Five Developments That will Rock Your World
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Overview

Status epilepticus

Imaging

Patient satisfaction vs. patient-centered care

Quality

Genomics/Biomics
Pediatric Status Epilepticus

FEBSTAT (Lewis DV et al. Ann Neurology 2014)
Time = neurons
10% of children with febrile SE had hippocampal changes on MRI versus 0% not status
Half of those had permanent changes with either hippocampal sclerosis or volume loss a year later

RAMPART (Silbergleit R et al. NEJM 2012)
Autoinjector in the ambulance
Two doses (high and low)
IM Midazolam > Lorazepam IV
  Faster, more effective

Pediatric Seizure Study (Chamberlain JM et al. JAMA 2014)
Lorazepam not superior to diazepam in efficacy or safety
Pediatric Imaging


MRI for shunt malfunction (Ashley WW et al. J Neurosurg 2005)

Flow measurement for shunt malfunction (in progress)
Patient-Centered Care vs. Patient Satisfaction

Kupfer JM, Bond EU. Patient Satisfaction and Patient-Centered Care: Necessary but Not Equal. JAMA July 2012.

Patient-centered care:

- providing medical care that respects the values of the patient/family.
- structuring the healthcare system and processes around the needs of the patient rather than the needs of physicians and nurses.

Patient satisfaction:

- a tool used by industry to measure how well we meet customers’ expectations.

Sometimes, the two will be in direct conflict.
If we’re going to use customer satisfaction as a quality measure, then it should be validated as a quality metric.
Patient-Centered Care ≠ Patient Satisfaction


Severely ill: CT rates are the same.
Mildly ill: CT rates are higher in whites.

Consistent with
Inappropriate antibiotics for asthma (higher in whites),
Severity-adjusted admission rates (higher in whites).

Vanderweil SG et al. Acad Emerg Med 2008
Severity-adjusted Admission Rates

N = 189
N = 198
N = 25
N = 35
N = 43
N = 21
N = 13
N = 13
N = 8
I think I need antibiotics for my col...

IT'S A VIRUS!
Variation in Care

Dartmouth Atlas Project

- Inappropriate use of antibiotics for URI lowest in cities with a major pediatric hospital
- Radiation exposure lowest in cities with a major pediatric hospital
- Four-fold differences in tonsillectomy rates
- Two-fold difference in emergency department use
- Two-fold difference in hospitalization rate
- The variation in use of antibiotics among cities is 1.8 fold
Ivers N. Audit and feedback: effects on professional practice and healthcare outcomes. Cochrane Database Syst Rev. 2012

70 studies included audit and feedback
- Median increase of 4.3% for proportion measures (IQR 0.5-16%)
- Median increase of 1.3% for continuous measures (1.3-29%)

Effectiveness depended on
- Low baseline performance
- Feedback written and oral
- Feedback more than once
- Feedback from supervisor or colleague
- Clear goal(s) articulated
Variation in Care

Percentage of Asthma Patients with X-rays
FY14 - Q3

Goal < 20%
Variation in Care

Monthly Proportion of Asthma Patients with Chest X-rays

- Goal: < 20%
- Monthly Feedback Initiated
Variation in Care

Propensity to Test
CY 2013
Variation in Care

Proportion of TBI Patients with Head CT
(Non-Trauma Stats, Jan 2010 - Mar 2012)
Reducing CT Scans for Head Injury

Intervention
Where Medicine is Headed

Report to the Virginia Legislature, 2014

• The traditional fee-for-service payment model promotes fragmentation and higher spending
• Physician, facility, and drug costs are high
• Americans use a higher proportion of expensive medicine
• Care is fragmented and uncoordinated
Where Medicine is Headed

Recommendations:

- Collect detailed data on health spending throughout the state
- Define and collect data on the quality of health care delivery
- Adopt annual spending benchmarks for the next 5 years
- Adopt annual benchmark goals on quality for the next 5 years
Data-driven Care
Data-driven Care
Genomics/Biomics

Acute diarrhea
C. Difficile
Cow milk allergy
UTI
? Respiratory infections, dental caries, IBS, IBD

Viral passengers
35% of elective pediatric surgery patients carry viruses
But no inflammatory response

Nitrosoma eutropha BID “misting”
   Reduces Staph aureus
   Reduces propioniacterium
   Improves wound healing in diabetic mice