Appropriate Utilization of Immediate Use Steam Sterilization

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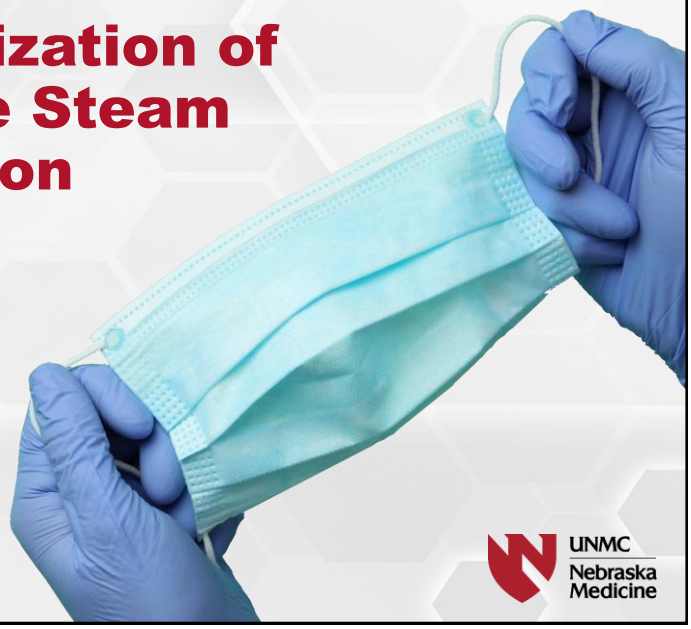

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1

Meet our Subject Matter Experts

Lauren Musil BSN, RN
Lauren is an Infection Preventionist with a background as Registered Nurse. She has a wide variety of healthcare experience having worked in neurology, neurosurgery, ambulatory surgery, home health and with the Nebraska Biocontainment unit. As an IP, her primary focus has been in critical care, oncology, VAE prevention and as the IP to the Nebraska Biocontainment Unit. Her recent work has been spent in a grant funded role to develop innovative tools to aid IPs in rural and remote settings.

Alisha Sheffield MSN, RN CIC
Alisha is an Infection Preventionist and Registered Nurse with 21 years of experience in a variety of healthcare settings including ambulatory, acute care, and surgical areas. Over the past 13 years, she has worked as an Infection Preventionist in outpatient surgery as well as at a large academic medical center. Her recent work has focused on utilizing her IPC expertise to develop infection control tools and resources to assist Infection Preventionists in under-resourced settings.

2

Disclosure Declaration

- We have no financial disclosures or conflicts related to this presentation.
- The views and opinions expressed during this webinar are those of the presenters and do not necessarily reflect those of the University of Nebraska Medical Center or The Nebraska Medical Center.

3

Program Objectives

- Explain the intended purpose and appropriate indications for Immediate Use Steam Sterilization according to current standards and guidance
- Identify common drivers and systemic causes of excessive IUSS use
- Implement strategies to reduce IUSS utilization while maintaining patient safety and efficiency.

4

Spaulding Classification

Spaulding Classification			
Patient Contact	**Device classification**	**Minimum Inactivation Level**	**Examples**
Intact Skin	Non-Critical	Low/Intermediate level disinfectant	Glucometers Wheelchairs Blood Pressure Cuffs Environmental Surfaces ~Bedrails, Call light, door handles
Non-intact skin or mucous membranes	Semi-critical	High-level disinfection	Endoscopes, speculums, laryngoscopes, respiratory therapy equipment, anesthesia equipment, etc
Sterile areas of the body, including bloodstream	Critical	Sterilization	Surgical instruments, IV cannula

5

What is IUSS

- Immediate Use Steam Sterilization
- For urgent need of a device for immediate patient care
- Form of steam sterilization
  - At 132-135 degrees Celsius
    - 3-10 minutes gravity
    - 3-4 minutes prevac
- Bypasses dry time
- Should NEVER be stored

6

History of “Flashing”

7

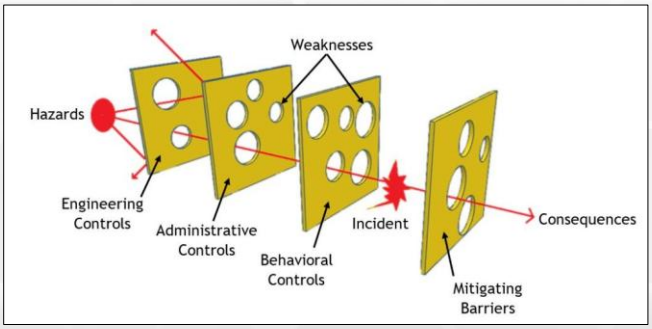
Concerns with “Flashing”

Minimal or No Decontamination	• Important reprocessing steps skipped • Cleaned in scrub sinks
Shortened Cycle Time	• Different standard of care • Gravity or Pre-vac
Open Pan	• Risk for contamination
Full Sets	• Quick turnovers
Quick Process	• Patient burns • Chipped instruments • Debris on instruments

8

IUSS Risk

- Increased risk of infection
- Vulnerable to recontamination
- Opens the door non-compliance elsewhere



Faster process = Increased Vulnerability

9

New Standard

Immediate-Use Steam Sterilization

"Flash sterilization" has traditionally been used to describe steam sterilization cycles where unwrapped medical instruments are subjected to an abbreviated steam exposure time and then used promptly after cycle completion without being stored. This is in contrast to traditional "terminal sterilization" cycles, where instruments are sterilized within containers, wrappers, or primary packaging designed to maintain the instruments' sterility and allow the devices to be stored for later use. The term "flash" arose out of the abbreviated time of exposure of the unwrapped device.

Today, however, "flash sterilization" is an antiquated term that does not fully describe the various steam sterilization cycles now used to process items not intended to be stored for later use. Current guidelines may require longer exposure times and/or the use of single wrappers or containers designed to allow for aseptic transfer of an item to the point of use. The term "immediate-use steam sterilization" more accurately reflects the current use of these processes. The same critical reprocessing steps (such as cleaning, decontaminating, and transporting sterilized items) must be followed regardless of the specific sterilization cycle employed; a safe process does not include short-cuts or work-arounds.

"Immediate use" is broadly defined as the shortest possible time between a sterilized item's removal from the sterilizer and its aseptic transfer to the sterile field. Immediacy implies that a sterilized item is used during the procedure for which it was sterilized and in a manner that minimizes its exposure to air and other environmental contaminants. A sterilized item intended for immediate use is not stored for future use, nor held from one case to another. Immediacy, rather than being defined according to a specific time frame, is established through the critical analysis and expert collaboration of the health care team.

We agree that:

- Personnel involved in reprocessing should be knowledgeable and capable of exercising critical thinking and judgment, and should implement standardized practices. The supervising organization is responsible for ensuring appropriate training, education, and competency of staff and ensuring that the necessary related resources are provided.
  - Examples of education and certification resources include the Certification Board for Sterile Processing and Distribution (CBSPD) and the International Association of Healthcare Central Service Material Management (IAHCSMM).

Immediate-Use Steam Sterilization 1

- Item must be validated for IUSS (IFU)
- All steps of reprocessing must be completed (Cleaning→ Decontamination→ Rinse)
- Aseptic transfer from sterilizer to point of use
- Must be sterilized in package cleared by FDA
- Process monitoring
- Quality management to ensure compliance
- Never flash:
  - ❑ Implants
  - ❑ CJD
  - ❑ Single-Use Devices

10

Regulatory Guidance

Review of AAMI ST79, AORN, and CMS guidance

- ✓ Education provided on:
  - Types of steam sterilizers
  - Types of cycles
- ✓ Cycles with no dry time can be used in accordance with IFU and professional guidance
- ✓ Must complete entire decontamination process

Cleaning→ Decontamination→ Rinse

11

Regulatory Guidance Continued

Review of AAMI ST79, AORN, and CMS guidance

- ✓ Aseptic transfer from the sterilizer to the point of use
- ✓ Must follow the Instructions for Use:
  - Device
  - Reprocessing container
- ✓ Items processed for immediate use require patient identifier

12

Comparison of Processes

	Terminal Sterilization	Flash	IUSS
Instruments Cleaned/Decontaminated	X		X
Instruments Wrapped/put in a container	X		X
Full Exposure Time	X		X
Full Dry Time	X		
Used immediately after sterilization		?	X
Stored for later use	X		

13

Appropriate Use of IUSS

One of a Kind Instrument

Emergency Situation/ Urgent Need

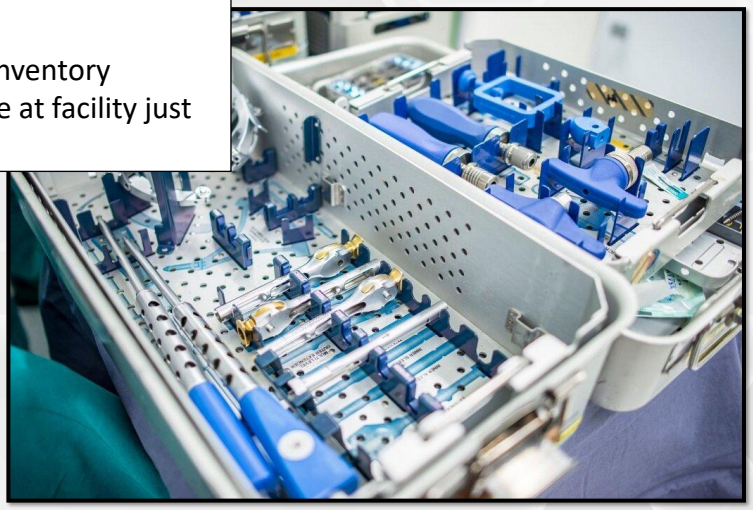
Unexpected Need

14

Appropriate Use of IUSS

IUSS is NOT used when:

- It's more convenient
- Substitute for sufficient inventory
- Loaner instruments arrive at facility just before the case

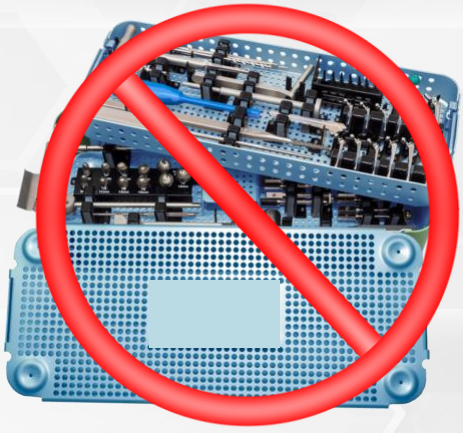


And it is NEVER used for:

- Reprocessing Implants
- Prion diseases

15

Immediate Use Steam Sterilization



IUSS should NOT be performed on

- Implants
- Creutzfeldt–Jakob disease (CJD)
- Devices or loads that have not been validated
- Single use devices

16

Requirements when we IUSS

- Full Decontamination
- Rigid Container
- Immediate Use
- Identified as IUSS
- Monitored

17

IUSS-Full Decontamination

- **Full Decontamination**
- Rigid Container
- Immediate Use
- Identified as IUSS
- Monitored

Transport	Rinse/Pre-soak	Cleaning	Inspection
Biohazard Container Leakproof Reprocessing area	Enzymatic Soak Time	Mechanical Manual IFU	Visual Inspection

18

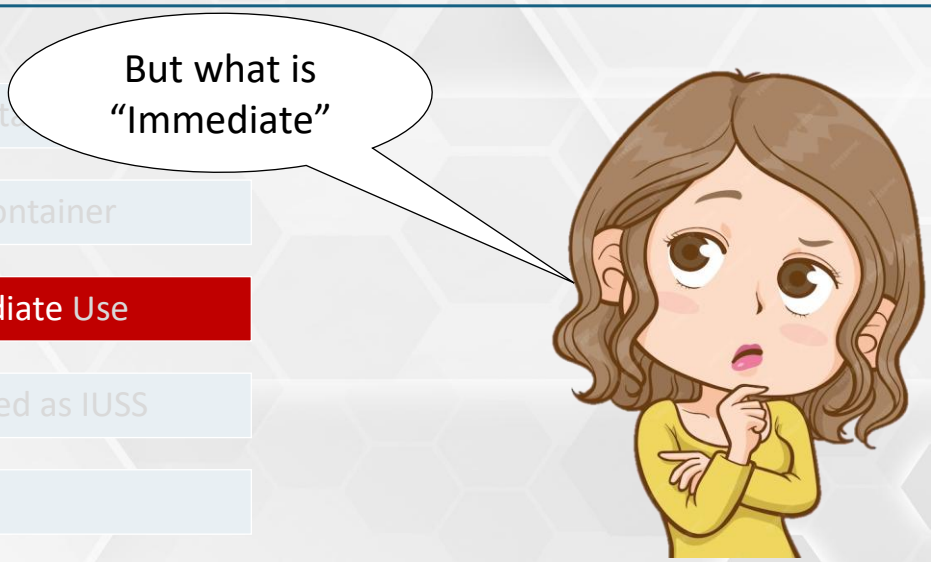
IUSS-Rigid Container

- Full Decontamination
- **Rigid Container**
- Immediate Use
- Identified as IUSS
- Monitored

19

IUSS- Immediate use

- Full Decont
- Rigid Container
- **Immediate Use**
- Identified as IUSS
- Monitored



20

Immediate Use Steam Sterilization

The shortest time between removal from the sterilizer and its aseptic transfer to the sterile field

- Immediate
- Item used during the procedure for which it was sterilized
- Minimize exposure to air
- Not stored for future use
- NOT held from one case to another

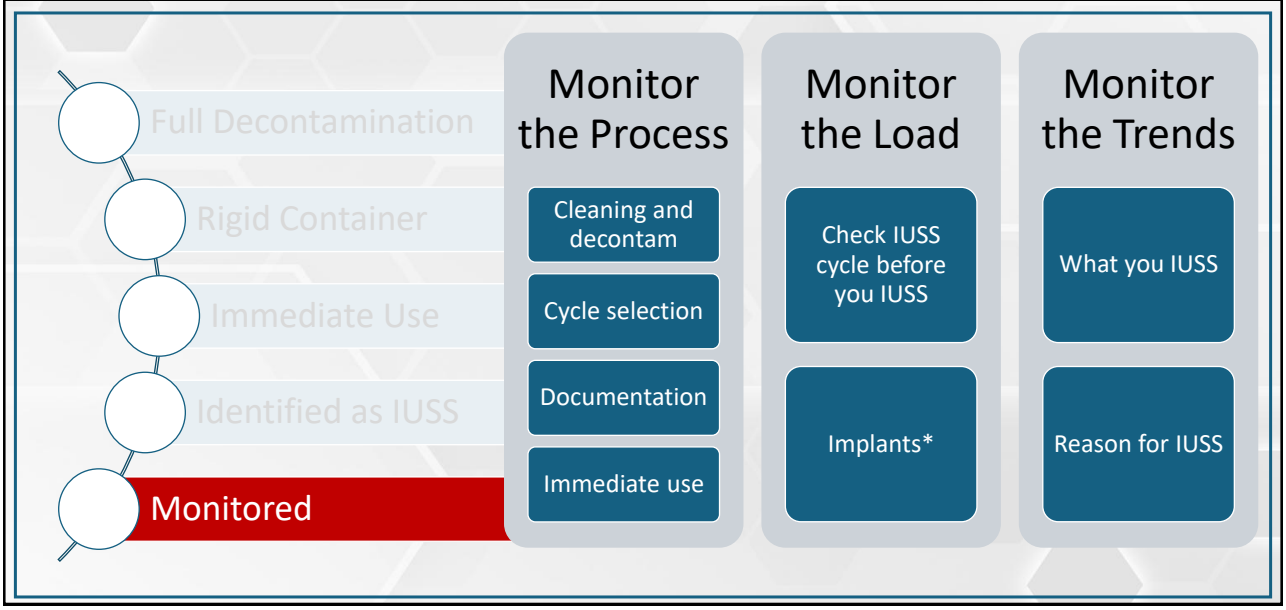
21

IUSS- Identified as IUSS

- Full Decontamination
- Rigid Container
- Immediate Use
- **Identified as IUSS**
- Monitored

22

IUSS- Monitored



23

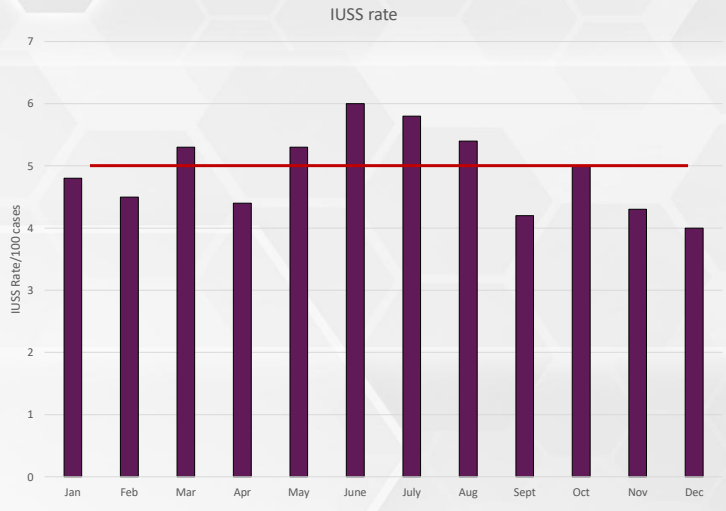
IUSS Documentation and Tracking

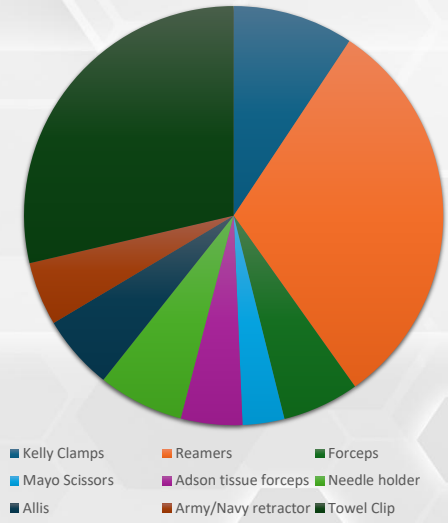
Date	Time	Load #	Item	Reason	Cycle	Temp	Time	BI/CI result	Operator
2/4/2026	0815	123456	#3 Kelly clamp	Dropped, no backup	PreVac	270	4 min	P	A. Sheffield
2/4/2026	1030	123451	Ortho Reamer	Emergency Item	Gravity	270	10 min	P	A Sheffield

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Kelly Clamps	6	5	7	4	8	6	7	9	5	6	7	4	74
Reamers	8	7	9	6	10	9	11	12	8	9	10	7	106
Forceps	5	4	6	3	7	5	6	8	4	5	6	3	62
Mayo Scissors	4	3	5	2	6	4	5	6	3	4	5	2	49
Adson tissue forceps	3	2	4	2	5	3	4	5	2	3	4	2	39
Needle holder	3	2	4	2	5	3	4	5	2	3	4	2	39
Allis	4	3	5	2	6	4	5	6	3	4	5	2	49
Army/Navy retractor	2	2	3	1	4	2	3	4	2	2	3	1	29
Towel Clip	1	3	5	7	9	5	4	6	8	9	1	2	60
Total	36	31	48	29	60	41	49	61	37	45	45	25	507
Rate per 100 cases	3.6	3.1	4.8	2.9	6	4.1	4.9	6.1	3.7	4.5	4.5	2.5	5.07

24

IUSS- Trending





25

Common Challenges

Policy Adherence	Protocol/ IFU Adherence	Over Flashing	Lack Proper Tools
Case Volume	Staffing	Inefficient Workflows	Prioritization of Rapid Turnover Trays
Vendor Issues	Culture	Gap Response	Poor Planning

26

How Do We Reduce IUSS

27

How Do We Reduce IUSS

- Large undertaking
- Conduct Instrument Inventory
- Staff Education
- Set Metrics
- Develop quality improvement initiatives

28

Common Causes of IUSS

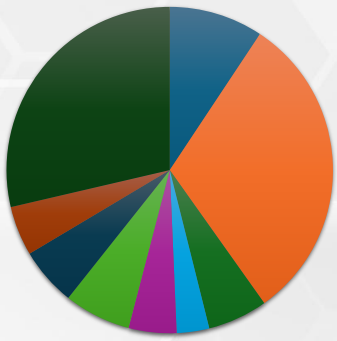
- Insufficient Inventory
- Case Delays/add ons
- OR/SPD Workflow gaps
- Data Trending gaps

29

Instrument Inventory

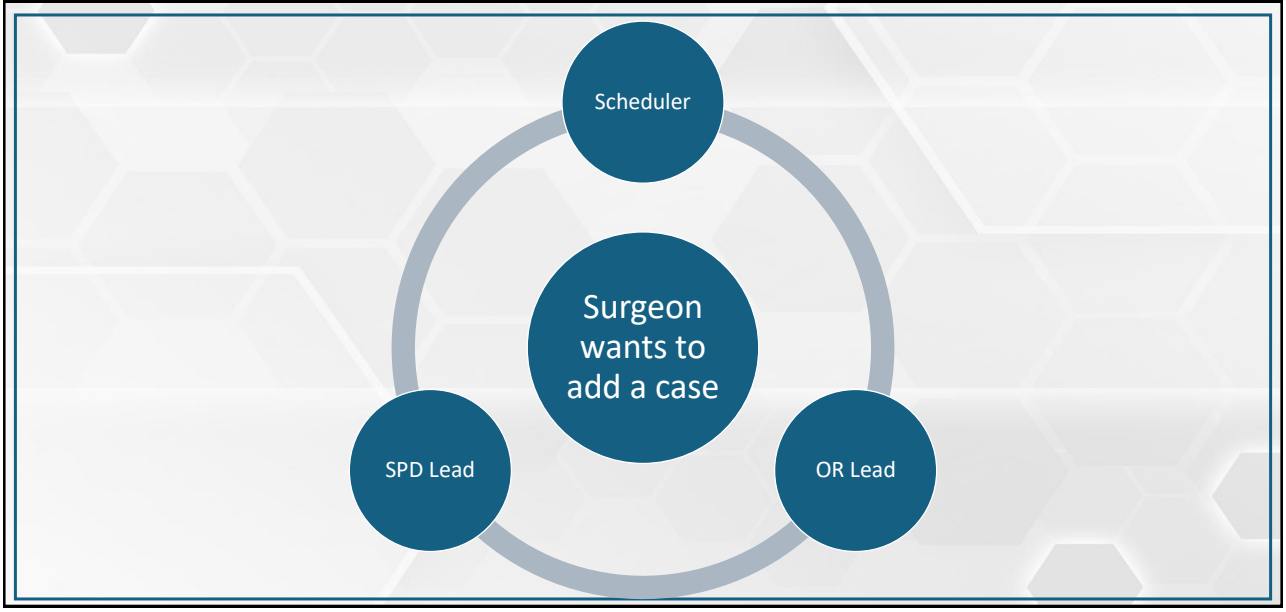
Sufficient instrument inventory to meet surgical volume

- Use data to determine what sets/Instruments are IUSS



30

Case Delay, Add-Ons



31

OR/SPD Workflow Gaps

	OR 1	OR 2	OR 3
7-7:45	Total Hip	T&A	Total Hip
8-8:45	Total Hip	BMT	Total Hip
9-9:45	Total Hip	T&A	Hernia
10-10:45	Lap Chole	BMT	Lap Chole
11-11:45	Lap Chole	Septoplasty	ORIF

3 Total Hip sets
2 Tonsil sets
2 BMT sets
2 General Sets
2 ENT Sets

32

OR/SPD Workflow Gaps

	OR 1	OR 2	OR 3
7-7:45	Total Hip	T&A	Total Hip
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33

OR/SPD Workflow Gaps

	OR 1	OR 2	OR 3
7-7:45	Total Hip	T&A	~~Total Hip~~ Lap Chole
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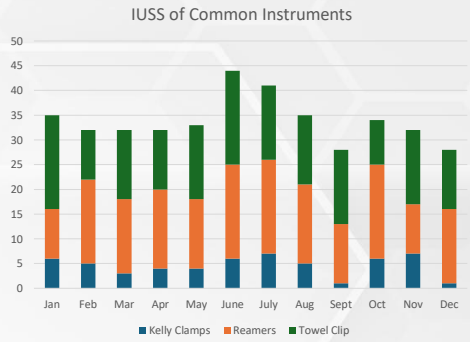
10-10:45	~~Lap Chole~~ Total Hip	BMT	Lap Chole
11-11:45	~~Lap Chole~~ Total Hip	Septoplasty	ORIF

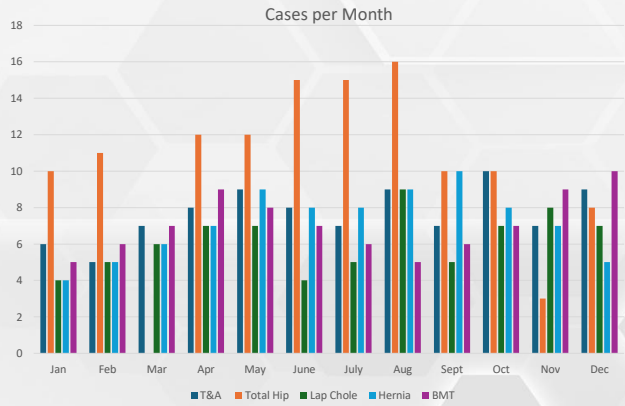
34

Data Trending Gaps

Common Mistakes

- Not gathering data
- Not gathering the *correct* data
- Not responding to SPD gaps





35

Closing Thoughts

- Consistently track IUSS utilization
- Early/ Consistent Engagement
  - Share IUSS data at ICC or QAPI
  - Share directly with surgical services
- Constantly monitor for upward trends
- Consistently audit
- Partner with frontline staff

36

Questions

37

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38


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39


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40