The University Of Sheffield.

What outcome measures should be developed for pre-hospital care? – Results of a consensus event

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PhOEBE

Pre-hospital Outcomes for Evidence Based Evaluation

PhOEBE - aims

- 5 year NIHR programme grant – 2011-16
- To develop new ways of measuring the impact of pre-hospital care provided by ambulance services.
- Provide better information about the effectiveness and quality of the different types of care delivered to a large group of patients
- Support quality improvement, audit and evaluation of future service changes.

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Partners
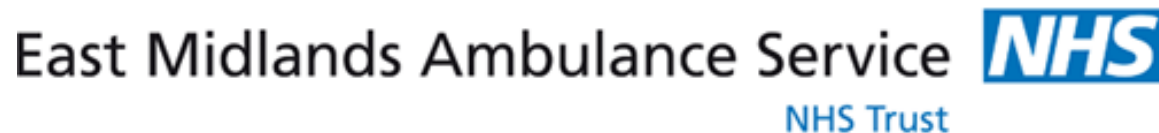
Work streams

- Identification of potential measures – Evidence reviews, consensus methods, qualitative study with recent users

- Creation of linked data set – ambulance, routine hospital, GP, register of deaths

- Development of measures - predictive risk adjusted measurement

- Testing in the real world

Consensus event

- 1 day event - July 2012

- Modified nominal group approach

- 52 candidate measures identified from 2 systematic reviews – policy & research

- 3 categories;

  ➢Service/operational (14)

  ➢Patient management/processes (20)

  ➢Patient outcomes (9)

Process

- 3 Small group discussions – identified measures and opportunity to add own

- Electronic voting by individuals using turning point rating each measure as:
  - ➤Essential
  - ➤Desirable
  - ➤Irrelevant

- Time measures considered separately

ACCURACY AND APPROPRIATENESS OF DECISIONS

Calls sent for telephone nurse advice that are returned for an ambulance response

Re-admission within 30 days for complications (e.g pneumonia, wound infections)

Hospital attendance or admission (e.g. within 24 hours, 7 days, 28 days)

Re-contact with ambulance service within 24 hours (e.g. for calls closed with advice or patients not transported)

Measuring patient safety
- Adverse incidents e.g. not recognising heart attack symptoms or leaving someone at home who needed hospital treatment
- Errors in diagnosis

Accuracy of call taker identification of different conditions (e.g cardiac arrest, heart attack, stroke, serious illness, low urgency calls suitable for nurse advice) or needs. Includes:
- measures of call assessment accuracy such as sensitivity
- appropriateness of triage decision
- risk of under-triage
- risk of over-triage

Accuracy of dispatch decisions – includes:
- Choice of response type dispatched (rapid response car, ambulance, helicopter)
- Appropriateness of referral to other agencies (e.g. GP services)
- Use of alternatives to ambulance dispatch (e.g. nurse advice or make own way)
- Relationship between priority category and response (right resource to right call)

Accuracy of paramedic diagnosis
- Agreement of on-scene and final hospital diagnosis
- Other measures of paramedic diagnosis accuracy, e.g. for specific conditions such as stroke, trauma

Compliance with protocols and guidelines
- with triage protocols
- transport protocols (e.g leave at home, alternative to ED
- with care and treatment guidelines (fits and convulsions, heart attack, stroke

AMBULANCE SERVICE CARE

Proportion of people with respiratory distress (breathing difficulties) receiving mechanically assisted breathing
Proportion of people with diabetes treated at home

Proportion of elderly people attended within scope of advanced paramedic practice (e.g. treat and leave at home)

Proportion of people receiving spinal immobilisation (splints and collars) for back/neck injuries

Proportion of cases treated within time guidelines including:
- STEMI (heart attack) guidelines (90 minutes)
- Thrombolysis (clot busting) (60 minutes)
- Proportion FAST positive (suspected stroke) arriving at a stroke centre within 60 minutes

HOSPITAL CARE/DISCHARGE

Duration of life support (intubation or ventilation) in hospital

Length of stay in hospital

Discharge destinations
- Home
- Continuing care
- Discharged needing continuing therapy e.g nursing care, supplemental oxygen, tube feeding, assisted breathing
- Proportion of patients living at home at 3 months

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_____**Glossary**

OVER TRIAGE - too high a level of urgency and/or response than is required.
UNDER TRIAGE - too low a level of urgency and/or response than is required.
NURSE ADVICE - for some people whose 999 calls identified as low risk their call may be transferred to a nurse or paramedic for further assessment and advice advice.
SENSITIVITY - the ability of a test (statistical or diagnostic) to detect a condition when it is present.
PRIORITY CATEGORY - 999 calls are assessed and assigned to a category depending on the urgency or seriousness of the problem, e.g. category A are calls where there appears to be a life threatening condition.
PROTOCOL - a structured guidance for the assessment and treatment of specific conditions.
FAST - *Face*, *Arm*, *Speech*, *Time*; used as an assessment tool for recognising a stroke.
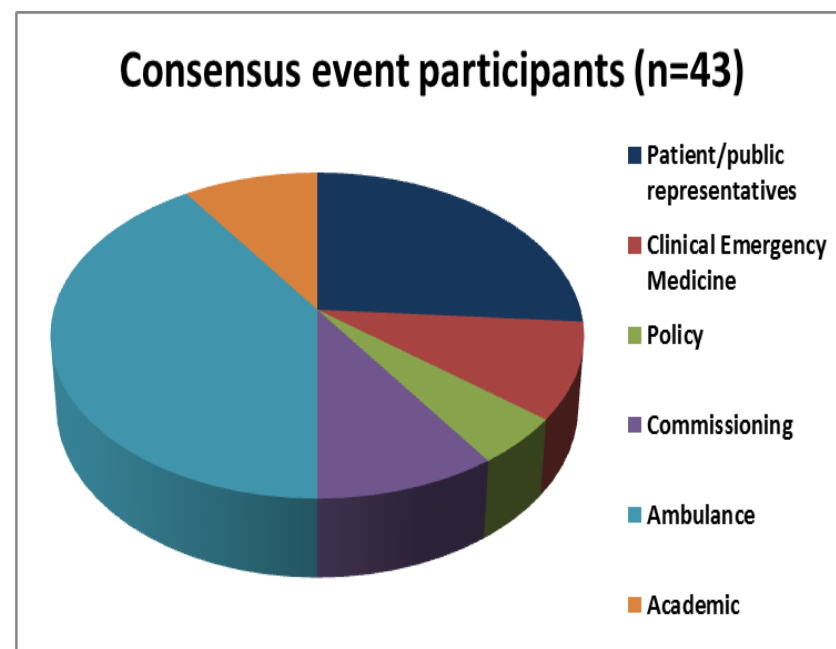TRIAGE – decision regarding the level of urgency and the level of response or care required, based on patient symptoms and circumstances of the incident.

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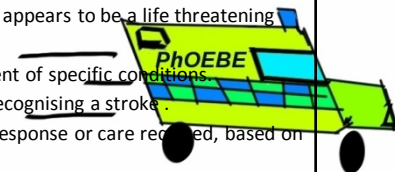
Participants

- Identified using professional groups, colleges, academic groups, patient groups

- 43 participants

Consensus event participants (n=43)

- Patient/public representatives
- Clinical Emergency Medicine
- Policy
- Commissioning
- Ambulance
- Academic

Results

Rank	Service/operational	Essential n(%)
1	Completeness and accuracy of patient records	35 (85)
2	Over – triage rates and under – triage rates	31 (76)
3	Proportion of calls treated by most appropriate service	30 (75)
	Patient management	
1	Accuracy of dispatch decisions	36 (86)
2	Accuracy of call taker identification of different conditions or needs	33 (79)
3	Compliance with end of life care plans	34 (76)
	Patient Outcomes	
1	Pain measurement and symptom relief	32 (78)
2	Patient experience	21 (54)
3	Return of Spontaneous Circulation (ROSC)	18 (43)

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Top ten measures

Rank	Measure	Essential N(%)
1	Accuracy of dispatch decisions	36 (86)
2	Completeness and accuracy of patient records	35 (85)
3	Accuracy of call taker identification of conditions or need	33 (79)
4	Pain measurement and symptom relief	33 (79)
5	Patient experience	31 (78)
6	Measuring patient safety	32 (76)
7	Over – triage rates and under triage rates	31 (76)
8	Compliance with end of life care plans	31 (76)
9	Proportion of calls treated by most appropriate service (whole 999 population)	30 (75)
10	Compliance with protocols and guidelines	29 (69)

Results

- 5/10 concerned with accuracy of processes

- 3 patient outcomes – pain management, experience and safety

- 2 treatment compliance

- Highlights predominance of process measures and difficulties in identifying relevant patient outcomes

Next steps

- Further refinement in to explicit measures

- Delphi study to prioritise final candidate measures for predictive models

- Development of models using linked data

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