# Spine Institute Overview Fusion Surgical Site Infections

# Spine Cases and Volumes

- Case types:
  - ALIFs, OLIFs, PLIFs, TLIFs
  - Deformity, Adolescent scoliosis
  - ACDFs, PCDFs
  - Spine and brain tumors

- High Complex Spine Population
  - Case Mix Index
    - 4.8 - 5

- Surgical Procedures Performed
  - FY22: 1165 cases
  - FY23: 1543 (378 more cases)
  - FY24: 1074

Specialty based OR Model with dedicated spine rooms and OR team

# Pre-operative Medicine Clinic
# POMC

# POMC Overview

Preoperative Medicine Clinic is designed to optimize patients prior to their elective surgery

- Patients are pre registered  - at least 7 days in advance
- Nurse Practitioners provide a thorough health assessment
    - patient risk factors, A1C, BMI, prior surgical hx, skin assessment, decolonization
        - Patients with an A1C above 8 must be referred to provider
            - Consult with the Diabetes Center may be indicated
- Hospitalist serves as the medical director
- Nurse Navigators provide education to the patient, loved one, SNF/Rehabs
- Standard lab and testing protocols designed from latest literature
- Nurses provide a thorough health assessment geared for anesthesia care
- Collaborative approach with hospitalists, NPS, anesthesia physician lead, lead CRNA, holding room, OR

# POMC Tasks/Patient Education

- Health Assessment
- Past health records/tests
- Lab
- EKG
- Additional Testing if needed
- Screening
- Patient education
- Pre-registration

Education Provided:

- Smoking cessation
- BMI
- Nutrition screening
- SSI prevention
- Diabetes education
- ERAS
- ICOUGH
- Equipment needs before/ after surgery
- Home preparation

Decrease in Day Of Surgery Cancellations
FY23=<3%
FY24=0.4%

# Spine Executive Council

# Spine Executive Council (EC)

**Functions of the Spine Executive Council:**

- A multidisciplinary team of surgeons and service line leaders that co-manage our Institute
- Recommend best practices based on current recommendations and literature to ensure our patients receive the best care with positive outcomes
- Decision makers for the spine program

- 6 Spine surgeons, Executive leaders, OR leaders, Resource Group leader, IP, Quality
- Multiple surgeon groups involved
- Bimonthly meetings
- Reviews
  - SSI data
  - Quality initiatives
  - Policy change requests
  - Operational metrics
  - New product requests and/or changes

# Spine EC Approval Workflow

**Recommendations/Policies Reviewed:**

- Infection Prevention Committee (system and local)
- Quality
- Patient care program
- Protocol and policy changes reviewed..POMC

Approvals:

- EC to MEC (as appropriate)
- Approvals are reviewed at each quarterly Spine Division Meeting
- Memo with current approvals are sent to all spine surgeons with privileges

# Spine EC Approvals

- Anesthesia and Neuromonitoring worked together to see how best to monitor motors and it was discussed that Precedex will no longer be used
- All new product requests will have to be presented to the EC for approval
- Anesthesia will no longer order steroids preoperatively for spine cases

# Fusion Surgical Site Infections Data & Overview

# SSI | Fusion

| Facility | Procedure Month | Surgeon |
|---|---|---|
| All | Multiple values | All |

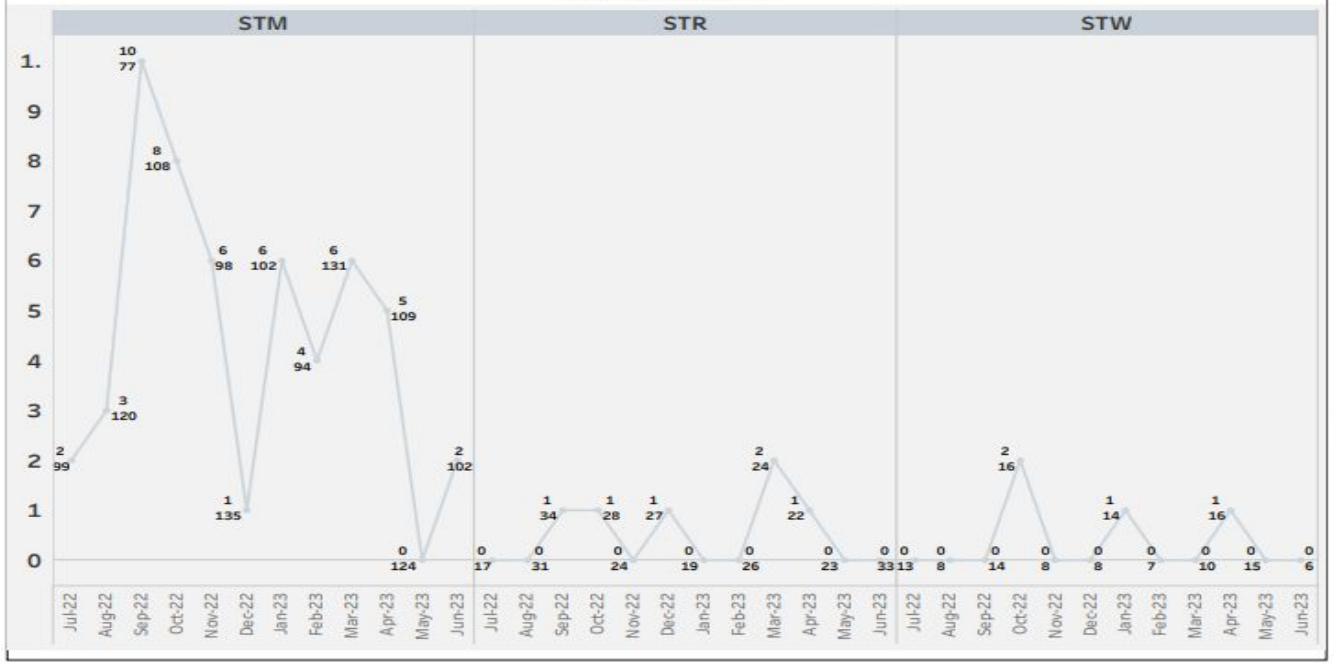
**Risk Adjustment for Expected NHSN SSI variables:** Facility & patient specific variables including gender, diabetes, trauma, ASA score, medical school affiliation*, hospital bed size*, procedure duration, BMI, spinal level, approach

## Fusion SSI | Trend


## Fusion SSI | AST

| | FY21 | FY22 | FY23TD |
|---|---|---|---|
| SIR | 1.478 | 1.675 | 1.677 |
| Inf Count | 46 | 51 | 63 |
| Predicted Inf. Count | 31.122 | 30.500 | 37.566 |
| Total Proc. Counted | 1,541 | 1,422 | 1,742 |
| Infection Rate | 2.99% | 3.58% | 3.62% |

## Fusion SSI | Facility




## Fusion SSI | Facility

| | | STM | STR | STW |
|---|---|---|---|---|
| FY21 | SIR | 1.450 | 0.000 | 2.108 |
| | Inf Count | 35 | 0 | 11 |
| | Predicted Inf. Count | 24.143 | 1.761 | 5.218 |
| | Total Proc. Counted | 1,076 | 181 | 283 |
| | Infection Rate | 3.25% | 0.00% | 3.89% |
| FY22 | SIR | 1.727 | 0.000 | 2.267 |
| | Inf Count | 41 | 0 | 10 |
| | Predicted Inf. Count | 23.777 | 2.311 | 4.412 |
| | Total Proc. Counted | 984 | 205 | 233 |
| | Infection Rate | 3.96% | 0.00% | 4.29% |
| FY23TD | SIR | 1.764 | 1.206 | 1.575 |
| | Inf Count | 53 | 6 | 4 |
| | Predicted Inf. Count | 30.052 | 4.975 | 2.539 |
| | Total Proc. Counted | 1,299 | 308 | 135 |
| | Infection Rate | 4.08% | 1.95% | 2.96% |

## Fusion SSI | Current Month

| | June 2023 | | |
|---|---|---|---|
| | STM | STR | STW |
| SIR | 0.873 | 0.000 | 0.000 |
| Inf Count | 2 | 0 | 0 |
| Predicted Inf. Count | 2.292 | 0.591 | 0.131 |
| Total Proc. Counted | 102 | 33 | 6 |
| Infection Rate | 1.96% | 0.00% | 0.00% |

# SSI | Fusion

| Facility | Procedure Month | Surgeon |
|---|---|---|
| STM | Multiple values | All |

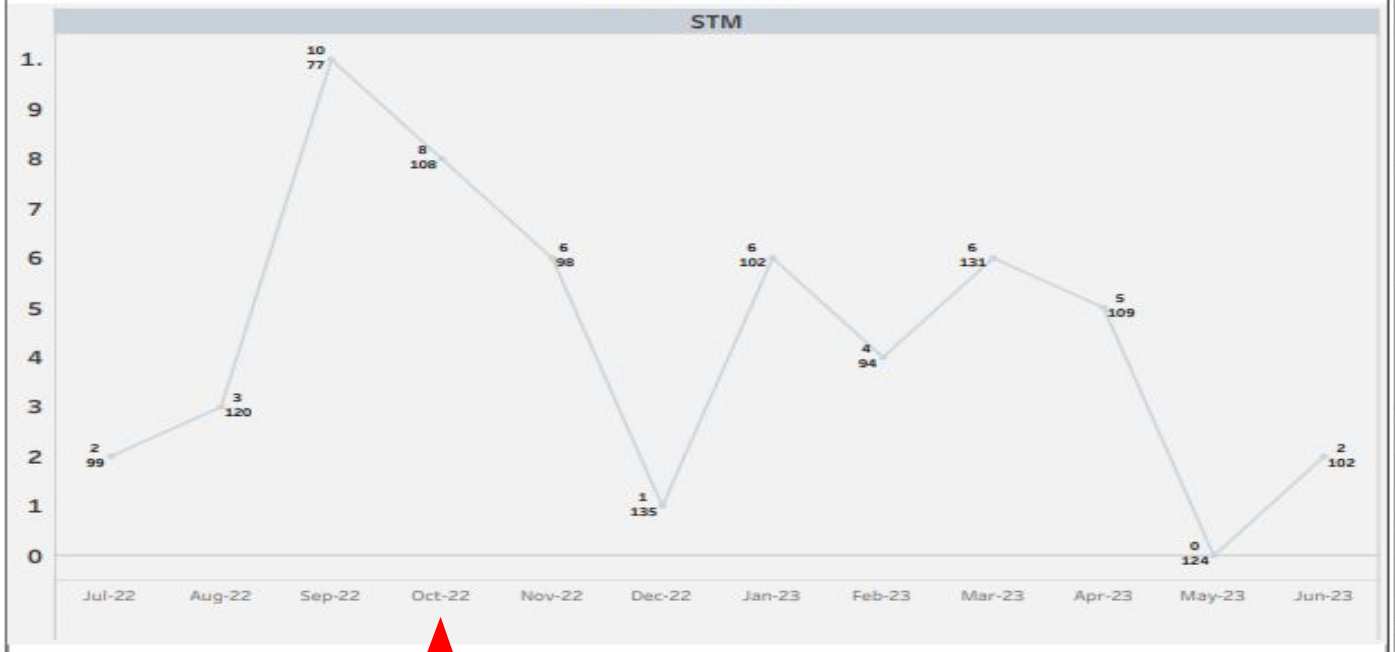
**Risk Adjustment for Expected NHSN SSI variables:** Facility & patient specific variables including gender, diabetes, trauma, ASA score, medical school affiliation*, hospital bed size*, procedure duration, BMI, spinal level, approach

## Fusion SSI | Trend


## Fusion SSI | AST

| | FY21 | FY22 | FY23TD |
|---|---|---|---|
| SIR | 1.450 | 1.675 | 1.764 |
| Inf Count | 35 | 51 | 53 |
| Predicted Inf. Count | 24.143 | 23.777 | 30.052 |
| Total Proc. Counted | 1,541 | 984 | 1,299 |
| Infection Rate | 3.25% | 3.58% | 4.08% |

## Fusion SSI | Facility




## Fusion SSI | Facility

| | | STM |
|---|---|---|
| FY21 | SIR | 1.450 |
| | Inf Count | 35 |
| | Predicted Inf. Count | 24.143 |
| | Total Proc. Counted | 1,076 |
| | Infection Rate | 3.25% |
| FY22 | SIR | 1.727 |
| | Inf Count | 41 |
| | Predicted Inf. Count | 23.777 |
| | Total Proc. Counted | 984 |
| | Infection Rate | 3.96% |
| FY23TD | SIR | 1.764 |
| | Inf Count | 53 |
| | Predicted Inf. Count | 30.052 |
| | Total Proc. Counted | 1,299 |
| | Infection Rate | 4.08% |

## Fusion SSI | Current Month

| | June 2023 STM |
|---|---|
| SIR | 0.873 |
| Inf Count | 2 |
| Predicted Inf. Count | 2.292 |
| Total Proc. Counted | 102 |
| Infection Rate | 1.96% |



**Moved to New OR Tower, 10/10/22**

# Spine SSIs FY 2021 - 2024

| Facility | Timeframe | # SSI | Procedure | Rate | SIR |
|---|---|---|---|---|---|
| Midtown | FY 21 | 35 | 1076 | 3.25 | 1.45 |
| Midtown | FY 22 | 39 | 984 | 3.96 | 1.64 |
| Midtown | FY 23 | 53 | 1299 | 4.08 | 1.76 |
| Midtown | FY 24 | 34 | 1074 | 3.17 | 1.28 |

# FUSION SSI Summary

- 54 Surgical Site Infections, FY23
  - Depth: 46 deep infections, 2 spinal abscess, 1 IAB, 1 Bone, 3 SIP, 1 SIS
  - Approach: 48 posterior, 1 Anterior/Posterior, 1 Lateral, 2 anterior
  - Prior spine surgery:  32 patients (54%)
  - Surgeons: 11 with 6 having ≥ 4 SSI's each and 1 with 3 SSI's
  - Procedure Day: Monday x5, Tuesday x9, Wednesday x11, Thursday x14, Friday x13, Sat/Sun 1 case each
  - OR Suites/# Cases: OR 2 x5, OR 3 x10, OR 4 x 3, OR 5 x9, OR 8 x8, OR 9 x4

- Spine Procedural Levels of the SSI Cases
  - Breakdown by Level
    - 2-5 levels x25 patients
    - 6-10 levels x19 patients
    - 11-17 levels x8

  - 67% (29) cases with 5+ levels
  - 50% involved the thoracolumbar levels
  - 35% involved lumbar levels only

# FUSION SSI Performance Overview

- Pre Operative Medical Clinic (POMC)
  - 74%(40) of patients went to POMC pre-op
    - 80% of these patients had at least 5 days CHG bathing pre-op
  - 26% (14) of patients did not go to POMC pre-op
    - inpatient for ≥5 days prior to surgery x7 patients
    - 2 admitted and surgery on the same day without POMC
    - 7% of these patients received 5 days CHG bathing

- MRSA Preop Screen
  - 7% MRSA positive screen
    - MRSA+ patients receive Mupirocin intranasal x5 days
      - 50% received 10 doses of mupirocin
    - Vancomycin added to pre-op (administered 75%)

- Diabetes 9% of patients overall
  - 60% of the diabetic patients had an A1C >8

- BMI >40: 26% (27)
  - 5 patients with a BMI >50

- Current smoker 29%

# FUSION SSI Performance Overview

- Antibiotics
  - Pre-op Antibiotics
    - 87% (47) received Cefazolin
    - 57% received less than 30 min of incision time
      - Address timeliness of preop antibiotic administration with Anesthesia
  - Post-op Antibiotics
    - 41% (22) received post op antibiotics > 24 hours
      - Up to 10 doses x4
      - 11-15 doses x7
      - 16 - 26 doses x11
        - IP recommendation to discontinue antibiotics within 24 hours of surgical procedure unless infectious process identified
- Steroids - 59% received preop steroids; no steriods in 9 patients
  - 31% (14) of these cases also received steroids post-operatively
    - IP Committee recommended to suspend the routine administration of pre op steroids
- Irrigation - 50% (27) of cases received Neosporin GU irrigation
  - Change in irrigation to 3000 ml saline or betadine mixture for posterior cases, April 2023
- Procedure duration - 54% of the cases had a duration of >4h with max 9 hours 14 minutes

- Post Op Long Term Antibiotics Ordered by Surgeon Code/# Patients
  - B20 x12
  - DO13 x5
  - E23 x2
  - R12 x1
  - S16 x1

# FUSION SSI Performance Overview

- Vancomycin powder - applied in 87% of the cases
- Drains - 91% (49) of patients had drains
  - 73% had the drain in place for ≥5 days
    - IP recommendation to remove the drain as soon as possible; do not discharge patient with drain
- Traffic -
  - IP observations noted frequent unnecessary traffic in and out of the OR
    - OR Manager addressed the issue with education and awareness or practice
    - Door counters were placed on the OR doors
      - Improvement in reduction of traffic
  - Product Representatives: 94% had reps present in the OR
    - 21% had 3 or more reps; 1 surgeon has 5 reps in his procedures
  - 43% of the cases had 15 or more staff involved
    - All persons in the OR are not documented
- EBL - 44% had an EBL >500ml
  - 38% received unit(s) of PRBCs
  - 1 case with EBL 3500ml and received 9u PRBC, 4u FFP and 450ml cell saver
    - TXA regimen approved
- Discharge destination - 46% (25) to a LTC/Rehab Facility
  - Spine Nurse Navigator connected with the LTC and Rehab Facilities in the area and provided education on post op care

# Fusion SSI Pathogens FY23

Gram Positive Bacteria:

- Staphylococcus aureus x8
- MRSA x8
- Coag Negative Staph x6
- Group B Strep x1
- Diphtheroids x3
- P acne x4
- Staphylococcus capitis x1
- Staphylococcus lugdunensis x2
- Enterococcus faecalis x1
- Staph viridans

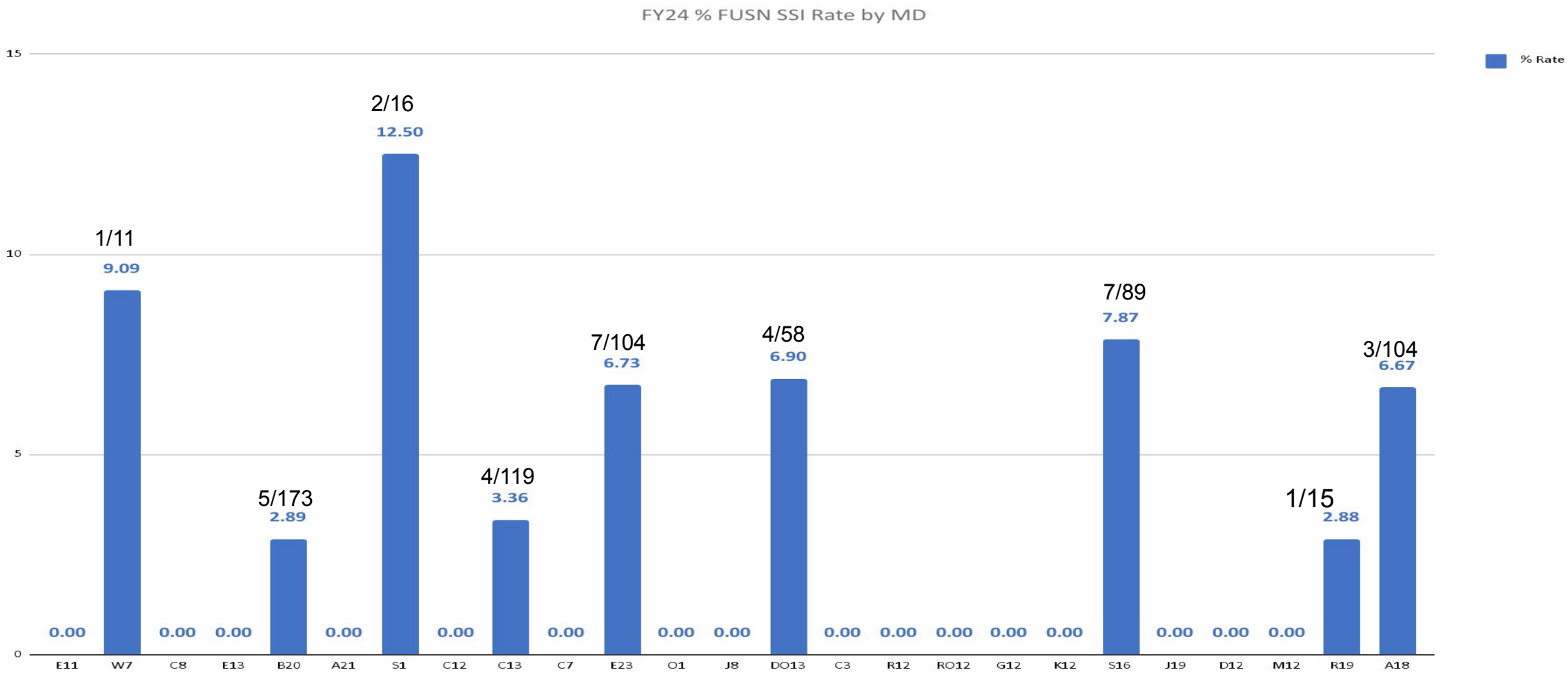
Gram Negative Bacteria:

- Pseudomonas aeruginosa x7
- Enterobacter cloacae x5
- Klebsiella pneumoniae x4
- Veillonella parvula x1
- E coli x1
- Hafnia alvei x1
- Proteus mirabilis x5
- Serratia marcescens x4
- Morganella morganii x1
- Enterobacter aerogenes x1
- Citrobacter sedlakii x1

Fungus

- Candida glabrata x1

# Fusion Surgeon Specific SSI Rates, Jul 23-Jun 24



# Prevention Strategies

- Patient selection - evaluate patient comorbidities
  - POMC visit
    - Smoking cessation
    - Diabetic management
    - BMI
    - Nutrition Screening, evaluation, and education
  - Direct admits - optimize care prior to surgery
- Antibiotics
  - Pre op antibiotic timing
    - Optimize - 30 minutes - 1 hour of incision time; Vancomycin 1-2 hours
    - Vancomycin x1 for MRSA+ patients
    - Gram negative coverage for select high risk patient populations
  - Post op antibiotics - recommendation to discontinue within 24 post op
- CHG Bathing - 5 days pre op and post op
- Decolonization for patients MRSA/MSSA+ screen
  - Order Set to include: Intranasal Mupirocin x5 days, CHG bath x5 days, (may continue Mupirocin and CHG bath into the post op phase to complete 5 days of treatment; Vancomycin 1gm pre op for MRSA+
- Irrigation - standardization with product, volume, and timing
- Standardized Surgical Prep
- Decreased length of time for post op drain (as applicable based on volume of drainage); drain management by RN using aseptic technique; educate patient/family on drain management prior to discharge
- Glucose control and management
- Steroid usage
- Reduce blood loss therefore decreasing need for transfusion
- Sterile instrumentation process and reprocessing
- Reduce traffic in the OR
- Cleaning in the OR

# SSI - Post Operative Care

## Standard Post Operative Orders

- Staffing
  - Ratio is 5-6:1 for RN and 10-11:1 for PCT with a charge RN out of staffing
  - Currently utilizing 10 contract RNs for basic staffing needs on unit
  - Typically working 1-2 RNs and 1 PCT short on each shift
  - Charge RN vacancy is 25%
- Ambulate with assistance in hall 3-4 times daily, beginning night of surgery
- Incentive Spirometry 10xq1h while awake
- Nurse driven foley removal protocol, remove POD1 or once patient is able to ambulate to bathroom with assistance
- Ice Pack PRN to operative site
- SCDs worn continuously in bed
- TAG Initiative Pain Management
- CHG bathing x 5 days post op
- Dressings to be changed if saturated
  - Typical dressings used: island tegaderm or 4x4 gauze and medipore tape
- Drains- JP or HV use is surgeon specific
  - Empty q8h

# SSI - Post Op Unit Action Plan

July 2023

- CHG Bathing Audit
  - Clerk to complete daily audit, validated by NM/ANM. Pattern noncompliance to be addressed through corrective action
  - Goal - 90% compliance, August MTD 84.6%, baseline in July 27% compliance
- Discharge Paperwork
  - Engage CI to add SNF education to depart summary, Live 8/23/223

August 2023

- Charge RN accountability to assess and prioritize CHG daily baths
  - Daily audit when out of staffing, creation of visual reminder for staff
- Manager to review early foley removal opportunities from NP
  - Pattern noncompliance to be addressed through corrective action

September 2023

- CHG Bathing Competency
  - Staff educated on CHG bathing quarterly
  - PCT unit based competency added to include CHG bathing, drains, ambulation, ice, SCDs

# Spine SSIs Action Plan

Date: 8/29/2023

| Agenda Item(s) | Data Analysis Details | Discussion / Actions | Target Follow-up Date(s) | Responsible Party | Current Status | Status |
|---|---|---|---|---|---|---|
| MSSA Screening/treatment | Pt should be screened pre-operatively for MSSA and treated with mupirocin if positive | take to EC then if approved take back to IP system for meeting on topic. Dr. Gerth discussed with Dr. Carr and was approved | 9/12/23 | Leadership/EC | Currently ordering MSSA screening and treating to audit and correlate treatment to assess performance | Ortho, Spine, and Cardiac EC's approved. MSSA screening now in order sets |
| Drain Removal | Drains are currently being left in for an extended period of time which can lead to increased risk for infection | take to EC, removing drains sooner and article sent to EC docs. Consider a standard volume for drain removal. | 9/12/23 | Ashley | Tracking patients that are being sent home with drains. EC approved to not send patients home with a drain. Surgeons sent recommendations to D/C drains sooner if applicable and recommendations to not send patients home or to SNF with drains. Current tracking data shows work to still be done | EC approved, surgeons will be sent recommendations to D/C drains sooner if applicable and recommendations to not send patients home or to SNF with drains |
| Drain Competency for Staff | A competency for staff is needed to educate staff on how to aseptically empty drains and indications for drain D/C | Ask Leah if this is in process. Train family on aseptic techniques for post DC drains. Train all staff on aseptic techniques. Tracking pts D/C'd w/drains | 9/12/23 | Brooke | Post op unit completed training. Moving towards only RNs emptying drains..training in process | Staff training completed |
| Post-op Antibiotics | There is no evidence to support the use of post-op antibiotics when a drain is present | Take to EC. Will require surgeons to D/C Abx within 24 hours post-op | 9/12/23 | Ashley | Not standardized at this time. Some progress recently with SSI audit | EC approved |
| Steroids | Limit the use of steroids intraoperatively | Send SBAR to EC surgeons and Cavallo for discussion at EC. Lumbar fusion focal opportunity. Auditing pre-op steroid usage. | 9/12/23 | Ashley | Monitoring steroid use. EC approved no antibiotics for non-cervical | EC approved, discussions with anesthesia to stop steroid use pre-op with exception of cervical spine cases. |
| OR Traffic | Limit excess OR traffic specifically vendors | 1 vendor per product in OR, look at adding door counter | 9/12/23 | Ashley to reach out to Mike | Quote has been completed to purchase door counters. Waiting on approval. Staff and vendor education limiting traffic. Keeping Mayo table away from the door. Staff coming through prep room versus opening doors by tables | Will install door counters. Surgeons will be sent recommendations. Traffic flow patterns to be looked at. |

# Process Improvements for SSI Prevention

# New Irrigation Recommendations

**Recommendations:**

Normal saline (0.9% sodium chloride) is isotonic and the most commonly used wound irrigation solution due to safety (lowest toxicity) and physiologic factors; therefore, it is the **preferred** solution for all intraoperative surgical irrigations.

Antibiotic irrigation solutions should **NOT** be used due to insufficient evidence supporting their benefit and to align with antimicrobial stewardship goals. As such, antibiotics currently used for irrigation should be removed from all OR automated dispensing cabinets as local operations will allow. Additionally, any intraoperative order sets should be modified to remove any antibiotic-containing wound irrigation. An effort should be made to measure local reductions in antibiotic irrigation utilization post-implementation of this initiative.

If an alternative to normal saline is desired, povidone-iodine or chlorhexidine should be used over antibiotic or other antiseptic irrigation solutions. Facilities should compound these products using the below instructions rather than using commercially available formulations.

- Preferred: Povidone-Iodine 0.5% Irrigation Solution. Note: Povidone-Iodine may exert neurotoxic effects. Use with caution in neurosurgery.
    - Add 45 mL of 10% sterile povidone-iodine to 900ml of sterile 0.9% sodium chloride irrigation bottle.
    - Prior to fascial closure, irrigation solution can be poured into the wound and should be left to soak for up to 3 minutes.
    - Suction away any remaining povidone-iodine solution.

# Gram-Negative Spine Fusion Surgical Prophylaxis - Case Review & Recommendations

| 2021 Case Review | | |
|---|---|---|
| Bacteria | No. (%) *n=19 patients | Susceptibility Comments |
| Pseudomonas | 9 (47%) | 1 R to gentamicin (**89% overall gentamicin S**) |
| Proteus | 7 (37%) | 1 R to cefazolin, **pan S to all other agents** |
| Enterobacter | 6 (32%) | 1 R to piperacillin/tazobactam |
| Klebsiella | 4 (21%) | 1 R to ciprofloxacin, gentamicin, tobramycin (**75% overall susceptibility to these agents**)<br>All R to cefazolin |
| Serratia | 1 (5%) | R to piperacillin/tazobactam |
| Citrobacter | 1 (5%) | pan S |
| Acinetobacter | 1 (5%) | pan S |

* Some polymicrobial infections, **29 pathogens**

| 2022 Case Review | | |
|---|---|---|
| Bacteria | No. (%) *n=20 patients | Susceptibility Comments |
| Pseudomonas | 5 ( 25%) | 1 R cefepime, 1 R FQs |
| Serratia | 4 (20%) | 1 R tobramycin |
| Proteus | 4 (20%) | Pan S |
| Enterobacter | 4 (20%) | Pan S |
| Anaerobes (total) | 3 (15%) | |
| E coli | 2 (10%) | 1 R cefazolin |
| Klebsiella | 2 (10%) | Pan S |
| Hafnia | 1 (5%) | Pan S |
| Morganella | 1 (5%) | Pan S |

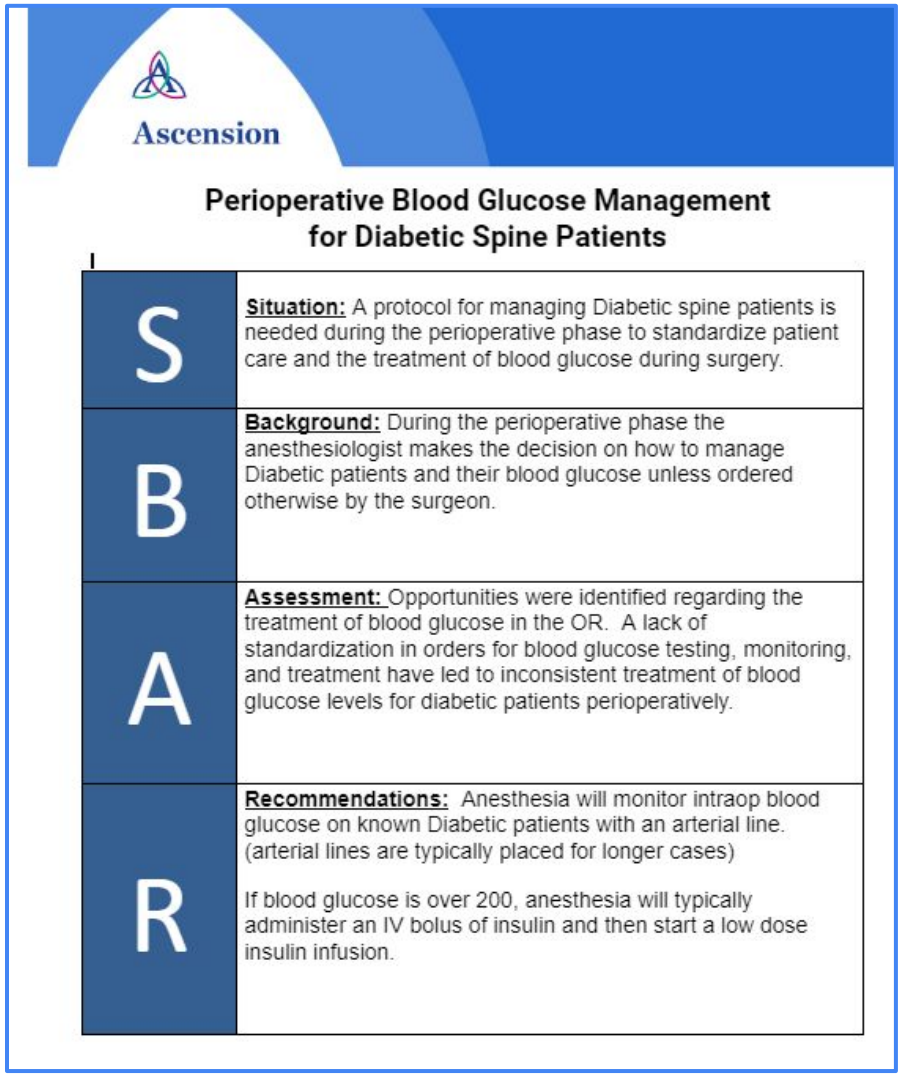
* Some polymicrobial infections, **23 pathogen isolates.** Potential ampC-producers only reporting relevant antimicrobials

**Recommendations:**

**ID/IP Recommendation: Patients undergoing thoracolumbar to sacrum procedures with a BMI >35.**

**Reference:** American Journal of Health-System Pharmacy February 2013, 70 (3) 195-283; DOI: https://doi.org/10.2146/ajhp120568

# Intraop Glucose Management- Anesthesia



Ascension

**Perioperative Blood Glucose Management for Diabetic Spine Patients**

| | |
|---|---|
| S | **Situation:** A protocol for managing Diabetic spine patients is needed during the perioperative phase to standardize patient care and the treatment of blood glucose during surgery. |
| B | **Background:** During the perioperative phase the anesthesiologist makes the decision on how to manage Diabetic patients and their blood glucose unless ordered otherwise by the surgeon. |
| A | **Assessment:** Opportunities were identified regarding the treatment of blood glucose in the OR. A lack of standardization in orders for blood glucose testing, monitoring, and treatment have led to inconsistent treatment of blood glucose levels for diabetic patients perioperatively. |
| R | **Recommendations:** Anesthesia will monitor intraop blood glucose on known Diabetic patients with an arterial line. (arterial lines are typically placed for longer cases)<br><br>If blood glucose is over 200, anesthesia will typically administer an IV bolus of insulin and then start a low dose insulin infusion. |

# Approved TXA Protocol

Goal: decrease transfusions and blood loss

## Tranexamic Acid (TXA) for SPINE Patients

**Indications:**

- Greater than 4 level fusion
- Cell Saver usage
- Surgeon request

  Example: any level case where the patient may be anemic and the procedure would warrant due to blood loss

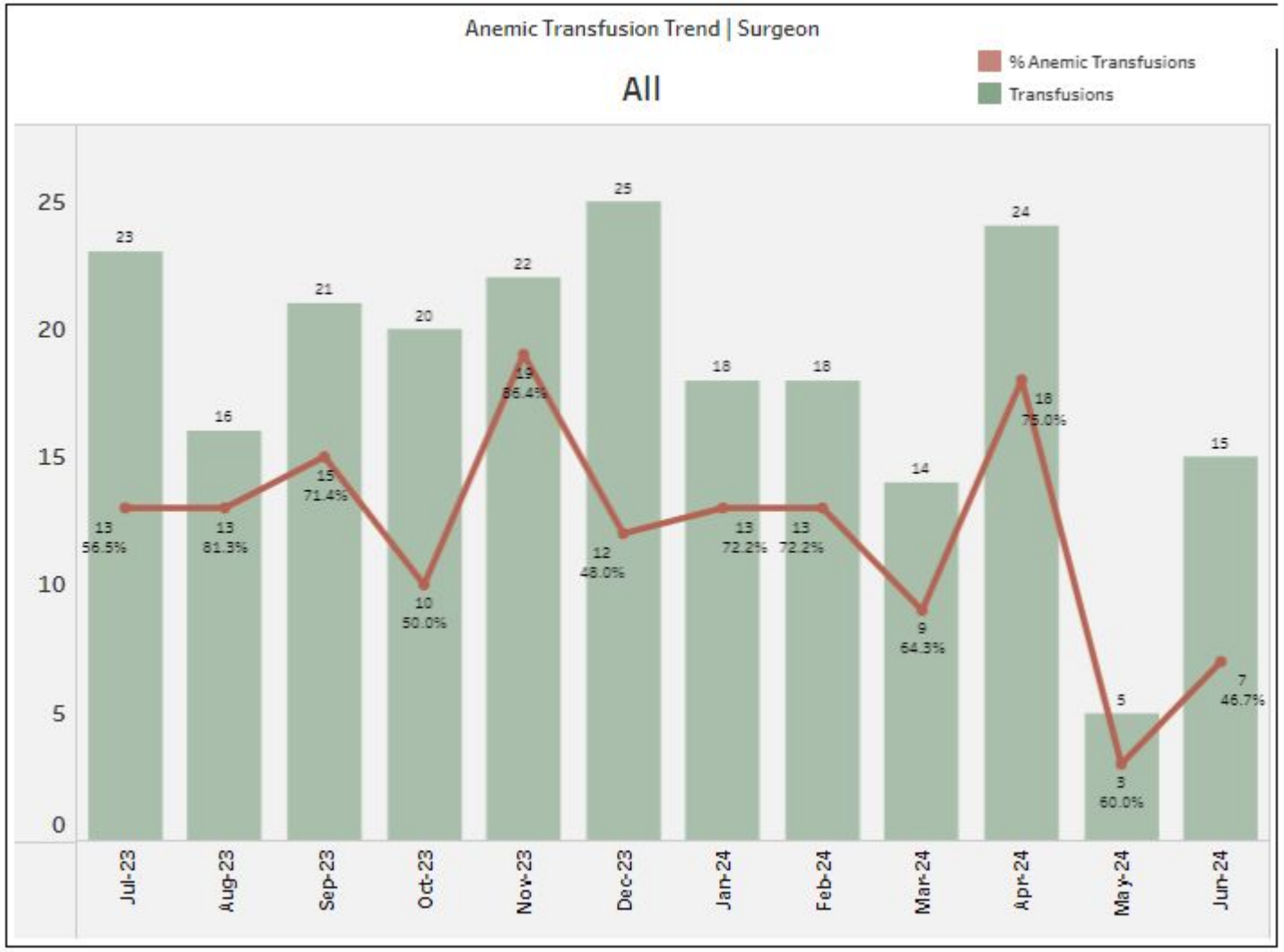
**Cautions:**

- Renal Failure= Creatinine > 1.5
- Thromboembolic disease= pulmonary embolism, DVT, history of ischemic stroke
- Coronary stent placed within the last 12 months
- Acute Subarachnoid hemorrhage
- Malignancy
- DIC (Disseminated intravascular coagulation)

**Dosing:**

- Loading dose= 1Gm IV in the OR
- Intraop infusion= 5mg/kg per hour

# Transfusion Trends



# Smoking Cessation Education

Ascension Saint Thomas

Preoperative Medicine Clinic

## Four Reasons You Should Quit Smoking Before Surgery

Quitting smoking is one of the best things you can do to improve your health. But if you are a long-time or heavy smoker, quitting may seem too hard, or even impossible. And, you might wonder, how can quitting after many years of smoking make a difference in the few weeks before your surgery?

The truth is that quitting smoking just four to six weeks before your surgery—and staying smoke-free afterward—can lower your risk of serious complications and help you recover more quickly.

### Why Quitting Smoking Helps

Smokers are at high risk of developing complications during and after surgery. And those complications can be life-threatening. Here are four reasons why smoking puts you at an increased risk for problems:

**1. Smoking prevents healing.**

Your body needs a healthy supply of oxygen to help it heal after surgery. When you smoke, the molecules that transport oxygen throughout your body, called hemoglobin, are unable to carry the amount of oxygen to your organs and tissues. As a result, your body becomes deprived of the oxygen it needs to repair wounds and build healthy new tissue.

Smoking also causes narrowing of the blood vessels, which can prevent blood, oxygen nutrients from reaching your healing wound.

**2. Smoking raises your risk of blood clots.**

Smoking thickens your blood. That makes it more difficult for blood to travel through your blood vessels—especially if they . If you are a smoker, your thickened blood raises your risk of developing a blood clot in your legs. If a blood clot travels from your legs to another part of your body, it could cause a heart attack, stroke, or pulmonary embolism (a blood clot in your lungs).

**3. Smoking raises your risk of infection.**

Your blood contains cells called neutrophils that help fight infection. Smoking causes these cells to lose some of their infection-fighting power, which can double your chances of getting an infection after surgery compared to a non-smoker. If you develop , it will not only slow your recovery, but you may need to take antibiotics, have another surgery, or spend more time in the hospital.

**4. Smoking increases inflammation and sometimes pain.**

The chemicals found in cigarettes can increase the amount of inflammation, or swelling, throughout your body. After surgery, this extra swelling can cause smokers to experience more pain than non-smokers.

## Reducing Your Surgery Risks

Our goal is to help improve your chances of having a successful surgery. If you are a smoker, it's never too late to quit.

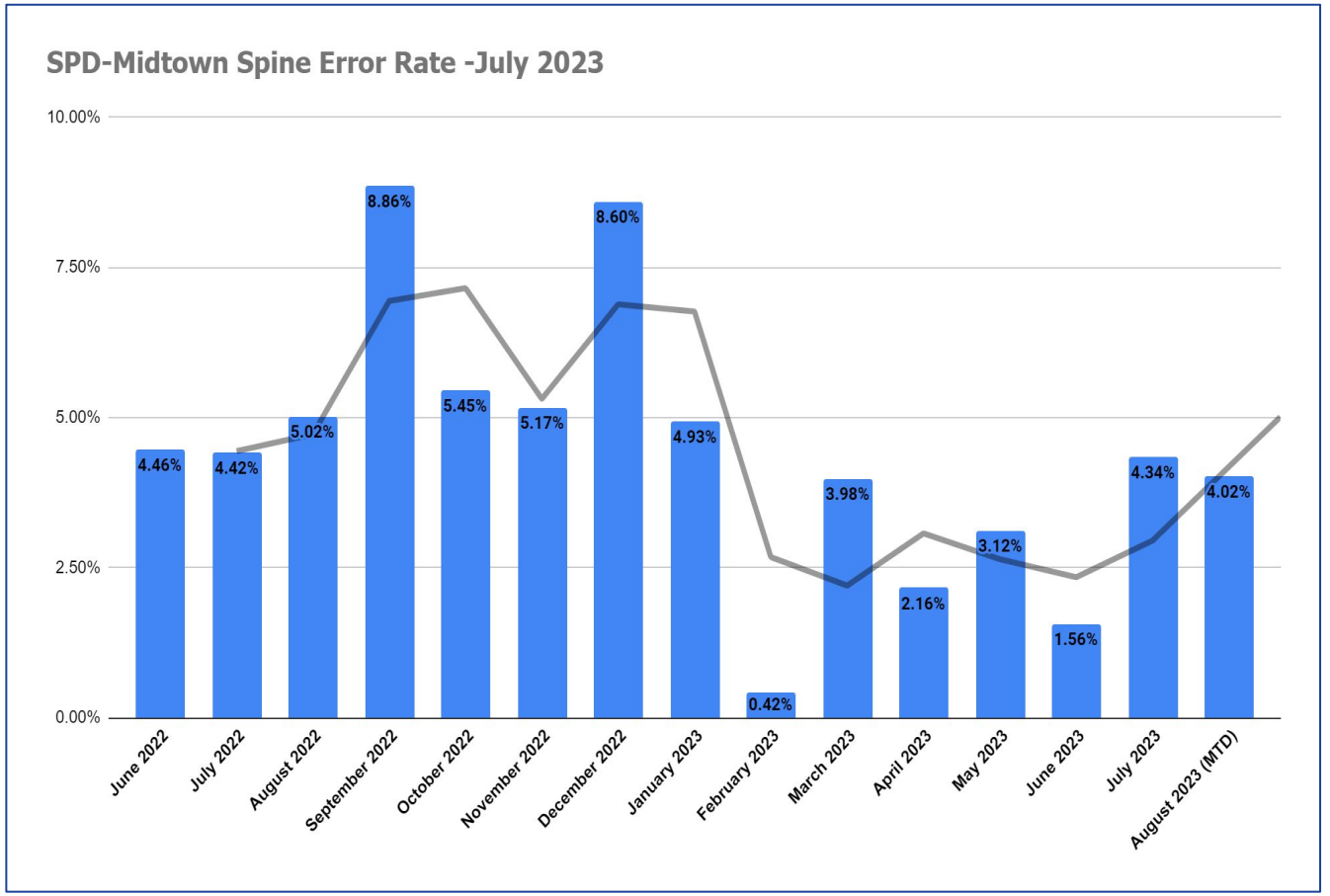
# Peer Review and Drill Down Process

- Infection Prevention collects SSI data on all events
- Detailed elements associated with the case are assessed for trends, commonalities and standard of care
- OR Team and key stakeholders are notified of the SSI event
  - In addition to the multidisciplinary team, the CMO, ID physician and System Quality Officer are notified
- Drill down tool is completed using surveillance data including all components of the pre op, perioperative and postoperative details
  - Drill down is scheduled
  - Information is shared with the team in advance of the meeting with the expectation that team members review case details and are prepared to discuss
- IP leads the Drill Down Process
  - Multidisciplinary team
    - OR Team, POMC, Nurse Navigator, Pre Op Holding, Post Op Recovery, Post Op Surgical Unit, SPD, Quality, Infection Prevention; surgeon, anesthesia, Diabetes Center, CI and other stakeholders are invited as appropriate
  - Drill Down process is conducted on all SSI's
    - identify trends
    - root causes
    - opportunities
    - deviations from the standard of care
      - addressed in a timely manner
- Details of the Drill Down are reviewed with the IP Committee and Spine Committee
  - IP recommendations, policy or practices changes will be referred to the Spine EC Committee
- Peer Review
  - Process to assess outliers and evaluate trends
    - Escalate cases as needed

# SPD Update

# Saint Thomas Midtown -Spine Error Rate

| Month | ALL Trays Processed | Error Rate All Service Lines | Spine Trays Processed | Error Rate Spine Trays |
|---|---|---|---|---|
| June 2022 | 10,932 | 0.49% | 965 | 4.46% |
| July 2022 | 8,744 | 0.48% | 701 | 4.42% |
| August 2022 | 10,058 | 0.57% | 737 | 5.02% |
| eptember 202 | 9,023 | 0.81% | 643 | 8.86% |
| October 2022 | 9,674 | 0.52% | 825 | 5.45% |
| lovember 202 | 9,603 | 0.53% | 677 | 5.17% |
| ecember 202 | 10,731 | 0.87% | 919 | 8.60% |
| January 2023 | 8,652 | 0.50% | 791 | 4.93% |
| February 2023 | 8,512 | 1.12% | 714 | 0.42% |
| March 2023 | 10,442 | 1.35% | 1030 | 3.98% |
| April 2023 | 9,492 | 1.45% | 970 | 2.16% |
| May 2023 | 9731 | 1.54% | 865 | 3.12% |
| June 2023 | 9793 | 1.22% | 899 | 1.56% |
| July 2023 | 9116 | 2.19% | 737 | 4.34% |
| August 2023 (MTD) | 7427 | 1.51% | 622 | 4.02% |



# Discussion