A nationwide web-based quality registry for impact of additional call triage time on EMS

Method

1. Gamst-Jensen H, et al. Self-rated worry predicts hospitalisation in out-of-hours services telephone triage. Copenhagen; 2018. (abstract, not published).
2. KL: Regions of Denmark, Ministry of Finance and Ministry of Health, 2016; Indblik i sundhedsvesenet resulter 2016, Report published by Ministry of Health. Available at [citied 2018 Jan 12] http://www.sum.dk/~/media/Filer - Publikationer_i_pdf/2016/Indblik-i-sundhedsvesenet-resultater-maj-2016/Indblik-i-sundhedsvesenets-resultater-maj-2016.pdf
3. Gamst-Jensen H, Lippert FK, Egerod I. Under-triage in telephone consultation is related to non-normative symptom description and interpersonal communication: A mixed methods study. Scand J Trauma Resusc Emerg Med 2017 December 15;25(1):52.

Conflict of interest

None

Funding

None

REFERENCES

1. Gamst-Jensen H, et al. Self-rated worry predicts hospitalisation in out-of-hours services telephone triage. Copenhagen; 2018. (abstract, not published).
2. KL: Regions of Denmark, Ministry of Finance and Ministry of Health, 2016; Indblik i sundhedsvesenets resulter 2016, Report published by Ministry of Health. Available at [citied 2018 Jan 12] http://www.sum.dk/~/media/Filer - Publikationer_i_pdf/2016/Indblik-i-sundhedsvesenet-resultater-maj-2016/Indblik-i-sundhedsvesenets-resultater-maj-2016.pdf
3. Gamst-Jensen H, Lippert FK, Egerod I. Under-triage in telephone consultation is related to non-normative symptom description and interpersonal communication: A mixed methods study. Scand J Trauma Resusc Emerg Med 2017 December 15;25(1):52.

Conflict of interest

None

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None

A nationwide web-based quality registry for dispatcher-assisted cardiopulmonary resuscitation (DACPR) of out-of-hospital cardiac arrest (OHCA) – an innovative structured measurement

Aim

Following the guidelines of DACPR may enhance bystander CPR rate after OHCA. Registry of quality measurement for DACPR has never been explored. We designed a nationwide quality registry for DACPR performance and innovated a structured format of measurement.

Method

A nationwide Google Forms based online registry covering over twenty administrative regions and more than twenty millions of population was designed and launched for DACPR performance and quality measurement at individual case level for non-traumatic OHCA patient. Audio records of individual EMS call were reviewed for performance rating.

Designs

System data inputted could be immediately retrieved as feedback to each corresponding administrative region. Recognition of cardiac arrest by call communication, CPR Instructions upon the recognised OHCA, and chest compression upon the recognised OHCA were the three major categorical performance indicators, and each operational time interval of call-to-recognition, call-to-instruction, and call-to-compression were evaluated. Each categorical performance indicator (Y axis) was paired with its operational time interval (X axis) as a set of quality index for diagrammatic comparison in our design. We used regression analysis for statistical analysis.

Results

A total of 5642 audio records for OHCA EMS calls across 17 regions were centralised into the nationwide DACPR Quality Registry in 6 months (minimal 40 to maximal 1622 cases/region according to its population). Regional recognition rate significantly varied from 10.0% to 65.5% (p<0.01; averaged 51.0%, SD 20.0%). Instruction rate varied from 41.3% to 95.0% (p<0.01; averaged 80.0%, SD 28.5%). Compression rate varied from 0% to 87.5% (p<0.01; averaged 54.0%, SD 23.6%). Averaged regional call-to-recognition time, call-to-instruction time, and call-to-compression time were 48 (SD 19), 84 (SD 42), and 185 (SD 114) seconds. The designated diagrammatic comparisons may indicate the administrative regions of better performance located at the upward and leftward dimension, and the ones of unsatisfied performance located at the downward and rightward dimension (diagrams will be illustrated).

Conclusion

We successfully innovated and launched a nationwide DACPR quality e-registry showing a wide variety of regional performance needing improvement. The designated diagram may easily indicate and compare the individual performance across the joint regions.

Conflict of interest

None

Funding

None

Impact of additional call triage time on EMS response performance and resource use

Aim

Time based standards have been used as a key performance measure for EMS internationally but can lead to operational behaviours that are not clinically focussed. NHS England tested a new operational model (Dispatch on Disposition) allowing additional call triage time of up to 4 min before starting the response interval clock start.

Method

A controlled before and after time series analysis of the intervention implemented in 6 of the 10 regional EMS services. We measured weekly trends in average resource usage.
WHAT IS THE ECONOMIC IMPACT OF DIFFERENT TYPES OF EMS RESPONSE?

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10.1136/10.1136/bmjopen-2018-EMS.79

Aim Modern EMS provides a range of response options including management by:
1. telephone,
2. management and discharge or
3. referral at scene or transport to hospital.

We used linked data of ambulance records, hospital records and national mortality statistics for all calls to one ambulance service in England in a 6 month period to assess the costs associated with each response option.

Method We calculated costs for each type of EMS response using the linked data and NHS Reference Costs. We then used two risk adjusted indicators measuring:
1. rates of telephone or at scene management attending ED or admitted to hospital within 3 days and
2. rates of patients taken to hospital and discharged from ED without treatment to identify matched cases of correct and incorrect response decisions to compare costs of each decision type.

Results 1 87 387 cases were included with 5.6% managed by telephone (mean cost £125), 28% discharged at scene (mean cost £415) and 66.4% transported to hospital (mean cost £1745). Mean cost of an incorrect transport decision was an additional £313 and an incorrect non-transport decision £237 per case.

Conclusion The main reason for differences in response type is inpatient costs for admitted patients. Improvement in decision making about whether or not to take people to hospital could potentially result in substantial savings in urgent care system costs.

Conflict of interest None

Funding NHS England.

DEVELOPMENT OF RISK ADJUSTED INDICATORS OF EMS PERFORMANCE AND QUALITY (PHOEBE PROGRAMME)

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Aim Measurement of EMS performance and quality has been confined to response times or a small number of acute conditions and do not account for patient or system factors that may affect outcome. We developed a small set of consensus derived risk adjusted indicators to potentially measure EMS performance reflect and assessed what risk factors need to be included.

Method We developed 5 indicators:
1. mean change in pain score,
2. % accuracy of identification of 16 emergency conditions,
3. % inappropriate decisions to leave patients at scene,
4. % patients transported to ED not needing hospital facilities,
5. % survival to admission and 7 days for 16 emergency conditions.

We also created a linked dataset of ambulance, hospital and mortality data. For each indicator we used a 3 step process to build multivariable statistical models using a range of variables including age, gender, condition, environment (deprivation), health area and treating hospital.

Results 1 87 387 cases were available. One indicator (mean change in pain score) did not require risk adjustment. For all other indicators age, condition (or call reason) and deprivation were included in the final model. Gender was also included in indicators 2, 3 and 4 and hospital had an effect in indicators 4 and 5.

Conclusion We have created a set of indicators to reflect care for a broad range of EMS callers and care provided. Overall, a range of factors influence outcome and risk adjusted indicators are needed to provide fair and accurate assessments of performance.

Conflict of interest None

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RECRUITING LAY-PERSONS TO OUT-OF-HOSPITAL CARDIAC ARRESTS THROUGH A SMARTPHONE APPLICATION BASED RESPONSE SYSTEM

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Aim Despite their lifesaving potential, automated external defibrillators (AEDs) are seldom used in out-of-hospital cardiac arrests (OHCAs). Activating lay-persons to transport AEDs to nearby OHCAs holds the potential to increase bystander defibrillation and improve OHCA survival. The ‘HeartRunner’-system is a mobile-phone position system which activates lay volunteers through a smartphone application to attend in

Abstracts