Prevention of Medical Errors Through Effective Communication

ENHANCING PATIENT SAFETY WITH CLEAR HEALTHCARE COMMUNICATION

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Objectives

- Understanding Medical Errors and Their Consequences
- The Role of Effective Communication in Healthcare Settings
- Strategies to Prevent Medical Errors Through Communication
- Building a Culture of Safety and Accountability


TO ERR
IS HUMAN

Silent Epidemic

- 98,000 Deaths annually in hospitals
- During a 4-day inpatient stay one medication error will occur
- 25 medically related injuries every 100 admissions
- 40,000 incidents of medical harm occur every day

Pennsylvania Patient Safety Reporting System (PA-PSRS)

- The system requires hospitals, ambulatory surgical facilities, and birthing centers to report serious events as defined by various acts.
- Reports are submitted monthly to the **Patient Safety Authority (PSA)**, which analyzes the data to identify trends and make recommendations for improving patient safety.
- The PA-PSRS is the largest database of its kind in the U.S., containing over 5 MILLION EVENT reports since 2004, and it plays a crucial role in preventing future errors by providing insights into how to avoid medical mistakes.
- Additionally, Pennsylvania has a **Medical Care Availability and Reduction of Error (MCARE) Act**, which outlines the requirements for reporting medical errors and near misses.

PA-PSRS SAFETY HARM SCORES

	Harm Score	Definition
Incidents	A	Circumstances that could cause adverse events (e.g., look-alike medications, confusing equipment)
Incidents	B1	An event occurred but it did not reach the individual because of chance alone
Incidents	B2	An event occurred but it did not reach the individual because of active recovery efforts by caregivers
Incidents	C	An event occurred that reached the individual but did not cause harm and did not require increased monitoring
Incidents	D	An event occurred that required monitoring to confirm that it resulted in no harm and/or required intervention to prevent harm
Serious Events	E	An event occurred that contributed to or resulted in temporary harm and required treatment or intervention
Serious Events	F	An event occurred that contributed to or resulted in temporary harm and required initial or prolonged hospitalization
Serious Events / High Harm	G	An event occurred that contributed to or resulted in permanent harm
Serious Events / High Harm	H	An event occurred that resulted in a near-death event (e.g., required ICU care or other intervention necessary to sustain life)
Serious Events / High Harm	I	An event occurred that contributed to or resulted in death

Closer to Home- What Does the Data Show?

288,882

256,679

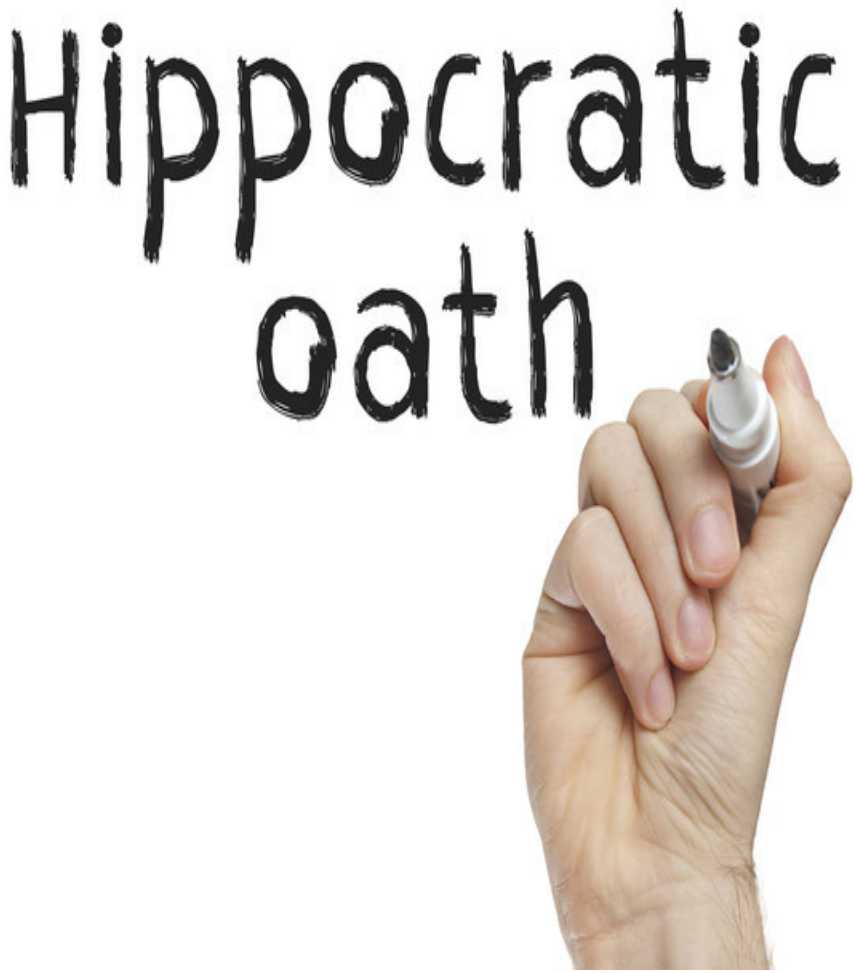
287,997

315,418

Closer to Home- What Does the Data Show?

- In 2024, there was a 9.5% increase of SE reported from 2023; with 7.3% Increase in serious events, with high harm reports increasing 1.1%
- 96.0% came from hospitals, while 4.0% originated from nonhospital facilities (ASFs, birthing centers, and abortion facilities).
- 32.2 reports per 1000 patient days for hospitals and 11.4 reports per 1000 surgical encounters for ASF's.
- Error Related to Procedure/Treatment/Test (P/T/T) remained the most frequently reported event type


WHY
IS THIS
STILL
HAPPENING?



The Oath requires physicians to uphold specific ethical standards, including:

Beneficence: Physicians must act in the best interest of their patients and provide beneficial treatments.

Non-maleficence: The Oath emphasizes the importance of not causing harm to patients.

Confidentiality: Physicians are required to respect patient privacy and confidentiality.

Teaching and Mentorship: The Oath includes a commitment to teach the art of medicine to future generations without expecting payment. The original text includes a pledge to various healing gods and outlines the responsibilities of physicians towards their teachers and patients. It also explicitly prohibits actions such as administering poison.

Code of Ethics for the Certified Registered Nurse Anesthetist

1.1 Respects human rights and the values, customs, culture, and beliefs of patients and their families.

1.2 Supports the patient's right to self-determination.

1.3 Acts in the patient's best interest and advocates for the patient's welfare.

1.5 Protects patients from healthcare providers who are incompetent, impaired, or engage in unsafe, illegal, deceptive, abusive, disrespectful, or unethical practice.

1.6 Participates in honest and transparent disclosure of an adverse or

unanticipated event to the patient and others with the patient's consent.

2.1 Engages in a scope of practice within individual competence and maintains

role-specific competence.

2.5 Is physically and mentally fit for duty.

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Code of Ethics for the Certified Registered Nurse Anesthetist

2.7 Is honest in all professional interactions to avoid any form of deception.

2.11 Respects and engages healthcare providers to foster a collaborative and cooperative patient care environment through a culture of safety and open communication to contribute to the ethical and safe environment of care.

2.12 Manages medications to prevent diversion of drugs and substances

2.16 Is responsible and accountable to contribute to the dignity and integrity of the profession.

2.18 Reports critical incidents, adverse events, medical errors, and near misses in accordance with law, accreditation standards, and institutional policy to promote a culture of safety, maintain the integrity of the profession, and advance the profession and its body of knowledge.

6.1 Works in collaboration with the healthcare community to promote highly competent, ethical, safe, quality patient care.

Understanding Medical Errors and Their Consequences

Importance of Communication

Joint Commission data continues to demonstrate the importance of communication in patient safety

- 1995 - 2005: Ineffective communication identified as root cause for nearly **66 percent** of all reported sentinel events*
- 2010 - 2013: Ineffective communication among **top 3 root causes** of sentinel events reported**

** (JC Root Causes and Percentages for Sentinel Events (All Categories) January 1995–December 2005)*

*** (JC Sentinel Event Data (Root Causes by Event Type) 2004-2012)*

Definition and Types of Medical Errors

Definition of Medical Errors

Medical errors are preventable adverse effects of care that may or may not harm patients.

Medication Errors

Medication errors occur when incorrect drugs or dosages are administered to patients.

Diagnostic Errors

Diagnostic errors involve incorrect or delayed identification of a patient's condition.

Surgical and System Failures

Surgical errors and system failures include mistakes during operations and breakdowns in healthcare processes.

Impact on Patient Safety and Healthcare Outcomes

Consequences of Medical Errors

Medical errors cause patient harm and extend hospital stays, impacting overall health outcomes.

Financial and Trust Impacts

Medical errors increase healthcare costs and erode patient trust in healthcare systems.

Need for Preventive Measures

Highlighting the urgency to implement measures that prevent errors and improve patient safety.

Common Causes of Medical Errors

Miscommunication

Miscommunication among healthcare teams frequently leads to medical errors and compromises patient safety.

Lack of Standard Procedures

Absence of standardized protocols increases the risk of inconsistent care and medical mistakes.

Fatigue and Inadequate Training

Healthcare provider fatigue and insufficient training contribute significantly to the occurrence of errors.

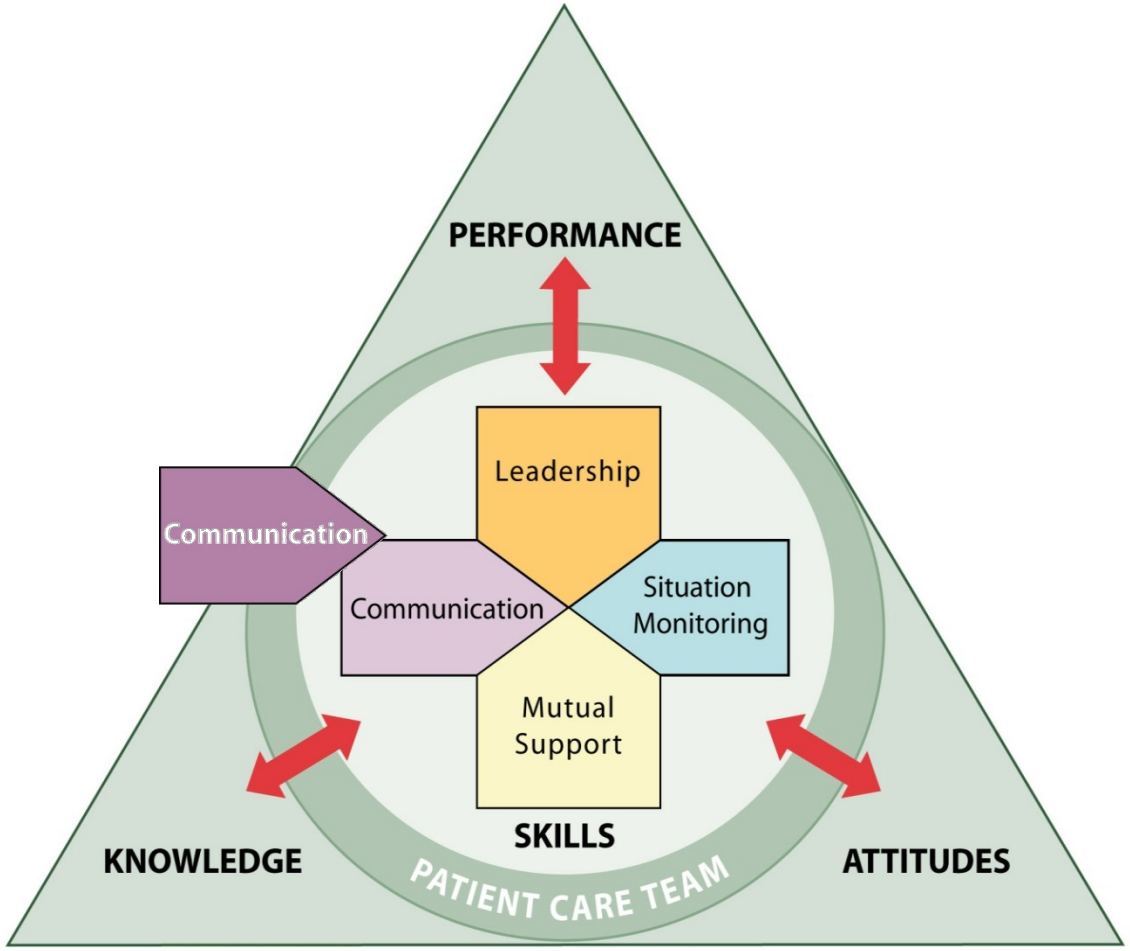
System Inefficiencies

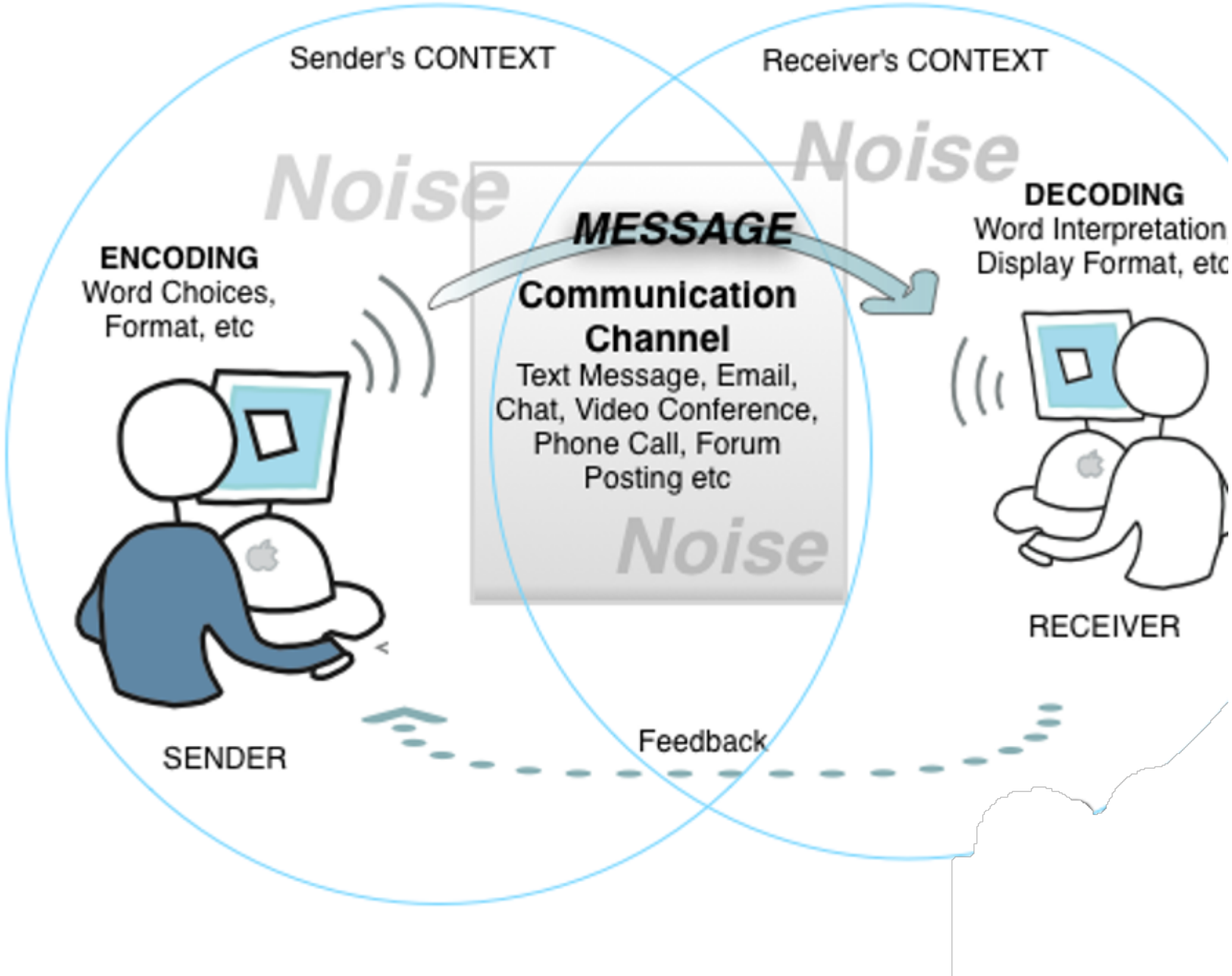
Inefficient healthcare systems and workflows can lead to mistakes and affect patient outcomes.

The Role of Effective Communication in Healthcare Settings

COMMUNICATION

- Effective communication skills are vital for patient safety
- Enables team members to effectively relay information
- The mode by which most TeamSTEPPS strategies and tools are executed





Communication is…

- The process by which information is exchanged between individuals, departments, or organizations
- **THE LIFELINE OF THE CORE TEAM**
- Effective when it permeates every aspect of an organization

Standards of Effective Communication

- Complete

  Communicate all relevant information
- Clear

  Convey information that is plainly understood
- Brief

  Communicate the information in a concise manner
- Timely

  Offer and request information in an appropriate timeframe
- Verify authenticity

  Validate or acknowledge information

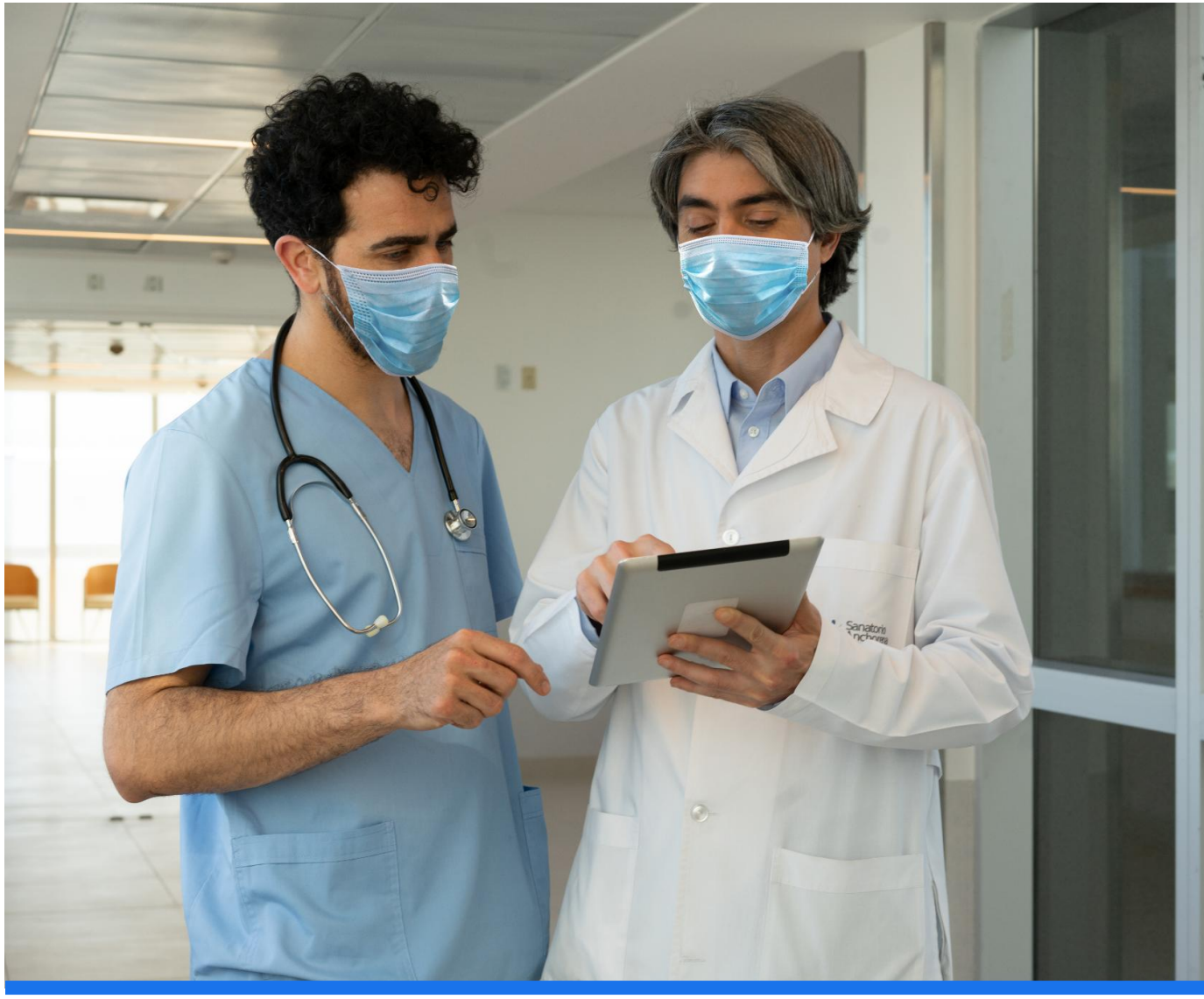
Importance of Clear Communication Among Healthcare Teams

Shared Understanding

Clear communication fosters a shared understanding among healthcare team members about patient care plans.

Error Reduction

Effective communication reduces errors caused by assumptions or incomplete information in patient care.



Communication Challenges

- Language barrier
- Distractions
- Physical proximity
- Personalities
- Workload
- Varying communication styles
- Conflict
- Lack of information verification
- Shift change

Barriers to Effective Communication in Clinical Environments

Hierarchical Culture

Hierarchical structures can limit open communication among clinical staff and hinder information flow.

Time Pressures

Busy schedules and urgent tasks create time constraints that reduce opportunities for effective communication.

Language Differences

Differences in language or terminology can cause misunderstandings in clinical communication.

Environmental Distractions

Noisy or chaotic environments can distract staff and disrupt clear communication.

Tools and Strategies for Improving Communication

Structured Communication Tools

Structured communication tools streamline information flow and reduce errors in healthcare settings effectively.

Use of Checklists

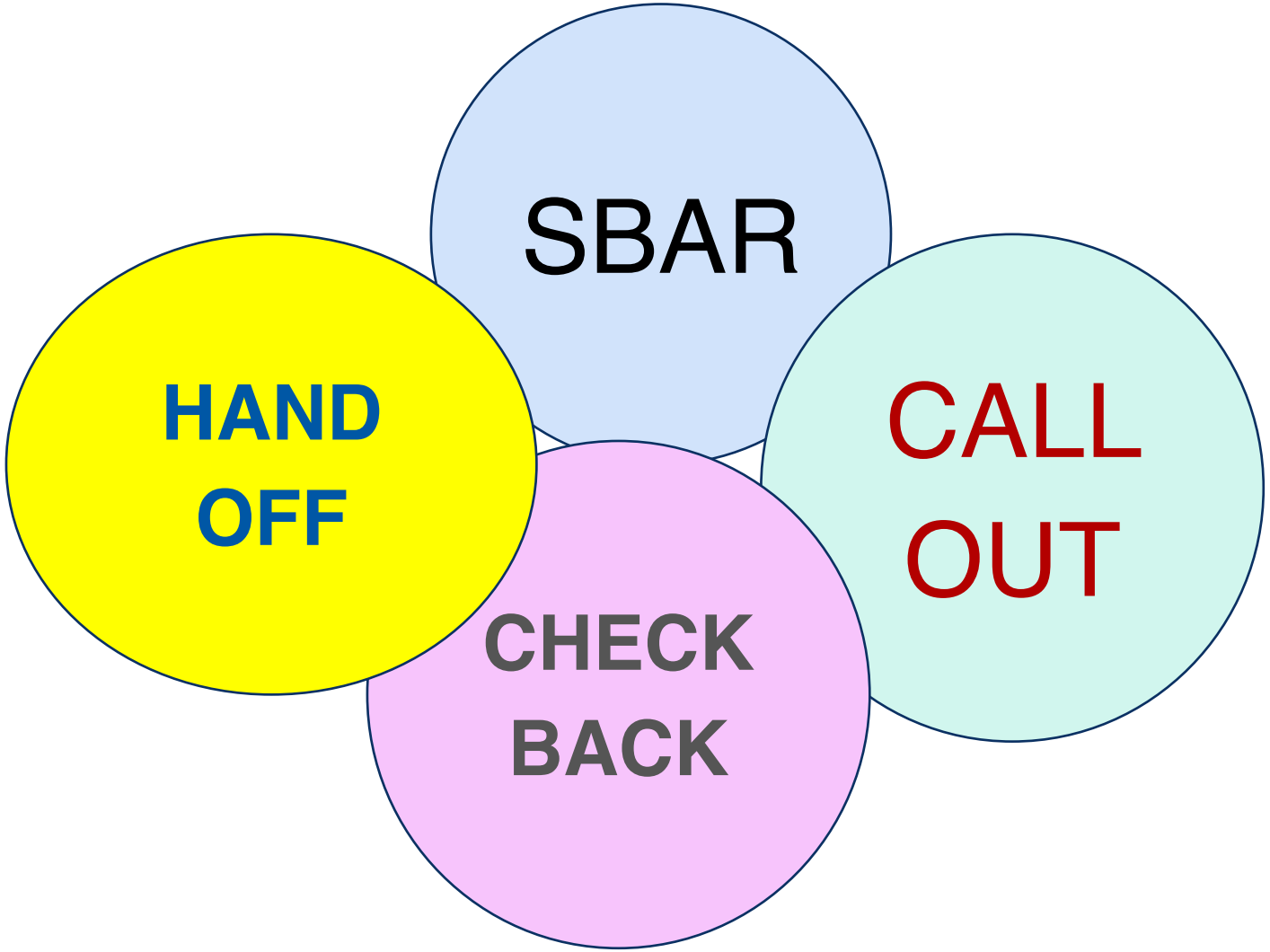
Checklists ensure all critical information is shared consistently during healthcare processes and handoffs.

Multidisciplinary Meetings

Regular multidisciplinary meetings foster teamwork and shared understanding among healthcare professionals.

Strategies to Prevent Medical Errors Through Communication

INFORMATION EXCHANGE STRATEGIES



SBAR Provides…

A FRAMEWORK FOR TEAM MEMBERS TO EFFECTIVELY COMMUNICATE INFORMATION TO ONE ANOTHER

Communicate the following information:

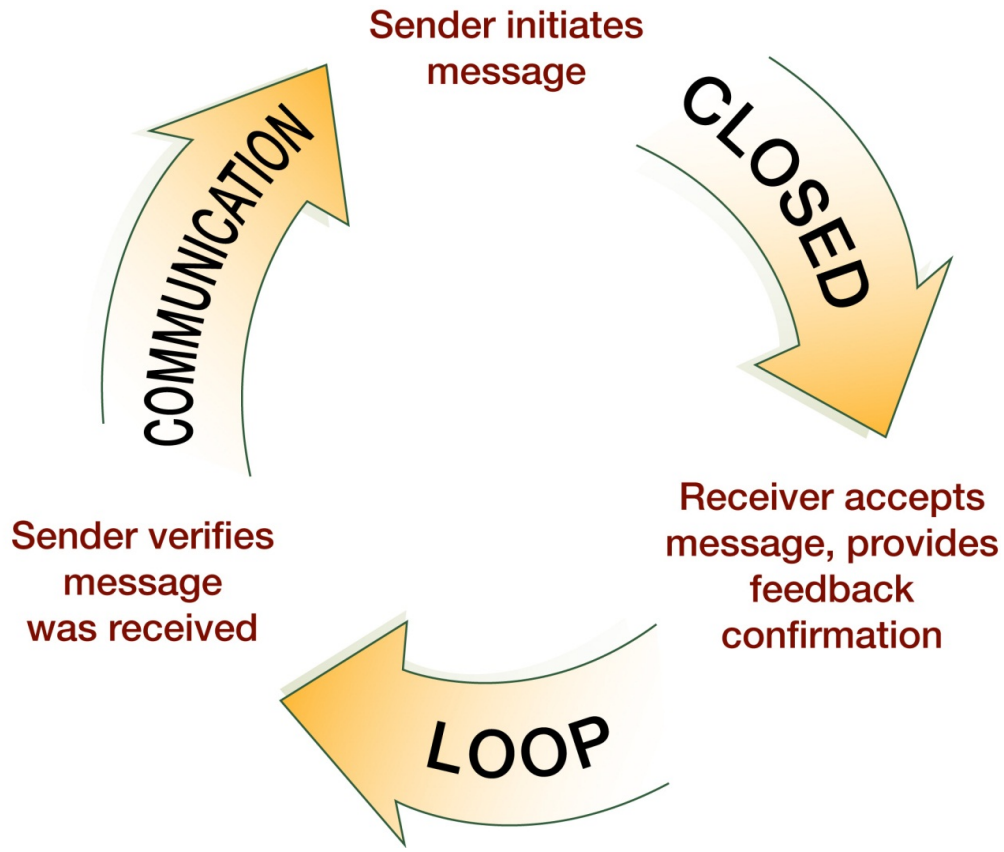
- **S**ituation—What is going on with the patient?
- **B**ackground—What is the clinical background or context?
- **A**ssessment—What do I think the problem is?
- **R**ecommendation—What would I recommend?

Call-Out is…

A strategy used to communicate important or critical information

- It informs all team members simultaneously during emergency situations
- It helps team members anticipate next steps

A Check-Back is…



Huddle

Handoff is…

The transfer of information during transitions in care across the continuum

Includes an opportunity to ask questions, clarify, and confirm

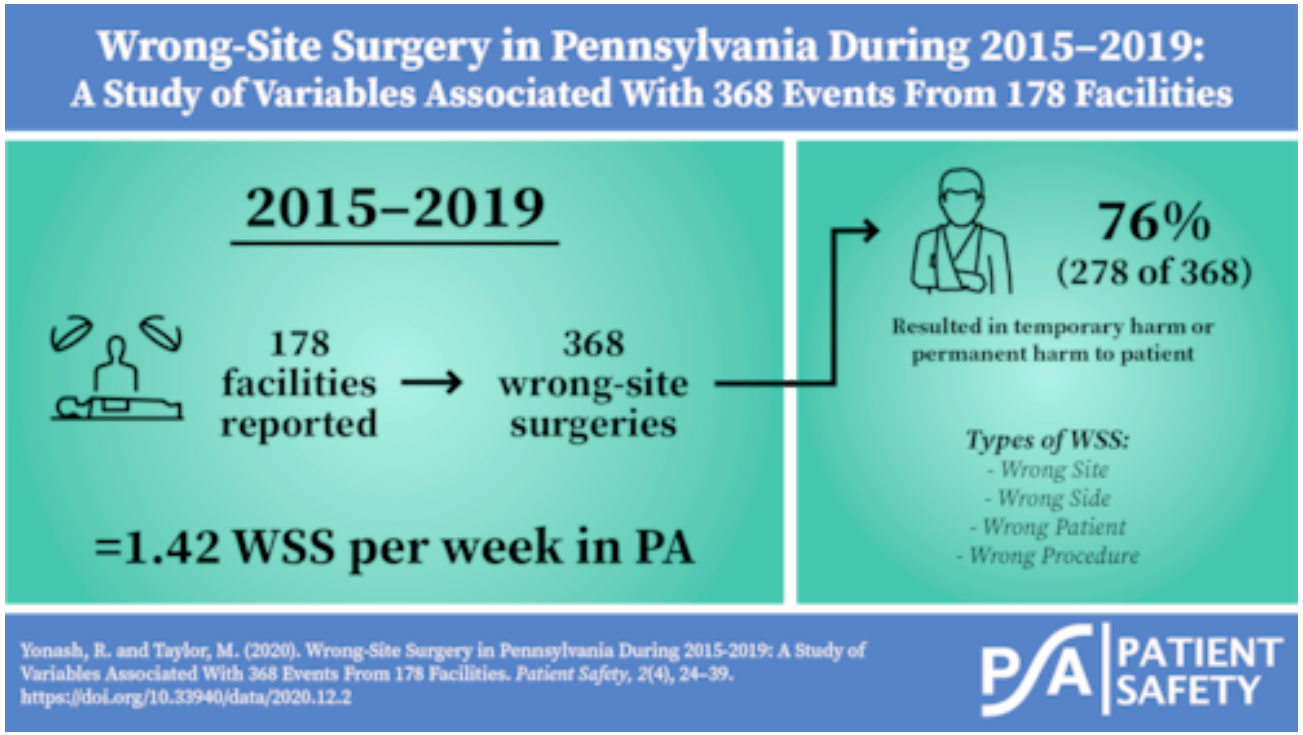
Handoff Consists of…

- Transfer of responsibility and accountability
- Clarity of information
- Verbal communication of information
- Acknowledgment by receiver
- Opportunity to review

Debrief


Time Out

According to the most recent Joint Commission sentinel event data, there were more than 3,300 sentinel events from 2015 to 2018; **440 WERE WRONG-SITE SURGERIES**.1 The Pennsylvania Patient Safety Authority indicated that 60 wrong-site surgeries were reported from mid-2016 to mid-2017; nerve blocks administered to the wrong side represented nearly **ONE-FOURTH** of these events.2 A 2018 study assessing surgical adverse events and near misses at 86 Veterans Health Administration facilities found that, although overall surgical adverse event rates had decreased from 1.74 to .47 per 100,000 procedures over seven years, there were still 169 total wrong site procedures reported.3 Almost **30 PERCENT** of these adverse events could be attributed to an incomplete or incorrectly performed surgical time out.3 In 2022, wrong-site surgery accounted for 6% of the 1,441 (87) sentinel events reviewed by The Joint Commission. These data underscore the need for continued efforts in thoughtfully and thoroughly conducting surgical time outs.



Why Timeouts Are Important

Preventing Errors:

- Timeouts provide an opportunity for the surgical team to pause and verify critical information before proceeding with a procedure.
- This includes confirming patient identity, surgical site, procedure, and the availability of necessary equipment and resources.
- By double-checking these details, potential errors and complications can be detected and prevented.

Enhancing Communication:

- In a busy OR, effective communication is essential for a successful surgical outcome.
- Timeouts foster collaboration and open dialogue among team members, encouraging them to voice concerns, clarify doubts, and share vital information.
- By promoting clear communication, timeouts create an environment that is conducive to teamwork and reduces the risk of miscommunication.

Ensuring Patient Safety:

- Patient safety is at the forefront of healthcare practice, and timeouts are pivotal in this aspect.
- By mandating a moment of reflection and verification, timeouts serve as a safety net, ensuring that the correct patient, procedure, and site are addressed.
- This simple yet crucial step significantly reduces the occurrence of wrong-site surgeries and other preventable medical errors.

TIME OUT POLICY

Three components are universally addressed by professional organizations and TJC to ensure the patient's safety and to prevent the occurrence of wrong person, wrong site, wrong procedure/surgery. They include–

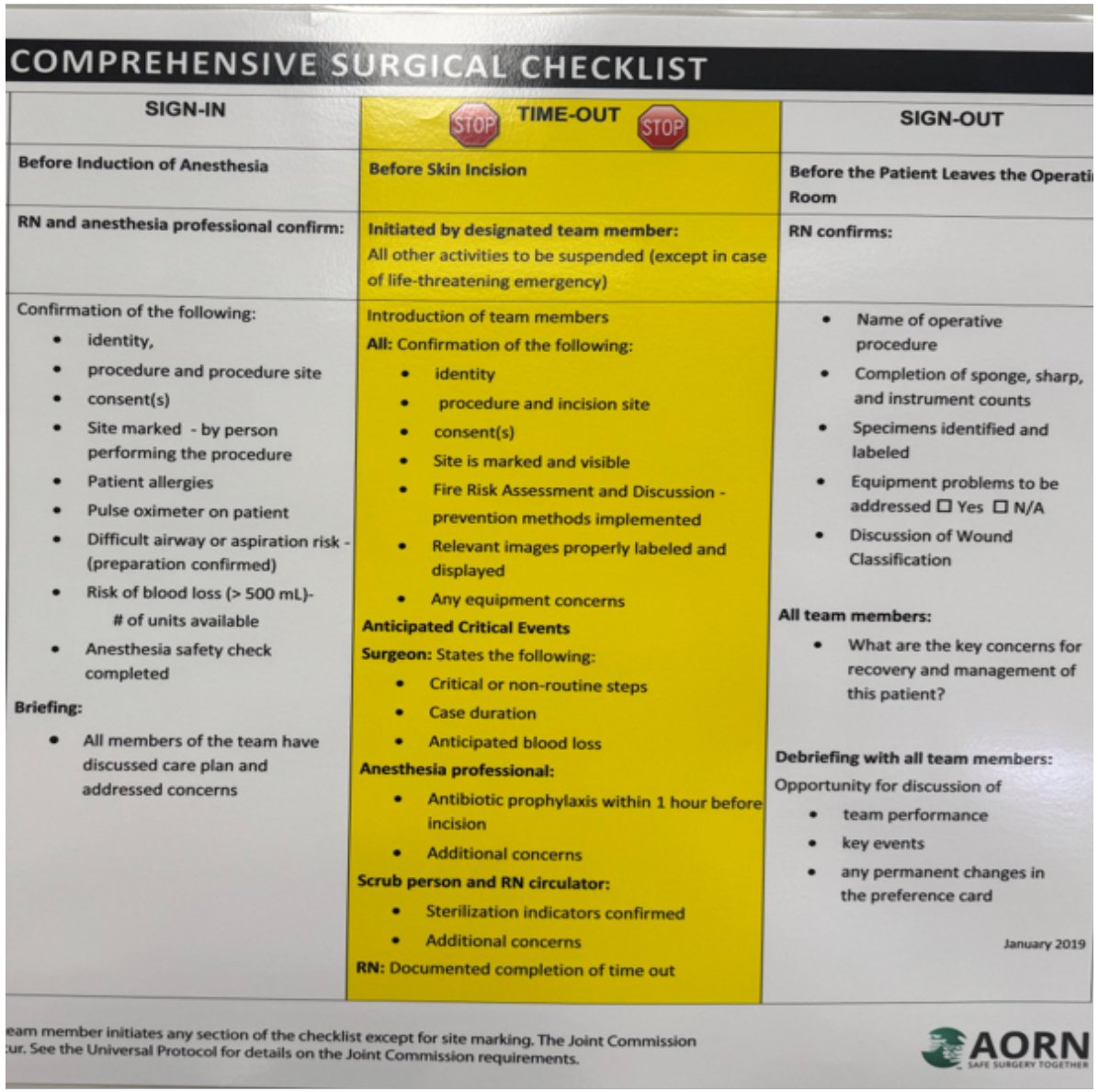
- Pre-operative/pre-procedural verification to prevent errors and promote safe patient care.
- Marking of the operative/procedural site.
- Time-Out for all surgeries or procedures to ensure that the correct patient, site, and procedure are consistent with the plan of care. The Time-Out is required for all surgeries or procedures.

AORN COMPREHENSIVE SURGICAL CHECKLIST

WHAT DOES

YOUR SURGICAL

TIME OUT INCLUDE?



COMPREHENSIVE SURGICAL CHECKLIST

SIGN-IN	TIME-OUT	SIGN-OUT
Before Induction of Anesthesia	**Before Skin Incision**	**Before the Patient Leaves the Operati Room**
RN and anesthesia professional confirm:	**Initiated by designated team member:** All other activities to be suspended (except in case of life-threatening emergency)	**RN confirms:**
Confirmation of the following: • identity, • procedure and procedure site • consent(s) • Site marked - by person performing the procedure • Patient allergies • Pulse oximeter on patient • Difficult airway or aspiration risk - (preparation confirmed) • Risk of blood loss (> 500 mL)- # of units available • Anesthesia safety check completed **Briefing:** • All members of the team have discussed care plan and addressed concerns	Introduction of team members **All:** Confirmation of the following: • identity • procedure and incision site • consent(s) • Site is marked and visible • Fire Risk Assessment and Discussion - prevention methods implemented • Relevant images properly labeled and displayed • Any equipment concerns **Anticipated Critical Events** **Surgeon:** States the following: • Critical or non-routine steps • Case duration • Anticipated blood loss **Anesthesia professional:** • Antibiotic prophylaxis within 1 hour before incision • Additional concerns **Scrub person and RN circulator:** • Sterilization indicators confirmed • Additional concerns **RN:** Documented completion of time out	• Name of operative procedure • Completion of sponge, sharp, and instrument counts • Specimens identified and labeled • Equipment problems to be addressed ☐ Yes ☐ N/A • Discussion of Wound Classification **All team members:** • What are the key concerns for recovery and management of this patient? **Debriefing with all team members:** Opportunity for discussion of • team performance • key events • any permanent changes in the preference card January 2019

eam member initiates any section of the checklist except for site marking. The Joint Commission ur. See the Universal Protocol for details on the Joint Commission requirements.

AORN SAFE SURGERY TOGETHER

Top Considerations for Effective Timeouts:

• Standardized Procedures: To optimize the effectiveness of timeouts, healthcare institutions should establish standardized protocols that clearly outline the steps to be followed. This includes designating a team member responsible for leading the timeout, defining the necessary information to be verified, and specifying the timeframe for the process.

• Active Participation: Timeouts should involve the entire surgical team, including surgeons, anesthesiologists, nurses, and technicians. Active participation and engagement from all members encourage a collective sense of responsibility and ensure that critical information is not overlooked.

• Structured Communication: Communication during timeouts should be clear, concise, and structured. Using a standardized script or checklist helps guide the team through essential elements, ensuring consistency and reducing the chance of overlooking critical information. It is essential to encourage team members to ask questions, share concerns, and seek clarification during the timeout.

• Continual Education and Training: Ongoing education and training are paramount to keep the surgical team informed about the latest protocols, best practices, and research regarding timeouts. Regular training sessions, workshops, and updates help reinforce the importance of timeouts, enhance team skills, and maintain a patient

The significance of effective communication and coordination among surgical teams cannot be overstated.

LanguageLine Solutions

Interpretation Services Available

English Translation: Point to your language. An interpreter will be called. The interpreter is provided at no cost to you

American Sign Language
Point to your language. An interpreter will be called. The interpreter is provided at no cost to you.

Arabic العربية
اشر الى لغتك. وسيتم الاتصال بمترجم. تقدم خدمة المترجم مجانا لك.

Bengali বাংলা
আপনার ভাষার দিকে নির্দেশ করুন। একজন দোভাষীকে ডাকা হবে। দোভাষী আপনি বিনামূল্যে পাবেন।

Burmese မြန်မာ
သင့်ဘာသာစကားကိုညွှန်ပြပါ။ စကားပြန်ခေါ်ယပေးပါမယ်။ သင့်အတွက် ကုန်ကျစရိတ်မရှိပါ။

Cantonese 廣東話
請指認您的語言。以便為您提供免費的口譯服務。

Farsi فارسی
زبان مورد نظر خود را مشخص کنید. یک مترجم برای شما درخواست خواهد شد. مترجم بصورت رایگان در اختیار شما قرار می گیرد.

French Français
Indiquez votre langue et nous appellerons un interprète. Le service est gratuit.

Haitian Creole Kreyòl
Lonje dwèt ou sou lang ou pale a epi n ap rele yon entèprèt pou ou. Nou ba ou sèvis entèprèt la gratis.

Hindi हिंदी
अपनी भाषा की ओर इंगित करें। जिसके अनुसार आपके लिए दुभाषिया बुलाया जाएगा। आपके लिए दुभाषिया की निशुल्क व्यवस्था की जाती है।

Hmong Hmoob
Taw rau koj hom lus. Yuav hu rau ib tug neeg txhais lus. Yuav muaj neeg txhais lus yam uas koj tsis tau them dab tsi.

Italian Italiano
Indicare la propia lingua. Un interprete sarà chiamato. Il servizio è gratuito.

Japanese 日本語
あなたの話す言語を指してください。無料で通訳サービスを提供します。

Korean 한국어
귀하께서 사용하는 언어를 지정하시면 해당 언어 통역 서비스를 무료로 제공해 드립니다.

Mandarin 普通话
请指认您的语言，以便为您提供免费的口译服务。

Nepali नेपाली
आफ्नो भाषातर्फ औंल्याउनुहोस्। एक दोभाषेलाई बोलाइनेछ। तपाईंको कुनै खर्च बिना, एकजना दोभाषे उपलब्ध गराइनेछ।

Polish Polski
Proszę wskazać swój język i wezwiemy tłumacza. Usługa ta zapewniana jest bezpłatnie.

Portuguese Português
Indique o seu idioma. Um intérprete será chamado. A interpretação é fornecida sem qualquer custo para você.

Punjabi ਪੰਜਾਬੀ
ਆਪਣੀ ਭਾਸ਼ਾ ਵੱਲ ਇਸ਼ਾਰਾ ਕਰੋ। ਜਿਸ ਮੁਤਾਬਕ ਇਕ ਦੁਭਾਸ਼ੀਆ ਬੁਲਾਇਆ ਜਾਵੇਗਾ। ਤੁਹਾਡੇ ਲਈ ਦੁਭਾਸ਼ੀਆ ਦਾ ਮੁਫਤ ਇੰਤਜ਼ਾਮ ਕੀਤਾ ਜਾਂਦਾ ਹੈ।

Romanian Română
Indicați limba pe care o vorbiți. Vi se va face legătura cu un interpret care vă este asigurat gratuit.

Russian Русский
Укажите язык, на котором вы говорите. Вам вызовут переводчика. Услуги переводчика предоставляются бесплатно.

Somali Af-Soomaali
Farta ku fiiqucadaada... Waxa laguugu yeeri doonaa turjubaan. Turjubaanka wax lacagi kaaga bixi mayso.

Spanish Español
Señale su idioma y llamaremos a un intérprete. El servicio es gratuito.

Tagalog Tagalog
Ituro po ang inyong wika. Isang tagasalin ang ipagkakaloob nang libre sa inyo.

Vietnamese Tiếng Việt
Hãy chỉ vào ngôn ngữ của quý vị. Một thông dịch viên sẽ được gọi đến, quý vị sẽ không phải trả tiền cho thông dịch viên.

Language Solutions: On demand audio and video interpreting, on site interpreting / Bilingual and Interpreter Staff Testing and Training / Translation and Localizat

www.LanguageLine.com

Patient-Centered Communication and Informed Consent

Clear Patient Communication

Effective communication ensures patients understand their health conditions and treatment options clearly.

Ensuring Informed Consent

Obtaining informed consent involves patients actively in decision-making, reducing errors from misunderstandings.

Utilizing Technology for Accurate Information Transfer

Electronic Health Records

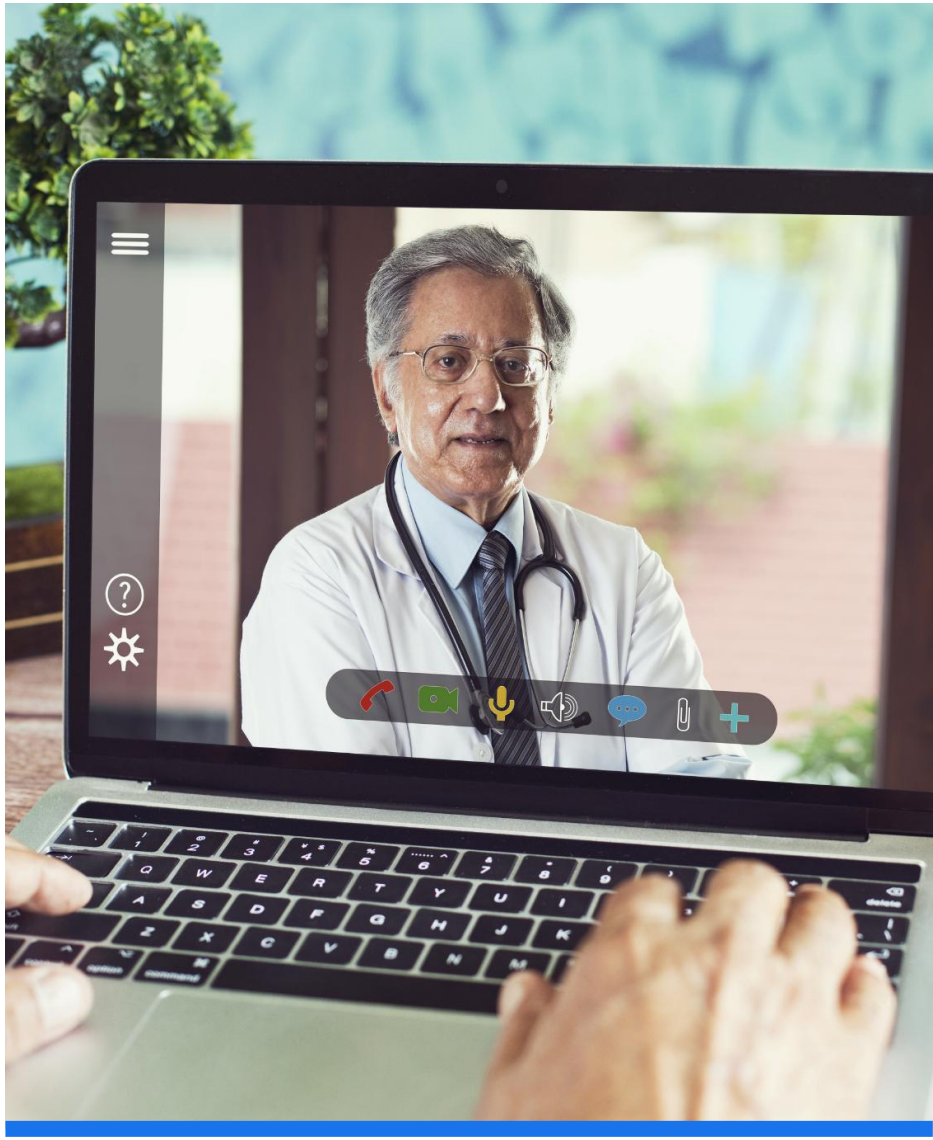
Electronic health records streamline patient information access to improve accuracy and reduce errors.

Computerized Provider Order Entry

Computerized provider order entry ensures precise medication and treatment orders for patient safety.

Secure Messaging Systems

Secure messaging systems enable safe and timely communication between healthcare professionals.



Building a Culture of Safety and Accountability

Encouraging Open Reporting and Learning From Errors

Non-punitive Reporting Systems

Non-punitive systems encourage open reporting without fear, fostering honest communication about errors.

Identifying Error Patterns

Open reporting helps teams detect common error patterns to target improvements effectively.

Implementing Corrective Actions

Corrective actions based on error insights improve systems and enhance patient safety outcomes.

Leadership's Role in Fostering Effective Communication

Setting Clear Expectations

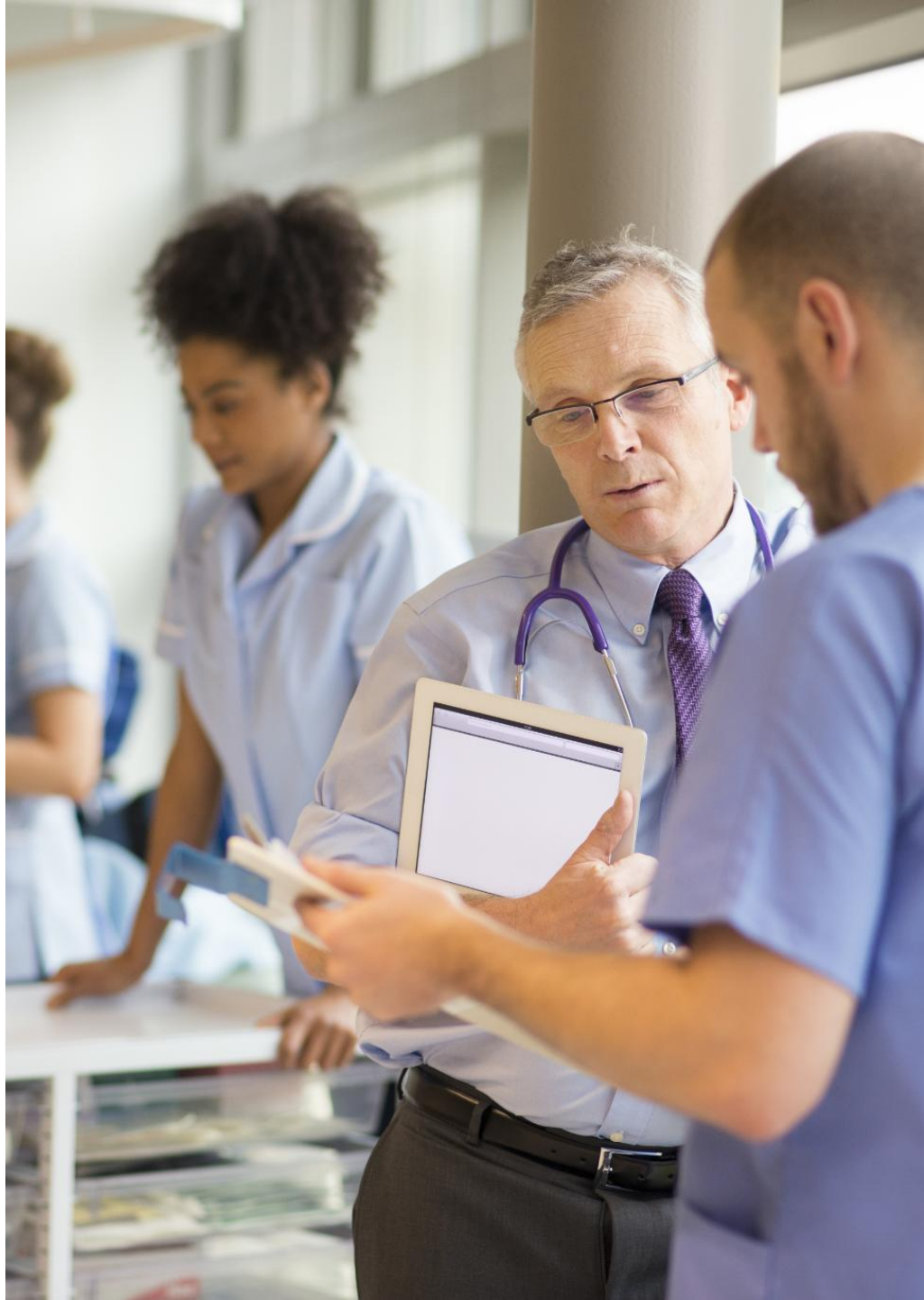
Leaders establish clear communication expectations to ensure understanding and alignment within healthcare teams.

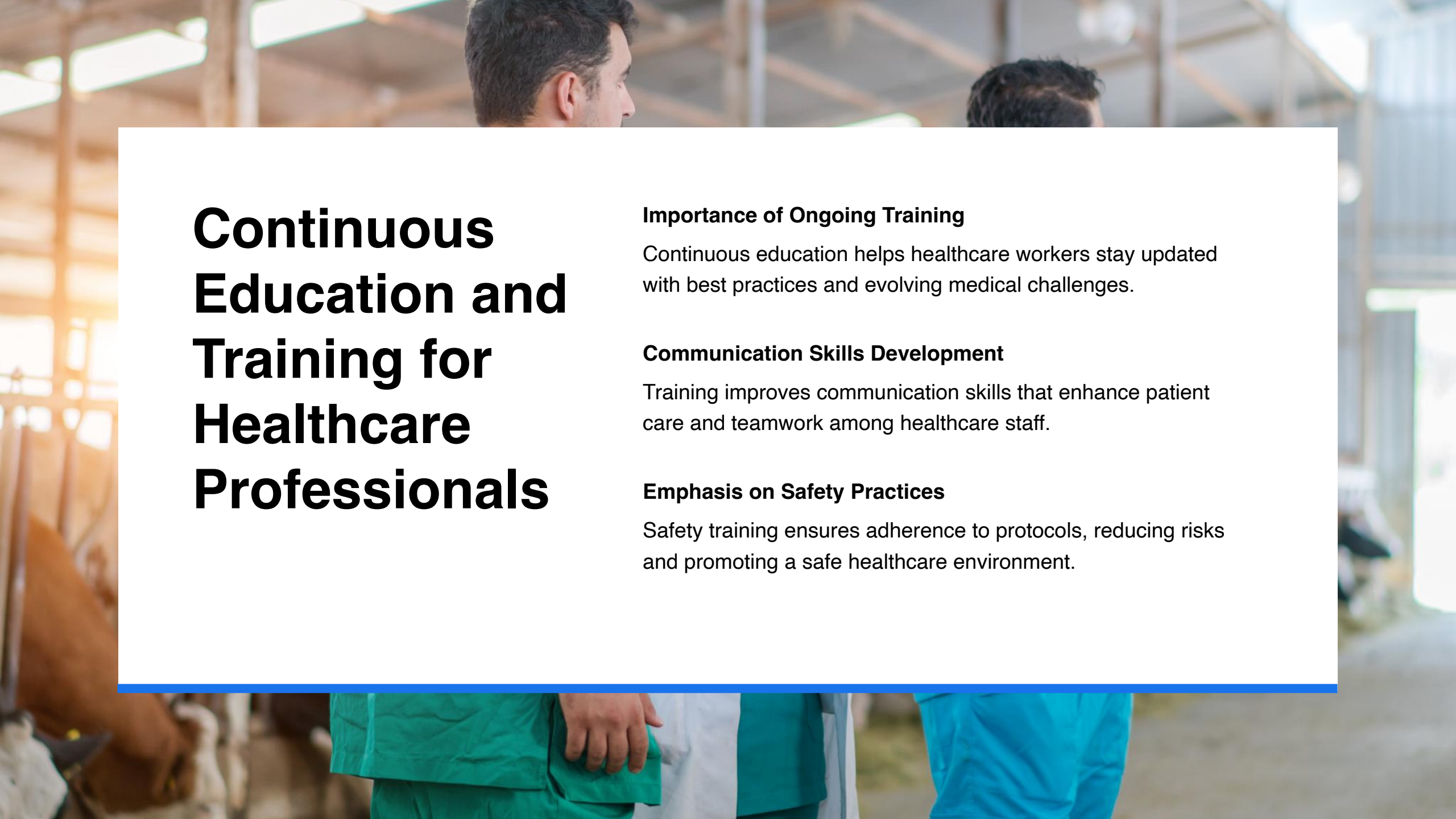
Providing Communication Resources

Leaders supply tools and resources that facilitate effective communication among healthcare staff.

Modeling Transparency

Leaders demonstrate transparent communication practices to foster trust and a safe healthcare environment.





Continuous Education and Training for Healthcare Professionals

Importance of Ongoing Training

Continuous education helps healthcare workers stay updated with best practices and evolving medical challenges.

Communication Skills Development

Training improves communication skills that enhance patient care and teamwork among healthcare staff.

Emphasis on Safety Practices

Safety training ensures adherence to protocols, reducing risks and promoting a safe healthcare environment.


QUALITY
CONFORM
DURABLE
FEATURES
PERCEPTED

GoAudits

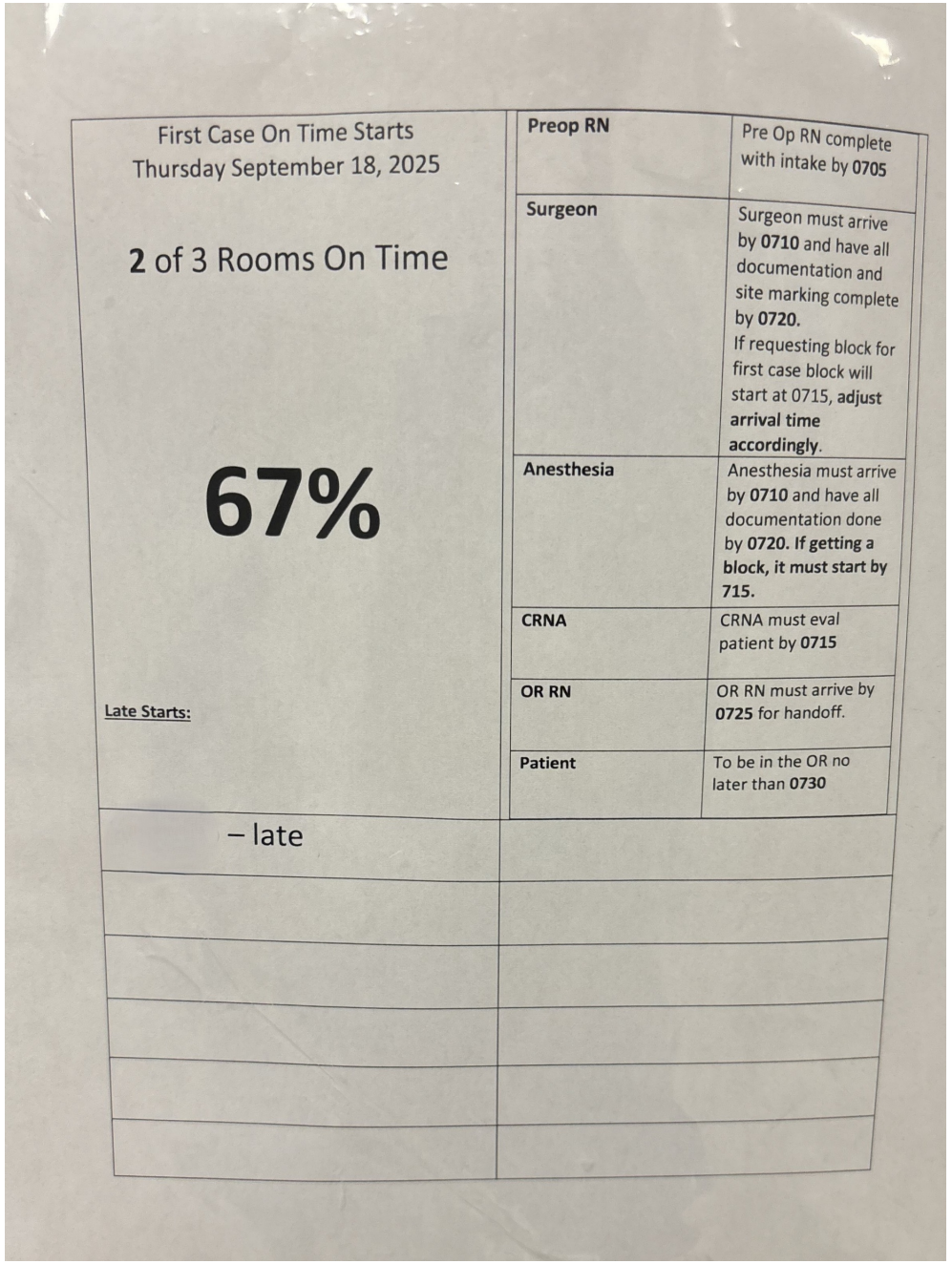
How to Improve Healthcare Quality with Key Metrics and Indicators

1. Conduct Internal Audits & evaluations
2. Monitor Patient Outcomes
3. Improve Patient Safety
4. Enhance Patient Experience
5. Measure and Reduce Wait Times
6. Enhance Care Coordination & Efficiency
7. Benchmark Against Industry Standards
8. Monitor Quality Metrics in Real-Time
9. Reduce Healthcare Disparities
10. Strengthen Preventive Care Programs

23 MOST USED HEALTHCARE METRICS

- Time
- Patient Satisfaction
- Cost
- Hospital Success
- Hospital Capacity

Here is an example of what my hospital does when there is a delay in getting the patient in the room on time. This is posted on the locker room doors for all to see. What is missing on this picture is the name of the person who was late. Do you think this is an effective way of getting better compliance on getting the patient in the room on time.



First Case On Time Starts
Thursday September 18, 2025

2 of 3 Rooms On Time

67%

Late Starts:

– late

Preop RN	Pre Op RN complete with intake by **0705**
Surgeon	Surgeon must arrive by **0710** and have all documentation and site marking complete by **0720.** If requesting block for first case block will start at 0715, **adjust arrival time accordingly**.
Anesthesia	Anesthesia must arrive by **0710** and have all documentation done by **0720. If getting a block, it must start by 715.**
CRNA	CRNA must eval patient by **0715**
OR RN	OR RN must arrive by **0725** for handoff.
Patient	To be in the OR no later than **0730**

Simulation Training


HAND WASHING
SGT
Ali-ul-Hasan
Nurse Practitioner
Critical Care

5 Benefits of Simulation-Based Training

Simulation-based training, including simulation learning and scenario-based training, stands as a transformative educational approach designed to replicate real-world industry situations and tools. The benefits extend far beyond mere practice; they elevate proficiency, instill self-confidence, and contribute to enhanced productivity, performance, and job satisfaction.

1. Higher Engagement and Knowledge Retention Rates:

Engaging learners in realistic contexts through simulation training boosts motivation and knowledge retention. Learning-by-doing ensures that lessons are not only learned but remembered, leading to a higher and more sustained understanding of the material.

2. Productive Failure — Learning from Mistakes:

Simulation in education provides a safe haven for learners to understand the consequences of their choices. By allowing controlled failure within a simulated environment, learners can experiment, reset scenarios, and explore different outcomes. This not only enhances learning but also fosters a culture where mistakes are valued as opportunities for improvement.

5 Benefits of Simulation-Based Training

3. Reflection on Feedback:
Simulation-based learning facilitates the development of problem-solving skills without risking real-world consequences. Learners can reflect on their choices, analyze outcomes, and receive instant feedback, nurturing improved judgment and enhanced problem-solving abilities. This feedback loop is valuable for both individual growth and meeting assessment and compliance requirements.

4. Filling Training Gaps:
Simulated learning enables instructional designers to target specific skills and goals that may be overlooked in traditional linear teaching models. It acts as a strategic tool to address and fill training gaps, ensuring a comprehensive and effective learning experience.

5. Easily Accessible Learning:
In response to the demands of modern learners, simulation-based learning offers accessibility, flexibility, and convenience. With the ability to deliver training across multiple devices, including mobile platforms, learners can access content anytime, anywhere, aligning seamlessly with their on-the-go jobs and lifestyles.

Conclusion

Importance of Patient Safety

Preventing medical errors is vital to ensure patient safety and improve healthcare outcomes.

Role of Effective Communication

Clear communication among healthcare providers reduces errors and enhances care quality.

Supporting Tools and Culture

Standardized protocols, technology, and a safety culture support error prevention efforts.

REFERENCES

Acceldata Product Team. What are Data Quality Metrics? https://www.acceldata.io/article/what-are-data-quality-metrics, accessed September 18, 2025

AHA Team Training TeamSTEPPS Pocket Guide: Team Strategies and Tools to Enhance Performance and Patient Safety, ND. www.aha.org/teamtraining

American Association of Nurse Anesthesiology, AANA Policy and Practice Considerations- Code of Ethics (2018) Cehttps://issuu.com/aanapublishing/docs/code_of_ethics_for_the_certified_registered_nurse_?fr=sZGY1YTU2NDAxMjUrtified Registered Nurse Anesthetist by aanapublishing – Issuu, accessed September 18, 2025.

Croke, L. Updated statistics underscore the importance of the surgical time out. *AORN J,2019, 109*: P5 -P5. https://doi.org/10.1002/aorn.12731

Fernandez Castillo G, Khalid M, and Salas E. Beyond communication: an update on transforming healthcare teams. *Front. Med. 2024;11*:1282173. doi: 10.3389/fmed.2024.1282173, accessed June 24, 2025.

Kepner S, Jones R. Patient Safety Trends in 2021: An Analysis of 288,882 Serious Events and Incidents From the Nation's Largest Event Reporting Database, *PatientSafetyJ.com 2022; 4 (21).doi: 10.33940//data/2022.6.2*, accessed September 3, 2025.

REFERENCES

Jacobs, Lenworth *M. Jr., MD, MPH, FACS , (*June 7, 2023). A LOOK AT THE JOINT COMMISSION: Study Analyzes Wrong-Site Surgery Data in Medical Malpractice Complaints.

Kepner S, Jones R. Patient Safety Trends in 2022**:** An Analysis of 256,679 Serious Events and Incidents From the Nation's Largest Event Reporting Database, *PatientSafetyJ.com, 2023*. *doi*: 10.33940/001c.74752 accessed September 3, 2025.

Kepner S, Jones R. Patient Safety Trends in 2023: An Analysis of 287,997 Serious Events and Incidents From the Nation's Largest Event Reporting Database. *Patient Safety*. *2024;6(1)*:116529. doi:10.33940/001c.116529, accessed September 3, 2025

Kepner S, Jones R. Patient Safety Trends in 2024: An Analysis of 315,418 Serious Events and Incidents From the Nation's Largest Event Reporting Database. *Patient Safety. 2025;7(2*):133876. doi:10.33940/001c.133876, accessed September 3, 2025

Module I Curriculum Content, *Accredited Certified Legal Nurse Program*, accessed July 2025.

Understanding TeamSTEPPS *AHA Center For Health Innovation, 2018*.

Wenner, D. Surgery on the wrong body part or person: It happens regularly in Pa., data shows. Updated: Mar. 02, 2023, 11:50 a.m.| Published: Feb. 23, 2023, 5:02 a.m. Accessed March 30, 2024 from https://www/pennlive.com/health/2023/02/surgery-on-the-wrong-body-part-or-person-heres-how-often-it-happens-in-pa.htm


To err is human, to
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