

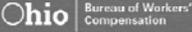
**OSC 12**  
Ohio Safety Congress & Expo

**WELL AT HOME. SAFE AT WORK.**

**311 Safety and Quality: Walking the Talk at Nationwide Children's Hospital**

Terry Davis, MD and Janet Berry, RN, MBA

Wednesday, March 28, 8 to 9 a.m.



**Safety and Quality:**



**Walking the Talk at Nationwide Children's Hospital**

Janet Berry, RN, MBA, VP Perioperative Services  
J. Terrance Davis, MD, Associate Chief Medical Officer  
*Co-Medical Directors for Patient Safety*

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 **NATIONWIDE CHILDREN'S**  
*When your child needs a hospital, everything means™*

Learning Objectives:

Participants will be able to:

- Describe several methods to create awareness and build momentum for a safety program
- Explain the concept of high reliability organizations and identify several tools that can be used to enhance safety
- Articulate the need for both culture change and vigorous process improvement teams to improve safety

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*When your child needs a hospital, everything means™* | *Create a safe day. Every day.*

**Background: Nationwide Children's**

- Located in Columbus, OH
- 4<sup>th</sup> largest and busiest children's hospital in the country
- 352 licensed beds  
+110 leased off-site NICU/NSCU beds
- 19,000 annual Inpatient Admissions
- 20,000 annual Surgical Procedures
- 77,000 annual Emergency Department visits
- 120,000 annual Urgent Care visits
- Over 400,000 Primary Care and Specialty Clinic visits
- Over 8800 employees

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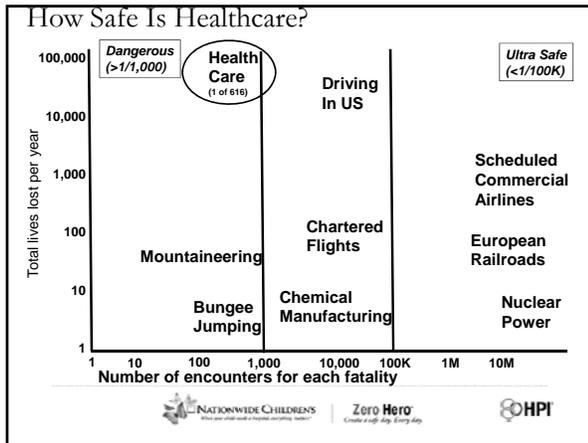


Track record of our healthcare system-  
National statistics on patient safety:

- Number of deaths per year from medical errors –
  - 44,000 (one 737 airliner crashing every day)
  - 98,000 (one 747 airliner crashing every day)
- Record of compliance doing things we know make patients safer:
  - Compliance with recommended care- 55%
  - Time outs before invasive procedures- 79%
  - Reporting of critical test results- 65%

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But we're way better than other countries . . .

. . .right?

Logos: NATIONWIDE CHILDRENS, Zero Hero, HPI

### Preventable Deaths per 100,000 population

Rank	Country	Deaths
1	France	65
2	Japan	71
3	Australia	71
4	Spain	74
5	Italy	74
6	Canada	77
7	Norway	80
8	Netherlands	82
9	Sweden	82
10	Greece	84
11	Austria	84
12	Germany	90
13	Finland	93
14	New Zealand	96
15	Denmark	101
16	UK	103
17	Ireland	103
18	Portugal	104
19	USA	110

Diseases surveyed include diabetes, epilepsy, stroke, influenza, ulcers, pneumonia, infant mortality and appendicitis. Source: Commonwealth Fund, Health Affairs, World Health Organization.

Logos: NATIONWIDE CHILDRENS, Zero Hero, HPI

### Estimated costs of medical errors over 10 years

■ \$170 Billion – \$290 Billion

Source: Institute of Medicine

Logos: NATIONWIDE CHILDRENS, Zero Hero, HPI



### Highly Reliable Organizations (HROs)

**Three Principles of Anticipation**

- **Preoccupation with Failure**  
Regarding small, inconsequential errors as a symptom that something's wrong
- **Sensitivity to Operations**  
Paying attention to what's happening on the front-line
- **Reluctance to Simplify**  
Encouraging diversity in experience, perspective, and opinion

**Two Principles of Containment**

- **Commitment to Resilience**  
Developing capabilities to detect, contain, and bounce-back from events that do occur
- **Deference to Expertise**  
Pushing decision making down and around to the person with the most related knowledge and expertise



**NATIONWIDE CHILDRENS** | **Zero Hero** | **HPI**

### Turn to your neighbor:

- On a scale of 1 – 10 how do you rank your organization as an HRO?
- Do you sense organizational will to become more of an HRO?

**NATIONWIDE CHILDRENS** | **Zero Hero**

### Highly Reliable Organizations (HROs)

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### Our Safety Journey at NCH

- It starts with the Board of Directors
- Error Prevention
- Quality Improvement
- Reinforcement and keeping momentum

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### Our Safety Journey at NCH

- It starts with the Board of Directors
  - Establishing a Quality of Care Committee of the Board
- Error Prevention
  - Groundwork of the Committee
- Quality Improvement
  - "We have ignition . . ."
- Reinforcement and keeping momentum
  - The Committee informs the Full Board

**NATIONWIDE CHILDRENS** | **Zero Hero**

### Our Safety Journey at NCH

- It starts with the Board of Directors
  - Establishing a Quality of Care Committee of the Board
    - Re-established in 2008
  - Groundwork of the Committee
    - Includes the Board Chair
  - "We have ignition . . ."
  - Includes some safety experts from industry
  - The Committee informs the Full Board
    - Meets monthly

**NATIONWIDE CHILDRENS** | **Zero Hero**

### Our Safety Journey at NCH

- It starts with the Board of Directors
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  - “We have ignition . . .”
  - The Committee informs the Full Board

---



### Our Safety Journey at NCH

- It starts with the Board of Directors
  - Establishing a Quality of Care Committee of the Board
  - Groundwork of the Committee
    - Visit to Cincinnati Children’s Hospital
    - Attend Institute for Healthcare improvement “Boards on Board” Minicourse
    - Externally facilitated full day retreat for Board Committee

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### Our Safety Journey at NCH

- It starts with the Board of Directors
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  - Groundwork of the Committee
  - “We have ignition . . .”
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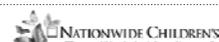
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### The data . . .

- Serious Safety Event Rate (SSER)
  - Really bad harm
  - Normalized to size of hospital

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### Three Categories of Safety Events

*A variation from expected practice or best clinical practice that...*

**Serious Safety Event**

- Reaches the patient
- **Followed by** moderate to severe harm or death

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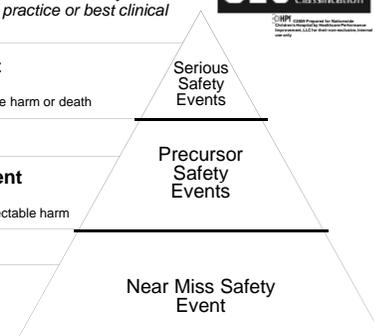
**Precursor Safety Event**

- Reaches the patient
- **Followed by** minimal or no detectable harm

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**Near Miss Safety Event**

- Does not reach the patient
- Error is caught by a detection barrier or by chance



Serious Safety Events

Precursor Safety Events

Near Miss Safety Event

**SEC** Safety Event Classification

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### The data . . .

- Serious Safety Event Rate (SSER)
  - Really bad harm
  - Normalized to size of hospital
- The Preventable Harm Index
  - Numerator only for events of patient harm
  - Eight Domains of harm included
  - Domains can be added up to reflect all preventable harm

---



### Preventable Harm Index (PHI)

Preventable Harm Index	2011 (# events)
Hospital Acquired Infections *	
Adverse Drug Events (Severity D-I) **	
Non-ICU Cardiac Arrests	
Significant Complications after Surgery ***	
Serious Falls – Inpatient / Outpatient †	
Serious Safety Events ††	
Preventable Harm not reported elsewhere (e.g. Joint Commission Never Events)	
<b>Total Patients w/ Preventable Harm</b>	<b>Sum</b>



- ### It started with The Board . . .
- Serious Safety Event Rate (SSER)
    - 1.2/10,000 adjusted patient days
  
  - The Preventable Harm Index
    - Total number of kids harmed last year
- Management of message after decades of success stories
- 

### NCH new goal adopted 2008:

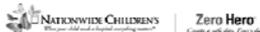
Eliminate Preventable Harm by 2013!

*. . . Big hairy audacious goal*



- ### Our Safety Journey at NCH
- It starts with the Board of Directors
    - Establishing a Quality of Care Committee of the Board
    - Groundwork of the Committee
    - “We have ignition . . .”
    - The Committee informs the Full Board
      - Safety moved to the top of the agenda at Full Board Meetings
      - Twice a year “deep dive” into safety data
- 

- ### Turn to your neighbor:
- On a scale of 1 – 10 how involved is your Board of Directors in Safety?
  
  - Do you sense organizational will for your Board to become more involved?
- 

- ### Our Safety Journey at NCH
- It starts with the Board of Directors
  - Error Prevention
  - Quality Improvement
  - Reinforcement and keeping momentum
- 

Our Safety Journey at NCH

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Our Safety Journey at NCH

- It starts with the Board of Directors
- Error Prevention
  - Branding of the program: “Zero Hero”
  - The HPI process for culture change
  - Development of low risk behaviors and error prevention tools
  - Basic Training - Use of videos
  - Results – SAQ and Habit Scale

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**Zero Hero™**  
*Create a safe day. Every day.*

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Success factors: branding . . .

- Consistency
- Add patient safety to core values
- Good catch stories
- Buttons and lanyards

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### The Approach

We partnered with an external consultant with proven expertise to develop strategies to improve safety at our hospital.

Diagnostic Assessment   Evidence-Based Recommendations   Implementation & Reinforcement

**Sustaining Our Safety Culture & Optimizing Outcomes**

HPI Health Protection Institute  
Children's Hospital of Philadelphia  
Philadelphia, PA 19104

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### Culture and Safety

**Outcomes**

**Behaviors**

**Culture**

The shared values and beliefs of the individuals in the organization  
*(the way we act when no one is looking)*

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### Our Safety Journey at NCH

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  - The HPI process for culture change
  - Development of low risk behaviors and error prevention tools
    - Retrospective analysis of 3 years’ worth of SSEs
    - Understanding common causes
    - Multidisciplinary group of 65 picked from collection of evidence based tools to support low risk behaviors

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### Basic training - 2 hours

First 45 minutes is making the case – why we needed to undertake a Patient Safety Program at NCH

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### Videos make the case for teamwork





Hockey



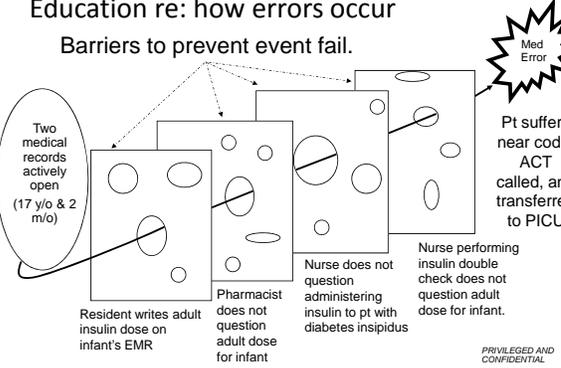
Basketball



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### Education re: how errors occur

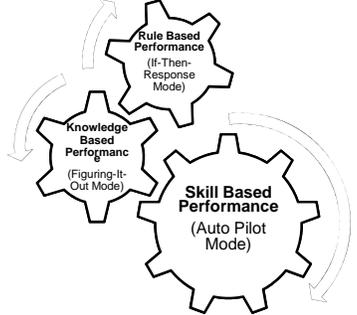
#### Barriers to prevent event fail.





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### Three Ways Humans Perform





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### Skill-Based Errors

#### What We're Doing At The Time

We are doing tasks so routine and familiar that we don't even have to think about the task while we are doing it.

**Nationwide Children's Baseline Analysis: 12% of errors**

Type of Error	Example Error Prevention Strategy
Slip	Stop and think before acting
Lapse	
Fumble	

**1 to 3 of 1,000 acts performed in error (pretty reliable!)**



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### Rule-Based Errors

#### What We're Doing At The Time

We choose how to respond to a situation using a principle (rule) we were taught, told or learned through experience.

**Nationwide Children's Baseline Analysis: 73% of errors**

Type of Error	Example Error Prevention Strategy
Used the wrong rule	Education about the correct rule
Misapplied a rule	Think a second time – validate/verify
Chose not to follow the rule	Reduce burden, increase risk awareness, improve coaching

**1 in 100 choices made in error- (not too bad!)**



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### Knowledge-Based Errors

#### What We're Doing At The Time

We're problem solving in a new, unfamiliar situation. We don't have a skill for the situation, we don't know the rules, or no rule exists. So we come up with the answer by:

- Using what we do know (fundamentals)
- Taking a guess
- Figuring it out by trial-and-error

**Nationwide Children's Baseline Analysis: 15% of errors**

Type of Error	Example Error Prevention Strategy
We came up with the wrong answer (a mistake)	STOP and find an expert who/that knows the right answer

**30 to 50 of 100 choices made in error- (yikes!)**



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### Basic training - 2 hours

Second part – teaching the 3 low risk behaviors and 8 supporting tools



### Zero Hero™ Essentials

Behavioral Expectations	Related Tools
Everyone Makes a Personal Commitment to Safety	<ol style="list-style-type: none"> <li><b>"Name Game"</b> From Member Checking to Coaching using ARCC Ask a question Request a change Concern – make a statement Chain of command</li> <li>Pay attention to detail using STAR Stop: Plan for a response Think: Focus on the action Act: Perform the act Review: Check for desired results</li> </ol>
Everyone is Accountable for Clear and Complete Communication	<ol style="list-style-type: none"> <li>Use SBAR to communicate concisely regarding action <b>Situation:</b> "What is the problem, patient or process?" <b>Background:</b> "What is important to know?" <b>Assessment:</b> "What is your evaluation?" <b>Recommendation:</b> "What action needs to take place?"</li> <li>Swirey communication with 1 on 7 clarifying questions. A clarifying question can be memetic (5) one five) or phonetic (alpha, beta)</li> <li>NCH Standardized Hand-off Patient/Project Problems Pertinent Past History Plan/Procedure Decontaminated/Potential Pitfalls</li> </ol>
Everyone Supports a Questioning Attitude	<ol style="list-style-type: none"> <li><b>QWY</b> <b>Qualify</b> the source (do I trust this source) <b>Validate</b> the content (does it make sense to me) <b>Verify</b> your action (check it with an expert)</li> <li><b>Stop and Re-evaluate</b> – (Don't proceed in the face of uncertainty)</li> </ol>



### Example of a tool: ARCC

This is a technique I use to help a **team member** prevent a safety event.

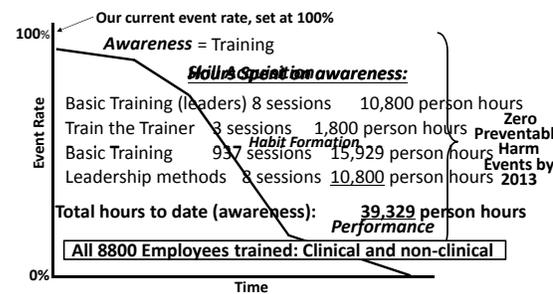
"Safety Phrase":  
"I have a concern..."

**What is the "ARCC" technique?:**

- Ask** – First ask a question
- Request** – If team member does not modify their plan - ask for a change
- Concern** – If they still do not modify their plan, express your concern about the situation
- Chain of command** – Follow the **Chain of command** if they do not change their behavior- Inform your leader immediately to prevent an event



### Making it Stick: Time and Resources



Our current event rate, set at 100%

**Awareness = Training**

**Skills spent on awareness:**

- Basic Training (leaders) 8 sessions 10,800 person hours
- Train the Trainer 3 sessions 1,800 person hours
- Basic Training 937 sessions 15,929 person hours
- Leadership methods 3 sessions 10,800 person hours

**Habit Formation**

**Zero Preventable Harm Events by 2013**

**Total hours to date (awareness): 39,329 person hours**

**All 8800 Employees trained: Clinical and non-clinical**

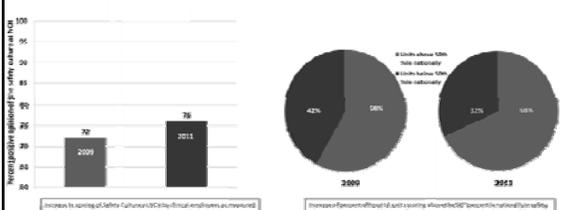


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### results- safety culture survey



Percent positive responses for safety culture at NCH

2009: 70%  
2011: 79%

Likely above 100% this reliability

2009: 42%  
2011: 32%



### Safety Behavior Habit Scale: Zero Hero Essentials

**Frontline Staff**

We do it when we know someone's watching

I do it most of the time, but when I get busy, I forget

Safety Behaviors? What are they?

No one else is doing it, so I feel out of place

Our Safety Behaviors are just how we do things around here!

**Safety Behavior Habit Scale**

Never On Occasion Usually Always

Knowledge Based Performance Rule Based Performance Skill Based Performance

1 2 3 4 5 6 7 8 9 10

Just another flavor-of-the-month project

I need to make our Safety Behaviors my own work habits

Reinforcing our Safety Behaviors isn't an extra job – it is my job

It's one more thing on my plate - I'm just too busy to observe

How can I make our Safety Behaviors part of everything we do?

**Managers**

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### Example: Habit Formation Survey Results by Question

**Safety Behavior Habit Scale**

Never On Occasion Usually Always

1 2 3 4 5 6 7 8 9 10

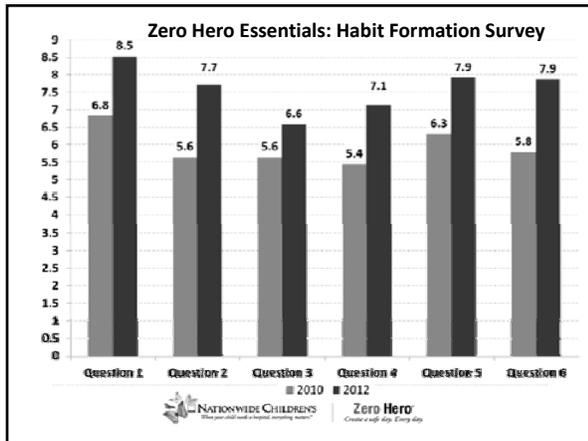
HABIT FORMATION SURVEY	Results
1. How frequently do you use our safety behaviors during your work day?	
2. How frequently do those you work with use our safety behaviors?	
3. How frequently do you reinforce safety behaviors?	
4. How frequently do you observe others reinforce safety behaviors?	
5. How frequently do you hear or find yourself thinking "I don't have time" as the reason not to practice using our safety behaviors?*	
6. How frequently in a typical workday do you forget to use our safety behaviors?*	

\*\* Reverse Question - Scoring reversed based on response

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### Turn to your neighbor:

- Could these techniques be modified in your organization to promote safety?
- What would be the challenges?

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### Our Safety Journey at NCH

- It starts with the Board of Directors
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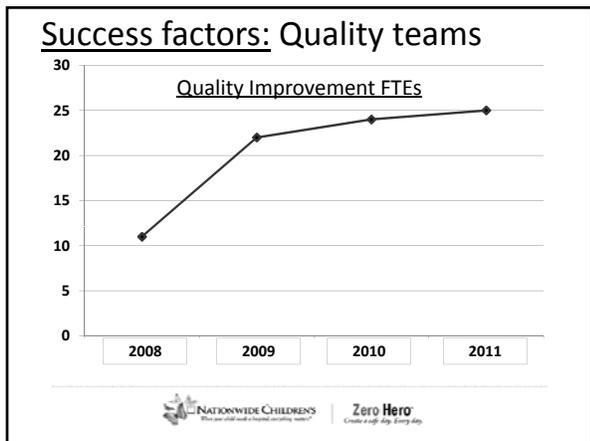
### Multidisciplinary microsystem-based quality teams

- Common Improvement methodology
  - Specific Aims
  - Key Driver diagrams
  - PDSA cycles
- Multidisciplinary
  - Appropriate medical personnel with QI support
- Use of embedded QI personnel

### NCH QUALITY / SAFETY / SERVICE STRATEGIC PRIORITIES

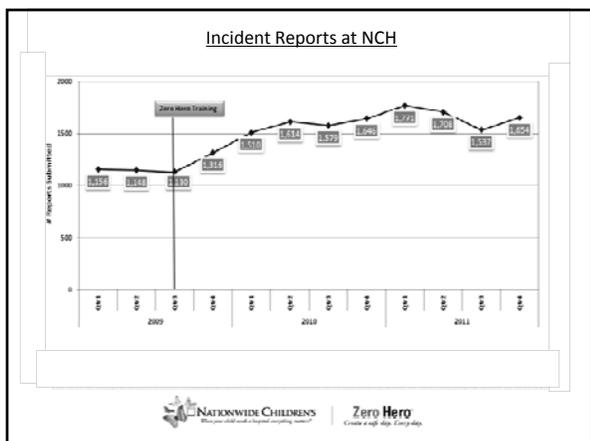
**Teams working on 100 specific projects**

Keep Me Well	PATIENT & FAMILY CARE	DO NOT HARM ME	Heal Me Cure Me	Treat Me With Respect
<ol style="list-style-type: none"> <li>1. Reducing staff exposures to Pertussis in ED</li> <li>2. Identification of Obese patients in Primary Care</li> <li>3. Obesity Reduction in Franklin County</li> <li>4. Outpatient Asthma Management</li> <li>5. Prevention of ED and admissions of Asthma Patients</li> <li>6. Identification of hypertension in primary care</li> <li>7. Improving WIC immunization rates</li> <li>8. Improving influenza immunization</li> <li>9. Car Health/Nutrition App</li> <li>10. Primary Care Disposal Station</li> <li>11. Primary Care Scheduling System</li> <li>12. Primary Care Disposal Station</li> <li>13. NCH QIS reduction</li> <li>14. Diabetes: reduce ED and inpatient admissions</li> </ol>	<ol style="list-style-type: none"> <li>1. Accessing Psychiatric care</li> <li>2. Reducing ED/ICU transfer times for Level 1 trauma patients</li> <li>3. Reducing T4/T401 4-4 in ED</li> <li>4. Improving handoff communications</li> <li>5. Improving communications w/ Primary Care Providers in the Clinic</li> <li>6. Admission Bed Status</li> <li>7. Auditing Scheduling</li> <li>8. Cardiology Clinic Project</li> <li>9. Clinical Nutrition Tables</li> <li>10. Clinical Therapies</li> <li>11. Emergency</li> <li>12. Emergency</li> <li>13. Emergency</li> <li>14. Behavioral Health Intake</li> <li>15. Developmental Disability</li> <li>16. Clinic Flow</li> <li>17. Clinic Registration</li> <li>18. Clinic Registration</li> <li>19. DE Therapist Efficiency</li> <li>20. Clinic Phase II</li> <li>21. Speech Waitlist</li> <li>22. Allentown Review</li> <li>23. Wound Care Management</li> <li>24. Wound Care Management</li> <li>25. Wound Care Management</li> <li>26. Wound Care Management</li> <li>27. Wound Care Management</li> <li>28. Wound Care Management</li> <li>29. Wound Care Management</li> <li>30. Wound Care Management</li> <li>31. Wound Care Management</li> <li>32. Wound Care Management</li> <li>33. Wound Care Management</li> <li>34. 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Surgery Navigator Tool</li> <li>17. Welcome Center</li> <li>18. Westerville Patient Registration</li> </ol>



### Development of Critical Mass of individuals with training in a common QI method

- 70 clinicians and administrators trained by sending them to external training courses
  - Intermountain Health Care Advanced Training Program in Quality (Salt Lake City)
  - Advanced Improvement Methods (Cincinnati)
- "Quality Improvement Essentials" course developed at NCH:
  - An additional 250 staff will be trained.



### Enhanced RCA process

Three meeting format:

- Meeting #1- Charter meeting
- Meeting #2- Agree on detailed timeline based on interviews by trained interviewers
- Meeting #3- Agree on Root Causes, Failure modes, and recommendations
- Results of RCA presented to the QIP Safety Committee for final approval
- Follow-up by QIS – completed recs by due date

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### RCA Team Members

**Executive Sponsor:** Rhonda Comer, Senior VP-Legal Services

**Clinical Facilitator:** J. Terrance Davis, MD

- |   |  |
|---|--|
| ■ Trauma Medical Director, Pediatric Surgery            | ■ Medical Director, Center For Child and Family Advocacy   |
| ■ Associate Trauma Medical Director, Emergency Medicine | ■ Section of Ophthalmology                                 |
| ■ Trauma Program Manager                                | ■ Program Manager, Clinical Services and Care Coordination |
| ■ Chief, Section of Emergency Medicine                  | ■ Quality Coordinator, QIS                                 |
| ■ Section of Neurosurgery                               |  |
| ■ Chief, Section of Critical Care                       |  |

- Chiefs or content experts from all involved areas
- Does NOT include individuals directly involved in event
- Information from involved individuals gathered by trained interviewers



### Meeting #1

- Review scope of RCA
- Review of roles and reminder re: taking off turf hats
- Ensure composition of committee is correct
- Make list of all necessary interviews



### Between Meetings 1 & 2

- Interviews are conducted
- Patient chart reviewed
- Standards, policies, protocols reviewed
- Detailed timeline developed



### Enhanced RCA process

#### Three meeting format:

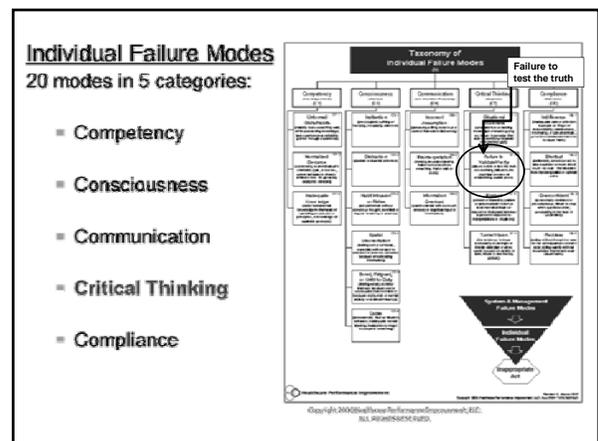
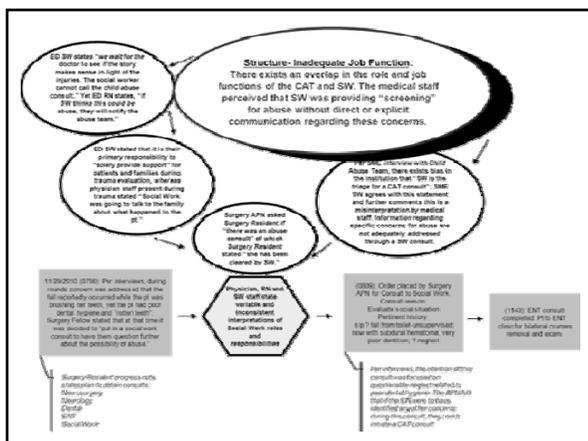
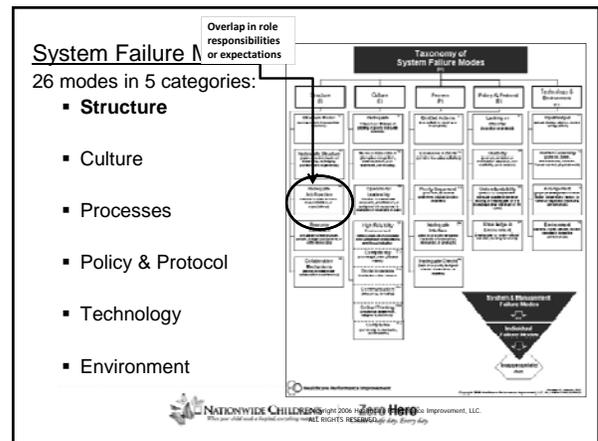
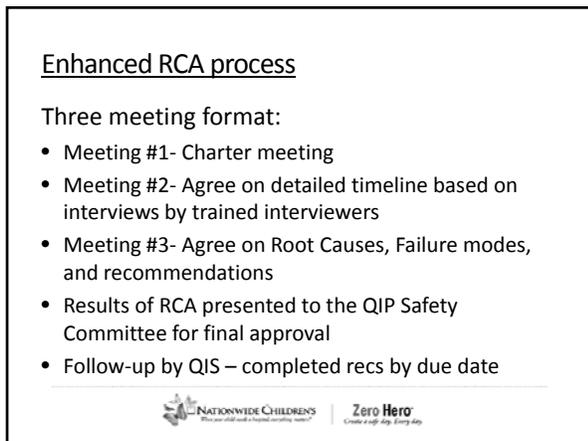
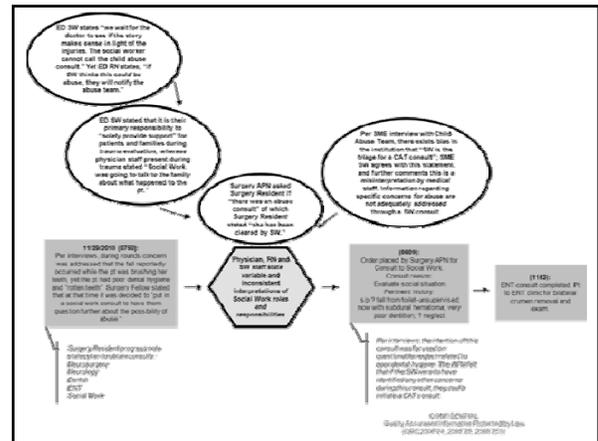
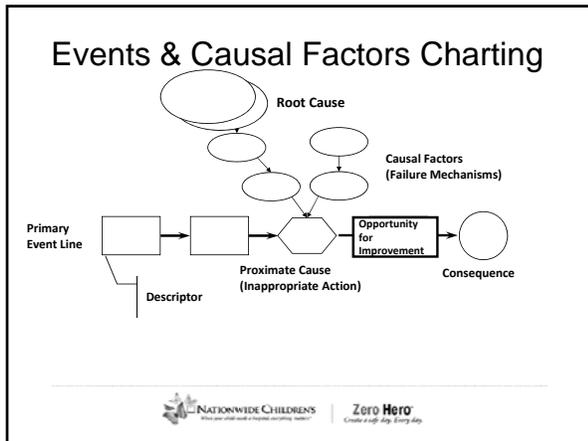
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### Clinical History

- **11/26/2010 (1218):** Pt arrives via EMS, Level 1 Trauma. Pt with seizure activity upon arrival, eye deviation, and right-sided hypertonicity. Mother reports patient fell from toilet while brushing her teeth.
- **(1245-1338):** Head CT and skull films obtained. ED care completed. Pt transported to PICU.
- **(1400-1700):** RN and MD staff verbally communicate regarding concerns for abuse. Pt remains with decreased LOC.
- **(1755):** Repeat Head CT obtained.
- **11/27/2010 (0805):** Physical Medicine consult completed.
- **(1000):** Pt with improving neurological status. Transferred to 4TS.
- **11/29/2010 (0750):** Concerns regarding inconsistency in history of injury versus patient assessment (dental hygiene) verbalized during rounds. Surgery APN orders Social Work consult for possible neglect.
- **(1143-1232):** ENT and Neurology consults completed.
- **(1401):** SW attempts to meet with family, unavailable.
- **11/30/2010 (0800):** Surgery plans to discharge this day.
- **(1337):** SW consult completed. No needs identified.
- **(1550):** Mother requests to leave AMA, Surgery APN speaks with mother, informs mother awaiting radiology results of leg. Mother has APN speak with "step-father" on phone to explain reason for delay in discharge.
- **(1805):** Pt discharged home to mother.







Turn to your neighbor:

- How robust is the “QI Program” in your organization?
- Could/should it be more robust?



Our Safety Journey at NCH

- It starts with the Board of Directors
- Error Prevention
- Quality Improvement
- Reinforcement and keeping momentum

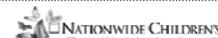
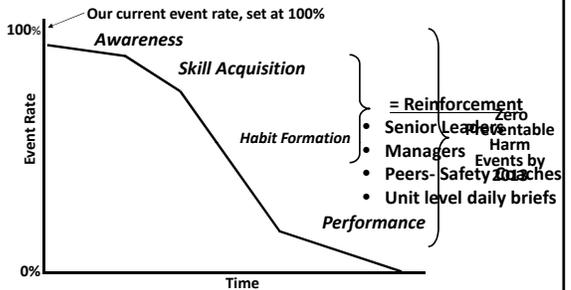


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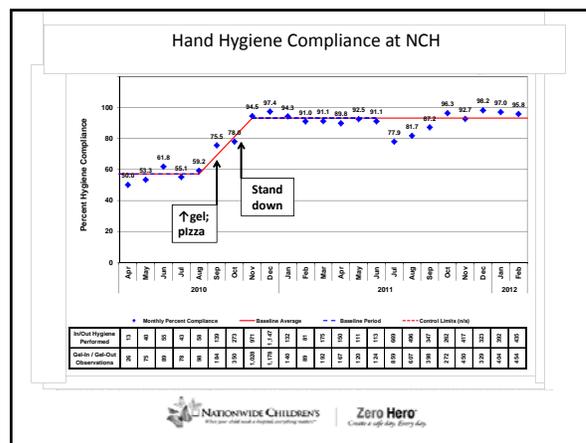
Making it Stick:  
Time and Resources



Reinforcement and keeping momentum

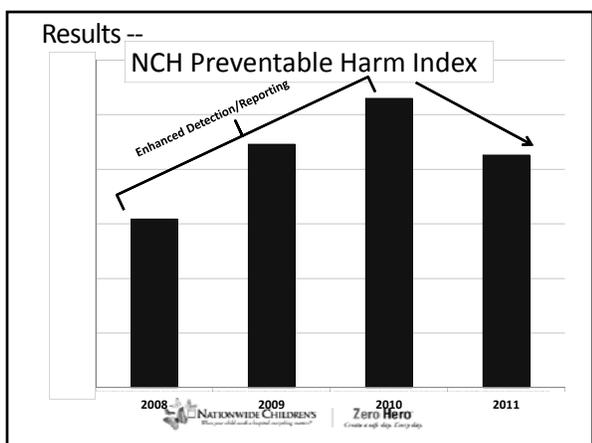
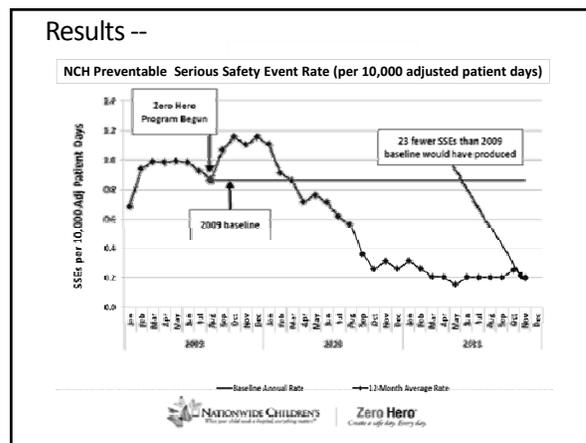
- Senior Leader Safety Walking Rounds
- Managers “Rounding to Influence”
  - 5:1 feedback
- Peer-to-Peer Coaching – the Safety Coach Program
- Unit level daily safety briefs
- Hospital wide daily safety check-in
- Hand Hygiene Safety Stand-down





Turn to your neighbor:

- Are you using reinforcement techniques in your organization now?
- If not, which one(s) might be useful?



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