

Variation in National Clinical Audit Data Capture: Is Using Routine Data the Answer?

Dawn W. Dowding^a, Natasha Alvarado^b, Lynn McVey^b, Mamas Mamas^c, Rebecca Randell^b

^a Division of Nursing, Midwifery and Social Work, University of Manchester, Manchester, UK,

^b School of Healthcare, University of Leeds, Leeds, UK

^c Institute of Primary Care & Health Sciences, Keele University, UK

Abstract

National Clinical Audit (NCA) data are collected from all National Health Service providers in the UK, to measure the quality of care and stimulate quality improvement initiatives. As part of a larger study we explored how NHS providers currently collect NCA data and the resources involved. Study results highlight a dependence on manual data entry and use of professional resources, which could be improved by exploring how routine clinical data could be captured more effectively.

Keywords:

Clinical Audit; Quality Improvement; Information Systems

Introduction

In the UK, there are over 100 National Clinical Audits (NCAs) that are either centrally developed and managed through the National Clinical Audit and Patient Outcomes Programme (NCAPOP) or by independent professional organisations. The aim of the NCAs is to provide data for measuring the quality of care provided by National Health Service (NHS) providers, as well as stimulating quality improvement (QI) initiatives [1]. There is evidence that NCAs have led to improvements in the quality of patient care [2]. However there have also been reports of variation in how NHS Trusts engage with the NCA data, with reports of a lack of resources and variations in data quality impacting on their value as feedback on performance [3].

We are currently undertaking a study to develop and evaluate QualDash, an interactive web-based quality dashboard that supports clinical teams, quality subcommittees, and NHS Trust Boards to understand and make use of NCA data. This poster reports a subset of the findings from Phase 1 of the study, focusing on how NCA data are currently collected across NHS Trusts, and the resources involved. It then reflects on the implications of these findings, in terms of the utility of using electronic health record data for capturing NCA and other audit data.

Methods

The study focuses on two NCAs; the Myocardial Infarction National Audit Project (MINAP) and the Paediatric Intensive Care Audit Network (PICANet), with evaluation of cardiology departments and Paediatric Intensive Care Units (PICUs). MINAP provides data on the management of ST-elevation

myocardial infarction (STEMI) and non-ST segment elevation myocardial infarction (NSTEMI), compared to national and international standards to participating hospitals and ambulance services. PICANet records admission details and treatment provided to all critically ill children in PICUs.

A total of 5 NHS Trusts (providers) participated in the first phase of the study; all 5 take part in MINAP and 3 of the 5 have PICUs and also take part in PICANet. The number of staff at each site varied from 20,000 (site 4) to 8,000 (sites 2 and 3), and patients seen per year from 700,000 (site 3) to 1.5 million (sites 1 and 4). Semi-structured interviews were conducted with 54 individuals across the NHS Trusts and the wider NHS organisational regional structure, including NCA leads, members of NHS Trust quality and safety committees, Trust Boards, and clinical commissioning groups (CCGs). CCGs are the statutory NHS bodies responsible for planning and commissioning health care services in localities in England.

Interviews focused on participants' role and their experience of, and involvement with, NCAs. We also explored what data were collected for each NCA, how data are captured and how they are used in the NHS Trust and by whom. All interviews were audio-recorded, transcribed and entered into a qualitative software program (*NVivo 10*) for indexing. Interview data were analysed using framework analysis. After familiarisation with the data, a thematic framework was developed to index the data before interpretation of key themes.

Results

Interview data were collected between November 2017 and June 2018. Participants, 30 of whom were female and 24 male, worked in both clinical and non-clinical roles. Twenty-eight of the participants were clinicians (14 doctors/surgeons and 14 nurses), 22 had non-clinical managerial or support roles (including senior managers who were members of Trust Boards and quality and safety committees; some of these participants had clinical backgrounds and some did not), and 4 participants worked within CCGs. An overview of the key results are summarised in Table 1.

Resources used to support NCA data collection, entry, submission, validation

There was considerable variation in the resources used by each site to support the various NCAs, both within NHS Trusts and across Trusts. For MINAP, 3 of the sites had designated

clinicians who were responsible for data collection, entry, submission, and validation. This varied from having a full-time nurse with overall responsibility for collection and evaluation of data (Site 1) to having nurses collecting data alongside their clinical responsibilities (Sites 2 and 3). Site 4 had mixed usage of non-clinical and clinical resources, with a non-clinical primary PCI project assistant collecting data for STEMI patients and 2 acute chest pain specialists collecting and entering data for NSTEMI patients. Site 5 used non-clinical personnel to collect and enter MINAP data, employing a non-clinical cardiology information analyst, assisted by another team member.

The picture for PICANet across the 3 NHS Trusts that participated in this NCA was different. In all three of the sites clinicians initially fill out the PICANet forms, with non-clinical staff (database managers, audit-coordinators and audit clerk) then collating and checking the information, identifying missing and inaccurate data.

Table 1 – How NCA data are captured

	MINAP	PICANet
Resources		
<i>Clinical</i>	Full-time nurse (site 1) Nurse + clinical resp (sites 2, 3) Specialist nurse (site 4)	Clinicians fill out the form (sites 1, 4, 5)
<i>Non-Clinical</i>	Project assistant (site 4) Information analyst (site 5)	Database manager, audit coordinator/clerk – (sites 1, 4, 5)
Systems		
<i>Database</i>	Sites 1, 2, 4, 5	Sites 1, 4
<i>Excel</i>	Site 1	Sites 1, 4
<i>Directly into portal</i>	Site 3	Site 5

Systems for data collection, and entry

Similarly, there was considerable variation in the systems' NHS Trusts used to collect and enter the data into the NCA web portals. For MINAP, all of the sites apart from Site 3, had some form of in-house database that was also used to record data (Site 1 also used Microsoft Excel spreadsheets) before uploading to the web portal. Site 3 was the only site to enter data directly into the web portal. All sites relied on manual data entry by an individual into the database/web portal.

For PICANet two sites used in-house databases/spreadsheets for data collection that were then uploaded to the web portal. At site 5, data were copied and pasted from the Trust's patient data management system directly into the PICANet online portal retrospectively after a patient's discharge.

Use of NCA data

The way in which NCA data were captured by NHS Trusts affected how they were used. Issues raised included the accuracy of the data (with some Trusts highlighting concerns about data reliability) and timeliness. The way NCA data were

both collected by Trusts (sometimes retrospectively) and then reported by suppliers (often yearly) meant that data were considered by some Trusts to be out-of-date and not useful to inform practice.

Conclusions

There is variation in how NHS Trusts capture NCA data, with organisations dedicating expensive resources (such as highly trained professionals, like nurses) to ensure data are collected, uploaded, and checked for reliability. All of the NHS Trusts in our study collected data manually, with some automating the uploading process to web portals. With the growing implementation of electronic health records in the NHS, emphasis should be given to how to more effectively use routine data for data capture. Considering the burden of NCA data collection and processing in the NHS (over 100 NCAs currently), this could free valuable professional resource for care elsewhere in the healthcare system.

Acknowledgements

This research is funded by the National Institute for Health Research (NIHR) Health Services and Delivery Research (HS&DR) Programme (project number 16/04/06). The views and opinions expressed are those of the authors and do not necessarily reflect those of the HS&DR Programme, NIHR, NHS or the Department of Health.

References

- [1] K. J. Pheko, J. Clements, and D. B. Bell, "National Clinical Audit Quality Assessment - Overview of the self-assessment survey: 'audit of audits,'" Healthcare Quality Improvement Partnership, London, UK, 2014.
- [2] J. S. Birkhead, L. Walker, M. Pearson, C. Weston, A. D. Cunningham, and A. F. Rickards, "Improving care for patients with acute coronary syndromes: initial results from the National Audit of Myocardial Infarction Project (MINAP)," *Heart*, **90** (2004), 1004–1009.
- [3] A. Taylor, J. Neuburger, K. Walker, D. Cromwell, and O. Groene, "How is feedback from national clinical audits used? Views from English National Health Service trust audit leads," *J. Health Serv. Res. Policy*, **21** (2016), 91–100.

Address for correspondence

Dawn W Dowding, Professor of Clinical Decision Making, Division of Nursing, Midwifery and Social Work, University of Manchester, Oxford Road, Manchester M13 9PL, UK.

Email: dawn.dowding@manchester.ac.uk