If c-arm fluoroscopy is not available or if the patient is unable to remain in a prone position on the table top but can lie quietly and comfortably in a nonrotated lateral decubitus position, lateral C1-C2 puncture can be performed using vertical beam fluoroscopy. Under intermittent image guidance, the spinal needle is advanced incrementally into the subarachnoid space at the posterior margin of the thecal sac behind the posterior margin of the upper cervical spinal cord. Great caution with frequent image monitoring should always be used during needle advancement, as the dura is punctured and as the iodinated contrast medium is cautiously and slowly injected into the posterior cervical subarachnoid space. When this is completed, an image should be documented and permanently retained, and the needle is then withdrawn from the neck. The desired area of the opacified subarachnoid space is then examined and documented.

- Following completion of the examination as described above, the patient may be transferred to the CT scanner for CT myelographic or cisternographic imaging when appropriate.

- For CT myelography, the patient is rolled from side to side to promote uniform diffusion of contrast to completely opacify the region of interest. Imaging is obtained using a multidetector CT scanner with the patient prone and/or supine as needed within the scanner. Image data are acquired helically with thin collimation. Images are reconstructed in the axial, coronal, and sagittal planes and reviewed in soft tissue and bone windows.

- For CT cisternography, CT imaging is obtained as soon as possible after positioning of the opacified CSF in the basal cisterns. Thin section image data are obtained helically through the area of interest with thin collimation with the patient in both prone and supine positions. Images are reconstructed in the axial, coronal, and sagittal planes and reviewed in the soft tissue and bone windows. For detection of CSF leakage at the skull base, use of a workstation capable of multiplanar 3-D image reformations has proven value in localizing and measuring the size of the dural defect.

- Pediatric myelography is most often performed under conscious sedation or general anesthesia. Pediatric patients are often kept NPO for 6 to 8 hoyrs prior to anesthesia or sedation and may be dehydrated. Patients should be appropriately hydrated before and for several hours after the sedation. Pediatric patients may be at higher risk of adverse events during contrast medium administration, including patients with asthma, sensitivity to medication and/or allergens, congestive heart failure, serum creatinine level greater than 1.5 mg/dL, or those younger than 12 months of age. However, the incidence of headache, vomiting, and back pain appear to be lower in the pediatric population.

  Prior to performing myelography in a child, the radiologist should review imaging studies of the brain and spine to determine if the patient has undergone repair of a posterior dysraphic defect, a low laying tethered cord, or a lipomeningocele, all of which preclude lumbar puncture. Low lying cerebellar tonsils and Chiari II malformations with caudal displacement of the hindbrain into the cervical canal are contraindications to lateral C1-C2 puncture. The position of the conus in infants and young children is lower than in older children and adults, and lumbar puncture should be performed at the L3-L4 or L4-L5 level in children younger than 3 years of age using a 25 guage needle. Penetration of the dura may be inapparent. When CSF sampling is needed, collection should be limited to 1 to 2 cc per vial, especially in infants with small capacity thecal sacs. Instillation of the contrast medium under intermittent imaging control is recommended. The minimum volume and dose to produce adequate visualization should be used; dosage should be calculated per kg of body weight.

- Delayed CT through the region of interest can be useful in certain situations (eg, to demonstrate opacification of suspected arachnoid cysts that do not opacify on the initial CT).

- In particular situations, recent reports of modifications of fluoroscopic and CT myelography technique including digital subtraction, dual energy, and ultrafast myelography, suggest their utiliyy but report only preliminary results with limited data. Inclusion of these techniques herein will await greater experience and definition of specific indications.

**Postprocedural Care**

- The patient should be adequately hydrated.

- The patient should be observed following the examination for sufficient time to observe for potential complications.

- If the myelogram is performed on an outpatient basis, the patient should be properly instructed regarding limitations following the procedure (eg, no driving).

- Instructions for post procedural care, including warning signs of adverse reactions, symptoms, and signs of infection at the puncture site and the possibility of persistent headaches, should be given to the patient by a trained professional. The instructions should include a recommendation that the patient be in the company of a responsible adult for 12 hours following the procedure,

- A physician should be available to answer questions and provide patient management following the procedure.

## REFERENCES


ACR-ASNR-SPR Practice Parameter for the Performance of Myelography and Cisternography; Revised 2019 (resolution 19).

| SUBJECT: SMALL BOWEL EXAMINATION | REFERENCE # |
|---|---|
| DEPARTMENT: RADIOLOGY | PAGE: 1 OF: 6 |
| | EFFECTIVE: 09/2021 |
| | REVISED: MM/YYYY |

## PURPOSE

The purpose of this policy is to provide guidance in performing high quality small bowel examinations.

## POLICY

It is the policy of Modoc Medical Center to provide quality small bowel examinations in concordance with the practice parameters as set forth by the American College of Radiology (ACR).

## PROCEDURE

### Introduction

Radiographic examination of the small bowel after oral ingestion of contrast is a proven and useful procedure. The purpose is to establish the presence or absence of a disease and its nature by opacifying the small bowel with contrast taking sequential images. The goal is to obtain a diagnostic quality study visualizing the small bowel with the minimum radiation dose necessary. Peroral pneumocolon is an adjunct technique that involves retrograde insufflation of air into the terminal ileum via a rectal tube.

### Indications

Indications for contrast small bowel examinations include, but are not limited to:

- Diverticula
- Evaluation for asymptomatic stricture prior to capsule enteroscopy
- Evaluation for presence of primary or secondary neoplasm(s)
- Evaluation of congenital bowel anomaly
- Evaluation of postsurgical anatomy
- Evaluation of suspected enteric fistula
- Intraluminal tethering
- History of small bowel disease
- Inflammatory bowel disease
- Known or suspected small bowel stricture or obstruction
- Malabsorption
- Polyposis syndrome such as Cowden or Peutz-Jeghers

- Protein losing enteropathy
- Suspected small bowel bleeding or iron deficiency anemia
- Possible small bowel stricture or obstruction
- Enteric fistula
- Possible postoperative leak

Pertinent symptoms serving as indications for a contrast small bowel examination include, but are not limited to:

- Abdominal pain
- Diarrhea
- Abdominal masses
- Unexplained fever
- Vomiting
- Failure to thrive or weight loss

**Pediatric Patients Special Considerations**

Some indications for contrast small examinations, such as failure to thrive, are unique to the pediatric population. In patients with suspected malrotation and an unclear duodenal-jejunal junction (ligament of Treitz) on the upper gastrointestinal (GI), documentation of the position of the small bowel may help to clarify a potential diagnosis of malrotation.

In determining the appropriateness of a small bowel examination for a specific pediatric patient, alternate methods might be considered that may not require ionizing radiation, such as ultrasound and MRI.

**Specifications of the Examination**

The written or electronic request for a contrast small bowel examination should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation.

Documentation that satisfies medical necessity includes, but not limited to:

- Sign and symptoms
- Relevant history

- Known diagnosis
- Additional information regarding the specific reason for the examination or a provisional diagnosis is helpful and may at times be needed to allow for the proper performance and interpretation of the examination.

The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or question and consistent with the state scope of practice requirements. (ACR Resolution 35, adopted in 2006 – revised in 2016, Resolution 12-b)

**Patient Selection**

A qualified radiologist should be available to help the clinician decide which test is best to evaluate the clinical problem(s). The radiologist and the patient's health care provider should consult when necessary to determine the examination and examination technique appropriate for the individual patient.

**Patient Preparation**

The adult patient should be instructed to refrain from taking anything by mouth after midnight the night before the procedure. Some institutions require a bowel preparation in order to reduce excessive right-sided colonic feces that can impair normal small bowel motility. Patients may generally take scheduled medications on the morning of the examination. Examinations may be performed with shorter fasting times as clinically indicated. If a peroral pneumocolon is planned, a bowel preparation to remove any intraluminal particulate material should be performed.

The pediatric patient should have nothing by mouth or via nasogastric, gastrostomy, or other enterostomy tube prior to the examination. The length of the fast depends on the patient's age, the examination, and the clinical circumstances. Suggested regimens are as follows:

- Two hours for neonates and infants under 3 months of age
- Three hours for infants 3 to 12 months of age
- Four hours or more for all other children

These regimens may be modified depending on the needs of the patient as assessed by the performing radiologist. For emergent indications, fasting may not be required.

**Examination Preliminaries**

Horizontal beam imaging should be performed if there is any suspicion of pneumoperitoneum or if the patient has an underlying condition that might predispose to bowel perforation.

Pertinent prior studies and/or reports, if available, should be reviewed when appropriate.

Medical history should be reviewed to determine whether the protocol should be modified to meet specific needs, such as dosing of medication or clinical monitoring. Concurrent medical conditions as well as allergies should be considered in patient scheduling and study design.

**Examination Technique**

To produce a diagnostic quality examination, the physician should tailor the contrast small bowel examination procedure to the individual patient, as warranted by clinical circumstances and the condition of the patient

Contrast selection and administration

- For adult patients, oral ingestion of a minimum of 16 ounces of a well suspended barium preparation, with additional barium ingestion as needed to maintain uniform distension of all barium opacified small bowel loops. This is best accomplished by maintaining a barium filled stomach for the duration of the procedure. Because dilution and absorption, the use of water-soluble contrast media is not the preferred method for small bowel contrast examination and imaging. However, water soluble contrast is sometimes preferred by referring physicians if there is suspicion of bowel leak or obstruction; if used, an isosmotic water-soluble contrast will minimize the dilution effect caused by hyperosmotic contrast agents.

- For children, the type of contrast given is determined by the child's age and the indications for the study. Barium is the preferred contrast medium for most studies. A barium sulfate suspension of 45% weight/weight (70% weight/volume) is commonly used. Barium should be avoided when there is a possible perforation of the GI tract. When small bowel study is performed with iodinated containing contrast media, low or iso-osmolar contrast is preferred. Use of iso-osmolar contrast media is particularly important in critically ill premature neonates and infants to avoid serum electrolyte shifts. Hyperosmolar iodinated contrast media should not be given by mouth in patients who are at risk for aspiration.

  Volume of contrast administered will vary based on patient age, size, anatomy, and pathology. Typical volumes range from 30 to 75 ml in infants and to 480 ml in older teens and can be adjusted based on individual needs of the patient and the discretion of the performing radiologist. The radiologist may choose to administer additional contrast at any time during the study if images or fluoroscopy suggest that the quantity of contrast present in the GI tract is insufficient for diagnosis.

  Delivery of contrast: Contrast medium should be delivered in a manner that is appropriate for the patient's age. Flavoring agents may be added. For neonates and infants, a device consisting of a feeding tube or orogastric tube passed through a nipple may be used to deliver the contrast into the mouth. Alternatively, the neonate or infant may be fed contrast from a baby bottle with a nipple. Older infants may be given by straw or taken directly from a cup by an older child. A nasogastric tube, gastrostomy, or jejunostomy, if present, may be used as appropriate. If the infant or child does not voluntarily take contrast, administration of contrast into the mouth with a small syringe may be successful. The syringe should have a Luer lock type or catheter type tip to prevent accidental injury

to the mouth. However, if the child of any age is unable to take sufficient contrast by mouth, an appropriately sized enteric tube may need to be placed for contrast administration.

The procedure in adult and pediatric patients should include, but not limited to:

- Preliminary (scout) supine radiograph of abdomen as indicated

- Intermittent fluoroscopy with patient rotation with palpation or compression (known as rotation and palpation) of all accessible small bowel loops, including the terminal ileum, with appropriate images to demonstrate any abnormality. The timing of fluoroscopy depends upon the examination indication, patient condition, and transit time. Palpation is performed with a lead gloved hand, compression paddle with inflatable balloon is placed under the patient's pelvis. When the balloon is inflated, the loops are displaced superiorly out of the pelvis. In addition to obtaining compression images after the small bowel is opacified, in certain cases, if needed, images utilizing compression may be obtained before the contrast reaches the colon in order to better assess early detectable small bowel abnormalities.

- After obtaining preliminary images of the abdomen, intermittent, serial large format overhead images of the abdomen are obtained in the supine and prone position when possible, each labeled with its individual time of acquisition. These overhead images are obtained as the contrast progresses through the small bowel to the colon and allow documentation of transit time. Subsequent timing of the overhead images should be dependent upon the examination indication, patient condition, and transit time.

- Alternatively, the study may be terminated when contrast reaches an ostomy or a point of complete obstruction, demonstrates a perforation, or other finding requiring surgical intervention. In cases of presumed partial obstruction, especially in small children with very little intra-abdominal fat in which the bowel loops significantly overlap and are asymmetrically dilated, it is important to follow the proximal end of the contrast bolus until it has cleared from the small bowel and into the colon. If there is a partial obstruction of the mall bowel, it is on these images that one might see residual contrast at a transition point from dilated bowel above a partial obstruction to decompressed bowel just distal to it.

- If peroral pneumocolon is needed to better visualize the terminal ileum, the patient is then placed in the lateral decubitus position on the fluoroscopy table. Pneumocolon is achieved by introducing a flexible enema catheter tip connected to a handheld bulb insufflator into the rectum and insufflating room air. Room air is introduced in a retrograde manner under intermittent fluoroscopic guidance until the right colon is filled with air. Air should be insufflated until it fills the terminal ileum or to patient tolerance. The patient can be placed in the prone position to encourage reflux of gas into the terminal ileum. If air does not enter the terminal ileum despite right colonic distension, postevacuation examinations may show that it has entered the ileum. This technique is usually not performed on children.

The following quality control indicators should be applied to all contrast small bowel examinations:

- When examinations are completed, patients should be held in the fluoroscopic area until the physician has reviewed all of the images.

- An attempt should be made to resolve questionable radiographic findings before the patient leaves. Repeat fluoroscopy of segments in question or special maneuvers, such as per oral pneumocolon, should be performed as necessary, but again, should not be performed on children.

**REFERENCES**


ACR-SPR PRACTICE PARAMETER FOR THE PERFORMANCE OF A CONTRAST SMALL BOWEL EXAMINATION, Revised 2018 (Resolution 4)*

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|---|---|---|---|
| REFERENCE # | 7470.24.03 | EFFECTIVE | 10/1983 |
| SUBJECT: | AUTOCLAVING OF EQUIPMENT & SUPPLIES | REVISED | 04/2023 |
| | | REVIEWED | |
| DEPARTMENT: | CENTRAL SUPPLY | PRIOR REVISIONS: | |

**PURPOSE:**
The purpose of this policy is to outline proper procedures for autoclaving equipment and supplies.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to outline the proper procedures for autoclaving equipment and supplies.

**PROCEDURE**

**SEE THE TABLES BELOW FOR WRAPPING AND STERILIZATION OF SURGICAL SUPPLIES.**

| TYPE | WRAPPING | TIME | DRY TIME | PRESSURE NO. | TEMPERATURE (F) |
|---|---|---|---|---|---|
| SMALL PACKS:<br>Cysto packs<br>D & C packs<br>Instrument trays<br>Lap packs<br>Maternity packs<br>Maternity supplies<br><br>LINEN PACKS:<br>Drape sheets<br>Towels<br>Dressings<br>Doctor's gowns<br>Scrub gowns<br>Lab tapes<br>Ray-tec sponges | Double or 2 Ply Sterilization Wraps | 5 Minutes | 20 Minutes | 15 | 275 degrees |
| DRESSING MATERIALS:<br>Fluffs<br>Kerlix<br>Webril<br>4x4's<br>Telfa | Double or 2 Ply Sterilization Wraps | 5 Minutes | 20 Minutes | 15 | 275 degrees |





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| DEPARTMENT: | CENTRAL SUPPLY | PRIOR REVISIONS: | |

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| SPONGES/ PACKS:<br>Surgical sponges<br>T & A sponges/Peanuts | | | | | |
| TYPE | WRAPPING | TIME | DRY TIME | PRESSURE NO. | TEMPERATURE (F) |
| BULK LINEN:<br>Lap Linen Pack | Double Ply Sterilization Wraps | 5 Minutes | 20 Minutes | 15 | 275 degrees |
| TRAY PACKS | Double Ply Sterilization Wraps | 5 Minutes | 20 Minutes | 15 | 275 degrees |
| METAL GOODS:<br>Basins<br>Bowls<br>Canisters<br>Forceps<br>Pans<br>Pitchers<br>Speculums<br>Trays<br>Tracheostomy tubes | 2 Single Ply Sterilization Wraps | 5 Minutes | 20 Minutes | 15 | 275 degrees |
| GLASSWARE:<br>Medicine glasses | Wrap with Blue towel and Sterilization Wrap | 5 Minutes | 20 Minutes | 15 | 275 degrees |
| LAPAROSCOPIC CAMERA | Double Ply Sterilization Wraps | 3 Minutes | 15 Minutes | 15 | 270 degrees |
| Eye Instruments | Double Ply Sterilization Wraps | 5 Minutes | 3 Minutes | 15 | 270 degrees |



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| DEPARTMENT: | CENTRAL SUPPLY | PRIOR REVISIONS: | |

**REFERENCES:**
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**ATTACHMENTS:**
None





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| REFERENCE # | 7470.24.04 | EFFECTIVE | 06/1982 |
| SUBJECT: | INSTRUMENT CLEANING | REVISED | 2023 |
| DEPARTMENT: | CENTRAL SUPPLY | | |

**PURPOSE:**
The purpose of this policy is to outline procedures for cleaning surgical instruments.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to outline procedures for adequately washing and preparing each instrument in preparation for sterilization.

**PROCEDURE:**
The appropriate PPE for cleaning surgical instruments include, but are not limited to:

- A fluid-resistant gown
- Heavy duty gloves
- A mask
- Facial protection

**PRE-PREPARATION OR SOAKING**

- Presoaking instruments moistens and loosens the gross soil and therefore makes the cleaning step more efficient.
- Instruments that are being presoaked should, in general, be soaked with an enzymatic solution.

**Dilution of Enzymatic Solution**
The following should be done to ensure the uniform dilution of germicidal solutions according to the manufacturer's recommendations:

1. Wear protective gloves and eye protection to guard against contact with skin and eyes.
2. Review the manufacturer's recommendation for dilution.
3. Use the appropriate dilution of lukewarm water to the appropriate amount of enzymatic agent.
4. Use a test strip on the solution if recommended by the manufacturer.
5. Discard the enzymatic agent according to manufacturer's recommendation.

**Utilizing the Instrument Washer**

1. Soak dirty instruments in a basin of approved enzymatic solution for 10 minutes. All instruments with hinges must be open.
2. After soaking is completed, scrub with a brush until clean. Serrated instruments are to be scrubbed with a smaller brush, paying attention to the hinged areas.





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3. Rinse well with water.
4. Place the instruments on a clean tray and place the tray in the instrument washer.
5. Start the cycle. When the washing cycle is completed, remove the instruments from the opposite side into sterile processing.
6. Immerse instruments in an instrument lubricant and do not rinse.
7. Allow the instruments to dry and then package according to wrapping instructions.

**Manual Cleaning of the Instruments**

Follow the following procedure for instructions that are heat sensitive and/or are too delicate to go through the washer/disinfector:

1. Follow the instructions for Dilution of Enzymatic Solution 1 through 5 and Instrument Cleaning 1 through 3.
2. Next soak the instruments for 10 minutes in an instrument disinfectant solution.
3. Immerse instruments in cold water, rinsing thoroughly. Place on a clean tray and send them through the pass-through window into sterile processing.
4. Verify that the instruments are free of secretion, excretions, and microorganisms. Inspection using lighting and/or magnification may be used to identify residues more readily than the unaided eye.
5. Immerse instruments in an instrument lubricant and do not rinse.
6. Allow to dry and package according to wrapping instructions.

**Cleaning of instruments using High Level Disinfectants**

1. Follow the instructions for Manual Cleaning 1 through 6.
2. Use a test strip if indicated by the manufacturer's recommendations. Date the opening of any new solution and discard when the manufacturer states the solution is no longer good.
3. Make sure the solution is dated after dilution and discarded according to theInstructions for Use (IFU).
4. Leave the instrument submerged according to the IFU, pertaining to the solution used.
5. Rinse the instrument thoroughly with sterile water.
6. Place the instrument on a clean tray and send the tray through the pass-through window.





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| DEPARTMENT: | CENTRAL SUPPLY | | |

7. Allow the instrument to dry.

8. Package accordingly.

**Disposable verses Non disposable Instruments**

1. Only reusable instruments will be sterilized and made available for use.
2. Devices labeled for single use must not be reprocessed or be reused for patient care.

**REFERENCES:**
None

**ATTACHMENTS:**
None





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| REFERENCE # | 7470.24.05 | EFFECTIVE | 06/1982 |
| SUBJECT: | EQUIPMENT AND SUPPLIES | REVISED | 2023 |
| DEPARTMENT: | CENTRAL SUPPLY | | |

**PURPOSE:**
The purpose of this policy is to outline procedures for equipment and supplies in Central Supply.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to outline procedures for equipment and supplies.

**PROCEDURE:**

**Sterilized Supplies**

Central Supply is responsible for delivering sterilized instruments and instrument trays to patient areas as needed. Supplies that arrive from the Purchasing Department will be checked to make sure that the packages are intact, free of dampness and soil, and free of contamination. Packages should also be checked for their expiration date.

**Non-Sterile Supplies**

Items that are handled by Central Supply that are not sterile must be kept in a clean and dry area, protected from dust and airborne particles.

Non-sterile items stored in Central Supply that are reusable must be properly cleaned and disinfected.

Non-sterile items should not be mixed with other sterile items.

**Distribution and Rotation of Supplies**

Sterile supplies should be handled as little as possible. There is a chance of contamination with each handling. The picking up and moving of packs increases the risk of damage. It is essential to plan to handle sterile material as little as possible. Rotation of supplies must, however, be done any time materials are being put away.

A general rule for putting away materials is to put the fresh materials to the back, bottom, or to the left of older supplies. Each technician must check the dates to bring older supplies to where they will be used first.

**Handling of Sterile Supplies**

- Do not place sterile supplies where they can become damp.
- Do not handle sterile supplies any more than necessary.



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| SUBJECT: | EQUIPMENT AND SUPPLIES | REVISED | 2023 |
| DEPARTMENT: | CENTRAL SUPPLY | | |

- Turn the dated portion of the tape on the sterile supplies to where it can be seen.
- If an item is not used often, place it in a dust cover immediately after cooling.

**Equipment Maintenance**

- Ordering Supplies:
  a. Use the appropriate purchasing order form. Routine supplies are to be ordered from the Materials Management section of the electronic medical records (EMR) system. For supplies unique to the Surgery Department, the purchasing order form in Excel must be used.
  b. Send the form to the OR manager. The OR manager must approve the supplies ordered. The supply request will then be forwarded to the Purchasing Department.

- Special equipment or supplies that cost more than $5,000 must be approved by Senior Leadership.

- If supplies are needed before they can be delivered from Purchasing, they can be retrieved from the Purchasing Department by completing the form located in that department. The correct information must be documented so that Purchasing can maintain an accurate inventory.

- If a supply is needed from another hospital, the Surgery manager will arrange for them and for their replacement.

- Repairs:
  a. For repairs, a work order ticket must be completed for the Maintenance or IT department within WorxHub.
  b. If any of the surgery or sterile processing equipment needs repaired, the Surgery manager will make arrangements.

**Outdated Instruments and Supplies**

- Outdates should be checked in the supply room, soiled decontamination room, medication room, sterile processing, operating room, ante room, anesthesia office, and the procedure room with the adjacent cleaning and reprocessing area every month.
- Outdates should be removed and replaced as needed.
- Supplies should be rewrapped and sterilized as needed.
- Supplies should be returned to the area from which they came.

**REFERENCES:**
None

**ATTACHMENTS:**
None





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Commented [DG2R1]: The routine supplies are ordered in Cerner. For our special items we still use an excel form.
Commented [AV3]: I believe this has been updated. I think the limit is anything over $5000 needs to be approved by admin.
Commented [DG4R3]: Yes, you're correct.
Commented [BP5R3]: Would senior leadership approve this then?
Commented [AV6R3]: I believe its the senior leader above that department that approves the purchase that is over $5,000, so in this case it would be the CNO.
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| REFERENCE # | 7470.24.06 | EFFECTIVE | 1/1979 |
| SUBJECT: | CENTRAL SUPPLY RESPONSIBILITY | REVISED | 2021, 2022 |
| DEPARTMENT: | CENTRAL SUPPLY | | |

**PURPOSE:**
The purpose of this policy is to outline the responsibilities of Central Supply (CS) personnel.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center (MMC) that the responsibilities of the CS personnel will be followed accordingly.

**PROCEDURE:**

- CS is responsible for:
  - Sterilization of supplies in the Operating Room (OR), CS, Emergency Room, Clinic, and Physical Therapy.
  - Making available solutions and trays in each department in which to place soiled instruments.
- Dispensing and stocking as needed.
- Sterile supplies are stored in the CS anteroom and in the sterile processing area. It is the CS staff's responsibility to maintain the par levels of supplies in the Surgery Department.
- All equipment and supplies will be stored alphabetically.
- All dirty items will be placed in the Soiled Decontamination Room.
- If the sterility of all sterilized basins, instruments, linens, and trays have been compromised, they are to be re-sterilized.
- All autoclavable supplies are sterilized according to the correct procedure for that item.
- All items will be properly labeled before sterilization.
- Attest's will be run once a month and sent to the lab with the correct documents.
- Attest's will be run with each load and a control each day the autoclave is used.
- Any non-autoclavable items that must be sterilized or cleaned with a high-level disinfectant will be cleaned using an approved disinfectant solution.



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| REFERENCE # | 7470.24.06 | EFFECTIVE | 1/1979 |
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- All autoclavable records will be kept for two years.

**REFERENCES:**
None

**ATTACHMENTS:**
None



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| SUBJECT: MEDTOXScan PROFILE-V | REFERENCE #<br>PAGE: 1 |
|---|---|
| DEPARTMENT:URINALYSIS | OF: 25<br>EFFECTIVE: 08/2023 |
| APPROVED BY: Dr. Robert James | REVISED: |

**PURPOSE**
This procedure describes the use of the MEDTOXScan Profile-V drug screens on urines at Modoc Medical Center (MMC) Laboratory.

**POLICY**
It is the policy of the Laboratory at MMC that staff will adhere to the rules described herein regarding policies and procedures in the Laboratory Department as they pertain to Urinalysis and are approved by the Laboratory Director.

**PRINCIPLE**
The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System consists of the PROFILE®-V MEDTOX*Scan*® Test Devices and the MEDTOX*Scan*® Reader. The PROFILE®-V MEDTOX*Scan*® Test Devices are one-step immunochromatographic tests for the rapid, qualitative detection of one or more of the following in human urine: Amphetamine, Barbiturates, Benzodiazepines, Buprenorphine, Cocaine, Methadone, Methamphetamine, Opiates, Oxycodone, Phencyclidine, Propoxyphene, THC (Cannabinoids) and Tricyclic Antidepressants or their metabolites. The PROFILE®-V MEDTOX*Scan*® Test Devices can only be used with the MEDTOX*Scan*® Reader. The MEDTOX*Scan*® Reader is an instrument used to interpret and report the results of the PROFILE®-V MEDTOX*Scan*® Test Device. The PROFILE®-V MEDTOX*Scan*® Test Devices cannot be visually read.

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The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System is for *in vitro* diagnostic use and is intended for prescription use only. It is not intended for use in point-of-care settings.

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The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System includes the one-step, competitive, membrane-based immunochromatographic PROFILE®-V MEDTOX*Scan*® Test Device and the MEDTOX*Scan*® Reader, which interprets and reports the test results automatically. A single urine sample can be evaluated for the presence of each of the classes of drugs specified in a single PROFILE®-V MEDTOX*Scan*® Test Device. The PROFILE®-V MEDTOX*Scan*® Test Device includes antibody-colloidal gold, drug-conjugates and a control line.

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**ANTIBODY-COLLOIDAL GOLD** Mouse monoclonal antibodies were developed that bind specifically to the drug class being tested. The individual monoclonal antibodies were adsorbed to colloidal gold and dried onto the test device.

**DRUG-CONJUGATES** Drugs from each class to be tested were individually conjugated to bovine serum albumin (BSA) or IgG. Each drug conjugate is immobilized on a test line at a designated position on the membrane strip.

**CONTROL LINE** Each test strip has anti-mouse antibody immobilized at the Control position of the membrane strip. The anti-mouse antibody will bind excess antibody-colloidal gold, indicating that the reagents are working properly.

When the urine sample is placed in the sample well of a test strip, the dried antibody-colloidal gold on the sample pad dissolves and the urine wicks up the white strips carrying the reddish-purple antibody-

colloidal gold with it. The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System will detect specific classes of drugs in urine because drug(s) in the urine and the drug(s) conjugated to the protein compete to bind to the antibody-colloidal gold. A test line will form when drug in the sample is below the detection threshold (negative result).

The MEDTOX*Scan*® Reader scans the test device and utilizes a contact imaging sensor (CIS) to capture relative line intensities. Software algorithms and barcodes are used to identify the test device, the drug tests associated with the test device and whether the presence or absence of a line is associated with a negative or positive result, respectively. The results of the scans are displayed on the MEDTOX*Scan*® Reader screen or, optionally, can be printed.

**Clinical Significance:**

Qualitative PROFILE®-V MEDTOX*Scan*® Test Devices utilize a one-step, solid-phase immunoassay technology. The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System includes the MEDTOX*Scan*® Reader for a convenient automated result. This test system may be used to screen urine samples for one or more of the following drug classes prior to confirmatory testing:

The amphetamines are a group of drugs that are central nervous system stimulants. This group includes amphetamine and methamphetamine.

Amphetamine (d-amphetamine) is detected on the Test Device only at the (AMP) position, methamphetamine (MAMP) is detected at the (MAMP) position.

Barbiturates (BAR) are a group of structurally related prescription drugs that are used to reduce restlessness and emotional tension, induce sleep and to treat certain convulsive disorders.

Benzodiazepines (BZO), a group of structurally related central nervous system depressants, are primarily used to reduce anxiety and induce sleep.

Buprenorphine (BUP) is a potent analgesic often used in the treatment of opiate abusers.

Cocaine (COC) is a central nervous system stimulant. Its primary metabolite is benzoylecgonine.

Methadone (MTD) is a synthetic opioid used clinically as a maintenance drug for opiate abusers and for pain management.

Opiates (OPI) are a class of natural and semi-synthetic sedative narcotic drugs that include morphine, codeine and heroin.

Oxycodone (OXY) (Oxycontin®, Percodan, Percocet) is a semi synthetic narcotic analgesic that is prescribed for moderately severe pain. It is available in both standard and sustained release oral formulations. Oxycodone is metabolized to Oxymorphone and Noroxycodone.

Phencyclidine (PCP) is a hallucinogenic drug.

Propoxyphene (PPX) is a narcotic analgesic. Its primary metabolite is norpropoxyphene.[3]

Tricyclic Antidepressants (TCA) are a group of structurally related prescription drugs that are used to manage depression.

Marijuana (THC) is a hallucinogenic drug derived from the hemp plant. Marijuana contains a number of active ingredients collectively known as Cannabinoids.

Many factors influence the length of time required for drugs to be metabolized and excreted in the urine. A variety of factors influence the time period during which drug metabolites are detected in urine. These include the rate of urine production, the volume of fluid consumption, the amount of drug taken, the urine pH, and the length of time over which drug was consumed. Drinking large volumes of liquid or using diuretics to increase urine volume will lower the drug concentration in the urine and may decrease the detection period. Lower detection levels may increase the detection time window. Although the detection period for these drugs varies widely depending upon the compound taken, dose and route of administration and individual rates of metabolism, some **general times have been established and are listed below.**[1-5]

| Drug | Detection Period |
|---|---|
| Amphetamine | |
| Acid Conditions | 1-3 days |
| Alkaline Condition | 3-10 days |
| Barbiturates | |
| Short-Acting | Up to 6 days |
| Long-Acting | Up to 16 days |
| Benzodiazepines | 1-12 days |
| Buprenorphine | up to 3 days |
| Cocaine metabolite | Up to 5 days<br>1 to 3 days typical |
| Methadone | 1-3 days |
| Methamphetamine | |
| Acid Conditions | 1-3 days |
| Alkaline Conditions | 3-10 days |

| Drug | Detection Period |
|---|---|
| Opiates | |
| Heroin | 1 day |
| Morphine | 1-3 days |
| Codeine | 1-3 days |
| Oxycodone | 1-3 days |
| PCP | |
| Single Use | 1-8 days |
| Chronic Use | Up to 4 weeks |
| Propoxyphene | Up to 1 week |
| THC | |
| Single Use | 1-7 days |
| Chronic Use | Less than 30 days typical |
| Tricyclic Antidepressants | 1-7 days |

The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System detects the presence of some drugs at concentrations lower than the traditional cutoff concentrations used in workplace drug testing programs. Clinicians recognize that drug testing cutoffs used for workplace deterrence will not provide the sensitivity they need for pain management, adherence testing and emergency department (ED) care. Most drugs of abuse testing performed by clinical laboratories is conducted for emergency rooms, rehabilitation programs and other clinical settings to diagnose and/or treat patients.[7] Lower cutoffs provide earlier

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detection times, longer detection windows and higher confirmation rates.[8] The laboratory performing the confirmation testing should be instructed to remove the cutoff concentration (reporting threshold) so the presence of lower concentrations of the drug can be documented, in order to greatly reduce the risk of missing a drug that is, in fact, present.[9]

**SAMPLE COLLECTION AND PREPARATION**

- The urine sample should be collected in a clean, dry container. Approximately 75 µL is required for each sample well.
- Collection of **30 mL of urine is more than sufficient for initial and subsequent testing**. No preservatives should be added.
- **Urine may be tested immediately following collection.**
- If it is necessary to store the urine, store under refrigeration at 2 to 8°C (36 to 46° F) for no more than two days. Urine may be frozen at -20°C (-4° F) or colder for storage.
- Stored urine must be brought to ambient temperature (18 to 25°C/64 to 77°F) and mixed well to assure a homogeneous sample prior to testing.

**PRECAUTIONS**

- The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System is for *in vitro* diagnostic use only.
- Do not use PROFILE®-V MEDTOX*Scan*® Test Devices after the expiration date printed on the package label.
- The PROFILE®-V MEDTOX*Scan*® Test Device should remain in its original sealed foil pouch until ready to use. If the pouch is damaged, do not use the test.
- If PROFILE®-V MEDTOX*Scan*® Test Devices have been stored refrigerated, bring to ambient temperature (18-25°C/ 64-77°F) prior to opening foil pouch.
- Do not store the test kit at temperatures above 25°C (77°F). Do not freeze.
- Avoid cross-contamination of urine samples by using a new urine specimen container and a fresh pipette tip for each urine sample. Avoid polystyrene containers. Do not use preservatives.
- Do not touch test strips in the large viewing window of the PROFILE®-V MEDTOX*Scan*® Test Device.
- Do not use PROFILE®-V MEDTOX*Scan*® Test Device if strips are damaged or dirty.
- Do not apply labels or tape to the PROFILE®-V MEDTOX*Scan*® Test Device.
- Do not write outside of the ID area on the left side of the PROFILE®-V MEDTOX*Scan*® Test Device top.
- Urine specimens and all materials coming in contact with them should be handled and disposed of as if infectious and capable of transmitting infection. Avoid contact with broken skin.
- Avoid contaminating the top of the test device with urine sample. Clean any urine off the top of the test device using a dry wipe to prevent contamination of the MEDTOX*Scan*® Reader sensor.

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**REAGENTS and MATERIALS PROVIDED/STORAGE CONDITIONS**

The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System kit contains PROFILE®-V MEDTOX*Scan*® Test Devices for use with the MEDTOX*Scan*® Reader.

- Each test device has all the reagents necessary to test one urine sample for one or more drugs simultaneously on the MEDTOX*Scan*® Reader.
- Each test device holds one or more test strips composed of a membrane strip coated with drug conjugate and a pad coated with antibody-colloidal gold in a protein matrix.

**Kit Contents**

1. Twenty-five (25) test devices in individual foil packages
2. Twenty-five (25) disposable pipette tips
3. One Quick Reference guide

**Storage Conditions**

The kit, in its original packaging, should be stored at 2-25°C (36-77°F) until the expiration date on the label.

**MEDTOX*Scan*® Reader Contents**

1. Positive and Negative QC Test Devices
2. Cleaning Cassette
3. MiniPet pipettor
4. Quick Set Up guide
5. User Manual

**MATERIALS REQUIRED BUT NOT PROVIDED**

1. Urine specimen collection container (avoid polystyrene)
2. PROFILE®-V MEDTOX*Scan*® Positive and MEDTOX Negative Control Solutions (external controls)

**OPTIONAL MATERIALS**

1. Thermal Printer and Printer paper
2. Hand held Barcode Scanner

NOTE: Specimen containers and external control solutions are available from MEDTOX Diagnostics, Inc.

**PROCEDURE**

1. Open one pouch for each sample to be tested and mark the PROFILE®-V MEDTOX*Scan*® Test Device with the patient or sample identification (ID). Place a patient label on the instrument to identify the patient to be run.

   (You may notice a reddish-purple color in the sample well. This is normal, do not discard the test).

   Note: If device was stored refrigerated, allow it to come to room temperature (64-77°F before opening and using.)

2. Dispense 75µL of urine into sample well (indicated by downward triangle on the test device). (Note: if urine was refrigerated, allow to come to room temperature (64-77°F), and mix by swirling before use.)
3. Repeat Step 2 for all sample wells with a downward triangle above them. Wipe off any spills on the device.
4. Place the test device in the MEDTOX*Scan*® Reader cassette drawer and close the drawer immediately. The MEDTOX*Scan*® Reader will read the barcode on the test device and determine its part number and test configuration. It will prompt the user to enter Lot#, User ID#, and Specimen ID#, which can all be entered using the MEDTOX*Scan*® Reader keypad or hand held barcode scanner. The MEDTOX*Scan*® Reader will begin timing the assay once it detects the barcode and results will be displayed and printed after the scan and analysis are complete.
5. Discard disposable yellow sample tip. Store the 75µL Pipet in a dry, secure location at room temperature (18 – 25 ºC or 64 – 77 ºF). Replace the Pipette if it becomes damaged or does not function properly.

**Maintenance:**

The MEDTOX*Scan*® Reader includes a Positive QC Test Device, a Negative QC Test Device and a Cleaning Cassette. The MEDTOX*Scan*® Positive and Negative QC Test Devices are intended to detect errors associated with the MEDTOX*Scan*® Reader and a contaminated contact imaging sensor (CIS), and to verify that the CIS cleaning procedure using the MEDTOX*Scan*® Cleaning Cassette effectively removed any contamination.

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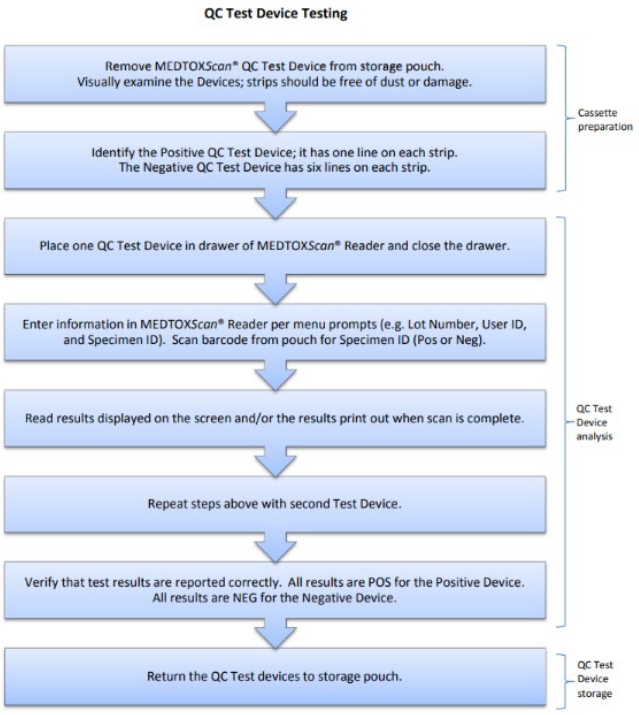
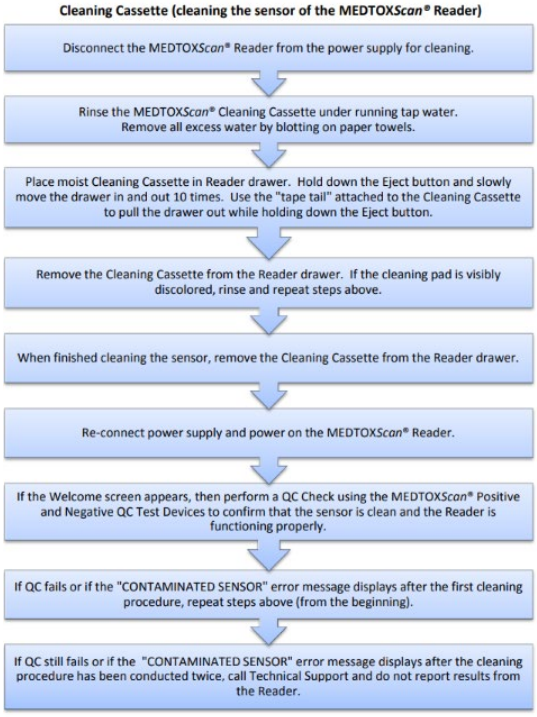
| DEPARTMENT:URINALYSIS | OF: 25<br>EFFECTIVE: 08/2023 |
| APPROVED BY: Dr. Robert James | REVISED: |






**Cleaning cassettes are intended to be one time use**

**READING AND INTERPRETATION OF THE TEST RESULTS**

The MEDTOX*Scan*® Reader will automatically read the control and test lines at the correct positions and display the test results for each drug. Results may also be printed. The MEDTOX*Scan*® Reader displays the results as either "NEG" for a negative result, "POS" for a preliminary positive result, or "INVALID" for an invalid result. "VALID" will be displayed if valid results are obtained. PROFILE®-V MEDTOX*Scan*® Test Devices cannot be visually read.

**Valid**: The control line must be present for the test to be valid.

**NEG**: A NEGATIVE test result for a specific drug indicates that the sample does not contain the drug/drug metabolite above the cutoff level.

**POS**: A preliminary POSITIVE test result for a specific drug indicates that the sample may contain drug/drug metabolite near or above the cutoff level. It does not indicate the level of intoxication or the specific concentration of drug in the urine sample. Positive samples should be sent to a reference laboratory for more definitive testing.

**Invalid**: The control line must be present for the test to be valid. The absence of a control line indicates the test is invalid. The urine sample should be retested on a new test device.

Information regarding confirmatory testing may be obtained from www.medtox.com or by contacting MEDTOX at 1-800-832-3244.

**QUALITY CONTROL**

Quality control ensures accuracy and reliability of results and detects errors. MEDTOX recommends a Quality Control Program for monitoring the performance of the PROFILE®-V MEDTOX*Scan*® Test Devices and the MEDTOX*Scan*® Reader that uses a combination of internal controls and external controls. Users should follow government regulations for the running of QC material.

**Internal controls:** ensure that the test is working and that you are performing the test correctly. A control line (internal control) is included on each PROFILE®-V MEDTOX*Scan*® test strip. Whether or not drug is present in the sample, a line must form at the Control position on the test strip to show that enough sample volume was used and that the reagents are migrating properly. If a Control line does not form, the test is invalid. The Control line consists of immobilized anti-mouse antibody that reacts with the antibody-colloidal gold as it passes this region of the membrane. Formation of a line detectable by the MEDTOX*Scan*® Reader verifies the Control line antibody-antigen reaction occurred.

**External controls:** are urine-based control materials that contain the drugs to be tested at concentrations above the cutoff (positive control) or contain no drug (negative control). Run external controls as if they were patient samples. Refer to the instructions that accompany the external controls. You should run external controls routinely or as needed for any of the following reasons:

(1) to practice the test with a known control,
(2) when you open a new lot of devices,
**(3) once a week,**
(4) if you suspect that the reader or test device is not working properly,

**Deleted:** The purpose of quality control is to ensure accuracy and reliability of results and to detect errors.…

**Commented [AC1]:** @Brenda Lewis @Walter Dimarucut per package insert, and with IFU we will have to run medtox QC weekly.

**Commented [BL2R1]:** Hi @Adam Caughe,
I currently run the device QC weekly, and the liquid external controls monthly/new lot. Do you need me to change the liquid QC to weekly, also? The device QC is also considered external QC, so I wasn't sure.
Brenda

**Commented [AC3R1]:** Yes, this is referring to the liquid controls. It says about the test devices " The MEDTOX*Scan*® Positive and Negative QC Test Devices are intended to detect errors associated with the MEDTOX*Scan*® Reader and a contaminated contact imaging sensor (CIS), and to verify that the CIS cleaning procedure using the MEDTOX*Scan*® Cleaning Cassette effectively removed any contamination."

So essentially we should perform the cleaning, run the positive and negative test devices, and then run the liquid QC.

(5) if you have had a repeated unexpected test result, or
(6) if you suspect that the test devices have been stored improperly.

Should control results indicate a problem with the PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System, please follow the instructions in the Troubleshooting Section below.

External quality control materials are available from MEDTOX. Contact MEDTOX at 1-800-832-3244 for further information.

**RESULTS**

**Negative Samples**
When no drug(s) is present in the urine sample, the reddish-purple antibody-colloidal gold solutions migrate along the strip and bind to the respective drug conjugate(s) immobilized on the membrane. Each strip has up to 4 drug test lines. The binding of the antibody-colloidal gold to the drug conjugate generates a line at the corresponding test position on the strip. The MEDTOX*Scan*® Reader will scan each test position and if a line is detected it will return "NEG" on the display screen (or print out) next to the abbreviation for the drug test, indicating a negative result.

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**Positive Samples**
When drug(s) is present in the urine sample the antibody-colloidal gold binds to the drug(s) before it migrates along the strip. When the antibody-colloidal gold binds to the drug(s) in the urine, it cannot bind to the drug conjugate immobilized on the membrane and no line is generated at the drug-specific position in the result window. The MEDTOX*Scan*® Reader will scan each test position and if no line is detected it will return "POS" on the display screen (or print out) next to the abbreviation for the drug test, indicating a preliminary positive result.

**Control Line (Valid or Invalid results)**
Each test strip has an internal procedural control. A line must form at the Control position in the result window to indicate that sufficient sample was applied and that the reagents are migrating properly. If a Control line does not form, the test is invalid. The MEDTOX*Scan*® Reader scans each control line and returns "VALID" to the right of the drug test result to confirm that the control line was detected. If no control line is detected it will return "INVALID" on the display screen (or print out) next to the abbreviation for the invalid drug test, and no result will be given for that drug test.

**LIMITATIONS OF THE PROCEDURE**

1. The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System is only for use with unadulterated preservative free, human urine samples. Urine samples that are either extremely acidic (below pH 4.0) or basic (above pH 9.0) may produce erroneous results. If adulteration is suspected, obtain an additional specimen and re-test. Clear polystyrene containers may absorb some drugs; use of polypropylene containers is advised.

2. A presumptive positive result for any drug does not indicate the level of intoxication, administration route or concentration of that drug in the urine specimen.
3. A negative result may not necessarily indicate drug-free urine. Negative results can be obtained when a drug is present but below the cut-off level of the test.
4. Place PROFILE®-V MEDTOX*Scan*® Test Devices in MEDTOX*Scan*® Reader immediately after adding the sample. Once the test device has been read in the MEDTOX*Scan*® Reader, it must not be reinserted for a repeat reading, as the ten-minute timing will begin again. If a repeat reading is required, rerun the sample on a fresh test cassette.
5. The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System is not intended for use in point-of-care settings.
6. There is a possibility that other substances and/or factors, e.g. technical or procedural errors, may interfere with the test and cause false results.
7. Gas Chromatography/Mass Spectroscopy is the recommended confirmatory method for most drugs. HPLC or LC/MS/MS is the preferred confirmatory method for Tricyclic Antidepressants and Benzodiazepines. Any of the drugs being tested for in the PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System may give a preliminary positive result if ingested at prescribed therapeutic doses.
8. The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System cannot distinguish between abused drugs and certain prescribed medications. A positive test may be obtained from certain foods or food supplements.
9. The PROFILE®-V MEDTOX*Scan*® Test Devices must be used only with the MEDTOX*Scan*® Reader. They cannot be visually read.

**The PROFILE®-V MEDTOX*Scan*® drugs of abuse test system provides only a preliminary analytical test result. A more specific alternate chemical method must be used to obtain a confirmed analytical result. Gas chromatography / mass spectrometry (GC/MS), high performance liquid chromatography (HPLC) or liquid chromatography / tandem mass spectrometry (LC/MS/MS) are the preferred confirmatory methods.** Clinical consideration and professional judgment should be applied to any drug of abuse test result, particularly when preliminary positive results are obtained.

A complete package insert is available at www.medtox.com/ProductTraining.aspx.

**Deleted:** A more specific alternate chemical method must be used in order to obtain a confirmed analytical result....

## PERFORMANCE CHARACTERISTICS

**Sensitivity**

The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System detects drug classes at the following cutoff concentrations:

| | | | |
|---|---|---|---|
| AMP Amphetamine (d-Amphetamine) | 500 ng/mL | OPI Opiates (Morphine) | 100 ng/mL or 2000 |
| BAR Barbiturates (Butalbital) | 200 ng/mL | | |

| | | | ng/mL |
|---|---|---|---|
| BZO Benzodiazepines (Nordiazepam) | 150 ng/mL | OXY Oxycodone (Oxycodone) | 100 ng/mL |
| BUP Buprenorphine (Buprenorphine) | 10 ng/mL | PCP Phencyclidine (Phencyclidine) | 25 ng/mL |
| COC Cocaine (Benzoylecgonine) | 150 ng/mL | PPX Propoxyphene (Norpropoxyphene) | 300 ng/mL |
| MAMP Methamphetamine (d-Methamphetamine) | 500 ng/mL | THC Cannabinoids (11-nor-9-carboxy-r$^9$-THC) | 50 ng/mL |
| MTD Methadone (Methadone) | 200 ng/mL | TCA Tricyclic Antidepressants (Desipramine) | 300 ng/mL |

Configurations of the PROFILE®-V MEDTOX*Scan*® Test Devices may consist of any combination of the above listed drug analytes. Test Devices will have an opiate cutoff of either 100 ng/mL or 2000 ng/mL. Refer to specific product labeling for the combination of drug tests included on that test device.

**ACCURACY**

**Accuracy and Comparison to GC/MS or LC/MS/MS**

The accuracy of the PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System was evaluated by assaying a panel of blind coded clinical urine samples containing varying concentrations of drugs and comparing to GC/MS or LC/MS/MS results. The samples were obtained from MEDTOX Laboratories and grouped in the following manner: Negative samples that screened negative by KIMS (Kinetic Interaction of Microparticles in Solution), and not confirmed by GC/MS; Below Cutoff Negative samples that fell between limit of detection or quantitation and 50% of cutoff; Near Cutoff Negative samples that fell between 50% of the cutoff concentration and the cutoff concentration; Near Cutoff Positive samples that fell between the cutoff concentration and 150% of the cutoff concentration; and High Positive samples that were greater than 150% of cutoff concentration. Drug concentrations were assayed by GC/MS or LC/MS/MS for BZO and TCA. Concentrations used to assign the cutoff ranges for each drug were determined by summing the GC/MS and LC/MS/MS levels measured for all test-specific analytes found in the sample. The testing was performed by in-house operators. The results were interpreted at ten (10) minutes by the MEDTOX*Scan*® Reader and are summarized for each drug in the table below.

**PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System Results vs. stratified GC/MS or LC/MS/MS Values**

| DRUG | P-V MEDTOX*Scan* Test System | No Drug | Low negative by GC/MS or LC/MS/MS (Less than -50%) | Near Cutoff Negative (between -50% and cutoff) | Near Cutoff Positive (Between cutoff and +50%) | High Positive (greater than +50%) | % Agreement. |
|---|---|---|---|---|---|---|---|
| **AMP (500)** | Positive | 0 | 0 | 4 | 5 | 41 | 96% |
| | Negative | 40 | 5 | 0 | 2 | 0 | 92% |
| **BAR (200)** | Positive | 0 | 0 | 3 | 4 | 36 | 100% |
| | Negative | 40 | 3 | 2 | 0 | 0 | 94% |
| **BZO (150)** | Positive | 0 | 0 | 1 | 4 | 41 | 100% |
| | Negative | 40 | 3 | 3 | 0 | 0 | 98% |
| **BUP (10)** | Positive | 0 | 0 | 0 | 4 | 36 | 100% |
| | Negative | 40 | 0 | 4 | 0 | 0 | 100% |
| **COC (150)** | Positive | 0 | 0 | 2 | 4 | 52 | 97% |
| | Negative | 56 | 1 | 5 | 1 | 1 | 97% |
| **mAMP (500)** | Positive | 0 | 0 | 1 | 3 | 40 | 98% |
| | Negative | 40 | 4 | 3 | 1 | 0 | 98% |
| **MTD (200)** | Positive | 0 | 0 | 2 | 3 | 40 | 98% |
| | Negative | 40 | 4 | 2 | 1 | 0 | 96% |
| **OPI (100)*** | Positive | 0 | 0 | 3 | 5 | 44 | 100% |
| | Negative | 46 | 2 | 2 | 0 | 0 | 94% |
| **OPI (2000)*** | Positive | 0 | 0 | 1 | 4 | 36 | 100% |
| | Negative | 40 | 4 | 3 | 0 | 0 | 98% |
| **OXY (100)** | Positive | 0 | 0 | 0 | 3 | 36 | 98% |
| | Negative | 40 | 3 | 4 | 1 | 0 | 100% |
| **PCP (25)** | Positive | 0 | 0 | 3 | 10 | 30 | 100% |
| | Negative | 40 | 1 | 1 | 0 | 0 | 93% |
| **PPX (300)** | Positive | 0 | 0 | 4 | 4 | 40 | 100% |
| | Negative | 45 | 1 | 2 | 0 | 0 | 92% |
| **TCA (300)** | Positive | 0 | 0 | 3 | 4 | 36 | 100% |
| | Negative | 40 | 2 | 1 | 0 | 0 | 93% |
| **THC (50)** | Positive | 0 | 0 | 2 | 7 | 33 | 100% |
| | Negative | 40 | 4 | 2 | 0 | 0 | 96% |
| **All Drugs** | Positive | 0 | 0 | 29 | 64 | 541 | 99% |
| | Negative | 587 | 37 | 34 | 6 | 1 | 96% |

*Note: OPI (2000) is found in Work Place Drug Testing Products, while OPI (100) is found in ER Products where increased sensitivity is desired.

For samples giving preliminary positive results below the cutoff and negative results above the cutoff, the assayed values are detailed in the table below:

**ACCURACY/SUMMARY OF DISCORDANT RESULTS**

| Cutoff Value (ng/mL) | P-V MEDTOX*Scan* Test System | GC/MS or LC/MS/MS Value |
|---|---|---|
| 500 | AMP positive | Amphetamine at 277 ng/mL |
| | AMP positive | Amphetamine at 352 ng/mL |
| | AMP positive | Amphetamine at 368 ng/mL |
| | AMP positive | Amphetamine at 463 ng/mL |
| | AMP negative | Amphetamine at 504 ng/mL |
| | AMP negative | Amphetamine at 667 ng/mL |
| 200 | BAR positive | Butalbital at 126 ng/mL |
| | BAR positive | Butalbital at 159 ng/mL |
| | BAR positive | Butalbital at 184 ng/mL |
| 150 | BZO positive | Alprazolam at 146 ng/mL |
| 150 | COC positive | Benzoylecgonine at 114 ng/mL |
| | COC positive | Benzoylecgonine at 121 ng/mL |
| | COC negative | Benzoylecgonine at 180 ng/mL |
| | COC negative | Benzoylecgonine at 278 ng/mL |
| 500 | mAMP positive | Methamphetamine at 483 ng/mL |
| | mAMP negative | Methamphetamine at 554 ng/mL |
| 200 | MTD positive | Methadone at 148 ng/mL |
| | MTD positive | Methadone at 176 ng/mL |
| | MTD negative | Methadone at 250 ng/mL |
| 100 | OPI positive | Morphine at 51 ng/mL |
| | OPI positive | Morphine at 79 ng/mL |
| | OPI positive | Morphine at 92 ng/mL |
| 2000 | OPI positive | Morphine at 1375 ng/mL |
| 25 | PCP positive | Phencyclidine at 19 ng/mL |
| | PCP positive | Phencyclidine at 21 ng/mL |
| | PCP positive | Phencyclidine at 24 ng/mL |
| 100 | OXY negative | Oxycodone at 71 ng/mL, Oxymorphone at 31 ng/mL |
| 300 | PPX positive | Norpropoxyphene at 172 ng/mL |
| | PPX positive | Norpropoxyphene at 194 ng/mL |
| | PPX positive | Norpropoxyphene at 228 ng/mL |
| | PPX positive | Norpropoxyphene at 271 ng/mL |

| Cutoff Value (ng/mL) | P-V MEDTOX*Scan* Test System | GC/MS or LC/MS/MS Value |
|---|---|---|
| 300 | TCA positive | Nortriptyline at 194 ng/mL |
| | TCA positive | Nortriptyline at 217 ng/mL |
| | TCA positive | Desipramine at 287 ng/mL |
| 50 | THC positive | 11-nor-9-carboxy-r9-THC at 35 ng/mL |
| | THC positive | 11-nor-9-carboxy-r9-THC at 39 ng/mL |

**Sensitivity/Precision/ Distribution of Random Error**

Performance of the PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System around the specific cutoff for each drug was evaluated by testing standard drug solutions diluted in drug-free urine in triplicate on 5 different intervals by 3 in-house operators using different readers (45 determinations for each level). Drug free urine was also tested on each interval. The results were interpreted at ten minutes by the MEDTOX*Scan*® Reader and are summarized for each drug in the table below:

| Sample Concentration (ng/mL) | % of Cutoff | Number of Observations | # Neg | # Pos | Sample Concentration (ng/mL) | % of Cutoff | Number of Observations | # Neg | # Pos |
|---|---|---|---|---|---|---|---|---|---|
| AMP (500) | | | | | BAR (200) | | | | |
| 0 | NEG | 45 | 45 | 0 | 0 | NEG | 45 | 45 | 0 |
| 100 | 20% | 45 | 45 | 0 | 100 | 50% | 45 | 45 | 0 |
| 250 | 50% | 45 | 41 | 4 | 150 | 75% | 45 | 32 | 13 |
| 375 | 75% | 45 | 37 | 8 | 250 | 125% | 45 | 0 | 45 |
| 625 | 125% | 45 | 8 | 37 | 300 | 150% | 45 | 0 | 45 |
| 750 | 150% | 45 | 0 | 45 | | | | | |
| BZO (150) | | | | | BUP (10) | | | | |
| 0 | NEG | 45 | 45 | 0 | 0 | NEG | 45 | 45 | 0 |
| 75 | 50% | 45 | 45 | 0 | 5 | 50% | 45 | 45 | 0 |
| 112.5 | 75% | 45 | 33 | 12 | 7.5 | 75% | 45 | 30 | 15 |
| 187.5 | 125% | 45 | 8 | 37 | 12.5 | 125% | 45 | 0 | 45 |
| 225 | 150% | 45 | 0 | 45 | 15 | 150% | 45 | 0 | 45 |
| COC (150) | | | | | mAMP (500) | | | | |
| 0 | NEG | 45 | 45 | 0 | 0 | NEG | 45 | 45 | 0 |
| 75 | 50% | 45 | 45 | 0 | 100 | 20% | 45 | 45 | 0 |
| 112.5 | 75% | 45 | 24 | 21 | 250 | 50% | 45 | 27 | 18 |
| 187.5 | 125% | 45 | 0 | 45 | 375 | 75% | 45 | 13 | 32 |
| 225 | 150% | 45 | 0 | 45 | 625 | 125% | 45 | 1 | 44 |
| | | | | | 750 | 150% | 45 | 2 | 43 |
| MTD (200) | | | | | OPI (100) | | | | |
| 0 | NEG | 45 | 45 | 0 | 0 | NEG | 45 | 45 | 0 |
| 50 | 25% | 45 | 45 | 0 | 25 | 25% | 45 | 45 | 0 |
| 100 | 50% | 45 | 34 | 11 | 50 | 50% | 45 | 37 | 8 |
| 150 | 75% | 45 | 8 | 37 | 75 | 75% | 45 | 4 | 41 |
| 250 | 125% | 45 | 0 | 45 | 125 | 125% | 45 | 0 | 45 |
| 300 | 150% | 45 | 0 | 45 | 150 | 150% | 45 | 0 | 45 |
| OPI (2000) | | | | | OXY (100) | | | | |
| 0 | NEG | 45 | 45 | 0 | 0 | NEG | 45 | 45 | 0 |
| 1000 | 50% | 45 | 45 | 0 | 25 | 25% | 45 | 45 | 0 |
| 1500 | 75% | 45 | 31 | 14 | 50 | 50% | 45 | 44 | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2500 | 125% | 45 | 0 | 45 | 75 | 75% | 45 | 19 | 26 |
| 3000 | 150% | 45 | 0 | 45 | 125 | 125% | 45 | 0 | 45 |
| | | | | | 150 | 150% | 45 | 0 | 45 |
| PCP (25) | | | | | PPX (300) | | | | |
| 0 | NEG | 45 | 45 | 0 | 0 | NEG | 45 | 45 | 0 |
| 6.25 | 25% | 45 | 45 | 0 | 150 | 50% | 45 | 45 | 0 |
| 12.5 | 50% | 45 | 31 | 14 | 225 | 75% | 45 | 31 | 14 |
| 18.75 | 75% | 45 | 1 | 44 | 375 | 125% | 45 | 2 | 43 |
| 31.25 | 125% | 45 | 0 | 45 | 450 | 150% | 45 | 0 | 45 |
| 37.5 | 150% | 45 | 0 | 45 | | | | | |
| TCA (300) | | | | | THC (50) | | | | |
| 0 | NEG | 45 | 45 | 0 | 0 | NEG | 45 | 45 | 0 |
| 150 | 50% | 45 | 45 | 0 | 25 | 50% | 45 | 45 | 0 |
| 225 | 75% | 45 | 9 | 36 | 37.5 | 75% | 45 | 39 | 6 |
| 375 | 125% | 45 | 0 | 45 | 62.5 | 125% | 45 | 0 | 45 |
| 450 | 150% | 45 | 0 | 45 | 75 | 150% | 45 | 0 | 45 |

**Non Cross-reactive Endogenous Compounds**

The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System was evaluated for cross reactivity with fifteen endogenous compounds. The compounds were dissolved in appropriate solvents at a concentration of at least 1.0 mg/mL. Each compound was further diluted to 100 µg/mL except for albumin (20 mg/mL) and bilirubin (200 µg/mL). None of these compounds showed cross-reactivity at the referenced concentrations to any of the PROFILE®-V MEDTOX*Scan*® Test Devices.

| | | |
|---|---|---|
| Acetaldehyde | Creatinine | Hemoglobin, Human |
| Acetone | Epinephrine | Sodium Chloride |
| Albumin, Human | Estradiol | Tetrahydrocortisone |
| Bilirubin | Estriol | d,1-Thyroxine |
| Cholesterol | Glucose Std. Solution | Uric Acid |

**Unrelated Compounds, Prescription and Over-the-Counter Medications**

The following compounds were tested for reactivity to the PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System. Listed compounds were dissolved in appropriate solvents and then added to drug-free urine for testing. Unless otherwise noted by a drug name abbreviation such as "AMP" or "BAR" etc., all the listed compounds were negative in each of the tests at 100 µg/mL or the highest level tested. If a drug name is followed by an abbreviation such as "AMP" or "BAR" etc., check the "Related Compounds and Cross Reactants" listing for the drug in question under the appropriate heading (AMP, BAR, etc.) to find its level of cross-reactivity to that test.

Deleted: all of

**Related Compounds and Cross Reactants**

The following metabolites and reacting compounds were evaluated for the specified test on the PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System. Reference standards for the various metabolites and compounds were prepared in negative urine samples. Results are expressed as the minimum concentration expected to produce a positive result in the indicated assay. Compounds that reacted with the test are listed first, and related compounds that did not react with the highest concentration tested are listed second as Negative at 100,000 ng/mL. "% Cross-Reactive" values were calculated from the cut-off level for the calibrator used for each test (approximate 50% positive rate) divided by the lowest reported level found to react in the same test (greater than 66% positive rate).

| **Amphetamines (AMP)** (d-Amphetamine) 500 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| l-Amphetamine | Positive at 50,000 ng/mL | 1% |
| Fenfluramine | Positive at 10,000 ng/mL | 5% |
| MDA | Positive at 250 ng/mL | 200% |
| Phentermine | Positive at 7,500 ng/mL | 7% |
| Ephedrine | Negative at 100,000 ng/mL | None Detected |
| MDE (MDEA) | Negative at 100,000 ng/mL | None Detected |
| MDMA | Negative at 100,000 ng/mL | None Detected |
| l-Methamphetamine | Negative at 100,000 ng/mL | None Detected |
| d-Methamphetamine | Negative at 100,000 ng/mL | None Detected |
| Phenethylamine | Negative at 100,000 ng/mL | None Detected |
| Pseudoephedrine | Negative at 100,000 ng/mL | None Detected |
| Tyramine | Negative at 100,000 ng/mL | None Detected |

| **Barbiturate (BAR)** (Butalbital) 200 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Allobarbital | Positive at 250 ng/mL | 80% |
| Amobarbital | Positive at 800 ng/mL | 25% |
| Barbital | Positive at 2,500 ng/mL | 8% |
| Butabarbital | Positive at 400 ng/mL | 50% |
| Cyclopentobarbital | Positive at 250 ng/mL | 80% |
| Diphenylhydantoin (Phenytoin) | Positive at 2,000 ng/mL | 10% |
| Pentobarbital | Positive at 300 ng/mL | 67% |
| Phenobarbital | Positive at 1,250 ng/mL | 16% |
| Secobarbital | Positive at 50 ng/mL | 400% |
| Talbutal | Positive at 50 ng/mL | 400% |
| Barbituric Acid | Negative at 100,000 ng/mL | None Detected |
| Glutethimide | Negative at 100,000 ng/mL | None Detected |
| Hexobarbital | Negative at 100,000 ng/mL | None Detected |
| Mephobarbital | Negative at 100,000 ng/mL | None Detected |

| | | |
|---|---|---|
| Thiopental | Negative at 100,000 ng/mL | None Detected |

| **Benzodiazepine (BZO)** (Nordiazepam) 150ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Alprazolam | Positive at 100 ng/mL | 150% |
| Alprazolam, 1-OH | Positive at 25,000 ng/mL | <1% |
| Clobazam | Positive at 75 ng/mL | 200% |
| Clonazepam | Positive at 900 ng/mL | 17% |
| Clorazepate | Positive at 200 ng/mL | 75% |
| Desalkylflurazepam | Positive at 600 ng/mL | 25% |
| Desmethylchlordiazepoxide | Positive at 1,000 ng/mL | 15% |
| Desmethylflunitrazepam | Positive at 75 ng/mL | 200% |
| Diazepam | Positive at 75 ng/mL | 200% |
| Flunitrazepam | Positive at 50 ng/mL | 300% |
| Lorazepam | Positive at 1,200 ng/mL | 13% |
| Lorazepam glucuronide | Positive at 1,000 ng/mL | 15% |
| Midazolam | Positive at 5,000 ng/mL | 3% |
| Nitrazepam | Positive at 50 ng/mL | 300% |
| Oxazepam | Positive at 200 ng/mL | 75% |
| Oxazepam glucuronide | Positive at 2,500 ng/mL | 6% |
| Temazepam | Positive at 90 ng/mL | 167% |
| Temazepam glucuronide | Positive at 750 ng/mL | 20% |
| Triazolam | Positive at 750 ng/mL | 20% |
| Triazolam, 1-OH | Positive at 10,000 ng/mL | 2% |
| | | |
| 7-Aminoclonazepam | Negative at 100,000 ng/mL | None Detected |
| 7-Aminoflunitrazepam | Negative at 100,000 ng/mL | None Detected |
| Chlordiazepoxide | Negative at 100,000 ng/mL | None Detected |
| Flurazepam | Negative at 100,000 ng/mL | None Detected |

| **Buprenorphine (BUP)** (Buprenorphine) 10ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Buprenorphine-glucuronide | Positive at 20 ng/mL | 50% |
| Norbuprenorphine | Positive at 250 ng/mL | 4% |
| Norbuprenorphine-glucuronide | Positive at 500 ng/mL | 2% |
| | | |
| Codeine | Negative at 100,000 ng/mL | None Detected |
| Diacetylmorphine | Negative at 100,000 ng/mL | None Detected |
| Hydrocodone | Negative at 100,000 ng/mL | None Detected |
| Hydromorphone | Negative at 100,000 ng/mL | None Detected |
| Levorphanol | Negative at 100,000 ng/mL | None Detected |
| 6-Monoacetylmorphine | Negative at 100,000 ng/mL | None Detected |
| Morphine | Negative at 100,000 ng/mL | None Detected |
| Naloxone | Negative at 100,000 ng/mL | None Detected |

| | | |
|---|---|---|
| Naltrexone | Negative at 100,000 ng/mL | None Detected |
| Oxycodone | Negative at 100,000 ng/mL | None Detected |
| Oxymorphone | Negative at 100,000 ng/mL | None Detected |
| Thebaine | Negative at 100,000 ng/mL | None Detected |

| **Cocaine (COC)** (Benzoylecgonine) 150 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Cocaine | Positive at 250 ng/mL | 60% |
| | | |
| Ecgonine | Negative at 100,000 ng/mL | None Detected |
| Ecgonine Methyl Ester | Negative at 100,000 ng/mL | None Detected |

| **Methamphetamine (mAMP)** (d-Methamphetamine) 500 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Ephedrine | Positive at 2,500 ng/mL | 20% |
| Fenfluramine | Positive at 50,000 ng/mL | 1% |
| MDE (MDEA) | Positive at 7,500 ng/mL | 7% |
| MDMA | Positive at 1,150 ng/mL | 43% |
| l-Methamphetamine | Positive at 7,500 ng/mL | 7% |
| Phenethylamine | Positive at 2,500 ng/mL | 20% |
| Phenylephrine | Positive at 25,000 ng/mL | 2% |
| Procaine | Positive at 7,500 ng/mL | 7% |
| | | |
| d-Amphetamine | Negative at 100,000 ng/mL | None Detected |
| l-Amphetamine | Negative at 100,000 ng/mL | None Detected |
| MDA | Negative at 100,000 ng/mL | None Detected |
| Phentermine | Negative at 100,000 ng/mL | None Detected |
| Phenmetrazine | Negative at 100,000 ng/mL | None Detected |
| Pseudoephedrine | Negative at 100,000 ng/mL | None Detected |
| Tyramine | Negative at 100,000 ng/mL | None Detected |

| **Methadone (MTD)** (Methadone) 200 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Buprenorphine | Negative at 100,000 ng/mL | None Detected |
| EDDP (Primary metabolite) | Negative at 100,000 ng/mL | None Detected |
| EMDP (Secondary metabolite) | Negative at 100,000 ng/mL | None Detected |

| **Opiates-(OPI)** (Morphine) 100ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Codeine | Positive at 50 ng/mL | 200% |
| Diacetylmorphine | Positive at 50 ng/mL | 200% |
| Dihydrocodeine | Positive at 75 ng/mL | 133% |
| Ethylmorphine | Positive at 50 ng/mL | 200% |
| Hydrocodone | Positive at 400 ng/mL | 25% |
| Hydromorphone | Positive at 800 ng/mL | 13% |

| | | |
|---|---|---|
| Levorphanol | Positive at 2,500 ng/mL | 4% |
| 6-Monoacetylmorphine | Positive at 350 ng/mL | 29% |
| Morphine 3-β-D-Glucuronide | Positive at 75 ng/mL | 133% |
| Morphine 6-β-D-Glucuronide | Positive at 500 ng/mL | 20% |
| Nalorphine | Positive at 50,000 ng/mL | <1% |
| Norcodeine | Positive at 10,000 ng/mL | 1% |
| Thebaine | Positive at 25,000 ng/mL | <1% |
| | | |
| Apomorphine | Negative at 100,000 ng/mL | None Detected |
| Naloxone | Negative at 100,000 ng/mL | None Detected |
| Naltrexone | Negative at 100,000 ng/mL | None Detected |
| Oxycodone | Negative at 100,000 ng/mL | None Detected |
| Oxymorphone | Negative at 100,000 ng/mL | None Detected |

| **Oxycodone (OXY)** (Oxycodone) 100 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Codeine | Positive at 5000 ng/mL | 2% |
| Dihydrocodeine | Positive at 25,000 ng/mL | <1% |
| Ethylmorphine | Positive at 7,500 ng/mL | 1% |
| Hydrocodone | Positive at 50,000 ng/mL | <1% |
| Hydromorphone | Positive at 50,000 ng/mL | <1% |
| Morphine | Positive at 25,000 ng/mL | <1% |
| Morphine 6-β-D-Glucuronide | Positive at 100,000 ng/mL | <1% |
| Naloxone | Positive at 25,000 ng/mL | <1% |
| Naltrexone | Positive at 50,000 ng/mL | <1% |
| Norcodeine | Positive at 100,000 ng/mL | <1% |
| Oxymorphone | Positive at 250 ng/mL | 40% |
| | | |
| Apomorphine | Negative at 100,000 ng/mL | None Detected |
| Diacetylmorphine | Negative at 100,000 ng/mL | None Detected |
| Levorphanol | Negative at 100,000 ng/mL | None Detected |
| 6-Monoacetylmorphine | Negative at 100,000 ng/mL | None Detected |
| Morphine 3-β-D-Glucuronide | Negative at 100,000 ng/mL | None Detected |
| Nalorphine | Negative at 100,000 ng/mL | None Detected |
| Thebaine | Negative at 100,000 ng/mL | None Detected |

| **Phencyclidine (PCP)** (Phencyclidine) 25 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| 4-Hydroxyphencyclidine | Positive at 7,500 ng/mL | <1% |

| **Propoxyphene-(PPX)** (Norpropoxyphene) 300 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Propoxyphene | Positive at 50 ng/mL | 600% |

| **Cannabinoids (THC)** (11-Nor-9-carboxy-$D^9$-THC) 50 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| $\Delta^9$ –Tetrahydrocannabinol | Positive at 100,000 ng/mL | <1% |
| Cannabidiol | Negative at 100,000 ng/mL | None Detected |
| Cannabinol | Negative at 100,000 ng/mL | None Detected |
| l-11-Hydroxy-$\Delta^9$-THC | Negative at 100,000 ng/mL | None Detected |
| $\Delta^8$ –Tetrahydrocannabinol | Negative at 100,000 ng/mL | None Detected |

| **Tricyclic Antidepressant-(TCA)** (Desipramine) 300 ng/mL | **Result** | **% Cross-Reactive** |
|---|---|---|
| Amitriptyline | Positive at 500 ng/mL | 60% |
| Clozapine | Positive at 7,500 ng/mL | 4% |
| Cyclobenzaprine | Positive at 20,000 ng/mL | 2% |
| Doxepin | Positive at 1,300 ng/mL | 23% |
| Imipramine | Positive at 250 ng/mL | 120% |
| Maprotiline | Positive at 300 ng/mL | 100% |
| Nordoxepin | Positive at 700 ng/mL | 43% |
| Nortriptyline | Positive at 500 ng/mL | 60% |
| Perphenazine | Positive at 75,000 ng/mL | <1% |
| Prochlorperazine | Positive at 50,000 ng/mL | <1% |
| Promazine | Positive at 900 ng/mL | 33% |
| Protriptyline | Positive at 50,000 ng/mL | <1% |
| Quetiapine (Seroquel) | Positive at 10,000 ng/mL | 3% |
| Trimipramine | Positive at 5,000 ng/mL | 6% |
| Carbamazepine | Negative at 100,000 ng/mL | None Detected |
| Carbamazepine-10, 11 epoxide | Negative at 100,000 ng/mL | None Detected |
| Chlorpromazine | Negative at 100,000 ng/mL | None Detected |
| Clomipramine | Negative at 100,000 ng/mL | None Detected |
| Loxapine | Negative at 100,000 ng/mL | None Detected |
| Mirtazapine | Negative at 100,000 ng/mL | None Detected |
| Norclomipramine | Negative at 100,000 ng/mL | None Detected |
| Olanzapine | Negative at 100,000 ng/mL | None Detected |
| Phenothiazine | Negative at 100,000 ng/mL | None Detected |
| Thiothixene | Negative at 100,000 ng/mL | None Detected |

**Interference**

**pH and Specific Gravity:**

The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System was assayed with three negative clinical samples with pH values of 4.0, 7.0 and 9.0 ± 0.1. Each sample was assayed in triplicate. The pH samples were fortified with drug concentrations that were the maximum level to give a strong negative (95% or

greater negative) result (10-50% of cut-off, see Sensitivity data), and the minimum level above the cut-off to give a strong positive (95% or greater positive) result (125-150% of cut-off, see Sensitivity data). All three pH samples gave negative results when fortified to the maximum strong negative level for each drug, and all gave positive results when fortified to the minimum strong positive level for each drug.

The PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System was assayed with three samples with specific gravity values of 1.003, 1.015 and 1.030 ± 0.001. Each sample was assayed in triplicate. The specific gravity samples were fortified with drug concentrations as described above for pH to give strong negative and strong positive results. All three specific gravity samples gave negative results when fortified to the maximum strong negative level for each drug, and all gave positive results when fortified to the minimum strong positive level for each drug.

**Common Drugs:**
Following the study of M.L. Smith, et al.[6] drug free urine samples were spiked with drug concentrations that were the maximum level to give a strong negative (95% or greater negative) result (10-50% of cut-off, see Sensitivity data), and the minimum level above the cut-off to give a strong positive (95% or greater positive) result (125-150% of cut-off, see Sensitivity data). 100,000 ng/mL of the common drugs were then added to the preparation and assayed by the PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System. If a common compound name is followed by the abbreviation "COC", "BAR" or "OPI", or "OXY" it has cross-reactivity to the specified drug test (see "Related Compounds and Cross Reactants") and therefore was not assayed for interference for that drug test. Samples were evaluated in triplicate by in-house operators. None of the common drugs listed in the following table affected the expected results.

**Common Drugs Evaluated with the PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System**

| | | |
|---|---|---|
| Acetylsalicylic Acid | Chlorpheniramine | Morphine - **OPI, OXY** |
| Acetaminophen | Cocaine **- COC** | Phenobarbital - **BAR** |
| Brompheniramine maleate | Dextromethorphan | Phenytoin (Diphenylhydantoin)-**BAR** |
| Caffeine | Doxylamine | d-Pseudoephedrine |
| Carbamazepine | Ibuprofen | Salicylic Acid |

**TROUBLESHOOTING**
Use the QC Test Devices provided with the MEDTOX*Scan*® Reader to detect errors associated with the MEDTOX*Scan*® Reader and a contaminated contact imaging sensor (CIS) and to verify that the CIS cleaning procedure using the MEDTOX*Scan*® Cleaning Cassette effectively removed any contamination (dirt, dust or sample).
The QC Test Devices function as an optical performance system check for the MEDTOX*Scan*® Reader only, not for the PROFILE®-V MEDTOX*Scan*® Drugs of Abuse Test System, and they are not intended to replace the need for the external controls. The QC Test Devices have been designed to simulate the end points that are generated in the PROFILE®-V MEDTOX*Scan*® Test Device when external positive and negative QC controls are run. The QC Test Devices consist of artificial control lines and test lines (negative) or artificial control lines and no test lines (positive) printed on a membrane and placed in the PROFILE®-V MEDTOX*Scan*® Test Device plastic housing. The QC Test Devices are not intended to

evaluate all components of the test system from specimen preparation through generation of results. They are intended to function as a troubleshooting device to determine that the reader optics are functioning correctly. You should run the QC Test Devices (1) if you suspect the MEDTOX*Scan*® Reader is not functioning properly, or (2) if you suspect the CIS is dirty, or (3) if the MEDTOX*Scan*® Reader has been dropped or damaged.
Consult the MEDTOX*Scan*® Reader User Manual for details on troubleshooting, cleaning procedure and explanation of MEDTOX*Scan*® Reader error messages. Contact MEDTOX Technical Support if you need any additional help at 1-800-832-3244.

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| SUBJECT: PROFICIENCY TESTING PROCEDURE | REFERENCE # |
|---|---|
| | PAGE: 1 OF: 3 |
| DEPARTMENT: LABORATORY QUALITY ASSURANCE | EFFECTIVE: 08/15 |
| APPROVED BY: Robert James M.D. | REVISED: 07/2023 |

**PURPOSE**

The purpose of this policy is to establish basic rules for the policies and procedures as they relate to the test procedures performed as part of the API and CAP Proficiency Testing Program at Modoc Medical Center (MMC) Laboratory.

**POLICY**

The policy is that staff will adhere to the rules described herein with regard to policies and procedures for Proficiency Testing at MMC.

**PRINCIPLE**

The American Proficiency Institute (API) send us samples to analyze in a manner prescribed by Clinical Laboratory Improvement Amendments (CLIA) regulations throughout the year. All testing performed at MMC Laboratory must be associated with proficiency testing reporting and analysis. Centers for Medicare & Medicaid Services (CMS) and the state of California receive copies of the evaluation reports and use that data to measure the quality of laboratory testing at our hospital.

**PROCEDURE**

1. When the packages are received in the lab the samples are examined to ensure that all the materials are present, and none have leaked or been damaged in transit. If replacement samples are needed the manager will be notified and additional materials will be ordered immediately.
2. Survey samples are stored as specified by the supplier.
3. The paperwork is forwarded to the manager for ordering in the laboratory information system (LIS) and task assignment.
4. Upon receipt the lab manager will enter the deadline for submission of results into his work Outlook calendar as well as two days prior to the deadline. The calendar provides an audible and visual warning to ensure deadlines are not missed. Staff are notified of the deadline.
5. All testing will be ordered in the LIS by the lab manager so that the testing may be performed in a manner resembling that of actual patient testing as much as possible. Bar-coded labels will be used to test automated samples.
6. Testing will be rotated among staff by the lab manager in order to demonstrate Clinical Laboratory Scientist (CLS) competency for all testing over time.
7. All testing must be performed in the same manner as actual patient testing to the extent that is possible.
8. Examine sample stability requirements and testing requirements before processing.
9. Proficiency testing samples may not be routinely tested in duplicate unless patient samples are also routinely tested in duplicate per approved written procedure. It is acceptable to repeat testing on individual samples if such repeats would have been appropriate for patient samples. Examples would be Suspicion of short sample or suspicion of instrument failure during testing. It is always acceptable to repeat unusual or very high or very low results at the discretion of the CLS/Medical Laboratory Technician (MLT).

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10. CLS/MLT staff and the medical director must sign an attestation statement affirming that the samples were tested in the same manner as patient samples to the extent possible.
11. The medical director must personally verify that the testing was not performed inappropriately in duplicate by examining the instrument printouts and log sheets and signing a specific statement on the review documentation that he verified that the rules were followed. Copies of all the printouts will be attached to the review documentation. The lab manager will assemble the printouts for director review, but the director may, and should, personally verify everything is collected and reviewed.
12. LIS report printouts for all Proficiency testing will be submitted to the lab manager for on-line data input and record retention.
13. After the results have been entered on-line a printout of the submitted data will be reviewed by a CLS to hopefully identify typos or entry errors.
14. All testing personnel are to sign the attestation page. These documents are retained for at least 2 years.
15. Failure to achieve an overall testing event score of satisfactory performance for two consecutive testing events or two out of three consecutive testing events is unsuccessful performance. Testing will be stopped and sent out as necessary until MMC is once again approved for testing that analyte by the lab director after corrective action.

**PERFORMANCE REVIEW AND CORRECTIVE ACTION**

1. When the results of the survey become available the lab manager will review the reports and determine if corrective action is needed. Corrective action activities will be coordinated and assigned by the lab manager.
2. A special evaluation form will be prepared for signature by the manager and director that documents all unacceptable results and the corrective action taken to resolve each case.
3. This form identifies the specific problem in detail, the investigative process used, and the corrective action taken. Once corrective action has been applied the samples are usually re-tested to verify the effectiveness of the actions taken.
4. As of 08/15/15 a new section will be added to the review form to accommodate the special attestation by the director and manager that the testing was not performed in duplicate unless appropriate for patient testing as well.

**NOTES**

1. Body Fluid cell count, and differential testing must be performed with 2 days of sample receipt to minimize cellular deterioration.
2. Alere Cardiac PT samples occasionally don't work, and nothing can be done about it.
3. A1C samples must be tested when no other tests are running on the instrument to prevent excessive cellular sedimentation and settling.
4. Nova analyzer has proficiency panels available in "analyze proficiency"

**REFERENCES**
CLIA Standards

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Federal Register: Request Access. (n.d.). Unblock.federalregister.gov. Retrieved July 12, 2023, from https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-G/part-493#subject-group-ECFRd2d2bd8eaa3acaf

NCCLS Standards


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| SUBJECT: EMERGENT RADIOLOGY PROCEDURES | REFERENCE # 7630.24.01 |
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| | PAGE: 1 OF: 2 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: MM/YYYY |
| APPROVED BY: | REVISED: 07/2016 |

**PURPOSE**

The purpose of this policy is to ensure that all Emergency Room staff know the protocol for ordering STAT versus emergent exams and what constitutes each of these categories.

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**POLICY**

The Emergency Room physician is responsible for requesting the radiology procedures on patients in the Emergency Room.

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The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or question and consistent with the state scope of practice requirements.

**PROCEDURE**

**Ordering of the procedure**

The written or electronic request for an emergent radiology procedure should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation. For an emergent procedure, where timing is critical, a verbal request from the physician to the technologist may be used to expedite the procedure. This verbal order must be entered into the electronic ordering system at the earliest opportunity. The technologist will perform the procedure and notify the interpreting radiologist that an emergent examination is pending review. Approved report is available in Cerner Results in Power Chart, physicians message board, and Infinitt PACS

**Deleted:** As soon as the report is available in the PACS the radiology staff will print the report to the Emergency

**Interpretation Criteria**

It is the policy of the American College of Radiology (ACR) that radiologists provide comprehensive imaging services to patients seen in the emergency department and provide timely consultative services for a patient's physician. The services of the radiologist in the emergency setting include, but are not limited to, the design and standardization of safe and effective radiological procedures; continuing supervision of technical performance and quality control of imaging; and, most importantly, interpretation of examinations, reporting of the results, and appropriate consultation with the referring physicians.

The timely interpretation of imaging examinations by qualified radiologists performed on emergency department (ED) patients facilitates decisions regarding their treatment and possible hospital admission. During normal working hours radiologists are available to interpret imaging examinations performed on ED patients within a reasonable time after such examinations are processed. These interpretations are then made available to the ED physician promptly so they may be integrated into patient care decisions.

The radiology practice provides similar timely interpretations for ED radiology examinations after normal working hours and on weekends and holidays by scheduling coverage by qualified radiologists via teleradiology.

**Technologist Staffing**

A radiologic/ CT technologist is available 24 hours a day. If a procedure is needed after hours the staff member is available by phone and per the Last Frontier Healthcare District MOU has a 30 minute response time.

**REFERENCES**


ACR practice guidelines.

| SUBJECT: ENEMA EXAMINATION IN ADULTS | REFERENCE # |
|---|---|
| | PAGE: 1 OF: 7 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 09/2021 |
| | REVISED: MM/YYYY |

**PURPOSE**

The purpose of this policy is to provide guidance in performing high quality enema examinations in adults.

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**POLICY**

It is the policy of Modoc Medical Center to provide enema examinations in adults in concordance with the parameters as set forth by the American College of Radiology (ACR).

**PROCEDURE**

**Introduction**

The purpose of this examination is to establish the presence or absence of disease and its nature by distending the colonic lumen and the coating of the mucosa of the colon. The goal is to obtain a diagnostic quality study by visualizing the colon in multiple projections with the minimum radiation dose necessary.

Deleted: The radiographic examination of the colon by single contrast or double contrast technique is a proven and useful procedure.

**Indications**

The indications for a fluoroscopic contrast enema examination include, but are not limited to:

- Diverticular disease
- Inflammatory bowel disease
- Colon cancer screening
- Incomplete colonoscopy
- Distal intestinal obstruction syndrome or meconium ileus equivalent in cystic fibrosis patients
- Evaluation of questionable findings on other imaging examinations such as computed tomography
- Colonic volvulus
- Assessing integrity of rectal anastomosis prior to take down of diverting colostomy or ileostomy
- Assessment of possible colonic fistulae
- Diseases involving the colon with familial inheritance pattern
- Perioperative evaluation of the colon for surgical planning and follow-up
- History of previous colon polyp or neoplasm
- Bowel fistulas

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The fluoroscopic contrast enema may also be helpful in diagnosing almost all disease states intrinsically or extrinsically affecting the colon.

Pertinent symptoms for the fluoroscopic contrast enema examination include, but are not limited to:

- Abdominal pain
- Diarrhea
- Constipation
- Other changes is bowel habits
- Gastrointestinal bleeding (only if colonoscopy is not available or cannot be performed)
- Anemia (only if colonoscopy is not available or cannot be performed)
- Abdominal masses
- Intestinal obstruction
- Weight loss
- Fever or sepsis

The possible contraindications for a fluoroscopic contrast enema examination include, but are not limited to:

- Unexplained pneumoperitoneum or pneumoretroperitoneum
- Acute colitis, including toxic megacolon
- Combative, uncooperative patient
- In the setting of recent endoscopic intervention, there should be a 7 day interval between the fluoroscopic contrast enema examination and the performance of large forceps biopsy through a rigid colonoscope or proctoscope, snare polypectomy, hot biopsy, or biopsy of any size or type in infectious or active inflammatory bowel disease.

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**Specifications of Examination**

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The written or electronic request for a fluoroscopic contrast enema examination should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation.

Documentation that satisfies medical necessity includes, but not limited to:

- Signs and symptoms
- Relevant history (including known diagnosis)
- Additional information regarding the specific reason for the examination or a provisional diagnosis would be helpful and may at times be needed to allow for the proper performance and interpretation of the examination.

The request for the examination must be originated by a physician or other appropriately licensed health care provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or question and consistent with the state scope of practice requirements. (ACR Resolution 35, adopted in 2006-revised in 2016, Resolution 12-b)

Colon Preparation

- The preparation should consist of an effective combination of dietary restrictions, hydration, osmotic laxatives, contact laxatives, and cleansing enemas. These preparations are intended to rid the colon of fecal material and excess fluid as much as possible. In appropriate clinical situations, preparation may be limited and, in the setting of suspected bowel obstruction or colonic volvulus, should be omitted. There is also no routine need for colonic preparation in case of existing ileal or colonic diversion.

Examination Preliminaries

- An appropriate medical history should be available, including results of laboratory tests and imaging, endoscopic, and surgical procedures as applicable.
- The enema tip should be inserted by a physician or a trained assistant (eg, technologist, radiologist assistant, nurse, or physician assistant). A retention cuff may be used. It should be inflated carefully in accordance with the manufacturer's guidelines and under fluoroscopic guidance and after instillation of a small amount of barium for better visualization of the balloon whenever possible. A retention cuff should be avoided for recent low rectal anastomoses (in rare instances it may be inflated under extreme care and under strict fluoroscopic guidance to avoid anastomotic dehiscence), following pelvic radiation therapy and in chronic inflammatory bowel disease.
- Medications (eg, glucagon) may be administered to facilitate the examination

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Examination Technique

The following fluoroscopic contrast examination procedures should be tailored by the physician to the individual patient, as warranted by clinical circumstances and the condition of the patient, to produce a diagnostic quality examination.

- Single contrast examination

  A sufficient volume of an appropriate low density (ie, 15% to 25% weight/volume) barium suspension or water-soluble iodinated contrast should be administered to provide colonic distention.

  In early postsurgical patients, if perforation is suspected or if preparation is contraindicated or not possible for other reasons, water-soluble contrast should be used. Blind-ending colonic segments (eg, rectal remnant following the Hartmann procedure or J-pouch) may also be studied with water-soluble contrast. Water-soluble contrast contains 300 to 700 mg of iodine/mL, equivalent to 60% to 76% density. It may be diluted with water to 20% to 30%, depending on the indication. Water-soluble contrast is also recommended in patients with suspected colonic obstruction or volvulus.

- For barium studies, kilovoltage of 100 kVp or greater should be used (depending on patient size) during image acquisition. A lower kVp of 70 to 80 optimizes iodine contrast visualization on water-soluble contrast studies.

- Manual or mechanical compression should be applied as appropriate to all accessible segments of the colon during fluoroscopy.

- Spot large-format images should demonstrate all fluoroscopically identified suspicious findings as well as those segments of the colon in profile that may not routinely be demonstrated on overhead projections.

- Images should include frontal and oblique views of the entire filled colon, an angled-beam view of the sigmoid colon, and a lateral view of the rectum. Whenever possible, the lateral rectal view should include an image obtained after the enema tip has been removed.

- Post-evacuation images should be obtained when possible and should always be obtained in the evaluation for leak.

- The quality assurance indicators specific to the single contrast enema examination are:

  - Compression views may be helpful
  - Each accessible segment of the colon is seen during fluoroscopy
  - Each segment of the entire colon should be seen without overlap, if possible
  - Imaging technique should optimize visualization of all segments of the colon

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- Complete visualization of the entire colon should be ensured through demonstration of the ileocecal valve, terminal ileum, or appendix

- In the setting of distal intestinal obstruction syndrome/meconium ileus equivalent in patients with cystic fibrosis, a water-soluble contrast enema examination can demonstrate the level of the obstruction and possibly be therapeutic. The water-soluble contrast material enema procedure has became an accepted supplement to other nonsurgical therapeutic measures, and multiple enemas with water-soluble contrast agents over several days may be required to mobilize the tenacious stool plugs. Repeat enemas in this setting may be performed without fluoroscopic guidance.

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Double Contrast Barium Examination

- Commercially prepared high density (80% weight/volume or greater) barium suspension is used
- Kilovoltage of 90 kVp or greater, depending on the patient's size, is used
- Barium suspension and air are introduced under fluoroscopic control to achieve adequate coating and distention of the entire colon
- The entire colon should be examined fluoroscopically during the course of the examination. Images should be taken to attempt to demonstrate all segments of the colon in double contrast.
- Suggested views include the following:
    - Spot images of the rectum, sigmoid colon, flexures, and cecum in double contrast.
    - Large format images, including prone and supine views on the entire colon, an angled-beam view of the sigmoid colon, and a lateral view of the rectum, either cross table lateral or vertical beam, preferably with the enema-tip removed
    - Both lateral decubitus views of the entire colon using a horizontal beam (a wedge filter is recommended)
    - Erect or semierect flexure views, and post-evacuation views, when possible, may be helpful
- The quality assurance indicators specific to the double contrast barium enema examination are as follows:
    - Adequate barium coating of the entire colon has been achieved
    - The colon is well distended with air
    - Each segment of the colon is seen in double contrast on at least 2 images taken in different positions, whenever possible

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  - Complete visualization of the entire colon is ensured through demonstration of the ileocecal valve, terminal ileum, or appendix.

- Colostomy or colonic mucous fistula fluoroscopic contrast enema

  - These procedures are indicated when disease is suspected involving a colostomy or colonic mucous fistula or to delineate anatomy in preparation for colostomy revision/takedown. The ostomy should be examined by the radiologist or a trained assistant. An appropriate device should be inserted into the ostomy. Examples of appropriate devices include, but are not limited to:

    - Foley catheter
    - Red rubber catheter
    - Cone colostomy tip

    If a Foley catheter is used, the balloon should be inflated on the outside of the stoma and held firmly against the stoma by the patient's gloved hand. Alternatively, the Foley balloon may be inflated under care inside the stoma and under strict fluoroscopic guidance to avoid injury.

  - Low density barium or water-soluble contrast should be instilled into the ostomy through the device under fluoroscopic observation. The examination should attempt to answer the clinical question and should be recorded on spot radiographs.

Quality Assurance

The following quality assurance indicators should be applied as appropriate to all fluoroscopic contrast enema examinations:

- Colon preparation should be adequate for the clinical indication
- When examinations are completed, patients should be held in the fluoroscopic area until the physician has reviewed the images
- An attempt should be made to resolve questionable radiographic findings before the patient leaves. Repeat fluoroscopy of the patient should be performed as necessary.

The following steps are suggested for a quality assurance and continuing quality improvement program:

- Correlation of radiologic, endoscopic, and pathologic findings
- In high volume centers, determination of detection rates for colorectal cancer and polyps measuring 1 cm or greater.

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**REFERENCES**


ACR PRACTICE PARAMETER FOR THE PERFORMANCE OF FLUOROSCOPIC CONTRAST ENEMA EXAMINATION IN ADULS, Revise 2018 (Resolution2)*


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| SUBJECT: SCHEDULING RADIOLOGY EXAMS | REFERENCE # 7630.24.02 |
|---|---|
| | PAGE: 1 OF: 2 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 06/2020 |
| | REVISED: |

**PURPOSE**

The purpose of this policy is to increase throughput, reduce wait time, increase response time, increase turnaround time and provide optimum care to patients in the Radiology Department.

**POLICY**

It is the policy of Modoc Medical Center to schedule patients in a timely manner.

**PROCEDURE**

**Scheduling Guidelines**

The following guidelines should be adhered to in order to facilitate proper scheduling in a timely manner within the Radiology Department:

- If a translator is needed, utilize Proprio Language Services 1-855-293-8133.
- The patient will have a written order signed by the ordering provider with an appropriate diagnosis for the exam ordered. Or an order may be placed within our electronic medical record (EMR)
- Confirm if authorization is needed or not. If authorization is needed, do not schedule until an authorization has been obtained. This number must be documented in the EMR.
- Scheduling hours are from 7:30 am to 4:30 pm Monday through Friday.
- Computed Tomography (CT) is scheduled 7:30 am to 4:30 pm Monday through Friday.
- CT exams without intravenous (IV) contrast are scheduled at 15 minute intervals.
- CT exams with IV contrast are scheduled at 30 minute intervals.
- Ultrasound Sound (US) exams are scheduled 7:30 am to 4:30 pm Tuesday through Friday, at 60 minute intervals.
- US Echocardiograms (Echos) are scheduled Wednesday afternoon 1:00 pm to 4:00 pm.
- General radiologic exams are not scheduled. They are done on a walk-in basis 7:30 am to 4:30 pm Monday through Friday.
- MRI exams are scheduled when the Mobile Unit is anticipated to be at Modoc Medical Center (MMC). This schedule changes frequently and fluctuates month to month.
    - Interventional Radiology (IR) exams are scheduled when the Interventional Radiologists are scheduled to be at MMC. This schedule changes frequently and fluctuates month to month. Some exams require preparation (refer to exam specific protocols), but are not limited to:

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a. Nothing by mouth (NPO) for 8 hours

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b. Oral contrast

c. Drink 32 ounces of water

d. Full bladder

e. Bathe

f. Attire

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- Patients are to check in 30 minutes prior to the scheduled time to register and fill out any paperwork that is needed.

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**Patient No Show**

If a patient is a no-show for a scheduled procedure, call the patient to reschedule.

If a patient is a no-show a second time, contact the ordering provider and inform them that the patient was a no show for two scheduled appointments.

To assist the patient in keeping appointments, the radiology aide will attempt to contact patients to remind them of their appointment. If, when making reminder call(s) the radiology aide reaches a disconnected number, the radiology aide will attempt to verify the information and/or update the EMR with correct information. If the radiology aide is unable to make these reminder calls, he/she should communicate that to other radiology staff so they can make those reminder calls.

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| SUBJECT: SCHEDULING RADIOLOGY EXAMS | REFERENCE # 7630.24.02 |
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| SUBJECT: PATIENT EMR RECORDS AND REPORTS | REFERENCE # 7630.24.03 |
| | PAGE: 1 OF: 1 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 04/2013 |
| APPROVED BY: | REVISED: 08/2024 |

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**PURPOSE**

The purpose of this policy is to outline the Radiology Department's method of handling radiology records.

**TERMS/DEFINITIONS**

Reports: Radiographic reports from the radiologist interpreting the examination done in the imaging department.

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**POLICY**

It is the policy of Modoc Medical Center (MMC) that the Radiology Department is to ensure that they are compliant with all state and federal regulations regarding radiology records and patient information.

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**PROCEDURE**

- With the addition of the electronic medical record (EMR) system, all patients will be registered in the EMR before being examined within the Radiology Department. All emergency room patient examinations will be electronically placed within the EMR system either by a licensed physician or a registered nurse (RN) at the direction of the licensed physician. The examination will then be completed and marked as such from the Radiology Department by the technologist who performed the exam.
- All outpatients will be registered in admitting and placed within the EMR system. The written request is scanned by admitting clerk and becomes a permanent part of the patient's electronic medical record.
- All requests from any examination done within the Radiology Department will be scanned into the Picture Archiving and Communication System (PACS) system and will be available for viewing along with the images taken in our department.
- All radiologists are responsible for dictating and placing their own reports within the PACS system. Each report is then either automatically updated into the patient's EMR or, if need be, scanned into the patient's EMR. Reports are automatically faxed to outside physicians.

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| SUBJECT: DUPLICATION AND TRANSFER OF RADIOLOGY STUDIES | REFERENCE # 7630.24.04 |
| DEPARTMENT: RADIOLOGY | PAGE: 1<br>OF: 1 |
| | EFFECTIVE: 01/14/2014 |
| APPROVED BY: | REVISED: 08/2024 |

**PURPOSE**

The purpose of this policy is to ensure consistent management of patient exams following Health Insurance Portability and Accountability Act guidelines and Modoc Medical Center (MMC) policies.

**POLICY**

It is the policy of MMC that all Radiology examinations, and their respective reports, performed at MMC are archived on the hospital Picture Archiving and Communication System (PACS). They are available for transfer or duplication as needed to provide continuity of care for the patient.

**PROCEDURE**

All patients have a legal right to obtain a copy of their radiology study. To facilitate this, the patient will be directed to the Medical Records Department. The patient will have to sign a request for Medical Records Release Form, as well as authorize another individual to obtain their private healthcare information (PHI) in case of emergency. The patient may also ask for the exam to be sent to another healthcare provider or facility. This request will remain in effect for one (1) year from the date of signature.

The radiology exams will be copied to a CD and labeled with the patient's name, medical record number, exam performed and date of the exam. A copy of the report is included on the CD as well as a paper copy.

Patients who are seen in the MMC Emergency Room or a patient in Med Surg/Acute that require transfer to another facility can be provided with a CD of the current radiology exam as well as any other relevant exam. The ER staff or Med Surg/Acute staff can make a CD or send images digitally to the facility that the patient is being transferred to. A Radiology Technologist can assist with burning a CD or sending images digitally if needed to facilitate the care of the patient, this should not become the norm.

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An exam may be sent from our PACS to another facility's PACS.¶
In the event that a legal service company subpoenas a copy of the radiology exam, the subpoena needs to be cleared through the Medical Records Department to ensure it meets all legal criteria. The subpoena will then be returned to radiology and a cost for the duplication will be provided depending on the number of exams needed to be copied as well as for the length of time needed to do the duplication. Payment will be made to MMC.¶

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| SUBJECT: PORTABLE RADIOGRAPHIC EXAMINATIONS | REFERENCE # 7630.24.07 |
|---|---|
| | PAGE: 1 OF: 3 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 03/2014 |
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**PURPOSE**

The purpose of this policy is to perform high quality portable radiography.

**POLICY**

It is the policy of Modoc Medical Center (MMC) to provide quality portable radiologic examinations in concordance with the practice parameters as set forth by the American College of Radiology (ACR). Portable radiologic examinations should be performed only for a valid medical reason and with minimum exposure that provides the image quality necessary for adequate diagnostic information.

**PROCEDURE**

**Specifications for Use of the Portable Radiograph System (aka Portable X-Ray)**

A portable exam can be performed at the patient's bedside at the request of the physician or other appropriately licensed healthcare provider. The technologist will wear a protective lead apron during the performance of the exposure and all unnecessary individuals will be cleared from the room. Prior to initiating the x-ray exposure, the technologist will call out "X-Ray" and allow adequate time for others to clear the area or step as far as possible from the patient. A protective apron can/will be supplied to those staff requesting one or are within six feet of the source.

Prior to a portable exam in surgery, the system will be wiped down with a hospital-approved germicidal detergent or wipe. Care must be taken by the technologist to avoid contaminating the sterile fields. The technologist will wear a protective lead apron and/or stand behind the mobile, lead lined barrier. All the staff can step away from the immediate area of the exposure and stand behind the lead barrier or the aproned technologist should be informed to do so.

For the safety of the patient from falls or in the case of isolation precautions, the technologist may decide to perform an exam at the bedside.

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**Indications**

Portable radiography should be performed for diagnostic indications or to answer a clinical question. Indications include, but are not limited to:

- Evaluation of patients with cardiopulmonary signs and/or symptoms following cardiac or thoracic surgery or major trauma, when posteroanterior (PA) and lateral examinations cannot be performed, and to better evaluate the lung bases when clinically or radiologically indicated.
- Patients with life support devices.
- Patients who are critically ill or medically unstable.
- Patients who, because of their clinical condition, cannot be transported for standard radiography.



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- Immediate assessment for pneumothorax following an interventional procedure in the chest or abdomen.

**SPECIFICATIONS OF THE EXAMINATION**

Written request for the portable radiography should provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation.

Documentation that satisfies medical necessity includes, but is not limited to:

- Signs and symptoms.
- Relevant history.
- Known diagnosis.
- Additional information regarding the specific reason for the examination or a provisional diagnosis would be helpful and at times be needed to allow for the proper performance and interpretation of the examination.

The request for the examination must be originated by a physician or other appropriately licensed healthcare provider. The accompanying clinical information should be provided by a physician or other appropriately licensed health care provider familiar with the patient's clinical problem or question and consistent with the State's scope of practice requirements.

The technologist should seek permission of and expect assistance from nursing or other personnel to position unstable patients and adjust or remove support apparatus in the radiologic field.

In cooperative adults and older pediatric patients, fully upright portable chest radiographs should be performed at a source-image distance (SID) of 40 to 72 inches, with the optimal distance as close as possible to 72 inches. Infants and young children and comatose or uncooperative patients may be imaged supine or semi-erect with 40-inch or greater SID. The patient-to-image receptor distance should be minimized. Young or uncooperative children should be immobilized when necessary to assure adequate patient positioning and prevent motion artifact. The examination may be modified by the physician or by a qualified technologist under the direction of a physician, as dictated by the clinical circumstances or the condition of the patient.

Radiographic exposure for portable chest should optimally be performed at peak inspiration for most indications. The radiograph should include the lung apices, the costophrenic sulci, the upper airway, and the upper abdomen. On an optimally penetrated chest radiograph, the retrocardiac vasculature and lower thoracic spine should be visible.

**Technical Factors**

- Exposures times should be as short as feasible to reduce motion artifacts.

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- Exposure parameters (including mAs, kVp, distance, and patient position) should be recorded for each image and may be used to optimize subsequent portable radiographs. Digital radiographs should be in accordance with the ACR-AAPM-SIIM Practice Parameter for Digital Radiography.

- For all patients, the radiographic beam should be appropriately collimated to limit radiation exposure outside the area of clinical interest. Inadequate collimation in neonatal intensive care units may increase exposure by a factor of 2. Therefore, inclusion of the abdomen below the costophrenic sulcus level on a neonatal chest radiograph is discouraged. If abdomen radiography is clinically warranted, a separate request including the medical necessity of the examination is required. In that circumstance, the abdomen may be included in a single exposure along with the chest using appropriate collimation and exposure parameters.

- Shielding during radiography may reduce the minimal amount of external radiation, but it does not affect internal scatter. However, the use of shielding should not be discouraged because it is an overt acknowledgement to the patient, child, parents or other caregivers that every attention to minimizing exposure has been addressed.

When the examination is complete, the radiographs should be reviewed by qualified personnel, either a physician or a radiologic technologist.

Images that are not of diagnostic quality should be repeated.

**REFERENCES**


1. American Registry of Radiologic Technologists (Mobil Unit) Chest Radiography
2. ACR-SPR-STR PRACTICE PARAMETER FOR THE PERFORMANCE OF PORTABLE (MOBILE UNIT) CHEST RADIOGRAPHY




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| SUBJECT: RADIOGRAPHIC EXAMINATION OF EXTREMITIES | REFERENCE # 7630.24.08 |
| | PAGE: 1<br>OF: 4 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 01/2009 |
| APPROVED BY: | REVISED: 05/2017 |

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**PURPOSE**

The purpose of this policy is to ensure consistent radiographic imaging of the extremities.

**POLICY**

It is the policy of Modoc Medical Center (MMC) Radiology Department to provide quality radiologic examinations in concordance with the practice parameters as set forth by the American College of Radiology (ACR).

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**Indications**

Indications for radiography of the extremities include, but are not limited to:

- Trauma.
- Pain.
- Instability.
- Impingement.
- Suspected physical abuse such as in infants and young children (Policy for Skeletal Surveys in Children).
- Metabolic diseases, nutritional deficiencies, and skeletal changes from systemic disease.
- Benign and malignant neoplasms.
- Primary non-neoplastic bone pathology.
- Arthropathies.
- Infections.
- Preoperative or postoperative evaluation and/or follow-up.
- Congenital syndromes and developmental disorders.
- Vascular lesions.
- Evaluation of soft tissues in an extremity (e.g., suspected foreign body).
- Correlation of abnormal skeletal findings on other imaging studies.

| SUBJECT: RADIOGRAPHIC EXAMINATION OF EXTREMITIES | REFERENCE # 7630.24.08 |
|---|---|
| | PAGE: 2 OF: 4 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 01/2009 |
| APPROVED BY: | REVISED: 05/2017 |

**PROCEDURE**

**Written Request for the Examination**

The written or electronic request for an extremity radiographic examination will provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation. (refer to the Policy for Requesting Radiology examinations)

**Specifications for Examinations**

The following table lists the minimum recommended views in routine circumstances. However, the views may be modified for any given clinical situation. Additional views may be warranted as part of the initial examination, or after review of the initial images, to clarify suspected pathology. Certain clinical situations routinely may require more views than the minimum for a given anatomic area. Additional imaging examinations may be indicated based on the evaluation of the images. This list of minimum views is not absolute in certain clinical situations; radiologists and non-radiologist clinicians may rely on their knowledge and experience to further reduce the necessary views.

| BODY PART | VIEWS |
|---|---|
| EXTREMITIES | |
| AC Joints | Right and Left are done simultaneously.<br><br>AP Erect bilateral with and without 5-pound weights. |
| Ankle limited 2 views | AP and lateral |
| Ankle complete 3 views | AP, Lateral and Internal Oblique. |
| Bone Age | PA both hands together to include wrists |
| Calcaneus (Heel) | Lateral, plantodorsal (upshot) 40$^{o}$, Internal Oblique. |
| Clavicle | AP, AP cephalad tilt 30-35$^{o}$. |
| Elbow limited 2 views | AP and lateral |
| Elbow complete | AP (no rotation of hand), TRUE Lateral (thumb straight up), External Oblique. |
| Femur | AP, Lateral (make sure hip and knee joints are on film) |

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| SUBJECT: RADIOGRAPHIC EXAMINATION OF EXTREMITIES | REFERENCE # 7630.24.08 |
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| | PAGE: 3 OF: 4 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 01/2009 |
| APPROVED BY: | REVISED: 05/2017 |

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|---|---|
| Finger | PA full Hand. Oblique & Lateral of affected finger. |
| Forearm | AP (hand in AP projection) Lateral (thumb straight up). |
| Foot limited 2 views | AP and lateral |
| Foot complete 3 views | AP, Lateral, Internal Oblique. |
| Hand limited 2 views | |
| Hand 3 views | PA, Oblique, Lateral (separate the fingers if possible). |
| Hand and Wrist for Arthritis | AP both hands to include wrists on one film. If wrists are specifically ordered, then copy image un-assign from hands and reassign to wrists. |
| Hip 1 view | AP |
| Hip limited 2-3 views | AP Pelvis, Frog or Cross-table lateral hip |
| Hips bilateral with Pelvis 2 view | AP Pelvis, AP Pelvis Frog, Cross-table lateral hips |
| Hips bilateral with Pelvis 3-4 views | AP Pelvis, AP Pelvis Frog, Inferior rami↓, Superior Rami↑, Frog or Cross-table lateral hips |
| Hip for infant (up to 12 months) | AP and Frog of pelvis |
| Humerus | AP and lateral |
| Knee limited 1-2 views | AP and lateral |
| Knee for Patella 3 views | AP, lateral and sunrise |
| Knee for trauma 3 views | AP, cross table lateral and tunnel view |
| Knee standing | AP both knees on the same film |
| Knee 4 views | AP, lateral, sunrise and tunnel view |
| Lower Extremity Infant up to 12 months | AP Hip to Ankle on one film. Lateral each leg, hip to toe. |
| Scapula | AP (arm abducted if possible), Lateral |

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|---|---|
| Shoulder | AP Internal Rotation, AP External Rotation, Lateral Neer (Y) view, and the Grashey view. |
| Sterno-Clavicular Joints | AP, shallow obliques (10-15$^0$) |
| Tibia and Fibula | AP and lateral include both joints |
| Toes | AP foot, oblique and lateral of affected toe |
| Upper Extremity Infant up to 12months | AP Shoulder to wrist on one film. Lateral Shoulder to wrist on one film. |
| | |

**Specific Considerations for the Pediatric Patient**

- A grid should not be used for extremity radiography in the infant and small child.
- The kilovoltage peak (kVp) and milliampere-seconds (mAs) technique charts should be individualized according to patient size and age.
- All efforts should be made to minimize radiation exposure to the health care workers and family members involved in patient positioning and immobilization.
- When imaging a symptomatic bone or joint, routine comparison images of the corresponding contralateral bone or joint generally are not indicated; however, limited comparison views may be helpful to verify or exclude pathology after initial review of the symptomatic extremity in some children.
- Certain pathologic processes may warrant simultaneous evaluation of both the right and left sides. This is particularly true for disorders of the hip, for which AP and frog-leg views of the entire pelvis, with appropriate use of gonadal shielding as indicated. Incorrect placement of gonadal shields can obscure pathology and increase the need for repeat images. Placement of gonadal shields in girls may not effectively shield the ovaries. The department has guidelines and regular instruction for technologists in the proper placement of gonadal shields.

**REFERENCES**


1. American College of Radiology (ACR) Guidelines and Standards Committee

| | |
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| SUBJECT: REPEAT OF X-RAY IMAGES | REFERENCE 7630.24.09 |
| | PAGE: 1 |
| DEPARTMENT: RADIOLOGY | OF: 1 |
| | EFFECTIVE: 06/2018 |
| APPROVED BY: | REVISED: 08/2024 |

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**PURPOSE**

The purpose of this policy is to establish a standard for repeat X-ray images. The focus is to decrease unnecessary radiation exposure to patients.

**POLICY**

It is the policy of Modoc Medical Center to define the reasons for repeating X-rays. The Radiology Manager is responsible for analyzing the repeats and the reasons for them. The MMC Radiology Department strives for a repeat rate less than 7%. The off-site X-ray Supervising Radiologist will provide corrective guidance as needed.

**PROCEDURE**

1. The technologist and/or the radiologist are responsible for deciding if an image must be repeated. The following list outlines several common reasons for possible repeat images, but this list is not all inclusive.

    - Underexposure
    - Overexposure
    - Patient Motion
    - Artifact-on patient or on cassette
    - Positioning
    - Mechanical Failure

2. It is understood that there will be repeated X-rays for a variety of reasons. This department strives for a repeat rate of less than 7%.

3. The Radiology Manager will analyze the reasons for repeats at the end of each month. These are documented on the Repeat Analysis Report that is presented to the Supervising Radiologist on a monthly basis.

4. If there are any corrective measures that need to be taken, they will be addressed immediately whether they are related to personnel or mechanical issues.

5. Technique charts will be updated, as needed, to reduce the repeat rate.

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**REFERENCES**

1. C-0283; 485.635(b)(3); Title 10, part 20, section 20.1101; 11485(g); Title 17, 30255(b)(1&2), 30305(b)(1&2).

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| SUBJECT: REGISTRATION OF RADIOLOGY PATIENTS | REFERENCE # 7630.24.10 |
|---|---|
| DEPARTMENT: RADIOLOGY | PAGE: 1 OF: 2 |
| | EFFECTIVE: 06/2020 |
| | REVISED: |

**PURPOSE**

The purpose of this policy is to provide direction and/or explanation of patient registration. To ensure that patient information is entered into the Electronic Medical Record (EMR) correctly.

**POLICY**

It is the policy of Modoc Medical Center (MMC) is to register patients for any medical service provided in MMC.

**PROCEDURE**

Registration is a process by which a patient's name and identity are enrolled into the records of MMC. This is required in order to provide services of the hospital to the patient and keep track of various services that are utilized by each patient. This is also the first step in generating a medical record of the patient in which all medical details of the patient are documented.

Registration is done with the following objectives:

- To collect basic details of patient related to identity, contact and demography.
- To create a unique identification number for each patient.
- To enter patient's name in MMC's system.
- To generate a record of the patient for documenting further processes related to him/her.

**Who Should be Registered**

All first-time patients to MMC wanting to utilize the services of MMC must be registered, Except in the following situations:

- If the patient is already registered with the hospital.
- If the healthcare services required by the patient are not available in MMC.
- If the patient is unknown to the hospital and is brought in deceased.

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**When Will Registration be Preformed**

Registration will be performed as a first step before any healthcare services are provided by the hospital. However, in a medical emergency where care needs to be provided urgently, registration can be done simultaneously or later as the situation allows. Such cases shall be handled in MMC's Emergency Department (ED) and urgency will be determined based on the ED Triage process.

**Patient Check-In**

The patient will sign in on the sign-in sheet located outside the Admitting Office upon their arrival.

Patients will be seen in the order they arrive for their appointments; however, if a patient is more than 30 minutes early for their appointment time, that patient will not be worked in ahead of another patient with an appointment time prior to the first patient.

Work-in patients will be seen on a first-come, first-served basis, after accommodating those patients in the ED and patient's that have appointments.

Admitting personnel will open the patient's EMR and verify the patient's address, phone number and insurance company status.

After confirming with the patient that all registration information is correct, Admitting personnel will update the EMR, as necessary, prior to the patient having any services performed.

Copy (both sides) of the patient's driver license and insurance card, will be scanned into the EMR. This procedure will occur for all patients at least annually.

If the patient does not have insurance, arrangements for payment will be arranged prior to the patient being seen. However, no patient will be turned away due to lack of ability to pay.

Notify Technologist that the patient has completed the Admitting/Registration process.

| SUBJECT: SCHEDULING AND TRANSPORTING WARNERVIEW RESIDENTS FOR RADIOLOGY EXAMINATIONS | REFERENCE # |
|---|---|
| DEPARTMENT: RADIOLOGY | PAGE: 1 OF: 1 |
| | EFFECTIVE: 2010 |
| APPROVED BY: | REVISED: 07/2016, 05/2020 |

**PURPOSE**

The purpose of this policy is to ensure clear communication, safety and to minimize wait time for the Skilled Nursing Facility (SNF) residents needing radiology services.

**POLICY**

It is the policy of Modoc Medical Center (MMC) that all radiology procedures performed for SNF residents are to be coordinated as to time of procedure, staff involved and mode of transportation to eliminate any undue mental or physical stress on the resident.

**PROCEDURE**

Once an order for a radiology procedure on a SNF resident has been requested in Cerner by his/her provider the Charge Nurse will phone the Radiology Department and make arrangements for the procedure.

Transportation will be a wheelchair or gurney depending on the physical condition of the resident. The Charge Nurse is to call the Radiology Department if the resident cannot stand on their own. The transportation method of resident will be considered based on the patient needs. The resident will be escorted by SNF nursing staff to the Radiology Department. The SNF staff member will remain with the resident before, during and after the procedure to assist the technologist as necessary and to facilitate a timely return to the SNF.

**Deleted:** The Charge Nurse will ensure that a radiology request form has been completely filled out and signed by the physician. This order will be faxed to the radiology department as well as carried with the resident's chart to radiology with the patient.¶

The result of the radiology procedures will be available to the SNF and the resident's provider as soon as it has been interpreted by the radiologist, for STAT procedures or at a time not to exceed 24 hours for routine procedures.

**REFERENCES**

1. MMC/SNF policy for Ancillary Services.



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| SUBJECT: AUTOMATED EXTERNAL DEFIBRILLATOR (AED) | REFERENCE # |
|---|---|
| DEPARTMENT: RADIOLOGY | PAGE: 1<br>OF: 5 |
| | EFFECTIVE: 07/2016 |
| | REVISED: 04/2021 |

## PURPOSE

The purpose of this policy is to develop a process that will result in a well-organized and effective emergency response plan for cardiac arrest victims. An automated external defibrillator (AED) is used to treat individuals experiencing sudden cardiac arrest.

## POLICY

It is the policy of Modoc Medical Center (MMC) that an AED will be maintained in the Radiology back hallway.. The AED will be used only by trained individuals for emergency situations that comply with the National Standards and Guidelines set forth by the American Heart Association or American Red Cross. The MMC AED program will be overseen by the MMC Medical Director.

## PROCEDURE

### Storage

The AED will be stored and placed in accordance with the manufacturer's recommendations and American Heart Association guidelines, out of reach of children, and labeled with "Only trained AED users shall operate the device." The Medical Director must be notified of the placement of an AED at MMC.

### Users

Only trained AED users will operate the device.

### Maintenance

The Radiology Department will be responsible for proper testing and documentation of maintenance in accordance with the schedule of maintenance from the operating manual of the AED.

Documentation will reflect the date and type of maintenance testing and the initials of the person performing the maintenance/testing. (Attachment 1)

MMC's Maintenance Department will provide a maintenance and testing compliance report yearly to the Medical Director and/or Radiology Department Manager.

A verification report of maintenance and testing will be maintained by MMC's Maintenance Department.

### Corrective Action for Deficiencies

Any deficiency identified will be immediately brought to the attention of the Medical Director and/or Radiology Department Manager who will decide what action will be taken to correct the deficiency.

All deficiencies in machine performance will be documented on the AED Problems/Corrective Action Form. (Attachment 2) "Deficiencies" does not include low batteries that need to be replaced. Units indicating low batteries will have the batteries replaced by the Maintenance Department as soon as possible.

If a machine is found to be malfunctioning, the Medical Director and/or Radiology Department Manager will place the AED unit out of service until it can be repaired or replaced.

**Training in the Use of AED**

Only those who have been trained in the use of AEDs are permitted to use them.

Training will be conducted by certified trainers, according to the American Heart Association Guidelines or Red Cross. It will include CPR training and a required reading of this program in its entirety.

Training records will be kept in each employee's official personnel files. When training is successfully completed, copies of certification cards are to be sent by the trainees to the Medical Director and/or Radiology Department Manager.

**After Use of AED**

The Medical Director will be notified of any AED use.

A completed AED Incident Form Radiology Department/CT Form (Attachment 3) following AED use will be delivered to the Medical Director and the Radiology Department Manager.

Critical Incident Debriefing session to evaluate the incident will be held within seven (7) days for all initial responders and trained AED users involved in the incident. This session will be called by the Medical Director.

If necessary, the Medical Director will recommend changes in rescue practice.

The AED will be checked by the Radiology Department Manager and put back in a state of readiness per American Heart Association guidelines and the manufacturer's recommendations.

**REFERENCES**

- American Red Cross *http://www.redcross.org/prepare/location/workplace/easy-as-aed* or American Heart Association.

**ATTACHMENTS**

1. AED Maintenance Checklist Radiology Department
2. AED Problems/Corrective Actions Form Radiology Department
3. AED Incident Form Radiology Department Radiology Department

| SN: (01) 0 0847946 00215 2 (21) X16B817957<br>Check the Following (P=pass F=fail) | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | | | | | | | | | | | | |
| Time | | | | | | | | | | | | |
| Is the unit clean, undamaged, and free of excessive wear? | | | | | | | | | | | | |
| Are there any cracks or loose parts in the housing? | | | | | | | | | | | | |
| Verify electrodes are connected to the AED Plus and sealed in their package. Replace if expired. | | | | | | | | | | | | |
| Are all cables free of cracks, cuts, exposed or broken wires? | | | | | | | | | | | | |
| Turn the AED PLUS on and off and verify the green check indicates ready for use. | | | | | | | | | | | | |
| Batteries within expiration date. Replace if expired. | | | | | | | | | | | | |
| Check for adequate supplies. (AED pads adult & pediatric, pocket mask with one way valve, exam gloves, razors, gauze/hand towel) | | | | | | | | | | | | |
| Initials | | | | | | | | | | | | |

NOTES:_____
_____
_____
_____
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| | |
|---|---|
| Equipment Serial Number | (01) 0 0847946 00215 2 (21) X16B81795 |
| Date | |
| Location of Defibrillator | |
| Problems / Corrective Actions | |
| Signed | |

*Equipment SN:* (01) 0 0847946 00215 2 (21) X16B817957

*Use this form to report any event, including, or situation that results in use or possible use of an AED*

Location of Victim: _____

Date of Incident: _____ Time of Incident: _____

Name and contact information for person(s) who found or with victim: _____

Did the victim have a pulse? Yes ☐ No ☐ How was the pulse checked? _____

Was the victim breathing? Yes ☐ No ☐ How was breathing checked? _____

Was 911 called? Yes ☐ No ☐ Time: _____

Was CPR conducted? Yes ☐ No ☐ Person conducted CPR: _____

Was an AED applied to the victim? Yes ☐ No ☐

If yes, name and contact information for the person who operated AED and any other pertinent information:
_____
_____
_____

AED used was located: _____

Briefly describe the event, incident, or situation that resulted in the AED being brought to the victim (whether used or not) or any information not listed above: _____
_____
_____

Briefly describe the situation of the victim when EMS arrived (i.e. was there a pulse (i.e. was there a pulse, was victim breathing, etc.) _____
_____
_____

Information for person(s) completing this form: Name (print): _____
Date completed: _____

Contact information: _____

Notify the Medical Director of any AED use.

Completed form is to be given to the Department Manager.
Date received by Department Manager: _____ Signature: _____

| | |
|---|---|
| SUBJECT: RADIOGRAPHIC EXAMINATION OF HEAD AND NECK | REFERENCE # |
| | PAGE: 1<br>OF: 3 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 01/2009 |
| APPROVED BY: | REVISED: 04/2016, 05/2017, 08/2024 |

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**PURPOSE**

The purpose of this policy is to ensure consistent radiographic imaging of the head and neck.

**POLICY**

It is the policy of Modoc Medical Center's Radiology Department to provide quality radiologic examinations in concordance with the practice parameters as set forth by the American College of Radiology (ACR).

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**Indications**

Indications for radiography of the head and/or neck include, but are not limited to:

- Trauma
- Pain
- Radiculopathy
- Wheezing
- Croup

**PROCEDURE**

**Written Request for the Examination**

The written or electronic request for head and/or neck radiographs will provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation. (Refer to the Policy for Requesting Radiology Examinations for more information on requesting radiology examinations)

**Specifications for Examinations**

The following table lists the minimum recommended views in routine circumstances, however, the views may be modified for any given clinical situation. Additional views may be warranted as part of the initial examination, or after review of the initial images, to clarify suspected pathology. Certain clinical situations routinely may require more views than the minimum for a given anatomic area. Additional imaging examinations may be indicated based on the evaluation of the images. It should be understood that this list of minimum views is not absolute. In certain clinical situations, radiologists and non-radiologist clinicians may rely on their knowledge and experience to further limit the necessary views.

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| SUBJECT: RADIOGRAPHIC EXAMINATION OF HEAD AND NECK | REFERENCE # |
|---|---|
| | PAGE: 2<br>OF: 3 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 01/2009 |
| APPROVED BY: | REVISED: 04/2016, 05/2017, 08/2024 |

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| ANATOMIC AREA | VIEWS |
|---|---|
| SKULL AND FACIAL BONES | |
| Facial Bones limited less than 3 views | Waters's, PA or AP |
| Facial Bones (generally done in CT) | Water's, PA or AP, lateral (all upright if possible, cross-table lateral for fluid level if unable to do upright) |
| Mandible limited 1 – 3 views | AP or PA, oblique and lateral of injured side |
| Mandible complete (generally done in CT) | Towne, both obliques, PA, lateral (side of injury closest to film) |
| Nasal Bones | Water's upright, both laterals for soft tissue |
| Orbits pre MRI | Water's upright with eyes up, Water's upright with eyes down |
| Orbits (generally done in CT) | Water's upright, Caldwell upright, Rhese obliques |
| Sinuses (12 years and up) | Water's, Caldwell, lateral, submental vertex. All views done upright |
| Sinuses (7-12 years) | Water's, Caldwell, lateral. All views done upright |
| Sinuses (6 years and younger) | Water's, Caldwell. All views done upright |
| Skull | PA, Towne's, both lateral |
| Skull limited | AP, lateral (side of injury closest to film) |
| TMJ's bilateral | Oblique views open and closed mouth. AP 35° caudal to OML |
| Zygomatic Arches | Axial obliques, submental vertex, Towne's |
| NECK | |
| Neck Soft Tissue | AP with neck extended and lateral |

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| SUBJECT: RADIOGRAPHIC EXAMINATION OF HEAD AND NECK | REFERENCE # |
| | PAGE: 3<br>OF: 3 |
| DEPARTMENT: RADIOLOGY | EFFECTIVE: 01/2009 |
| APPROVED BY: | REVISED: 04/2016, 05/2017, 08/2024 |

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**Specific Considerations for the Pediatric Patient and Child Bearing ages**

- Appropriate use of gonadal shielding will be done. Placement of gonadal shields in girls may not effectively shield the ovaries. The department has guidelines and regular instruction for technologists in the proper placement of gonadal shields.

**REFERENCES**

1. American College of Radiology (ACR) Guidelines and Standards Committee.

| SUBJECT: LEAD APRON INSPECTION | REFERENCE # 7630.24.12 |
|---|---|
| DEPARTMENT: RADIOLOGY | PAGE: 1 OF: 3 |
| | EFFECTIVE: 02/2015 |
| APPROVED BY: | REVISED: 04/2021 |

## PURPOSE

The purpose of this policy is to ensure all lead aprons and protective apparel are functioning properly and protecting the persons wearing them from unnecessary radiation exposure.

## TERMS/DEFINITIONS

### Lead Apron

Lead aprons are any covering garment used to protect a person from receiving unnecessary radiation. Lead equivalent will not be less than 5 mm thick.

## POLICY

It is the policy of Modoc Medical Center that all protective apparel used within the Radiology and Computed Tomography (CT) Departments will be visually inspected once a year and replaced or repaired if found to be faulty.

## PROCEDURE

- Lead aprons will be visually inspected annually for defects such as holes, cracks or tears. This check can be performed by visual inspection, tactile evaluation (feeling the protective devices) or by x-ray imaging.
- A record of the date of the check, the type of check and who performed the check, will be kept for three years.
- If a defect is found at the time of the annual check or on any other occasion, the device will be removed from service immediately.
- Once a year, all aprons being used within the Radiology Department will be visually inspected. Any lead aprons or lead protective apparel that does not pass visual inspection will be imaged by either using x-ray or CT. All aprons in service will be examined in accordance with this policy in the month of January.

### Rejection Criteria

Aprons can fail testing for many reasons; the following are the most common examples:

- Multiple small holes and cracks.
- Large hole or crack.
- Wearing out or thinning of the lead.

- Velcro not in working order (can be repaired).
- Holes can be seen when the apron is checked using x-ray.

| *DATE:* | *INSTITUTION: MODOC MEDICAL CENTER* |
|---|---|
| *DEPARTMENT: RADIOLOGY* | |

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| APRON | BURGUNDY | BURG1 | | | | |
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**Recommended retention**: This record should be retrained for at least 5 years.

| Performed by: | Management Review: |
|---|---|
| Date: | Date: |

| SUBJECT: RADIOLOGIST COVERAGE | REFERENCE # |
|---|---|
| | PAGE: 1 OF: 1 |
| DEPARTMENT: RADIOLOGY OF DEPARTMENTAL MANUAL | |
| | EFFECTIVE: 4/2013 |
| APPROVED BY: | REVISED: 08/2020 |

**PURPOSE**

The purpose of this policy is to define the Radiologist and/or groups that will be responsible for the interpretation of radiologic images that are produced at Modoc Medical Center (MMC).

**POLICY**

It is the policy of MMC to have a Radiologist coverage 24 hours a day, seven days a week.

**PROCEDURE**

Radiologists shall be available to provide professional services seven days per week, 24 hours per day, including all holidays.

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Provide one or more qualified group physician to be available at reasonable times for telephone consultation with individual members of staff or physicians regarding the services. Technical staff will also have access to a qualified group physician for telephone consultation as it pertains to delivering a high-quality exam.

Import digitally signed written reports directly into the picture archiving and communication system (PACS).

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Minimize turnaround time (TAT) on all studies, with an average TAT of two hours, not to exceed 12 hours on non-emergent studies.

Provide preliminary interpretation on all Emergency Room (ER) CT scans within 30 minutes and written within one hour. If requested by ER physician, provide an immediate preliminary interpretation of overnight general x-rays; otherwise, provide a written report by 9 AM the following day.

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Notify ER physician of discrepancies between their preliminary interpretation of overnight cases and final Radiologist interpretation by 9 AM the following day.

**REFERENCES**

1. Contractual Agreement with Mt Shasta Radiology.

| SUBJECT: AUTOMATED EXTERNAL DEFIBRILLATOR (AED) | REFERENCE # |
|---|---|
| DEPARTMENT: RADIOLOGY | PAGE: 1 OF: 5 |
| | EFFECTIVE: 07/2016 |
| | REVISED: 04/2021 |

**PURPOSE**

The purpose of this policy is to develop a process that will result in a well-organized and effective emergency response plan for cardiac arrest victims. An automated external defibrillator (AED) is used to treat individuals experiencing sudden cardiac arrest.

**POLICY**

It is the policy of Modoc Medical Center (MMC) that an AED will be maintained in the Radiology back hallway. The AED will be used only by trained individuals for emergency situations that comply with the National Standards and Guidelines set forth by the American Heart Association or American Red Cross. The MMC AED program will be overseen by the MMC Medical Director.

**Deleted:** Computed Tomography (CT) Control Room

**PROCEDURE**

**Storage**

The AED will be stored and placed in accordance with the manufacturer's recommendations and American Heart Association guidelines, out of reach of children, and labeled with "Only trained AED users shall operate the device." The Medical Director must be notified of the placement of an AED at MMC.

**Users**

Only trained AED users will operate the device.

**Maintenance**

The Radiology Department will be responsible for proper testing and documentation of maintenance in accordance with the schedule of maintenance from the operating manual of the AED.

Documentation will reflect the date and type of maintenance testing and the initials of the person performing the maintenance/testing. (Attachment 1)

MMC's Maintenance Department will provide a maintenance and testing compliance report yearly to the Medical Director and/or Radiology Department Manager.

A verification report of maintenance and testing will be maintained by MMC's Maintenance Department.

**Corrective Action for Deficiencies**

Any deficiency identified will be immediately brought to the attention of the Medical Director and/or Radiology Department Manager who will decide what action will be taken to correct the deficiency.

All deficiencies in machine performance will be documented on the AED Problems/Corrective Action Form. (Attachment 2) "Deficiencies" does not include low batteries that need to be replaced. Units indicating low batteries will have the batteries replaced by the Maintenance Department as soon as possible.

If a machine is found to be malfunctioning, the Medical Director and/or Radiology Department Manager will place the AED unit out of service until it can be repaired or replaced.

**Training in the Use of AED**

Only those who have been trained in the use of AEDs are permitted to use them.

Training will be conducted by certified trainers, according to the American Heart Association Guidelines or Red Cross. It will include CPR training and a required reading of this program in its entirety.

Training records will be kept in each employee's official personnel files. When training is successfully completed, copies of certification cards are to be sent by the trainees to the Medical Director and/or Radiology Department Manager.

**After Use of AED**

The Medical Director will be notified of any AED use.

A completed AED Incident Form Radiology Department/CT Form (Attachment 3) following AED use will be delivered to the Medical Director and the Radiology Department Manager.

Critical Incident Debriefing session to evaluate the incident will be held within seven (7) days for all initial responders and trained AED users involved in the incident. This session will be called by the Medical Director.

If necessary, the Medical Director will recommend changes in rescue practice.

The AED will be checked by the Radiology Department Manager and put back in a state of readiness per American Heart Association guidelines and the manufacturer's recommendations.

**REFERENCES**

- American Red Cross *http://www.redcross.org/prepare/location/workplace/easy-as-aed* or American Heart Association.

**ATTACHMENTS**

1. AED Maintenance Checklist Radiology Department
2. AED Problems/Corrective Actions Form Radiology Department
3. AED Incident Form Radiology Department Radiology Department

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# AED MAINTENANCE CHECKLIST
# RADIOLOGY DEPARTMENT

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Check the Following (P=pass F=fail) | | | | | | | | | | | | |
| Date | | | | | | | | | | | | |
| Time | | | | | | | | | | | | |
| Is the unit clean, undamaged, and free of excessive wear? | | | | | | | | | | | | |
| Are there any cracks or loose parts in the housing? | | | | | | | | | | | | |
| Verify electrodes are connected to the AED Plus and sealed in their package. Replace if expired. | | | | | | | | | | | | |
| Are all cables free of cracks, cuts, exposed or broken wires? | | | | | | | | | | | | |
| Turn the AED PLUS on and off and verify the green check indicates ready for use. | | | | | | | | | | | | |
| Batteries within expiration date. Replace if expired. | | | | | | | | | | | | |
| Check for adequate supplies. (AED pads adult & pediatric, pocket mask with one way valve, exam gloves, razors, gauze/hand towel) | | | | | | | | | | | | |
| Initials | | | | | | | | | | | | |

## AED Problems / Corrective Actions Form
## RADIOLOGY DEPARTMENT

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|---|---|
| Equipment Serial Number | (01) 0 0847946 00215 2 (21) X16B817957 |
| Date | |
| Location of Defibrillator | |
| Problems / Corrective Actions | |
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# AED INCIDENT FORM
# RADIOLOGY DEPARTMENT

*Equipment SN:* (01) 0 0847946 00215 2 (21) X16B817957

*Use this form to report any event, including, or situation that results in use or possible use of an AED*

Location of Victim:

Date of Incident: Time of Incident:

Name and contact information for person(s) who found or with victim:

Did the victim have a pulse? Yes ☐ No ☐ How was the pulse checked?

Was the victim breathing? Yes ☐ No ☐ How was breathing checked?

Was 911 called? Yes ☐ No ☐ Time:

Was CPR conducted? Yes ☐ No ☐ Person conducted CPR:

Was an AED applied to the victim? Yes ☐ No ☐

If yes, name and contact information for the person who operated AED and any other pertinent information:

AED used was located:

Briefly describe the event, incident, or situation that resulted in the AED being brought to the victim (whether used or not) or any information not listed above:

Briefly describe the situation of the victim when EMS arrived (i.e. was there a pulse (i.e. was there a pulse, was victim breathing, etc.)

Information for person(s) completing this form: Name (print):
Date completed:
Contact information:

Notify the Medical Director of any AED use.

Completed form is to be given to the Department Manager.
Date received by Department Manager: Signature:

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| REFERENCE # | 7430.24.01 | EFFECTIVE |
| SUBJECT: | INTERVENTIONAL RADIOLOGY TIME OUT | REVISED |
| | | REVIEWED |
| DEPARTMENT: | RADIOLOGY | PRIOR REVISIONS: |

**PURPOSE:**
The purpose of this policy is to promote patient safety by ensuring that the medical team is confirming information regarding the patient, procedure, and the site that are to be examined.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**

Time Out: An immediate pause by the medical team to confirm the correct patient, procedure, and site.

**POLICY:**
It is the policy of Modoc Medical Center (MMC) that prior to an Interventional Radiology procedure, each of the components of Time Out will be followed and documented, as appropriate.

**PROCEDURE:**
During the informed consent process, the patient's identity, the procedure, and the site are confirmed with the patient. Once this process is complete, the patient is escorted to the procedure room. Images are then obtained, and the site is marked.

**REFERENCES:**
The Joint Commission (2024, January 1). *The Universal Protocol*. Retrieved June 20, 2024, from https://www.jointcommission.org/-/media/tjc/documents/standards/universal-protocol/up_poster1pdf.pdf.

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| SUBJECT: PATIENT LABS PRIOR TO COMPUTED TOMOGRAPHY EXAM WITH IV CONTRAST | REFERENCE: 7680.24.01 |
| DEPARTMENT: RADIOLOGY | PAGE: 1 OF: 1 |
| | EFFECTIVE: 05/2008 |
| APPROVED BY: | REVISED: 01/2015, 04/2021 |

**PURPOSE**

The purpose of this policy is to establish guidelines for the Radiology Department to obtain laboratory results before performing computed tomography (CT) examinations with intravenous (IV) contrast.

**POLICY**

It is the policy of Modoc Medical Center (MMC) that all patients are to be evaluated before being given IV contrast**.**

**PROCEDURE**

- 

- Children and patients 40 years of age and under do not need a creatinine and blood urea nitrogen (BUN) level drawn as long as they are not diabetic or do not have renal issues.

- Non-diabetic patients over the age of 40 years will have a creatinine and BUN level done within 60 days prior to the CT examination date. This level will be within the accepted norm of MMC of 0.8-1.8 ml/dL for creatinine and 7-18 mg/dL for BUN. The radiologist on duty will be notified of patients with abnormal levels before proceeding with an IV contrast.

- Diabetic patients should have a creatinine and BUN level done within 30 days of the CT examination date. This level should be within the accepted norm of MMC of 0.8-1.8 ml/dL for creatinine and 7-18 mg/dL for BUN. The radiologist on duty should be notified of patients with abnormal levels before proceeding with an IV contrast.

1. 

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¶
<#>Documentation on examination, including adverse and non-adverse reactions, will be documented on patient's paperwork and electronically submitted to be included within the patient's records.¶
¶
ATTACHMENT¶
¶
Pre-Medication List.

| SUBJECT: CT QUALITY CONTROL | REFERENCE # 7680.24.02 |
|---|---|
| DEPARTMENT: RADIOLOGY | PAGE: 1 OF: 2 |
| | EFFECTIVE: 05/2008 |
| APPROVED BY: | REVISED: 10/2020 |

**PURPOSE**

The purpose of this policy is to ensure the safety of all personnel and patients with regards to proper radiation exposure within the Radiology Department.

**TERMS/DEFINITIONS**

**Phantom**

ACR-accredited phantom used for daily quality control (QC) tests.

Go Up

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The computed tomography (CT) machine in the Radiology Department.

**Quick IQ Check**

The name of the built in QC test.

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**POLICY**

It is the policy of Modoc Medical Center that all QC tests will be performed daily at the beginning of the work day whenever possible in the absence of stat emergency cases.

**PROCEDURE**

**Daily Tests**

The following tests are to be performed daily, following the instructions within the Radiology Department:

- (Siemen's) Quick IQ Check.
- American College of Radiology (ACR) Phantom Test.
- (Siemen's) Head/Body.

**Monthly Exams**

The following tests are to be performed monthly, following the instructions within the Radiology Department:

- Monthly Monitor Tests.
- Monthly CT Quality Control Visual Test.

- Monthly Quality Assurance (QA) Worksheet (Philips).

**Annual Exams**

The following test is to be performed annually.

1. Physicist's annual inspection.

All numbers are to be recorded in the QC book located within the Radiology Department and should be within the allotted normal range. Any major discrepancies regarding test results should first be discussed with the Radiology Manager and then, if deemed necessary a CT Service Technician. Repairs are to be done in a timely manner by a qualified CT repair technician. In no instance will patients be scanned if any of the failing tests that could result in the impairment of patient exams. For more information refer to the ACR accreditation guidelines.

| SUBJECT: CT LOW DOSE LUNG CANCER SCREENING | REFERENCE # |
|---|---|
| DEPARTMENT: RADIOLOGY | PAGE: 1 OF: 3 |
| | EFFECTIVE: 09/2016 |
| APPROVED BY: | REVISED: |

## PURPOSE

The purpose of this policy is that Thoracic computed tomography (CT) is the only test that has been demonstrated to reduce mortality from lung cancer in high-risk current and former cigarette smokers. Screening with CT may have additional health benefits when associated with smoking cessation. Screening CT may be repeated annually for several decades, depending on when an individual begins screening. This policy outlines the principles for performing high-quality thoracic CT in adults at high risk for lung cancer.

## POLICY

It is the policy of Modoc Medical Center is to provide quality Radiologic/ CT examinations in concordance with the practice parameters as set forth by the American College of Radiology (ACR).

## INDICATIONS AND CONTRAINDICATIONS

There are no absolute contraindications to screening thoracic CT. As with all procedures, the relative benefits and risks of the procedure should be evaluated prior to the performance of thoracic CT. Appropriate precautions should be taken to minimize patient risks, including radiation exposure.

Screening thoracic CT is appropriate for asymptomatic individuals at high risk for lung cancer. An individual's risk for lung cancer is primarily determined by:

- Smoking history and age.

Additional risk factors include the following

1. Emphysema and chronic obstructive pulmonary disease (COPD)
2. Interstitial lung disease, such as pulmonary fibrosis
3. Occupational and environmental exposures, such as asbestos, arsenic, beryllium, cadmium, chromium, coal smoke, diesel fumes, nickel, silica, and soot
4. High levels of radon exposure
5. History of cancer, including lung cancer, lymphoma, head and neck cancer, and smoking-related cancers
6. Family history of lung cancer
7. Extensive secondhand smoke exposure
8. Prior thoracic radiation therapy, as may occur for breast cancer and lymphoma

## PROCEDURE

### Written Request for the Examination

The written or electronic request for a lung cancer screening Computed Tomography (CT) should provide sufficient information to demonstrate the medical appropriateness of the examination and allow for its proper performance and interpretation.

### Specifications for Examinations

A typical lung cancer screening CT of the thorax must be performed with multidetector helical (spiral) technique in a single breath-hold. The study must include axial images from the lung apices to the costophrenic sulci, with reconstruction intervals equal to or less than the slice thickness. Maximum intensity projection (MIP) reconstruction is a technique that may be useful to increase the sensitivity for lung nodule detection. Multiplanar reconstruction (MPR) may be useful to further characterize nodules, particularly nodules located along the pleural surfaces (also known as perifissural nodules).

Scans should be obtained in a suspended state of full inspiration whenever possible. Scans must be obtained through the entire lungs, from apices to bases, and the field of view must be optimized for each patient to include the entire transverse and anteroposterior diameter of the lungs.

The examination is conducted without the use of intravenous contrast medium.

### CT Lung Screening Exposure Considerations

Attention to CT technical parameters to achieve lower radiation exposure levels than is characteristic of standard adult thoracic CT examinations is important, particularly since a positive CT screening exam may result in subsequent follow-up examinations that expose screen-positive individuals to additional ionizing radiation, and screening CT may be repeated annually for several decades, depending on when an individual begins screening. This practice parameter outlines the principles for performing high-quality thoracic CT in adults at high risk for lung cancer.

## INTERPRETATION AND REPORTING

Anatomically appropriate window and level settings should be used to view all of the anatomy within the obtained CT coverage, including the lung parenchyma, mediastinum, chest wall, bones, lower neck, and upper abdomen within the scanned field of view. Lung nodules and focal lung lesions should be reported with respect to anatomic location (lung lobe, segment) and series/image number to facilitate comparison to both prior and subsequent thoracic CT examinations. Nodules should be described with respect to size, attenuation (soft tissue, type of calcification, fat), opacity (solid, ground glass [also known as nonsolid], and part-solid, containing both solid and ground-glass components), and margins (eg, smooth, lobulated, spiculated). Comparison with prior imaging studies is an important part of nodule evaluation. Specific reference should be made to change, or lack thereof, from prior examinations. If previous imaging studies, particularly thoracic CT examinations, are needed to determine the significance of positive findings, an attempt should be made to obtain and compare with the images directly and not rely on prior reports alone.

## REFERENCES


1. American College of Radiology (ACR) Guidelines and Standards Committee.

| SUBJECT: ANKLE BRACHIAL INDEX | REFERENCE # |
|---|---|
| DEPARTMENT: RADIOLOGY ULTRASOUND | PAGE: 1 OF: 4 |
| | EFFECTIVE: 07/2021 |
| | REVISED: MM/YYYY |

**PURPOSE**

The purpose of this policy is to ensure that Ankle Brachial Index exams are performed consistently.

**TERMS/DEFINITIONS**

**POLICY**

It is the policy of Modoc Medical Center (MMC) Radiology Department to perform an Ankle Brachial Index in accordance with the Manufacturer's Guidelines using the ABI Cuff-Link™ Systems.

**PROCEDURE**

**Written Request for the Examination**

The written or electronic request for an Ankle Brachial Index examination will provide sufficient information to demonstrate the medical necessity of the examination and allow for its proper performance and interpretation. (Refer to the Policy for Requesting Radiology Examinations.)

**Indications**

Indications for an Ankle Brachial Index examination include but are not limited to:

- Tobacco use
- Diabetes
- Heart disease
- Previous cardiovascular event
- Hyperlipidemia
- Stroke/Transient Ischemic Attack (TIA)
- Previous vascular surgery
- Patient is over the age of 65
- Intermittent claudication
- Numbness & tingling in feet
- Ulcerations
- Rest pain
- Gangrene

**Contraindications**

The exam is not to be performed on someone suspected of having acute deep venous thrombosis, and an arm pressure in an arm with a shunt or dialysis graft is not to be taken. Patients that have stents in lower extremities will be assessed by the Radiologist on a case-by-case basis.

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**Background**

A segmental exam of the leg is an extension of the ABI exam. In this test, you can attempt to localize the site of an occlusion by taking the pressures and waveforms at more locations on the leg. Pressures and PVR waveforms are taken just as in the ABI exam. The Doppler probe location remains at the ankle – usually the PT.

**The Segmental with Toe Procedure**

**Set up**

- Opening the exam: On the computer desktop, double click the simple ABI icon. When the program opens, select File-New-3 cuff with Toe Segmental Report (or 4 cuff). The report will open, and you can enter patient information, risk factors, symptoms, ICD codes, etc.
- Attaching cuffs: Wrap appropriate cuffs at each site. Attach the hoses from the Cuff-Link control unit to cuffs as shown below. The green connectors go to the arm (or thigh) cuffs, red to the calves, blue to above the knee cuffs, and yellow to the ankles (or toes). White hoses go to the patient's right side, blue to the left. (*NOTE* the image is reversed as if you are looking at the patient lying down.)

Brachial Pressure

1. Begin with the right brachial. Place the Doppler probe at a 45-degree angle to the skin over the radial or brachial artery. Use plenty of gel and slowly move the probe laterally until the best signal is obtained.
2. Press and hold Inflate on the Cuff-Link Remote (shown above) and inflate the cuff until you no longer hear the signal - continue for an additional 10-20 mmHg.
3. Release Inflate and the cuff will automatically deflate at the suggested rate of 2mmHg/second.
4. When you hear the Doppler signal return, pressing Pressure will store the pressure value in the exam.

Ankle Pressures

1. Press Next on the remote and the system will move to the Dorsalis Pedis (DP) site. Find the arterial signal using the Doppler probe on the dorsalis pedis artery on top of the foot. Obtain the arterial pressure in the same manner you did on the arm. (Hold Inflate until occlusion, release Inflate, press Pressure on Doppler signal return.)
2. Press Next and the system will move to the posterior tibial (PT) site. Find the Doppler signal on the posterior tibial artery. Obtain the arterial pressure. (Hold Inflate until occlusion, release Inflate, press Pressure on Doppler signal return.)

Ankle Waveform

- Press Next and the system will move to the waveform site. Press and release the button with the Waveform image on the top right of the remote. The cuff will inflate to roughly 85mmHg and deflate to the proper pressure (65mmHg) and hold that while the waveform is obtained. The waveform will start to appear when the cuff has reached 65mmHg. The patient should remain as still as possible during the measurement.

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**Segmental with Toe Examinations with simpleABI Cuff-Link™ Systems**¶

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- Leave the Doppler probe on the posterior tibial (PT) for all upper-level site pressures, if upper pressures will be taken. See notes on efficient protocols below.

Calf Pressure & Waveform

- Press Next on the remote and the system will move to the calf site. Obtain the arterial pressure and waveform in the same manner you did on the ankles.

Above Knee Pressure & Waveform

- Press Next on the remote and the system will move to the above knee site. Obtain the arterial pressure and waveform in the same manner you did on the ankles.

Thigh Pressure & Waveform (4-cuff)

- Press Next on the remote and the system will move to the thigh site. Obtain the arterial pressure and waveform in the same manner you did on the ankles.

Toe Pressure

- Press Next on the remote and the system will move to the toe site. Obtain the arterial pressure in the same manner you did on the arm and ankles or using the PPG sensor. *NOTE* digit cuffs inflate very quickly. A light tap on the inflate button will often suffice (Hold Inflate until occlusion, release Inflate, press Pressure on Doppler signal return).

Toe Waveform

- Press Next and the system will move to the waveform site. Press and release the button with the Waveform image on the top right of the remote.

Left Side

- Repeat the above pressures and waveform sequence for the left side of the patient. When finished, save or print the exam.

## Helpful Hints

Cuff techniques:

- Wrap the cuff snugly.
- Cuffs may be placed over thin clothing or stockings.
- Don't let the patient try to help by lifting their leg - as they relax their muscles the cuff will become loose.
- Placing a pillow under the patient's heels may aid the examination.
- If the patient has tremors that interfere with the waveform, having them perform multiple dorsiflexions with their toes before taking the waveform may help.

Doppler techniques:

- Hold the probe like you would a pencil, close to the end.
- Move the probe back and forth laterally over the artery to obtain the best signal.

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- Support the probe with your hand resting on the patient so that the probe does not move as the cuff is inflated and deflated.

Efficient Protocol:

- Current clinical and CPT guidelines for code 93923 do not require that pressures be obtained at upper sites on the leg if the exam is performed using both ankle pressures and PVR waveforms.
- This may significantly reduce the time necessary for this exam while maintaining clinical value.
- This efficient protocol significantly increases patient comfort.
- Clinically, if the ankle ABI is unequivocally normal, the upper leg pressures will be normal as well.

## REFERENCES


https://newman-medical.com/documents/SIMPLEABI%20CUFF-LINK%20QUICK%20START%205%20-%203%20OR%204%20CUFF%20SEGMENTAL%20WITH%20TOE%20(MAN-0016).pdf


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| REFERENCE # | 7770.24.13 | EFFECTIVE | 10/2007 |
| SUBJECT: | CLEANING THE PARAFFIN WAX BATH | REVISED | |
| | | REVIEWED | 4/2024 |
| DEPARTMENT: | PHYSICAL THERAPY | PRIOR REVISIONS: 2020 | |

**PURPOSE:**
The purpose of this policy is provide instructions for cleaning the paraffin bath.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center (MMC) that all procedures are performed with clean equipment in a clean environment.

**PROCEDURE:**
The paraffin bath will be emptied, cleaned and refilled every six months or as needed.

1. Unplug the unit and allow the liquid wax to solidify.
2. When the wax is solid, plug the unit in for a few minutes, or just until the cake of paraffin loosens from the sides and bottom of the unit.
3. Unplug the unit, do not leave an empty unit plugged in.
4. Press down firmly on one end of the paraffin, tipping the opposite end up. Lift the cake out and dispose of it in the trash.
5. Blot up any remaining paraffin in the tank with paper towels.
6. Clean the inside and outside of the unit with an all-purpose cleaner. Wipe the unit dry.
7. Add six pounds of new paraffin.
8. Plug the unit into an electrical outlet of the correct voltage.
9. A log sheet will be kept with dates of cleaning.

**REFERENCES:**
None

**ATTACHMENTS:**
None

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|---|---|---|
| REFERENCE # | LEAVE BLANK | EFFECTIVE 5/2024 |
| SUBJECT: | BILLING PROCEDURES | REVISED 5/2024 |
| | | REVIEWED |
| DEPARTMENT: | PHYSICAL THERAPY | PRIOR REVISIONS: 11/2023 |

POLICY: It is the policy of Modoc Medical Center to perform client billing in a manner that is ethical, fair, and in compliance with all HCFA, state, local, and other regulatory agencies.

PROCEDURE: Billing is done by the therapist when documenting the patient evaluation or treatment in the electronic medical record.

Billing is time-based according to the 8-minute rule (For time-based codes, you must provide direct treatment for at least eight minutes in order to receive reimbursement from Medicare). Charges should be checked by the treating therapist after completing the documentation and billing to ensure that the correct information was put in.

If any mistakes have been made in the billing process, the incorrect charges should be credited, with the appropriate charges being entered in their place.

Therapists are to ensure that they are entering the correct charge codes according to the patient's insurance.

Charges should be completed prior to the end of the workday.

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| REFERENCE # | 7770.24.14 | EFFECTIVE | 06/2017 |
| SUBJECT: | PATIENT PRIVACY DURING PHYSICAL THERAPY TREATMENT | REVISED | ~~2020~~ |
| DEPARTMENT: | PHYSICAL THERAPY | | |

**PURPOSE:**
The purpose of this policy is to ensure patients are provided privacy during physical therapy.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to follow the guidance of the Practice Act to provide privacy for patients receiving physical therapy whenever appropriate or requested. This may include the use of a private room, draping, or providing a therapist with whom the patient is comfortable.

**PROCEDURE:**
None

**REFERENCES:**
(n.d.). *Laws and Regulations*. Physical Therapy Board of CA. https://www.ptbc.ca.gov/laws/index.shtml

**ATTACHMENTS:**
None



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| REFERENCE # | 7770.24.15 | EFFECTIVE | ~~06/2006~~ |
| SUBJECT: | BILLING PROCEDURES | REVISED | ~~11/2020~~ |
| DEPARTMENT: | PHYSICAL THERAPY | | |

**PURPOSE:**

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center to perform client billing in a manner that is ethical, fair, and in compliance with all Healthcare Financing Adminstration, state, local, federal, and other regulatory agencies.

**PROCEDURE:**

- Billing is done by the therapist when documenting the patient for evaluation or treatment in the electronic medical record.
- Billing is time-based according to the 8-minute rule (for time-based codes, you must provide direct treatment for at least eight minutes to receive reimbursement from Medicare).
- The treating therapist should check the charges after completing the documentation and billing to ensure that the correct information was entered.
- If any mistakes have been made in the billing process, the incorrect charges should be credited, and the appropriate charges should be entered in their place.
- Therapists are to ensure they enter the correct charge codes according to the patient's insurance.
- Charges should be completed before the end of the workday.

**REFERENCES:**
None

**ATTACHMENTS:**
None



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| SUBJECT: DOCUMENTATION GUIDELINES | REVISED<br>REVIEWED 5/2024 |
| DEPARTMENT: PHYSICAL THERAPY | PRIOR REVISIONS: 02/2024 |

**PURPOSE:**
The purpose of this policy is to ensure accurate documentation.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**

**POLICY:**
The Physical therapy department will provide documentation of the course of patient treatment from initial evaluation to discharge within its scope of pract

**PROCEDURE:**
Identify actual problems that require the skills of a qualified Physical Therapist.
Indicate the patient's restorative potential in specific measurable terms.
Specify the date when the Physical Therapy intervention started and the current frequency and duration of treatment.
Document measurable improvements in the patient's functional status.
Assess the patient's status and compare it to the status of the patient at the onset of treatment.
Specifically address the deficits found in the patient's level of function of the initial evaluation.
Address other problems within the scope of practice that impair the patient's ability to progress.
The discharge summary will summarize the significant findings during the course of physical therapy.
Treatment, the patient's condition at the time of discharge and any recommendations for future care.

**REFERENCES:**

**ATTACHMENTS:**

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Identify actual problems that require the skills of a qualified physical therapist.¶
Indicate the patient's restorative potential in specific measurable terms.¶

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DOCUMENT MEASURABLE IMPROVEMENTS IN THE PATIENT'S FUNCTIONAL STATUS.¶
ASSESS THE PATIENT'S STATUS AND COMPARE IT TO THE STATUS OF THE PATIENT AT THE ONSET OF TREATMENT.¶
SPECIFICALLY ADDRESS THE DEFICITS FOUND IN THE PATIENT'S LEVEL OF FUNCTION ON THE INITIAL EVALUATION.¶
ADDRESS OTHER PROBLEMS WITHIN THE SCOPE OF PRACTICE THAT IMPAIR THE PATIENT'S ABILITY TO PROGRESS.¶
THE DISCHARGE SUMMARY WILL SUMMARIZE THE SIGNIFICANT FINDINGS DURING THE COURSE OF PHYSICAL THERAPY¶
TREATMENT, THE PATIENT'S CONDITION AT THE TIME OF DISCHARGE, AND ANY RECOMMENDATIONS FOR FUTURE CARE¶

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| REFERENCE # LEAVE BLANK | EFFECTIVE |
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| SUBJECT: CLEANING THE PARAFFIN WAX BATH | REVISED |
| | REVIEWED 5/2024 |
| DEPARTMENT: PHYSICAL THERAPY | PRIOR REVISIONS: |

**PURPOSE:**

**The purpose of this policy is to provide instructions for cleaning the paraffin bath that is utilized in the Physical therapy (Pt) department.**

**AUDIENCE:**
Department Wide

**TERMS/DEFINITION:**

**POLICY:**
It is the policy of Modoc Medical Center that all procedures are performed with clean equipment in a clean environment.

**PROCEDURE:**

The paraffin bath will be emptied, cleaned and refilled every six months or as needed when visibly soiled by an office worker.

1. Unplug the unit and allow the liquid wax to solidify.

2. When the wax is solid, plug the unit in for a few minutes, or just until the cake of paraffin loosens from the sides and bottom of the unit.

3. Unplug the unit, do not leave an empty unit plugged in.

4. Press down firmly on one end of the paraffin, tipping the opposite end up. Lift the cake out and dispose of it in the trash.

5. Blot up any remaining paraffin in the tank with paper towels.

6. Clean the inside and outside of the unit with an all-purpose cleaner. Wipe the unit dry.

7. Add six pounds of new paraffin.

8. Plug the unit into an electrical outlet of the correct voltage.

9. A log sheet will be kept with dates of cleaning next to the wax unit.

**REFERENCES:**

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| REFERENCE # LEAVE BLANK | EFFECTIVE |
| SUBJECT: CLEANING THE PARAFFIN WAX BATH | REVISED |
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| REFERENCE # | | EFFECTIVE |
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| SUBJECT: | PATIENT PRIVACY DURING PHYSICAL THERAPYTREATMENT | REVISED 08/2024<br>REVIEWED 5/2024 |
| DEPARTMENT: | PHYSICAL THERAPY | PRIOR REVISIONS: |

**PURPOSE:**

THE PURPOSE OF THIS POLICY IS TO ENSURE PATIENTS ARE PROVIDED PRIVACY DURING PHYSICAL THERAPY.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**

**POLICY:**

IT IS THE POLICY OF MODOC MEDICAL CENTER TO PROVIDE PRIVACY FOR PATIENTS RECEIVING PHYSICAL THERAPY WHENEVER

APPROPRIATE OR REQUESTED. THIS MAY INCLUDE THE USE OF A PRIVATE ROOM, DRAPING, AND/OR PROVIDING A THERAPIST WITH

WHOM THE PATIENT IS COMFORTABLE

**REFERENCES:**
www.ptbc.ca.gov › laws › law_documents › pet_cs

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| REFERENCE # | LEAVE BLANK | EFFECTIVE 06/2006 |
| SUBJECT: | PATIENT TREATMENT | REVISED<br>REVIEWED 05/2024 |
| DEPARTMENT: | PHYSICAL THERAPY | PRIOR REVISIONS: 11/2023 |

**PURPOSE: IT IS THE PURPOSE OF THIS POLICY TO ENSURE SAFE TREATMENT PROCEDURES.**

**TERMS/DEFINITION:**

**POLICY:**

It is the policy of Modoc Medical Center (MMC) to ensure that all care and services will are provided according to the principles of rehabilitation services medicine.

All patient visits will be documented in writing in the patient's record. Proper documentation of communication with the referring physician should be maintained in the medical record and will include the physician's signature when possible.

Each patient should be assessed within the capabilities and knowledge of the treating therapist, with those observations recorded. The patient's assigned therapist has the responsibility for determining the overall effectiveness of the established treatment plan.

PROCEDURE:

Documentation Requirements
Any cancellations of missed appointments will be documented and will include the reason for the missed treatment, if provided.
When call bells or remote stop switches are given to the patient, documentation should state such and address that instructions were given to the patient regarding the correct usage of the device.
Patients will be given access to their permanent medical record according to facility policy and state regulations.
If a wheelchair was utilized during treatment, it will be documented whether the device was locked and the integrity of the locks.
When performing gait training, therapists will document that the procedure was performed utilizing proper guarding techniques and appropriate safety belts.
Documentation will include any testing of sensation in relation to use of modalities that would require the patient to be able to accurately tell whether their skin was being affected by temperature. Documentation should
also include a statement that the treated area was inspected before and after treatment for skin color, skin integrity, and any sign or rash/blistering.
Utilization of proper draping techniques and whether a staff member of the same gender as the patient was present must be documented.

INITIAL ASSESSMENT AND EVALUATION OF THE PATIENT:INITIAL ASSESSMENT AND EVALUATION OF

THE PATIENT

AN INITIAL EVALUATION OF EVERY PATIENT WILL BE PERFORMED BY A LICENSED THERAPIST TO DETERMINE A

TREATMENT PLAN THAT IS BASED ON THE PRESCRIPTION OF THE REFERRING PHYSICIAN AND THE SPECIFIC INDIVIDUAL

NEEDS OF THE PATIENT.

THE PATIENT’S CURRENT CLINICAL CONDITION WILL BE NOTED IN EACH ASSESSMENT. THE PATIENT’S CURRENT CLINICAL CONDITION

IS A SUMMARY OF ALL PRESENTING PROBLEMS THAT DIRECTLY RELATE TO THE PATIENT’S PRIMARY DYSFUNCTION AS IDENTIFIED BY

THE THERAPIST. THIS WILL DETERMINE APPROPRIATE TREATMENT PROCEDURES TO BE UTILIZED AND DICTATE THE SHORT-TERM

OBJECTIVES OF THE PATIENT'S INDIVIDUALIZED TREATMENT PROGRAM.

SHORT-TERM OBJECTIVES ARE ACHIEVABLE WITHIN A MATTER OF DAYS OR WEEKS, DEPENDING ON THE PATIENT'S

CURRENT CLINICAL CONDITION. LONG-TERM OBJECTIVES ARE ACHIEVABLE AS THE FINAL FUNCTIONAL OUTCOME. WHEN

SHORT-TERM OBJECTIVES ARE ACHIEVED, EITHER THE LIST WILL BE REDUCED, OR NEW SHORT-TERM OBJECTIVES WILL BE

ESTABLISHED. IF THE SHORT-TERM OBJECTIVES ARE NOT ATTAINED WITHIN THE DESIRED TIMEFRAME, THE TREATMENT

PLAN MUST BE REASSESSED BY THE THERAPIST TO DETERMINE IF CHANGES OR MODIFICATIONS ARE NECESSARY.

CHANGES TO OR MODIFICATION OF OBJECTIVES WILL BE PERFORMED ONLY BY THE TREATING THERAPIST. PATIENTS WILL

PARTICIPATE IN ESTABLISHING THEIR OWN OBJECTIVES FOR TREATMENT. IF A PATIENT HAS UNREASONABLY HIGH EXPECTATIONS,

THE EVALUATING THERAPIST MUST EXPLAIN WHAT A REASONABLE EXPECTATION MAY BE AND DOCUMENT THIS CONVERSATION IN

THE MEDICAL RECORD.

THE TREATMENT PLAN WILL IDENTIFY SPECIFIC MODALITIES OR PROCEDURES THAT WILL BE USED IN ORDER TO REDUCE

OR ELIMINATE THE PRESENTING PROBLEMS AND FACILITATE ACHIEVING THE LONG-TERM OBJECTIVES. THE PATIENT WILL

PARTICIPATE IN THE DEVELOPMENT OF THE TREATMENT PLAN, AND THE PROPOSED PLAN OF CARE WILL BE AGREED
UPON.

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| REFERENCE # | LEAVE BLANK | EFFECTIVE<br>6/2006 |
| SUBJECT: | REHABILITATION SERVICES FOR SKILLED NURSING | REVISED<br>11/2023 |
| | | REVIEWED<br>5/2024 |
| DEPARTMENT: | PHYSICAL THERAPY | PRIOR REVISIONS: 11/2023 |

**PURPOSE:**

THE PURPOSE OF THIS POLICY IS TO MEET THE THERAPY NEEDS OF ALL RESIDENTS.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**

**POLICY:**
It is the policy of Modoc Medical Center (MMC) This facility ensures that specialized services, such as physical therapy, meet the rehabilitation and functional needs of all residents and are readily available.
 Services shall be provided in accordance with accepted professional practices by licensed therapists or by qualified assistants or other supportive personnel under the direct supervision.
 There shall be written administrative and resident care policies and procedures developed for each rehabilitation service provided.

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| REFERENCE # | LEAVE BLANK | EFFECTIVE 6/2006 |
| SUBJECT: | REHABILITATION SERVICES FOR SKILLED NURSING | REVISED 11/2023 |
| | | REVIEWED 5/2024 |
| DEPARTMENT: | PHYSICAL THERAPY | PRIOR REVISIONS: 11/2023 |

**PROCEDURE:**

**□ EACH RESIDENT WITH PHYSICIAN ORDERS FOR REHABILITATION SERVICES SHALL RECEIVE AN EVALUATION. THE PURPOSE**

**OF THIS EVALUATION IS TO ENSURE THAT THE SERVICES PROVIDED ARE APPROPRIATE TO THE NEEDS OF THE**

**RESIDENTRESIDENTS. DISCHARGE PLANNING WILL BE CONSIDERED DURING THE INITIAL ASSESSMENT AS WELL AS IN EACH**

**REASSESSMENT.**

**□ EACH RESIDENT RECEIVING REHABILITATION SERVICES SHALL HAVE A CURRENT PLAN OF CARE. THE RESIDENT PLAN OF CARE**

**SHALL INCLUDE RESIDENT REHABILITATION SERVICES SPECIFIC TO THE RESIDENT'S NEEDS AND GOALS. THE RESIDENT'S**

**PLAN OF CARE SHOULD INCLUDE TREATMENT, OBJECTIVES, REHABILITATION POTENTIAL, PRECAUTIONS, FREQUENCY AND**

**DURATION, AND PROCEDURES AND MODALITIES TO BE APPLIED.**

**□ REASSESSMENTS WILL INCLUDE THE RESIDENT'S RESPONSE TO REHABILITATION INTERVENTIONS, CHANGES IN THE**

**RESIDENT'S CONDITION, CHOICES FOR ALTERNATIVE INTERVENTIONS, AND PROGRESS TOWARDS MEETING GOALS AND OBJECTIVES.**

**REFERENCES:**

**ATTACHMENTS:**

| REFERENCE # | LEAVE BLANK | EFFECTIVE |
|---|---|---|
| SUBJECT: | SCOPE OF PRACTICE AND PLAN FOR THE PROVISION OF CARE | REVISED 07/2024 |
| | | REVIEWED |
| DEPARTMENT: | PHYSICAL THERAPY | PRIOR REVISIONS: |

**PURPOSE:**
The purpose of this policy is to discuss the provision of care plan as well as ensure all physical therapists are following the Physical Therapy Practice Act.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to follow the guidelines outlined below.

**PROCEDURE:**

Physical Therapy is the treatment of physical dysfunction or injury by the use of therapeutic procedures, the application of modalities, assessment for and training in the use of assistive devices, and patient education intended to restore or facilitate normal function or development. Physical Therapists and Physical Therapist Assistants are regulated by The physical therapy practice act; Refer to referenced website[1] .

Organization:

• The Physical Therapy Department reports to the Medical Executive Committee. The Physical Therapy Director reports to the Chief Nursing Officer.

The services provided are:

• Outpatient Physical Therapy

Evaluation and treatment of neurologic, orthopedic, and general medical patients

Evaluation and treatment of injuries

Ergonomic evaluation and consultation

Open Gym program for monitored independent exercise

Community education

•

Physical Therapy for acute hospital patients

Evaluation and treatment of mobility related problems

Consultation for equipment needed for safe discharge

•

Physical Therapy for swing bed patients

Evaluation and treatment of mobility related problems

Consultation for equipment needed for safe discharge

•

Physical Therapy for Skilled Nursing Facility patients

Evaluation and treatment of neurologic, orthopedic, and general medical patients

Consultation for equipment needed for safe discharge

Consultation to the Restorative Nursing Program and training as requested by nursing

Hours of Operation:

• Monday through Friday 8:00am - 5:00pm

• The outpatient clinic is closed on the following holidays; patients in inpatient units may be seen if appropriate and as staffing allows on these days as needed:

- New Year's Day
- Memorial Day
- 4th of July
- Labor Day
- Thanksgiving Day
- Christmas Day
- Staffing:

• The Physical Therapy Department is staffed, according to patient volume, by:

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- Physical Therapy Director

The Physical Therapy Director will be a Physical Therapist who is licensed to practice in California and who has experience in Physical Therapy management in one or more of the services provided.

Physical Therapist (P.T.)

A Physical Therapist licensed to practice or license eligible in California

Physical Therapist Assistant (P.T.A.)

A Physical Therapist Assistant licensed to practice or license eligible in California

Physical Therapy Aide

A person with a minimum of a high school diploma, experienced in customer service and with good computer skills. Training for this position is performed on site.

Office worker

Prioritization of Patients

In the event that staffing is not sufficient to cover all patients with physical therapy orders and overtime, per diem or temporary staffing is not available patients will be prioritized in the following way:

Acute and swing patients who need PT evaluation to facilitate a safe discharge.

SNF patients who are in a reference assessment period

Continuing out patients

All other patients

New out patients will be rescheduled

Referral of Patients:

• All patients who are treated by members of the Physical Therapy Department in all areas of Modoc Medical Center must have referral from a Medical Doctor, Doctor of Osteopathy, doctor of podiatry, Nurse Practitioner, clinical nurse specialist or Physician Assistant. The referral must include a diagnosis[2].

Discharge criteria:

• The patient will be discharged from Physical Therapy when any of the following occur

Maximum benefit of Physical Therapy has been achieved

The patient requests self-discharge

The patient is non-compliant with treatment

The patient abandons care by canceling three consecutive visits without providing 24hrs of notice and without good reason such as sickness, bereavement etc, or not showing

The referring medical provider discharges the patient from service

The patient's medical condition has deteriorated and needs to be re-evaluated by the medical provider

**REFERENCES:**


1. Department of Consumer Affairs (2023, January 1). *CALIFORNIA LAWS AND REGULATIONS RELATED TO THE PRACTICE OF PHYSICAL THERAPY*. Physical Therapy Board of California. Retrieved July 9, 2024, from https://www.ptbc.ca.gov/publications/law_reference_guide.pdf


**ATTACHMENTS:**

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| REFERENCE # | 7770.24.23 | EFFECTIVE 6/2006 |
| SUBJECT: | TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION | REVISED 7/2024 |
| | | REVIEWED |
| DEPARTMENT: | PHYSICAL THERAPY | PRIOR REVISIONS: |

**PURPOSE:**
The purpose of this policy is to ensure safe use of Transcutaneous Electrical Nerve Stimulation (TENS) treatments during Physical Therapy sessions.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**

TENS (Transcutaneous Electrical Nerve Stimulation)

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to utilize TENS modalities in a safe, effective manner.

**PROCEDURE:**

- Check for indications, contraindications and precautions before using TENS modality.
  - This device is for symptomatic relief of pain only.
  - Do not use TENS modality for pain relief unless etiology of pain has been established or a pain syndrome has been diagnosed.
  - Do not apply TENS modality over carotid sinus (anterior neck), transcerebrally (through the head), or over cancerous lesions.
  - Use caution with pregnancy, pacemakers, seizures or impaired sensation.
- Electrode placement
  a. Ensure the skin is clean and dry without irritation or open sores.
  b. Utilize a new set of electrodes for each patient
  c. Place electrodes at least one inch apart
- Explain procedure to the patient and slowly adjust controls until desired effect is achieved.
- Always follow current guidelines.

**REFERENCES:**

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Chatanooga Group (2010, January 1). *Chattanooga INTELECT LEGEND Series User Manual*. Manuals Library. Retrieved July 17, 2024, from https://www.manualslib.com/manual/2500339/Intelect-Legend-Series.html#manual

Teoli, D. (2024, March 20). *Transcutaneous Electrical Nerve Stimulation*. National Library of Medicine. Retrieved July 24, 2024, from https://www.ncbi.nlm.nih.gov/books/NBK537188/


**ATTACHMENTS:**

none

| REFERENCE # | LEAVE BLANK | EFFECTIVE | |
|---|---|---|---|
| SUBJECT: | MEALTIMES AND FREQUENCY | REVISED | 07/2024 |
| | | REVIEWED | |
| DEPARTMENT: | DIETARY -SKILLED NURSING FACILITY | PRIOR REVISIONS: | |

**PURPOSE:**
The purpose of this policy is to address mealtimes for Long Term Care (LTC) residents at Modoc Medical Center (MMC).

**AUDIENCE:**
All Staff

**TERMS/DEFINITION:**
Substantial meal is defined as offering three or more menu items at one time, one which includes a high-quality protein such as meat, fish, eggs, or tofu. The meal should be no less than 20% of the day's total nutrition.
Nourishing snack means items from the basic food groups, either singly or in combination with each other.

**POLICY:**
It is the policy of MMC's LTC Dietary Department to provide at least three meals daily at regular times comparable to standard mealtimes in the community or in accordance with resident needs, preference request, and plan of care. Meals will be served timely to maintain food quality and serve safe and palatable food temperatures.

**PROCEDURE:**

**1. In the LTC, there will be no more than fourteen hours between a substantial evening meal (dinner) and breakfast the following day. All residents will be offered a bedtime snack. 2. Meal and bedtime (HS) snacks will be served at the following times:**

Breakfast: Dining room 7:45 am.
Breakfast: Hall cart 8:30am
Hydration snack: 10 am
Lunch: Hall Cart 12:15 pm
Lunch: Dining Hall 12:45 pm
Hydration and food snack: 3:00 pm
Dinner: Dining Hall 5:45pm
Dinner: Hall Cart 6:30 pm
HS Snack: 8:30 pm



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**Deleted:** If a nourishing snack is served at bedtime, then up to sixteen16 hours may elapse between a substantial
**Deleted:** evening meal (dinner) and breakfast the next day.¶
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| SUBJECT: | MEALTIMES AND FREQUENCY | REVISED | 07/2024 |
| | | REVIEWED | |
| DEPARTMENT: | DIETARY -SKILLED NURSING FACILITY | PRIOR REVISIONS: | |

**REFERENCES:**

Centers for Medicare & Medicaid Services. (2024). *State Operations Manual: Appendix PP - Guidance to Surveyors for Long Term Care Facilities*. Retrieved from https://www.cms.gov/medicare/provider-enrollment-and-certification/guidanceforlawsandregulations/downloads/appendix-pp-state-operations-manual.pdf[1].

**ATTACHMENTS:**



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| REFERENCE # 8350.24.02 | | EFFECTIVE: | |
| SUBJECT: DISCHARGE NOTICE | | REVISED: | |
| DEPARTMENT: BUSINESS OFFICE | | | |

**PURPOSE:**
The purpose of this policy is to provide a Discharge Notice to patients upon discharge in accordance with Health and Safety Code section 127410.

**AUDIENCE:**
Facility Wide

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to provide a Discharge Notice to patients upon discharge in accordance with Health and Safety Code section 127410.

**PROCEDURE:**
Upon discharge, each patient will be provided with a Discharge Notice in hardcopy format and meets general accessibility standards, pursuant to section 96051.1. This Discharge Notice includes the following content:

a) Information on the availability of discount payment and charity care programs and how to apply.
b) Information on where the patient may access the hospital's discount payment and charity care policies.
c) Eligibility Information
d) Contact information for a hospital employee or office where the patient may obtain more information.
e) Internet website for the hospital's list of shoppable services.
f) Statement on the Hospital Bill Compliant Program, pursuant to section 96051.3.
g) Information on Health Consumer Alliance, including the following statement:
Help Paying Your Bill: There are free consumer advocacy organizations that will help you understand the billing and payment process. You may call the Health Consumer Alliance at 888-804-3536 or go to healthconsumer.org for more information.

**REFERENCES:**
California Code of Regulations (CCR), Title 22, Division 7, Chapter 9, Article 2, sections 96051.5 and 96051.6.

**ATTACHMENTS:**
Discharge Notice

## DISCHARGE NOTICE - MMC PATIENT FINANCIAL ASSISTANCE

Modoc Medical Center (MMC) is committed to prioritizing patient health by offering financial assistance and discounts to persons who have healthcare needs and are uninsured, underinsured, ineligible for government programs, or otherwise unable to pay for care. These discounts are based on family size and income. No person(s) will be denied access to medical services due to an inability to pay.

Modoc Medical Center's fair pricing policy, sliding fee schedule, and financial assistance applications can be obtained at any of the following locations:

- MMC Registration Desk
- MMC Admitting Desks
- MMC Patient Financial Services
- MMC Website
    - www.modocmedicalcenter.org/financial-assistance

These documents may also be obtained at any time by contacting our Patient Financial Services Counselor at (530) 708-8800, extension 11053. Patients may also email info@modocmedicalcenter.org to request these documents or present any questions about MMC's patient financial policies, procedures, and/or eligibility information.

For a complete list of MMC's shoppable services, please visit modocmedicalcenter.org.

## HOSPITAL BILL COMPLAINT PROGRAM

Beginning January 1, 2024, California's Department of Health Care Access and Information (HCAI) launched the Hospital Bill Complaint Program to better enforce the Hospital Fair Pricing Act (Act). Under the Act, hospitals are required to have both a discount payment policy and financial assistance policy to provide quality care to patients regardless of one's ability to render payment. You are eligible to apply for a hospital's discount payment or financial assistance program if:

1. You are uninsured (self-pay) OR have high medical costs, AND
2. Your family income is not more than 400 percent of the federal poverty level.

If you believe you were wrongly denied financial assistance, you may file a Complaint with the Hospital Bill Complaint Program. Information regarding the Hospital Bill Complaint Program can be found at the above MMC locations and at modocmedicalcenter.org under the "Help Paying Your Bill" tab. Additional information can also be found online at hcai.ca.gov/affordability/hospital-fair-billing-program/hospital-bill-complaint-program.

## HELP PAYING YOUR BILL

If you need help paying your bill, there are free consumer advocacy organizations that will help you understand the billing and payment process. You may call the Health Consumer Alliance at (888) 804-3536 or go to healthconsumer.org for more information.

1111 N. Nagle St. • Alturas, CA 96101 • 530-708-8800 • www.ModocMedicalCenter.org

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| REFERENCE # | 8350.24.04 | EFFECTIVE | 06/20,14 |
| SUBJECT: | ADMINISTRATIVE WRITE-OFF GUIDELINES | REVISED | 2019 |
| DEPARTMENT: | BUSINESS OFFICE | | |

**PURPOSE**

The purpose of this policy is to provide a guideline for approval authority for administrative write-offs given at Modoc Medical Center (MMC).

**AUDIENCE:**
Department Staff

**TERMS/DEFINITION:**
None

**POLICY**

It is the policy of MMC to ensure administrative write-offs are performed accurately and in a manner that is consistent with Generally Accepted Accounting Principles (GAAP).

**PROCEDURE**

Administration has the authority to authorize write-offs on individual accounts according to the schedule below. In all circumstances, administration should only approve write-offs that are documented and justifiable by financial or procedural arguments. Write-offs should be applied consistently to all patients in similar circumstances. Documentation as to the reasons why the write-off was requested by administration should accompany all write-off forms, as well as a signed write-off form at the appropriate level of authority.

| Administrative Write-Off Allowance | Approval Authority |
|---|---|
| $0 - $500 | Financial Counselor |
| $0 - $5,000 | Revenue Cycle Director |
| $0 - $10,000 | Chief Operations Officer |
| $0 - $10,000 | Chief Financial Officer/Finance Director |
| $0 - $15,000 | Chief Executive Officer |
| $15,001+ | Board of Directors |

Note: These limits do not apply to contractual adjustments.

**REFERENCES:**
None

**ATTACHMENTS:**
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| REFERENCE # | 8450.24.20 | EFFECTIVE | 2001 |
| SUBJECT: | SECURITY MANAGEMENT PLAN | REVISED | |
| DEPARTMENT: | ENGINEERING | | |

**PURPOSE:**
The purpose of this policy is to provide a program that will protect personnel, residents, and visitors from harm. A risk assessment is conducted to determine the elements of the plan.

**AUDIENCE:**
Facility Wide

**TERMS/DEFINITION:**
None

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to offer safety and security for all residents, visitors, personnel and property of the facility.

The goals of the Security Management Plan include the following:

- To provide education to personnel on the elements of the Security Management Program.
- To control access to and egress from sensitive areas.
- To reduce the risk of security incidents.
- To address security concerns of residents, visitors, personnel, and property.

The Director of Security, Safety Officer and Safety Committee are responsible for developing, implementing, monitoring, and managing the Security Management Program.

**PROCEDURE:**
Designation OF Employees Responsible for Developing, Implementing and Monitoring the Security Management Plan:

- The Administrator shall appoint a qualified individual to develop, implement, maintain and monitor the Security Management Program. The Director of Security is responsible for maintaining a Security Management Program that prepares for and prevents future security incidents by establishing security procedures, Inservice orientation and continuing education of all personnel, and monitoring and evaluation of security incidents for opportunities to improve care.
- See Security Authority Policy.

Security Issues Which Concern Residents, Visitors, Employees and Property Are Addressed:



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| REFERENCE # | 8450.24.20 | EFFECTIVE | 2001 |
| SUBJECT: | SECURITY MANAGEMENT PLAN | REVISED | |
| DEPARTMENT: | ENGINEERING | | |

- Security inspection vulnerability reports are completed to indicate areas of risk, including security vulnerabilities of sensitive areas, security habits of personnel, staff knowledge and skill of security management. An inspection gives a good indication of future danger, and immediate steps shall be taken to eliminate the problems.

- See Security Crime Vulnerability Inspection Report.

All Security Incidents Involving Residents, Visitors, Employees and Property Are Reported and Investigated:

- A Security Incident Report is completed on all incidents involving residents, visitors, personnel or property.
    - A security incident includes, but is not limited to:
    - Property damage lost or stolen property.
    - Injuries to staff (i.e., injuries to staff caused by residents during assessment and treatment activities)
    - Criminal activities
    - Theft, pilferage and tampering with medication.

- A Security Incident Report will be completed by the Security Officer on duty at the time of the incident or the department manager if no security officer is available. The Security Incident Report will be reviewed and studied by the Director of Security to determine the cause of the incident. The Director of Security will make a recommendation to the Safety Committee to prevent the recurrence of related incidents.

- The Safety Committee shall review all summaries of security incidents. Summary reports of security incidents shall include evaluation of the incident, conclusions, recommendations, and actions taken.

- All incidents will be aggregated on a quarterly basis and reported to the Safety Committee by the Director of Security. The Safety Committee will track and trend all incidents by type to determine if patterns exist. Once a pattern has been identified, a performance improvement project will be developed to improve performance.

- See Security Incident Report, Quarterly Report of Security Incidents.

All Residents, Visitors and Personnel Will Have Appropriate Identification:



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| SUBJECT: | SECURITY MANAGEMENT PLAN | REVISED | |
| DEPARTMENT: | ENGINEERING | | |

All employees and staff shall wear facility picture identification badges. All residents will wear permanent identification bands. All personnel shall stop and question any unidentifiable person in their area. Any person, who is not wearing a recognizable facility identification tag, visitor or vendor tag shall be considered a stranger.

Sensitive Areas Will Have Controlled Access as Determined by The Facility:

A security risk assessment will be completed, and those areas determined to be sensitive areas will have restricted access to and egress from. Additional policies will be written defining the special precautions to be taken in the following areas: Pharmacy, Medical Records, All personnel assigned or working in these areas will receive orientation and education to the area specific security practices to be utilized.

An Orientation and Education Program for Employees Regarding Security Is in Place:

- The Director of Security will provide security related education to all employees at orientation and annually thereafter. Education programs shall include:
    - Staff responsibility under the Security Management Plan
    - Reporting security incidents involving residents, personnel, visitors, and property.
    - Emergency procedures to follow in the event of a security incident.
    - Security measures in place at the facility (i.e., access control, CCTV, alarms)
    - Resident elopement
    - Identification badges
    - Workplace violence
    - Department-specific security measures

Performance Standards:

- The organizational Safety Committee will develop and establish performance measures and related outcomes, in a collaborative fashion, based on those priority issues known to be associated with the healthcare environment. Performance measures and outcomes will be prioritized based upon high risk, high volume, problem prone situations and potential or actual sentinel event related occurrences. Criteria for performance improvement measurement and outcome indicator selection will be based on the following:



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- The measure can identify the events it was intended to identify.
- The measure has a documented numerator and a denominator statement or description of the population to which the measure is applicable.
- The measure has defined data elements and allowable values.
- The measure can detect changes in performance over time.
- The measure allows for comparison over time within the organization or between the organization and other entities.
- The data intended for collection are available; and
- Results can be reported in a way that is useful to the organization and other interested stakeholders.

- The Safety Committee on an ongoing basis monitors performance regarding actual or potential risk related to one or more of the following:
  - Staff knowledge and skills,
  - Level of staff participation,
  - Monitoring and inspection activities,
  - Emergency and incident reporting,
  - Inspection, preventive maintenance and testing of safety equipment.
- Other performance measures and outcomes will be established by the Safety Committee, based on the criterion listed above. Data sources, frequency of data collection, individual(s) responsible for data collection, aggregation and reporting will be determined by the Safety Committee.
- Should the Safety Committee feel a team approach (other than the Safety Committee) is necessary for performance and process improvement to occur, the Safety Committee will follow the organization's performance improvement guidelines for improvement team member selection. Determination of team necessity will be based on those priority issues listed (high risk, volume and problem prone situations and sentinel event occurrence). The Safety Committee will review the necessity of team development, requesting team participation only in those instances where it is felt the Safety Committee's contributions toward improvement would be limited (due to specialty, limited scope and/or knowledge of the subject matter). Should team development be deemed necessary, primarily, team members will be selected on the basis of their knowledge of the subject identified for improvement, and those individuals who are "closest" to the subject identified. The team will be interdisciplinary, as appropriate to the subject to be improved.



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| SUBJECT: | SECURITY MANAGEMENT PLAN | REVISED | |
| DEPARTMENT: | ENGINEERING | | |

- Performance improvement monitoring and outcome activities will be presented to the Safety Committee by the Director of Security at least on a quarterly basis, with a report of performance outcome forwarded to the Organizational Performance Improvement Committee, MEC and Governing Body quarterly.
- The following are suggested performance measures:
  - Number of hours per shift, per week that Security Officers tour the facility.
  - Number of incident reports submitted.
  - All intrusion and panic alarm systems tested monthly.

Emergency Security Procedures:

- There are provisions made for the security of the physical plant, property, residents, visitors, and personnel of the facility during disaster situations.
- Personnel are trained in the actions to be taken in the event of a security incident, i.e., attempted robbery, workplace violence, civil disturbance.
- The facility shall seek to maintain a cooperative relationship with the news media, which balances the public need for information with the responsibility to safeguard the resident's right to privacy.
- The release of information to the media will be by authorized personnel only.
- Additional staff will be assigned from the Engineering Department to assist the Security Department in controlling vehicular and foot traffic in the event of a disaster.

Annual Evaluation of The Security Management Plan's Objectives, Scope, Performance and Effectiveness:

- The annual evaluation of the Security Management Program will include a review of the scope according to the current JCAHO standards to evaluate the degree to which the program meets accreditation standards and the current risk assessment of the facility. A comparison of the expectations and actual results of the program will be evaluated to determine if the goals and objectives of the program were met. The overall performance of the program will be reviewed by evaluating the results of performance improvement outcomes. The overall effectiveness of the program will be evaluated by determining the degree that expectations were met.
- The performance and effectiveness of the Security Management Program shall be



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reviewed by the Safety Committee, the Performance Improvement Committee and Administration.

**REFERENCES:**

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**ATTACHMENTS:**

None



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| REFERENCE # | 8480.24.01 | EFFECTIVE | |
| SUBJECT: | ACCEPTABLE COMPUTER USE | REVISED | |
| DEPARTMENT: | INFORMATION TECHNOLOGY | | |

**PURPOSE**

The purpose of this policy is to outline the acceptable use of computer equipment at Modoc Medical Center (MMC). To protect the employees and MMC from inappropriate use that exposes MMC to risks including virus attacks, compromise of network systems and services, and legal issues.

**AUDIENCE:**

Organization Wide.

**TERMS/DEFINITION:**

Blogging

Writing a blog. A blog (short for weblog) is a personal online journal that is frequently updated and intended for public consumption.

Extranet

An extranet is a private network that uses Internet protocols, network connectivity, and possibly the public telecommunication system to securely share part of an organization's information or operations with suppliers, vendors, partners, customers, or other businesses. An extranet can be understood as a private intranet mapped onto the Internet or some other transmission system not accessible to the public but is managed by more than one company's administrator(s).

Internet

The Internet is a worldwide, publicly accessible series of interconnected computer networks that transmit data by packet switching using the standard Internet Protocol (IP). It is a "network of networks" that consists of millions of smaller domestic, academic, business, and government networks, which together carry various information and services, such as electronic mail, online chat, file transfer, and the interlinked web pages and other resources of the World Wide Web.

Intranet

An intranet is a private computer network that uses Internet protocols and network connectivity to securely share part of an organization's information or operations with its employees.

Social Networking

The use of dedicated websites and applications to interact with other users, or to find people with similar interests to oneself.

Spam

Unauthorized and/or unsolicited electronic mass mailings.

Streaming Service

A service that sends video, music, etc., over the internet so that people can watch or listen to it immediately rather than having to download it, or rather than having to watch or listen at a particular time when something is broadcast.

**POLICY**

**General Use and Ownership**



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| SUBJECT: | ACCEPTABLE COMPUTER USE | REVISED | |
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MMC network administration desires to provide a reasonable level of privacy, users should be aware that the data they create on the corporate systems remains the property of MMC. Because of the need to protect MMC's network, management cannot guarantee the confidentiality of information stored on any network device belonging to MMC.

Internet/Intranet/Extranet-related systems, including but not limited to computer equipment, software, operating systems, storage media, network accounts providing electronic mail, World Wide Web (WWW) browsing, and File Transfer Protocol (FTP) services, are the property of MMC. These systems are to be used for business purposes to serve the interests of the company, our clients, and customers in the course of normal operations.

MMC has the right to examine the activities of any employee using MMC network devices.

This includes but is not limited to the following activities:

- Internet use, email
- Instant messaging
- Online chat
- Blogging
- Files accessed and created (documents, spreadsheets, databases, etc.)
- Or any other activities at the discretion of the Information Technology (IT) department.

Employees are not allowed to use MMC equipment or systems for personal use.
This includes but is not limited to:

- Non-business related email
- Social networking (Facebook, TikTok, SnapChat, and similar systems used for social interactions
- Video and audio streaming services
- Other entertainment media (reading material, photographs, comics, news, etc.)
- Internet browsing
- Shopping
- Games

If there is any uncertainty, employees should consult their supervisor or manager.

Employees may use personal devices during their break time for personal activities as long as they adhere to Health Insurance Portability and Accountability Act (HIPAA) guidelines, sexual harassment and hostile workplace polices, and Information Sensitivity Policy.

Employees may not take pictures or create any video or audio recordings on MMC properties at any time unless it is done as part of their normal job duties and are using approved MMC equipment.

Information Technology Services (ITS) requires that any information that users consider sensitive or vulnerable be encrypted and access controlled using approved electronic medical record or document



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management systems. For guidelines on information classification, see ITS's Information Sensitivity Policy.

For security and network maintenance purposes, authorized individuals within MMC may monitor equipment, systems, and network traffic at any time per the ITS Audit Vulnerability Scan Policy.

MMC reserves the right to audit networks and systems on a periodic basis to ensure compliance with this policy.

**Security and Proprietary Information**

The user interface for information contained on Internet/Intranet/Extranet-related systems should be classified as confidential, internal use only, or not confidential, as defined by corporate confidentiality guidelines, details of which can be found in the ITS Information Sensitivity Policy. Examples of confidential information include but are not limited to company private, corporate strategies, patient information, customer lists, financial information, and research data. Employees should take all necessary steps to prevent unauthorized access to this information.

Keep passwords secure and do not share accounts. Authorized users are responsible for the security of their passwords and accounts. System level passwords should be changed quarterly, user level passwords should be changed every six months.

All computing devices are to be secured with a password-protected screensaver with the automatic activation feature set at 10 minutes or less, or by locking or logging-off when the host will be unattended.

Because information contained on portable computers is especially vulnerable, special care should be exercised. All portable computing devices must be encrypted using ITS approved encryption methods. Protect laptops, tablets, and other portable computing devices in accordance with the "Portable Computing Devices Security Guidelines".

Postings by employees from a MMC email address to online forums, newsgroups, or social media should contain a disclaimer stating that the opinions expressed are strictly their own and not necessarily those of MMC, unless posting in the course of normal business duties.

All devices used by employees that are connected to the MMC Internet/Intranet/Extranet, whether owned by the employee or MMC, shall be continually executing approved virus-scanning software with a current virus database unless overridden by departmental or group policy.

Employees must use extreme caution when opening e-mail attachments or using embedded links received from unknown senders, which may contain viruses, e-mail bombs, or Trojan horse code.

**Unacceptable Use**



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| REFERENCE # | 8480.24.01 | EFFECTIVE | |
| SUBJECT: | ACCEPTABLE COMPUTER USE | REVISED | |
| DEPARTMENT: | INFORMATION TECHNOLOGY | | |

The following activities are, in general, prohibited. Employees may be exempted from these restrictions during their legitimate job responsibilities (e.g., systems administration staff may have a need to disable the network access of a host if that host is disrupting production services).
Under no circumstances is an employee of MMC authorized to engage in any activity that is illegal under local, state, federal or international law while utilizing MMC-owned resources.

The lists below are by no means exhaustive but attempt to provide a framework for activities which fall into the category of unacceptable use.

- **System and Network Activities**
- The following activities are strictly prohibited, with no exceptions:
  - Violations of the rights of any person or company protected by copyright, trade secret, patent or other intellectual property, or similar laws or regulations, including, but not limited to, the installation or distribution of "pirated" or other software products that are not appropriately licensed for use by MMC.
  - Unauthorized copying of copyrighted material including, but not limited to, digitization and distribution of photographs from magazines, books or other copyrighted sources, copyrighted music, and the installation of any copyrighted software for which MMC or the end user does not have an active license is strictly prohibited.
  - Exporting software, technical information, encryption software or technology, in violation of international or regional export control laws, is illegal. The appropriate management should be consulted prior to the export of any material that is in question.
  - Introduction of malicious programs into the network or server (e.g., viruses, worms, Trojan horses, e-mail bombs, etc.).
  - Revealing your account password to others or allowing use of your account by others. This includes family and other household members when work is being done at home.
  - Using a MMC computing asset to actively engage in procuring or transmitting material that is in violation of sexual harassment or hostile workplace laws in the user's local jurisdiction.
  - Making fraudulent offers of products, items, or services originating from any MMC account.
  - Making statements about warranty, expressly or implied, unless it is a part of normal job duties.
  - Effecting security breaches or disruptions of network communication. Security breaches include, but are not limited to, accessing data of which the employee is not an intended recipient or logging into a server or account that the employee is not expressly authorized to access, unless these duties are within the scope of regular duties. For purposes of this section, "disruption" includes, but is not limited to, network sniffing, pinged floods, packet spoofing, denial of service, and forged routing information for malicious purposes.
  - Unauthorized connection of any MMC computer to another computer or network.
  - Port scanning or security scanning is expressly prohibited unless prior notification to ITS is made.
  - Executing any form of network monitoring which will intercept data not intended for the employee's host unless this activity is a part of the employee's normal job/duty.



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| SUBJECT: | ACCEPTABLE COMPUTER USE | REVISED | |
| DEPARTMENT: | INFORMATION TECHNOLOGY | | |

- Circumventing user authentication or security of any host, network, or account.
- Interfering with or denying service to any user other than the employee's host (for example, denial of service attack).
- Using any program/script/command, or sending messages of any kind, with the intent to interfere with, or disable, a user's terminal session, via any means, locally or via the Internet/Intranet/Extranet.
- Providing information about, or lists of, MMC employees, patients, customers, partners, or vendors to parties outside MMC unless it is part of normal job duties.
- Perform acts that waste Computer resources or unfairly monopolize resources to the exclusion of others. These acts include, but are not limited to, sending mass mailings or chain letters, spending excessive amounts of time on the Internet, playing games, engaging in online chat groups, printing multiple copies of documents, or otherwise creating unnecessary network traffic.

- **Email and Communications Activities**
  - Sending unsolicited email messages, including the sending of "junk mail" or other advertising material to individuals who did not specifically request such material (email spam).
  - Any form of harassment via email, social networking, telephone, or paging, whether through language, frequency, or size of messages.
  - Unauthorized use, or forging, of email header information.
  - Solicitation of email for any other email address, other than that of the poster's account, with the intent to harass or to collect replies.
  - Creating or forwarding "chain letters", "Ponzi" or other "pyramid" schemes of any type.
  - Use of unsolicited email originating from within MMC's networks of other Internet/Intranet/Extranet service providers on behalf of, or to advertise, any service hosted by MMC or connected via MMC's network.
  - Posting the same or similar non-business-related messages to online networking services (Usenet, Reddit, Facebook, TikTok, etc.)
- **Blogging and Social Networking**
  - Blogging and social networking by employees using MMC's property and systems is prohibited.
  - MMC's Information Sensitivity Policy also applies to blogging and social networking. As such, Employees are prohibited from revealing any MMC confidential or proprietary information, trade secrets or any other material covered by MMC's Confidential Information policy when engaged in blogging or social networking.
  - Employees may not take pictures, record video, or record audio while on MMC property unless it is done as part of their normal job duties and using approved MMC equipment.
  - Employees shall not engage in any blogging or social networking that may harm or tarnish the image, reputation, and/or goodwill of MMC and/or any of its employees. Employees are also prohibited from making any discriminatory, disparaging, defamatory or harassing comments



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| DEPARTMENT: | INFORMATION TECHNOLOGY | | |

when blogging, posting to social media, or otherwise engaging in any conduct prohibited by MMC's Non-Discrimination and Anti-Harassment policy.

- When an employee expresses his or her beliefs and/or opinions online, the employee may not, expressly, or implicitly, represent themselves as an employee or representative of MMC. Employees assume all risk associated with posting any material online.
- Apart from following all laws pertaining to the handling and disclosure of copyrighted or export-controlled materials, MMC's trademarks, logos and any other MMC intellectual property may also not be used in connection with any online activity.

**PROCEDURE:**

**REFERENCES:**
None

**ATTACHMENTS:**
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**Commented [SF13]:** @Andreas Camacho What is the procedure for what will or will not happen as a result of this policy?

**Commented [AC14R13]:** I used to have something like "Failure to follow this policy can result in discipline up to and including termination" but I was told at one point (a long time ago) that I could not have that in my policy as it was up to HR and not IT.

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**Commented [SF15]:** @Andreas Camacho do you have references to support your policy? Where did you get the information to support you process?

**Commented [AC16R15]:** I did not keep track of my sources. I used policies from other facilities, recommendations from IT related websites, etc.

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| REFERENCE # | 8480.24.02 | EFFECTIVE | 01/2016 |
| SUBJECT: | IT SUPPORT TICKET DOCUMENTATION | REVISED | |
| DEPARTMENT: | INFORMATION TECHNOLOGY | | |

**PURPOSE**

The purpose of this policy is to establish basic rules for the proper documentation of Information Technology (IT) support tickets by the IT Department staff.

**AUDIENCE:**
Department Staff

**TERMS/DEFINITIONS**

**IT**: Information Technology

**IT Support Ticket**: A record of IT staff actions with regard to support requests, projects, and maintenance of IT related systems and hardware.

**Ticket System**: An electronic database and software used for the recording, management, and review of IT support tickets.

**POLICY**

It is the policy of Modoc Medical Center (MMC) that IT staff will adhere to the rules described herein for the documentation of IT support tickets.

**PROCEDURE**

**Intended Use**

IT support tickets are utilized to record IT support requests, projects, and maintenance of IT-related systems and hardware. They are to be documented accurately and clearly for review by end users, IT staff and MMC Administration.

**IT Support Ticket Creation**

IT support tickets are to be created for all IT-related activities including, but not limited to, end user support, regular system maintenance tasks, projects, IT-staff-identified issues and infrastructure improvements.

Support tickets may be created by the following methods:

- By an MMC employee via online IT support website.
- By IT staff.

Tickets created by MMC employees must be reviewed by an IT staff member and updated, if necessary, to contain the required information.

- Requestor– the person that is the main contact for the work to be done. This may be an MMC employee or IT staff member.



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**Commented [AC2R1]:** The IT Department Staff

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**Commented [EJ3]:** Worxhub - should we name it?

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**Commented [EJ4]:** We may need to check worxhub to see if the information lines up with the descriptions are.

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| SUBJECT: | IT SUPPORT TICKET DOCUMENTATION | REVISED | |
| DEPARTMENT: | INFORMATION TECHNOLOGY | | |

- Description– a brief description of the support request or work to be done. This will be documented in the following format: "specific category" – "summary."
  - The specific categories are software, hardware, printer, phone, email, EMR, infrastructure, medical equipment, security, user account, and others.
  - Summary must contain problem to be corrected or task to be performed and the system identifier, username, or software name if applicable. For example: "user jdoe domain password reset" or "workstation LABW7W01 hard drive error."
- Details– a detailed description of the problem to be corrected or task to be performed. The description must contain, at a minimum:
  - Users, systems, and or equipment affected.
  - Detailed information on the reported problem or task to be completed including any error messages, screen captures, or third-party documents.
  - If the ticket is a support request, when did the issue first present itself and how often is the issue occurring.
  - If the ticket is a support request, document the steps necessary to replicate the problem.
- Due Date – the date by which the work needs to be completed.
- Priority – indication of the severity of the problem or importance of the task.
  - High – user(s) are unable to perform job duties, impacts patient care or facility revenue, or timeline for completion is less than one week.
  - Medium – user(s) are able to perform major job duties with minor difficulties, task timeline for completion less than one month.
  - Low – user(s) job duties not impacted, task timeline greater than one month, low or no impact to facility processes and/or revenue.
- Category – general category of the problem or task to be completed. General categories are: administrative, project, maintenance, and end user support.

**IT Support Ticket Acceptance**

All IT support tickets are to be reviewed by an IT staff member within 24 hours of submission. During the review process, the IT staff member will edit the ticket to contain the above-required information, if needed. The IT staff member will communicate with the ticket contact either via email, phone, or in person to acknowledge receipt of the support ticket and an estimated time for when work will begin. The ticket will then be assigned to an IT staff member.



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**Commented [SF5]:** @Andreas Camacho Is this still the correct information that is collected? I do not see some of these categories in Workhub. Also it would be helpful if they were in the same order as the app.

**Commented [AC6R5]:** The names of some the fields have changed; Contact is now Requestor, Summary is now Description, and Description is now Details. However, this document is for the IT staff specifically. There are additional fields that we have access to that the general staff do not. We do not expect the general staff to follow this strict documentation policy, but we in the IT department are expected to clarify and modify tickets we receive to adhere to these rules.

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**IT Support Ticket Activity Documentation**

All IT support tickets must be updated when one of the following occurs:

- Work has been performed.
  - Documentation will include detailed description work performed using full, complete sentences.
  - Identify persons or entities involved by name.
  - For example: when creating a new user account, identify the user by name, the new user Domain ID created, any other system IDs created, email address, doors programmed for access by user, departmental shared resources granted access to, etc.
  - If there is additional work to be performed on the ticket, the documentation must include the next steps to be performed and an estimated time until work will continue.
- Attempt to contact person or entity related to the ticket has occurred.
  - Document the name of the person or entity, contact information used in the attempt (phone number, email address, etc.) and content of any message left.
  - If email communication has not been responded to within three business days, contact via phone or in person.
- 24 hours have passed since the last update of a high-priority ticket.
  - Documentation must include the reason for the lack of activity on the ticket, what is being done to resolve any hindrances to working on the ticket, and estimated time until work will continue.
- One week has passed since the last update of a medium- or low-priority ticket.
  - Documentation must include the reason for the lack of activity on the ticket, what is being done to resolve any hindrances to working on the ticket, and estimated time until work will continue.
- Ticket is to be closed by request of ticket contact.
  - Documentation must include detailed reason for closing the ticket in full and complete sentences.
- Ticket priority changed.
  - Documentation must include detailed reason for the change in ticket priority in full and complete sentences.



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- Ticket closure or merging with other ticket.
    - Documentation must include detailed reason for the closure or merger of the ticket in full and complete sentences. Assigned IT staff member must communicate with the ticket contact to notify them of the closure or merger; this conversation must be documented in the ticket.

**IT Support Ticket Follow Up**

IT staff members are to communicate with the IT support ticket initiator, either by phone or in person, between three and five business days after the ticket closes to determine whether they are satisfied with the work performed and whether additional work needs to be completed.

If it is determined that the issue is not resolved, the ticket will be reposed and assigned to an IT staff member.

**REFERENCES:**
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**ATTACHMENTS:**
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| SUBJECT: | PREVENTION AND CONTROL OF SCABIES AND OTHER PARASITE AND VECTOR BORNE INFECTIONS AT LONG TERM CARE | REVISED |
| | | REVIEWED |
| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: |

**PURPOSE:**
The purpose of this policy is to establish the process for mitigating the risk of Scabies and other parasite or vector borne infections to residents, health care professionals (HCP), and visitors of Modoc Medical Center's Long Term Care (LTC) facility.)

**AUDIENCE:**
Facility Wide

**TERMS/DEFINITION:**
**Vectors:** "Vectors are living organisms that can transmit infectious pathogens between humans, or from animals to humans. Many of these vectors are bloodsucking insects, which ingest disease-producing microorganisms during a blood meal from an infected host (human or animal) and later transmit it into a new host, after the pathogen has replicated. Often, once a vector becomes infectious, they are capable of transmitting the pathogen for the rest of their life during each subsequent bite/blood meal."1

**Vector Borne Diseases:** "Vector-borne diseases are human illnesses caused by parasites, viruses and bacteria that are transmitted by vectors."1

**Parasites:** "Parasites are organisms that live in, on or with another organism (host). They feed, grow or multiply in a way that harms their host. However, they need their host for their survival. For this reason, they rarely kill their host, but they often carry diseases that can be life-threatening."2

**Scabies:** "is an itchy skin rash caused by a tiny burrowing mite called Sarcoptes scabiei. Intense itching occurs in the area where the mite burrows. The need to scratch may be stronger at night. Scabies is contagious and can spread quickly through close person-to-person contact in a family, childcare group, school class, nursing home or prison. Because scabies spread so easily, health care providers often recommend treating the entire family or any close contacts. Scabies is easily treated. Medicated skin creams or pills kill the mites that cause scabies and their eggs. But itching may not stop for many weeks after treatment." 3

**Lice:** "are tiny, flat insects that travel by crawling. Head lice live on the hair on your head. Pubic lice live in your pubic hair, near your genitals. Both types of lice travel from person to person through close contact, which may include sexual intercourse or sharing personal items like sheets, pillows or towels."2

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to mitigate the risk of Scabies and other parasite and vector borne infections at the LTC by preparation, response and control. The LTC will refer to, and follow as needed, current guidance from California Department of Public Health (CDPH) and the Centers for Disease Control (CDC).

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| SUBJECT: | PREVENTION AND CONTROL OF SCABIES AND OTHER PARASITE AND VECTOR BORNE INFECTIONS AT LONG TERM CARE | REVISED<br>REVIEWED |
| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: |

**PROCEDURE:**

All basic infection control strategies will be followed at the LTC.
HCP will have annual, and as needed, training on infection control basics (hand hygiene, cleaning and disinfection, proper personal protective equipment (PPE) use, and transmission precautions). Education will be offered as needed to residents and visitors. Education may be done through one, or all of the following, one on one discussion, in-services, internal postings, or mailings.

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| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: |

Laundry services will follow their policies concerning safe handling and processing of linens.

Environmental Services (EVS) will keep a clean facility environment by following their policies for cleaning and disinfection.

The maintenance department will follow their policies for keeping the building free from infestations.

All new LTC residents will have a complete skin check on initial admission. Skin checks for all residents will be done by nursing on weekly summary days and two times a week on shower days by the CNA giving the shower. The CNA will complete a skin check sheet, and this will be signed off by the floor nurse.

The primary care provider will be notified immediately of any suspected scabies or lice infestation.

Surveillance for any resident change in condition is ongoing by nursing.

If a resident is diagnosed with scabies or lice, they will be placed on contact precautions or other precautions as ordered by the provider. Provider orders will be followed for any other parasitical infections. All treatment orders will be initiated immediately by the provider and followed by nursing. Providers should follow all current treatment protocols.

If an outbreak is identified, facility policy/procedure will be followed, a line list will be started and contact tracing will be initiated by nursing staff. CDPH and the Modoc County Public Health department will also be notified.

Direct care staff will not work with a known scabies or lice diagnosis and will follow employee health policies for return to work.

All other vector borne illnesses that are identified in the facility will be addressed immediately by the resident's provider.

**REFERENCES:**

Vector-borne diseases (who.int)
Parasites: Types, Symptoms, Treatment & Prevention (clevelandclinic.org)
Scabies - Symptoms and causes - Mayo Clinic

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| SUBJECT: | SURVEILLANCE | REVISED<br>REVIEWED |
| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: |

**PURPOSE:**
The purpose of this policy is to define a system of surveillance at Modoc Medical Center's (MMC) Skilled Nursing Facility (SNF) to prevent, identify, investigate, and control infections and communicable diseases that may affect residents, staff, and volunteers.

**AUDIENCE:**
Department Wide

**TERMS/DEFINITION:**
Surveillance: the collection of information.

**POLICY:**
It is the policy of the MMC SNF to perform facility wide surveillance to identify opportunities to prevent and/or reduce the rate of infections in residents, staff, and visitors.

**PROCEDURE:**
Surveillance information may be used to drive staff, resident and/or visitor education needs, implementation of new process needs, needed clinical treatments/interventions to reduce infection risk, and provide information for quick outbreak management.

Data collected may be used for the annual facility risk assessment and to develop the annual infection control plan.

Data will be reported monthly at the facility QAPI meeting and Quarterly at the MMC Infection Control Meeting. Data will also be reported to the National Health and Safety Network (NHSN) as required by regulations.

Surveillance data will be kept by the SNF infection control nurse either on paper or electronic spreadsheets. Surveillance data collection may include medical records review, Healthcare Worker (HCW) call in logs, direct observations, audits, shift to shift reports and other forms of communication.

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| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: |

The following are some of the data points that may be gathered as surveillance data to facilitate sound infection control practices, processes, and plans:

- Antibiotic use by residents.
- Organisms cultured.
- Types of infections by category. UTI, Respiratory, Skin, Ear, Eye, Dental, GI, and Other.
- Antibiotic Tracking Sheets compliance.
- HCW call in data
- Unprotected exposure to pathogens. (PPE use compliance)
- Hand Hygiene compliance.
- Resident vaccination status.
- HCW vaccination status for Flu and Covid.
- EOC and other facility wide audits.

The SNF will also follow any other surveillance needs that may be identified by facility-wide infection control plans or other MMC committees.

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| DEPARTMENT: INFECTION CONTROL- SNF | EFFECTIVE: 03/2016 |
| APPROVED BY: | REVISED: |

**PURPOSE**

The purpose of the policy is to define Modoc Medical Center's (MMC) policy regarding employee illness and tracking of employee absence.

**POLICY**

It is the policy of MMC to provide a safe patient care environment and to promote employee wellness.

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**PROCEDURE**

A. Reporting: Symptoms of Illness and Diagnosed Illness

a. If an employee is working and experiencing the following symptoms, they must report to their supervisor immediately. If an employee is not at work and is experiencing these symptoms, they are to stay home from work to protect our patient population and co-workers:

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i. Diarrhea

ii. Vomiting

iii. Jaundice (yellowing of the skin and/or eyes)

iv. Sore throat with fever

v. Productive cough with fever

vi. Infected cuts or wounds, or lesions containing pus on the hand, wrist, or exposed body part

b. The employee must report to their supervisor immediately if at work or the next business day if not at work when diagnosed with the following:

i. Norovirus

ii. Salmonella typhi (Typhoid Fever)

iii. Shigella spp. Infection

iv. E. coli Infection

v. Hepatitis A

vi. Clostridium dificile Infection

vii. Streptococcal Pharyngitis

viii. Influenza

ix. Covid 19

x. Tuberculosis (active)

xi. Scabies or Lice

xii. Conjunctivitis

xiii. Other infectious diseases as determined by a licensed medical professional.

B. Exclusion and Restriction from Work

a. If the employee has any of the symptoms or illnesses listed above, he/she may be excluded from work.

C. Medical Evaluation

a. Employees have the option to be seen by a licensed medical provider at the clinic or in the emergency room as part of the Employee Health Program.

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D. Returning to Work

a. An employee who is absent due to illness may be required to have a licensed medical provider's note indicating that the employee has recovered and may return to work.

E. Employee Absence Tracking

a. Employees will call their manager when they are unable to come to work due to illness. The manager then will complete an absence report form (see Appendix A) and turn it into the appropriate confidential employee for their area as noted below.

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i. Acute Nursing: Administrative Assistant to the Chief Nursing Officer (CNO)

ii. Warnerview Building: Administrative Assistant to the Director of Nursing (DON)

iii. All other departments/buildings: Executive Assistant to the Chief Executive Officer (CEO)

b. The confidential employee will then update the absence tracking spreadsheet report with the appropriate information.

c. The infection control nurse will review this report weekly to track potential trends in infectious illness in the workplace for surveillance purposes only.

d. Department managers may request to view this report to track employee absence for performance reviews. Human resources will manage these requests.

**REFERENCES**


The Centers for Disease Control and Prevention. (2016). Workplace health and safety. Retrieved March 22, 2016, from http://www.cdc.gov/niosh/topics/diseases.html


**APPENDIX A ATTACHED**

## APPENDIX A

### ABSENCE REPORT

**DATE:_____ TIME:_____**

**COMPLETED BY:_____**

**DEPARTMENT:_____**

**EMPLOYEE:_____**

**SHIFT:_____ TITLE:_____**

**ESTIMATED RETURN DATE:_____**

**WORK DAYS MISSED**

| SUN | MON | TUES | WED | THUR | FRI | SAT |
|---|---|---|---|---|---|---|
| | | | | | | |

**REASON FOR ABSENCE**

| | | |
|---|---|---|
| ACCIDENT ON DUTY | HOLIDAY | SICKNESS-SELF |
| ACCIDENT OFF DUTY | JURY DUTY | VACATION |
| DISCIPLINE | LEAVE OF ABSENCE | UNEXCUSED ABSENCE |
| DEATH IN FAMILY | SICKNESS IN FAMILY | OTHER |

**SYMPTOMS (CHECK ALL THAT APPLY)**

| | | |
|---|---|---|
| NAUSEA/VOMITING | FEVER/CHILLS | DIARRHEA |
| PROD COUGH | RASH | DECLINE TO STATE |

**EMPLOYEES MUST BE SYMPTOM FREE FOR 24 HOURS PRIOR TO RETURN TO WORK. EMPLOYEES MAY BE REQUIRED TO PROVIDE A NOTE FROM A HEALTHCARE PROVIDER TO RETURN TO WORK.**

**NOTES:_____**
**_____**

**CLEARED FOR RETURN TO WORK PER MANAGER DATE: _____**

**REPORTED TO:_____ ENTERED IN TO LOG BY CE Y OR N**


### ABSENCE REPORT

**DATE:_____ TIME:_____**

**COMPLETED BY:_____**

**DEPARTMENT:_____**

**EMPLOYEE:_____**

**SHIFT:_____ TITLE:_____**

**ESTIMATED RETURN DATE:_____**

**WORK DAYS MISSED**

| SUN | MON | TUES | WED | THUR | FRI | SAT |
|---|---|---|---|---|---|---|
| | | | | | | |

**REASON FOR ABSENCE**

| | | |
|---|---|---|
| ACCIDENT ON DUTY | HOLIDAY | SICKNESS-SELF |
| ACCIDENT OFF DUTY | JURY DUTY | VACATION |
| DISCIPLINE | LEAVE OF ABSENCE | UNEXCUSED ABSENCE |
| DEATH IN FAMILY | SICKNESS IN FAMILY | OTHER |

**SYMPTOMS (CHECK ALL THAT APPLY)**

| | | |
|---|---|---|
| NAUSEA/VOMITING | FEVER/CHILLS | DIARRHEA |
| PROD COUGH | RASH | DECLINE TO STATE |

**EMPLOYEES MUST BE SYMPTOM FREE FOR 24 HOURS PRIOR TO RETURN TO WORK. EMPLOYEES MAY BE REQUIRED TO PROVIDE A NOTE FROM A HEALTHCARE PROVIDER TO RETURN TO WORK.**

**NOTES:_____**
**_____**

**CLEARED FOR RETURN TO WORK PER MANAGER DATE: _____**

**REPORTED TO:_____ ENTERED IN TO LOG BY CE Y OR N**

| | | |
|---|---|---|
| REFERENCE # | 8753-SNF.24.06 | EFFECTIVE |
| SUBJECT: | CLOSTRIDIOIDES DIFFICILE (C-DIFF)- PREVENTING DEVELOPMENT AND CONTROLLING TRANSMISSION | REVISED |
| | | REVIEWED |
| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: |

**PURPOSE:**
The purpose of this policy is to define the process to prevent development of and if develops, controlling transmission of Clostridioides Difficile (C-Diff) in the Skilled Nursing Facility (SNF)

**AUDIENCE:**
Facility Wide

**TERMS/DEFINITION:**

**Clostridioides difficile (C-Diff):** is a spore-forming, toxin-producing bacteria transmitted among humans via the fecal-oral route.
**C-Diff Infection (CDI):** ranges in severity from mild diarrhea to severe intestinal infection with death occurring in up to 9% of cases. 65% of cases are health care associated.
For C-DIFF spores to proliferate and cause CDI, the normal flora of the colon must be disrupted AND C-Diff must be ingested. The disruption of the normal flora is generally caused by antibiotic use. These events may occur separately and in any order.
Risk factors for CDI include advanced age, exposure in healthcare settings and antibiotic use. Spores can live up to 5 months on surfaces.
**CDI Case Definition:** A positive laboratory test result for C. difficile toxin A and/or B (for example, molecular assays and/or toxin assays), or a toxin producing C. difficile organism detected by culture or other laboratory tests performed on an unformed stool specimen.
**Contact Precautions Plus:** Is used in addition to Contact Precautions. It is for residents known or suspected to have a microorganism that requires additional control measures that is spread by direct contact with the patient or by indirect contact with environmental surfaces or patient care equipment. Soap and water hand washing is required to remove spores by friction. Medicated soap or alcohol hand rub will not destroy C. Diff spores.
It requires the use of PPE gown, gloves, shoe protectors, soap and water hand washing, and cleaning with a 1:10 bleach solution or other C-Diff sporicidal agent (EPA List K agent).

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to mitigate the risk to our SNF residents of acquiring a CDI using Prevention, Appropriate Testing, Surveillance, Prompt Contact Plus Transmission Precautions, appropriate EVS cleaning protocols, Adherence Monitoring, Education, Antimicrobial Stewardship, and Outbreak Management.

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|---|---|---|
| REFERENCE # | 8753-SNF.24.06 | EFFECTIVE |
| SUBJECT: | CLOSTRIDIOIDES DIFFICILE (C-DIFF)- PREVENTING DEVELOPMENT AND CONTROLLING TRANSMISSION | REVISED |
| | | REVIEWED |
| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: |

**PROCEDURE:**

To prevent the spread of C-Diff in the facility, residents with diarrhea outside of their normal bowel pattern will be placed on Contact Plus Precautions until lab results have ruled out C-Diff or other transmissible GI issues. If C-Diff is confirmed the resident will remain on Contact Plus Precautions for duration of antibiotic therapy (usually 10 days) AND resident has no more symptoms. If C. Diff is ruled out, providers' orders will be followed for further testing.

It is best practice to have a confirmed CDI resident placed in a private room with a dedicated toilet. If this is not possible at the facility, consideration will be given to having a dedicated bedside commode.

Nursing will start a GI surveillance line list as soon as abnormal GI symptoms are known. This line list will be updated as new information arises. If an outbreak is determined the GI outbreak checklist will be initiated and the SNF Outbreak policy will be followed.

Testing Considerations: Nursing and providers will use the C-Diff algorithm (attached) prior to testing for any resident that has had three or more liquid stools within 24 hours that is not a normal bowel pattern for the resident.

A fresh liquid or unformed stool sample is collected into a sterile container. The sample should not be contaminated with urine or water. The sample should be taken to the laboratory immediately. A positive test is a critical lab and must be called by the lab to a licensed caregiver within 30 minutes of the test. If a nurse receives these results the physician must be notified within 1 hr.

Repeat testing, specifically as a test of cure, is not recommended. Bacterium and spores can shed into the environment both during and after treatment. Routine screening of asymptomatic carriers is not recommended.

Antimicrobial Stewardship Committee (ASC): MMC SNF is an active participant in the facility wide Antimicrobial Stewardship Committee Program. All Antimicrobial use is reviewed by the MMC in house Pharmacy who oversee the ASC and give recommendations for antibiotic use to Providers. The SNF Infection Control Nurse is responsible for maintaining a monthly spreadsheet that tracks antibiotic use, pathogens identified, infections identified, and tracking sheet adherence. This data is reported to the monthly Quality Assurance Performance Improvement (QAPI) meeting and the quarterly Infection Control Committee meeting.

As soon as a resident is placed on Transmission Precautions (Contact Precautions Plus) adherence monitoring will begin for proper PPE use, hand hygiene (soap and water), and environmental cleaning. This monitoring may be done by the SNF infection control nurse, nursing, or other management as needed.

Interfacility communication: If a resident with CDI needs to be transferred out of the facility the CDI status will be communicated to the receiving facility.

Education: Staff, Residents, and Visitors may be educated about C-Diff, PPE use, and Transmission Based Precautions through 1:1 communication, in-services, flyers and /or mailings. This education will be yearly and/or as needed.

**ENVIRONMENTAL CLEANING CONSIDERATIONS**

EVS will be immediately notified of a resident placed on Contact Precautions Plus and will follow their policies for cleaning the environment. This will include daily cleaning of C-Diff resident rooms using a C-Diff sporicidal agent (EPA List K agent) including bleach wipes and/or 1:10 bleach solutions. Special attention should be made to all "High Touch" surfaces when cleaning.

Additional areas that are contaminated during transient visits by patients with suspected or confirmed C-Diff (e.g., Radiology, Emergency Departments, Physical therapy) will also be cleaned and disinfected with a C-Diff sporicidal agent (EPA List K agent).

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Dedicated equipment should be used for CDI residents. If this is not possible proper cleaning and disinfection will be done prior to using for another resident.

Additional information including signs, quick fact sheets, educational materials and blank line lists may be found in the Infection Control SNF Resources Binder.

**REFERENCES:**

CDI_Quicksheet_May2019 (ca.gov)
CDI Prevention Strategies (ca.gov)

**ATTACHMENTS:**

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C.Diff Algorithm for Testing.pdf

| | | | |
|---|---|---|---|
| REFERENCE # | Click or tap here to enter text. | EFFECTIVE | |
| SUBJECT: | STANDARD AND TRANSMISSION BASED PRECAUTIONS AT SNF | REVISED | 08/2024 |
| | | REVIEWED | |
| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: | |

**PURPOSE:**
The purpose of this policy is to define the use of Standard and Transmission Based Precautions in the Modoc Medical Center (MMC) Skilled Nursing Facility (SNF) to prevent the spread of infections to health care personnel (HCP), residents and visitors of the facility.

**AUDIENCE:**
Facility Wide

**TERMS/DEFINITION:**
**Standard Precautions (SP):** Standard Precautions assume that every person is potentially infected or colonized with an organism that could be transmitted in the health care setting. SP should be practiced by all HCP when anticipating contact with blood, all body excretions and secretions (including sweat), non-intact skin or lesions, and mucous membranes.
SP were established for the safety of all HCP and is the basic practice that all HCP should adhere to. SP includes hand hygiene, proper use of gloves, gowns, masks and eye protection or face shields. It also includes safe injection practices, appropriate cough etiquette, proper handling of sharps and linens.

**Transmission Based Precautions (TBP):** TBP are applied when a resident has a known or suspected infectious agent that requires addition interventions based on the mode of transmission. The types of TBP are Contact and Contact Plus Precautions and Enhanced Barrier Precautions (EBP), Droplet Precautions, and Airborne Precautions.

**Infection:** indicates there are microorganisms in or on the body that are causing clinical signs or symptoms such as fever, cough, or dysuria. This indicates that the organisms have invaded the host.

**Colonization:** is when there are organisms present in or on the body or at a particular site but there are no signs or symptoms to support that the resident has an infection or is sick.1

**Personal Protective Equipment (PPE):** gloves, gowns, goggles, face shields, hair covers. shoe covers.

**POLICY:**
It is the policy of MMC to ensure all residents, health care workers and visitors are protected from the spread of infection by using proper standard and transmission-based precautions.

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**PROCEDURE:**

Standard Precautions will be always used for all residents.

**Hand Hygiene**

Healthcare workers' hands are the most common way that germs are spread within a facility. To prevent the transmission of viruses, bacteria, or other microbes from HCP hands to or from a person or an object, hand hygiene by either soap and water washing or alcohol-based hand rubs (ABHR) will be done in the following situations.

- Before and after touching a patient.
- Before performing a clean/aseptic procedure.
- After contact with blood, body fluids, secretions and excretions.
- After touching a resident's surroundings.
- After removing gloves.
- Between resident contacts.
- Before and after food preparation and service.

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Residents should also be assisted with hand hygiene at the following times.

- Before and after preparing or eating food.
- Before and after ALL meals and Snacks.
- Before and after touching the eyes, nose, or mouth.
- After using the restroom.
- After blowing their nose, coughing, or sneezing.
- After touching hospital surfaces such as bed rails, bedside tables, doorknobs, remote controls, or the phone.
- Before leaving their room.

**Personal Protective Equipment (PPE)**

PPE should be used at any time the HCP deems it is necessary to prevent their clothing or themselves from encountering a pathogen. PPE must be used when a TBP sign is posted. PPE should always be available for use. The Ward Clerk and the SNF Infection Control Nurse in coordination with MMC Central Supply department will maintain PPE supplies at adequate levels. If there should be a shortage the facility will reach out to the MMC Disaster Planning department as needed for supplies.

**Gloves:** Are used for any contact with blood, body fluid, secretions, and excretions and when coming into contact with contaminated items, when touching mucous membranes or non-intact skin and when contacting intact skin when infection risks are identified.

**Gowns:** Are used during procedures and resident care activities when HCP clothing may contact blood, body fluids, secretions and excretions.

**Mask, Eye Protection (goggles), and Face Shields:** Are used during procedures and resident care activities likely to generate splashes or sprays of blood, body fluids, and excretions.

**Other Common Applications for Standard Precautions**

**Soiled resident care equipment:** should be handled in a manner that prevents transfer of microorganisms. Equipment will be cleaned and disinfected appropriately per manufacturer directions for product dwell time.

**Environmental hygiene:** Environmental Services (EVS) staff will follow their policies and training to maintain a clean environment within the facility. Other staff will clean and disinfect care items with appropriate products using manufacturer dwell times.

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**Textiles and laundry:** Laundry will be handled in a manner that prevents transfer of microorganisms to others and the environment. Laundry services will follow their policies and training to process facility laundry.

**Needles and Sharps:** Safety/Single use needles will be used in the facility. The use of multi dose vials will be limited and will be dedicated to one resident as possible. Used needles and other used sharps will be disposed of in red sharps containers. Full containers will be disposed of per EVS facility policies. The MMC bloodborne pathogens policies will be followed at the SNF.

**Resident Resuscitation:** If resident resuscitation is required the facility will use a mouthpiece, resuscitation bag or other ventilation device that prevents contact with the residents' mouth or oral secretions.

**Resident placement:** The facility will consider private room placement, if available, if a resident is at increased risk of transmission, likely to contaminate the environment, unable to follow instructions, does not maintain appropriate hygiene, or is at an increased risk of acquiring an infection.

**Respiratory hygiene/cough etiquette:** All symptomatic persons will be instructed to cover their mouth/nose when sneezing or coughing. Tissues will be available in the facility and when used disposed of in a no touch receptacle. Hand hygiene should be performed after contamination with respiratory secretions. Residents that are unable to follow basic respiratory precautions will be assisted to wear a surgical mask as source control as tolerated. In shared rooms a spatial separation and a closed privacy curtain between beds of >3 feet should be maintained. **Transmission Based Precautions**

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A resident will be placed on additional transmission precautions when they have a suspected or identified infection requiring additional interventions to standard precautions based on the mode of transmission of

illness. Appropriate signage and an isolation cart will be placed at the room entrance. Dedicated noncritical patient care supplies will be used as available (BP cuffs, Stethoscopes, and Thermometers). Residents placed on TBP should only leave their room as medically necessary. The length of time and type of TBP needed should be based on the current CDC guidelines for patient isolation in coordination with the Primary Care Provider (PCP). The activities department will be notified and an appropriate activity in room plan will be developed. The EVS and Dietary departments will also be notified. Any resident who is isolated because of an infectious disease will be given the same quality of care as any non- isolated resident. Isolated patients will not be discriminated against at any time and will have total patient care within the specifications of the isolation needs.

**Contact and Contact Precaution Plus:** Contact Precautions are used for a resident known or suspected to be infected with a microorganism that is easily transmitted by direct or indirect contact. This includes touching the resident's environment or handling resident care items. Contact Precautions guidelines are Hand Hygiene before entering and when leaving the room. Put on gloves before room entry and discard them before room exit. Put on a gown before entering room and discard before room exit. Do not wear the same gown and gloves for more than one person. Use dedicated or disposable equipment and/or clean and disinfect reusable equipment prior to use on another person.

Contact Precautions Plus uses the same guidelines as Contact Precautions with the addition of soap and water hand washing and bleach cleaning per EVS policy.

**Enhanced Barrier Precautions (EBP):** Requires gown and gloves for all close contact personal care that takes place within the residents' room for residents that have been identified by facility criteria. Signage for EBP is placed inside the room. The SNF will follow the facility EBP policy.

**Droplet Precautions:** Will be used when a resident is known or suspected of having an infection whose microorganisms are easily transmitted by large droplets from sneezing, coughing or talking. It uses all PPE guidance from Contact Precautions with the addition of masking and goggles or face shields prior to entering the room.

**Airborne Precautions:** Is used when a resident is suspected of having or has an infection whose pathogenic organisms remain suspended in the air and are dispersed through air currents. It uses PPE guidance from Standard Precautions, Contact Precautions, and Droplet Precautions with the addition of a fit tested N-95 mask or PAPR prior to entering the room. The door to the room should remain shut.

**Education**

Facility staff will be educated annually and as needed for proper PPE use, Transmission Based Precautions and basic facility infection control strategies. Residents and visitors will also be educated as needed. Education may be done through in-services, 1:1 discussion, flyers, and mailings.

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| REFERENCE # | Click or tap here to enter text. | EFFECTIVE | |
| SUBJECT: | STANDARD AND TRANSMISSION BASED PRECAUTIONS AT SNF | REVISED | 08/2024 |
| | | REVIEWED | |
| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: | |

**SIGNAGE, CDC GUIDANCE, AND EDUCATIONAL INFORMATION MAY BE FOUND IN THE SNF INFECTION CONTROL RESOURCES BINDER.**

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**REFERENCES:**

1) APIC, Infection Prevention Guide to Long-Term Care 2nd edition

Appendix A | Infection Control | CDC

**ATTACHMENTS:**

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| REFERENCE # | LEAVE BLANK | EFFECTIVE |
| SUBJECT: | PREVENTION AND CONTROL OF NOROVIRUS INFECTION AND OTHER ACUTE GI INFECTIONS AT MMC LONG TERM CARE | REVISED |
| | | REVIEWED |
| DEPARTMENT: | INFECTION CONTROL -SKILLED NURSING FACILITY | PRIOR REVISIONS: |

**PURPOSE:**
The purpose of this policy is to prevent healthcare acquired infection (HAI) of Norovirus and other gastrointestinal (GI) infections to long term care (LTC) residents, volunteers, staff and visitors and to control transmission should they occur.

**AUDIENCE:**
Facility Wide

**TERMS/DEFINITION:**

1)Outbreak definition: two or more cases of norovirus infection at SNF within a forty-eight-hour period. All initial cases will be confirmed by real time polymerase chain reaction (RT-PCR) on liquid stool. How many confirmed cases needed shall be at the discretion of the Chief Medical Officer (CMO). Outbreaks are common and can happen any time of the year but most commonly November through April.

2) Norovirus is the most common infectious agent that causes acute gastroenteritis (vomiting and diarrhea). It causes an estimated 19 to 21 million cases a year. Anyone can become infected with Norovirus and a person can become infected more than once. Norovirus spreads quickly in closed and crowded places. It may be spread through direct contact with someone who is infected with norovirus, eating or drinking something that is contaminated with the virus, or touching a surface that is contaminated with norovirus and then putting unwashed hands into mouth (fecal oral route). However, it is important to remember that norovirus is not the only cause of acute gastroenteritis.

3) Other bacteria can cause acute gastroenteritis with symptoms of nausea, vomiting, and diarrhea. Common examples are Salmonella, Shigella, and Campylobacter. These are generally foodborne and rare within LTC facilities. The outbreak thresh hold is two or more residents or staff.

**POLICY:**
It is the policy of Modoc Medical Center (MMC) to mitigate the risk of GI pathogen infections at the LTC with preparation, response, and control and by using early identification and prompt resident transmission precautions.

**PROCEDURE:**
Preparation:

The LTC will always practice basic core infection control strategies. These include standard precautions, hand hygiene, cleaning, and proper use of personal protective equipment (PPE). Staff will be educated annually and as needed via in-services and/or one on one discussion. Residents and visitors will be educated as needed via facility postings, one on one discussion, and/or mailings.

Surveillance of residents and staff for any change in condition will be ongoing.

**RESPONSE:**

When any resident has multiple events of GI distress the charge nurse and the provider will be notified so that testing can begin. The resident will be placed on contact plus transmission precautions while testing is being done. If vomiting or splash risk is present droplet precautions will also be put in place (droplets may spread up to 10 feet). Nursing staff will immediately start a resident GI line list and pass on information about all symptomatic residents in shift report. This line list will be reviewed at least daily. The facility environmental services (EVS) and dietary departments will be notified.

Symptomatic residents will not be moved unless it is to a private room. Roommates will be monitored frequently for symptoms and placed on precautions as soon as any symptoms become present. Roommates must practice proper hand hygiene prior to exiting the room. A resident placed on transmission precautions should not leave their room unless it is medically necessary. If needing to be transferred to a higher level of care the transferring agency and receiving facility must be informed of the diagnosis.

If any staff reports GI issues a staff GI line list will be started. Staff will be asked not to work until their symptoms are resolved for at least a minimum of twenty-four hours, except for kitchen staff who must not return to work until they ate without symptoms for forty-eight hours. If staff become symptomatic at work, they will be asked to leave immediately. Visitors and volunteers that have had symptoms should also not come into the facility until at least a minimum of twenty-four hours have passed with no symptoms. If dietary staff become symptomatic when at work, they will immediately be asked to leave. The dietary department will stop all food prep and initiate bleach surface cleaning, per dietary policy, prior to resuming meal preparation.

**CONTROL:**

If an outbreak of Norovirus or other GI pathogen is determined, the LTC will follow the outbreak policy and begin using the gastroenteritis outbreak checklists for outbreak management. Immediate notification will be given to the CMO, administration, California Department of Public Health CDPH), and Modoc County Public Health.

Nursing will increase surveillance of all residents for new onset of symptoms. Symptomatic residents will be monitored closely for decline in condition including signs and symptoms of dehydration. Providers will be notified promptly and may consider intravenous fluids and anti-emetics.

Signage will be posted at the entrance to the facility notifying visitors of an outbreak. All visitors will be asked to wash with soap and water when entering and exiting the facility. The facility may be closed to visitors at the CMO's discretion.

The CMO may also decide to close all group activities and communal dining based on transmission risk and psychosocial benefit for the residents.

No new admissions or transfers will be permitted until there are no new cases in residents and employees for at least four days (ninety-six hours).

Symptomatic residents will remain on contact plus precautions until at least forty-eight hours after symptoms stop. Dedicated staff will be assigned to take care of symptomatic residents as staffing permits. Non-essential staff should not enter the room.

Hand Hygiene must be performed using liquid antimicrobial soap and water, the norovirus may not be eliminated with alcohol-based hand rubs (ABHR).

Environment:

EVS will immediately initiate their enhanced cleaning procedures per their policies. Environmental protection agency (EPA) approved disinfectant or freshly prepared sodium hypochlorite solution (chlorine bleach in a 1:10 dilution) will be used to disinfect surfaces contaminated with feces or vomitus. The cleaning frequency of hard nonporous high touch surfaces will be increased to three times per day using 1:10 bleach solution. Vomit and fecal spills will be cleaned and disinfected promptly.

Dietary:

During an outbreak for GI infections all resident's dinnerware should be paper only. If any dinnerware goes back to the kitchen, it must be washed with bleach solution.

The LTC facility may refer to the internal infection control manual as well as additional guidance from CDPH publication *"Recommendations for the Prevention and Control of Viral Gastroenteritis Outbreaks in California Long Term Care Facilities"*, and advice from the Modoc County Public Health Department.

**REFERENCES:**


Guideline for the Prevention and Control of Norovirus Gastroenteritis Outbreaks in Healthcare Settings (cdc.gov)

General Information about Norovirus | HAI | CDC


**ATTACHMENTS:**

www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/PCofViralGastroenteritisOutbreaks_ADA.pdf

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| REFERENCE # | 8460.24.09 | EFFECTIVE |
| SUBJECT: | CODE YELLOW | REVISED |
| | | REVIEWED |
| DEPARTMENT: | EMERGENCY MANAGEMENT | PRIOR REVISIONS: |

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**PURPOSE:**
The purpose of this policy is having a plan if the facility receives a threat of a bomb at any of the facility locations. ~~to ensure the safety of all patients, visitors and staff of Modoc Medical Center during a bomb threat situation~~

**AUDIENCE:**
Organization Wide

**TERMS/DEFINITION:**
None

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**POLICY:**
It is the policy of Modoc Medical Center (MMC) to ensure the safety of all patients, visitors and staff during a bomb threat situation ~~A bomb threat exists when any communication is received that a bomb or other explosive device has been placed in any public or private place on the Modoc Medical Center facility campus. Modoc Medical Center philosophy in dealing with a threat is to analyze the threat, rather than reacting to it.~~

**PROCEDURE:**

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**Evaluation of the Threat:**
Acting Administrator or Incident Commander (IC) will evaluate the validity of the threat. Most bomb threat calls are hoaxes, and in most cases the objective of the person who calls in a bomb threat is to disrupt business activity.

- If the threat analysis results in a decision to search the premises or to evacuate, a Code Yellow may be declared.

- Should a search of the premises be warranted, or if a suspected explosive device is found, the Acting Administrator or IC will instruct a staff member to announce "Code Yellow" three (3) times over the page system and through the department notification procedure.

Staff Response:
At no time should the hospital staff try to touch a bomb or suspected bomb.

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- Any location may receive anonymous calls regarding the presence of an explosive device within the facility. It is also possible that a potential explosive device may be discovered on the premises without the facility receiving a previous call or warning. This may include the receipt of a suspicious package or letter. While most bomb threats received are usually hoaxes – an attempt to disrupt normal business operations – it is important to take every threat seriously and never disregard a bomb threat.

- If you receive a bomb threat by telephone:
  - Remain calm. Do not hang up.

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- Take note of the caller's exact words. Try to prolong the conversation and get as much information as possible. Use the Bomb Threat Checklist as a guide to record the details of the threat. The Bomb Threat Checklist is in the front cover of the Hospital Preparedness Program red binder.
- Attempt to ascertain when the bomb will detonate; where the device is located; what it looks like and why it was placed at this location.
- When the call is over, complete the Bomb Threat Checklist or similar documentation immediately.
- Notify your supervisor immediately.
- Stand by for further instructions. If it is deemed necessary to search your area or to evacuate, you will be notified by your supervisor or via the overhead paging system.

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- If you receive a written threat:
  - Gather all materials as evidence, including any envelopes or containers.
  - Avoid further handling to prevent the contamination of evidence.
  - Notify your supervisor immediately.

**Evacuation:**

- An evacuation decision should be made only if an actual device has been located or substantiated through clear and reliable information provided by the caller, based on the threat criteria.

- Prior to evacuating, employees should check their immediate work area for suspicious packages or items that do not appear to belong. If a suspicious item is located, they should not touch the item and contact the IC, acting Administrator or supervisor immediately.
  - Make emergency notifications and call 911. Do not use radios or cellular phones.
  - Evacuate the building.
  - Check to see all doors and windows are open to minimize damage from a blast and secondary damage from fragmentation.
  - Establish a minimum 300-foot cordon around, above and below the object.
  - Secure the area until authorities arrive to prevent access to the danger area.
  - Do not permit re-entry into the area until the device has been removed/disarmed and the building has been declared safe for re-entry.
  - Report the location and an accurate description of the object to the appropriate authorities.

Deleted: by landline

- Explosion:
  - If an explosion occurs, initiate Code Triage – Internal.
  - Evacuate the facility immediately, as secondary devices may exist.
  - Call 911.
  - Establish a 1,000-foot cordon around, above and below the blast area.
  - Secure the area until the authorities arrive.
  - Treat injured in an area away from the blast site.
  - Record the names and contact numbers of potential witnesses.
  - Support law enforcement efforts as requested.

Deleted: authorities

**All Clear:**

Click or tap here to enter text.

Deleted: ENVIRONMENT OF CARE

- When it has been determined that there is no evidence of a device in the facility, or the suspected device has been rendered safe, the IC will notify a staff member to announce, "Code Yellow, all clear," three (3) times over the page system.

- All personnel will return to their normal duties.

**REFERENCES:**
Modoc Medical Center Hospital Preparedness Program Emergency Procedures red binder

**ATTACHMENTS:**
None

# ATTACHMENT G

# DEPARTMENTAL POLICY MANUALS

MODOC MEDICAL CENTER
A Public Entity
Healing Hands Close To Home
Last Frontier Healthcare District

# MEMORANDUM

**DATE:** 9/18/2024
**TO:** Board of Directors
**FROM:** Samantha Farr
**SUBJECT:** Review of Departmental Manuals

The following manuals are submitted for your review and approval:

- Canby Clinic Medical and Dental
- Alturas Clinic

Respectfully Submitted,

Samantha Farr
Policy Coordinator

MODOC MEDICAL CENTER
A Public Entity
Healing Hands Close To Home
Last Frontier Healthcare District

# MEMORANDUM

**DATE:** 9/18/24
**TO:** Board of Directors
**FROM:** Jonathan Crnkovic, Clinic Manager – Modoc Medical Clinic
**SUBJECT:** **Review of Departmental Policy Manual**

The following manual is submitted for your review and approval:

- Suicide Threat or Self-Harm via Telephone

This year's revisions/accomplishments:

- Reconciled both Administration copy of Clinic Policy Manual and Clinic owned copy of Policy Manual to be matching as well as reflect the digital version stored in our document management system (Revver)
- Medication Expire Policy submitted and approved
- Benzodiazepines Policy submitted and approved

Follow-up actions to be completed by:

- Cursory review of all current policies to further identify outdated information and bring them to the current standard (IE: Mentions of previous EMRs updated to reflect change to Cerner, Staff assigned to tasks that are no longer with department)
  -Plan for completion by new fiscal year (July 1)

Respectfully Submitted,
Jonathan Crnkovic, Clinic Manager – Modoc Medical Clinic

Jonathan Crnkovic

MODOC MEDICAL CENTER
A Public Entity
Healing Hands Close To Home
Last Frontier Healthcare District

# MEMORANDUM

**DATE:** 9/5/2024
**TO:** Board of Directors
**FROM:** Julie Carrilo
**SUBJECT:** Review of Departmental Policy Manual

The following manual is submitted for your review and approval:
Canby Clinic

This year's revisions/accomplishments:

I just took over this position and I am working on reviewing the manual.

Follow-up actions to be completed by:
I am working on reviewing the manual and will have it reviewed and updated by March 2025.

Respectfully Submitted,

MODOC MEDICAL CENTER
A Public Entity
Healing Hands Close To Home
Last Frontier Healthcare District

# MEMORANDUM

**DATE:** 9/5/2024
**TO:** Board of Directors
**FROM:** Julie Carrilo
**SUBJECT:** Review of Departmental Policy Manual

The following manual is submitted for your review and approval:
Canby Dental Clinic

This year's revisions/accomplishments:

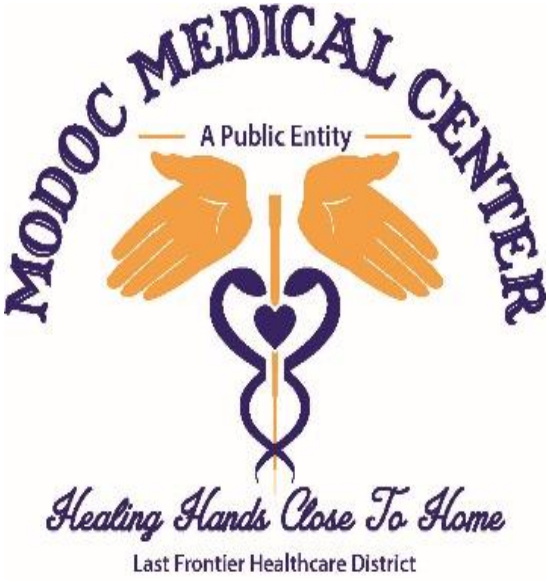
I just took over this position and I am working on reviewing the manual.

Follow-up actions to be completed by:
I am working on reviewing the manual and will have it reviewed and updated by March 2025.

Respectfully Submitted,

# ATTACHMENT H

# LFHD FINANCIAL STATEMENT
# AUGUST 2024
# (unaudited)

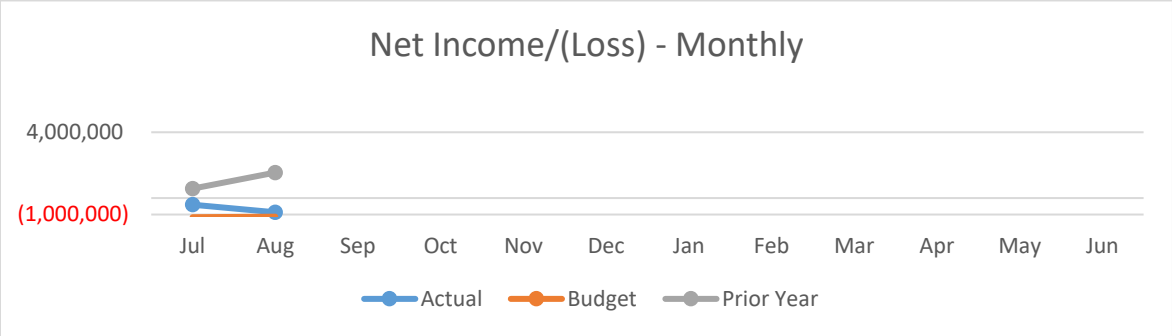



Modoc Medical Center
Financial Narrative
For the Month of August 2024

Prepared by Jin Lin, Finance Director

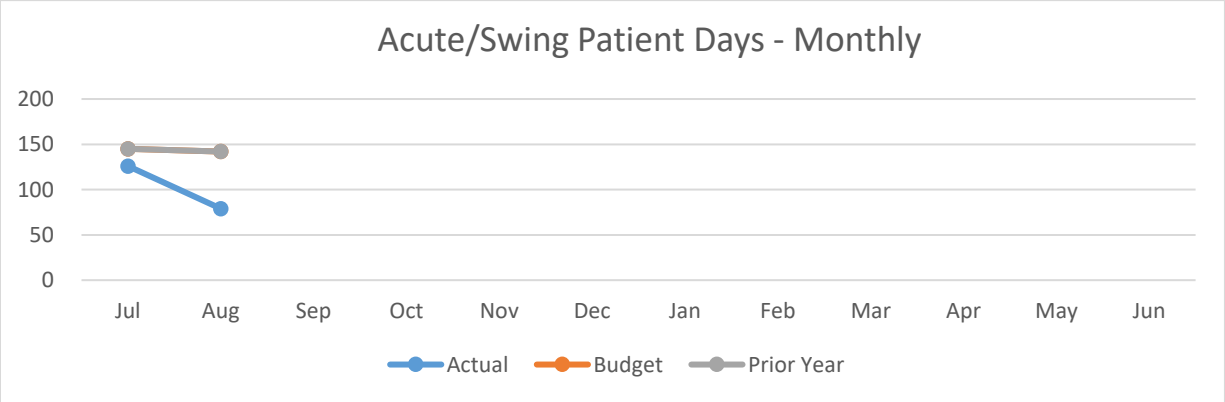
**Summary**

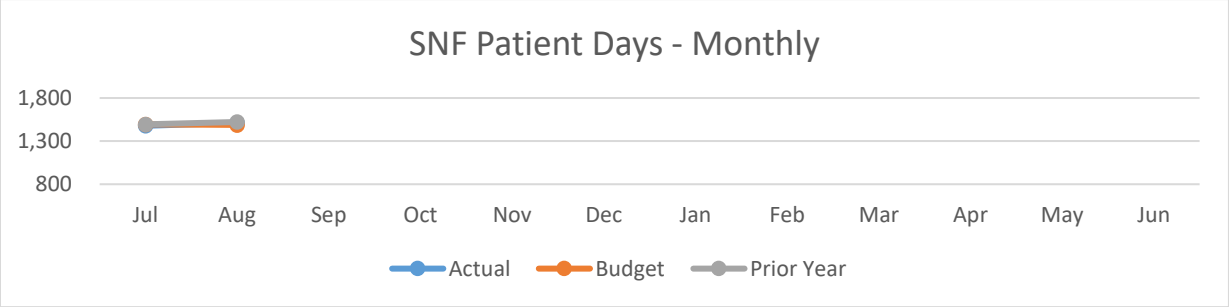
During the month of August, Modoc Medical Center reported a net Loss from operations of $640K showing better than the budgeted loss of $1.043 million. Both Inpatient and outpatient revenue were down from the prior month. Total patient revenue was $4.790 million, a decrease of $354K from the prior month. Net income, including Non-Operating Activity, showed a loss of $865K while was budgeted a loss of $1.131 million.




**Patient Volumes**

Combined Acute Days were under budget for the month by 63 days. The SNF Patient Days increased to 1,511 over budget by 23 days. Overall Inpatient Days were under budget by 40 (1,590 actual vs. 1,630 budget). Outpatient volumes saw all reporting departments over or under budget.

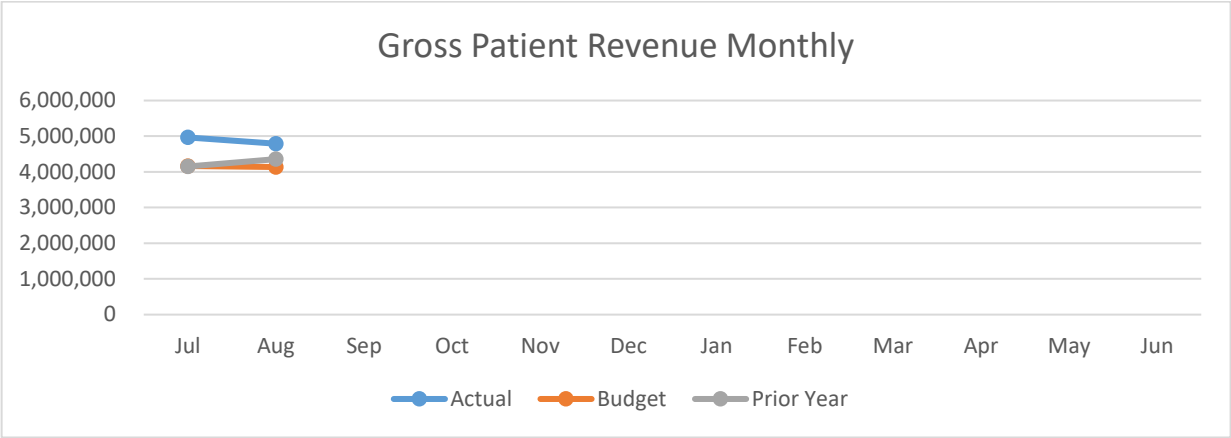


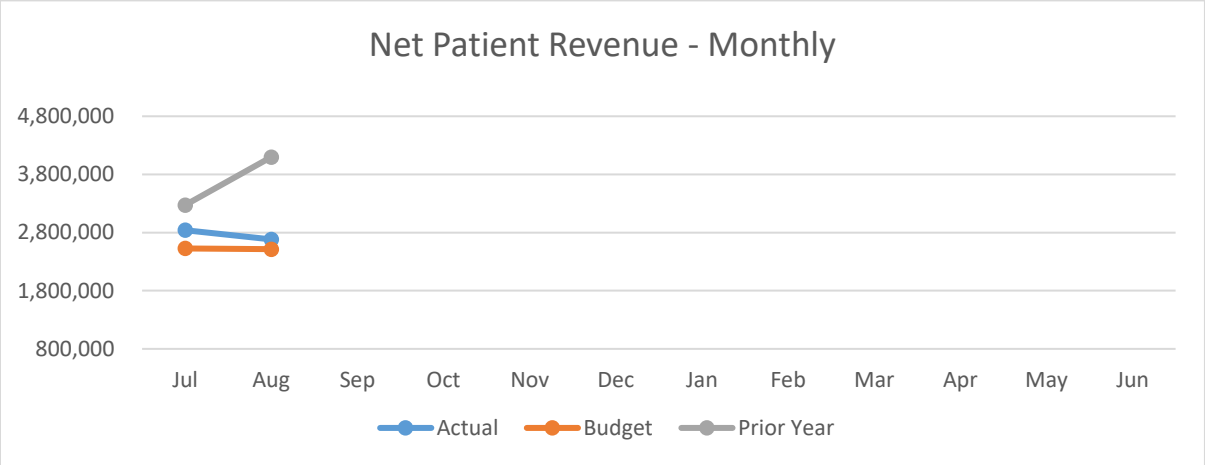




**Revenues**

Gross Patient Revenues were $4.790 million, while was budgeted at $4.136 million. Of this, the Inpatient Revenue was $1.233 million compared to budget at $1.347 million; and Outpatient Revenue

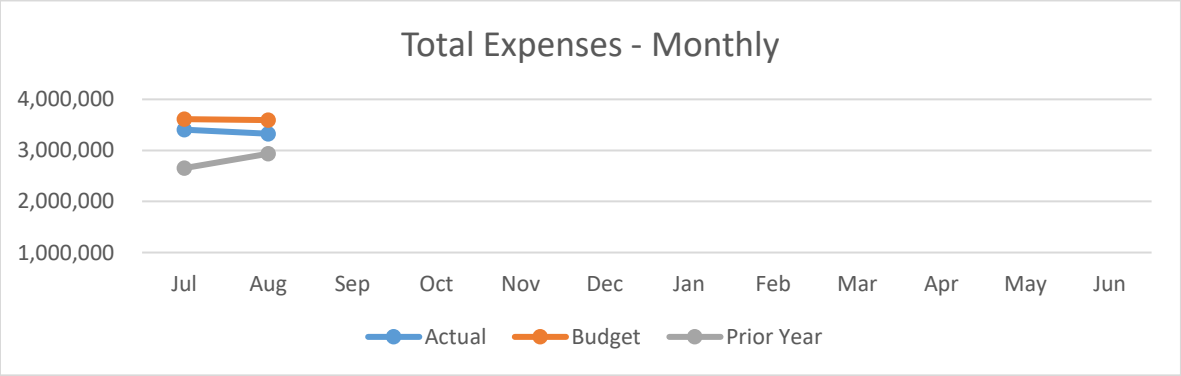
was $3.557 million while budgeted at $2.789 million.  Net Patient Revenue was $2.683 million, while budgeted at $2.515 million.




**Expenses**

Total Operating Expenses were $3.327 million this month, compared to a budget of $3.594 million. Operating expenses were down $84K from the prior month. The largest expenses were in registry and purchased services.




**Non-Operating Activity**

Non-Operating expenses for the month: $80K from accrued USDA loan interest. District Vouchers totaled $4,000. Interest income of $31K, and the loss of $171K from the retail pharmacy. Total non-operating income for the month showed a loss of $225k.

**Balance Sheet**

Cash decreased for August by $5.208 million to $32.817 million. Total assets decreased by $5.840 million during the month, while total liabilities decreased by $5.000 million. Days in Cash totaled 298. Days in AP totaled 16. Days in AR totaled 91. Net AR as a percent of Gross AR increased to 9.83%. The current ratio was 11.

Modoc Medical Center
Income Statement
For the month of August 2024

| | Month | Budget | Variance | Prior Year Month | YTD | Budget | Variance | Prior Year YTD |
|---|---|---|---|---|---|---|---|---|
| Revenues | | | | | | | | |
| Room & Board - Acute | 405,005 | 307,320 | 97,685 | 317,987 | 1,086,028 | 640,907 | 445,121 | 663,479 |
| Room & Board - SNF | 827,753 | 808,728 | 19,025 | 827,207 | 1,651,970 | 1,617,456 | 34,514 | 1,639,654 |
| Ancillary | 0 | 231,223 | (231,223) | 165,072 | 0 | 516,841 | (516,841) | 361,004 |
| Total Inpatient Revenue | 1,232,758 | 1,347,271 | (114,513) | 1,310,266 | 2,737,998 | 2,775,204 | (37,206) | 2,664,137 |
| Outpatient Revenue | 3,557,140 | 2,788,970 | 768,170 | 3,047,136 | 7,195,373 | 5,525,522 | 1,669,851 | 5,844,303 |
| Total Patient Revenue | 4,789,898 | 4,136,241 | 653,657 | 4,357,402 | 9,933,371 | 8,300,726 | 1,632,645 | 8,508,440 |
| Bad Debts (580000,580011,58010 | 753,529 | 136,810 | 616,719 | 26,790 | 1,086,970 | 274,551 | 812,419 | 26,790 |
| Contractuals Adjs | 1,186,979 | 1,437,645 | (250,666) | 231,127 | 2,170,218 | 2,890,912 | (720,694) | 1,109,224 |
| Admin Adjs (5930002-593001) | 166,594 | 46,919 | 119,675 | 0 | 989,966 | 93,382 | 896,584 | 0 |
| Total Revenue Deductions | 2,107,102 | 1,621,374 | 485,728 | 257,917 | 4,247,154 | 3,258,845 | 988,309 | 1,136,014 |
| Net Patient Revenue | 2,682,796 | 2,514,867 | 167,929 | 4,099,485 | 5,686,217 | 5,041,881 | 644,336 | 7,372,426 |
| *% of Charges* | *56.0%* | *60.8%* | *-4.8%* | *94.1%* | *57.2%* | *60.7%* | *-3.5%* | *86.6%* |
| Other Revenue | 4,213 | 35,025 | (30,812) | 214,711 | 41,678 | 57,550 | (15,872) | 237,690 |
| Total Net Revenue | 2,687,009 | 2,549,892 | 137,117 | 4,314,196 | 5,727,895 | 5,099,431 | 628,464 | 7,610,116 |
| Expenses | | | | | | | | |
| Salaries | 1,437,249 | 1,648,354 | (211,105) | 1,410,174 | 2,965,112 | 3,293,415 | (328,303) | 2,722,827 |
| Benefits and Taxes | 289,812 | 352,578 | (62,767) | 288,143 | 620,940 | 704,789 | (83,849) | 571,374 |
| Registry | 339,927 | 318,534 | 21,393 | 200,472 | 586,106 | 637,068 | (50,963) | 364,477 |
| Professional Fees | 382,442 | 384,194 | (1,752) | 326,918 | 850,072 | 768,415 | 81,657 | 572,066 |
| Purchased Services | 182,613 | 190,795 | (8,183) | 143,964 | 284,799 | 347,705 | (62,906) | 370,627 |
| Supplies | 287,384 | 286,345 | 1,039 | 208,947 | 547,636 | 617,283 | (69,647) | 320,111 |
| Repairs and Maint | 33,967 | 29,499 | 4,468 | 32,333 | 69,929 | 65,248 | 4,681 | 53,305 |
| Lease and Rental | 4,219 | 3,836 | 383 | 3,465 | 8,748 | 7,672 | 1,076 | 7,114 |
| Utilities | 65,094 | 57,228 | 7,866 | 48,744 | 113,232 | 114,456 | (1,224) | 101,691 |
| Insurance | 43,552 | 42,779 | 773 | 16,578 | 87,104 | 85,558 | 1,546 | 18,551 |
| Depreciation | 177,549 | 172,980 | 4,569 | 175,544 | 355,495 | 345,961 | 9,534 | 351,790 |
| Other | 83,264 | 106,687 | (23,423) | 79,770 | 151,373 | 218,848 | (67,475) | 134,078 |
| Total Operating Expenses | 3,327,072 | 3,593,810 | (266,738) | 2,935,052 | 6,640,544 | 7,206,418 | (565,874) | 5,588,011 |
| Income from Operations | (640,063) | (1,043,918) | 403,856 | 1,379,144 | (912,649) | (2,106,986) | 1,194,338 | 2,022,105 |
| Property Tax Revenue | 0 | (3,446) | 3,446 | (2,453) | 0 | (6,892) | 6,892 | (4,969) |
| Interest Income | 30,566 | 180 | 30,386 | 282,246 | 138,018 | 360 | 137,658 | 320,788 |
| Interest Expense | (79,713) | (79,555) | (158) | (85,120) | (159,687) | (159,110) | (577) | (169,391) |
| Retail Pharmacy Net Activity | (171,454) | 0 | (171,454) | 0 | (161,644) | 0 | (161,644) | 0 |
| District Vouchers and Other | (4,090) | (4,151) | 60 | (23,391) | (13,937) | (22,329) | 8,391 | (44,062) |
| Other Non-Operating Income | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Non-Operating Revenue | (224,691) | (86,972) | (137,720) | 171,282 | (197,250) | (187,971) | (9,279) | 102,366 |
| Net Income/(Loss) | (864,754) | (1,130,890) | 266,136 | 1,550,426 | (1,109,899) | (2,294,957) | 1,185,058 | 2,124,471 |
| EBIDA | (607,492) | (878,355) | 270,862 | 1,811,090 | (594,717) | (1,789,886) | 1,195,169 | 2,645,652 |
| Operating Margin % | -23.8% | -40.9% | 17.1% | 32.0% | -15.9% | -41.3% | 25.4% | 26.6% |
| Net Margin % | -32.2% | -44.4% | 12.2% | 35.9% | -19.4% | -45.0% | 25.6% | 27.9% |
| EBIDA Margin % | -22.6% | -34.4% | 11.8% | 42.0% | -10.4% | -35.1% | 24.7% | 34.8% |

Modoc Medical Center
Income Statement Trend

| | FYE 2024 YTD | | | July+August | FYE 2025 YTD | | |
|---|---|---|---|---|---|---|---|
| | YTD | Jul-23 | Aug-23 | 2023 | YTD | Jul-24 | Aug-24 |
| Revenues | | | | | | | |
| Room & Board - Acute | 6,016,327 | 345,492 | 317,987 | 663,479 | 1,086,028 | 681,023 | 405,005 |
| Room & Board - SNF | 9,398,699 | 812,447 | 827,207 | 1,639,654 | 1,651,970 | 824,217 | 827,753 |
| Ancillary | 720,857 | 195,932 | 165,072 | 361,004 | 0 | | 0 |
| Total Inpatient Revenue | 16,135,883 | 1,353,871 | 1,310,266 | 2,664,137 | 2,737,998 | 1,505,240 | 1,232,758 |
| Outpatient Revenue | 35,626,433 | 2,797,167 | 3,047,136 | 5,844,303 | 7,195,373 | 3,638,233 | 3,557,140 |
| Total Patient Revenue | 51,762,316 | 4,151,039 | 4,357,402 | 8,508,440 | 9,933,371 | 5,143,473 | 4,789,898 |
| Bad Debts | 5,908,023 | | 26,790 | 26,790 | 1,086,970 | 333,441 | 753,529 |
| Contractual Adjs | 1,109,224 | 878,097 | 231,127 | 1,109,224 | 2,170,218 | 983,239 | 1,186,979 |
| Admin Ajds | 0 | | 0 | 0 | 989,966 | 823,372 | 166,594 |
| Total Revenue Deductions | 7,017,247 | 878,097 | 257,917 | 1,136,014 | 4,247,154 | 2,140,052 | 2,107,102 |
| Net Patient Revenue | 44,745,069 | 3,272,942 | 4,099,485 | 7,372,426 | 5,686,217 | 3,003,421 | 2,682,796 |
| *% of Charges* | *86.4%* | *78.8%* | *94.1%* | *86.6%* | *57.2%* | *58.4%* | *56.0%* |
| Other Revenue | 647,376 | 22,979 | 214,711 | 237,690 | 41,678 | 37,465 | 4,213 |
| Total Net Revenue | 45,392,445 | 3,295,921 | 4,314,196 | 7,610,116 | 5,727,895 | 3,040,886 | 2,687,009 |
| Expenses | | | | | | | |
| Salaries | 16,387,304 | 1,312,653 | 1,410,174 | 2,722,827 | 2,965,112 | 1,527,863 | 1,437,249 |
| Benefits and Taxes | 3,576,544 | 283,231 | 288,143 | 571,374 | 620,940 | 331,128 | 289,812 |
| Registry | 3,280,739 | 164,005 | 200,472 | 364,477 | 586,106 | 246,179 | 339,927 |
| Professional Fees | 5,671,331 | 245,148 | 326,918 | 572,066 | 850,072 | 467,629 | 382,442 |
| Purchased Services | 1,930,188 | 226,663 | 143,964 | 370,627 | 284,799 | 102,186 | 182,613 |
| Supplies | 3,442,469 | 111,164 | 208,947 | 320,111 | 645,562 | 358,177 | 287,384 |
| Repairs and Maint | 304,223 | 20,972 | 32,333 | 53,305 | 69,929 | 35,962 | 33,967 |
| Lease and Rental | 37,453 | 3,649 | 3,465 | 7,114 | 8,748 | 4,529 | 4,219 |
| Utilities | 551,752 | 52,947 | 48,744 | 101,691 | 113,232 | 48,137 | 65,094 |
| Insurance | 459,775 | 1,973 | 16,578 | 18,551 | 87,104 | 43,552 | 43,552 |
| Depreciation | 2,094,280 | 176,246 | 175,544 | 351,790 | 355,495 | 177,946 | 177,549 |
| Other | 1,014,684 | 54,308 | 79,770 | 134,078 | 151,373 | 68,109 | 83,264 |
| Total Operating Expenses | 38,750,742 | 2,652,959 | 2,935,052 | 5,588,011 | 6,738,470 | 3,411,398 | 3,327,072 |
| Income from Operations | 6,641,703 | 642,962 | 1,379,144 | 2,022,105 | (1,010,574) | (370,512) | (640,063) |
| Property Tax Revenue | 2,232,447 | (2,516) | (2,453) | (4,969) | 0 | 0 | 0 |
| Interest Income | 1,266,830 | 38,542 | 282,246 | 320,788 | 138,018 | 107,452 | 30,566 |
| Interest Expense | (975,125) | (84,271) | (85,120) | (169,391) | (159,687) | (79,974) | (79,713) |
| Gain/Loss on Asset Disposal/Forte | 0 | 0 | 0 | 0 | (63,718) | 107,736 | (171,454) |
| Retail Pharmacy Net Activity | 105,803 | (20,671) | (23,391) | (44,062) | (13,937) | (9,847) | (4,090) |
| Other Non-Operating Income | 156,533 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Non-Operating Revenue | 2,786,488 | (68,916) | 171,282 | 102,366 | (99,324) | 125,367 | (224,691) |
| Net Income | 9,428,191 | 574,046 | 1,550,426 | 2,124,471 | (1,109,898) | (245,145) | (864,754) |
| EBIDA | 12,497,596 | 834,563 | 1,811,090 | 2,645,652 | (594,717) | 12,775 | (607,492) |
| Operating Margin % | 14.6% | 19.5% | 32.0% | 26.6% | -17.6% | -12.2% | -23.8% |
| Net Margin % | 20.8% | 17.4% | 35.9% | 27.9% | -19.4% | -8.1% | -32.2% |
| EBIDA Margin % | 27.5% | 25.3% | 42.0% | 34.8% | -10.4% | 0.4% | -22.6% |

Modoc Medical Center
Balance Sheet
For the month of August 2024

| | Unaudited 8/31/2024 | Unaudited 7/31/2024 | Unaudited 24-Jun | Unaudited 24-May | Unaudited 24-Apr | Unaudited 24-Mar | Unaudited 24-Feb | Unaudited 24-Jan | Unaudited 23-Dec | Unaudited 23-Nov | Unaudited 23-Jul |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cash | 2,336,433 | 2,365,865 | 2,040,226 | 1,461,100 | 1,475,140 | 2,524,085 | 677,751 | 1,121,545 | 1,395,384 | 326,804 | 834,261 |
| Investments | 29,258,720 | 34,438,664 | 35,207,420 | 41,068,608 | 23,539,822 | 21,514,382 | 21,659,450 | 29,504,053 | 31,271,417 | 33,414,624 | 34,723,012 |
| Designated Funds | 1,222,069 | 1,220,579 | 1,218,830 | 1,220,821 | 915,998 | 917,895 | 918,356 | 917,902 | 913,758 | 914,608 | 621,067 |
| Total Cash | 32,817,221 | 38,025,108 | 38,466,476 | 43,750,529 | 25,930,959 | 24,956,361 | 23,255,557 | 31,543,500 | 33,580,560 | 34,656,036 | 36,178,340 |
| Gross Patient AR | 14,384,129 | 15,951,519 | 17,014,906 | 18,067,468 | 19,104,506 | 20,642,241 | 20,663,365 | 19,174,034 | 17,032,707 | 15,278,904 | 12,942,701 |
| Allowances | (9,053,140) | (10,459,358) | (10,896,501) | (10,475,514) | (10,817,046) | (10,055,688) | (10,249,085) | (11,234,472) | (9,294,158) | (7,977,587) | (5,794,697) |
| Net Patient AR | 5,330,989 | 5,492,161 | 6,118,405 | 7,591,954 | 8,287,460 | 10,586,553 | 10,414,280 | 7,939,562 | 7,738,548 | 7,301,317 | 7,148,004 |
| *% of Gross* | *37.1%* | *34.4%* | *36.0%* | *42.0%* | *43.4%* | *51.3%* | *50.4%* | *41.4%* | *45.4%* | *47.8%* | *55.2%* |
| Third Party Receivable | 151,108 | 408,396 | 610,819 | 404,549 | 14,256,512 | 13,564,567 | 12,571,039 | 151,107 | 151,107 | 151,107 | 472,166 |
| Other AR | 564,585 | 744,835 | 601,047 | 438,491 | 379,774 | 504,211 | 554,889 | 475,283 | 539,141 | 428,029 | 479,695 |
| Inventory | 485,570 | 451,317 | 474,741 | 464,974 | 480,896 | 456,600 | 425,161 | 405,115 | 406,575 | 413,036 | 253,513 |
| Prepaids | 635,005 | 678,955 | 729,187 | 477,478 | 440,264 | 522,783 | 522,483 | 548,118 | 578,026 | 569,994 | 296,980 |
| Total Current Assets | 39,984,478 | 45,800,772 | 47,000,675 | 53,127,975 | 49,775,864 | 50,591,075 | 47,743,409 | 41,062,685 | 42,993,958 | 43,519,520 | 44,828,698 |
| Land | 713,540 | 713,540 | 713,540 | 713,540 | 713,540 | 713,540 | 713,540 | 713,540 | 713,540 | 713,540 | 713,540 |
| Bldg & Improvements | 47,326,806 | 47,326,806 | 47,326,806 | 47,326,806 | 47,326,806 | 47,326,806 | 47,326,806 | 47,326,806 | 47,326,806 | 47,326,806 | 47,326,806 |
| Equipment | 12,927,245 | 12,927,245 | 12,927,245 | 12,927,244 | 12,927,245 | 12,927,245 | 12,814,345 | 12,814,345 | 12,814,345 | 12,814,345 | 12,618,550 |
| Construction In Progress | 20,568,264 | 20,414,450 | 15,128,909 | 12,831,246 | 10,112,006 | 9,194,159 | 9,227,542 | 8,459,503 | 8,439,529 | 7,932,196 | 7,125,575 |
| Fixed Assets | 81,535,855 | 81,382,041 | 76,096,500 | 73,798,836 | 71,079,597 | 70,161,750 | 70,082,233 | 69,314,194 | 69,294,220 | 68,786,887 | 67,784,471 |
| Accum Depreciation | (19,195,631) | (19,017,884) | (18,839,740) | (18,666,588) | (18,487,648) | (18,314,480) | (18,135,539) | (17,969,358) | (17,791,715) | (17,612,910) | (16,919,573) |
| Net Fixed Assets | 62,340,224 | 62,364,157 | 57,256,760 | 55,132,248 | 52,591,949 | 51,847,270 | 51,946,694 | 51,344,836 | 51,502,505 | 51,173,977 | 50,864,898 |
| Other Assets | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Assets | 102,324,702 | 108,164,929 | 104,257,435 | 108,260,223 | 102,367,813 | 102,438,345 | 99,690,103 | 92,407,521 | 94,496,462 | 94,693,497 | 95,693,596 |
| Accounts Payable | 1,739,151 | 6,896,917 | 7,066,391 | 4,301,989 | 1,783,216 | 1,554,387 | 1,591,413 | 1,485,577 | 1,416,707 | 1,540,663 | 1,110,854 |
| Accrued Payroll | 1,329,161 | 1,252,679 | 1,243,183 | 1,114,355 | 1,435,404 | 1,278,546 | 1,232,410 | 1,073,671 | 1,031,976 | 905,124 | 1,090,317 |
| Patient Trust Accounts | 11,302 | 10,067 | 8,622 | 8,435 | 8,420 | 8,133 | 7,712 | 7,422 | 7,367 | 7,220 | 17,479 |
| Third Party Payables | 480,000 | 480,000 | 480,000 | 480,000 | 480,000 | 480,000 | 480,000 | 480,000 | 480,000 | 480,000 | 480,000 |
| Accrued Interest | | | | | | | | | | | |
| Other Current Liabilities/Accrue | 170,349 | 90,794 | 487,290 | 406,605 | 321,122 | 245,228 | 165,429 | 89,790 | 485,158 | 405,474 | 84,157 |
| Total Current Liabilities | 3,729,963 | 8,730,456 | 9,285,486 | 6,311,385 | 4,028,162 | 3,566,294 | 3,476,964 | 3,136,460 | 3,421,208 | 3,338,481 | 2,782,806 |
| Long Term Liabilities | 32,101,000 | 32,101,000 | 32,640,000 | 32,640,000 | 32,640,000 | 32,640,000 | 32,640,000 | 32,640,000 | 32,640,000 | 32,640,000 | 32,640,000 |
| Total Liabilities | 35,830,963 | 40,831,456 | 41,925,486 | 38,951,385 | 36,668,162 | 36,206,294 | 36,116,964 | 35,776,460 | 36,061,208 | 35,978,481 | 35,422,806 |
| Fund Balance | 59,696,743 | 59,696,743 | 59,696,743 | 59,696,743 | 59,696,743 | 59,696,743 | 59,696,743 | 59,696,743 | 59,696,743 | 59,696,743 | 59,696,743 |
| Current Year Income/(Loss) | (1,109,899) | (245,145) | 8,001,526 | 9,612,096 | 6,002,909 | 6,535,309 | 3,876,397 | -3,065,681 | -1,261,488 | -981,727 | 574,046 |
| Total Equity | 58,586,844 | 59,451,598 | 67,698,269 | 69,308,838 | 65,699,652 | 66,232,052 | 63,573,140 | 56,631,062 | 58,435,254 | 58,715,016 | 60,270,789 |
| Total Liabilities and Equity | 94,417,807 | 100,283,054 | 109,623,755 | 108,260,223 | 102,367,813 | 102,438,346 | 99,690,103 | 92,407,522 | 94,496,462 | 94,693,497 | 95,693,595 |
| Days in Cash | 298 | 346 | 350 | 412 | 244 | 239 | 223 | 303 | 322 | 333 | 347 |
| Days in AR (Gross) | 91 | 101 | 107 | 108 | 114 | 133 | 148 | 137 | 122 | 109 | 93 |
| Days in AP | 16 | 63 | 64 | 40 | 17 | 14 | 15 | 14 | 13 | 14 | 10 |
| Current Ratio | 10.72 | 5.25 | 5.06 | 8.42 | 12.36 | 14.19 | 13.73 | 13.09 | 12.57 | 13.04 | 16.11 |

## STATEMENT OF CASH FLOWS

**August-24**

| | CURRENT MONTH | August | July | FISCAL YEAR YTD | | |
|---|---|---|---|---|---|---|
| **CASH FLOWS FROM OPERATING ACTIVITIES** | | | | | | |
| NET INCOME | -864,754 | | | -1,109,899 | | |
| **ADJUSTMENTS TO RECONCILE NET INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES** | | | | | | |
| DEPRECIATION EXPENSE | 177,747 | 19,195,631 | 19,017,884 | 422,892 | 19,195,631 | 18,772,739 |
| CHANGE IN PATIENT ACCOUNTS RECEIVABLE | 161,172 | 5,330,989 | 5,492,161 | 161,172 | 5,330,989 | 5,492,161 |
| CHANGE IN OTHER RECEIVABLES | 437,538 | 715,693 | 1,153,231 | 437,538 | 715,693 | 1,153,231 |
| CHANGE IN INVENTORIES | -9,232 | 485,570 | 476,338 | -9,232 | 485,570 | 476,338 |
| CHANGE IN PREPAID EXPENSES | 43,950 | 635,005 | 678,955 | 43,950 | 635,005 | 678,955 |
| CHANGE IN ACCOUNTS PAYABLE | -5,157,766 | 1,739,151 | 6,896,917 | -5,157,766 | 1,739,151 | 6,896,917 |
| CHANGE IN ACCURED EXPENSES PAYABLE | 79,555 | 170,349 | 90,794 | 79,555 | 170,349 | 90,794 |
| CHANGE IN ACCRUED SALARIES AND RELATED TAXES | 76,482 | 1,329,161 | 1,252,679 | 76,482 | 1,329,161 | 1,252,679 |
| CHANGE IN OTHER PAYABLES | 0 | 480,000 | 480,000 | 0 | 480,000 | 480,000 |
| NET CASH PROVIDED (USED) BY OPERATING ACTIVITIES | -4,190,554 | | | -3,945,409 | | |
| **CASH FLOWS FROM INVESTMENT ACTIVITIES** | | | | | | |
| PURCHASE OF EQUIPMENT/CIP | -153,814 | 81,535,855 | 81,382,041 | -153,814 | 81,535,855 | 81,382,041 |
| CUSTODIAL HOLDINGS | 1,235 | 11,302 | 10,067 | 1,235 | 11,302 | 10,067 |
| NET CASH PROVIDED (USED) BY INVESTING ACTIVITIES | -152,579 | | | -152,579 | | |
| **CASH FROM FINANCING ACTIVITIES** | | | | | | |
| | 0 | 32,101,000 | 32,101,000 | 0 | 32,101,000 | 32,101,000 |
| NET CASH PROVIDED (USED) BY FINANCING ACTIVITIES | 0 | | | 0 | | |
| CASH AT BEGINNING OF PERIOD | 38,466,476 | | | 38,466,476 | | |
| NET INCREASE (DECREASE) IN CASH | -5,207,887 | | | -5,207,887 | | |
| CASH AT END OF PERIOD | 33,258,589 | | | 33,258,589 | | |
| | | | | 0 | | |

# MODOC MEDICAL CENTER
## "FULL TIME EQUIVALENT REPORT"
Twelve Months Ending: August 31, 2024

| Department | Aug-24 | Jul-24 | Jun-24 | May-24 | Apr-24 | Mar-24 | Feb-24 | Jan-24 | Dec-23 | Nov-23 | Oct-23 | Sep-23 | 12 Mo Ave | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Med / Surg | 15.30 | 15.20 | 16.11 | 16.35 | 16.08 | 15.04 | 14.57 | 11.56 | 15.61 | 12.59 | 13.97 | 14.64 | 14.75 | 0.10 | 0.01 |
| Comm Disease Care | | | | - | | | | | | | | | 0.00 | 0.00 | #DIV/0! |
| Swing Beds | | | | | | | | | | | | | #DIV/0! | 0.00 | #DIV/0! |
| Long Term - SNF | 55.09 | 51.19 | 56.39 | 54.00 | 54.30 | 56.28 | 51.60 | 49.47 | 52.18 | 45.23 | 51.45 | 52.83 | 52.50 | 3.90 | 0.07 |
| Emergency Dept | 12.19 | 10.73 | 11.94 | 12.36 | 9.94 | 10.47 | 9.98 | 9.87 | 12.52 | 9.5 | 10.89 | 10.93 | 10.98 | 1.46 | 0.12 |
| Ambulance - Alturas | 11.60 | 10.12 | 10.24 | 10.74 | 10.69 | 11.34 | 10.56 | 12.07 | 11.82 | 11.09 | 11.46 | 11.82 | 11.13 | 1.48 | 0.13 |
| Clinic | 18.57 | 18.61 | 16.40 | 17.04 | 16.62 | 19.67 | 22.04 | 19.76 | 20.74 | 20.51 | 21.20 | 20.46 | 19.30 | -0.04 | (0.00) |
| Canby Clinic | 8.03 | 7.46 | 6.27 | 7.38 | 7.45 | 6.95 | 7.58 | 7.95 | 7.57 | 7.56 | 9.17 | 7.69 | 7.59 | 0.57 | 0.07 |
| Canby Dental | 5.24 | 3.53 | 3.84 | 3.05 | 4.18 | 3.68 | 2.99 | 2.87 | 3.51 | 2.82 | 3.19 | 4.21 | 3.59 | 1.71 | 0.33 |
| Surgery | 3.92 | 4.25 | 4.01 | 4.15 | 4.05 | 4.13 | 4.65 | 3.65 | 3.76 | 4.33 | 4.00 | 3.56 | 4.04 | -0.33 | (0.08) |
| IRR | | | | - | | | | | | | | | 0.00 | 0.00 | #DIV/0! |
| Lab | 8.76 | 9.05 | 10.10 | 10.77 | 9.36 | 9.38 | 8.56 | 7.25 | 7.38 | 8.84 | 11.23 | 9.06 | 9.15 | -0.29 | (0.03) |
| Radiology | 4.96 | 3.91 | 3.47 | 3.48 | 3.12 | 3.96 | 4.28 | 4.2 | 4.45 | 4.78 | 5.67 | 6.27 | 4.38 | 1.05 | 0.21 |
| MRI | | | | - | | | | | | | | | 0.00 | 0.00 | #DIV/0! |
| Ultrasound | 1.33 | 1.32 | 1.31 | 1.31 | 1.32 | 1.39 | 1.50 | 1.28 | 1.49 | 1.36 | 1.28 | 1.15 | 1.34 | 0.01 | 0.01 |
| CT | 1.69 | 1.76 | 1.86 | 1.66 | 1.08 | 1.61 | 0.87 | 1.4 | 1.46 | 1.69 | 1.52 | 1.57 | 1.53 | -0.07 | (0.04) |
| Pharmacy | 1.77 | 1.93 | 1.84 | 2.16 | 2.12 | 2.05 | 1.91 | 1.38 | 2.04 | 2.16 | 1.93 | 1.05 | 1.86 | -0.16 | (0.09) |
| Physical Therapy | 6.99 | 6.51 | 8.22 | 6.24 | 6.29 | 7.65 | 4.88 | 3.72 | 4.64 | 5.12 | 4.20 | 5.08 | 5.80 | 0.48 | 0.07 |
| Other PT | | | | - | | | | | | | | | 0.00 | 0.00 | #DIV/0! |
| Dietary | 12.01 | 11.76 | 11.02 | 11.22 | 11.16 | 11.83 | 11.74 | 11.63 | 13.04 | 13.11 | 13.79 | 11.94 | 12.02 | 0.25 | 0.02 |
| Dietary Acute | 8.26 | 7.81 | 7.24 | 7.74 | 7.91 | 7.22 | 7.61 | 7.82 | 7.07 | 7.27 | 6.56 | 6.56 | 7.42 | 0.45 | 0.05 |
| Laundry | 1.01 | 0.93 | 0.96 | 0.99 | 1.00 | 0.95 | 1.07 | 1.01 | 1.08 | 0.97 | 1.04 | 1.01 | 1.00 | 0.08 | 0.08 |
| Activities | 3.68 | 3.85 | 4.23 | 3.72 | 3.54 | 3.47 | 3.56 | 3.54 | 3.62 | 3.64 | 3.78 | 3.55 | 3.68 | -0.17 | (0.05) |
| Social Services | 1.97 | 1.97 | 2.04 | 2.05 | 1.98 | 1.75 | 2.06 | 2.04 | 2.32 | 1.99 | 1.94 | 2.1 | 2.02 | 0.00 | - |
| Purchasing | 3.07 | 3.26 | 2.96 | 3.19 | 3.15 | 3.11 | 3.06 | 2.99 | 3.02 | 3.19 | 2.98 | 2.97 | 3.08 | -0.19 | (0.06) |
| Housekeeping | 13.54 | 13.45 | 13.24 | 13.42 | 13.71 | 11.76 | 11.77 | 12.93 | 13.65 | 13.56 | 13.49 | 12.58 | 13.09 | 0.09 | 0.01 |
| Maintenance | 6.05 | 6.02 | 5.95 | 5.95 | 6.01 | 6.02 | 6.03 | 5.9 | 5.95 | 5.9 | 5.99 | 5.98 | 5.98 | 0.03 | 0.00 |
| Data Processing | 4.32 | 3.65 | 4.20 | 4.65 | 4.69 | 4.45 | 3.94 | 3.94 | 4.01 | 4.43 | 5.08 | 3.65 | 4.25 | 0.67 | 0.16 |
| General Accounting | 3.51 | 3.84 | 3.85 | 3.37 | 3.14 | 3.62 | 4.07 | 4.1 | 4.05 | 4.21 | 4.02 | 4.11 | 3.82 | -0.33 | (0.09) |
| Patient Accounting | 6.13 | 6.88 | 6.78 | 6.26 | 6.22 | 6.2 | 6.87 | 5.96 | 6.33 | 5.2 | 5.36 | 6.13 | 6.19 | -0.75 | (0.12) |
| Administration | 2.73 | 2.46 | 2.69 | 3.10 | 3.41 | 3.12 | 2.75 | 3.12 | 3.35 | 3.33 | 3.53 | 3.52 | 3.09 | 0.27 | 0.10 |
| Human Resources | 2.01 | 2.00 | 2.01 | 1.99 | 1.99 | 2.01 | 2.00 | 2 | 2.00 | 2 | 2.00 | 2 | 2.00 | 0.01 | 0.00 |
| Medical Records | 7.97 | 7.70 | 7.70 | 7.77 | 7.92 | 7.64 | 7.67 | 7.6 | 7.68 | 7.77 | 7.97 | 7.86 | 7.77 | 0.27 | 0.03 |
| Nurse Administration | 3.05 | 3.13 | 2.91 | 3.06 | 3.21 | 3.01 | 2.76 | 3.1 | 2.75 | 2 | 2.45 | 2.07 | 2.79 | -0.08 | (0.03) |
| In-Service | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1 | 1.03 | 1.00 | 1.05 | 1.00 | 1.00 | 1.00 | 1.01 | 0.00 | - |
| Utilization Review | 1.48 | 1.44 | 1.48 | 1.50 | 1.49 | 1.48 | 1.50 | 1.44 | 1.44 | 1.46 | 1.01 | 0.97 | 1.39 | 0.04 | 0.03 |
| Quality Assurance | 0.51 | 0.51 | 0.50 | 0.50 | 0.51 | 0.5 | 0.51 | 0.51 | 0.50 | 0.5 | 1.00 | 1 | 0.59 | 0.00 | - |
| Infection Control | 0.65 | 0.62 | 0.60 | 0.66 | 0.66 | 0.64 | 0.60 | 0.63 | 0.64 | 0.7 | 0.75 | 0.69 | 0.65 | 0.03 | 0.05 |
| Retail Pharmacy | 3.58 | 3.47 | 3.20 | 2.86 | 2.89 | 3.01 | 3.43 | 4.04 | 4.24 | 3.94 | 4.00 | 4.51 | 3.60 | 0.11 | 0.03 |
| *TOTAL* | 241.97 | 231.32 | 236.56 | 235.69 | 232.19 | 236.82 | 230.00 | 221.73 | 236.96 | 223.95 | 238.90 | 234.52 | 233.38 | 10.65 | 0.04 |

2,800.61 August through September

# MODOC MEDICAL CENTER
## "KEY STATISTICS"
Twelve Months Ending, August 31, 2024

| | Aug-24 | | Jul-24 | | Jun-24 | | May-24 | | Apr-24 | | Mar-24 | | Feb-24 | | Jan-24 | | Dec-23 | | Nov-23 | | Oct-23 | | Sep-23 | | FY 25 YTD | FY 24 YTD | 12 Mos. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Act. | Bud. | Act. | Bud. | Act. | Bud. | Act. | Bud. | Act. | Bud. | Act. | Bud. | Act. | Bud. | Act. | Bud. | Act. | Bud. | Act. | Bud. | Act. | Bud. | Act. | Bud. | | | |
| ***Patient-Days*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adults/Peds | 48 | 72 | 90 | 92 | 57 | 81 | 76 | 98 | 137 | 98 | 63 | 100 | 68 | 70 | 72 | 76 | 89 | 126 | 46 | 126 | 62 | 111 | 89 | 119 | 138 | 164 | 901 |
| Swing | 31 | 70 | 36 | 53 | 80 | 26 | 71 | 49 | 89 | 49 | 84 | 52 | 82 | 41 | 43 | 17 | 63 | 47 | 62 | 47 | 88 | 35 | 48 | 15 | 67 | 123 | 735 |
| SNF | 1,511 | 1,488 | 1,478 | 1,484 | 1,301 | 1,495 | 1,446 | 1,472 | 1,463 | 1,472 | 1,550 | 1,536 | 1,413 | 1,339 | 1,464 | 1,494 | 1,469 | 1,240 | 1,437 | 1,240 | 1,534 | 1,256 | 1,466 | 1,241 | 2,989 | 3,017 | 17,641 |
| ***Total "Patient Days"*** | ***1,590*** | ***1,630*** | ***1,604*** | ***1,629*** | ***1,408*** | ***1,602*** | ***1,593*** | ***1,619*** | ***1,689*** | ***1,619*** | ***1,697*** | ***1,688*** | ***1,563*** | ***1,450*** | ***1,579*** | ***1,587*** | ***1,621*** | ***1,413*** | ***1,545*** | ***1,413*** | ***1,684*** | ***1,402*** | ***1,603*** | ***1,375*** | 3,194 | 3,304 | 19,277 |
| ***ADC*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adults/Peds | 1.55 | 2.40 | 2.90 | 3.07 | 1.90 | 2.70 | 2.45 | 3.16 | 4.57 | 3.27 | 2.03 | 3.23 | 2.34 | 2.26 | 2.32 | 2.45 | 2.87 | 4.06 | 1.53 | 4.20 | 2.00 | 3.58 | 2.97 | 3.97 | 2.23 | 2.65 | 2.45 |
| Swing | 1.00 | 2.33 | 1.16 | 1.77 | 1.67 | 0.87 | 2.29 | 1.58 | 2.97 | 1.63 | 2.71 | 1.68 | 2.83 | 1.32 | 1.39 | 0.55 | 2.03 | 1.52 | 2.07 | 1.57 | 2.84 | 1.13 | 1.60 | 0.50 | 1.08 | 1.98 | 2.00 |
| SNF | 48.74 | 49.60 | 47.68 | 49.47 | 48.37 | 49.83 | 46.65 | 47.48 | 48.77 | 49.07 | 50.00 | 49.55 | 48.72 | 43.19 | 47.23 | 48.19 | 47.39 | 40.00 | 47.90 | 41.33 | 49.48 | 40.52 | 48.87 | 41.37 | 48.21 | 48.66 | 47.94 |
| ***Total "Average Daily Census"*** | ***51.29*** | ***54.33*** | ***51.74*** | ***54.30*** | ***46.93*** | ***53.40*** | ***51.39*** | ***52.23*** | ***56.30*** | ***53.97*** | ***54.74*** | ***54.45*** | ***53.90*** | ***46.77*** | ***50.94*** | ***51.19*** | ***52.29*** | ***45.58*** | ***51.50*** | ***47.10*** | ***54.32*** | ***45.23*** | ***53.43*** | ***45.83*** | 51.52 | 53.29 | 52.38 |
| ***ALOS*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adults/Peds | 3.43 | | 3.33 | | 3.35 | | 3.30 | | 7.21 | | 3.32 | | 3.78 | | 4.00 | | 3.71 | | 5.75 | | 3.14 | | 4.94 | | 3.37 | 4.32 | 4.00 |
| Swing | 6.20 | | 6.00 | | 7.14 | | 5.92 | | 8.90 | | 6.40 | | 8.20 | | 5.38 | | 15.75 | | 6.20 | | 44.00 | | 6.86 | | 6.09 | 11.18 | 8.96 |
| ***Admissions*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adults/Peds | 14 | 20 | 27 | 19 | 17 | 16 | 23 | 24 | 19 | 24 | 13 | 25 | 18 | 18 | 18 | 14 | 24 | 25 | 8 | 25 | 18 | 17 | 18 | 18 | 41 | 38 | 225 |
| Swing | 5 | 1 | 6 | 8 | 7 | 6 | 12 | 3 | 10 | 3 | 10 | 4 | 10 | 7 | 8 | 3 | 4 | 6 | 10 | 6 | 2 | 2 | 7 | 3 | 11 | 11 | 82 |
| SNF | 1 | 2 | 4 | 1 | 5 | 2 | 4 | 2 | 1 | 2 | - | 2 | 2 | 3 | - | 4 | 1 | 9 | 2 | 9 | 3 | 1 | 1 | 3 | 5 | 6 | 24 |
| ***Total "Admissions"*** | ***20*** | ***23*** | ***37*** | ***28*** | ***29*** | ***24*** | ***39*** | ***29*** | ***30*** | ***29*** | ***29*** | ***31*** | ***30*** | ***28*** | ***26*** | ***21*** | ***29*** | ***40*** | ***20*** | ***40*** | ***23*** | ***20*** | ***26*** | ***24*** | 57 | 55 | 331 |
| ***Discharges*** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SNF | 2 | | 2 | | 2 | | 6 | | 1 | | 1 | | - | | 1 | | 1 | | 3 | | 2 | | 2 | | 4 | 4 | 25 |
| | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - |
| *Days in Period* | 31 | | 31 | | 30 | | 31 | | 30 | | 31 | | 29 | | 31 | | 31 | | 30 | | 31 | | 30 | | 62 | 62 | 368 |
| | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - |
| ***Amulatory Service Statistics*** | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - |
| Emergency Visits | 525 | 520 | 526 | 468 | 464 | 439 | 552 | 428 | 553 | 428 | 523 | 473 | 427 | 417 | 415 | 460 | 454 | 537 | 406 | 537 | 456 | 527 | 475 | 512 | 1,051 | 1,049 | 5,869 |
| Ambulance Runs Visits | 87 | 73 | 133 | 81 | 81 | 77 | 113 | 68 | 108 | 68 | 101 | 92 | 87 | 64 | 98 | 79 | 88 | 83 | 93 | 83 | 50 | 82 | 79 | 76 | 220 | 160 | 1,107 |
| Clinic Visits | 857 | 1,213 | 956 | 1,021 | 772 | 1,054 | 902 | 895 | 1,329 | 895 | 1,016 | 1,007 | 1,156 | 1,062 | 1,134 | 1,160 | 854 | 935 | 991 | 935 | 950 | 981 | 908 | 941 | 1,813 | 1,918 | 11,632 |
| Canby Clinic Visits | | 269 | 178 | 208 | 301 | 227 | 274 | 185 | 331 | 185 | 217 | 207 | 169 | 195 | 280 | 239 | 218 | 171 | 256 | 171 | 221 | 206 | 204 | 102 | 378 | 487 | 2,949 |
| Canby Dental | 210 | 195 | 163 | - | 171 | 57 | 237 | 40 | 286 | 40 | 200 | 96 | 123 | 170 | 194 | 238 | | 189 | | 189 | 200 | 211 | | 256 | 373 | 203 | 1,661 |
| Observation Admits | 6 | 2 | 4 | 2 | 2 | 8 | 5 | 5 | 5 | 5 | 4 | 7 | 2 | 5 | 3 | 4 | 5 | 3 | 4 | 3 | 5 | 4 | 5 | 3 | 10 | 8 | 50 |
| Observation Care Hours | 192.7 | 89 | 101.4 | 38 | 49.6 | 334 | 160.5 | 298 | 131.2 | 298 | 143.2 | 152 | 53.9 | | 113.8 | 157 | 249.1 | 177 | 132.1 | 177 | 274.8 | | 131.5 | 177 | 294 | 234 | 1,769 |
| | | | | | | | | | | | | | | | | | | - | | | | | | | - | - | - |
| ***Ancillary Services Statistics*** | | | | | | | | | | | | | | | | | | - | | | | | | | - | - | - |
| Surgeries | 2 | 1 | 8 | 2 | 4 | 12 | 8 | 3 | 5 | 3 | 3 | 5 | 14 | 1 | 3 | 2 | 5 | 1 | - | 1 | 3 | 6 | 12 | 7 | 10 | 5 | 54 |
| Endoscopies | 17 | 17 | 18 | 14 | 24 | 22 | 30 | 21 | 19 | 21 | 26 | 13 | 14 | 20 | 23 | 23 | 13 | 17 | 21 | 17 | 22 | 23 | 39 | 26 | 35 | 41 | 268 |
| Surgery & Recover Minutes | 501 | 297 | 946 | 474 | 642 | 498 | 1,064 | 535 | 574 | 535 | 611 | 993 | 666 | 538 | 696 | 774 | 434 | 413 | 462 | 413 | 518 | 809 | 923 | 1,099 | 1,047 | 1,076 | 7,268 |
| Anesthesia Minutes | 565 | 760 | 902 | 905 | 946 | 1,103 | 1,556 | 1,040 | 1,076 | 1,040 | 943 | 1,349 | 1,047 | 871 | 1,052 | 1,088 | 612 | 618 | 745 | 618 | 941 | 842 | 1,579 | 2,192 | 1,487 | 2,291 | 11,697 |
| Laboratory Tests | | 3,917 | 5,209 | 4,928 | 4,112 | 4,554 | 4,832 | 4,992 | 4,914 | 4,992 | 4,148 | 5,336 | 4,980 | 4,355 | 4,697 | 4,730 | 4,759 | 5,194 | 4,236 | 5,194 | 4,005 | 5,437 | 5,042 | 5,492 | 5,299 | 7,739 | 50,161 |
| Radiology-Diagnos Proc | 283 | 278 | 303 | 322 | 300 | 289 | 293 | 260 | 297 | 260 | 254 | 260 | 249 | 298 | 275 | 285 | 253 | 314 | 255 | 314 | 290 | 332 | 273 | 278 | 586 | 536 | 3,354 |
| Ultrasounds Proc | 99 | 88 | 76 | 111 | 102 | 119 | 85 | 121 | 89 | 121 | 61 | 132 | 102 | 104 | 95 | 71 | 58 | 110 | 52 | 110 | 109 | 47 | 133 | 104 | 175 | 188 | 1,047 |
| CT Scans Proc | 167 | 149 | 195 | 146 | 139 | 140 | 173 | 127 | 195 | 127 | 130 | 147 | 163 | 122 | 126 | 112 | 148 | 130 | 133 | 130 | 172 | 182 | 128 | 107 | 362 | 268 | 1,855 |
| MRI Proc | 28 | 18 | 18 | 12 | 26 | 23 | 18 | 30 | - | 30 | 30 | 11 | 18 | 32 | 17 | 14 | 13 | 13 | 15 | 13 | 25 | 17 | 25 | 9 | 46 | 44 | 233 |
| Physical Therapy Sessions | | 745 | | 613 | 375 | 840 | 718 | 729 | 770 | 729 | | 497 | | 597 | | 575 | | 601 | | 601 | 429 | 438 | 536 | 536 | - | 1,273 | 3,973 |
| Retail Pharmacy-Scripts | 2,594 | 2,658 | 2,624 | 2,628 | 2,351 | 2,521 | 2,689 | 2,234 | 2,998 | 2,234 | 2,548 | 2,665 | 2,463 | 2,239 | 2,639 | 2,700 | 2,410 | 2,767 | 2,334 | 2,767 | 2,518 | 2,580 | 2,343 | 2,645 | 5,218 | 4,981 | 30,306 |
| Dietician Consults | | | | - | | - | | - | | | | | | | | | | | | | | | | | - | - | - |

## Modoc Investment Portfolio

**As of September 20, 2024**

| Maturity | Item | Amount | Term | Rate |
|---|---|---|---|---|
| Current | Tbill | $71,622 | 3 mos | 4.000% |
| 10/24/24 | Tbill | $10,200,000 | 3 mos | 4.847% |
| 12/10/24 | Tbill | $11,765,610 | 3 mos | 4.760% |
| | | | | |
| N/A | PB MM | $6,128,535 | | 4.310% |
| N/A | LAIF | $673,830 | | 4.310% |
| | | | | |
| **Total** | | **$28,839,597** | | **4.68%** |