

<b>Institution:</b> University of Sheffield		
<b>Unit of Assessment:</b> A-02 Public Health, Health Services and Primary Care		
<b>Title of case study:</b> Using mortality review methods to improve hospital care		
<b>Period when the underpinning research was undertaken:</b> 2004–2013		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Jo Coster	Research Fellow	2003–present
Allen Hutchinson	Professor of Public Health	1997–2010 then emeritus
Katy Cooper	Senior Research Fellow	2005–present
Richard Jacques	Senior Lecturer	2009–present
Jon Nicholl	Professor of Health Service Research	1991–present
<b>Period when the claimed impact occurred:</b> 2017–2020		
<b>Is this case study continued from a case study submitted in 2014?</b> N		
<b>1. Summary of the impact</b> (indicative maximum 100 words)		
<p>University of Sheffield research developed Structured Judgement Review (SJR) to identify problems in care related to hospital deaths, reduce deaths due to problems in care and ultimately improve care. The Royal College of Physicians (RCP) implemented a three-year programme of SJR through the National Mortality Case Record Review Programme (NMCRR). One hundred and seven hospital trusts in England have now implemented SJR which has resulted in improved patient outcomes and mortality rates e.g. a 26% reduction in death associated with septicaemia in Mid Yorkshire Hospitals NHS Trust, and a 19% reduction in cardiac arrest events in Sheffield Teaching Hospitals Foundation Trust.</p>		
<b>2. Underpinning research</b> (indicative maximum 500 words)		
<p>Nearly half of deaths in England occur in hospital and between 3-5% are thought to be preventable. Concerns around high rates of in-hospital deaths, quality of care and the outcome of high-profile inquiries into excess mortality rates have driven the implementation of national policy to ensure the standard of care of in-hospital deaths is reviewed. Researchers in Sheffield's School of Health and Related Research (SchARR) developed Structured Judgement Review (SJR) to identify problems in care related to hospital deaths, improve care, and improve care outcomes.</p> <p>Development of SJR occurred in parallel with research undertaken in SchARR to develop the Summary Hospital Mortality Indicator (SHMI) [R1]. SHMI has been key in identifying hospital trusts with higher-than-expected mortality that require further investigation and in monitoring hospitals as they improve patient care. This highlighted the need for a detailed mortality review method that allows organisations to determine why deaths might have occurred, and thus enable learning and actions where required.</p> <p>Through the Sheffield-led Record Review for Safety and Quality (RReSQ) study existing methods of case note review for assessing care quality and patient safety were evaluated [R2, R3], and findings resulted in the development of a new method type, the SJR. [R4]. The SJR</p>		

method was explored and refined, through analysing a sub-set of 119 patients who died in hospital, from an overall sample of 1566 patients [R4]. For the majority of cases, (>80%) care was judged at least satisfactory. This identified that 20% of patients were considered to have received less than satisfactory care. This group also often experienced a series of adverse events [R6].

The key innovations of the SJR method are:

- A structured, phase of care approach.
- Combining implicit judgement, explicit explanatory comment and related quality of care scores (our research identified a strong relationship between explicit judgements and phase of care scores ( $p < 0.0001$ )).
- Quick and effective evaluation of deaths so that lessons can be learned about both poor and high-quality care.
- It can be used to look at individual cases as well as groups.

Following the publication of the SJR method [R4], SchHARR collaborated with the Academic Health Science Network (AHSN) to further develop the SJR method for implementation across the Yorkshire and Humber region, including reviewer training based on the training programme used in the RReSQ study [R5]. SJR has been chosen as the standardised mortality review tool by NHS Improvement and it was selected for use in the National Mortality Case Record Review Programme (NMCRR) in February 2016. The NMCRR was commissioned by the Healthcare Quality Improvement Partnership, funded by NHS Improvement and the Scottish Government and is delivered by The Royal College of Physicians. The aim was to replace variable local systems with a standardised, national, evidence-based method to review the care of patients who died in hospitals in England and Scotland and to improve healthcare quality through analysis of SJR reviews [R6].

### 3. References to the research (indicative maximum of six references)

- R1. Campbell, M. J., Jacques, R. M., Fotheringham, J., Maheswaran, R., & Nicholl, J.** (2012). Developing a summary hospital mortality index: retrospective analysis in English hospitals over five years. *BMJ*, 344, e1001. <https://doi.org/10.1136/bmj.e1001>
- R2. Hutchinson, A., Coster, J. E., Cooper, K. L., McIntosh, A., Walters, S. J., Bath, P. A., Pearson, M., Rantell, K., Campbell, M. J., Nicholl, J., & Irwin, P.** (2010). Assessing quality of care from hospital case notes: comparison of reliability of two methods. *BMJ Quality & Safety*, 19(6), e2. <https://doi.org/10.1136/qshc.2007.023911>
- R3. Hutchinson, A., Coster, J. E., Cooper, K. L., McIntosh, A., Walters, S. J., Bath, P. A., Pearson, M., Young, T. A., Rantell, K., Campbell, M. J., & Ratcliffe, J.** (2010). Comparison of case note review methods for evaluating quality and safety in health care. *Health Technology Assessment*, 14(10), 1–170. <https://doi.org/10.3310/hta14100>
- R4. Hutchinson, A., Coster, J. E., Cooper, K. L., Pearson, M., McIntosh, A., & Bath, P. A.** (2013). A structured judgement method to enhance mortality case note review: development and evaluation. *BMJ Quality & Safety*, 22(12), 1032–1040. <https://doi.org/10.1136/bmjqs-2013-001839>
- R5. Hutchinson, A., McCooe, M., & Ryland, E.** (2015). *A guide to safety, quality and mortality case note review using the structured judgement method*. Improvement Academy, 2015.

[https://www.improvement-academy.co.uk/documents/Projects/mortality\\_review/IA%20SJR%20Report-%202015.pdf](https://www.improvement-academy.co.uk/documents/Projects/mortality_review/IA%20SJR%20Report-%202015.pdf)

#### 4. Details of the impact (indicative maximum 750 words)

SJR has been implemented across the NHS and used to improve care and reduce hospital deaths. It works with SHMI and is an integral part of continuous quality and safety monitoring across the NHS; a national requirement for external quality assurance [S1]. SJR identifies potential causes for higher-than-expected hospital death rates identified by SHMI and can be used to support learning and improve care at any hospital.

In 2014 the Academic Health Science Networks (AHSN) in Yorkshire and Humber and in the West of England, in collaboration with Allen Hutchinson (SchARR), successfully implemented the SJR method across all 13 Trusts in Yorkshire and the Humber [S2]. This work subsequently led to the NMCRR and a 2017 recommendation in Learning from Deaths Guidance for Trusts to implement an evidence-based methodology for reviewing the quality of care of patients who die in hospital, with SJR cited as the exemplar method [S3].

This resulted in the adoption of SHMI and SJR or both by NHS trusts across the UK [S4, S5 and S6]:

- 131 acute trusts use SHMI
- 107 acute trusts in England and one health board in Scotland use SJR
- 106 trusts use both SHMI and SJR

SJR training has been cascaded to over 1,500 healthcare professionals, with training events being delivered in 25 cities [S5]. The largest group of trained staff are consultant medical staff, with many holding senior management positions. Feedback from practitioners using the tool [SJR], and from organisational leaders using its findings to learn from deaths and use the learning for improvement, has been overwhelmingly positive [S5]. Many trusts have now used the learning as the starting point for locally led quality improvement work [S5] and results of SJR are used to identify quality improvement initiatives and share good practice. SJR is also being implemented in Scotland with five reviewer training sessions for Scottish medical staff.

#### Impact on NHS Guidance and Practice

SJR has changed the understanding of mortality review methodology and has changed national guidance. It has also changed practice, with its widespread use in hospital trusts. Identifying impact on patient outcomes is challenging, but there is evidence that the changes made following SJR review are improving patient outcomes and from SHMI that hospital mortality is improving.

The Yorkshire & Humber AHSN demonstrated 'real and sustainable improvements' following the use of SJR [S2]. Examples include: a 22% increase in appropriate and timely start of End of Life Care (EOLC) pathways at Doncaster and Bassetlaw Teaching Hospitals NHS Trust since January 2016, which reduced unnecessary interventions for dying patients [S2]; a 26% reduction in death associated with septicaemia in Mid Yorkshire Hospitals NHS Trust [S2] and 19% reduction in cardiac arrest events in Sheffield Teaching Hospitals Foundation Trust [S2].

The Royal College of Physicians (RCP) also conducted a review [S4] which reported 13 case studies where trusts used SJR to identify and drive quality improvements. Trusts are using SJR to reduce pneumonia mortality rates, to reduce mortality in stroke patients, to improve hip

fracture care and to improve EOLC. Examples of improvements include: Royal Cornwall Hospital Trust now has implemented timely admission procedures for all stroke patients with 60% of patients being admitted to a stroke unit within 4 hours of arrival [S4, p.12] and St George's Hospital London demonstrated improvement in early operative intervention for hip fractures (within 36 hours) by nearly 10% from 74.9% (2016) to 83.3% (2018) [S4, p. 17].

### Impact on services

SJR was used as the basis for the Care Review Tool developed by the Royal College of Psychiatrists [S7]. This review tool supports mortality reviews for patients who were under the care of mental health trusts and can be adapted for use by joint mental health and community Trusts. To ensure best practice in the use of the review tool, 175 healthcare staff based in 9 mental health/community organisations have been trained to use SJR [S8].

The National Quality Board (NQB) in collaboration with SchARR have adapted the SJR method for an ambulance setting. Since 2019, the NQB guidance requires all Ambulance Trusts to review the quality of care of patients who died, (40-50 cases per quarter) using the SJR method [S9].

Findings from national SJR reviews and confidential enquiries were collaboratively reviewed to identify issues that were commonly seen across different health settings and patient groups. This collaborative approach reported four key findings in 2018 required to improve patient care and reduce premature mortality for all health settings [S10].

- 1) Improvements in recognition and management of sepsis are needed to prevent premature mortality in all patient groups.
- 2) Early detection of, and appropriate escalation of patients who are deteriorating or exhibit red flags at presentation will further prevent premature mortality.
- 3) Patients continue to be denied life-saving therapies on the grounds of age, pregnancy or having a learning disability.
- 4) Better communication, within and between organisations and healthcare agencies will help avoid premature deaths.

The Learning Disabilities Mortality Review (LeDeR) programme developed subsequent recommendations based on the findings. The recommendation to improve communication was that discharge planning meetings should include multidisciplinary input from all professionals and family or carers involved. They were keen to stress there would be a reinforcement of multi-agency working and partnerships between the adult learning disability service and other professionals such as diabetes specialists, the hospital trust, GPs, day services, and residential and nursing homes [S10].

### COVID-19 pandemic hospital care and SJR

The RCP are currently conducting one of the largest reviews of hospital care delivered during the pandemic using SJR as the review methodology. In 2020, 40 NHS Trusts with 300 COVID-19 cases have already reported their SJR findings to the study, which will form the basis of recommendations to the NHS for continued high standards of care in pandemics. The RCP's clinical director for quality improvement and patient safety, said: *"My colleagues in the NHS have been faced with unprecedented challenges during the pandemic but the RCP COVID-19 Study shows how almost all care provided has been of the right standard. We can, however, learn from*

excellent care, and variations in care, just as we can learn from poor care. I am looking forward to the completion of this review and the health service” [S11].

**5. Sources to corroborate the impact** (indicative maximum of 10 references)

- S1.** Detailed requirements for external assurance for quality reports 2018/2019 (p.7): [https://improvement.nhs.uk/documents/3601/Detailed\\_requirements\\_for\\_assurance\\_for\\_quality\\_reports.pdf](https://improvement.nhs.uk/documents/3601/Detailed_requirements_for_assurance_for_quality_reports.pdf)
- S2.** *Implementing Structured Judgement Reviews for Improvement*. The AHSN Network (2018). Document supports SJR implementation across 13 trusts and specifically shows examples of improvements on p.29: <https://www.patientsafetyoxford.org/wp-content/uploads/2018/06/Structured-Judgement-Review-Toolkit-June-2018.pdf>
- S3.** *National Guidance on Learning from Deaths: A Framework for NHS Trusts and NHS Foundation Trusts on Identifying, Reporting, Investigating and Learning from Deaths in Care*. National Quality Board (2017). <https://www.england.nhs.uk/wp-content/uploads/2017/03/nqb-national-guidance-learning-from-deaths.pdf>
- S4.** *Experience of Structured Judgement Review in Clinical Practice*. Royal College of Physicians (2019). p.4: <https://www.rcplondon.ac.uk/projects/outputs/experience-structured-judgement-review-clinical-practice>
- S5.** National Mortality Case Record Review (NMCRR). Annual report, 2018 (pp.6-7): <https://www.rcplondon.ac.uk/projects/outputs/national-mortality-case-record-review-nmcrr-annual-report-2018>
- S6.** Acute Trust survey spreadsheet demonstrating the use of SJR, SHMI or both, April 2019.
- S7.** *Using the Care Review Tool for mortality reviews in Mental Health Trusts. Guidance for Reviewers*. Royal College of Psychiatrists: [https://www.rcpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/policy/rcpsych\\_mortality\\_review\\_guidance.pdf](https://www.rcpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/policy/rcpsych_mortality_review_guidance.pdf)
- S8.** *Mental Health Mortality Review Programme based on SJR*. Improvement Academy. <https://improvementacademy.org/our-programmes/mental-health-mortality-review-programme.html>
- S9.** *National guidance for ambulance trusts on Learning from Deaths. SJR method adapted for ambulance trusts*. National Quality Board (2019). <https://www.england.nhs.uk/wp-content/uploads/2019/07/learning-from-deaths-guidance-for-ambulance-trusts.pdf> [Annex c].
- S10.** *Mortality reviews collaborative: a review of learning*. National Mortality Case Record Review Programme. <https://www.rcplondon.ac.uk/projects/outputs/mortality-reviews-collaborative-review-learning> and The LeDeR Programme [Annual Report 2018](#), p.67.
- S11.** [S11] Royal College of Physicians COVID-19 study into pandemic hospital care - using SJR as the methodology for the study and RCP COVID-19 Study, Preliminary Findings Powerpoint: <https://www.rcplondon.ac.uk/news/rcp-covid-19-study-provides-early-insight-pandemic-hospital-care>