The Present and Future of the MTS

Kevin Mackway-Jones
Professor of Emergency Medicine
Objectives

The origins of triage

The origins of MTS

The intelligence of MTS and it’s use
Edwin Smith papyrus
Edwin Smith papyrus

A medical condition I can heal

A medical condition I intend to fight with

A medical condition that cannot be healed

Jean Dominique Larrey
History

- Observations 1994
  - “Surprising” triage decisions
  - Inconsistent triage decisions
History

• Question

“How does triage work?”
History

• Answer

“Because it does”
A 26 year old man involved in pedestrian RTA.

Bilateral fractured tibia and fibula.

5 hours in “minor” area without treatment
History

• Local consultation

  • A common problem

  • A shared wish for a common solution
History

- Local review
- No consistency

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History

• The Manchester Triage Group
  • All local Emergency Physicians
  • All local Emergency Nurses
History

- Common names
- Common definitions
- Common methodology
- Common teaching
- Common audit
Triage Group: Nomenclature

- How many priorities?
- What should they be called?
## History

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## Triage Group: Nomenclature

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<tr>
<td>First</td>
<td>Red</td>
<td>Immediate</td>
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<tr>
<td>Second</td>
<td>Orange</td>
<td>Very urgent</td>
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<tr>
<td>Third</td>
<td>Yellow</td>
<td>Urgent</td>
</tr>
<tr>
<td>Fourth</td>
<td>Green</td>
<td>Standard</td>
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<tr>
<td>Fifth</td>
<td>Blue</td>
<td>Non-urgent</td>
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Triage Group: Definitions

• How long is it “safe” to wait

• How long is it “reasonable” to wait
Triage Group: Target Times

- First: 10 min
- Second: 60 min
- Third: 120 min
- Fourth: 240 min
- Fifth: 0 min
Triage Group: Methodology

- What is triage for?
  - What is the construct?

- How should triage be performed?
Triage Group: Philosophy

- Triage IS: a professional assessment process that should identify the priority of the patient for clinical intervention
• Triage IS NOT: designed to predict need for admission, resource usage, diagnosis, stream or final destination
Triage IS NOT: the only factor that affects the MANAGEMENT of the patient by the system
• MTS is Reductive

• All patients “start” as priority 1.
Triage Group: Methodology

- MTS categorises patients into “presentations”
  - Easily recognisable groups
  - NOT diagnoses
Example presentations

- Apparently drunk
- Behaving strangely
- Chest pain
- Crying baby
- PV bleed
- Worried parent
• MTS uses “discriminators”
  • General discriminators for all patients
  • Specific discriminators depending on Presentation(s)
Triage Audit: showing change
Triage Audit: showing change

Priority pre MTS

%
The Manchester Triage System has good inter-rater reproducibility and good to excellent test-retest reproducibility.
Conclusions

There is a great deal of evidence about the validity of the MTS

Validity can be investigated at both system and chart level
Conclusions

Admission rates, mortality and resource usage are correlated with MTS priority.
Conclusions

The system has good inter-rater and test-retest reliability
Conclusions

Further studies on system validity (adult and paediatric) that deliver suggestions for specific improvements are necessary.
MTS - the future
Content

Emergency triage

Paediatric Emergency triage

Telephone Triage and Advice
What is MTS for?

- Determining clinical priority
- Managing clinical risk
- Speaking a common language of urgency
What is MTS not designed for?

- Managing the department
- Predicting the need for admission
- Identifying resource requirement
What else can MTS do – the future

Aid in initial disposition decisions

Start the process of care
Deciding initial disposition (streaming)
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<td>Mi</td>
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<td>R</td>
<td>Mi&lt;sup&gt;p&lt;/sup&gt;</td>
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<td>R</td>
<td>R</td>
<td>Ma</td>
<td>Mi</td>
<td>PC</td>
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<tr>
<td>Collapsed adult</td>
<td>R</td>
<td>R</td>
<td>Ma</td>
<td>Mi</td>
<td>PC</td>
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<tr>
<td>Dental problems</td>
<td>R</td>
<td>Ma</td>
<td>Mi</td>
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<td>Ma&lt;sup&gt;p&lt;/sup&gt;</td>
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<td>R</td>
<td>Ma</td>
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<td>R</td>
<td>Ma</td>
<td>Mi/Eye</td>
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Start the process of care
Cardiac Chest Pain

Which Patients?

Over 25 years

Unrelated to trauma

Not pleuritic
Starting the process of care

**Patient with known or suspected TCA OD**

- Admit to ITU
- Complete PDI/320
- Complete Ref/326

**Patient with possible Acute poisoning**

- Adequate breathing
  - No: Intubate and ventilate
  - Yes: Adequate and secure airway

- Adequate circulation
  - No: Fluid infusion
  - Yes: Ingestion less than 1 h before

- Disposition risk assessment
  - Low: Discharge to General Practitioner
  - Moderate: Refer to Medical Ward
  - High: Admit to Critical Care Area

**MTS Collapsed Adult**

- Pain controlled
  - No: Reassess and treat pain
  - Yes: Pain controlled

**MTS Abdominal Pain**

- Admit CDU
  - Reassess at 6 h
  - Not settling: CCM needed

**MTS Unwell Adult**

- Refer to Acute Medicine

**MTS Malignant Mucosal Urticaria**

- No: Therapeutic advice
  - Yes: Consider RSI

**MTS Malignant Mucosal Urticaria**

- Discharge to General Practitioner

**MTS Malignant Mucosal Urticaria**

- Admit to Medical Ward

**MTS Malignant Mucosal Urticaria**

- Admit to Critical Care Area
Triage rationale

Government cuts.

Hospital

Emergency

Community needs.
A triage system is still needed in all systems or circumstances where demand for care outstrips the ability to deliver it.
Summary

MTS is a widely used tool that rapidly establishes the clinical priority of emergency department patients.

The “intelligence” of MTS can be used to design and drive good emergency care.

A risk management (triage system) such as MTS is essential for the delivery of safe and effective emergency care.
The Present and Future of the MTS

Kevin Mackway-Jones
Professor of Emergency Medicine
Triage and Emergency Medicine:
MTS in a modern world

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Manchester, UK
The life so short, the craft so long to learn

Hippocrates Aphorisms I
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