University HealthSystem Consortium

Failure to Rescue: Preventing Avoidable Deaths with Rapid Rescue Teams

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THE POWER OF COLLABORATION

University HealthSystem Consortium (UHC)

UHC:

A member-owned alliance of 90 full member and 123 associate members U.S. academic health centers

Mission:

To advance knowledge, foster collaboration, and promote change to help members succeed in their respective markets

Vision:

To be our members' resource of choice and catalyst for transformational change to achieve clinical and operational excellence

Quality Measurement and Reporting System (QMRS)

UHC **QMRS: National Quality and Safety Indicators**

Friday, September 9, 2005

Sample Academic Medical Center

Jan - Mar 2005 (Q1)

Agency View

AHRQ Safety Indicators	Jan - Mar 2005 (Q1) Relative Performance	Denom	Observed	Target	UHC Median	Apr 2004 - Mar 2005 (recent year) Relative Performance	Denom	Observed	Target	UHC Median
		N	Rate/1000				N	Rate/1000		
Surgical (Rate per 1000)										
Complications of anesthesia	⊙	1,625	0.0	1.3	0.6	⊙	7,090	0.3	1.0	0.6
Foreign body left in during procedure	⊙	4,867	0.0	0.2	0.0	⊙	20,597	0.1	0.2	0.1
Post-operative hip fracture	⊙	764	0.0	0.0	0.0	⊙	3,373	0.0	0.5	0.2
Post-operative hemorrhage or hematoma	⊙	1,395	0.7	4.2	2.8	⊙	6,097	2.6	3.8	2.7
Post-operative physiologic / metabolic	●	824	13.3	3.5	1.4	●	3,068	10.4	3.1	2.0
Post-operative respiratory failure	◒	718	15.3	9.1	6.2	●	2,671	13.9	9.3	5.6
Post-operative PE or DVT	●	1,373	32.8	18.4	13.9	●	6,047	35.9	17.8	14.1
Post-operative sepsis	●	289	31.1	19.2	10.7	●	981	33.6	19.9	11.5
Post-operative wound dehiscence	⊙	302	0.0	4.1	1.5	◒	1,305	3.8	3.7	2.2
Obstetric (Rate per 1000)										
Birth trauma	⊙	705	4.3	5.1	2.9	⊙	2,911	5.5	5.7	3.4
OB trauma - vaginal with instrument	⊙	42	119.0	272.7	215.8	⊙	235	178.7	286.9	229.5
OB trauma - vaginal w/o instrument	⊙	441	86.2	127.1	81.3	⊙	1,726	95.0	123.6	86.0
OB trauma - cesarean section	⊙	203	0.0	16.4	6.4	⊙	857	1.2	13.3	7.9
Other (Rate per 1000)										
Death in low mortality DRG	⊙	1,216	0.0	1.1	0.5	⊙	4,964	0.2	1.1	0.6
Decubitus ulcer	⊙	1,424	28.8	30.0	22.6	⊙	5,784	26.6	27.8	21.7
Failure to rescue	⊙	432	118.1	129.0	110.5	⊙	1,667	102.0	127.7	110.6
Iatrogenic pneumothorax	⊙	3,339	0.9	2.0	1.3	⊙	14,176	0.9	1.9	1.2
Selected infections due to medical care	⊙	3,917	5.1	5.7	4.2	⊙	16,381	4.0	6.0	4.0
Accidental puncture / laceration	◒	4,056	8.6	7.9	4.7	⊙	17,293	6.9	7.6	4.6
Transfusion reaction [target =95th ptle]	●	4,867	0.21	0.13	0.00	●	20,597	0.15	0.08	0.00

2004 Failure to Rescue Benchmarking Project

Project Goals:

- To **explore** the clinical and operational **components of care** delivered to patients at risk for complications associated with hospitalization
- To **evaluate** the use of **processes for prevention**, **early recognition** and diagnosis, **rapid intervention** and emergency **rescue**
- To **identify** focal areas where **opportunity for improvement** exists
- To **investigate** and **share successful strategies** for achieving best practice
- To further **define the common characteristics** of FTR patients to refine the measure

Enrollment Criteria

Inclusion Criteria:

- Patients discharged prior to 10/1/2003 and after 9/30/2002 identified via the the AHRQ Patient Safety Indicators SAS software documentation, version 2.1, rev. 1, with one or more of the following complications of admission:

DVT/PE	**Sepsis**
Acute Renal Failure (ARF)	**GI Hemorrhage (GIH)/Acute Ulcer**
Pneumonia	**Shock/Cardiac Arrest (S/CA)**

- $\geq$ 10 years of age
- < 75 years

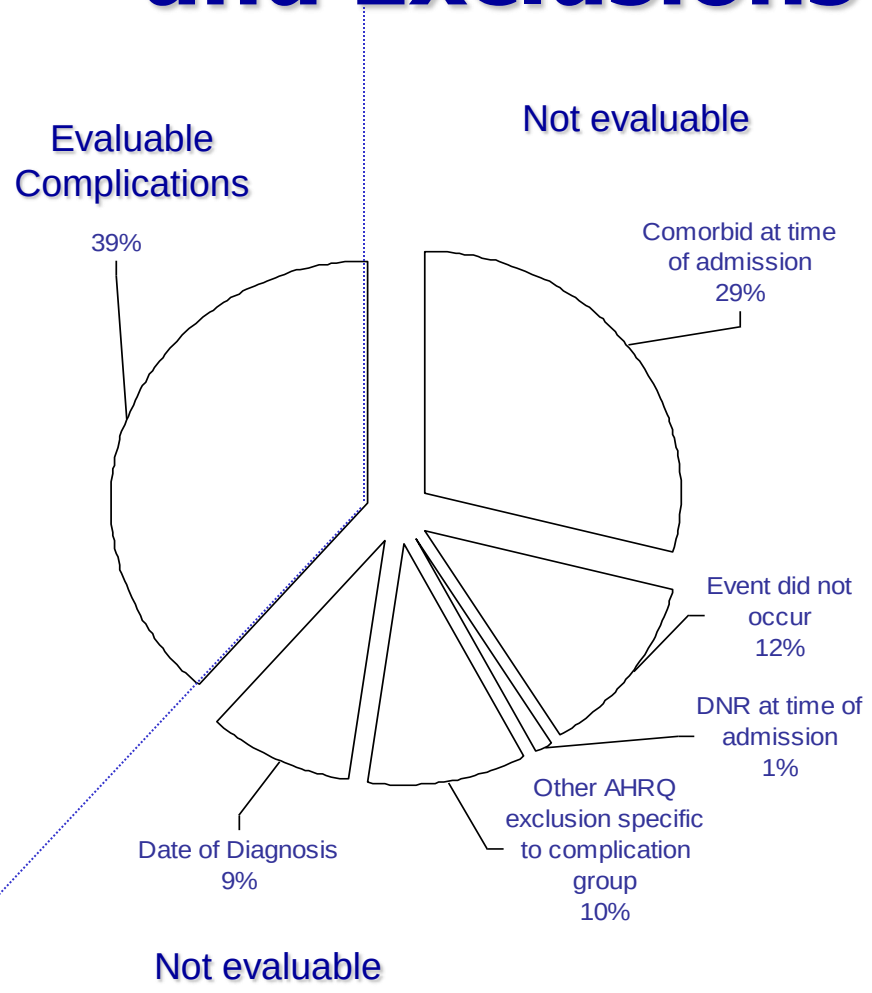
Exclusion Criteria:

- Transferred from acute care facility
- Discharged/Transferred to acute care facility
- Admitted from long-term facility
- DNR on admission
- Additional exclusions specific to each complication group

Distribution of Complications and Exclusions

Of the 5,376 complications identified by AHRQ SAS software:

- 2,074 (38.6%) complications were evaluable for FTR
- 3,302 (61.4%) complications were eliminated for the following reasons:
  - 47.2% (1,560) were comorbid condition
  - 19.7% (651) did not occur
  - 16.4% (540) had complication specific exclusion
  - 15.0% (494) had date of diagnosis too early
  - 1.7% (57) were in cases with DNR at admission



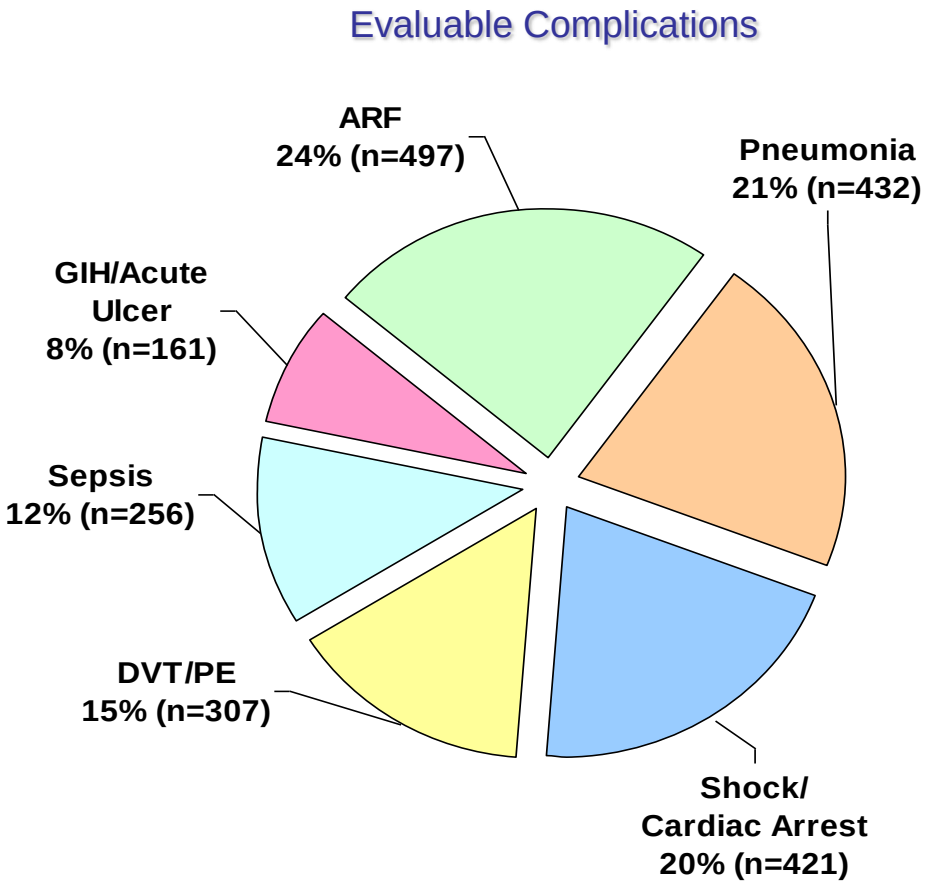
Failure to Rescue a Serious Threat

UHC's Failure to Rescue Benchmarking Project

- Retrospective chart review
- Study designed to examine 50% who died and 50% who survived
- 3,717 cases reviewed
- 2,125 cases did not meet AHRQ criteria for FTR
- 1,592 cases met AHRQ criteria
- Mortality rate higher in cases that met AHRQ criteria

Participant Contributions

- 41 UHC members submitted patient-level data
- 1,592 evaluable *cases* were enrolled
- 2,074 evaluable *complications* were identified



Availability of Signs to Diagnosis Within 1 Day

Aggregate Performance:

- 55.1% of all complications were diagnosed within 1 day of availability of signs (1,142/2,074)
- Diagnosis of pneumonia or sepsis occurred within a day of availability of earliest signs in less than 36% of patients with those complications

Hospital Performance:

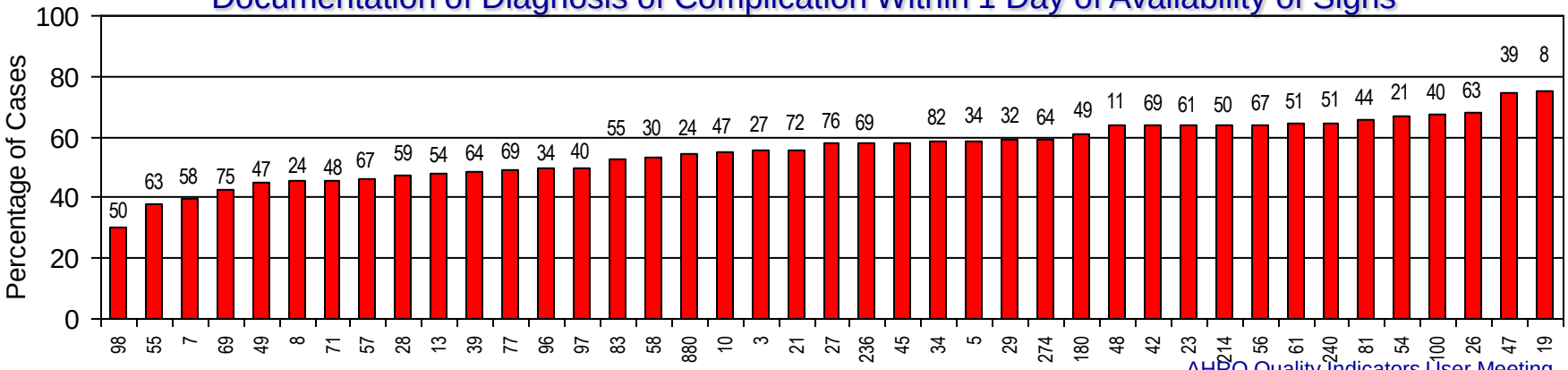
Mean: 55.9% Range: 30.0% — 75.0%

Median: 57.9% Standard Deviation: 9.9

Performance by Complication Group

S/CA:	83.6%
ARF:	61.0%
GIH:	55.9%
DVT/PE	54.4%
Pneumonia:	**35.7%**
Sepsis:	**29.7%**

Documentation of Diagnosis of Complication Within 1 Day of Availability of Signs*



* See primary sign criteria on following slide

Key Performance Measure

Diagnosis to Intervention Within 1 Day

Aggregate Performance:

- 74.1% of all complications received an intervention within 1 day of diagnosis (1,536/2,074)
- Interventions for sepsis and pneumonia occurred within 1 day of diagnosis more commonly than for any of the other complications

Hospital Performance:

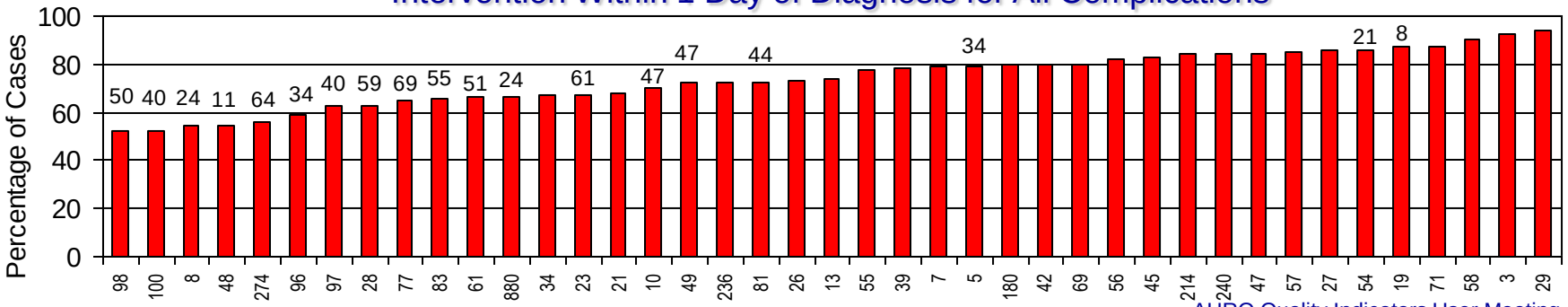
Mean: 74.0% Range: 52.0% — 93.8%

Median: 74.1% Standard Deviation: 11.5

Performance by Complication Group

Sepsis:	**91.8%**
Pneumonia:	**82.2%**
S/CA:	73.6%
DVT/PE:	73.3%
GIH:	68.9%
ARF:	60.4%

Intervention Within 1 Day of Diagnosis for All Complications



* See primary intervention criteria on following slide

Availability of Signs to Intervention Within 1 Day

Aggregate Performance:

- 41.5% of all complications received an intervention within 1 day of availability of signs (860/2,074)
- Less than 1/3 of the patients with Pneumonia or Sepsis and less than 1/2 of the patients with ARF, GIH, or DVT/PE received an intervention within 1 day of availability of signs

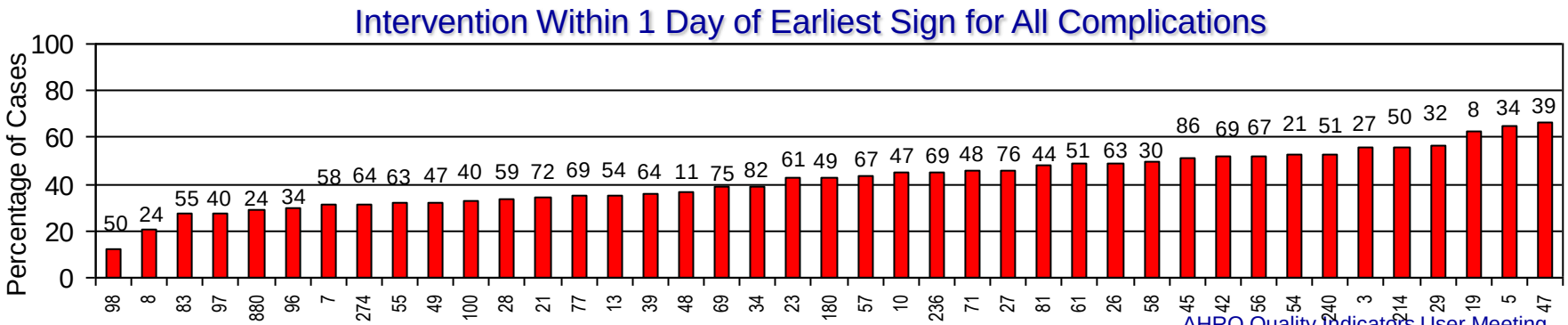
Hospital Performance:

Mean: 42.0% Range: 12.0% — 66.7%

Median: 42.9% Standard Deviation: 12.1

Performance by Complication Group

S/CA:	64.4%
DVT/PE:	**43.0%**
ARF:	**38.4%**
GIH:	**37.9%**
Pneumonia:	**29.9%**
Sepsis:	**29.7%**



Some "Best Practices" that Make a Difference

- Early warning signs (physiologic instability criteria)
- SBAR communication model (situation, baseline, assessment, recommendation)
- Rapid escalation of communication up chain of command
- Rapid response teams

UHC Commit to *ACT*ion Series

***A**ccelerate → **C**ollaborate → **T**ransform*

- Accelerated performance improvement through a highly structured change implementation model
- UHC staff provide one-on-one and group facilitation with direction from clinical experts
- 10 to 20 work teams commit to collaborate in the interactive and rigorous 14-week project cycle
- Customized project management tools: Charters, Best Practice Detail Forms, Gap Analyses and Implementation Plan
- Report out on individual and aggregate goal achievement and outcomes at end of collaborative and again at 6 months

Participants

20 academic medical centers

- 6 had RRT teams in place prior to collaborative
- 12 implemented adult RRTs during collaborative
- 1 implemented both adult and pediatric RRT
- 2 implemented early warning trigger tools/SBAR only
- Median hospital size: 592 licensed beds (range: 224-877)
- Collaborative vs. randomized trial
  (i.e. They wanted to implement RRT)

Baseline and Outcome Measures

- Total cardiopulmonary arrests (code blues)*
- Code blues outside the ICU
- Survival rate of code blues outside the ICU
- Mortality rate (unplanned deaths**)
- Unplanned admissions to ICU

*exclude code blues in ED or on day of admission

**exclude patients with DNR within 24 hour of admission, deaths in ED or stillbirths

Descriptive Measures

- # of RRT calls
- Average time from call to arrival
- Common presenting early warning signs
- Outcome of RRT call
  - Move to ICU or stay on floor?
  - Progress to code blue?
  - Survived to discharge?
- Staff/patient satisfaction

RRT Models Implemented

RRT teams structures

- MD/ICU RN/RT (7)
- ICU RN/RT (9)
- ICU RN/RT first responder, with MD resource available if needed (3)
- All except 1 used existing staff; 1 site added a nurse to the MICU staff

Equipment

- Range from basic equipment to Crash Cart
- Digital pagers, dedicated phone lines, cell phones/"walkie-talkies"

Collaborative Learning

Common struggles

- Without executive leadership support, a nearly impossible task
- Lack of rapid escalation policy or just lack of adherence to already established policy for communication up the chain of command
- RN discomfort in initiating escalation up chain of command
- Nursing staff reluctance to call RRT
- RRT MD resistance to intervening on other MD's patient
- Egos…egos….egos….egos!

Collaborative Sharing

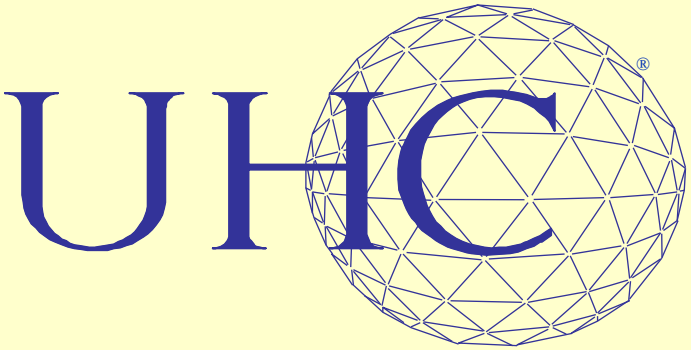
Creative ideas

- "Outreach Teams" rounds on patients transferred from ICU
- RRT simulator training
- Mock RRT calls ("poor man's simulator")
- Training videos
- Annual competency training for RNs on early warning signs
- Rewards for staff who call RRT

"It's not about you…it's about the patient!"

Timeline of Activities

First week of July	First Collaborative Conference
By end of July	Gaps / Implementation plans ready
August	Implementation initiation
September	RRTs "go live" on pilot units
September forward	Monitoring and measuring
October/November	Analysis/Evaluation/Adjustments
December	Summary report of initial experience
March 2006	Report project outcomes



Questions

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