

Efficiency Reimagined: AI's Role and Daily Huddle Boards Management Systems in Action

Karen Y. Edwards, MBA, BSN, RN, CSSM, CNOR

Nursing Director Perioperative Services Houston Methodist Hospital

October 11, 2025



Disclosure

I declare that I am not receiving any form of compensation for this presentation, and that I am not representing or speaking on behalf of the AORN Foundation or any affiliated organization.

Objectives

1. Optimize first case start times by ensuring all pre-operative preparations are completed timely through coordinated communication and data integration from Epic, AI system, and the huddle board.
2. Reduce turnover times by standardizing protocols, utilizing real-time monitoring on the huddle board, and leveraging AI predictions to proactively allocate staffing and resources.
3. Enhance teamwork and communication during morning reports by utilizing visual data from the huddle board, Epic, and AI to identify potential delays and collaboratively develop mitigation strategies.

Definitions

- ***Scheduled start time:*** The planned time when a case is intended to begin, as determined by the EHR.
- ***Actual case start time:*** The actual time a patient is wheeled into the operating room, as determined by AI's advanced computer vision "wheels in" algorithm.
- ***Delay:*** A condition in which the actual start time is later than the scheduled start time. AI logs all delays longer than 59 seconds.
- ***First case Start (FCS):*** A case will meet the criteria for 'first case' if it is the first case of the day for a surgeon, the first case scheduled within the room's 'first case hours', and there is no indication that the case is urgent, emergent, or cancelled.
- ***Turn Around Time TAT):*** Will be defined as wheels out to wheels in with the next surgery

Action Plans to Improve OR Efficiency Using AI and Huddle Board Management System

1 Pre-Operative
Planning &
Communication

2 First Case Starts
Optimization

3 Turnover Time
Reduction

4 Data Monitoring
& Continuous
Improvement

5 Staff Engagement
& Accountability

6 Utilize Technology
& Visual
Management

1 Pre-Operative Planning & Communication

UPDATE HUDDLE BOARD DAILY



HIGHLIGHT ANY CASES THAT ARE AT RISK

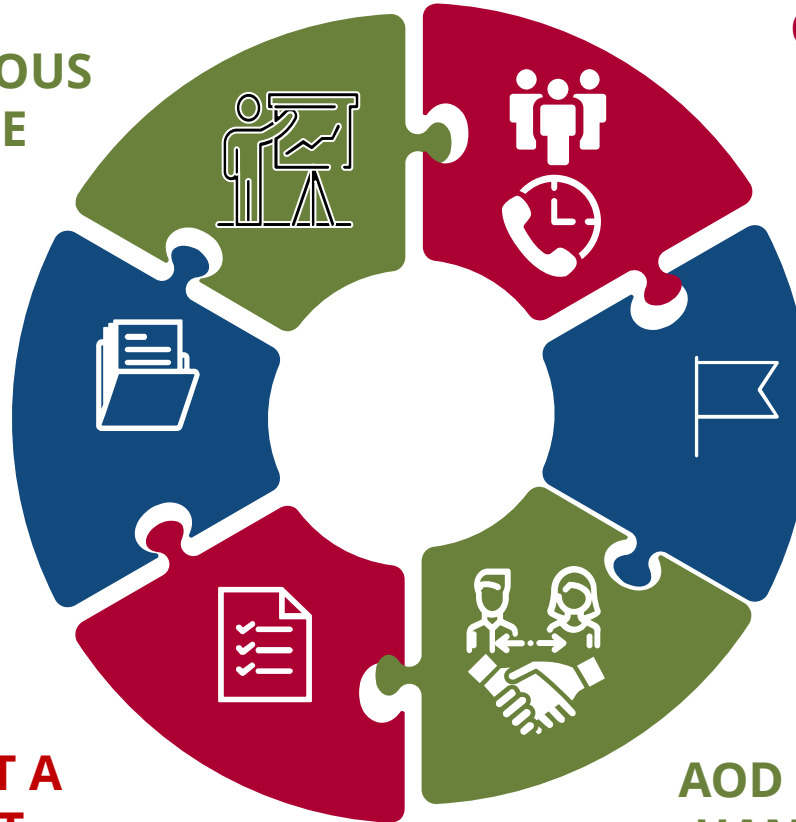
ASSIGN CLEAR RESPONSIBILITIES

2 First Case Starts Optimization

REVIEW THE PREVIOUS DAY'S FIRST CASE START TIMES

PRIORITIZE EARLY PRE-OP PREPARATIONS

IMPLEMENT A CHECKLIST SYSTEM



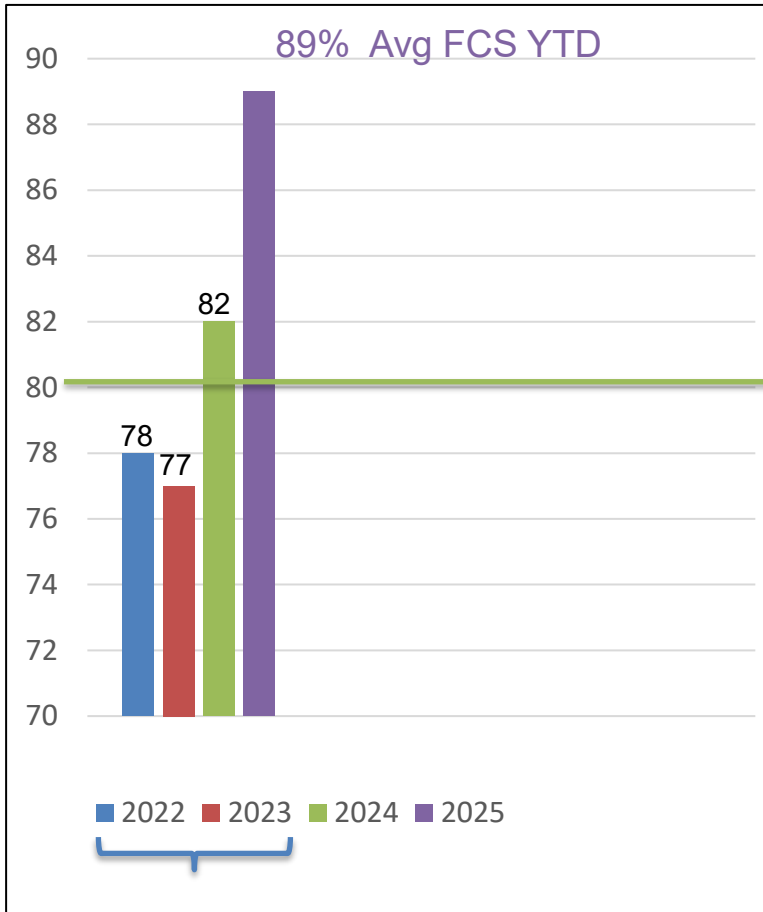
COORDINATE WITH ANESTHESIA AND NURSING TEAMS

FLAG ANY POTENTIAL DELAYS

AOD TO OR HANDOFF

AI Data First Case Start Main 3 OR & Dunn 6 OR

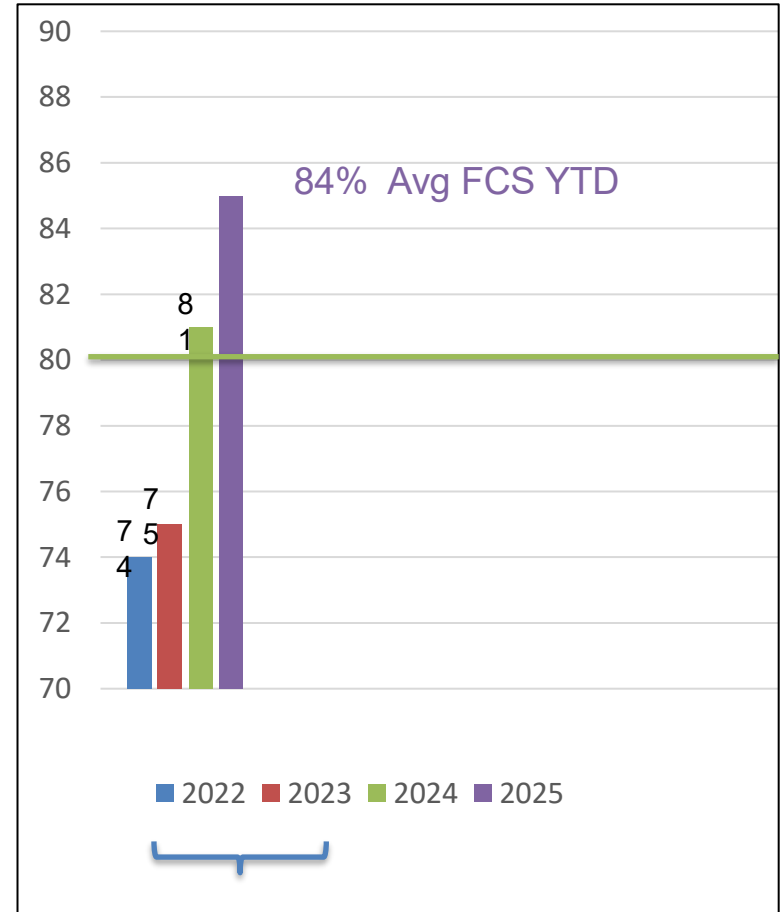
Main 3 OR First Case Starts YTD



Prior to AI & Huddle Board

Goal > 80%

Dunn 6 OR First Case Starts YTD



Prior to AI & Huddle Board

Goal > 80%

3 Turnover Time Reduction



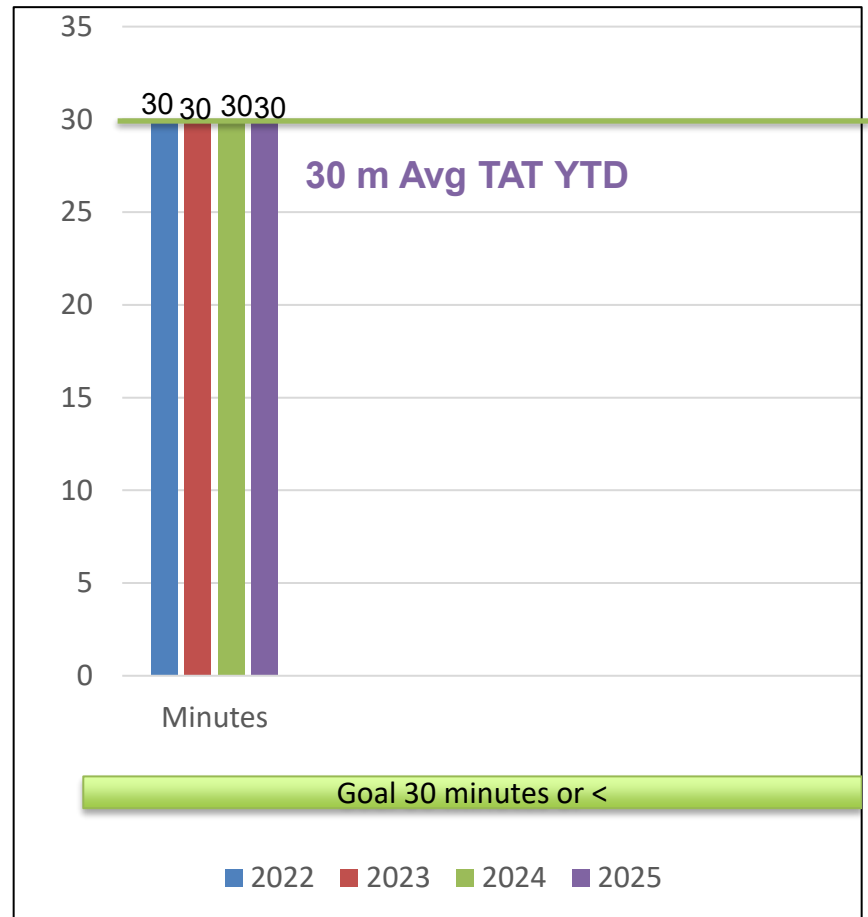
AI DATA TAT TIME

Main 3 OR & Dunn 6 OR

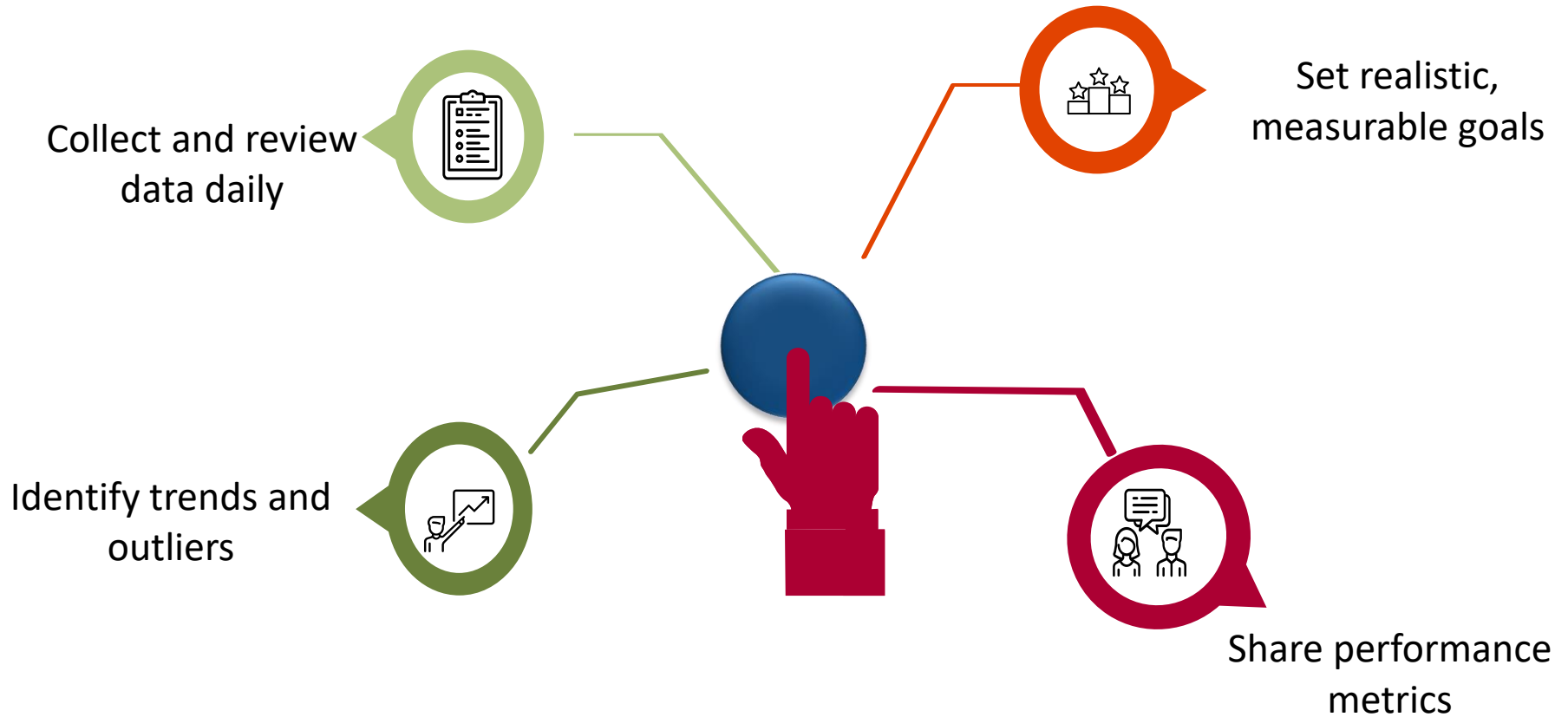
Main 3 OR TAT YTD



Dunn 6 OR TAT YTD



4 Data Monitoring & Continuous Improvement



Urology AI 3 Months of Data

PROSTATECTOMY, LAPAROSCOPIC, ROBOT-ASSISTED

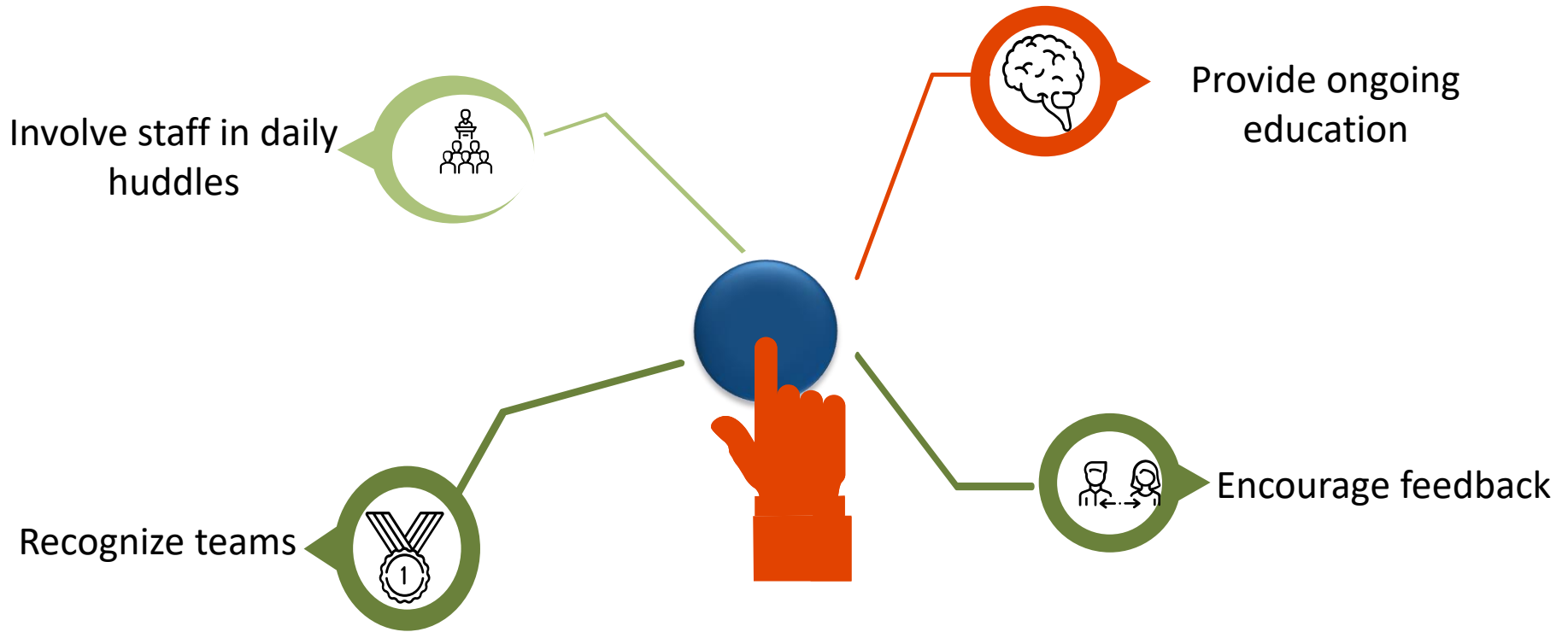
Surgeon (Anonymized)	Dr. 1 (52)	Dr. 2 (12)	Dr. 3 (11)	Dr. 4 (10)	Dr. 5 (6)	Dr. 6 (3)	Dr. 7 (1)	Total Volume (95)
Wheels In – Intubation (mins.)	10.2	8.8	11.4	12.0	10.2	9.7	11.0	10.3 Avg. mins
Intubation – Drape (mins.)	25.9	24.4	23.7	25.9	31.2	21.0	24.0	25.6 Avg. mins
Patient Draped – Incision (mins.)	3.6	2.8	1.9	3.1	3.7	2.7	2.0	3.2 Avg. mins
Incision - Undraped	231.3	232.8	282.1	179.4	281.3	193.7	268.0	234.3 Avg. mins
Undraped – Wheels Out (mins.)	10.6	9.5	14.8	10.1	9.3	9.7	12.0	10.8 Avg. mins

GYN AI 3 Months of Data

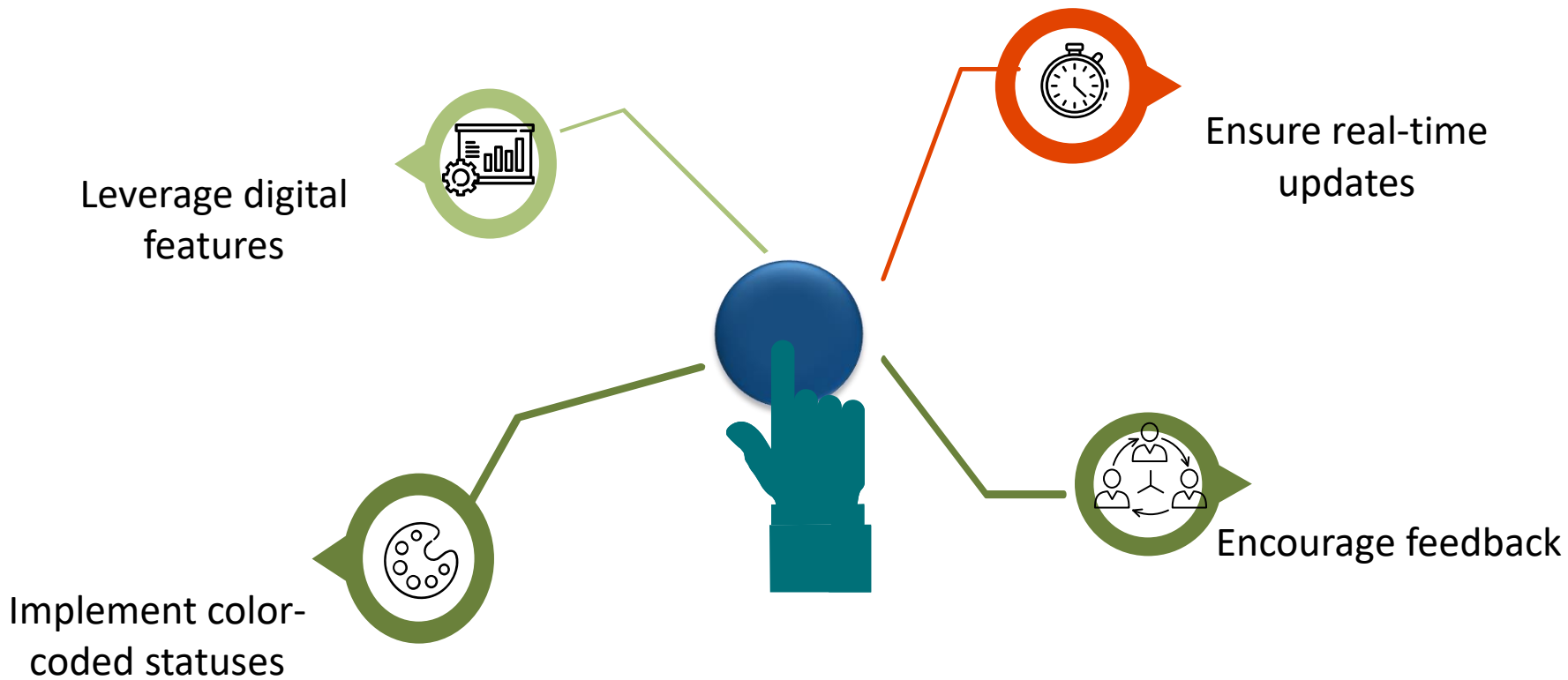
HYSTEROSCOPY WITH DILATION AND CURETTAGE OF UTERUS

<i>Surgeon (Anonymized)</i>	R	P	S	B	AE	I	AN	O	M	AV	Total
<i>Number of Cases</i>	64	28	22	16	13	11	11	10	8	7	190
Wheels In --> Intubation	9.5	7.5	7.4	6.8	7.4	7.3	7.1	6.8	9.0	7.6	8.1
Intubation --> Drape	18.3	11.9	13.6	12.4	12.0	13.0	11.9	10.8	12.4	14.6	14.4
Drape --> Cut	7.4	7.0	6.1	4.3	2.4	4.0	2.8	4.2	6.0	3.1	5.7
Cut --> Undraped	45.3	25.8	19.8	13.4	20.8	21.2	23.0	14.2	20.4	23.9	29.0
Undraped --> Wheels Out	11.3	9.6	9.2	9.7	9.8	9.9	9.1	9.5	11.8	8.9	10.2

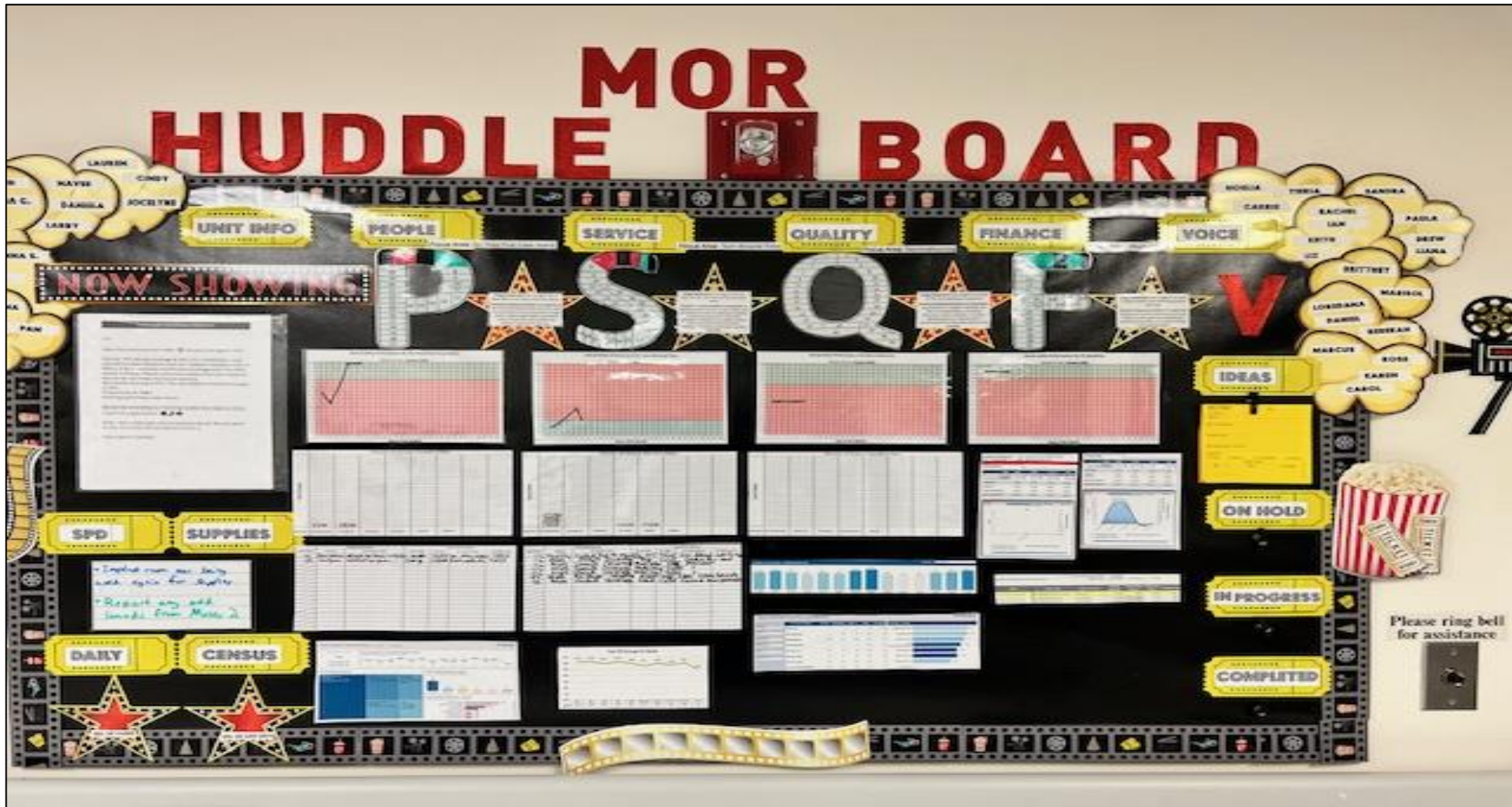
5 Staff Engagement & Accountability



6 Utilize Technology & Visual Management

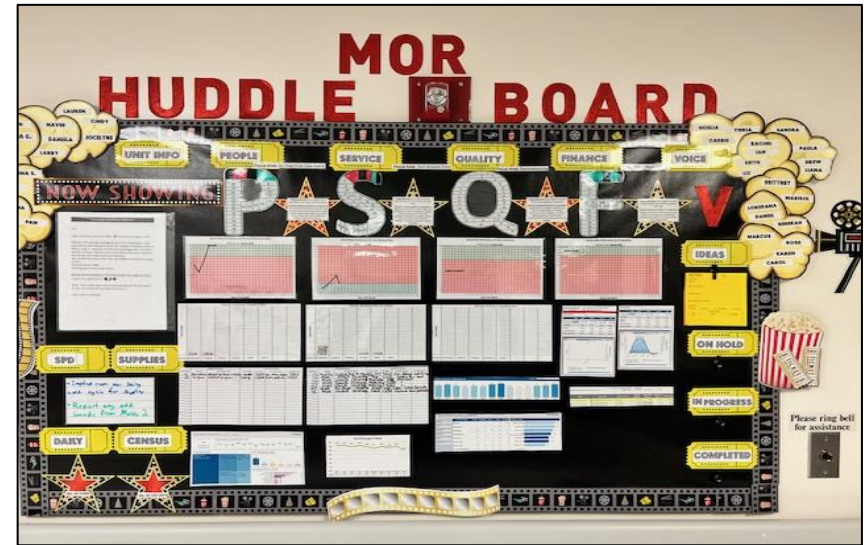


Huddle Management Board Paper



Daily Huddle & Huddle Board

Days	Time	Location
M-F	6:45 AM	Main 3 OR Front

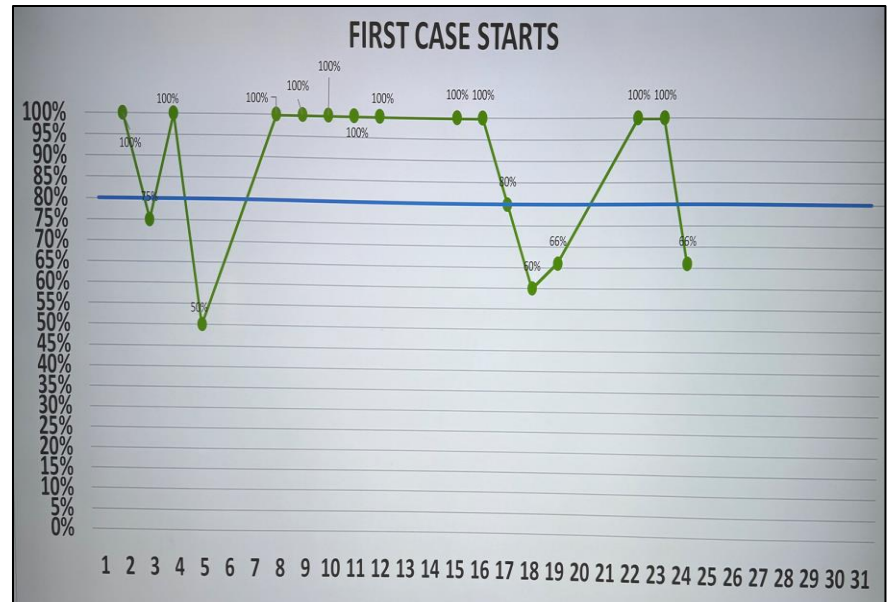
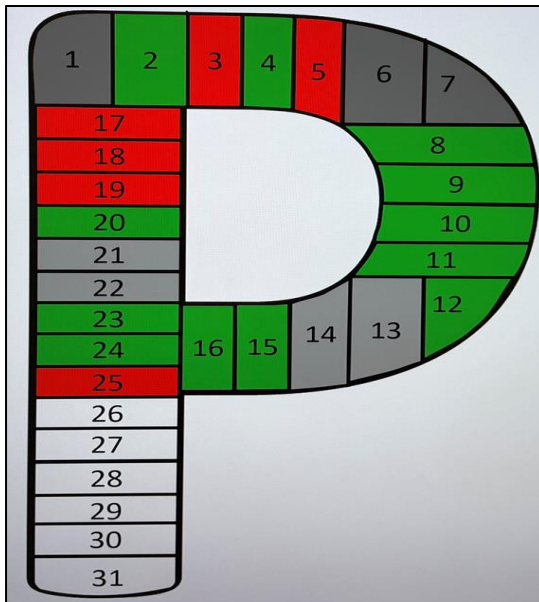


Pillar	People	Service	Quality	Finance
Metric	On-time first case starts (FCS)	Service On turnaround times (TAT)	Normothermia	Financial Unit Productivity
Target	≥ 80%	≤ 30 mins	≥ 70%	≥ 100%

Focus Area: **First Case Starts**

Target Statement: Our target is for at least 80% on time first case starts

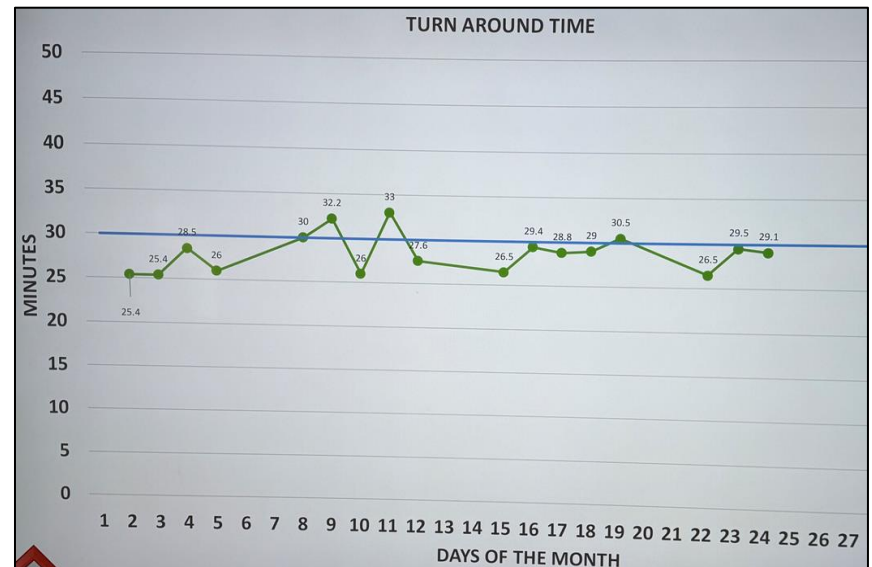
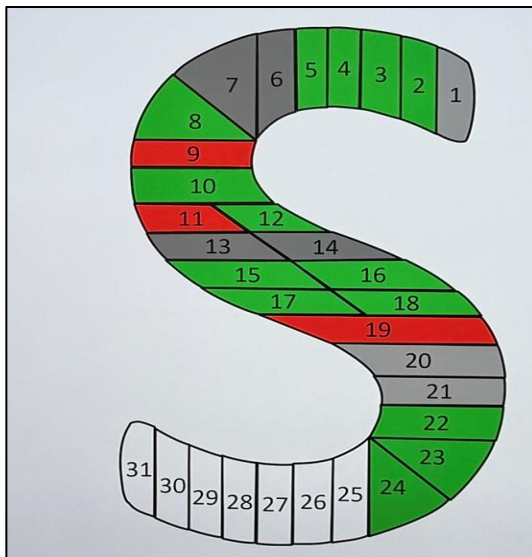
Outcome Statement/Why it's important: Having a minimum of 80% on-time starts keeps the OR on tract preventing delays in subsequent cases, interruptions of For our patients and impacts their overall experience of care.



Focus Area: Turn Around Time (TAT)

Target Statement: Our target is to have 30 minutes or less TAT between to follow Cases. TAT will be defined as wheels out to wheels in with the next surgery.

Outcome Statement/Why it's important: Having turn around time of 30 min or less is a major contributor to patient and surgeon satisfaction so we want to be unparalleled in this area of our service. It also leads to steadier workflow, cases finishing within Scheduled work hours, and scheduled work hours, and schedule balance for staff throughout the day.



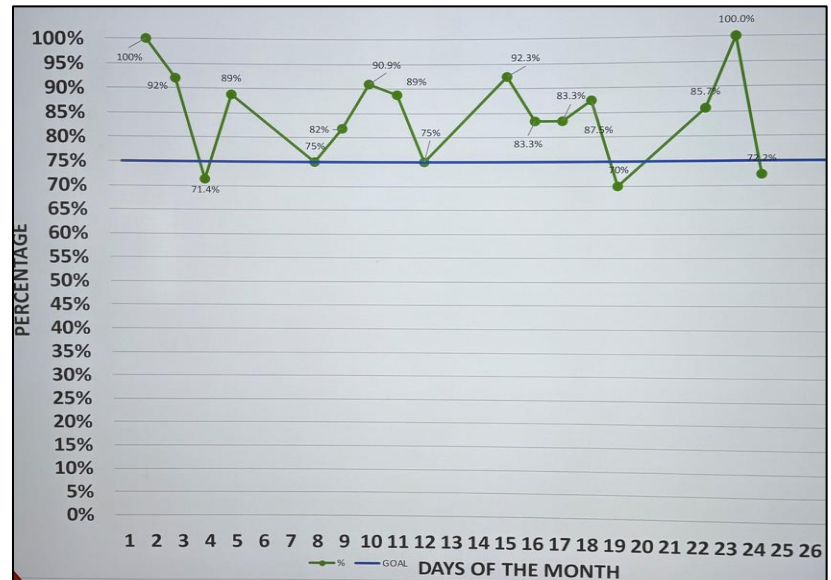
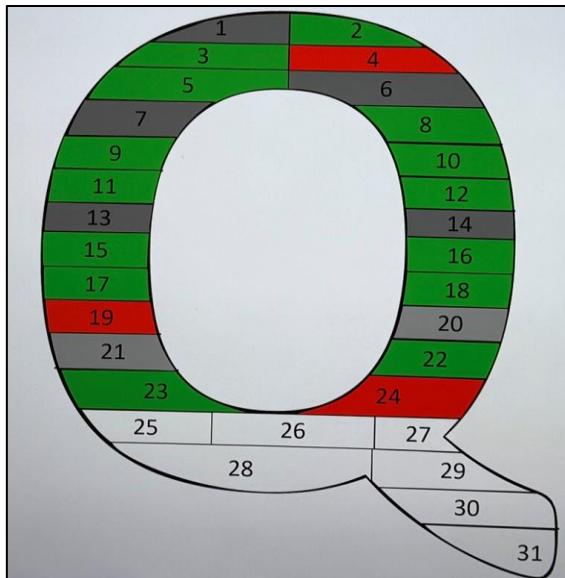
Month & Year: **SEPTEMBER 2025**

Unit/Department:

Focus Area: Normothermia

Target Statement: Our target is to have greater than 75% of Patients Normothermic (core body temp 96.8 F)

Outcome Statement/Why it's important: Hypothermia places surgical patients at Risk for adverse outcomes such as surgical site infections, poor wound healing, MI events, increased length of hospital stay, and increased blood loss.



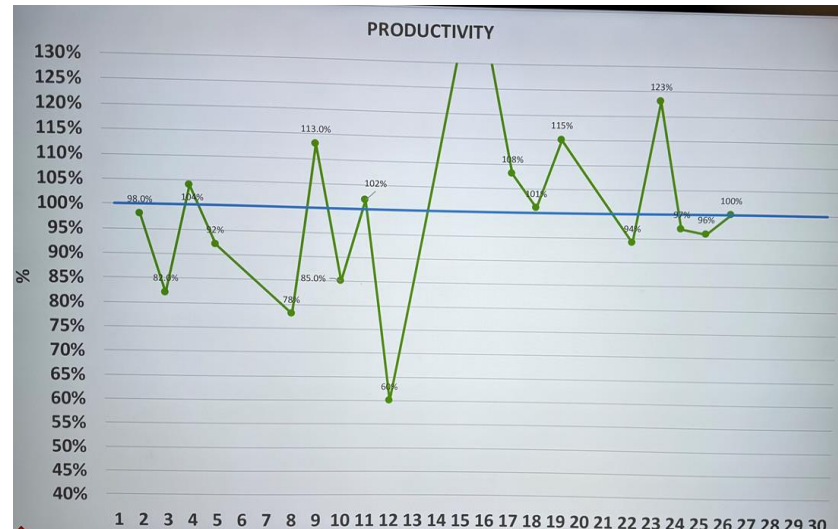
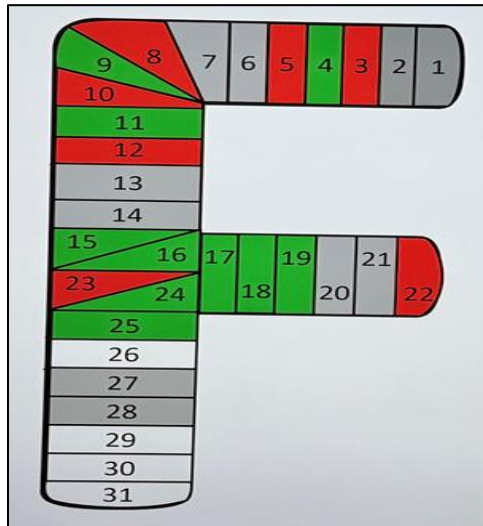
Month & Year: **SEPTEMBER 2025**

Unit/Department:

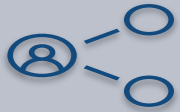
Focus Area: Productivity

Target Statement: Our target is to have 100% productivity daily

Outcome Statement/Why it's Important: Productivity directly impacts a hospital's financial health by maximizing the utilization of expensive resources, leading to Cost savings, increased patient throughput, and improved patient satisfaction while Also contributing to better staff morale by minimizing unnecessary delays and Optimizing workflow within the operating room.



WHY HUDDLE BOARDS



Real-time updates on team KPIs



Fosters open communication by addressing both successes and challenges



Promotes collaboration across all team roles



Provides a platform for idea-sharing

Huddle Board Implementation Highlights

Wins:

- ✓ Increased knowledge and engagement with the entire surgical team
- ✓ Cross departmental visibility
- ✓ Improved OR Metrics- FCS/TAT
- ✓ Improved nurse-to-nurse communication via AOD to OR Handoff that indirectly impacted FSC and TAT efficiency
- ✓ Increased visibility of team performance
- ✓ Leadership involvement and accountability

Opportunities:

- Tracking Countermeasures to improve processes and identify root causes.
- Encourage team to submit Voice Cards.
- Train additional staff to conduct huddle in absence of Team Lead
- Increase efficiency to improve patient outcomes.
- To continue to meet our KPIs
- Highlight individual and team successes

Video Main 3 OR Staff Huddle



Daily Huddle & Huddle Board Digital

Days	Time	Location
M-F	6:45 AM	Dunn 6 OR Front

Pillar	People	Service	Quality	Finance
Metric	On-time first case starts (FCS)	Service On turnaround times (TAT)	Normothermia	Financial Unit Productivity
Target	≥ 80%	≤ 30 mins	≥ 70%	≥ 100%

REFERENCES

1. He, J., Chen, X., Wu, Y., Li, Z., & Zhang, H. (2023). Artificial intelligence for improving first-case start times and operating room turnover: A systematic review. *Journal of Healthcare Engineering*, 2023, 1–12. <https://doi.org/10.1155/2023/1234567>
Annotation: Systematic review synthesizing AI approaches to optimize FCS and TTAT, reporting overall reductions in start delays and turnover times across multiple centers; highlights common AI modalities (predictive scheduling, real-time guidance) and barriers to implementation.
2. Patel, A., Green, A., & Chen, M. (2020). Reducing turnover time in the operating room with machine learning: Impacts on first-case efficiency. *Anesthesia & Analgesia*, 130(5), 1202–1210. <https://doi.org/10.1213/ANE.0000000000004000>
Annotation: Multisite study showing ML-based recommendations reduced TTAT and improved first-case efficiency, with notable gains from better case sequencing and handoff timing; discusses integration with existing dashboards.
3. Adams, L., Brooks, D., & Patel, R. (2021). Visual management in operating rooms: The impact of huddle boards on staffing productivity and communication. *Journal of Perioperative Practice*, 31(4), 145–153. <https://doi.org/10.1177/17504589211012345>
Annotation: Huddle boards correlated with improved staffing utilization, clearer communication, and perceived reductions in coordination overhead; qualitative feedback highlights workflow transparency.
4. Patel, K., Singh, A., & Brown, E. (2023). Implementing normothermia guidelines with huddle board-driven reminders: Effects on perioperative temperature management. *Journal of Perioperative Practice*, 33(4), 210–218. <https://doi.org/10.1177/17504589231123456>
Annotation: Huddle-board reminders linked to normative temperature targets; associated with higher adherence to normothermia guidelines and more timely corrective actions.
5. Brown, M., Chen, Y., & O'Neill, P. (2022). Huddle boards as a tool for daily surgical performance reviews: A mixed-methods study of staffing efficiency. *BMJ Quality & Safety*, 31(6), e1–e9. <https://doi.org/10.1136/bmjqs-2021-012345>
Annotation: Mixed-methods study showing huddle boards support daily performance reviews, with measurable gains in staffing efficiency and smoother shift transitions; identifies key success factors and barriers.

ENJOY THE LITTLE THINGS IN LIFE
BECAUSE ONE DAY YOU'LL LOOK
BACK AND REALIZE THEY WERE
THE BIG THINGS.



IF YOU
Believe
IN YOURSELF
Anything
IS POSSIBLE

**Thank
you!**

HOUSTON
Methodist[®]
LEADING MEDICINE