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Matter for Debate

Surveillance and quality improvement in the United Kingdom: Is there a meeting point?



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ABSTRACT

Recent high profile failures within the National Health Service of England and Wales have highlighted the need for surveillance of quality and performance. Mortality is the most commonly used metric, assessed at the hospital or trust level. However overall mortality can mask where the failures lie and even if they exist. Continuous surveillance at a granular level is needed, especially in surgery where interventions need to be safe, reliable and efficacious but so does the coordination of care along the entire patient pathway with robust protocols and mechanisms in place to prevent 'failure to rescue' and to optimise patient outcomes. There is an expanding body of surveillance tools available for surgical practice and these are beginning to show merit. The Care Quality Commission, who monitor services, increasingly through ongoing surveillance as well as inspections, should work more closely with local quality improvement efforts and become a vector for care excellence, actively involved with spreading best practice throughout the entire NHS and not just for identifying the 'bad apples'.

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Introduction

Surveillance of healthcare aims to assess the quality and safety of care. A number of high profile cases where care was demonstrably poor within the United Kingdom (UK) called for the improvement of surveillance.^{1–5} The importance of monitoring quality of care is critical at a time of increasing expectations and broad adaptations to care provision within the National Health Service (NHS).⁶ The focus of quality of care

has moved from volume and waiting list targets to outcome measures. This transition came with the publication of the comprehensive "High quality care for all" by Lord Darzi in 2008.⁷ This report placed quality and safety at the heart of the NHS, and proposed systematic publication of information regarding the quality of services.⁷ This approach to transparent quality improvement proposed by Lord Darzi must be monitored by accurate, clearly defined and methodologically sound measures of outcome.⁷

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Mortality

Death is the most definitive outcome of care and as such, mortality measures have been used extensively to attempt to identify failures of care and to rank institutions based upon their performance.⁸⁻¹² Organisations like the 'Dr Foster' unit monitor these and notify hospitals and public bodies such as the Care Quality Commission (CQC) if their mortality figures approach or exceed what is statistically expected.¹³ Mortality reports contributed to an initial investigation of Mid Staffordshire Trust in 2009, which was followed by a full enquiry in 2011.¹⁴ The subsequent Francis report on the safety and quality failures within this hospital has brought significant criticism to the use of mortality measures in assessment of care and identification of preventable deaths.⁴ The Hospital Standardised Mortality Ratio (HSMR), a key measure used by the Dr Foster Unit, has come under particular scrutiny for a number of reasons, predominantly how case mix adjustment is undertaken.¹⁵⁻²⁰ This criticism is exemplified by the fact that 50% of cases where mortality exceeds the expected are explained by errors in data coding.^{4,15} Whilst mortality data look at entire hospitals, history shows it is more often parts of hospitals (e.g. units) that fail rather than entire institutions.^{1,2} Amalgamation of all data together allows compensation by better performing parts for those that are failing. Mortality data also seem to lack the ability to differentiate the 5% of inpatient deaths that are preventable from those that are not.²¹ Aside from the issues surrounding the accuracy and quality of this data, there also seems to be no ideal time to intervene based on mortality measures.¹⁸ Regulators and senior management of Mid Staffordshire Trust, for instance, were lambasted for not picking up problems sooner.⁴ More recently, at Leeds General Infirmary in 2013, the paediatric cardiac surgery unit was shut down due to rising mortality figures; a decision arguably due to inaccuracies in the hospital's mortality data.²² When HSMR shows excess mortality, data coding, accuracy and individual unit metrics are checked to determine if any formal review is required locally. This therefore encourages local level activity and investigation as well as being a trigger for involvement of other bodies.

Surgical surveillance

Surgery has been a prominent area of healthcare failure, the Bristol babies enquiry and the Oxford paediatric cardiac surgery being two notable examples of care failures within the UK.^{1,2} The publication of the European Surgical Outcomes Study (EUSOS) found that 4% of patients die after non-cardiac surgery.^{23,24} A number of global surgical initiatives have aimed to reduce the mortality and morbidity burden of surgery; including the WHO's surgical safety checklist and the 'Safe surgery saves lives' WHO initiative.²⁵ Implementation of the Surgical Safety Checklist demonstrated a reduction of 36% for both mortality and morbidity.²⁶ These initiatives underlined the importance of accurate measures of surgical practice; and the creation of the WHO's *Standardised metrics for global surgical surveillance* followed in 2009.^{27,28} Previous work

in this area has confirmed their value as a method of surgical surveillance within the UK.²⁸

At the same time, there have also been a number of changes in surgical practice. Firstly, there has been a transition from top down caseload and waiting time targets to measuring outcomes.⁷ Secondly, services have undergone centralisation based on evidence that higher-volume centres achieve better outcomes – including major trauma centres, stroke and acute myocardial infarction management, vascular and cardiothoracic surgery.^{14,28,29} A higher caseload enables adequate skills maintenance and proper service provision, with specialised equipment, support and management pathways.²⁹ Thirdly, on a background of increasing public expectation, high profile enquiries and expected transparency in every public body there is an increasing level of personal accountability. For surgeons, this means publication of individual mortality data. Publication of such data has been found beneficial in cardiothoracic surgery; research by Bridgewater et al. found mortality rates were reduced after such disclosure.³⁰ This scheme is currently expanding to include 10 surgical specialities – including vascular, upper gastro-intestinal and colorectal surgery.³¹ Finally, patient choice and selection of service providers is of ever increasing importance, and will continue to be with the implementation of the white paper *Equity and Excellence: Liberating the NHS*.⁶ Despite 'ranking' of institutions not being an initial aim of surveillance, we anticipate that this will likely play an important role in patient selection of services.

Surgical surveillance is currently made up of a wide range of information sources. The Surgical Site Infection Surveillance Service has evolved from the Nosocomial Infection National Surveillance Scheme that started in 1997.³² The National Patient Safety Agency's (NPSA) National Reporting and Learning Service (NRLS) is one of the largest self reporting databases of patient safety incidents in the world. Since its establishment in 2003, over four million incident reports have been submitted.³³ Reporting systems have their place in the gathering of safety-related information, and the development of preventative systems. Their use as a surveillance tool for individual hospitals, however, is limited.

There are a selection of routinely collected databases of mortality for a number of specialities.³⁴ Cardiothoracic surgery has the most stringent coverage; the UK Cardiac Surgical Register has been running since 1977 and a database for valve replacement has been running since 1986. Such registries exist in a number of other specialities.³⁵ More broadly; the National Confidential Enquiry into Peri-operative Deaths (NCEPOD) records all deaths within 30 days of a surgical procedure in England, Wales and Northern Ireland.³⁶

Aside from increasing scrutiny of surgical practice, recent high profile failures and the transition from a waiting time targets to a focus on outcomes, Dimick et al. and others have proposed that surgery may provide an important demonstrator of the wider quality of healthcare.³⁷⁻⁴⁰ Surgery, irrespective of speciality, has a number of key steps that could indicate quality.^{26,27,41,42} However, the caseload required to make such assertions may be a limiting factor of this methodology as are the complications of case mix adjustment.³⁷

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