ICE2025
IMAGING CONFERENCE & EXPO
FEBRUARY 22-24, 2025 • ORLANDO, FL

Advancing the Future of OR Imaging: Building a Dedicated Team

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The Ohio State University
Wexner Medical Center

Overview

- Background
- Collaboration with OR
- Operational Management
- Performance Metrics
- Equipment Management
- Dedicated OR Radiology Technologists
- Future Growth and Development
- Q&A

About Us

Introductions

Erin Willis MBA, BSRT(R)(VI)

- Associate Director Procedural Imaging
  - Imaging Services Enterprise Wide

Ashley Adams MHI, BSRT(R)(VI)

- Perioperative and Procedural Imaging Manager
  - Imaging Services UH/James/Ross/SDS

Disclosure Statement

The following presenters of this continuing education unit have no relevant financial relationships with commercial interests to disclose:

- Erin Willis MBA, BSRT(R)(VI)
- Ashley Adams MHI, BSRT(R)(VI)

About The Ohio State University Wexner Medical Center

We’re central Ohio’s only academic medical center

7
hospitals

1,404
staffed beds

17
multispecialty centers

24,500+
Employees

100+
facilities






THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

Facts and figures

Nationally ranked academic medical center

On the campus of one of the nation's largest public universities

Ranked for **31 consecutive years** by *U.S. News & World Report "Best Hospitals"*

Magnet recognition from the American Nurses Credentialing Center

1,404
staffed beds

24,507
employees

60,713
patient admissions (FY23)

2,745
faculty researchers

3.4M
outpatient visits (FY23)

225,000
telehealth visits

20 research centers and institutes

Hospital Tower

- Scheduled to open in 2026
- Largest single facilities project ever undertaken at Ohio State at 1.85 million square feet
- 820 large, private rooms
- 148 additional beds for patients of the OSUCCC – James
- 51 neonatal intensive care unit bassinets

BEST HOSPITALS U.S.News & WORLD REPORT RANKED IN 10 SPECIALTIES

NCI CCC A Comprehensive Cancer Center Designated by the National Cancer Institute

Forbes 2023 BEST EMPLOYERS FOR DIVERSITY POWERED BY STATISTA

MAGNET RECOGNIZED

BEACON FOR AWARD EXCELLENCE

BECKER'S Hospital Review 100 Great Hospitals in America

Key Challenges

- Increased Imaging Wait Times
- Decreased RT Skillset Competency
- Inadequate Staffing Model
- Lack of Metric Dashboards
- Limited Equipment Visibility
- Weak Collaboration with OR

Prior Imaging Support for Surgical Operations

Over 50 ORs Supported

Average Daily Staffing of 4-6 FTEs

350 Imaging Procedures/Month

20% of Surgical Procedures Supported by Imaging

Equipment Inventory:

- 16 C-Arms
- 2 O-Arms
- 3 Mini C-Arms
- 1 3D C-Arm
- 1 CT Airo

THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

Collaboration with OR

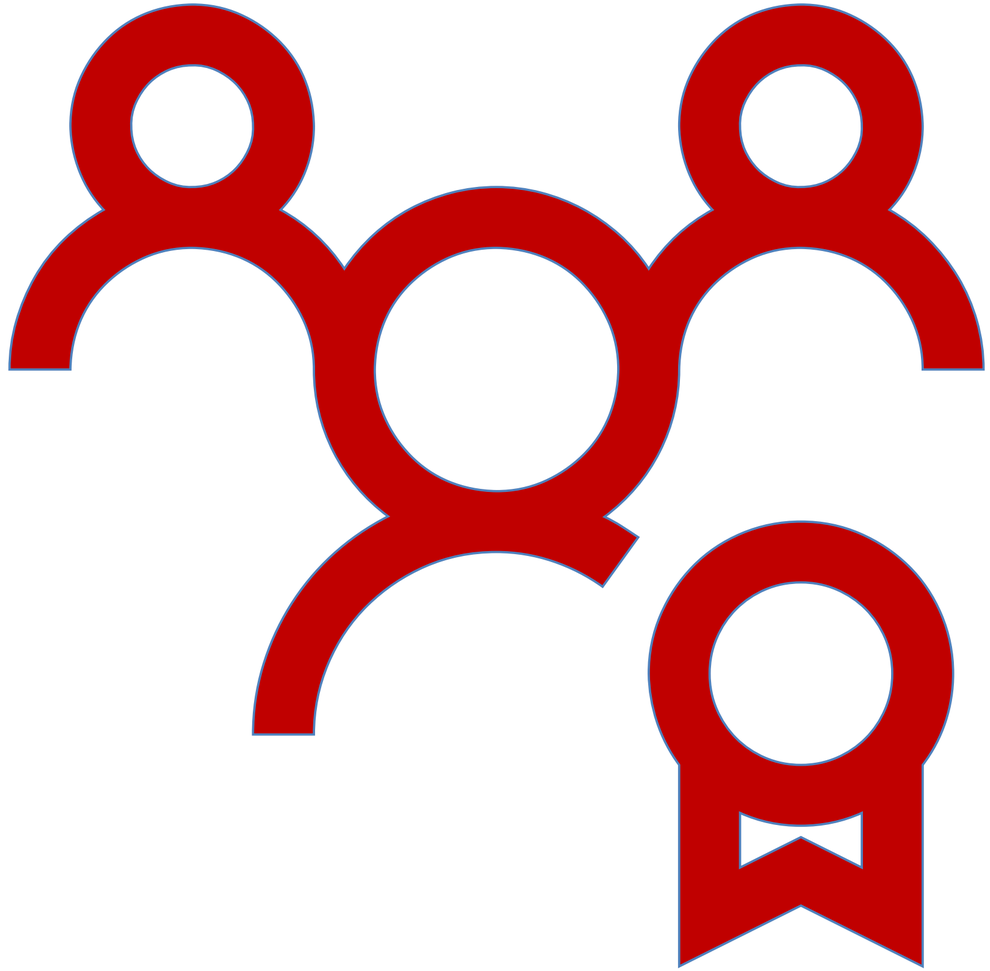
Known Problems

Workflow Communication

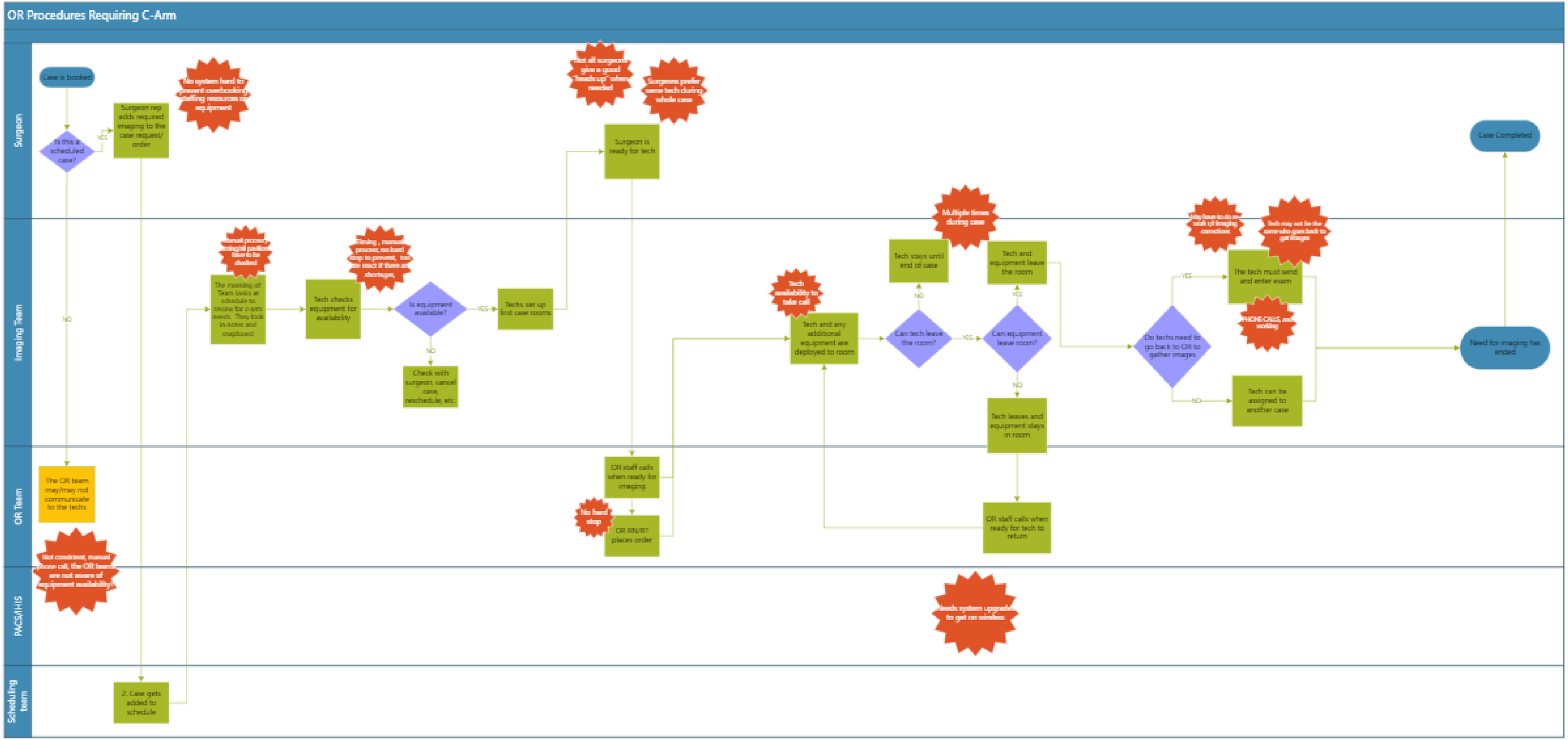
- Phone Number
- Staff and Equipment Availability
- Scheduling Equipment for Procedures
- Triaging Procedures

Establish a Dedicated Imaging Team

- Develop a specialized team to provide focused support for OR procedures, ensuring streamlined workflows and enhanced efficiency.



Imaging Workflow



Action Plan for Enhancing Support

Increase C-Arm Availability

Establish an Appropriate Staffing Model

Develop Performance Metrics

Enhance Equipment Visibility

Source Additional Staff

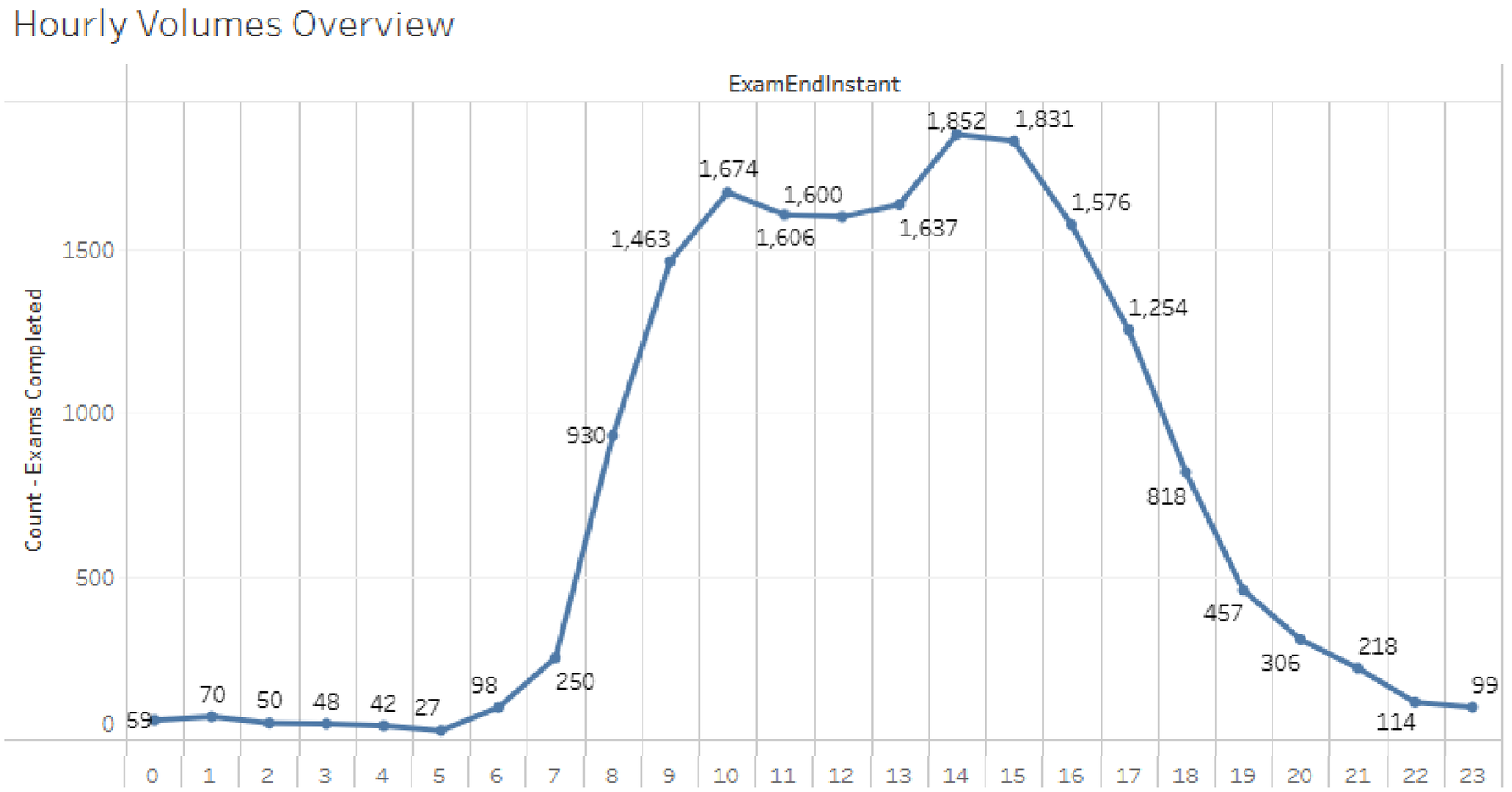
Performance Metrics

Found new ways to collect and evaluate data

- Data analytics experts
- Manual collection, tracking, and trending

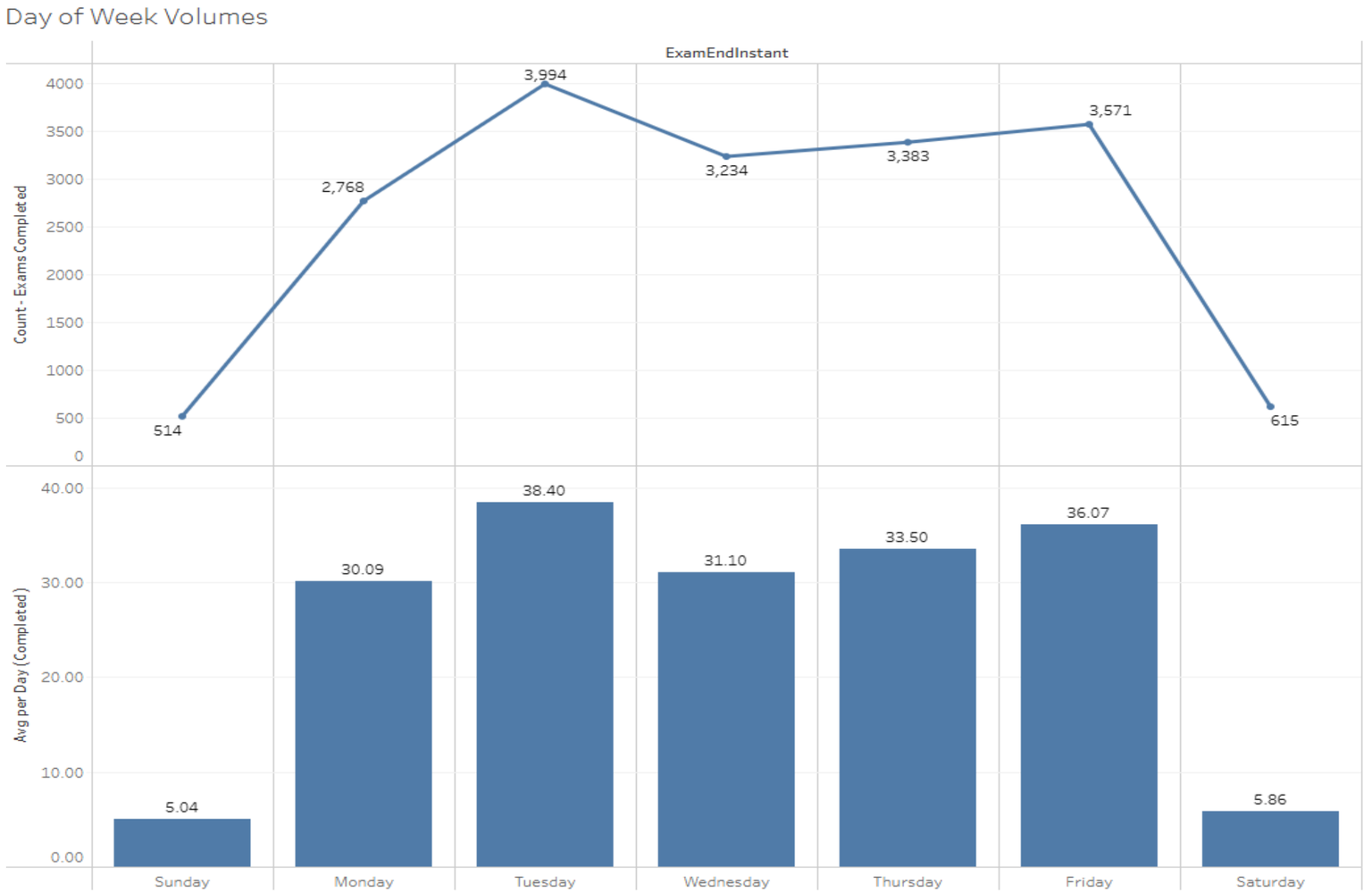
Operational Hours

Case volume by hour of the day over a 2-year period.



Operational Hours

Case volume by day of the week over a 2-year period.



Operational Management

- Creating a new cost center
- Asking for FTE support for a non-revenue generating cost center
- Justification approach – support service

Staffing Model Development

Staffing Model Version #1

- Number of Techs based on hours of operation

	Hours of Operation							Coverage Hours Per Week	Tech Per Machine/Room	Working Hours Per Week
Modality Grouping	M	T	W	R	F	Sat	Sun			
X-ray	630-1700	630-1700	630-1700	630-1700				42	1.0	42.0
X-ray		600-1630	600-1630	600-1630	600-1630			42	1.0	42.0
X-ray		700-1730	700-1730	700-1730	700-1730			42	1.0	42.0
X-ray		1100-2130	1100-2130	1100-2130	1100-2130			42	1	42.0
X-ray	630-1700	630-1700		630-1700	630-1700			42	1	42.0
X-ray	700-1730	700-1730	700-1730	700-1730				42	1	42.0
X-ray	600-1930	600-1930	600-1930	600-1930	600-1930			67.5	7	472.5
X-ray	1100-2200	1100-2200	1100-2200	1100-2200	1100-2200			57.5	2	115.0
X-ray	2130-600	2130-600	2130-600	2130-600	2130-600			42	1	42.0
X-ray						730-18		10.5	1	10.5

Staffing Model Development

Staffing Model Version #2

- Service Line Hours of Operation
- Equipment Needed per Service Line
- Number of Techs per Piece of Equipment

PROPOSED model!		Hours of Operation							Coverage Hours Per Week	Tech Per Machine/Room	Working Hours Per Week
Modality Name	Modality Grouping	M	T	W	R	F	Sat	Sun			
C-arm 11 UH Ortho/NT	X-ray	700-2130	700-2130	700-2130	700-2130	700-2130			72.5	1	72.5
C-arm 12 Ortho Misc/NT	X-ray	700-1930	700-1930	700-1930	700-1930	700-1930			62.5	1	62.5
C-arm 13 UH/NT	X-ray	700-1930	700-1930	700-1930	700-1930	700-1930			62.5	1	62.5
C-arm 14 UH/NT	X-ray	700-1930	700-1930	700-1930	700-1930	700-1930	730-2000	730-2000	87.5	0.5	43.75
C-arm 15 NT	X-ray	700-1730	700-1730	700-1730	700-1730	700-1730	730-2000	730-2000	77.5	0.5	38.75
C-arm 16 NT	X-ray	700-1730	700-1730	700-1730	700-1730	700-1730			52.5	0.5	26.25
C-arm 17 NT	X-ray	1200-1900	1200-1900	1200-1900	1200-1900	1200-1900			35	0.5	17.5
C-arm 18 NT	X-ray	1400-2200	1400-2200	1400-2200	1400-2200	1400-2200			40	0.5	20
C-arm 19 NT	X-ray	1500-2100	1500-2100	1500-2100	1500-2100	1500-2100			30	0.5	15
C-arm 20 NT	X-ray	1500-2200	1500-2200	1500-2200	1500-2200	1500-2200			35	0.5	17.5
O-arm 1 UH/NT	X-ray	630-2000	630-2000	630-2000	630-2000	630-2000			77.5	0.5	38.75
O-arm 2 UH/NT	X-ray	630-2000	630-2000	630-2000	630-2000	630-2000			77.5	0.5	38.75
3D C-arm	X-ray	700-1930	700-1930	700-1930	700-1930	700-1930			62.5	1	62.5

Obtaining Buy In

- OR Staff Relationship
- Radiology Technologist Education
- Phone Fatigue

Daily Collaboration with OR Staff

Team Level

- Daily Huddle
- Daily Workflows

Radiology Technologist Education

Competency and Skill Enhancement

Revised Onboarding
Task Completion/Progress Milestones

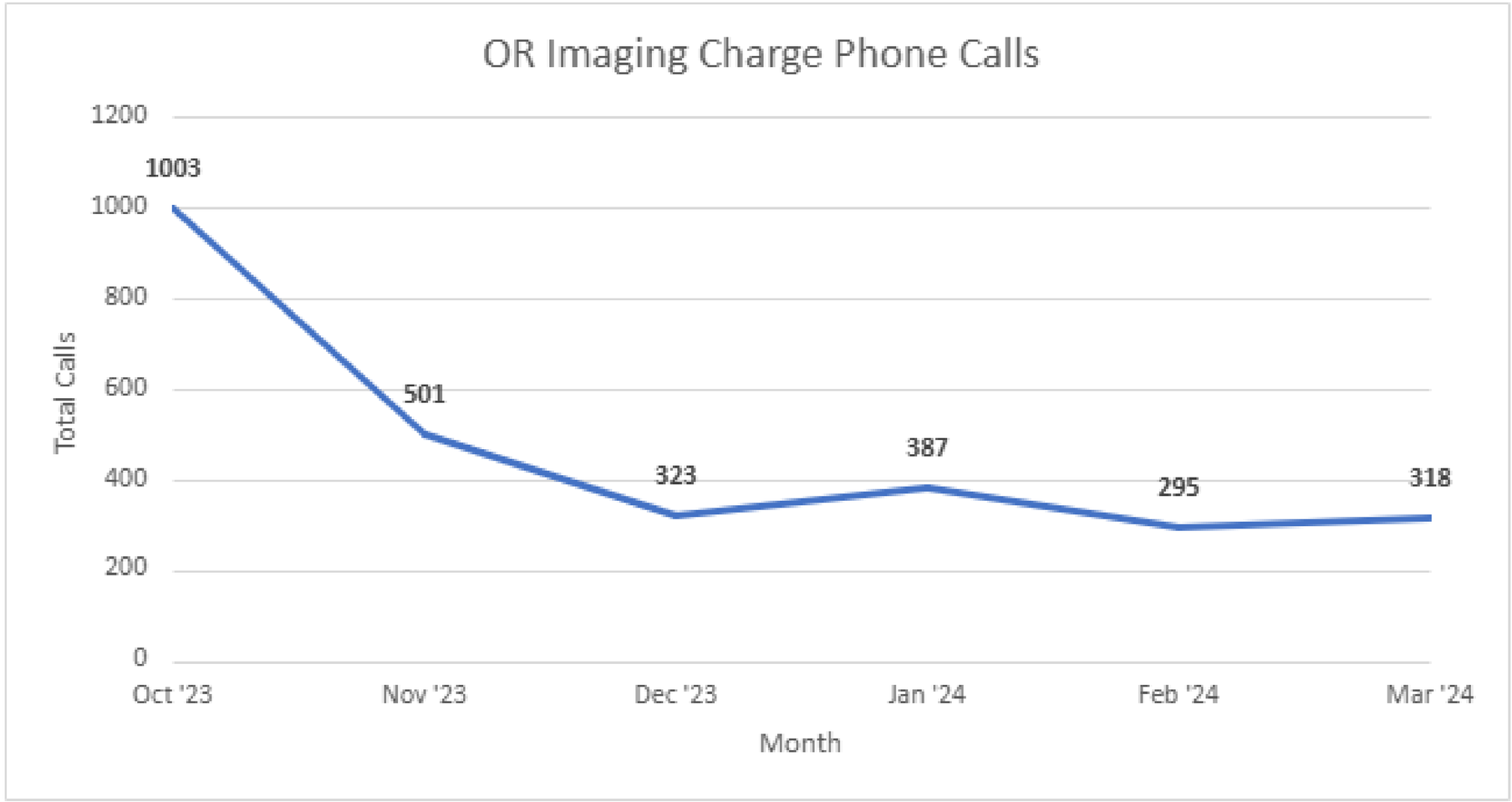
Anticipates Surgeons' Needs

Relied on Surgeons and Senior Rad Tech

Comprehends the Operational Dynamics and Expectations of the OR Environment

Emergency Codes
Sterility

Phone Fatigue



Full Transition to a Dedicated Team

Approximately 9 Months for Conversion

- Gradual Step-by-Step Process
  - Day Coverage
  - Weekend Coverage
  - 24/7 Coverage

Dedicated OR Team

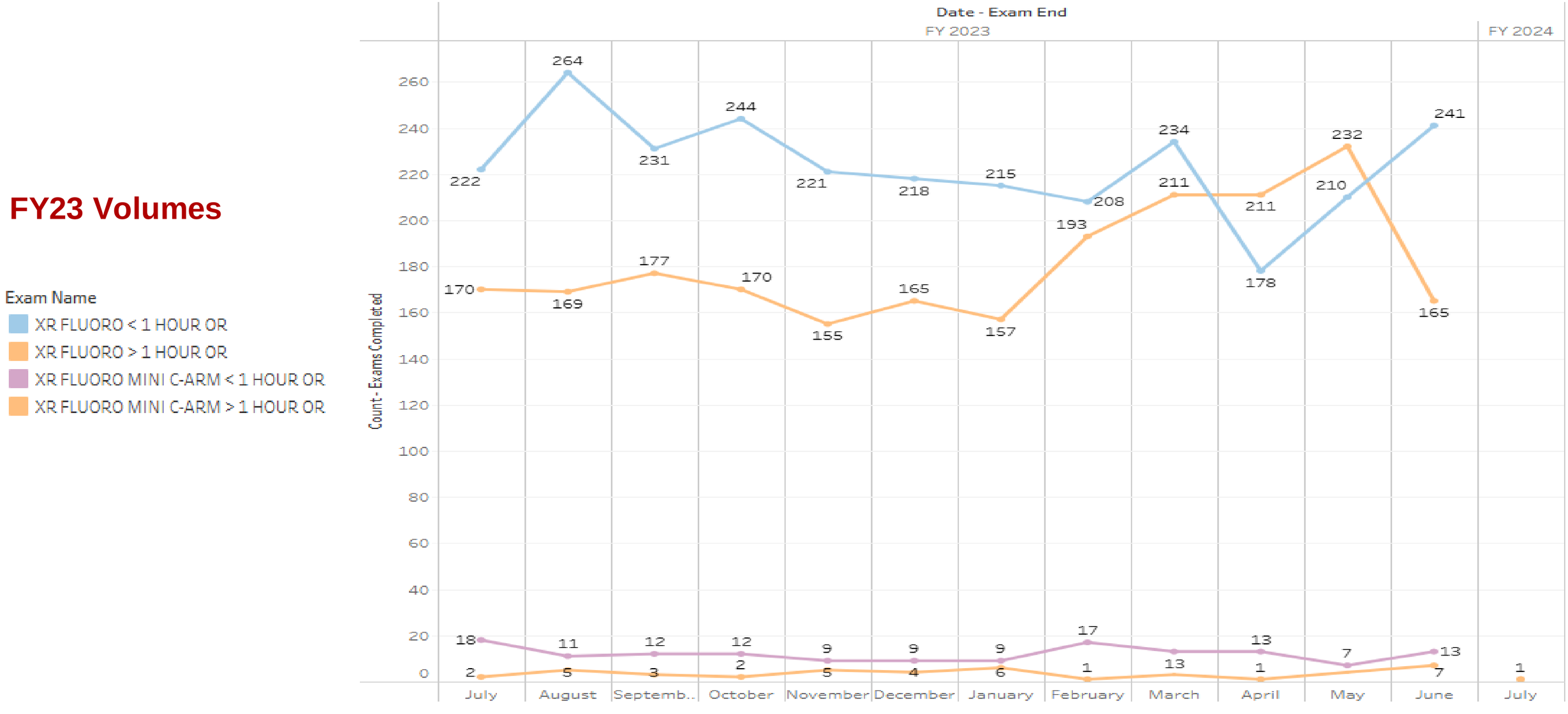
"Coming together is a beginning, staying together is progress, and working together is success."

Henry Ford

How Are We Doing??

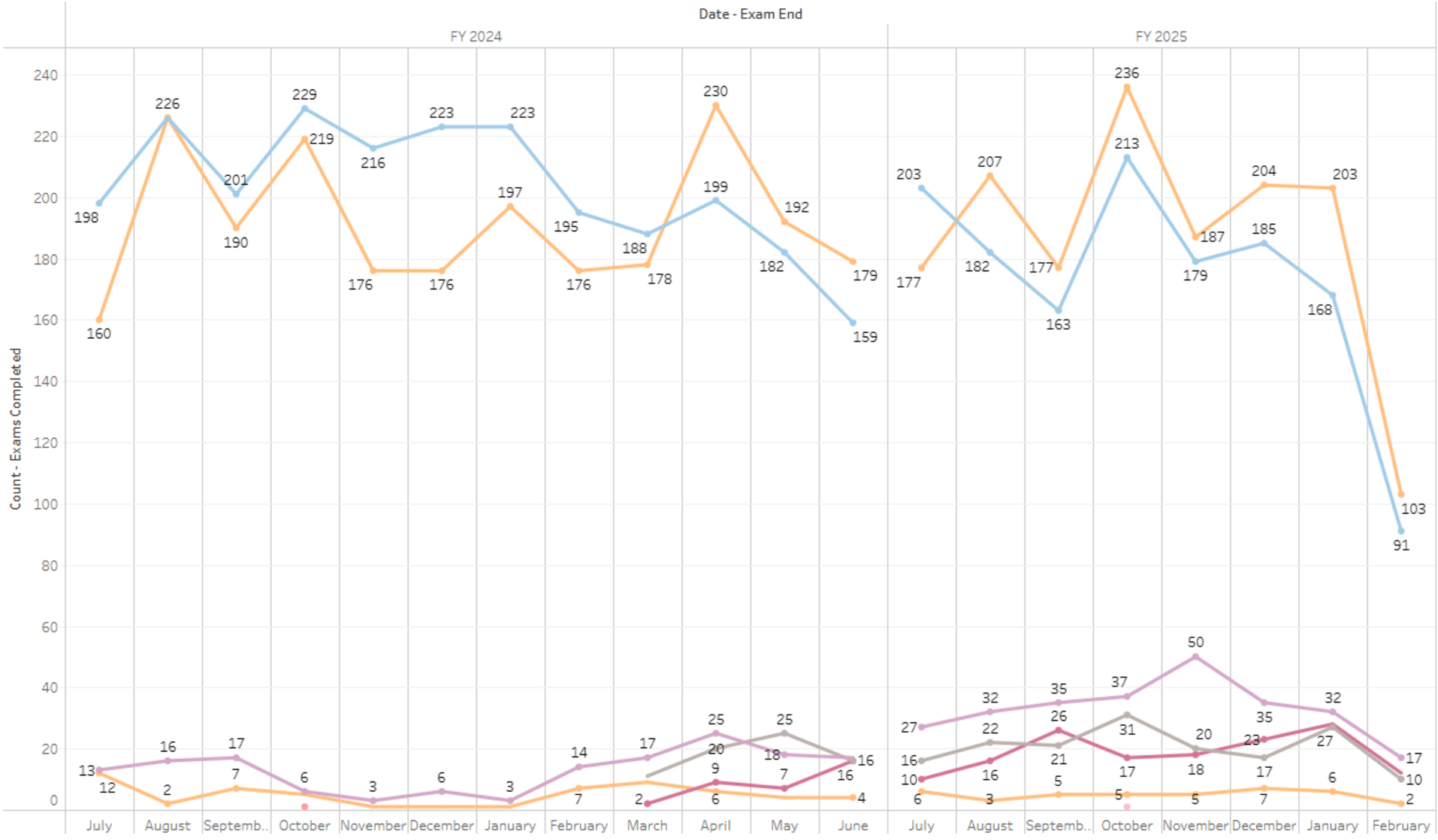
Performance Metrics

FY23 Volumes



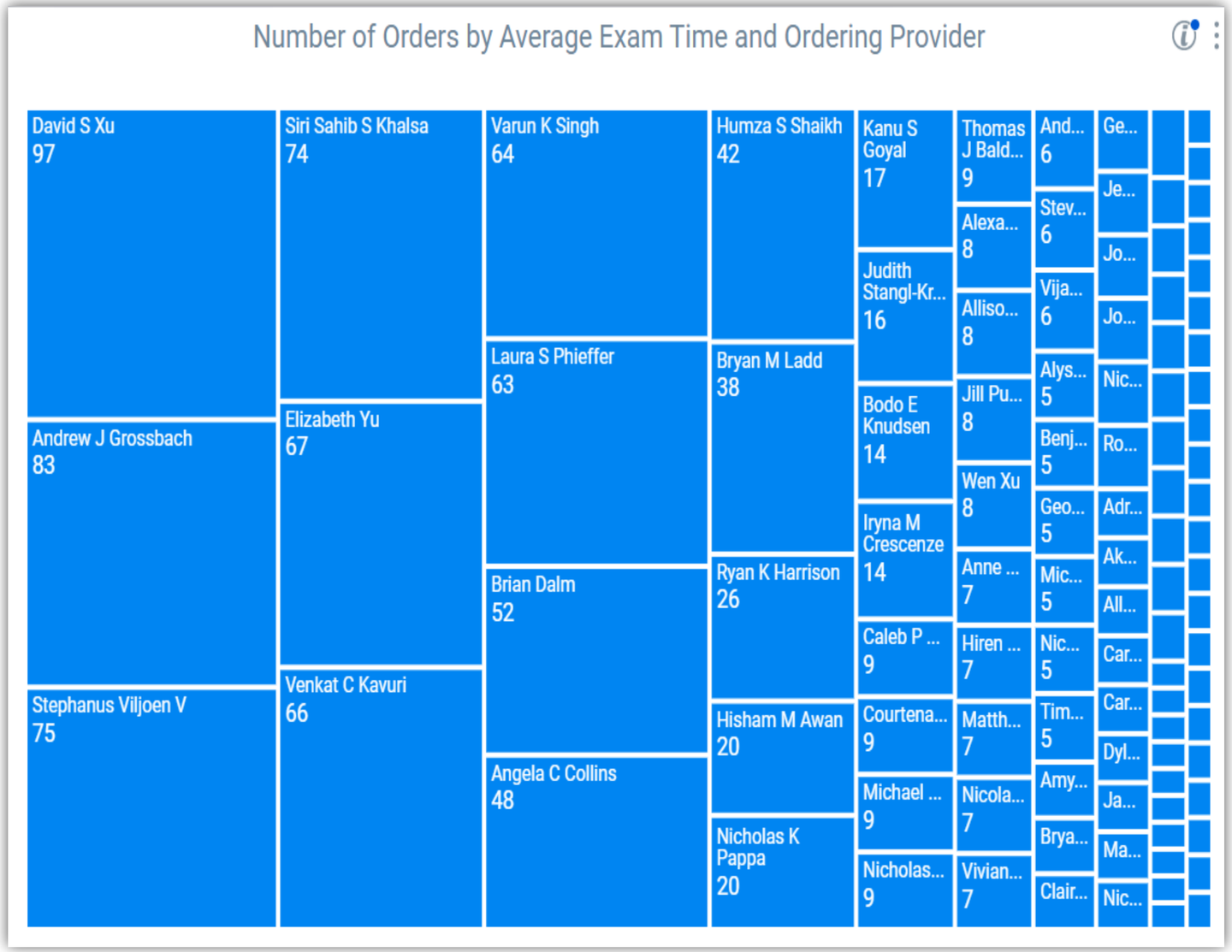
Performance Metrics

FY24 Fluoro Volumes



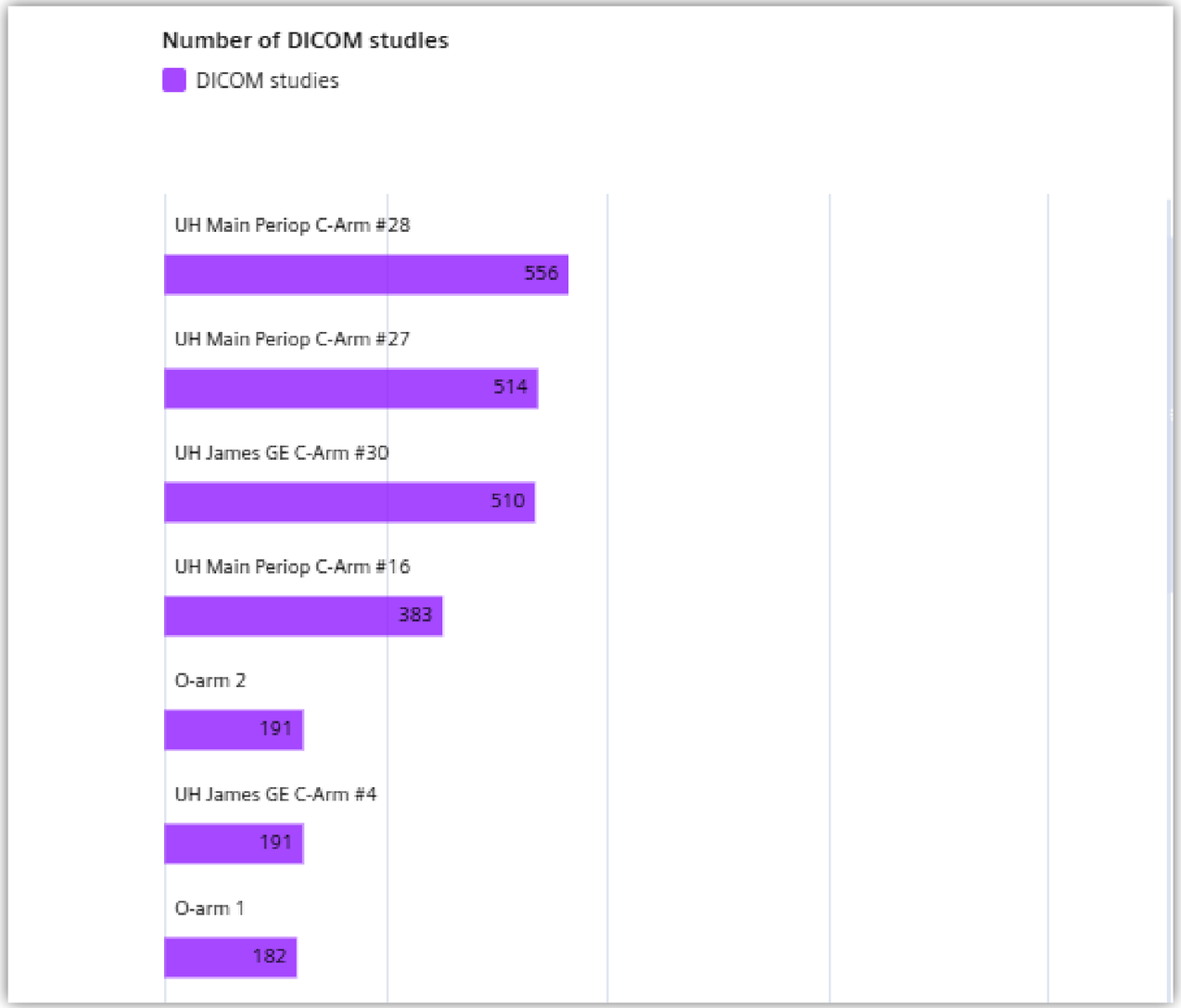
Performance Metrics

Breakdown exam volume by service line.



Performance Metrics

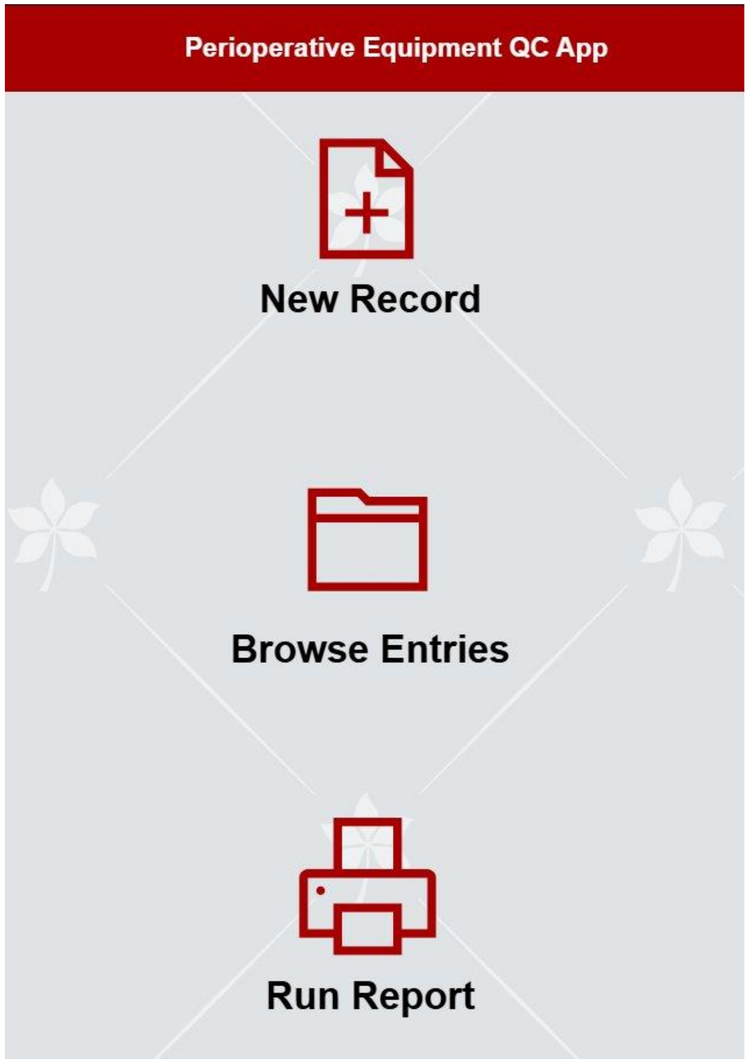
Break down exam by piece of equipment.



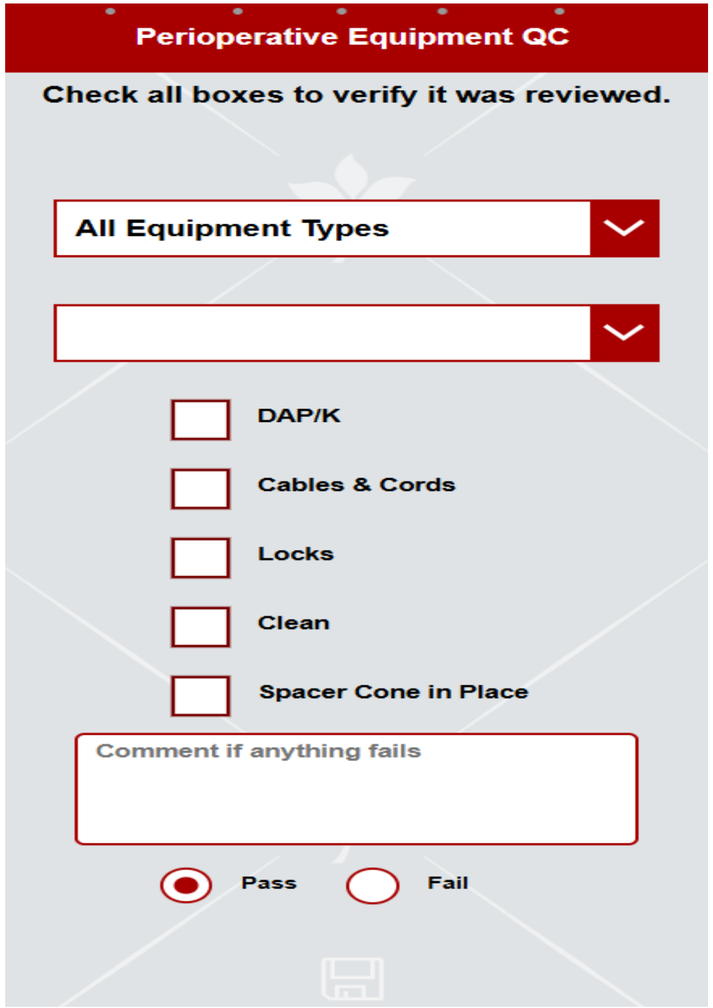
Equipment Management

- Equipment Quality Control
- Equipment Inventory Management
- Resource Stewardship

Quality Control



Quality Control



Equipment Demos

Equipment Demos

Coordinating with all Relevant Stakeholders

- Clinical Engineering
- PACS
- IT
- Radiation Physics

Equipment Management

Purchasing Decision

- Image Quality and Functionality
- Ease of Use
- Service Agreement and Training

Future Growth

Continued Collaboration with OR

- Vertical Expansion Hours
- New Tower
- Ambulatory Locations

Current Imaging Support for Surgical Operations

Over 50 ORs Supported

Staffing with 17 FTEs for 24/7 support

425 Imaging Procedures/Month

20% of Surgical Procedures Supported by Imaging

Equipment Inventory:

- 16 C-Arms
- 3 O-Arms
- 3 Mini C-Arms
- 3 3D C-Arms

What's Next

What's Next

Flat Plate Imaging in the OR

What's Next

CT Portables

References

- Siddiqui, A. A., Andras, L. M., Obana, K. K., Murgai, R., Illingworth, K. D., Tolo, V. T., Mariscal, M., Ponrartana, S., & Skaggs, D. L. (2021). Using a dedicated spine radiology technologist is associated with reduced fluoroscopy time, radiation dose, and surgical time in pediatric spinal deformity surgery. *Spine deformity*, *9*(1), 85–89. https://doi.org/10.1007/s43390-020-00183-5

- Burke, J. F., Anciano, V., Novicoff, W. M., & Yarboro, S. R. (2021). Use of Standardized Language for C-arm Fluoroscopy Improves Intraoperative Communication and Efficiency. *The Journal of the American Academy of Orthopaedic Surgeons*, *29*(9), e458–e464. https://doi.org/10.5435/JAAOS-D-20-00314

Lessons Learned

- Engaging a team is crucial for creating buy-in, which is essential for the success of any project
- Transparent and open communication is extremely important
- Recognizing success and acknowledging outcomes
- Understanding it is okay to fail and learning how to adjust moving forward

Questions?