Session Objectives

This session will provide a unique integrative learning experience, teaching patient safety through a real case review of a child's death presented by an anesthesiologist, surgeon, pediatrician, and the child's parent. We will review records and research, and openly discuss what happens when things go wrong in health care and how you can become a more knowledgeable and humane clinician as we move forward in providing safer and kinder care.

OBJECTIVES
- Identify how specific safety measures can prevent harm in the operating room
- Develop an action plan to follow in your current work
- Embrace human connections with your patients and families and learn from them
Agenda

- Introduction-Jonny
- Dale-Justin’s story
- Barbara-anesthesia complications
- Bruce-surgery complications
- Jonny-pediatric complications
- Audience questions/concerns/participation
- Break 2:30-3:00
- Dale-lessons learned, case study, RCA & accomplishments
- Barbara-improving anesthesia care
- Bruce-surgical quality improvements & partnerships
- Jonny-what happens when things go wrong and doing better
- All-Learning from loss
- Audience questions/concerns/participation

Pediatric Patient Safety and Transparency in Medicine

Dale Ann Micalizzi
Founder, Director, Health Educator
Justin’s HOPE Project at The Task Force for Global Health
micalizzidag@aol.com
Justin’s story…

“Oh January 15th, 2001, Justin, a healthy 11-year old boy, was taken into surgery to incise and drain a swollen ankle. He was dead by 7:55 a.m. the next morning, leaving behind two grieving and bewildered parents who desperately wanted to know why their son had died. But medical care was to fail them twice – first their son died and then no one would explain to them why. I was one of the consultants, from another Children’s Hospital, contacted by Justin’s parents to review his records and figure out what went wrong.”

~Adrienne G. Randolph, MD, MSc
Boston Children’s Hospital Dept. of Anesthesia

Jan 15th
6pm: Justin diagnosed with Staph aureus ankle infection from orthopedist’s earlier tap
9pm: Incision & drainage of Justin’s ankle begins in operating room
9:20pm: Justin suffers sudden pulmonary hemorrhage and cardiac arrest twice while under general anesthesia
10pm: Justin transported emergently to the pediatric ICU

Jan 16th
12am-7am Justin suffers several more cardiac arrests in the PICU. Parents told only that the prognosis is poor
3pm: Coroner calls, requesting consent for complete autopsy. Parents told, “Something very wrong-contact attorney.”
7:30am Labs, X-rays, brain scan, EKGs performed. Family & clergy begin to arrive
7:45am: “No hope” - PICU doctors advise parents to remove Justin from life support
7:55am: Time of Justin’s death, age 11 years, 7 months, 16 days

Jan 17, 2001-present: Our search for answers begins…
Our circle of CARE

Pediatrician
Nurses
Surgeon
Coroner
Clergy
PICU Staff
Patient/Family
Anesthesiologist
Resident/Students
Technicians/Radiologist
Pediatric Cardiologist
Pulmonary Specialist
Infectious Disease
Pharmacist
Ambulance EMT

What would you do as a parent?
There are many faces left behind in tragedy…
What not to say to the families when something goes wrong...

- “YOU signed the consents for surgery and anesthesia.”
- “Are you receiving counseling?” You need to get over it.
- “These things happen and you may never know what went wrong.”
- “I knew there was a problem when I heard the alarms.”
- “I have no idea what happened-go ask a specialist.”
- “I guess I can squeeze you in for a meeting but I’m very busy.”
- “I don’t have to share the M&M and QA investigations with you.”
- “I didn’t tell the resident to begin surgery alone.”
- “Medicine is an imperfect science.” I did nothing wrong—it was the science.”

Table from our article: The Heart of Health Care
Parents’ Perspectives on Patient Safety (link on resource page)

Table 1
Symptoms reported by 75 parents after the loss of a child
Emotional and Psychological Symptoms Percentage (n= 75)

- Sleeplessness 82%
- Depression 82%
- Anxiety 73%
- Lack of joy 68%
- Fatigue 65%
- Lack of concentration 60%
- Alcohol or drug abuse 59%
- Mood changes 58%
- Lack of motivation 55%
- Posttraumatic stress 53%
- Uncontrollable crying 50%
- Suicidal thoughts 45%
- Irritability 40%
- Morbid thoughts 33%
- Lack of emotions 28%
- Obsessive-compulsive tendencies 23%
- Unable to return to work 22%
- Unable to leave home 18%
- Anger management concerns 18%
- Uncontrollable laughing 3%
- Bipolar diagnosis 2%
- Delirium 2%
What Parents want and need following an adverse medical event:

- The truth about what happened to our child
- Honesty, Empathy, Apology, Respect (HEAR)
- Processes changed to prevent similar events
- Provide family with resources to begin the healing process
- Remember our child
- Include parents and families in facilitating safety improvements, FAC, Boards, RCA, Grand Rounds, etc.

All we received from those involved was a deafening SILENCE

Which I couldn’t accept as Justin’s mom.

So, I began to search…and search…and continue to search…

I needed a truthful explanation about what happened in order to help heal our family and community. It was my duty to protect those left behind.
Our Circle of Unnecessary Disappointment

Etiologies:

1. Pulmonary or air embolus
2. Septic-toxic shock/Severe Sepsis/Septic arthritis
3. Pneumonia-pre op x-ray would have saved him
4. Aggressive irrigation causing embolus/cardiac arrest
5. Medication over dose
6. Malignant Hyperthermia
7. ET tube improper insertion/blocked airway (kinked tube/muscular reaction)
8. Succinylcholine (muscle relaxant) hyperkalemia
9. Microscopic abnormality of Mitral Valve/Long QT Syndrome
10. Joules of electricity too high
11. Tourniquet too tight-vitals different in extremities
12. Allergic reaction
13. Anesthesia machine malfunction, alarms turned off
14. Failure of critical thinking and team work
15. Constellation of errors before and after event
16. Outside reviews, “No smoking gun”
Located in your envelope:

- Medication record
- Anesthesia record
- Surgical notes
- Hospital reports
- Autopsy results

What happened to Justin?

- Please discuss at your table and write your ideas on the flip charts
More questions to think about…

- What do you think happened to Justin?
- Why do you think that?
- What would you tell his family if you were the doctor?
- Would you communicate openly?
- What obstacles would you face?
- What would cause your fear?
- What would give you courage?
- This could happen to your family, too…What would you do?
- Working in Health Care you will have a unique experience following an adverse medical event…

Ask me anything…

All teach and all learn from bad outcomes…
Anesthesia Complications

By Dr. Barbara Brandom

History of Barbara W Brandom, MD

Recently retired from 35 years of pediatric anesthesia practice in a tertiary care hospital with outpatient surgery & 15 years of service in pediatric pain management.

In decades past received funding for performing labeling studies of neuromuscular blocking drugs.

Since 2000 received funding from the Malignant Hyperthermia Association of the United States to direct the MH Registry, a not-for-profit research registry.
Session Objectives

Discuss complications related to IV drug administration during anesthesia practice.

OBJECTIVES

- Identify how specific safety measures can prevent harm
- Develop an action plan to follow in your current work
- Embrace human connections with your patients and families and learn from them

Images Thanks to Google
Complications during Anesthesia

Anesthesia induces lack of response to surgery.

Anesthetic drugs decrease ventilation and circulation.

Anesthetic Plan includes support of breathing and circulation.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway</td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
<td></td>
</tr>
</tbody>
</table>

Complex Environment
Anesthesia Practice

Check all equipment.
   Individual use. Departmental support.

Prepare drugs.
   Preparation in Pharmacy?

Anesthesia Complications

Anesthesia induces immobility.

   Injury to...
      Eyes, ears, nerves, all dependent skin.
Pediatric Anesthesia Inhalation Induction

Placement Intravenous Catheter
Placement Intravenous Catheter
Intravenous Fluids

Complications during Anesthesia

Preventable anesthesia mishaps: a study of human factors

Retrospective 47 interviews
359 preventable incidents
82% involved human error

Syringe swap was 3rd most common
IV disconnection was 5th most common
Complications during Anesthesia

Preventable anesthesia mishaps: a study of human factors

“Focused on the process of error—its causes, the circumstances that surround it, or its association with specific procedures, devices, etc . . . regardless of final outcome”

Drug Swaps and Syringes vs Pre mixed meds and double checks

Similar vials- Could this end a life?

Could this save a life?

Robot Pre-mixed medication saves lives

Double check yourself and your resident when it comes to medication
Institute for Safe Medication Practices
November 2015

Error reduction Program starts with a
Multidisciplinary team to improve medication use:
  time
  resources
  assess safety & implement change
  Promote a CULTURE of Safety
  Increase detection and reporting
  Explore & understand root causes
  Educate practitioners
  Recommend methods
  Respond to hazardous situations before errors occur

Reporting to ISMP is voluntary.


BMJ 2011;343:d5543 doi: 10.1136/bmj.d5543

5 ORs in a tertiary care hospital
89 anesthetists 1075 cases 10,764 drugs given

NEW METHODS:
  ☐ customized drug trays
  ☐ drug trolley
  ☐ pre-filled syringes
  ☐ large color coded labels
  ☐ bar code reader linked to computer
  ☐ rule to scan prior to admin
  ☐ speakers and touch screen
  ☐ auditory & visual verification on screen & audible warning RE antibiotic admin
  ☐ automatic compilation of anesthetic record

NEW METHODS:

Fewer drug errors overall; 9 (95% CI 7 to 11) / 100
versus 12 (95% CI 9 to 14)  p=0.045

most errors were in recording

Reduction in drug administration errors with;
scanning barcode prior to administration
keeping voice prompt active

There were no differences between the new and conventional systems with respect to outcomes of the patients or the anaesthetists' workload.


8 months 1,046-bed tertiary care teaching hospital

Randomly, prospectively observed 277 operations including 3,671 drug administrations

ME &/or ADE in 5.3% (95% CI 4.5 to 6)
153 errors 91 ADEs 80% preventable
70 errors (46%) had potential for patient harm
51 (33%) led to ADE

Higher rates than observed retrospectively

Recommendations:
Technology-based Interventions:
- Bar coded syringe labels
- Point of care bar code documentation
- Specific Drug decision support
- ALERTS
Process-based Interventions:
- Optimize timing for documentation
- Reduce opportunity for work-arounds
- Infusion administration placed to minimize bolus
- Vendor selection
- Practitioner training

Anesthesia Complications

Decision support

Cognitive aids

www.emergencymanuals.org
Opportunity to recognize individual differences

Audience questions & comments
The Surgeon Perspective

Bruce Ramshaw MD FACS
Professor and Chair
Department of Surgery
UT Grad School of Medicine
Knoxville, Tennessee

Surgical Complications

HIS FAULT
HER FAULT
THEIR FAULT
NOT ME

HAZARDS CAN OCCUR IN OFFICE ENVIRONMENTS TOO
AVOID THIS . . . BY AVOIDING THESE!

ALWAYS USE GOOD SAFETY PRACTICES
The scientific method is based on a mechanistic model before we understood how biologic organisms worked. Flaws include the fact that there will never be one “right” answer and whatever is true today might not be true tomorrow.

Increased Complexity Leads to Fragmentation
“Perhaps this (fragmentation) is the most common characteristic of socially organized evil in modern society”

- Stanley Milgram

_Obedience to Authority_, 1974
Fragmentation Leads to Increased Bureaucracy and Waste

We’re All In This Boat Together

I’m sure glad the hole isn’t in our end 0 0 0
Traditional Medical Practice: Individual Physician focused

A Wealth of Knowledge
Need for A New Approach to Understanding Information
July 27, 2010
Dealing with Complex Systems/Problems

- **Reductionist Science**: designed for simple systems, when cause and effect are clear and predictable (machines)

- **Complexity (Systems) Science**: designed for complex systems, when there are too many variables to control (human beings)
The True Definition of Standardization is NOT Uniformity

“Attention must be paid to the fact that **it is not the aim of standardization to achieve absolute uniformity.** This would be counterproductive and not keeping with the needs of the economy and consumers. Standardization should be a flexible, dynamic process which brings benefits to all those involved, producers and consumers alike. **Its results should be an optimum variety, and not by any means uniformity, rigidity and hostility to innovation.”**

- The Textbook: An Introduction to Standards and Standardization
It Is.... OPTIMAL VARIETY

“GPS” FOR HEALTHCARE

**Goal = Optimal Outcomes, Not the Fastest Route**

<table>
<thead>
<tr>
<th><strong>Factors &amp; Variables</strong></th>
<th><strong>Healthcare</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Driving</strong></td>
<td>Surgeon</td>
</tr>
<tr>
<td><strong>Driver</strong></td>
<td>Device/Drugs</td>
</tr>
<tr>
<td><strong>Car</strong></td>
<td>Patients</td>
</tr>
<tr>
<td><strong>Passenger</strong></td>
<td>Cost</td>
</tr>
<tr>
<td><strong>Gas Level</strong></td>
<td>Technique</td>
</tr>
<tr>
<td><strong>Traffic</strong></td>
<td>Facility</td>
</tr>
</tbody>
</table>

- Happier Passenger/Patient
- Better Driver/Surgeon
- Sustainability

---

Not a machine, but a Complex Adaptive System

---

*Complex Adaptive System Model*
Understanding

What If:

“We can’t solve problems by using the same kind of thinking as when we created them.”
Thank You

Paediatric Drug Complications

Dr Jonny Taitz
Director, Patient Safety
Clinical Excellence Commission
Australia
Clinical Excellence Commission

The Clinical Excellence Commission is responsible for leading safety and quality improvement in the NSW public health system.
10 years in quality and safety in health care

Grown from:

- 4 programs in 2004/5 (12 staff)
- 30 programs/initiatives in 2015 (100 staff)

The Paediatric Quality Program Team

Acknowledgements:

Dr Sarah Dalton - Clinical Director | Clinical Excellence Commission

Sarah Patterson - Paediatric Safety & Quality Coordinator | Clinical Excellence Commission

Vicki Fox - Principal Data Analyst, Patient Safety | Clinical Excellence Commission
Where paediatric services are delivered - INPATIENT

<table>
<thead>
<tr>
<th>2014 INPATIENT Admissions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total &lt;16yrs:</td>
<td>276,967</td>
</tr>
<tr>
<td>Total all age groups:</td>
<td>2,848,931</td>
</tr>
</tbody>
</table>

- Sydney Children’s Hospitals Network (Randwick and Westmead)
- Metropolitan
- Regional
- Hunter New England Local Health District

Medication errors in Paediatrics

- Most common cause of preventable medical error (Parihar & Passi, Indian pediatr 2008)
- Vulnerable to medication errors and adverse drug events
- x3 times more likely to experience a harmful medication error than adults (Kaushal et al, JAMA 2001)
- Is the problem getting worse?
- Research on effective interventions is limited (Maaskant, et al Archives of Disease in Childhood 2014)
2011-2013 IIMS Data

Paediatric Medication Error RCA's (SAC 1&2)
Notified under either PIT Medication/IV fluid or Clinical Management

<table>
<thead>
<tr>
<th>Year</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>2</td>
</tr>
<tr>
<td>2014</td>
<td>6</td>
</tr>
</tbody>
</table>
Usual culprits?

Medications involved in SAC 1&2 for 2013-2014 (n=19)

<table>
<thead>
<tr>
<th>Medication</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>3</td>
</tr>
<tr>
<td>Gentamicin</td>
<td>3</td>
</tr>
<tr>
<td>Adrenaline</td>
<td>2</td>
</tr>
<tr>
<td>Calcium</td>
<td>1</td>
</tr>
</tbody>
</table>

Medications involved in SAC1&2 incidents (2013-2014)
Paediatric medication incident review

- Literature review
- Reviewed 498 medication incidents notified into IIMS during 2013 -2014
- IIMS – Is it a reliable snapshot?
- Developed a taxonomy to classify the errors
- Identified the top 4 medication errors and causes

2013/2014 Types of paediatric medication incident \((n=498)\)
2013/2014 Types of paediatric medication incident (n=498)

Top 4 - Medication incident types

Wrong dose/volume | Wrong time/wrong frequency | Required not administered | Suboptimal documentation
--- | --- | --- | ---
46 | 27 | 27 | 28
42 | 34 | 31 | 29

2014 vs 2013
Paediatric medication error taxonomy

Wrong Dose (wrong single unit dose error)
- Wrong dose prescribed (i.e. incorrectly prescribed not administered)
- Wrong dose administered
- Incorrect checking
- Illegible prescription
- Incorrect checking: IVF
- Prescribing error (i.e. incorrectly prescribed and administered)
- Weight error

Documentation Standard
- Prescribed incorrectly: incorrect doc of time, date, vol, conc, rate, route
- Incomplete prescription: missing time, date, vol, conc, rate, route, frequency, no prescriber signature, Patient ID
- Illegible prescription
- Incorrect labelling of infusion
- Prescribed correctly nurse error in documentation (monitoring of administration FBC; cumulative totals, RN signature missing, time, date)

Medication ordered not given
- Unable to access stock
- Dose omitted due to illegible order or unclear drug regime
- Not charted or communicated by medical staff
- Failure to follow policy (administration not supervised)
- Inadequate checking of charts/handover/multiple charts in use
- Route of administration not accessible (NG/IVC not insitu)

Incorrect timing of medication administration
- Duplication
- Wrong time
- Wrong frequency (prescription and/or administration errors)
Wrong dose (single unit dose error)

Wrong dose administered - prescribing error (i.e. incorrectly prescribed and administered)
Wrong dose administered - incorrect checking
Wrong dose prescribed (i.e. incorrectly prescribed not administered)
Wrong dose administered - weight error
Wrong dose administered - illegible prescription
Wrong dose administered - incorrect checking - IV

Medication ordered not given

Medication ordered not given - Inadequate checking
Medication ordered not given - Failure to follow policy
Medication ordered not given - Omission of dose
Medication ordered not given - Dose omitted due to illegible order
Medication ordered not given - Unable to access stock
Medication ordered not given - Route of administration not accessible
Incorrect timing of medication administration

![Bar chart showing incorrect timing of medication administration](image)

Medications involved in Top 4 notification types

![Bar chart showing medications involved in Top 4 notification types](image)
SAC rating for top 4 errors

Gentamicin - Is it confusing?
### Gentamicin questionnaire

<table>
<thead>
<tr>
<th>Does a local hospital dose guideline exist?</th>
<th>Overall 50 questionnaire responses received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exists</td>
<td>n=50</td>
</tr>
<tr>
<td>Does not exist</td>
<td>18 (36%)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>5 (10%)</td>
</tr>
</tbody>
</table>

### Reference guide used by your unit

<table>
<thead>
<tr>
<th>Reference guide used by your unit</th>
<th>n=38</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paediatric pharmacopoeia (Red Book)</td>
<td>12 (32%)</td>
</tr>
<tr>
<td>MIMS</td>
<td>0</td>
</tr>
<tr>
<td>eTG</td>
<td>4 (11%)</td>
</tr>
<tr>
<td>Protocol from the 3 tertiary paediatric units in NSW</td>
<td>14 (37%)</td>
</tr>
<tr>
<td>As per consultant advice</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>As per JMO advice</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>other sources used</td>
<td>4 (10%)</td>
</tr>
</tbody>
</table>

\(n=\) the number of responses received for that question
Dose variation of Gentamicin

Variability in max. dose of Gentamicin
Lessons Learnt

Audience questions & comments

Break 2:30-3:00
The Answer…

Nine years and nine months later a doctor spoke up…

The letter that took me ten years to write has been read at many healthcare events. (on resource page)
At the end of the day, I’m not sure what was more disturbing to me as a mom…the not knowing or the not caring.
Justin did matter.

Courage VS Fear

You are your own wizard
Questions from the IHI Open School

- What happened to Justin, and what can health care providers learn from it? *(See next slide)*
- Did you think about filing a lawsuit? If so, what were your goals in doing so? *(Not until the silence began. Goal was the truth.)*
- Who delivered the news to you, and who do you wish had? *(Ten years later a colleague of Anesthesia informed us of probable cause. We had wished that the docs involved would have informed us immediately.)*
- What advice would you have for providers in speaking with patients and families about adverse events? *(HEAR> Honesty, Empathy, Apology, Respect)*

What can Health Care Providers Learn from Justin’s Story?

- Safety First
- HEAR: Honesty, Empathy, Apology, Respect
- Compassionate Care must squash Med Mal
- Importance of Medical and Family Hx
- Medication mistakes can be deadly
- Be careful
- High costs involved in defense
- Significant impact on family can not be measured-help us
- Partner WITH Families-they can give you the answers. They are NOT your enemy!
- Communication, Coordination of Care and Compassion key
- Mama Bears (and some Papa Bears) won’t stop till the problems are fixed
- We can do better as a Community
- Speak up and Act
- Be inspired to help us-roll up your sleeves
- What did you learn?
What would be the one thing that you would change in healthcare that you know would save lives?

Marie Bismark (MD, JD) wrote: "Teaching doctors that it's OK to say these five simple phrases: (1) "I don't know but I'll try to find out for you" (2) "I'm tired and I need a break" (3) "I need some help with this" (4) "I'm sorry I made a mistake" and (5) "I'm concerned about my colleague."

There are patterns when things go right, not just when they go wrong - find patterns, why did it go right? Why did it go wrong? Then discuss and make changes.

Invite patients/family and involved clinicians to RCA - This is the only way the truth will be known if you include the players. You are guessing otherwise.

My answer: Rapid, honest, compassionate disclosure following adverse medical events and then learn from events to safeguard the next child.

Nurse Leader writes: “FEDERALLY MANDATED, safe patient to staff ratios!!!!”

“Remove the arrogance and ill mannered clinicians no matter how much money they bring to the organization.” No bullies allowed!

Cameras in OR provide real time sequence of events. Validate staff and patient/family concerns and would save money and lives. What are you afraid of?

Blueprint for Improved Results

- Build trust with your patients
- Keep patient safety and kindness first
- Take an adequate family and medical history w/patient and family input
- Invite patients/families into their care as a valued team member-new concept
- Look outside of the box-What else could it be?
- Be honest, listen and partner with patients and families-they can give you the diagnosis
- Watch out for sepsis and act fast
- Respectful management of adverse events
- Provide support to family at all times
- Remove or manage the chaos-Keep it simple in a complex universe
- Coordination of care in place and follow up
- Include patients, families and advocates in policy, procedures, boards, device discussion, shared decisions, FAC, RCA, Patient Experiences managers, co-authors of papers and Grand Rounds, follow disease specific facebook groups to learn, etc., etc.
- Medical Schools-don’t train in silos and encourage the students to learn from adverse events
- Strengthen your culture of safety in all areas of care- the reception area, pharmacy, lab, floor, office, OR, ER, homecare, PICU, clinics, etc.
- Create a new culture of patient/family and staff support-lives will be saved
What You Should Ask Prior to Your Surgery Requiring Anesthesia:

1. Who will provide the anesthesia and what is their background? Anesthesiologist? Nurse Anesthetist? Anesthesia Assistant? Sedation Nurse?
2. Is the facility licensed by the State?
3. Is the facility accredited by the Joint Commission or other accrediting agency?
4. Are patients undergoing general anesthesia monitored by EKG (electrocardiogram)? Is Oxygen saturation measured by using a pulse oximeter? Is inspired carbon dioxide measured? Are the concentrations of anesthetic gases measured?
5. Are patients undergoing general anesthesia monitored by ECG (electrocardiogram)?
6. Is body temperature measured during anesthesia? How?
7. Is there a defibrillator present?
8. Is there an anesthesia machine that is used? If so, who maintains the machine?
9. How are patients undergoing general anesthesia monitored during anesthesia?
10. Is there a written protocol for managing Malignant Hyperthermia?
11. Is there a recovery area and is it staffed by a nurse?
12. Does the facility perform drills to prepare for Malignant Hyperthermia each year? Have all current employees been trained?
13. Does the facility have 36 vials of dantrolene immediately available?
14. Does the facility have a cart or other location where additional supplies are kept to manage a case of Malignant Hyperthermia?
15. What hospital is back up for the ambulatory center?
16. Is there a written protocol for transfer to a hospital in case of emergency?
17. How long does it take to transfer?
18. Are my records maintained by the facility? For how long?
19. Provide all information about each of the medications and their dose and frequency of use? Include any that will provide my anesthesia/exposure, satisfactorily completed an Advanced Cardiac Life Support course within the last two years?
20. Have those that will provide my anesthesia/sedation satisfactorily completed an Advanced Cardiac Life Support course within the last two years?
21. Provide accurate information, including dose and frequency of ALL medications that are being taken, including antidepressants, vitamins, and diet pits, performance-enhancing and herbal medications.
22. Report all allergies and adverse reactions to (for example): medications, latex, and foods.
23. Describe the uses of alcohol and or recreational drugs, as well as how often/how much.
24. Relate whether the patient is taking prescription drugs illegally. What are these medications and their dose and frequency of use?
25. Ask as a reminder if any pre-operative testing (including ordered labs, x-rays, urinalysis etc.) will be completed, reviewed and acted upon prior to surgery.
26. Tell your surgical/anesthesia team about any recent illness symptoms, including any history of asthma, heart problems or autoimmune deficiency.
27. Provide the names and contact information about each of the patient/family members.
28. urinalysis etc.) will be completed, reviewed and acted upon prior to surgery.
29. Tell your surgical/anesthesia team about any recent illness symptoms, including any history of asthma, heart problems or autoimmune deficiency.
30. Provide full information about any diagnosed conditions and their treatments, including any history of allergies, heart problems or autoimmune deficiencies.
31. Describe any personal or family history of muscle disorders, heat stroke. or occurring spontaneously with exercise.
32. Describe any personal or family history of muscle weakness or severe muscle pain after anesthesia.
33. Describe any problems that you or family members have experienced during or after anesthesia.
34. Describe any personal or family history of muscle weakness or severe muscle pain after anesthesia.
35. Describe any personal or family history of muscle weakness or severe muscle pain after anesthesia.
36. Describe any personal or family history of muscle weakness or severe muscle pain after anesthesia.
37. Describe any personal or family history of muscle weakness or severe muscle pain after anesthesia.
38. Describe any personal or family history of muscle weakness or severe muscle pain after anesthesia.
39. Describe any personal or family history of muscle weakness or severe muscle pain after anesthesia.
40. Describe any personal or family history of muscle weakness or severe muscle pain after anesthesia.
Letter from the Editor

Thank you for contributing to the Patient Safety section of Current Treatment Options in Pediatrics.

I enclose the link for the journal should you not have seen it http://link.springer.com/journal/40746/onlineFirst/page/1

I hope you agree the combined QI and Patient Safety articles will prove to be a valuable reference in the future.

Your article places partnering with parents and families as a key part of the healing process hopefully will help to change practice. ~Dr. Peter Lachman

Provide grief support services at your hospital
Justin and Noah Helping Families Heal

- Provide Bereavement Resources to your families
- Support groups, counseling, disease specific facebook groups, music therapy, memory gardens, memory books, pet therapy, art therapy, camps for siblings, gardens, benches, walkways, journaling, fountains, playgrounds, labyrinths, etc....
- The Compassionate Friends Support Group
- IHI Forum Yearly Candle Light Vigil-Join us! Mon. Dec. 7th 6:30 pm
- Remembrance events
My Shining Star…
Learning from adverse medical events

How I find comfort in learning from loss…

- In partnership with IHI, Justin’s HOPE Project has awarded 25 IHI Forum Scholarships to clinicians doing the most amazing things to save lives!

Justin’s IHI Forum Scholarships: http://tinyurl.com/o8ph2og

Improving Anesthesia CARE

- Barbara: Safety measures and action plans in the OR
Safety Measures and Action Plans

Identify your system for documentation of medical errors.

Who teaches this to students and young practitioners in every clinical area?
Who is your representative to the relevant hospital committee?
Identify the most costly/frequent errors
  Consider different methods
  Present to administrators to gain support
  Involve key individuals in study of process & change

Improving Anesthesia CARE

Is it possible to institute a barcode system with EMR?
Are vendors optimal?
Are practices optimal?
How are recognition and reporting of errors supported by the system/culture?
Encourage pre-op evaluation prior to the day of surgery.
Encourage extension of post-op follow up.
What happens when things go wrong in Pediatrics and how we can do better

A Special kind of TIME OUT

- The PROCESS ISSUE that I have not stressed enough is how to provide time & space for discussing the complication with the patient & family.
- Provide adequate time for feedback.
- Include all members of the health care team in communication with family. How??
- Hospital risk management system.

Our article in Pediatric Anesthesia

- Discussion
Communicate

Examine the practice of communication between families and health care providers.

- Provide time and space in private room
- Discuss complication with patient and family openly
- Discuss complication with team
- When we talk in the PACU it is NOT private & people forget
- Initiate professional card exchange for future contact
- Writing a detailed note in the chart
- A letter to the family for future reference

- The system has to expect and accept that sometimes there is a need to take TIME OUT following tragic event
- The need for time for communication has to be accepted and not punished by the administrators.

Audience questions & comments
Surgical Quality Improvement & Partnerships

Bruce: Safety measures and action plans in the OR

Value-Based Clinical Quality Improvement
An Innovative Solution
### Differences...Intent & Uses

**Clinical VALUE Improvement**
- Improve Outcomes
  - Adaptive Process
  - Real-World Conditions
  - Locally Varied Data
  - Affordable & Rapid
  - Immediate Application

**Test Hypothesis**
- Traditional Clinical Research
  - Standard Protocol
  - Controlled Conditions
  - Clean Data
  - Costly/Time Consuming
  - Delayed Impact

---

### Care Coordination and CQI

- Exempt from HIPAA
  - 1996 law and final rule
- Patient Safety and Quality Improvement Act of 2005
- 21st Century Cures Act
- Not appropriate to go through IRB process
  - CMS
  - Liberty IRB
Breaking Out of Old Mindsets

A Shift in Policy

H.R.6 - 21st Century Cures Act

<table>
<thead>
<tr>
<th>Recommendations</th>
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Academic Journal Rejects Traditional Statistical Analyses
The True Objective In Healthcare is to Improve Value for the Patient

In healthcare, **VALUE** is defined as the quality, satisfaction and true cost for a person's entire cycle of care.

We should learn how to improve the value of care for patients and to improve value for the entire healthcare system and for all stakeholders who add value to a person's cycle of care.

**Value:**
- Quality
- Safety
- Satisfaction
- Costs for the entire cycle of care

Justin Ford Kimball
DETERMINE WHAT MATTERS
LOCALLY

• PATIENT’S CHOICE
• SURGEON’S TECHNIQUE
• DEVICE USED
• ANESTHESIA
• COST
• OPERATIVE VALUE
• LONG TERM OUTCOMES
• THE FACILITY
• ETC.
Patients have many various concerns. Some want to be involved in the decision process for what operation is performed and sometimes even what mesh is used.
Patient Perspective

"After the third recurrence, the hernia was larger than ever before. The surgeon told me it couldn’t be fixed and I would have to live with it for the rest of my life.”

Biologic Engineer/Materials Science Perspective

"In our mesh explant analysis, we found that all hernia meshes undergo alterations in the body. But these alterations are quite variable from patient to patient”
A Team Based CQI Methodology

**Plan**

**Brainstorm**

**Do**

**Study**

**Act**

---

**DATA ANALYTICS**

**Potential Areas of Focus**
- Quality and Safety
- Time
- Resources
- Costs
- Efficiency

**Analysis Methods**
- Factor
- Statistical
- Comparisons
- Hypothesis
Malcolm Gladwell TED Talk on Spaghetti Sauce

IDENTIFY TECHNIQUES THAT IMPROVE

• Outcomes
• Satisfaction
• Quality
• Cost

IDENTIFY CLUSTERING POPULATIONS—“BIG DATA”

WHO BENEFIT OR ARE HARMED BY

• Specific Techniques
• Types/Brands of Devices
• Pharmaceuticals
Isolated vs. Complex Adaptive Systems

Predictive Analytics is in Sight
Predictive Algorithms

Google Flu Trends' Failure Shows Good Data > Big Data
by Kaiser Fung | 8:00 AM March 25, 2014

Benefit, Harm and Waste

Estimates of Benefits and Harms of Annual Mammography Screening Over 10 Years of 10,000 50-Year-Old Women

Benefit

WASTE

HARM

- 1,960 will have normal mammogram results for all 10 years
- 302 will be diagnosed as having breast cancer
- 173 will survive breast cancer regardless of screening
- 30 deaths averted
- 57 overdiagnoses
- 92 deaths despite screening

- 63 will have at least 1 false-positive result during the 10 years
- 940 will have an unnecessary biopsy

10,500 50-year-old women
Finding the Hole in Healthcare
Machine OR Complex Adaptive System

CROSSING THE QUALITY CHASM
A New Health System for the 21st Century

Appendix B

Redesigning Health Care with Insights from the Science of Complex Adaptive Systems

Paul Pisek
Thank You

What happens when things go wrong in Pediatrics and how can we do better?

Jonny: How can we do better?
What happens when things go wrong in Pediatrics and how we can do better

NSW Children and Young persons
RCA committee

Parent comments following adverse medical events:

- They didn’t listen to us. We know our child best.
- We told them that we have allergies to meds and heart conditions in our family and they still gave that medicine and our child died. We told them not to but they said they use it all the time.
- Upgrade of family hx is needed prior to surgery—what questions should parents ask and what info should we reveal? The family didn’t want to tell surgeon that their daughter was on Prozac and complication arose and she died. Cause of death was rapid admin of clindamycin during anesthesia.
- I did not feel like a partner in my child’s care at all! Everything was being done around us but not with us.
- We were sent home multiple times from pediatrician until we rushed our child to the ER or found them dead on the floor. We didn’t know what to watch for. It was our fault.…
- The pediatricians never knew the diagnosis and kept trying things that made things worse.
- It was just an accident that my daughter died of sepsis but they could have told me what to watch for when I brought her home with a dx of flu several times. She died in my arms.
- Why aren’t children on monitors after surgery? I found her dead in the bed when I woke up next to her in the hospital.
- They sent us home with meds multiple times but never told us what to look for to know that he was getting sicker and dying little by little in front of our eyes. We could have saved him if we knew.
- Handoffs were poor. We didn’t know what to do next, where to go, who to call.
- They kept giving my son pain meds for his sports injury until he was addicted and he finally took them with alcohol and died of an overdose. He was hopping from clinic to clinic getting more meds.
- They didn’t tell us the truth and we trusted them with our child.…and then the silence began.

(Provided by Dale Ann Micalizzi, Justin’s HOPE Project interviews with families)
Acknowledgments

- Sarah Dalton
- Sarah Patterson
- Paul Hunstead
- Thomas Loveday
- Patient Safety Team, CEC
- NSW Kids and Families

Children and Young People
RCA Committee

- Objectives:
  - Identify issues in paediatric quality and safety
  - Undertake more detailed analysis of emerging themes e.g. Clinical Focus Reports.
- Age range:
  - Infants who have left hospital following birth, through to young people 20 years of age
- Meets quarterly
Committee Process

- RCA presented by committee member using presentation template
Committee Process

• RCA coded for clinical risk group, principal incident type, contributing system and human factors, patient factors and recommendations

Children and Young Person RCA Taxonomy Dictionary

<table>
<thead>
<tr>
<th>Risk Groups</th>
<th>Definitions</th>
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<tbody>
<tr>
<td>Acute abdominal pain, incl. AAA</td>
<td>Patient exhibits signs or complains of symptoms related to acute abdominal pain. Also includes pain associated with AAA</td>
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<tr>
<td>Aggression</td>
<td>Overt or suppressed hostility or disturbed behaviour, either innate or resulting from continued frustration, which is directed outward at others, potentially or actually impacting on care</td>
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<tr>
<td>Airway management</td>
<td>Maintenance of airway not managed in accordance with appropriate guideline or best practice for the patient concerned</td>
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<tr>
<td>Allergy/Anaphylaxis</td>
<td>Patient has an adverse reaction or anaphylaxis</td>
</tr>
<tr>
<td>Altered consciousness</td>
<td>Management of patient does not recognise or adequately consider the impact or implications of the patient's altered mental state</td>
</tr>
<tr>
<td>Aspiration / choke</td>
<td>Inhalation of foreign body or body fluids into the airway or lungs</td>
</tr>
<tr>
<td>Asthma</td>
<td>Incident including a patient who presented with symptoms associated with Asthma</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>Incident including a patient who presented with symptoms associated with Bronchitis</td>
</tr>
<tr>
<td>BIF charts/altered criteria</td>
<td>If the incident involved included observations charted in the yellow or red zones not being escalated appropriately OR the incorrect chart being used OR inappropriate altered criteria</td>
</tr>
<tr>
<td>Community service involvement/referrals</td>
<td>Incident involved current or previous involvement and/or referrals to external community services (IFAC, Community DBA etc.)</td>
</tr>
<tr>
<td>Group</td>
<td>Incident including a patient who presented with symptoms associated with Group</td>
</tr>
<tr>
<td>Deteriorating patient - delay/failure to escalate</td>
<td>There is evidence the patient is deteriorating but there are delays or failures to implement acute care escalation</td>
</tr>
<tr>
<td>Deteriorating patient - failure to recognise</td>
<td>Decline in a patient's clinical condition that is not recognised, when there are changes in observations and/or no improvement to treatment provided</td>
</tr>
</tbody>
</table>
Committee Process

• Coding entered into NSW RCA database

Committee Outcomes

• Annual Report
• Clinical Focus Report
• Clinical Support Tools
• Education
CHILDREN AND YOUNG PEOPLE
RCA COMMITTEE; 2011-2013 DATA

Table 21: IMS notifications for 0-16 years of age by severity Assessment code (SAC), January 2011 to June 2014

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<tr>
<td>SAC 1</td>
<td>23</td>
<td>25</td>
<td>29</td>
<td>32</td>
<td>74</td>
<td>21</td>
<td></td>
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<tr>
<td>SAC 2</td>
<td>107</td>
<td>109</td>
<td>113</td>
<td>320</td>
<td>330</td>
<td>104</td>
<td></td>
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<tr>
<td>SAC 3</td>
<td>1,730</td>
<td>2,044</td>
<td>1,581</td>
<td>2,466</td>
<td>1,370</td>
<td>2,260</td>
<td>1,730</td>
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<tr>
<td>SAC 4</td>
<td>2,420</td>
<td>2,754</td>
<td>2,375</td>
<td>2,424</td>
<td>2,122</td>
<td>2,292</td>
<td>2,352</td>
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<tr>
<td>No SAC allocated</td>
<td>50</td>
<td>75</td>
<td>85</td>
<td>94</td>
<td>126</td>
<td>94</td>
<td>180</td>
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<tr>
<td>Total</td>
<td>4,100</td>
<td>4,657</td>
<td>4,339</td>
<td>5,087</td>
<td>5,965</td>
<td>5,420</td>
<td>5,099</td>
</tr>
</tbody>
</table>

Figure 16: IMS notifications for 0-16 years of age by age group January 2011 - December 2013

The six most prevalent principal incident types for children 0-16 years are shown in Figure 17. Several of these areas are being addressed through existing QIC programs including Medication Safety, Quality Use of Antibiotics in Healthcare, Falls Prevention Program, Between the Flags and SEPSIS KILLS.
2011-2013 RCA Data

Challenges

• SPECIAL CASES
  – Neonates / Adolescents
  – Mental Health / Maternity
  – Child Protection / Community Health

• TRANSLATING THE LESSONS
  – State-wide/ system learning
  – Transparent versus protective
Future Priorities

• Diagnostic Error
  – 13 Cases in 2013-2014
  – Neurological Emergencies
    • Meningitis x 4
    • Cerebral tumour x 1
  – Surgical Emergencies
    • Intussusception, Malrotation
    • Testicular Torsion, Ovarian Cyst
  – Sepsis
    • Meningococcaemia

Questions
How can we find comfort in learning from loss?

- Heal yourself so you can teach others-accept the tragedy as fact
- Don’t blame yourself
- Find like minded people who want to improve care with you
- Create relationships that will inspire you to explore-find a cure or a new way of doing things
- Partner with the families as the answer sometimes lies with them
- Volunteer for organizations where you want to learn and teach on the specific topic
- Write articles, present at conferences, interview, become a detective, test devices, question patients, invite families and clinicians to join you.
- If you were involved in an adverse event or are closely tied-it’s up to you to have courage to fix things to save others. You will heal yourself.
- Don’t pretend it didn’t happen…or tell yourself that these things happen….do something. Your profession needs you.
- How do you heal from loss in your personal life?
Resources:

- Justin's RCA [https://www.youtube.com/watch?v=y63eICMOXSw](https://www.youtube.com/watch?v=y63eICMOXSw)
- Justin's HOPE video [https://www.youtube.com/watch?v=3IpjDTTruKQ](https://www.youtube.com/watch?v=3IpjDTTruKQ)
- Current Treatment Options in Pediatrics, Partnering with Parents and Families to Provide Safer Care: Seeing and Achieving Safer Care through the Lens of Patients and Families [http://link.springer.com/journal/40746/onlineFirst/page/1](http://link.springer.com/journal/40746/onlineFirst/page/1)
- The Letter that took me ten years to write [http://justinhope.tumblr.com/post/10380571733/the-letter-that-took-me-ten-years-to-write](http://justinhope.tumblr.com/post/10380571733/the-letter-that-took-me-ten-years-to-write)

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Justin's HOPE Pediatric Safety Project

Justin lives forever in my heart

Working for our grand daughter Isabella & your children!

**Healthcare Openness  Professionalism  Excellence**

~An era of Compassion~

Music by Karen Taylor-Good “Precious Child.”

Ark drawing by Erika G. age 7

Follow us on Twitter @JustinHOPE
Anyone can make a difference…

"The world is a dangerous place to live; not because of the people who are evil, but because of the people who don't do anything about it."

~ Albert Einstein

Faculty contact info:

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Thank you for attending and participating in our session. We loved having the opportunity to teach and learn together!

Please feel free to contact us with your questions or comments.