Physician Feedback Reduces Resource Use in the Emergency Department

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BACKGROUND

- Traditional Emergency Department (ED) quality measurement has included metrics of:
  - Timeliness: LOS, time to antibiotics, boarder time, etc.
  - Productivity: Patients/hour
  - Safety: errors, hand-offs, hand-washing
  - Patient-centeredness: Satisfaction, LWBS (Left Without Being Seen)
- Clinical quality metrics not frequently monitored:
  - Effectiveness metrics:
    - Adherence to evidence-based practice
    - Reducing unnecessary practice variation
  - Efficiency: Efficient use of resources
- Variation in practice:
  - Widely prevalent at institutional and individual provider level
  - Highlights opportunity for quality improvement by benchmarking best practice

PURPOSE

1. To develop a comprehensive scorecard for feedback to ED physicians on their practice patterns
2. To evaluate the impact of physician feedback (relative to peers) on ED resource use, quality and efficiency

METHODS

Study Design: Pre- Post-Intervention analysis
Setting: 2 tertiary pediatric EDs
Data source: EMR and billing data
Scorecards distributed quarterly to ED providers
Intervention Date: Sep 1, 2010
PRE: July 1 2009 – Aug 31, 2010
POST: Sep 1 2010 – Dec 31, 2011
Analysis: Fisher Exact test and Wilcoxon Rank Sum test

INCLUSION CRITERIA

4 common conditions in pediatric ED
Respiratory illness — Head Injury
Gastroenteritis — Fever
ESI 3 – highest potential for practice variation
Used chief complaint at triage
Diagnosis can be biased by physician

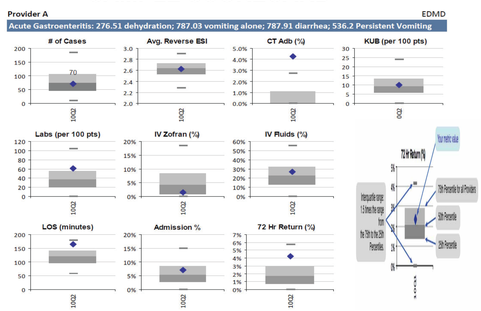
METRICS

ED Length of Stay (LOS)
Measure of efficiency
Return Rate (return to ED within 72 hr)
Measures potential unmet needs at first visit
Balancing metric
Resource use
Relevant to condition:

Gastroenteritis	Fever
Labs (lytes, CBC)	Labs (lytes, CBC, blood culture, CRP)
Abdominal X-ray	Chest X-ray
CT Scan Abdomen	Abdominal X-ray
IV Ondansetron	IV Antibioitics
IV Fluids	
Respiratory Illness	**Head Injury**
Chest X-ray	CT Scan Head

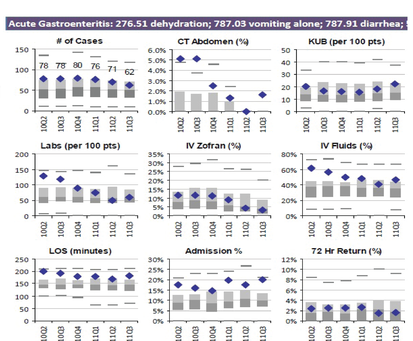
Admission to hospital monitored for all conditions

SAMPLE SCORECARD



RESULTS

ONE PROVIDER'S SCORECARD

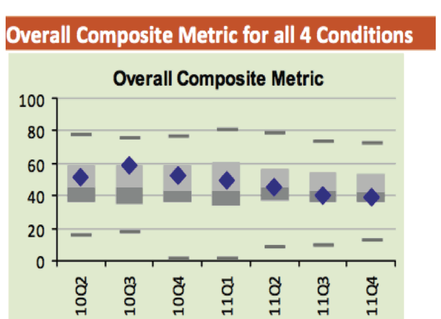


Total eligible patient visits during study period: **48,538** (38% of all ESI 3 patients seen during study period)
- PRE: **21,612**
- POST: **26,926**

Total # of physicians: **121**
- Mean: **401** patients/ physician

Resource/Outcome	PRE	POST	P-Value
Abdomen/Pelvis CT Scan (%)	1.2	0.6	**<0.0001**
Head CT Scan (%)	26.0	19.1	**<0.0001**
Chest X-ray (per patient)	31.7	28.1	**<0.001**
Abdominal X-ray (per patient)	15.7	16.7	ns
Lab Tests (per patient)	71.1	70.4	ns
IV Antibiotics (%)	12.0	10.8	**<0.0001**
IV Fluids (%)	37.8	38.6	ns
IV Ondansetron (%)	11.6	8.1	**<0.0001**
Hospital Admission (%)	7.4	6.7	**<0.0001**
Length of Stay (min)	129	125	**<0.0001**
72-hr Return Rate (%)	2.2	2.0	ns

REDUCING VARIATION AND MEAN



CONCLUSIONS

1. Physician feedback on practice patterns, including resource use and quality metrics relative to peers, can influence resource use in the ED
2. Reduced resource use did not adversely affect quality of care (LOS or Return rate)

LIMITATIONS

- Severity adjustment is based on triage acuity and chief complaint – may not adjust for all patient-related factors
- Some changes in resource use may reflect temporal trends