Assess Mechanism of Injury (MOI)

Any communication barrier?
- No
- Yes

Age less than 12 or greater than 65?
- No
- Yes

Altered mentation?
- No
- Yes

Intoxication (drug/alcohol use) suspected?
- No
- Yes

Any neurological deficit?
- No
- Yes

Any distracting injury?
- No
- Yes

Any spinal deformity?
- No
- Yes

Any midline spinal or paraspinal point tenderness?
- No
- Yes

All Answers

Yes

Immobilization Required

No

Immobilization NOT Required
Berwick, DM (1989, Jan 5) Sounding board: Continuous Improvement as an ideal in health care. NEJM, 322 (1), 53-56
Science of Improvement

- The science of improvement includes system thinking, understanding variation, psychology of change, and the theory of knowledge that are applied to improve the performance of processes, organizations, and communities.
- The proper application of this science requires integration of a set of improvement methods and tools with knowledge of subject matter to develop, test, implement, and spread changes.

Operational Definition: Associates in Process Improvement

Patient Safety

Reducing the risk of unnecessary harm, such as errors of omission or commission, associated with health care to an acceptable minimum has been termed “patient safety.”

Biggum et al. (2012, Jan/Mar). Patient safety in emergency medical services: A systematic review of the literature. PEC, 16 (1), 20-35
INTRODUCTION

There is a compelling need to develop meaningful clinical performance indicators for prehospital care. Ambulance services are being used in healthcare to assess and improve the quality of care provided by ambulance services and in line with a previously published framework. Indicators were piloted by ambulance services and in light of the changing clinical demands on, and the transfer of patients from, ambulance services. For indicators to be meaningful, they should be measurable and realistic, aiming to bring about improvements in care for patients. The development of clinical performance indicators for ambulance services is important as it can lead to better care for patients and as a result may have led to poor morale, adverse outcomes for patients and as other opportunity costs.

METHOD

A national pilot of clinical performance indicators for English ambulance services. For indicators to be meaningful, they should be measurable and realistic, aiming to bring about improvements in care for patients. The development of clinical performance indicators for ambulance services is important as it can lead to better care for patients and as a result may have led to poor morale, adverse outcomes for patients and as other opportunity costs.

RESULTS

The pilot will provide the basis for further development of clinical indicators, benchmarking of services, including in emergency prehospital care. Clinical performance indicators are increasingly being used in healthcare to assess and improve the quality of care provided by ambulance services.
Joining care bundles
Clinical Performance Indicators (CPIs) including
We measured care using national ambulance
unreliable at delivering whole bundles of care
death rates, improves long-term outcomes and
Cardiovascular disease is the commonest cause of
Problem
We undertook a national collaborative to improve
Measurement of the e
Individual value
Individual value
Administration of analgesia
Administration of GTN
Care bundle for AMI
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Adverse event (AE) detection in health care has traditionally relied upon several methods including: patient care documentation review, mortality and morbidity review, voluntary reporting systems, and direct observation and complaint systems. A novel sampling strategy, known as the trigger tool (TT) methodology, has been developed and successfully employed among general healthcare, surgical care, primary care, intensive care, and pediatric care as well as pharmacy services.

Given the success of this approach, TTs have been developed for a variety of fields within emergency medical services. The TT demonstrated an AE detection in sample size of 9836. The study was conducted between March 69.9% to 87.6%); specificity 58.5% (95% confidence interval [CI], 1–4). The final eight-item TT consisted of triggers of high potential for AEs and harm, a strategy employed by experts using an affinity process. Triggers for other areas of potential AE/harm were additionally considered by five iterative rounds of derivation tests. The TT demonstrated an AE detection. The aim of this research was to develop and evaluate a trigger tool to identify Adverse Events and Harm in Emergency Medical Services. The TT is a retrospective methodology that allows for the detection and targeted application of a retrospective success as an alternative.

The Emergency Medical Services Trigger Tool (EMSTT) demonstrated a high sensitivity and moderate specificity in sampling cases with potential risk for both AEs and harm, and a greater accuracy in identifying such cases specifically for use in the emergency medical care, including: patient care documentation review, mortality and morbidity review, voluntary reporting systems, and direct observation and complaint systems. A novel sampling strategy, known as the trigger tool (TT) methodology, has been developed and successfully employed among general healthcare, surgical care, primary care, intensive care, and pediatric care as well as pharmacy services.

Applied triggers to 10,000 plus encounters

Figure 1: EMSTT Methodology Process

EMS Trigger Tool Process
Reviews 20 Encounters every Two Weeks
Two reviewers (Inter-Rater Reliability)

Data Collected
- Adverse event rate
- Triggers
- Harm

Emergency Medical Service Trigger Tool Items

- C1: SpO2 < 94% without supplemental Oxygen or SpO2 < 85% without assisted ventilation
- C2: Change in Systolic Blood Pressure > 20% from first measurement
- C3: Increase in Early Warning Score > 1 point
- C4: Pain score > 4 without subsequent reduction
- C5: Temperature > 38°C without subsequent reduction

- M1: Administration of Opioid analgesic & Naloxone in same patient encounter
- P1: Inappropriate spinal immobilization
- R1: Return to same patient in 24 hours following refusal of transport

EMSTT Measures
- Trigger Rate per 100 patient encounters
- AE Rate per 100 patient encounters
- Harm Rate per 100 patient encounters

Definitions
- EMSTT: Emergency Medical Services Trigger Tool
- PCR: Patient Care Record
- AE: Adverse Event
- SpO2: Oxygen Saturation
- BP: Blood Pressure

To be completed during dedicated/scheduled time to avoid interruption and ensure completion

Hamad Ambulance Service – Not Published
Organization as a System

- Driver Process
- Mainstay Process
- Support Process

Need

Purpose of the Organization

Deming, Out of the Crisis, pg. 4

Lloyd Provost
Associates in Process Improvement

Quality as a Business Strategy

Leadership

- Vision
- Values

System View of the Organization

- Family of Measures/Scenarios
- Deming cycles of planning

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Associates in Process Improvement

Quality as a Business Strategy
Figure 1 illustrates the key components of the new clinical and offers some examples within each of the identified patient flow groups. Our developing clinical model better reflects the needs of patients and aims to ensure we send the right care to the right place at the right time.

**SAS Clinical Model**

- **Hospital**
  - **Immediate Life Threatening**
  - **Urgent & Emergency**
  - **Non Life Threatening**
  - **Routine**
  - **Discharges**
  - **Transfers**
  - **Scheduled Care**

- **Specialist/Advanced Paramedic**
- **Alternative Care Pathways**
- **Integrated Community Care Teams**
- **Primary and Social Care**
- **Emergency Ambulatory Care**
- **Intermediate Care**
- **Minor Injury Units**
- **GP Out of Hours**
- **Other Hospital Services & Direct Access to Specialist Care**

**SAS Triage & Dispatch**

- **Hear, Treat & Refer**
- **See, Treat & Refer**
- **Anticipatory Care**


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