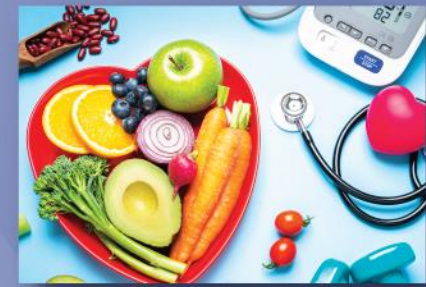


# Are We Reaching the Goal in Preventing Patient Safety Events in Hospitals?

BFCC NCORC



# Presenters



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A hand is shown placing a wooden block with a blue plus sign on top of a stack of other wooden blocks. The stack includes blocks with icons for a heart with a pulse line, two pills, a syringe, a person in a wheelchair, and a first aid kit. The word 'AGENDA' is written vertically in a light blue banner on the right side of the image.

# AGENDA

- Learning Objectives
- Background and Context
- NCORC Methodology
- Findings
- Moving the Needle
- Questions



# Learning Objectives

- How was systematic screening implemented for identification of patient safety events; how does this fit within the broader context for patient safety work?
- How are findings being used to improve screening, reporting, and safety in U.S. hospitals?



# Background and Context



# Patient Safety MUST be a Priority

- High rates of harm persist in US hospitals
  - 2008 OIG reports patient harm rate at 27%
  - 2018 OIG reports patient harm rate at 25%
- We have to identify ways to improve quality
- We have to protect Medicare beneficiaries

U.S. Department of Health and Human Services  
Office of Inspector General



Adverse Events in Hospitals:  
A Quarter of Medicare  
Patients Experienced Harm in  
October 2018

1. [Adverse Events in Hospitals: National Incidence Among Medicare Beneficiaries \(OEI-06-09-00090; 11/10\) \(hhs.gov\)](#) (Oct. 2008 data)
2. [Adverse Events in Hospitals: A Quarter of Medicare Patients Experienced Harm in October 2018, OEI-06-18-00400 \(hhs.gov\)](#) (Oct. 2018 data)
3. [Health Care Safety during the Pandemic and Beyond — Building a System That Ensures Resilience | NEJM](#)



# Patient Safety IS a Priority

- Improving patient safety and advancing health equity are:
  - Biden-Harris Administration priorities
  - Core goals of the CMS National Quality Strategy

1. [The CMS National Quality Strategy: A Person-Centered Approach to Improving Quality | CMS](#)
2. [FACT SHEET: Protecting Seniors by Improving Safety and Quality of Care in the Nation's Nursing Homes | The White House](#)
3. [Statement from CMS Administrator Chiquita Brooks-LaSure on President Biden's State of the Union: | CMS](#)
4. [PCAST Meeting: Speaker Bios \(whitehouse.gov\)](#)
5. [Executive Order On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government | The White House](#)
6. [CMS Strategic Plan Pillar: Health Equity](#)



# Initiatives Are In Place to Reduce Patient Harm

- CMS, AHRQ, and other Federal agencies implement policies and programs to reduce patient harm in hospitals
  - CMS Quality Improvement Organization (QIO) program
  - National Healthcare System Action Alliance to Advance Patient Safety
  - CMS Hospital-Acquired Condition (HAC) Reduction program
  - AHRQ Quality Safety Review System (QSRS) program





# Patient Safety Research is Ongoing

## OIG 2018

Sample: Medicare Beneficiaries,  
National

- 25% of patients experienced harm
  - 12% permanent harm
  - 13% temporary harm
- 43% of harms were preventable

## Bates et al. 2023

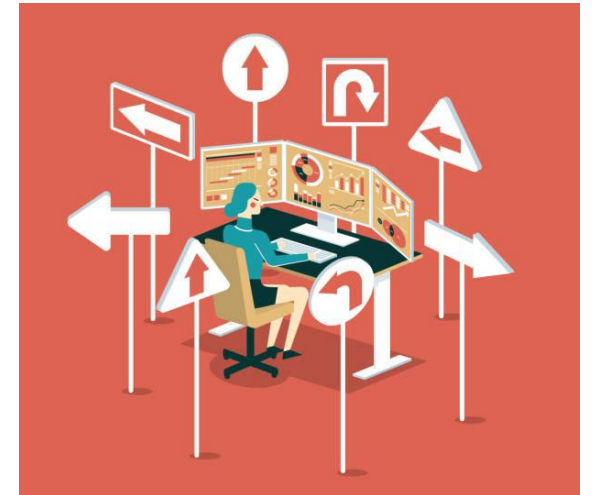
Sample: All Admissions, MA

- 24% of admissions has at least 1 adverse event
- 23% of harms were preventable
- 32% were serious adverse events



# How do we Improve Quality and Safety?

- Research methodologies vary...
  - Sampled populations vary...
  - Categorization of data vary...
- 
- Need to link patient safety data to improvement initiatives



# BFCC NCORC Patient Safety Role and Goals

- Beneficiary and Family Centered Care Quality Improvement Organizations (BFCC-QIOs) help people who have Medicare exercise their right to high-quality health care.
- The BFCC National Coordinating Oversight and Review Center (NCORC):
  - Uses national data to identify opportunities for quality improvement and increased patient safety.
  - Collaborates with CMS and other partners to support the rights and services for people with Medicare.



# NCORC Methodology



# BFCC NCORC Medical Record Reviews



## Stage 1: Screen Records using IHI GTT



## Stage 2: Physician Review of Flagged Records

**Objective:** Identify patients with likely adverse events

- **Screen medical records** to identify positive triggers for harm
- **Send flagged charts** to physician for secondary review

**Objective:** Confirm presence, severity, and preventability of harm

- **Describe** harm source, nature, event
- **Determine** if patient was sent to higher level care and if the event could have been prevented
- **Reach consensus** through physician collaboration and expert consultation



# IHI GTT – Inpatient Triggers for Harm

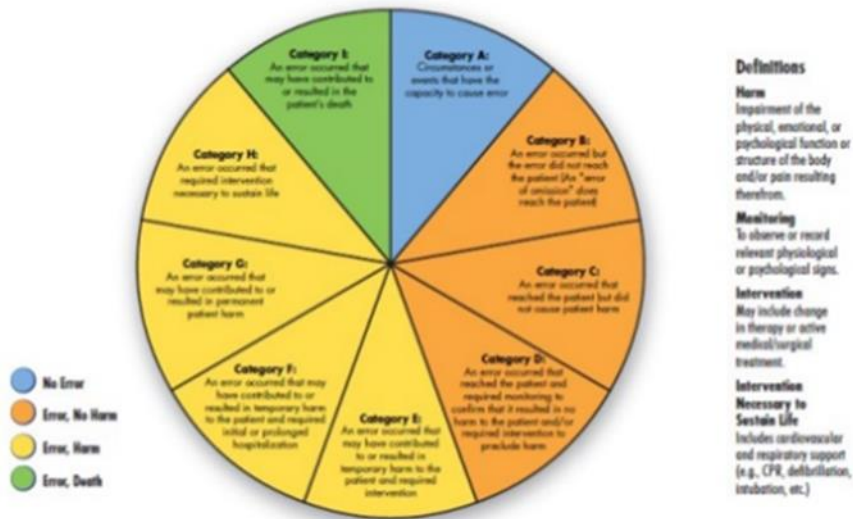
Patient Care	Medication	Surgical	Intensive Care	Perinatal	Emergency Dept
C1 Transfusion or use of blood products	M1 C.diff positive stool	S1 Return to surgery	I1 Pneumonia onset	P1 Terbutaline or magnesium sulfate use	E1 Readmission to ED within 48 hours
C2a Cardiac arrest	M2 PTT > 100s	S2 Change in procedure	I2 Readmission to ICU	P2 3rd or 4th degree lacerations	E2 Time in ED > 6 hours
C2b Respiratory/Pulmonary arrest	M3 INR > 6	S3 Admission to ICU post-op	I3 In-unit procedure	P3 Platelet count < 50,000	
C2c Rapid response team activation	M4 Glucose < 50 mg/dL	S4 Intubation/reintubation/ BIPAP in PACU	I4 Intubation/reintubation	P4 Estimated blood loss >500mL for vaginal delivery or >1000mL for cesarean delivery	
C3 Acute dialysis	M5 Rising BUN or serum creatinine > 2 times baseline	S5 Imaging in intra-op or post-anesthesia care unit		P5 Specialty consult	
C4 Positive blood culture	M6 Vitamin K administration	S6 Intra- or post-op death		P6 Administration of oxytocic agents in postpartum period	
C5 X-Ray or Doppler studies for emboli or DVT	M7 Benadryl /Diphenhydramine administration	S7 Mechanical ventilation > 24hrs post-op		P7 Instrumented delivery	
C6 Decrease in Hb or Hct of ≥ 25%	M8 Romazicon/Flumazenil administration	S8 Intra-op epinephrine, norepinephrine, naloxone, or romazicon		P8 Administration of general anesthesia	
C7 Patient fall	M9 Naloxone/Narcan administration	S9 Post-op increase in troponin levels > 1.5 ng/mL or >2000 ng/L		P9 Gravid hysterectomy	
C8 Pressure ulcers	M10 Antiemetic use	S10 Injury, repair, or removal of organ during procedure		P10 Therapeutic hypothermia	
C9 Readmission within 30 days	M11 Over-sedation/hypotension	S11 Any operative complications		P11 Meconium aspiration	
C10 Restraint use	M12 Abrupt medication stop			P12 Emergency cesarean delivery	
C11 Healthcare-associated infection	M14 IV epinephrine administration			P13 Five min. Apgar < 6	
C12 In-hospital stroke	M15 Med administered present on allergy list			P14 Complications of abortion	
C13a Transfer to higher level of care					
C13b Transfer to/from another acute care hospital					
C14 Any procedure complication					
C15 New neurological deficit at discharge					
C16 Temperature > 38.3 C on day before or day of discharge					
C17 Indication of litigation on the medical record					
C18 Death					



# Assigning Severity and Preventability

## MERP INDEX

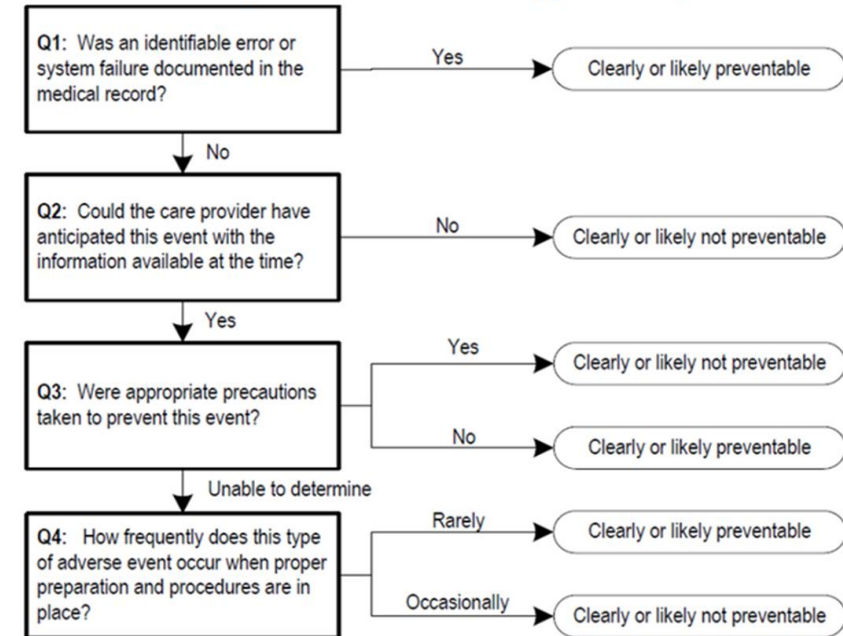
### National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP)



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## Preventability Decision Algorithm

### Part I – Decision Algorithm To Determine Suggested Response



# Categorizing Severity

	Category	Level	Event Description
	No harm	A	Circumstances or events that have the capacity to cause error
<b>PSE</b>	Near miss	B	An error occurred, but did not reach the patient
		C	An error reached the patient but did not cause patient harm
		D	An error resulted in the need for increased patient monitoring but no patient harm
		E	An error resulted in the need for treatment or intervention and caused temporary patient harm
	Temporary Harm	F	An error resulted in initial or prolonged hospitalization and caused temporary patient harm
		G	An error resulted in permanent patient harm
	Permanent Harm	H	An error resulted in a near-death event (e.g., anaphylaxis, cardiac arrest)
		I	An error resulted in patient death



# Categorizing Preventability

Category	Description	Drug Example	Non-Drug Example
Preventable	The AE was definitely preventable	Patient given penicillin, with known allergy, suffered anaphylaxis	Sponge left in after abdominal surgery causes sepsis, requires ICU care
Possibly preventable	There is some chance the AE could have been prevented	Patient did not receive aspirin for secondary prevention due to possible GI bleed, suffered MI	Patient had lower-limb bypass grafting procedure and ended up with cellulitis that tested positive for MRSA
Not preventable	The event was definitely not preventable	Patient given penicillin with no known allergy, suffered anaphylaxis	Surgeon nicks a vessel during an emergency abdominal surgery performed on someone who has had 3 prior abdominal surgeries
Unable to determine	The review physician was unable to determine if the AE was preventable	Patient suffered DVT, but unclear whether prophylaxis was given	Lacerated blood vessel found during surgery, but unclear if due to error

# Categorizing Harm Type

Type of Harm	Examples
<b>Patient care</b>	Intravenous volume overload; aspiration; venous thrombosis or pulmonary embolism; exacerbation of preexisting medical condition; Stage III pressure ulcer, etc.
<b>Infection</b>	Urinary tract infection; vascular catheter-associated infection; bloodstream infection; respiratory infection; surgical site infection, etc.
<b>Medication</b>	Excessive bleeding; delirium or changes in mental status; hypoglycemic event; acute renal insufficiency; severe hypotension; respiratory complication; severe allergic reaction, etc.
<b>Procedure</b>	Excessive bleeding; severe hypotension; respiratory complication; iatrogenic pneumothorax; postoperative ileus; postoperative urinary retention; acute coronary syndrome, etc.



# Additional Considerations- Reviewing Charts

- **Natural Progression of Disease**

- Natural Progression of Disease: A decline, or change in condition, which occurs independently of clinical care, and is reasonably the result of an underlying disease process

- **Present on Admission**

- Present on admission: the conditions present at the time the order for inpatient admission occurs

An adverse event that is present on admission to the hospital or natural progression of disease is excluded



# NCORC Sample

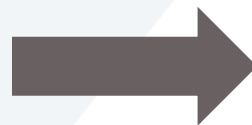
## QSRs Sample

27,000 records across 5 hospital types receiving technical assistance from the CMS QIN-QIO Program



## NCORC Sub-Sample (4,000 cases)

NCORC targets approximately the same proportions of cases by hospital-type



## NCORC Sample Targets

Other urban acute hospitals:	1,200
Targeted urban acute hospitals:	1,080
Rural hospitals:	760
Critical access hospitals (CAH):	760
Indian Health Service (IHS) hospitals:	200



# Findings



# Records Review

- NCORC review conducted May 2022 through January 2023
- 2,970 charts reviewed
- Hospital discharge dates after September 30, 2020



# Prevalence of Patient Safety Events (PSEs)

- 54% of patients experienced a PSE
  - Fluid/electrolyte disorders = 24%
  - Hematologic derangement = 12%
  - Cardiac rhythm derangements = 10%
  - Respiratory issues = 7%
  - Hypotension = 7%



# PSEs by the numbers

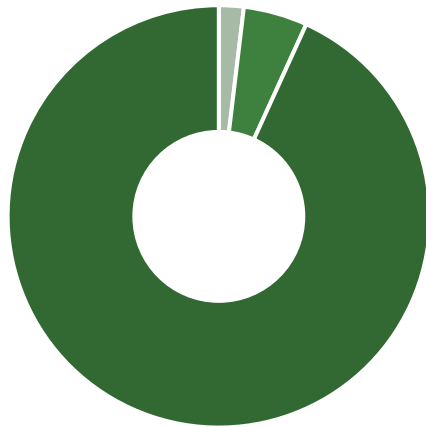
- Among PSEs:
  - 39% experienced 1 PSE
  - 26% experienced 2 PSEs
  - 35% experienced 3+ PSEs
- 93% of PSEs were *not* preventable





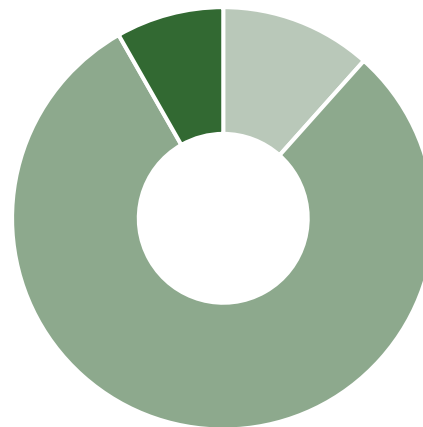
# Types of PSEs

## Preventability



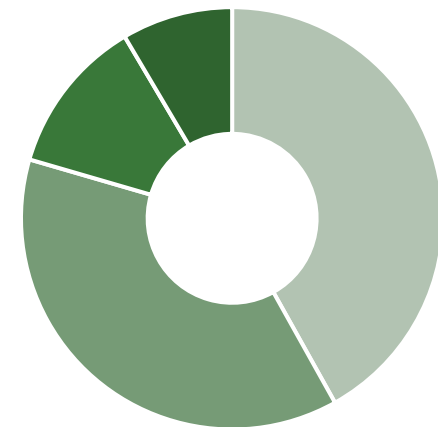
- Definitely Preventable, 2%
- Possibly Preventable, 5%
- Not Preventable, 93%

## Severity



- Near Miss, 12%
- Temporary Harm, 80%
- Permanent Harm, 8%

## Category of Harm



- Medication, 42%
- Patient Care, 38%
- Procedure, 12%
- Infection, 9%

# Moving the Needle



# Protecting Medicare Beneficiaries

- Link identified PSEs with BFCC-QIO case review work
  - PSE referrals to QIOs for Quality of Care Review
  - Identifying HACs and Improving Patient Safety
- Identify opportunities for targeted intervention and education





Q&A



# Thank You

## Contact Information

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