National Clinical Audit Quality Assessment

Overview of the self-assessment survey: "audit of audits"

Report to the Healthcare Quality Improvement Partnership

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Imperial College London

HQIP Healthcare Quality Improvement Partnership

Centre for Healthcare Improvement

Report prepared for

The Healthcare Quality Improvement Partnership (HQIP)

by

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The Audit of Audits was commissioned by HQIP, funded by NHS England. The development and reporting was undertaken by the Centre for Healthcare Improvement and Research (CHIR) based at Imperial College, supported by an advisory group including external experts.

HQIP Healthcare Quality Improvement Partnership	The Healthcare Quality Improvement Partnership (HQIP) is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. Its aim is to promote quality improvement, and in particular to increase the impact that clinical audit has on healthcare quality in England and Wales. HQIP holds the contract to manage and develop the National Clinical Audit Programme, comprising more than 30 clinical audits that cover care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual audits, also funded by the Health Department of the Scottish Government, DHSSPS Northern Ireland and the Channel Islands.
Centre for Healthcare Improvement	The Centre for Healthcare Improvement and Research is part of Imperial College London and based at Chelsea and Westminster NHS Foundation Trust. It aims to build on the work of the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care (CLAHRC) Northwest London to develop an international centre of excellence supporting the sustained improvement to healthcare systems; delivering improved patient outcomes, experience and value. Comprising of clinicians, academics, analysts, quality improvement experts and healthcare managers, the Centre seeks to develop and apply improvement science principles to accelerate the speed at which healthcare research findings are implemented into frontline healthcare. A major component of CHIR is the evaluation of research or improvement initiatives with a focus on data accuracy and utilisation. CHIR informed the development and design of the questionnaire.
Imperial College London	The Imperial College Academic Advisory Group (ICAAG) have expertise in national audits as well as assessing clinical outcomes with experts in the analysis of large datasets, both in primary and secondary care. In addition, Healthcare Quality Quest provided valuable guidance to the Group early in the process when the audit questions were being developed.

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1. OVERVIEW

The Healthcare Quality Improvement Partnership (HQIP) is a major force in professionally led quality improvement in healthcare in the UK and is under contract to NHS England. An advisory team from Imperial College collaborated with HQIP to design a self-assessment survey for National clinical audits. Importantly, this is the first time an extensive 'audit of audits' has been undertaken in England, and as such I would like to thank the team that contributed to the development of the audit, including the field testing and to the writing of this report.

The aim of this work is to facilitate shared understanding among National clinical audits (NCAs) for the design and conduct of NCAs. This 'audit of audits' will help individual audits enhance their roles in delivering high quality national audits that can contribute to improvements in the quality of patient care provided in NHS organisations.

The overall findings show that NCAs have a strong governance framework in place including the use of data. Examples given by the NCAs show both local and national impacts with data being used by Professional Bodies and Societies, Commissioners, Department of Health and Regulators to inform change. There is an opportunity to utilise national sources of data further and for the NCAs to help drive improvements at organisational and patient level using the locally available data and national comparator data. The move to provision of online data supports transparency and encourages benchmarking. The development of patient reported outcome measures (PROMs) is a sign of a more patient centred approached and is to be encouraged. Going forward, each NCA will be provided with a report as part of individual feedback.

Relatively few studies have been undertaken in the UK or internationally to assess performance and the impact of NCAs, and this report for the first time provides a benchmark for the future design of high quality clinical audits.

PROFESSOR DANNY KEENAN

Medical Director, Healthcare Quality Improvement Partnership
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2. FOREWORD

I want to thank Professor Bell and his team for producing this ground-breaking analysis of the state of national clinical audit in the British Isles. Special thanks go to Dr Phekoo from Imperial and Dr Yvonne Silove and Samantha McIntyre from HQIP who worked hard together on this project. In addition thanks go to Professor Nick Black and members of the National Advisory Group on Clinical Audits and Enquiries who offered helpful advice on the project.

This has been an in-depth review of how national clinical audits run and, by surveying how these take place, has allowed us to reflect on the different approaches to national audit. We can conclude what good, in relation to a national audit, looks like. This will help HQIP in the review of the current programme, as audits retender, and allow us to offer advice when new topics are proposed in the future.

The primary aim of this self-assessment process was to support improvement in the quality of NCAs operating in England; by a cycle of self-assessment with central analysis and review of supporting evidence, and feedback. We now have an opportunity for change, and then re-assessment.

HQIP recognises that successful audits are each achieved through the strength of their partnerships between multiple groups. These include those commissioning audits, those designing and running them, healthcare professionals delivering care, clinical audit professionals, healthcare commissioners, professional bodies and patients themselves. We believe that improvement in NCA quality will be achieved if we work together to review our audit practices and shape the required changes. We seek to run this audit of audits collaboratively and transparently, with a joint sense of ownership of issues and capacity for improvement.

The review was divided into three sections; audit scope, structure and governance, and design, conduct of delivery and impact. With the output reporting in different phases:

- the overall report bringing all the learning together
- each participating national audit will receive its own assessment compared to the national picture - the equivalent of benchmarking
- it will afford those who run audits to review their approach against the rest and reflect as to whether they could do better.

In the first section, audit scope and structure, I was interested to see that the audits in their different ways covered the British Isles, the Crown dependencies of the Isle of Man and the

Channel Isles and with several extending into the Republic of Ireland. Although many of the national audits predated the NHS Outcomes Framework, most link to one or more of the framework domains.

Under governance, the Imperial College Advisory Group proposed some standards against which the audits were assessed. The audits compared well but most have room for improvement. For instance patients were represented on 80% of Boards of the audits while the public featured in only 34% of these Boards. Patient information sheets concerning the audit were provided in 61% of the work streams. Clearly there is room for improvement.

Outcome measures appeared to be backed up by evidence and NICE, SIGN, European and International guidance featured strongly.

In the third section it was heartening to see that the dissemination of the findings has moved on from a weighty tome onto much more directed messages to key audiences including patients. There is much more for us to do in this area to focus messages and recommendations to key audiences:

- healthcare teams delivering the service
- patients and the public
- commissioners
- those who quality assure the NHS

and publish them widely and in different formats and media in line with current approaches to transparency.

The Imperial group reinforced the value of using existing robust data sources to reduce the burden of data collection. There is work for HQIP to do with those that deliver the audits to ensure that we achieve upwards of 95% data completeness. A data dictionary with clear definitions (aligned with existing coding schemes where appropriate) will be a useful addition to the specification for all audits. With the increased use of the audit data including publication of individual consultant data there needs to be an enhanced focus on validated risk adjustment models and in the definition, identification and management of outliers.

We understand the limitations of this study which, in the main, was a self-assessment exercise with limited validation. For further iterations we will consider ways to extend the validation.

Overall there have been many valuable messages from this first review of the national audit programme. My take on it is that the programme is healthy but that there is a significant amount that can be done to improve the programme and it is the intention of HQIP to work on this over the next year and to use these principals in the retendering and future commissioning exercises.

Danny Keenan

HQIP medical director

3. INTRODUCTION

Background

The primary aim of National clinical audits (NCAs) is to stimulate improvements in the outcomes of patients by systematically measuring the extent to which clinicians, services and organisations are delivering high-quality and evidence-based care. NCAs are now required to support an increasing number of additional functions including commissioning, patient safety, service redesign, quality improvement and revalidation.

HQIP advocates the following definition of clinical audit[1] :

> *'Clinical audit is a quality improvement cycle that involves measurement of the effectiveness of healthcare against agreed and proven standards for high quality, and taking action to bring practice in line with these standards so as to improve the quality of patient care and health outcomes.'*

HQIP is currently contracted by NHS England and the Welsh Government to deliver a programme to drive the high-quality delivery of NCAs. The current concerns about variation in clinical outcomes faced by the National Health Service (NHS) provide a necessary and timely impetus for HQIP to drive best value from NCA in improving health outcomes. HQIP aims to facilitate the sharing of best practice in the design and delivery of NCAs undertaken in England.

The development of the national "audit of audits," was undertaken by a team from the Centre for Healthcare Improvement and Research (CHIR) based at Imperial College supported by a number of external experts. The Imperial College Academic Advisory Group (ICAAG) have expertise in national audits as well as assessing clinical outcomes with experts in the analysis of large datasets, both in primary and secondary care (including the National BioBank longitudinal follow-up). The National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care (CLAHRC) Northwest London, is recognised internationally for its innovative evidence-based approach, linking data with quality improvement to improve standards of care. This group informed the development and design of the questionnaire.

The purpose of this work is to assess progress over time to inform and support the on-going development of existing clinical audits, and to support the design of future NCAs. The aim is to ensure high quality clinical audit that will help to drive improved care for patients.

The main objectives were to:

i. Collect information on future NCA activities planned for the subsequent financial year (e.g. Quality Accounts Resource)
ii. Evaluate the current range of performance
iii. Review individual project issues and provide subsequent advice and support as required. This work is on-going.

This report provides the first baseline for all of the existing NCAs.

4. METHODS

Development of the self-assessment survey

Imperial College Academic Advisory Group (ICAAG) worked with HQIP and Healthcare Quality Quest Limited to develop an initial survey template with guidance for NCAs to self-assess. This was achieved by the synthesis of existing literature and a consensus approach through iterative meetings with ICAAG, HQIP and national experts. This guidance was used as the basis to develop an online survey, with small scale testing and wider consultation. The survey was reviewed by five existing NCAs and made available through broader public consultation of all NCAs in October 2013. The survey was modified following feedback and the final version approved by NHS England and the National Advisory Group for Clinical Audits and Enquiries (NAGCAE) in December 2013. Based on this work the online self-assessment survey was developed using an open source platform Qualtrics® and was tested prior to the national launch in February 2014.

Content of the self-assessment online survey

The self-assessment online survey (Appendix 4) contained three sections:

i) Audit scope (section A: questions **1 to 6**) covered the following key areas:

- Main audit contact name and contact details
- Health or social care sector(s) covered by the audit
- Geographic coverage
- NHS Outcomes Framework domains covered
- Audit funding
- Intended period to collect individual patient data between April 2014 – 31st March 2015

ii) Structure and governance (section B: questions **7 to 20**) assessed the main areas listed below:

- Management and membership of NCA Board
- Frequency of meetings and minutes of the Board meeting taken
- Audit Documentation in place
- Information Governance
- Types of quality of care measures (structure, process and outcome) and source of evidence for measures
- Sampling strategy

ii) Design, conduct of delivery and impact of NCAs (section C: questions **21 to 53**) gauged the following:

- Improvements in structure, process or clinical and/or patient outcomes demonstrated over time at a local or National level
- Learning and spread of good practice
- Types of organisations that used the NCA data to drive improvement
- Ascertainment (recruitment) rate for the NCA and types of data sources used
- Geographical coverage
- Data Quality plan (definition and recording of data variables; data acquisition; existing data sources used; data quality for validity; reliability and statistical methods used for analysing and comparing variation)
- Patient safety
- Dissemination of NCA findings

Eligibility

NCA and Patients Outcomes Programme (NCAPOP) are audits commissioned and managed by HQIP. All NCAPOP audits were required to complete the self-assessment survey. NCAs that are independently funded and managed outside of HQIP (non-NCAPOP audits) were invited to participate but participation was not obligatory.

The self-assessment form for audit scope, structure and governance (sections A and B, respectively) were designed to be completed by all NCAs. To be eligible to participate, each NCA must i) operate in England, ii) intend to collect patient level data in 2014-15 and iii) plan to report comparative performance of providers.

The design, conduct of delivery and impact section of the self-assessment form (section C) was to be completed if the NCA met the following criteria: i) completion of two audit cycles, ii) both cycles included patient level data and iii) an audit report had been published after April 2012.

NCAs that solely collected organisational data were **ineligible.**

A total of forty three NCAs were invited to complete the on-line self-assessment survey by HQIP starting in February 2014 and to be completed by 28th March 2014.

Completion of the self-assessment online survey

NCAs were advised to collate and validate all information required for each question prior to online submission by their team. It was recommended that the self-assessment survey be completed by one individual, using a single computer port (single IP address), with appropriate knowledge and overview of the audit. Once online data entry had commenced, a time limit of 14 days was applied to complete the survey. To ensure reliability and validity of data, data quality and verification checks were inbuilt to the Qualtrics® system. Question logic, where applicable, was part of the system design to improve data efficiency and quality. Required fields were included, as applicable, to ensure data completeness and validity. To guide the user completing the online self-assessment survey on HQIP's website links were provided with a downloadable version of the self-assessment survey, user guide and a glossary of terms.

At the conclusion of the survey individuals were prompted to complete a final submission. Once submitted, further edits were not possible. Immediately on submission a full printable version of the completed self-assessment survey was produced for each NCA. A hard copy of all of the completed sections signed by the Chair of the NCA Board was then submitted within 10 working days of electronic submission to HQIP.

A help desk was provided (Monday to Friday working hours only, from 3rd to 28th March 2014) where initial queries were assessed and, where possible, were answered initially by HQIP. NCAs with multiple work streams were asked to complete a form for each work stream. Four NCAs requested to complete a single form for their work streams as their data were collectable within the one form, which HQIP accepted. Technical queries were passed onto the information team at CHIR.

Quality Assurance and data completeness

Of the 43 NCAs invited, 42 completed the survey in full and one opted out (see Appendix 2 for a comprehensive list of all NCAs that participated). Twenty five of the 42 NCAs were commissioned and managed by HQIP and 17 were independently funded and managed outside of HQIP.

NCAs vary in their remit, design and structure. NCAs can collect data in a single condition (or procedure or pathway), while others are more complex and may collect data from more than one condition in a single audit (or on more than one procedure or pathway). Hence, for the purposes of this analysis ICAAG made the decision to analyse each condition or pathway audit and defined within this report as a work stream. This was important when analysing section C which reports on the impact of individual audit work streams.

The data reported is based on the individual NCAs self-assessment responses. Validation is an important process but was beyond the remit for year one overall report but is part of the on-going work to support individual feedback.

From the 42 NCAs, 54 individual audit work streams were generated and included in the final analysis (see Figure 1). 32 NCAs reported a single work stream. Six NCAs with more than one related audits completed a total of 18 self-assessment forms representing the individual work streams. Four NCAs reported multiple work streams using a single self-assessment form.

All NCAs fully completed Section A, the audit scope. For structure and governance (Section B) data completeness for questions ranged from 87% to 100%. 28 NCAs were eligible to complete Section C, on the design, delivery and impact and the range for data completeness for this section was between 54% and 100%. All self-assessment forms were quality assured by two individuals (one person from HQIP and the other from CHIR) for duplicated or incomplete entries. A specific issue arose regarding data governance for four NCAs and this was then verified directly (between May and July 2014) with the relevant NCAs. Two reported that they had Section 251 exemption but were not collecting identifiable data (one NCA clarified that this was a data entry error, and the other NCA had Section 251 covering their main audit, but for

one work stream non-identifiable data were collected). Two NCAs collected identifiable data but no Section 251 was in place; both subsequently clarified that they consented patients.

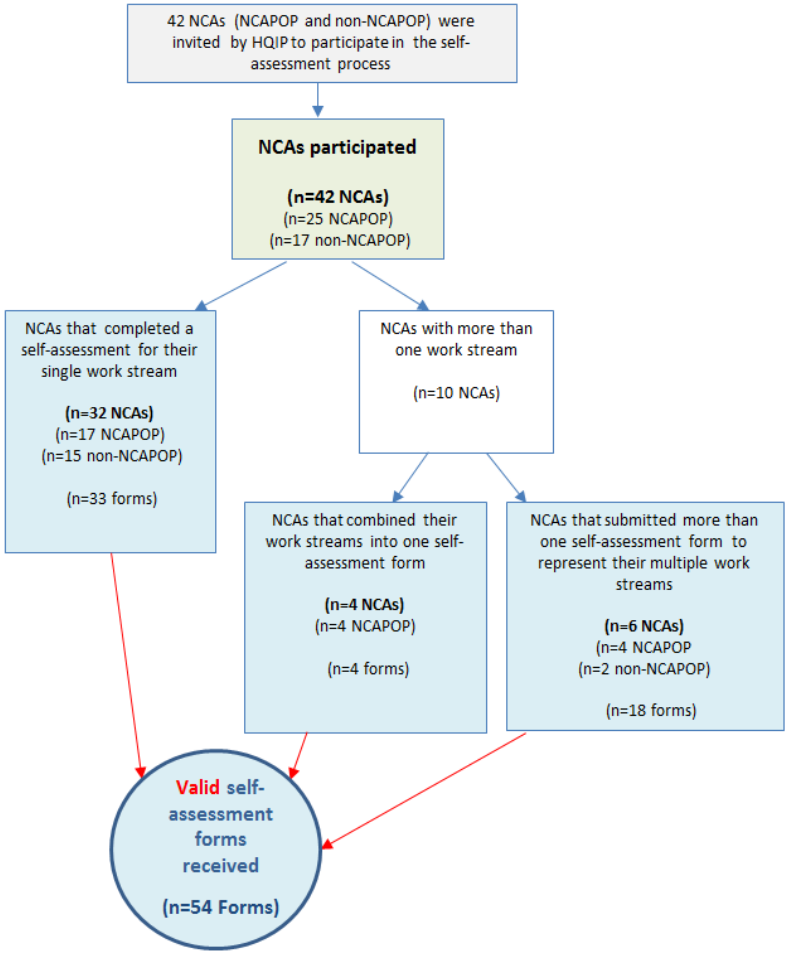


Figure 1
Schema demonstrating the NCAs (n=42) that participated in the self -assessment process by the number of the work streams (n=54) included in the final analysis.

Data analysis

The data from Qualtrics® were exported to Excel. Logical tests were used on nested questions, as well as for further classifications of answers. The six NCAs that completed a total of 18 self-assessment forms were analysed as 18 individual forms (Figure 1).

Questions that included an option for free text answers and comments were analysed separately to establish emerging themes. Two independent analysts carried out iterative rounds of coding manually to cluster the responses into meaningful categories. The data were then summarised for inclusion in the report.

5. FINDINGS FROM SELF-ASSESSMENT ONLINE SURVEY

Section A: Audit Scope

All 54 NCAPOP or non-NCAPOP work streams cover England and most cover Wales. There is less NCA coverage in other regions; however the relative proportion of non-NCAPOP audits is greater for each of the other individual areas. Of note, 11 work streams also include the Republic of Ireland (see Figure 2).

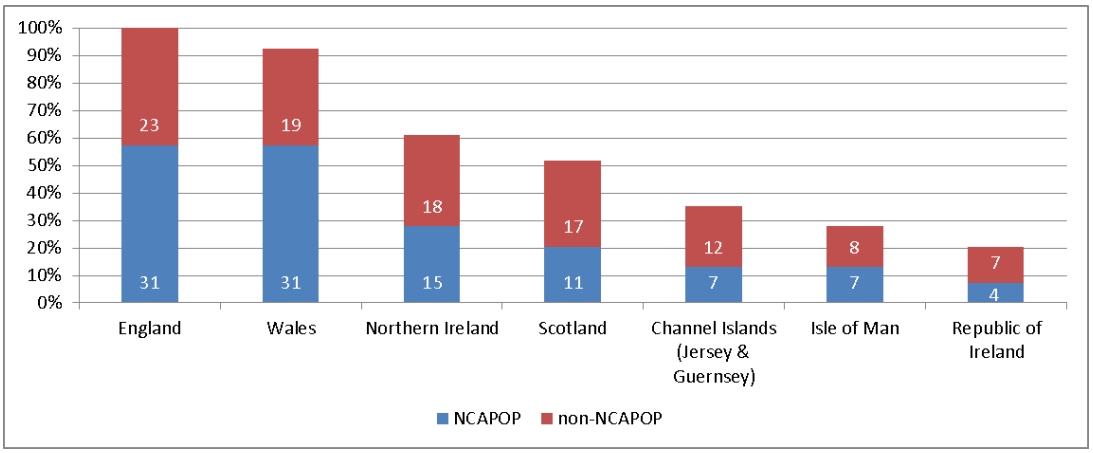


Figure 2 (Question 4)
Geographical areas covered by NCA work streams (%).

50 (93%) of the 54 NCA work streams relate to patient groups in secondary care (Table 1) or secondary and tertiary care. A smaller number of NCAs cross organisational boundaries, with 13 work streams bridging secondary care with another domain such as primary, social or community care. Five (10%) work streams directly involve primary care.

Table 1 (Question 3.2)
Health or social care sector(s) covered (%) by NCA work streams (n=54).

Health or Social Care Sectors covered	n (%)
Secondary Care only	24 (44)
Secondary Care and Tertiary Care	13 (24)
Secondary Care, Mental Health Trust, and Community Care	3 (6)
Secondary Care and Community Care	2 (4)
Primary Care only	2 (4)
Tertiary Care only	2 (4)
Secondary Care and Primary Care	1 (2)
Secondary Care and Mental Health Trust	1 (2)
Secondary Care, Community Care, and Primary Care	1 (2)
Secondary Care, Community Care, and Social Care	1 (2)
Secondary Care, Community Care, and Tertiary Care	1 (2)
Secondary Care, Community Care, and Private Provider	1 (2)
Secondary Care, Primary Care, and Tertiary Care	1 (2)
Secondary Care, Tertiary Care, Rehabilitation, and Pre-hospital care	1 (2)

NCAs were asked to select a single primary domain for each work stream from the NHS Outcomes Framework and then to select all other relevant secondary domains. Domains 1-3 were the most frequently selected as the primary domain matched to their work (Figure 3). This is balanced by a more evenly selected secondary domain with domains 4 and 5 being commonly selected. Overall, this represents widespread goals for quality improvement from the NCAs across the Outcomes Framework structure.

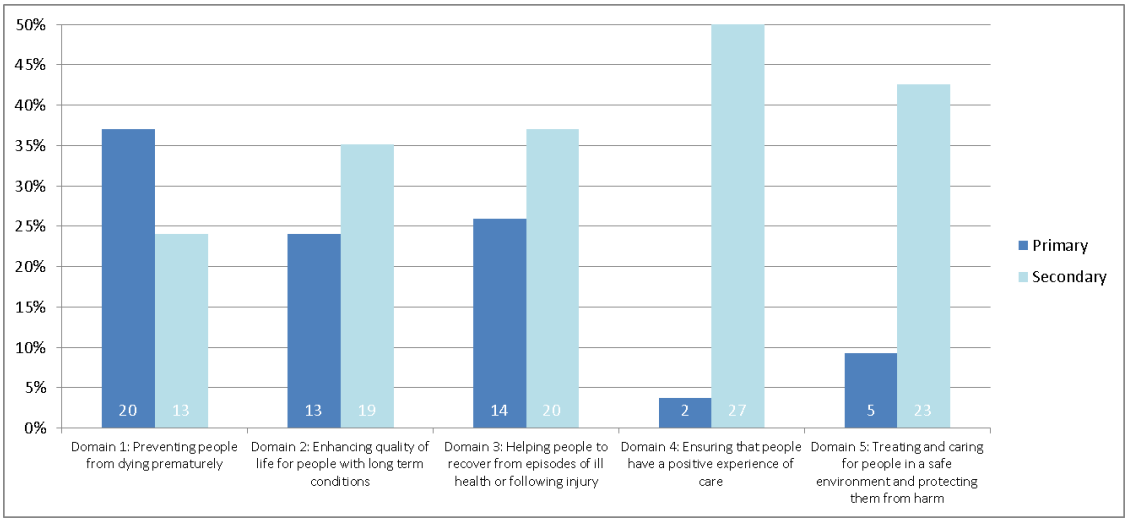


Figure 3 (Question 4.1-4.2)

Primary and other domains covered by NCA works streams (%). For primary domain (n=54) a single response was required. For secondary domains covered, multiple responses were allowed, hence the total is greater than the number of work streams (54).

30 (56%) of 54 work streams specified they intended to collect continuous individual patient data across April 2014 to March 2015. The rest of the 24 work streams intend to collect individual patient data at various times within this time period.

NCAs are able to report data at multiple levels by units of analysis. The majority of work streams, 53 (98%) of 54, intended to report their data nationally with others reporting by region, trust, and hospital (46%, 59%, and 70% respectively). One NCA reported that coverage in England was only 50% and this NCA responded that this did not qualify as national coverage. Fewer intend to report their findings by team, ward, department, or individual clinician (13%, 7%, 15%, and 17% respectively).

Section B: Structure and Governance

44 (81%) of the 54 work streams stated that they had an NCA Board (or equivalent) and Table 2 outlines the NCA Board representation. There is broad representation from a variety of stakeholders on NCA Boards such as clinical professionals, patients and service providers, but less involvement with the general public (see glossary in Appendix 3). Clinical audit professionals were present in 31 (70%) of the 44 NCA Boards. Two (5%) NCAs responded that they did not have data and project management directly represented on the Board, with one being in the setting-up phase. Additional board membership noted commissioners, third sector representation, primary care, and other professional groups or bodies (Other in Table 2).

Table 2 (Question 9-9.0.1)
Composition of Board Membership for those audits with a board (n=44). *For definition, please see glossary, Appendix 3.

Board Membership	n (%)
Clinical Lead	44 (100)
Representative from participating units	39 (89)
Methodologist (e.g. epidemiologist)	42 (95)
Clinical Audit Professional*	31 (70)
Patient/Carer/Service User Involvement*	35 (80)
Public Involvement*	15 (34)
Management (data and project)	42 (95)
Relevant professional societies or equivalent bodies	41 (93)
Other	13 (30)

Of the 54 work streams, 10 stated they did not have a board and that an alternative governance structure was in place (for example, the British Thoracic Society used its Professional and Organisational Standards committee). However, the composition of members was not reported. Approximately three quarters of Boards or equivalent reported meeting at least three times per year, while 13 of the 54 work streams met twice per year and one reported meeting once per year. 10 (19%) of the 54 of work streams reported that their minutes were publicly accessible.

An audit protocol (as defined in the glossary, Appendix 3) should provide guidance and comprehensive details about the national clinical audit's aims and objectives, methodological and statistical plan, quality improvement approach and audit design which are clearly understood by the local units participating in the audit. 40 (74%) of the 54 work streams stated they had an audit protocol in place with 17 of these having a publicly accessible version. There was a spread of responses as to which documents were or were not within the protocol, with no formal documentation for some aspects of some NCAs, such as quality improvement approach and statistical analysis plan. One NCA work stream did not respond to any of the documentation criteria listed in Table 3. While 27 work streams had all recommended documents in place, of those, only four were all contained within an overall protocol.

Table 3 (Question 13)
Accompanying Audit documentation (n=52). Note: Two work streams did not respond to question 13 and two additional work streams did not complete the response for the criteria 'quality improvement approach.'

Audit documentation in place	Yes, in audit protocol n (%)	Yes, but NOT in audit protocol n (%)	No n (%)
Improvement driven aims and objectives	27 (51)	14 (26)	12 (23)
Methodological plan clearly presented	24 (45)	23 (43)	6 (11)
Statistical analysis plan clearly presented	8 (15)	30 (56)	15 (28)
Quality improvement approach	19 (37)	18 (35)	14 (27)
Project plan including audit design	25 (47)	24 (45)	4 (8)

A total of 35 work streams collected patient-identifiable data and of these, 28 (80%) had a Section 251 exemption and 30 (86%) provided a patient information sheet (Table 4a). All seven work streams that did not have a Section 251 exemption consented patients. Seventeen work streams did not collect identifiable data and the majority (16 work streams) did not provide a patient information sheet (Table 4b). One NCA had a Section 251 exemption but on further clarification, this was for another work stream within the same clinical audit.

Table 4 (Question 14-15)

Data Governance and good clinical practice in place by NCA work streams.

a) This section identifies work streams collecting identifiable data but also have Section 251 exemption or consents patients and provides a PIS (35 work streams)		
i.	Identifiable data, Section 251 exemption, patient information sheet, and patient consent form	n= 35 / (%) 3 (8)
ii.	Identifiable data, Section 251 exemption and patient information sheet	20 (57)
iii.	Identifiable data and Section 251 exemption	5 (14)
iv.	Identifiable data, patient information sheet, and patient consent form	7 (20)
b) This section identifies work streams that do not collect identifiable data but also have Section 251 exemption and provides a PIS (17 work streams)		
i.	No identifiable data*, Section 251 exemption and patient information sheet	n = 17/ (%) 1 (6)
ii.	No Identifiable data and patient information sheet	3 (18)
iii.	No identifiable data and no patient information sheet	13 (76)
*Section 251 in place for other NCA work stream within the same clinical audit		

43 (80%) of the NCA work streams collected process measures and 41 (76%) collected outcome measures, with less than half, 25 (46%), collecting structure measures (Figure 4). Work streams listed their measures within each domain and these were coded and subsequently themed by structure, process and outcomes (for listed themes see Figure 4).

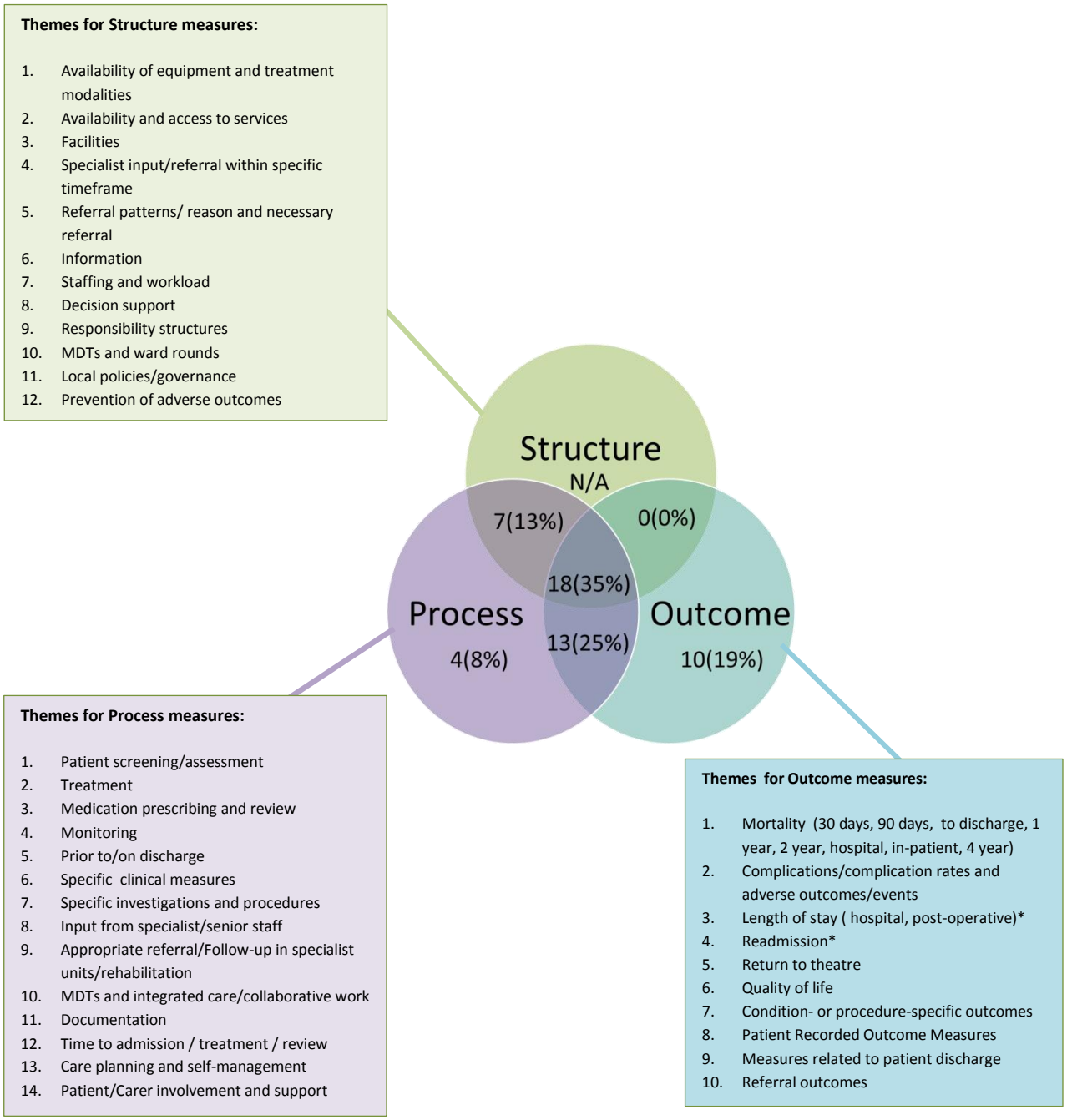


Figure 4 (Question 16-18.1)

Combination of quality of care measures collected by NCA work streams (n= 52) and themes for structure, process and outcome measures. Note: NCAs were asked to list a maximum of five quality measures related to each of the domains. *Length of stay and readmission were classed as short term outcome measures in the self-assessment form.

Measures were specified by 52 of the 54 work streams, with one excluded as it only collected a patient reported experience measure (PREM) (and was not categorised into one of the domains). One NCA work stream did not specify measures. Of the measures specified by the 52 work streams, the source for the standards used (e.g. NICE, SIGN or other standards (S), guidelines (G) or evidence (E)) was documented. NICE and other UK sources were the most commonly used, but there was a broad range including SIGN, European and other International standards (Table 5).

Table 5 (Question 16-18.1)
Source of standards used by NCA work streams. Multiple responses were allowed hence the total is greater than the number of the 52 work streams that specified the source for the standard used for their measures.

Source for the standards used	Structure (n)	Process (n)	Outcome (n)
NICE	36	83	55
SIGN	8	15	12
Other UK S/G	33	66	43
European S/G	3	15	20
International S/G	5	12	18
Recent research (E)	9	13	21
Other	26	59	43

NCAs were asked to specify the sampling approach used for identifying the audit population. 36 (67%) of the 54 work streams collected data on the total population with a third (18 work streams) using some form of sampling methodology (Figure 5). Convenience sampling was most common with random sampling approaches also being used.

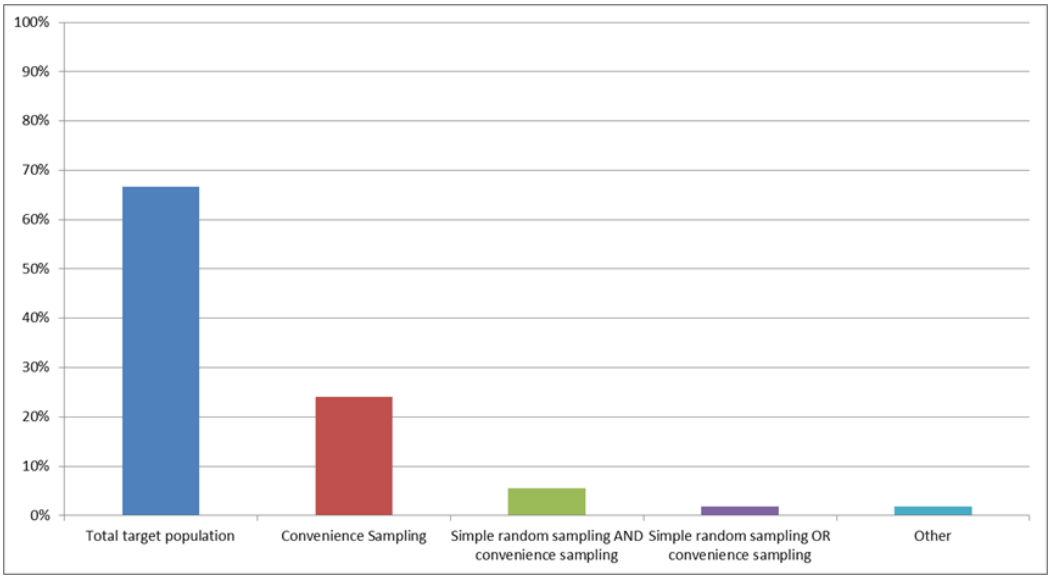


Figure 5 (Question 19-20)
NCA work streams (n= 54) collecting data on the total population or a sample of the population (%).
Glossary definitions: **Total target population** (100%) (e.g. Everyone diagnosed with asthma / or undergoing an intervention such as carotid artery stenting). **Simple random sampling** (e.g. Random 5% of everyone diagnosed with asthma or 5% of everyone receiving an intervention such as carotid artery stenting). **Stratified random sampling** (e.g. Random 5% of all males and random 5% of all females diagnosed with asthma or random 5% of males and 5% of females undergoing an intervention such as carotid artery stenting). **Convenience sampling** (e.g. "ease of sampling" - all asthma patients who attend Dr X outpatient department or patients undergoing carotid artery stenting who attend Mr Y outpatient department OR every one attending Monday asthma clinic or Monday surgical clinic for carotid artery stenting).

Section C: Design, conduct of delivery and impact

28 of the 54 work streams were eligible to complete this section as the following criteria were met: i) completion of two audit cycles, ii) both cycles included patient level data and iii) an audit report was published after April 2012.

Impact

NCA work streams recorded structure, process, and outcome measures relevant to the individual audit. To assess whether improvements were shown over time by NCAs their responses were compared to previous responses (Question 22 compared to Question 16-18). For the purpose of this analysis work streams were excluded if the measure was not initially collected (a total of six exclusions, see Table 6).

Table 6: (Question 22 compared to Question 16-18c)
Improvement in quality of care shown over time by NCA work streams.

Quality of care measures	Number of work streams collecting structure, process and outcome baseline measures (q16-18)	Of those work streams that collected structure, process or clinical and/or patient outcomes that demonstrated improvement over time (q22)
Structure	10/28	7/10 *
Process	21/28	18/21 ^
Outcome	27/28	24/27 **

*1 work stream excluded for improvement in quality of care for structure as was not initially collecting this measure.
^ 4 work streams excluded for improvement in quality of care for process as were not initially collecting these measures.
** 1 work stream not evaluated for improvement in quality of care for outcome as no response given. Further validation is on-going.

Mechanisms to support improvements at a local and national level were themed, as below:

A) Local Mechanisms

1. Reporting data to individual consultants, workload activity, peer review, clinical lines of enquiries and for action plans
2. Data were used for quality accounts, comparative analysis, benchmarking, process monitoring by SHAs, Commissioners and NHS Trust Board level
3. Service provision, planning and reconfiguration
4. Updating guidelines, protocols and introducing care bundles

B) National Impact - data used by the following groups

1. Care Quality Commission for their reports
2. NHS England 'Everyone Counts'
3. NHS Quality Dashboards
4. NHS Best Practice Tariff
5. NICE

22 of the 28 work streams identified priority areas for improvement which included reducing clinical adverse events, mortality (including premature death), improving clinical coding,

increasing screening rates, appropriate and timely admissions, developing PROMs, patient perception of procedure success versus clinician perspective, and identifying priority topics for research. Improvement plans in place to address priority areas included:

1. Provision of the online results in real time to bench mark performance
2. Monitoring of the right treatment at the right place at the right time
3. Introduction of a care bundle or PROMS
4. Empowerment of local clinicians and service lead to use local data to manage improvement
5. Development of joint work or campaigns with professional bodies.

Dissemination of findings

Audit findings were disseminated in a number of ways including through peer and non-peer reviewed publications. In total, 119 peer reviewed publications were reported (from 2009 to 2014), and 59 non-peer reviewed (from 2007 to 2014). There was a spectrum of volume of publications produced by the NCAs (Note; reporting was limited to 10 peer and non-peer reviewed publications for each work stream, with five work streams reporting the maximum of 10 peer-reviewed publications). Five work streams had no peer reviewed publications with three of the five publishing non-peer reviewed reports, all three with publications at least as recently as 2013.

A broad range of approaches were described to support shared learning of the NCA work and the spread of good practice. Most described the use of established approaches such as seminars, conferences, webinars and web based activities. A minority (14%) used social media (Figure 6). Other ways of sharing learning were local champions, database manager buddying, quarterly newsletters and peer support.

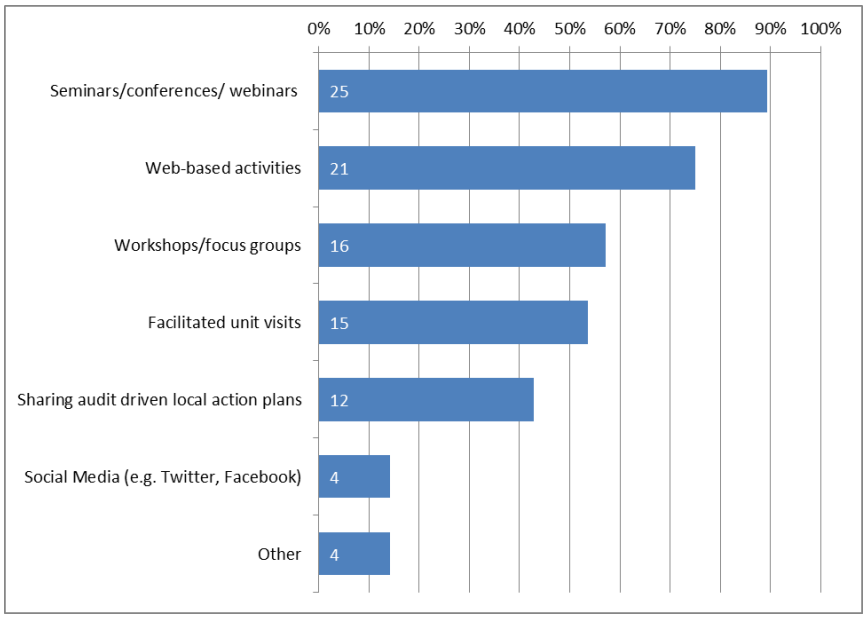


Figure 6 (Question 27.1)

Fora used (%) by NCA work streams to share learning and spread of good practice (n=28). Note: multiple responses were allowed, hence the total is greater than the number of work streams (28).

The NCA data was reported to be used by other groups, not necessarily linked to the delivery of the NCA, to support quality improvement (Figure 7). This included National groups, such as regulators, Department of Health, NHS England, and NHS Litigation Authority. Three additional responses mentioned specialty reference groups, strategic clinical networks and a European collaborative study group.

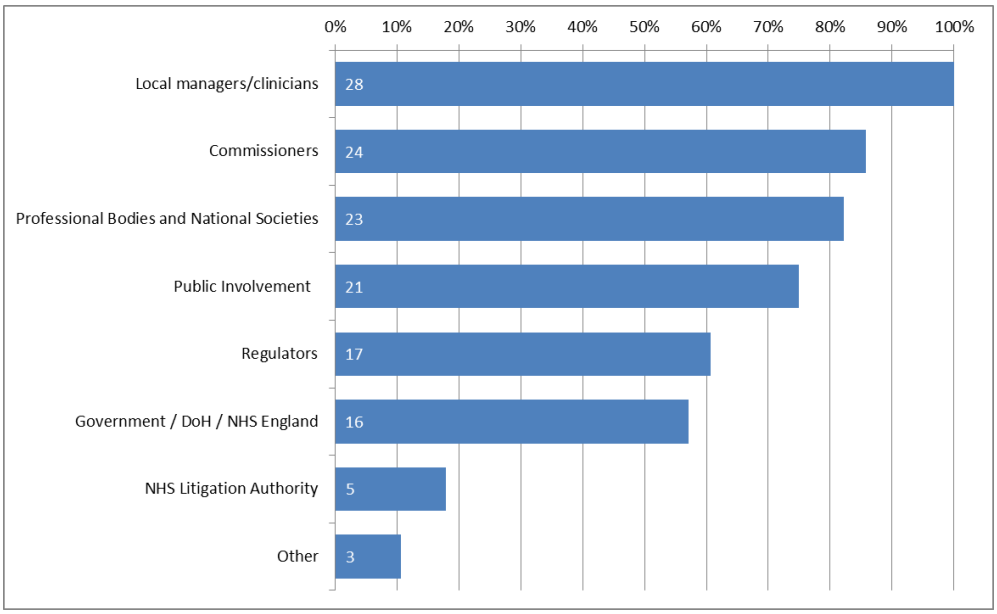


Figure 7 (Question 28)

Organisations (%) using data from NCA work streams to drive quality improvement (n=28). Note: multiple responses were allowed, hence the total is greater than the number of work streams (28).

Ascertainment / Recruitment

24 (86%) of the 28 work streams collected data on the total population which was consistent with the previous response in Section B Question 19. Of these 24, a total of 21 (88%) work streams specified both the total number of eligible patients/service users for their work stream and the actual numbers of patients recruited. The majority (57%) reached their target patient recruitment rate of 100%, whilst 5 work streams reached 90% and 4 work streams ranged from 50% (1 work stream) to 70% (3 work streams). Where there was a difference between eligible and recruited number the main issues identified were that some NHS Trusts or General Practitioners did not submit their data on time, coding issues, poor data entry and resource implications for collecting data (Figure 8).

Four work streams collected data based on a sample population and all four reported the actual number of patients recruited. Only one of this group specified the methodological approach and ensured that the sample was representative. Three specified their target sample. No work streams checked for potential biases.

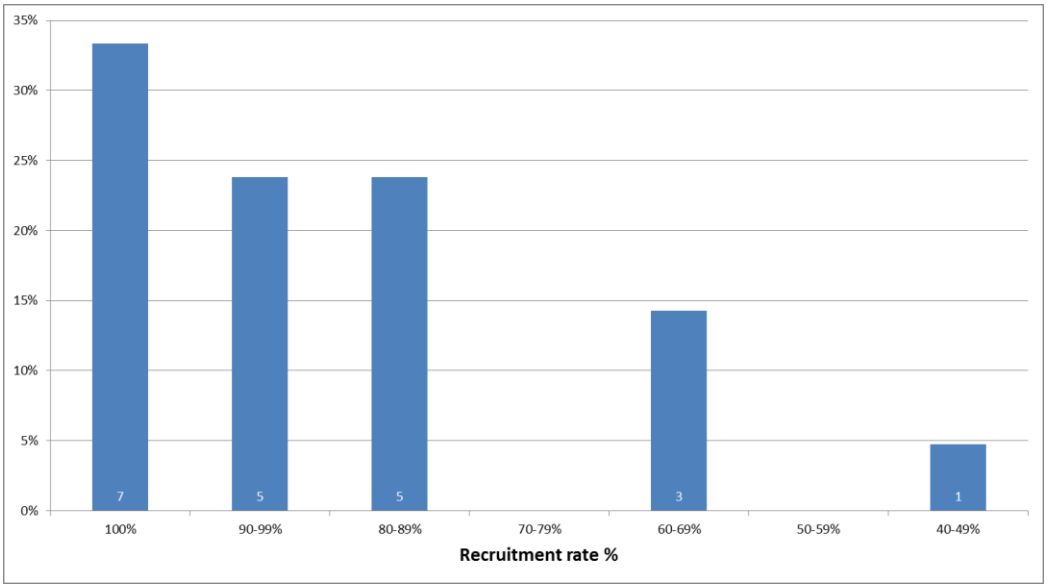


Figure 8 (Question 29.1 and 33)

Patient recruitment rate (%) reported by work streams (n=21). Note: NCAs reported the number of eligible patients (q29.1) and the number of patient's actually recruited (q33).

Of the 24 work streams collecting data on the total population 19 used existing data sources to calculate ascertainment/recruitment rate. While 17 of the 19 used Hospital Episode Statistics (HES) data for this purpose (Table 7). Other sources included cancer registries, quarterly review of hospital submissions, and the Patient Episode Database for Wales. One work stream noted that HES data did not distinguish between two types of heart attack but future work was underway to investigate HES further as a source for case ascertainment.

Table 7 (Question 35.1)

Data sources used to calculate ascertainment / recruitment rate for those collecting data on the total population (n=19). Multiple responses were given hence the total is greater than the number of work streams (28).

Data sources (n=19)	n (%)
Hospital Episode Statistics	17 (89)
Surgical logs	1 (5)
Theatre management systems	3 (16)
Case note review	1 (5)
Primary care databases	0 (0)
Community care databases	0 (0)
Mental Health databases	0 (0)
Other:	8 (42)

26 of the 28 work streams report consistent participation over the course of the audit period, with no fluctuation in the number of units participating at the beginning and the end. Two NCA work streams showed minor fluctuations over their reporting period and account for the differing numbers of participating units in eight of the geographic regions (Table 8).

Table 8 (Question 36)

Units participating (%) until the end of the audit, by geographical Regions. Note: The numbers shown are an aggregate total of participating units by each NCA

	Total Number of Eligible Units	Number of Participating Units at the:		Proportion of units participating until the end of the audit against the eligible number of units
		Beginning	End	
East Midlands	128	124	125	98
East of England	242	232	230	95
London	350	323	328	94
North East England	116	114	114	98
North West England	329	324	325	99
South Central	182	169	169	93
South East Coast	185	172	173	94
South West England	237	227	229	97
West Midlands	232	229	231	100
Yorkshire and the Humber	220	215	215	98
Wales	71	69	70	99

Data definition, coding and recordings of data variables

24 of the 28 work streams provided instructions in the form of a user manual for participating units which included a data dictionary that defined variables and their measurement (Table 9). 22 of the 28 work streams used an electronic system to acquire data with integrated electronic prompts to guide data entry.

The total number of core data variables collected from 26 of 28 work streams ranged from 2 to 291 (median 43). Two work streams commented that the collection of core data variables depended on the procedures carried out as many dataset items were only relevant to specific procedures or treatment pathways. For the 18 work streams reporting additional variables this ranged from 0 to 850 (median 28.5) variables.

For coding, the International Classification of Diseases (ICD) was used by 20 (71%) of 28 work streams. Where valid, the Classification of Interventions and Procedures (OPCS) was used by 12 work streams.

18 (64%) of the 28 work streams responded that they recorded continuous data as a numeric value. Where multiple readings were required, all respondents provided clear instructions about which reading to record (Table 9).

Table 9 (question 38 to 39.2)
NCA work streams responses to defining and the recording of data variables.

Data Acquisition	Yes n (%)	No n (%)
User manual is available	24 (86)	4 (14)
Data acquisition system uses integrated electronic prompts to guide data entry	22 (79)	6 (2`)
Diagnostic ICD codes used	20 (71)	8 (29)
Clear data definitions for each variable (structure, process and outcomes)	27 (96)	1 (4)

	Yes n (%)	No n (%)	n/a (n)
OPCS (procedural) codes used	12 (60)	8 (40)	8
Continuous data recorded as a numeric value	18 (86)	3 (14)	7
Where multiple readings are required, there is clear instruction about which reading is recorded	12 (100)	0 (0)	16

Data Acquisition

To minimise the data collection burden on participating sites and improve data consistency, 25 of 28 NCA work streams had a responsible individual identified for data collection at participating sites and 19 (68%) work streams acquired data electronically. Of the remaining nine, six work streams had a plan in place to move to acquiring data electronically.

Existing sources of data were used as part of the audit (as opposed to data verification alone) by 21 (78%) of 28 work streams. Table 10 shows the range of data sources used which were i) integral to the audit and ii) for enriching the audit dataset: established external sources such as the Hospital Episode Statistics and the Office of National Statistics were used for all three purposes. Other sources used included local electronic patient record system.

Table 10 (Question 41.0.2)
Hospital or National established data sources used as an integral source for audit, enriching and validating the audit dataset by NCA work streams (n =28).

Established data sources	Integral data source for audit n	Dataset for audit enrichment n	Validation dataset n
Patient Administration systems	17	1	1
Theatre management systems	10	0	0
Hospital Episode Statistics	9	8	9
Pathology systems	9	1	0
Histology systems	7	1	0
Office of National Statistics	7	12	6
Surgical logs	5	0	0
Commissioning systems	1	0	1
Incident reporting systems e.g. Datix	0	0	0
Cancer registries	0	2	1
Other	3	1	0

Data Quality

The NCA work streams were asked to report the data completeness for their core audit data variables. For the 28 work streams, data completeness was 94% (range 34.4% -100%). 14 (50%) of the 28 work streams tested reliability of the data and 24 (86%) work streams flagged exceptional values. 21 (75%) of the 28 work streams performed consistency checks. Other examples for ensuring validity of the data were a validation visit at participating sites, validation studies, trend analysis and clinicians validating their data.

Statistical methods for analysing variation in performance outcomes

The methods used by the NCAs to display data and assess variation in performance within the NCA work streams included tables and charts, specifically using funnel plots, run and control charts. Other methods included, caterpillar plots, radar charts, box and whisker plots, geographic mapping and Kaplan Meier survival curves.

22 (95%) of the 28 work streams identify outliers, with the majority (21 of the 22 work streams) using funnel plots (Table 11). 20 of the 22 work streams stated there were robust systems and processes in place to ensure patient safety issues or outliers were identified and acted on. The outlier policy for 19 of the 22 work streams conformed to Department of Health/HQIP guidance, and for 13 work streams the NCA Board (or Partner Organisation) supported local units in addressing any patient safety issues when identified.

20 (71%) of the 28 NCA work streams risk adjusted their outcome measures of which 16 used a validated risk adjustment model, three used an unvalidated risk adjustment model and one work stream did not specify.

Table 11 (Question 45- 49.2)

Processes and systems in place to ensure patient safety issues or outliers are identified and addressed.

Note: Table 12.b allowed multiple responses hence the total is greater than the number of work streams (28).

a) Patient Safety and Outlier Identification	Yes n (%)	No n (%)	no response
Identifying outliers	22 (79)	6 (21)	
Processes and systems place to ensure patient safety/ issues or outliers are identified and addressed	20 (95)	1 (5)	7
Outlier policy in place	22 (100)	0 (0)	6
Policy conforms to DH/HQIP guidance for timeliness of response	19 (90)	2 (10)	7
NCA Board (or Partner Organisation) advises and supports local units in addressing any patient safety issues when identified	13 (65)	7 (35)	8
b) Identifying outliers using a particular method (n=22)			
Funnel plots	21 (95)		
Other SPC methods	5 (23)		
Other methods	4 (18)		

NCA Boards (or equivalent) supported continuous feedback of local data in 19 (68%) of the 28 work streams whilst 4 (15%) had feedback three times or less per annum. 18 (64%) of the 28

work streams reported that local sites had the opportunity to comment on their data prior to wider publication. 23 (82%) work streams provided machine readable data which was publicly available. Data from the NCA work streams were disseminated to a range of healthcare stakeholders mainly using the web (24 work streams). Other organisations that used the data included professional societies, data.gov.uk website and Public Health England.

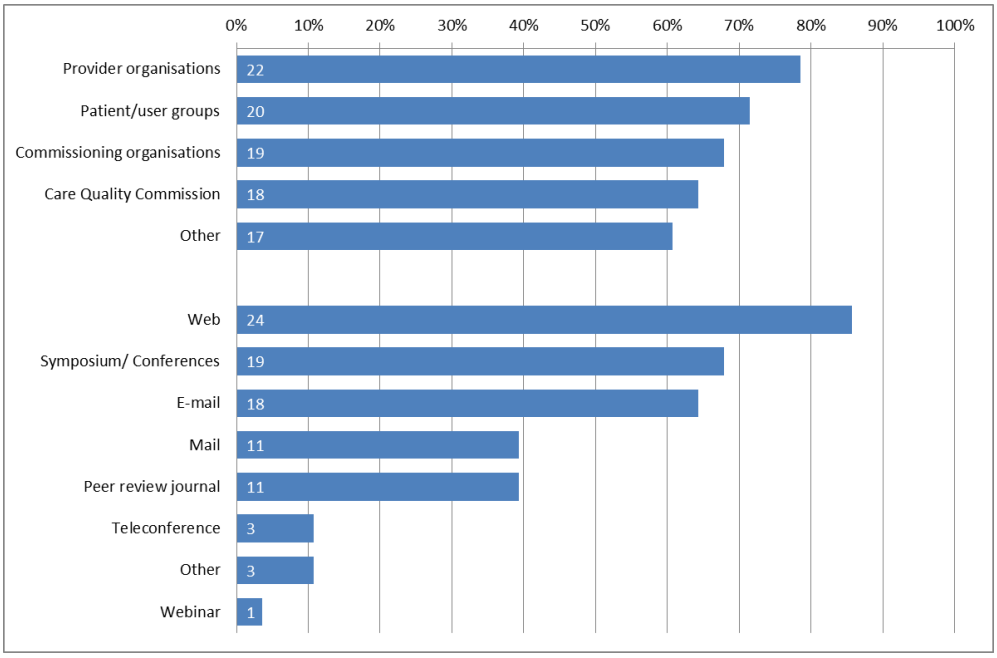


Figure 9 (Questions 50 to 52)
Dissemination of NCA finding (n=28) to Organisations and methods used %.

6. SUMMARY

National clinical audits (NCAs), through systematic review of delivered care against best known practice, are powerful tools to lead and improve quality of care for patients. Whilst there are published peer review papers and guidance documents as how to best conduct a clinical audit[2,3], there has been less work published reviewing best practice for clinical audits run at national level. This report forms the background to this first self-assessment survey of the NCAs within England. It is intended to provide a framework from which to measure the current baseline delivery of NCAs, highlight areas for improvement and allow best practice to be spread across and between audits, in order to drive changes in clinical care for the benefit of patients.

Audit Scope: section A

This section captured the basic scope of each of the 54 work streams who participated. The NCAs focus on England and are being undertaken throughout the UK and in the Crown Dependencies of the Channel Islands and the Isle of Man, and the Republic of Ireland. Most audits are based in secondary care (including tertiary care) with only a minority (14%) of audits reflecting care in other sectors such as primary, community, social and mental healthcare.

The explicit aims and objectives of an NCA should be to demonstrate the need for improvement and highlight those areas in which it could occur. It is reassuring that current NCAs link to the NHS Outcomes Framework[4] which set out high-level national outcomes in which the NHS should be aiming to improve. Most NCAs surveyed selected one of domains 1-3 (Preventing premature death, Enhancing quality of life for people with long term condition and Helping people to recover from episodes of ill health or following injury) as their primary match. The choice of secondary match provided a more balanced picture with increased selection of domains 4-5 (Ensuring that people have a positive experience of care and Treating and caring for people in a safe environment and protecting them from harm) suggesting that the NCAs objectives are consistent with the NHS outcomes framework.

All NCAs planned to report at National, Regional, Trust or hospital level consistent with annual reporting for quality accounts.

Structure and governance: section B

The work of Imperial College Academic Advisory Group recommended that the NCA Board should involve organisations or bodies (stakeholders) with a declared and legitimate interest in the NCA subject and be responsible for all aspects of the governance, design and conduct of the NCA. The findings against these criteria show that governance arrangement at Board level was evident, with a broad range of stakeholders including patients who were well, but not universally, represented (80%). Membership of the lay public was lower at 34% and this could be strengthened in future NCA planning and governance. 19% made the NCA Board minutes publicly available. Moving forward there is a need for increased transparency and this is an area that could be reviewed prior to the next annual reporting period.

ICAAG felt it was important that each NCA should have an available comprehensive audit protocol providing overall guidance as to roles and responsibilities, detailed project plan including audit design, improvement driven aims and objectives, detailed methodological plan (including plan for statistical analysis) and quality improvement approach. Whilst documents were available, only four of the 54 work streams had all documents recommended by the ICAAG within an audit protocol. Bringing all documents into a single audit protocol would help to improve accessibility for all users and stakeholders. In addition, 17 work streams stated that their audit protocol was publicly available. In common with publicly available minutes this represents an opportunity to increase transparency.

All 35 NCA work streams that collected identifiable data had appropriate systems and processes in place, consistent with best practice in information and clinical governance (NHS Act 2006[5], NICE 2002[2]). Conversely, one NCA indicated that non-identifiable data were collected, but did have a Section 251 exemption. Subsequent confirmation revealed that this NCA had multiple work-streams and the Section 251 covered a different work-stream within the same clinical audit. A patient information sheet for the NCA was provided by 34 (63%) of the 54 work streams and highlights that information for patients and the public could be improved further.

As expected the NCAs reported a range of measures which focus mainly on process and clinical outcomes rather than structural measures. Themed examples of each of the types of measures are shown in Figure 4 (page 14). Importantly, this survey highlights that most NCAs measures are based on National Guidelines particularly NICE, as well as SIGN, European and International guidance. Other sources include professional bodies and societies (e.g. British Heart Rhythm Society, Paediatric Intensive Care Society, and the British Orthopaedic Association), and evidence-based clinical scores such as the Oxford Knee and Hip score. As such the outcomes measures appear aligned with current evidence and current best practice.

Design, conduct of delivery and impact of NCAs: section C

NCA is a cyclical process that should be designed to demonstrate improvements over time. NCA data is being used at multiple levels and it was encouraging to see that NCAs are having an impact at local provider sites with data being used for a number of quality initiatives such as service planning and reconfiguration. In the same way, to optimise the opportunities for quality improvement and improve upon national policy, the NCAs data was reported to be used by other established Bodies, not necessarily connected to the delivery of the NCA; these included the Care Quality Commission, NHS Litigation Authority, NHS England and Commissioners with one NCA using their data at a European level through a collaborative study group. On-going priority areas were identified from the NCA data for clinical improvement with the majority paying attention to patient safety issues, including reducing clinical adverse events, introducing care bundles, monitoring of the right treatment at the right time and ensuring results are provided in real time to bench mark performance. Importantly, priority areas from the patient's perspective were in development, for example, assessing "patient's perception of procedure success versus clinicians," and audit specific PROMS. This reflects a move towards a more patient centred approach and is to be encouraged (see Appendix 5 for examples of case vignette). The survey also highlighted the importance and effectiveness of NCAs, with mature NCA work streams demonstrating improvement over time (Table 6, page 16) for clinical outcomes, process and structural measures (for example, improving clinical care, national benchmarking, and local feedback to provider sites).

For NCAs to benefit patients it is important the findings are disseminated widely, not merely in annual reports. There was clear evidence of dissemination of the outputs from the NCAs, which occurred through a variety of mechanisms. Importantly, the 28 eligible NCA work streams that completed Section C reported 119 peer reviewed publications and 59 non-peer reviewed publications between 2007-2014 (each NCA was limited to listing ten peer or non-peer reviewed publications). Other routes included traditional mechanisms through national and regional conferences and workshops as well as web-based activities, focus groups, facilitated unit visits and shared action plans. At present the use of social media is low and this would be expected to grow with time. This could potentially increase the profile of NCAs and encourage patients and public to be more aware of the findings.

The intent of most NCAs is to cover the entire auditable population, with 24 (86%) of the 28 work streams reporting this was the case. Sustained rates of participation of local units across England throughout the audit periods were good (Table 8).The four audits that employed a

sampling strategy favoured convenience sampling methodology, with one using a simple random sampling approach. Only one of the four work streams employed case ascertainment strategies to ensure that sample was representative, without any of the four work streams checking for potential biases. Going forward the focus should be on a total population basis where possible but where sampling is used there should be a clear strategy to ensure that the sampling process is defined and will be representative of the audit population.

To reduce the burden of data collection and transcription errors, ICCAG recommends that existing clinical or administrative data sources be used. When this is not possible, prospective data collection by local participating units can still be enriched by existing data sources, or be validated by them. The main sources of existing data used by NCAs were the Hospital Episode Statistics and the Office of National Statistics; however Patient Administration Systems were also used as an internal source by the majority of NCAs. Other sources of external data used included cancer registries, Patient Episode Database for Wales and quarterly review of hospital submissions. Challenges identified pertinent to data acquisition for NCA included coding[6,7] difficulties and resources available to enable data collection.

Data quality is a key component for any large scale studies and to guarantee this, a user manual which included a data dictionary that defined variables and their measurement was provided by 24 (86%) of 28 of the NCA work streams to participating sites to ensure clarity in data definitions and protocols. This was further supported by the use of integrated electronic data collection systems in 21 work streams, with prompts to guide data entry. A key recommendation was for all core data variables such as quality of care measure and demographic to achieve at least 95% completeness. The survey explored the number of essential audit data variables and potential extended variables collected to assess the extent of data burden and completeness. The number of variables for each work stream ranged from 2 to 291 (median 43), and for extended data variables was 0 (i.e. no further extra variables collected) to 850 variables (median 28.5). This variation could be partially explained by some NCAs auditing specific procedures or treatment pathways, as not all dataset items may be relevant, however the high number of variable may contribute to data burden. To increase data integrity 24 (86%) work streams flagged exceptional values, but only 14 (50%) of the 28 work streams stated that they tested the reliability of the data. These findings suggest that there is an opportunity to review data burden overall, which should make it easier to assess data reliability.

To assess outcomes it is important to adjust for patient characteristics, preferably using a validated risk-adjusted model (see glossary definition), to ensure as far as possible that the differences in outcomes measured reflect organisational differences in quality of care. Importantly, 20 of the 28 work streams risk adjusted their outcome measures. Of these, 16 used a validated risk adjustment model. Three used an unvalidated risk adjustment model. The remaining 8 did not report risk adjustment, which may limit the power to accurately discriminate between units of varying performance by failing to take into account case mix and patient complexity[8].

Most NCAs used funnel plots to identify outliers, which aid in alerting participating sites and can provide timely information to support improvement at a local level. 13 of the 28 NCA Boards stated that they had a role to advise and support local units in addressing any patient safety issues identified. This raises the question of how the other NCAs would address any quality or safety issues raised by the audit. This could be an area for clarification in future NCA design, including audit protocols. Only 18 (64%) of the 28 work streams had the opportunity to comment on their data prior to wider publication. It is recommended by ICAAG that all data outputs should be approved by the NCA Board to permit local units (of analysis) to comment on their data prior to any publications and support improvements in care consistent with good practice.

Overall, the NCAs show evidence of clear governance arrangements, with most having clear methodological approaches and dissemination strategies in place. Importantly, the data and findings are used by broad range of other Professional Bodies and Societies, Commissioners, Department of Health and Regulators to inform and drive change. This audit of NCAs provides a baseline to review progress of existing audits in future years and to inform the planning of new NCAs.

Limitations

The 42 participating NCAs generated 54 work streams as part of this self-assessment process. As such all data collected cannot be verified through an online system. The question construct was designed to minimise this problem and both qualitative and quantitative inputs were assessed by two independent reviewers to try to ensure the quality of the data provided.

The answers of question 6.2 (At what unit of analysis will the audit be reporting?) elicited a small response as to whether NCAs intended to analyse and report data by, for example, individual clinician (17%), department (15%), ward (15%), or team (19%). Further encouragement to NCAs should be given to improve feedback in these areas.

Work is on-going to more fully analyse the outputs including the examples of improvement which will be reported back at the level of each individual NCA. Of note, 10 NCAs had multiple work streams, of which four reported onto one self-assessment form. Future work will need to assess the best format for reporting multiple work streams.

A major limitation of self-assessment is the lack of independent verification. Documentation provided by NCAs such as their annual report, governance structure, audit design and project plan will be reviewed to inform individual feedback as part of on-going work.

Potential Future Areas to explore

From this initial audit of audits the further development of this self-assessment process could be established as a routine governance process. To facilitate this, future work may include:

1. Further refinements of the questionnaire based on the findings to capture for example i) recruitment by participation sites and ii) whether peer reviewed publications were mainly research or audit.

2. Assessing each NCA (from this round) to provide advice and support to encourage further improvements, best practice and share learning.
3. Observing the performance of NCAs individually, comparatively and trends overtime.
4. Building a robust verification process for NCAs is further developed prior to publication of data
5. To use the findings to influence how NCAs are subsequently commissioned and monitored in the future by HQIP.
6. Share learning at a National level for all undertaking NCAs or other large scale quality improvement initiatives.
7. Provide a bank of case studies to inform audits and support improvements in care

The above factors could assist in defining a clear process to improve and subsequently enhance the quality of each NCA to improve patient outcomes and monitor improvements over time.

References

1. Burgess R, (2011). ***New Principles of Best Practice in Clinical Audit***. 2nd Edition. Healthcare Quality Improvement Partnership. Oxford: Radcliffe Publishing
2. National Institute for Clinical Excellence. ***Principles for Best Practice in Clinical Audit***: NICE, 2002.
3. Dixon N. (2013) Proposed standards for the design and conduct of a national clinical audit or quality improvement study. ***Int J Qual Health Care.***
4. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213055/121109-NHS-Outcomes-Framework-2013-14.pdf
5. http://www.legislation.gov.uk/ukpga/2006/41/section/251
6. Phekoo K, Møller H, Richards M, Schey S. (2002). Comparison of a specialist haematological malignancy database against a regional cancer registry: case ascertainment and diagnostic accuracy. ***Br J Haematol***;119(3):697-705.
7. Jones RC, Dickson-Spillmann M, Mather MJ, Marks D, Shackell BS. (2008). Accuracy of diagnostic registers and management of chronic obstructive pulmonary disease: the Devon primary care audit. ***Respir Res;*** 9: 62.
8. Aylin P, Bottle A, Tsang C, February 2013. ***Imperial College report for Dr Foster Intelligence to support the NHPA proposal***: Imperial College, 2013.

Appendix 1: List of figures and tables

Appendix 2: List of NCAs that participated in the self-assessment process

Column A shows NCAs that participated in the self- assessment process and went on to complete section C* as the following criteria were met: i) completion of two audit cycles, ii) both cycles included patient level data and iii) an audit report had been published after April 2012.. Column B indicates the NCA commissioned and managed by HQIP (NCAPOP) and those independently run (non-NCAPOP). Column D shows the NCAs with multiple work streams that completed a single self-assessment form for each or combined their work streams into one self-assessment form.

A) NCAs that self-assessed Y/N *completed section C	B) NCAs commissioned and managed by HQIP (NCAPOP)		C) NCAs full Name and acronym	D) Single self-assessment completed for each multiple work stream Yes/No (combined)
Yes*	NCAPOP	1	Acute coronary syndrome or Acute myocardial infarction (MINAP)	
Yes*	NCAPOP	2	Bowel cancer (NBOCAP)	
Yes*	NCAPOP	3a.	Cardiac Rhythm Management (CRM) - Ablation dataset	Yes
Yes*	NCAPOP	3b.	Cardiac Rhythm Management (CRM) - Device dataset	Yes
Yes	NCAPOP	4	Chronic kidney disease in primary care	
Yes*	NCAPOP	5	Congenital heart disease (Paediatric cardiac surgery) (CHD)	
Yes	NCAPOP	6a.	Diabetes (Adult) (NDA) - Foot Care	Yes
Yes*	NCAPOP	6b.	Diabetes (Adult) (NDA) - NDA Core	Yes
Yes	NCAPOP	6c.	Diabetes (Adult) (NDA) - NPID Pregnancy	Yes
ineligible	NCAPOP	6d.	Diabetes (Adult) (NDA) – NaDIA	
ineligible	NCAPOP	6e.	Diabetes (Adult) (NDA) – PEDS	
ineligible	NCAPOP	6f.	Diabetes (Adult) (NDA) – Pumps	
ineligible	NCAPOP	6g.	Diabetes (Adult) (NDA) – Transition	
Yes	NCAPOP	7a.	Diabetes (Paediatric) (NPDA) – PREM	Yes
Yes*	NCAPOP	7b.	Diabetes (Paediatric) (NPDA) - Prospective audit	Yes
Yes	NCAPOP	8a.	Epilepsy 12 audit (Childhood Epilepsy) - Prospective Audit	No (combined)
Yes	NCAPOP	8b.	Epilepsy 12 audit (Childhood Epilepsy) – PREM	
Yes*	NCAPOP	9	Falls and Fragility Fractures Audit Programme (FFFAP)	
Yes*	NCAPOP	10	Head and neck oncology (DAHNO)	
Yes	NCAPOP	11	Inflammatory bowel disease (IBD) National Clinical Audit of Biological Therapies	
Yes*	NCAPOP	12	Lung cancer (NLCA)	
Yes*	NCAPOP	13	National Adult Cardiac Surgery Audit	
Yes	NCAPOP	14a.	National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme - Primary care audit	Yes
Yes	NCAPOP	14b.	National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme - Pulmonary Rehabilitation	Yes

Yes	NCAPOP	14c.	National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme - Secondary Care Audit	Yes	
Yes*	NCAPOP	15	National Audit of Percutaneous Coronary Interventional Procedures		
Yes	NCAPOP	16	National emergency laparotomy audit (NELA)		
Yes*	NCAPOP	17	National Heart Failure Audit		
Yes*	NCAPOP	18.a	National Joint Registry (NJR) – Ankle	No (combined)	
Yes	NCAPOP	18.b	National Joint Registry (NJR) – Elbow		
Yes	NCAPOP	18.c	National Joint Registry (NJR) – Hip		
Yes	NCAPOP	18.d	National Joint Registry (NJR) – Knee		
Yes	NCAPOP	18.e	National Joint Registry (NJR) – Shoulder		
Yes*	NCAPOP	19	National Vascular Registry		
Yes*	NCAPOP	20	Neonatal intensive and special care (NNAP)		
Yes*	NCAPOP	21	Oesophago-gastric cancer (NAOGC)		
Yes*	NCAPOP	22.a	Paediatric intensive care (PICANet) - main audit	No (combined)	
Yes	NCAPOP	22.b	Paediatric intensive care (PICANet) - Transport and retrieval dataset		
Yes	NCAPOP	23	Prostate Cancer		
Yes	NCAPOP	24.a	Rheumatoid and early inflammatory arthritis - Clinical audit data capture		
ineligible	NCAPOP	24.b	Rheumatoid and early inflammatory arthritis - PROM/PREM		
Yes*	NCAPOP	25.a	Sentinel Stroke National Audit Programme (SSNAP) - main audit	No (combined)	
Yes	NCAPOP	25.b	Sentinel Stroke National Audit Programme (SSNAP) - Community and transitional hospital data		
Yes	non-NCAPOP	26	Adherence to British Society for Clinical Neurophysiology (BSCN) and Association of Neurophysiological Scientists (ANS) Standards for Ulnar Neuropathy at Elbow (UNE) testing		
Yes	non-NCAPOP	27	Adult Bronchiectasis Audit		
Yes*	non-NCAPOP	28	Adult community acquired pneumonia		
Yes*	non-NCAPOP	29	Case Mix Programme (CMP)		
Yes*	non-NCAPOP	30.a	Elective surgery (National PROMs Programme) - Hip replacement		Yes
Yes*	non-NCAPOP	30.b	Elective surgery (National PROMs Programme) - Knee replacement		Yes
Yes*	non-NCAPOP	30.c	Elective surgery (National PROMs Programme) - Varicose vein		Yes
Yes*	non-NCAPOP	30.d	Elective surgery (National PROMs Programme) - Groin hernia		Yes
Yes	non-NCAPOP	31	Fitting child (care in emergency departments)		

Yes *	non-NCAPOP	32	Major trauma: The Trauma Audit & Research Network (TARN)	
Yes	non-NCAPOP	33	Mental health (care in emergency departments)	
Yes	non-NCAPOP	34	National Audit of Intermediate Care	
Ineligible	non-NCAPOP	35	National Audit of Seizures in Hospitals (NASH)	
Yes	non-NCAPOP	36	National Cardiac Arrest Audit (NCAA)	
Yes	non-NCAPOP	37.a	National Comparative Audit of Blood Transfusion programme - Audit of patient information and consent	
ineligible	non-NCAPOP	37.b	National Comparative Audit of Blood Transfusion programme - Audit of the management of patients in Neuro Critical Care Units	
Yes*	non-NCAPOP	38	Non-invasive ventilation – adults	
Yes	non-NCAPOP	39	Older people (care in emergency departments)	
Yes*	non-NCAPOP	40	Paediatric pneumonia	
Yes	non-NCAPOP	41	Pleural procedures	
Yes	non-NCAPOP	42.a	Prescribing Observatory for Mental Health (POMH) - QIP 12B: Personality Disorder	Yes
Yes	non-NCAPOP	42.b	Prescribing Observatory for Mental Health (POMH) - QIP 14A: substance misuse - alcohol detoxification	Yes
Yes	non-NCAPOP	42.c	Prescribing Observatory for Mental Health (POMH) - QIP 6D: Assessment of side effects of depot antipsychotic medication	Yes
Yes	non-NCAPOP	42.d	Prescribing Observatory for Mental Health (POMH): QIP 9c: Use of antipsychotic medication in people with a learning disability	Yes
Opted out	non-NCAPOP	43	Pulmonary hypertension (Pulmonary Hypertension Audit)	
Ineligible	non-NCAPOP	44	Renal replacement therapy (Renal Registry)	
Yes	non-NCAPOP	45.a	UK Parkinson's Audit – Occupational Therapy	No (combined)
	non-NCAPOP	45.a	UK Parkinson's Audit – Neurology	
	non-NCAPOP	45.b	UK Parkinson's Audit – Elderly Care	
	non-NCAPOP	45.c	UK Parkinson's Audit - Physiotherapy	
	non-NCAPOP	45.d	UK Parkinson's Audit – PREM	
	non-NCAPOP	45.e	UK Parkinson's Audit - Speech and Language Therapy	

Appendix 3: Glossary of terms for the self-assessment form

***Definitions added for this report**

A Audit protocol	An audit protocol provides guidance and comprehensive details about the national clinical audit to the local units participating in the audit. The following sections should be included: • Project plan (including audit design) • Improvement driven aims and objectives • Methodology plan (including statistical methods) • Quality improvement approach • Patient consent form (if applicable) • Patient information sheet
C Core data variables	Essential data variables collected by all units (of analysis) participating in the audit and used in the final analysis and reporting of the findings.
Clinical audit professional	Clinical Audit Professional: a role that focuses on providing support for clinical audit at an organisational or clinical service level in an NHS organisation.
D Data acquisition	How audit data are obtained, which includes collecting and extracting from an electronic record or acquiring from another source.
Data completeness	All core data variables should record data completeness All core data variables should aim for 100% completeness
Data enrichment/linkage	A 'value added' process through which data enrichment or linkage from one or more sources is added to the existing audit data set to enhance the utility of the data.
Data reliability	The reliability of the data has been ensured (E.g. coding audit where different coders are given the same information to code).
Data validation	All coded variables require validation checks for coding of diagnoses and procedural interventions (e.g. endoscopy). Data should be validated via an alternative source.
E Eligibility for completing self-assessment form, section C	The national clinical audit meet all three criteria: 1. Completed two audit cycles 2. Includes patient data in both audit cycle 3. The most recent audit report has been published after 1st April 2012
Eligible number of patients	The number of patients that are eligible to be included in an audit. For time defined audits, this would be all eligible patients during the time period.
I Ineligibility for completing self-assessment form	National clinical audits are ineligible if they solely collect organisational data.

The International Classification of Diseases (ICD):	The standard diagnostic tool for epidemiology, health management and clinical purposes. It is used to classify diseases and other health problems recorded on many types of health and vital records including death certificates and health records.
L	
Local participating units (of analysis)	The unit for which the audit data are analysed, for example: individual hospital, NHS Trust, network, commissioning group, GP practice, ward, department or clinician. This is also known as level of granularity.
M	
Machine readable data	Data (or metadata) that is in a format that can be understood by a computer (i.e. Comma-separate values or open data format).
Manager (project and data)	A named person responsible for the operational running, project and data management of the national clinical audit.
N	
National Clinical Audit Board	The governance group (or equivalent) that has ultimate responsibility for all aspects of the audit.
O	
Office of Population Censuses and Surveys Classification of Interventions and Procedures	A procedural classification for the coding of operations, procedures and interventions performed during in-patient stays, day case surgery and some out-patient attendances in the National Health Service (NHS).
P	
Patient/Carers/Service User Involvement	People with the condition covered by the audit to involve and recognise their opinions and experiences of care.
Public involvement	Potential patients, carers and people who use health and social care services and people from organisations that represent people who use services.
Project plan	A description of the main stages in the audit, key deliverables at each stage, expectations of all participants in the audit and a detailed time frame for completion of each state of the work.
R	
Regions	Former Strategic Health Authorities (SHAs) in England (disestablished March 2013) or appropriate table showing geographical area covered e.g. Academic Health Science Networks, Clinical Commissioning Group.
S	
Sampling	**Total target population** (100%) (e.g. Everyone diagnosed with asthma / or undergoing an intervention such as carotid artery stenting). **Simple random sampling** (e.g. Random 5% of everyone diagnosed with asthma or 5% of everyone receiving an intervention such as

carotid artery stenting).

Stratified random sampling (e.g. Random 5% of all males and random 5% of all females diagnosed with asthma or random 5% of males and 5% of females undergoing an intervention such as carotid artery stenting).

Convenience sampling (e.g. "ease of sampling" - all asthma patients who attend Dr X outpatient department or patients undergoing carotid artery stenting who attend Mr Y outpatient department OR every one attending Monday asthma clinic or Monday surgical clinic for carotid artery stenting)

Other types of sampling could include rapid cycle sampling or purposive sampling

Q
Quality-of-care measure

The exact aspects of care that represent quality of care for the target group is measurable and may include:

- Structure, which assesses personnel, equipment, record systems or facilities; a resource that facilitates the provision of care or provides the capacity for care. *Examples may include the availability of a dedicated stroke unit, nurse and physician training, policy, guideline or care bundle in place*

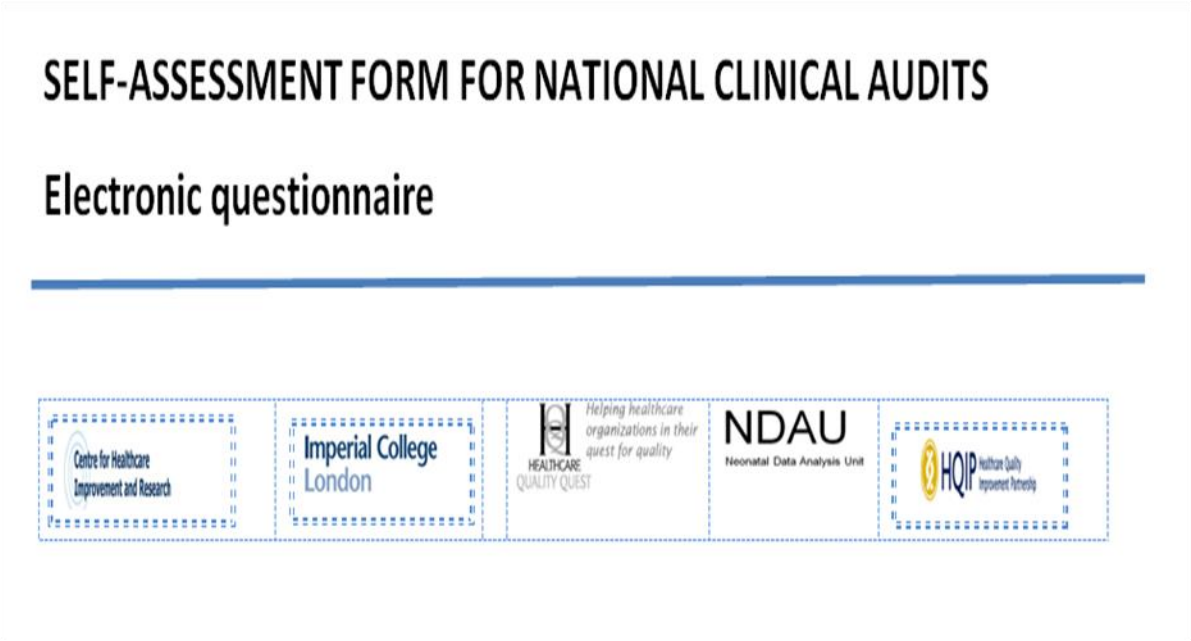
- Process, which assesses how a diagnosis is reached and treatment, including communication with patients and others, is carried out; care or service provided for a patient by one or more healthcare professionals or services. *Examples may include waiting time, number of diagnostic tests, clinical assessment e.g. for frailty undertaken.*

- Outcome, which assesses the result of clinical care, improvement in patients' behaviour or knowledge or patient and family satisfaction; what happens (or does not happen) to a patient in response to care or service provided. *Clinical examples may include measures for mortality rates, morbidity or adverse event. Patient outcomes may include quality of life, patient knowledge and understanding, compliance to treatment regimen.*

V
Validated risk adjusted model:

One for which a peer-reviewed publication describes analyses of either internal or preferably external validation on a similar population to that used in the audit.

Appendix 4: Self-assessment survey



The Healthcare Quality Improvement Partnership (HQIP) under contract to NHS England, has been tasked with facilitating the sharing of best practice and supporting improvements in the design of National Clinical Audits (NCAs) in England. This assessment form will be used in an 'audit of audits' to support the improvement in the quality and impact of these projects.

The audit process:
The responses received in this audit, along with submitted evidence, will be evaluated by an expert team commissioned by HQIP. For each NCA, areas for improvement as appropriate will be identified along with the associated time frames for these to be implemented. Summaries of the feedback will be publically accessible via the HQIP website.

Eligibility:
NCAs are eligible to submit an assessment form if:

- The audit intends to achieve participation by all eligible providers in England
- Participation includes the collection of individual patient data from 2014/15
- The audit reports or intends to report comparative performance of providers

Ineligibility:
This self-assessment process does not apply to a NCA that solely collects organisational data

Completing the form:
The form is divided into three sections: A, B and C.

All National Clinical Audits (NCAs) must complete **Sections A and B.**

Section C must be completed by all NCAs meeting **ALL** of the following criteria:

- Completed 2 audit cycles (i.e. audit and re-audit).
- Both cycles contain patient data.
- Most recent report published after 1st April 2012.

All fields in all required sections are mandatory. Submissions with incomplete fields will not be accepted. Incomplete submissions will be noted as such and scored accordingly.

This self-assessment should be completed by one individual, using a single computer port (single IP address), with appropriate knowledge and overview of the audit. All information required prior to on-line submission should be collated and validated by the team (the PDF form can be used to collect specific information manually if necessary, this is available at www.hqip.org.uk/nca-quality-assessment). Once on line data entry has commenced, a time limit of 14 days will apply. Cookies will recognise the internet protocol (IP) address allowing the individual to continue to complete the form from the last data entry point.

Note Question 55 will remind the individual to complete a final check of the questionnaire prior to submission. Clicking on the forward button will take you to a survey summary of your

answers. You may download and print this for your records and verification. Changes may still be made at this point by clicking the back button.

Clicking on the forward button again from that page will then submit the form. **AFTER THAT, NO FURTHER CHANGES CAN BE MADE**. Immediately on submission a final summary of your responses will appear in the survey window **and must be printed or saved** at this time as it is not retrievable once the individual has logged out.

NCAs with more than one work stream, must complete a form for each stream. If a single individual is completing more than work stream they should complete one stream at a time. It is not possible to complete more than one form at a time from the same IP address.

Further information and support:
For further information on the development of this self-assessment form, or how the data you provide will be used, please visit www.hqip.org.uk/nca-quality-assessment.

SECTION A

Q1 SECTION A:

ALL QUESTIONS IN THIS SECTION MUST BE ANSWERED BY ALL NCAs

Self-Assessment for NCAs for planned activities to be undertaken between 01.04.14 to 31.03.15.
This form is to be signed by Chair of the NCA Board

NCA name

(Please select your audit name. If your audit is not listed, please select and provide your FULL audit name)

- E.g. HQIP "Audit of Audits"

Q1.0.1 Other (please specify)

Q2 Host audit organisation

This is the main contract holder responsible for the audit.

	Host Audit Organisation
	(free text)
Organisation	
Address	
Data Protection Act Registration Number	

Q2.1 Audit website (For example: www.hqip.org.uk)

Q2.2 Main audit contact name and contact details (i.e. the person who is taking day-to-day responsibility for the audit) Please note that contact information will be made public via HQIPs Quality Accounts Resources

	Main audit contact details
	(free text)
Name	
Email	
Address	
Telephone Number	

Q3 Chair of NCA Board

(A hard copy of all of the completed sections must be signed by the Chair of the NCA Board with ultimate responsibility for the NCA. A wet signature copy should be provided within **10 working days** of electronic submission)

	Chair of NCA Board
Name Date(dd/mm/yyyy)	(free text)

Q3.1 Please upload electronic signature

Q3.2 Health or social care sector(s) covered by the audit (please tick all that apply)

- ❑ Secondary Care
- ❑ Mental Health Trust
- ❑ Community Care
- ❑ Primary Care
- ❑ Social Care
- ❑ Tertiary Care
- ❑ Other (please specify)

Q3.2.1 Other (Please specify)

Q4 Geographic coverage

This refers to an intention to acquire data from all relevant service providers in the following areas; (Please tick all that apply)

- ❑ England
- ❑ Wales
- ❑ Scotland
- ❑ Northern Ireland
- ❑ Republic of Ireland
- ❑ Channel Islands (Jersey & Guernsey)
- ❑ Isle of Man

Q4.1 NHS Outcomes Framework domains covered

Please select primary domain. If you are unsure what the audit's primary domain is, please see current quality accounts resource for guidance.

- ❍ Domain 1: Preventing people from dying prematurely
- ❍ Domain 2: Enhancing quality of life for people with long term conditions
- ❍ Domain 3: Helping people to recover from episodes of ill health or following injury
- ❍ Domain 4: Ensuring that people have a positive experience of care
- ❍ Domain 5: Treating and caring for people in a safe environment and protecting them from harm

Q4.2 Please select other domains covered in the NCA

- ❑ Domain 1: Preventing people from dying prematurely
- ❑ Domain 2: Enhancing quality of life for people with long term conditions
- ❑ Domain 3: Helping people to recover from episodes of ill health or following injury
- ❑ Domain 4: Ensuring that people have a positive experience of care
- ❑ Domain 5: Treating and caring for people in a safe environment and protecting them from harm

Q5 Audit funding

Please select only one. (Participant refers to the participating healthcare service or provider)

- ❍ NHS England funded (NCAPOP audits)
- ❍ Publically funded (non-NCAPOP audits)
- ❍ Professional body (no cost to participants)
- ❍ Subscription or levy funded (non-NCAPOP audits: participants pay fee)
- ❍ Other (please specify)

Q5.0.1 Other (please specify)

Q6 Will patient recruitment/data acquisitions take place between 1st April 2014 – 31st March 2015? To qualify for inclusion into quality accounts, audits will need to be collecting data during this time period.

- ❍ Yes
- ❍ No

Q6.1 When does the audit intend to collect individual patient data between 1 April 2014 – 31 March 2015?

Please select all that apply (excluding data acquired by linkage). If the audit is continuous, please select all.

- ❑ April 2014
- ❑ May 2014
- ❑ June 2014
- ❑ July 2014
- ❑ August 2014
- ❑ September 2014
- ❑ October 2014
- ❑ November 2014
- ❑ December 2014
- ❑ January 2015
- ❑ February 2015
- ❑ March 2015
- ❑ ALL

Q6.2 Unit of analysis

At what unit of analysis will the audit be reporting? Please tick all that apply

- ❑ Individual clinician
- ❑ GP practice
- ❑ Team
- ❑ Ward
- ❑ Department
- ❑ Commissioning Group
- ❑ Hospital
- ❑ Trust
- ❑ Region/network
- ❑ National
- ❑ Other (please specify)

Q6.2.1 Other (Please specify)

SECTION B

Q7 SECTION B: ALL QUESTIONS IN THIS SECTION MUST BE ANSWERED BY ALL NCAs

	Date	Not applicable
	(dd/mm/yyyy)	
a. Most recent annual report publication date		❍
b. Date of first patient recruited/data acquisition in the most recent annual report		❍
c. Date of last patient recruited/data acquisition in the most recent annual report		❍

Q7.1 Please upload annual report

Management of NCA

The NCA Board or equivalent should involve Organisations or Bodies (stakeholders) with a declared and legitimate interest in the NCA. All aspects of the governance, design and conduct of the NCA is monitored by the Board. Membership should include the following listed below:

- Clinical Lead
- Representative from participating units
- Methodologist (e.g. epidemiologist) actively involved in the design of the audit
- Clinical Audit Professional
- Patient/Carer/Service User Involvement
- Public Involvement
- Management (including project and data) Stakeholders
- Relevant professional societies or equivalent bodies
- Commissioning
- Voluntary organisations

Terms of reference, including roles and responsibilities for NCA Board members are in place.

The NCA Board should meet regularly and minutes should be

i) produced
ii) circulated internally
iii) publically available

Q8 Do you have a NCA Board?

❍ Yes
❍ No

Q8.0.1 Please upload a document that describes the governance structure for NCA

Q8.0.2 If no, please specify other governance structure

Q9 Which members or groups are actively involved in the NCA Board?

	Yes	No
a. Clinical Lead	❍	❍
b. Representative(s) from participating units	❍	❍
c. Methodologist(s) actively involved in the design of the audit	❍	❍
d. Clinical Audit Professional	❍	❍
e. Patient/Carer/Service User involvement	❍	❍
f. Public Involvement	❍	❍
g. Management (including project and data)	❍	❍
h. Relevant professional societies or equivalent bodies	❍	❍
i Other (please specify)	❍	❍

Q9.0.1 Other (please specify)

The NCA Board or equivalent should meet regularly.
Minutes of the NCA Board should be:

- **i) produced**
- **ii) circulated internally**
- **iii) made available to the public**

Q10 How often does the NCA board or equivalent meet (per annum)?

- ❍ One time
- ❍ Two times
- ❍ Six times
- ❍ Three times
- ❍ Twelve times
- ❍ Four times
- ❍ Eleven times
- ❍ Ten times
- ❍ Nine times
- ❍ Eight times
- ❍ Seven times
- ❍ Five times
- ❍ They do not meet
- ❍ other please specify

Q10.0.1 other (please specify)

Q11 Are written minutes of the meetings produced, circulated internally and published in the public domain?

	Produced	Circulated internally	Public domain
Yes	❑	❑	❑
No	❑	❑	❑

Q11.1 Please provide date of last minutes recorded (dd/mm/yyyy)

Audit protocol is available

An audit protocol is publically available and provides guidance and comprehensive details about the NCA to the local units (of analysis).

The following sections listed below are included:

- Project plan including audit design
- Improvement driven aims and objectives
- Methodological plan (including statistical analysis plan)
- Quality improvement approach
- Patient information sheet
- Patient consent form (if applicable)

Q12 Is there an audit protocol and is it publically available?

	Audit protocol is available	Audit protocol is publically available
Yes	❑	❑
No	❑	❑

Q12.0.1 Please upload your audit protocol

Q13 Does the NCA documentation include the following?

	Yes in the audit protocol	Yes but NOT in the audit protocol	No
Improvement driven aims and objectives	❍	❍	❍
Methodological plan clearly presented	❍	❍	❍
Statistical analysis plan clearly presented	❍	❍	❍
Quality improvement approach	❍	❍	❍
Patient information sheet	❍	❍	❍
Patient consent form (if applicable)	❍	❍	❍
Project plan including audit design	❍	❍	❍

Q13.0.1 Please upload project plan

Information Governance

Systems and processes are in places which are consistent with best practice in information governance and compliant with required legal frameworks, including:

- Section 251 of Health and Social care Act, 2006,
- Data Protection Act, 2003 ·
- Guidelines for Good Clinical Practice, 1998

Q14 Does the NCA collect patient identifiable data?

- ❍ Yes
- ❍ No

Q14.1 Do you have a patient information sheet?

- ❍ Yes
- ❍ No

Q14.1.1 Please upload patient information sheet

Q14.2 Do you have a patient consent form?

- ❍ Yes
- ❍ No

Q14.2.1 Please upload patient consent form

Q15 Do you have exemption under section 251 of the Health and Social Care Act 2006?

- ❍ Yes
- ❍ No

Q15.0.1 Please state section 251 exemption number

Quality of care measures

Structure, process and outcome (clinical and patient) measures should be prioritised by their capacity to support quality improvement. Quality of care measures are evidence-based, important to measure and report, feasible to collect and relevant to improvement of the quality of patient care.

Q16 Are structure measures collected?

- ❍ Yes
- ❍ No

Q16.1 Please list up to five main quality measures related to structure and the evidence source for each (please give name of validated measure where possible).

Measure is based on the following standards (S), guidelines (G) or evidence (E)

Please select all that apply

	Evidence						Other	
	NICE	SIGN	Other UK S/G	European S/G	International S/G	Recent research (E)	Other (Please specify)	Comments (optional)
Structure measure 1	❑	❑	❑	❑	❑	❑		
Structure measure 2	❑	❑	❑	❑	❑	❑		
Structure measure 3	❑	❑	❑	❑	❑	❑		
Structure measure 4	❑	❑	❑	❑	❑	❑		
Structure measure 5	❑	❑	❑	❑	❑	❑		

Q17 Are process measures collected?

❍ Yes

❍ No

Q17.1 Please list up to five main quality measures related to process and the evidence source for each (please give name of validated measure where possible).

Measure is based on the following standards (S), guidelines (G) or evidence (E)

Please select all that apply

	Evidence						Other	
	NICE	SIGN	Other UK S/G	European S/G	International S/G	Recent research(E)	Other (Please specify)	Comments (optional)
Process measure 1	❑	❑	❑	❑	❑	❑		
Process measure 2	❑	❑	❑	❑	❑	❑		
Process measure 3	❑	❑	❑	❑	❑	❑		
Process measure 4	❑	❑	❑	❑	❑	❑		
Process measure 5	❑	❑	❑	❑	❑	❑		

Q18 Are outcome (clinical and/or patient) measures collected?

❍ Yes

❍ No

Q18.1 Please list up to five main quality measures related to outcome and the evidence source for each (please give name of validated measure where possible).

Measure is based on the following standards (S), guidelines (G) or evidence (E)

Please select all that apply

	Click to write Column 1						Click to write Column 2	
	NICE	SIGN	Other UK S/G	European S/G	International S/G	Recent research (E)	Other (Please specify)	Comments (optional)
Outcome measure 1	❑	❑	❑	❑	❑	❑		
Outcome measure 2	❑	❑	❑	❑	❑	❑		
Outcome measure 3	❑	❑	❑	❑	❑	❑		
Outcome measure 4	❑	❑	❑	❑	❑	❑		
Outcome measure 5	❑	❑	❑	❑	❑	❑		

Q19 Sampling strategy

Sampling strategy is explicit and is representative of the target population

Please specify the sampling approach used for the NCA.

- ❍ a. Total target population (100%) (e.g. Everyone diagnosed with asthma / or undergoing an intervention such as carotid artery stenting)
- ❍ b. Simple random sampling (e.g. Random 5% of everyone diagnosed with asthma or 5% of everyone receiving an intervention such as carotid artery stenting)
- ❍ c. Stratified random sampling (e.g. Random 5% of all males and random 5% of all females diagnosed with asthma or random 5% of males and 5% of females undergoing an intervention such as carotid artery stenting)
- ❍ d. Convenience sampling (e.g. “ease of sampling” - all asthma patients who attend Dr X outpatient department or patients undergoing carotid artery stenting who attend Mr Y outpatient department OR every one attending Monday asthma clinic or Monday surgical clinic for carotid artery stenting)
- ❍ e. Other (please specify) (e.g. rapid cycle sampling, purposive sampling)

Q19.0.1 Other (please specify)

Q20 If a sample of a patient population has been used, please explain the rationale for deciding the sample size per unit of analysis (e.g. power calculation) (100 words). (If applicable, please specify a page number explaining this strategy from annual report)

SECTION C

SECTION C APPLIES ONLY TO NCAs THAT HAVE COMPLETED AND REPORTED A MINIMUM OF TWO AUDIT CYCLES

NCA Impact

The impact of the NCA should explicitly reflects an intention to drive improvement in quality of care and/or patient outcomes.

Q21 Have you completed 2 audit cycles?

❍ Yes
❍ No

Q21.1 Do both audit cycles includes patient data?

❍ Yes
❍ No

Q21.2 Has the most recent audit report been published after 1st April 2012?

❍ Yes
❍ No

Q22 Has the NCA demonstrated improvements in structure, process or clinical and/or patient outcomes over time?

	Yes	No
Structure	❍	❍
Process	❍	❍
Outcomes	❍	❍

Please specify examples of how the NCA has stimulated initiatives to improve patient care or clinical outcomes, at:

1) Local level

2) National level

Q23 Example at local level (e.g. provided data for revalidation)

Q23.1 Example at national level (e.g. supplied data to Care Quality Commission or NHS Electronic Dashboards)

Q24 Has the NCA identified priority areas for improvement in patient care?

❍ Yes
❍ No

Q24.1 Please outline the highest priority areas identified.

Q24.2 What plans have been made to address the priorities listed above?

Q25 Please provide a maximum of ten publications (peer reviewed) based on the current NCA

	Title	Author(s)	Journal	publication date (dd/mm/yyyy)
	free text	free text	free text	free text
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Q26 Please provide a maximum of 10 publications (non-peer reviewed, e.g. published reports or professional journals) based on the NCA

	Title	Author(s)	Journal	publication date (dd/mm/yyyy)
	free text	free text	free text	free text
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

Q27 Learning and spread of good practice should be supported and encouraged. Has the NCA encouraged learning and spread of good practice between units?

- ❍ Yes
- ❍ No

Q27.1 Please specify all fora used.

	Yes	No
a. Workshops/focus groups	❍	❍
b. Seminars/conferences/ webinars	❍	❍
c. Facilitated unit visits	❍	❍
d. Sharing audit driven local action plans	❍	❍
e. Web-based activities	❍	❍
f. Social Media (e.g. twitter, Facebook)	❍	❍
g. Other (please specify)	❍	❍

Q27.1.1 Other (please specify)

Q28 Have any of these organisations used the NCA data to drive improvement in the quality of healthcare? (e.g. spread of good practice)

	Yes	No	Don't know
a. Local managers/clinicians (e.g. service redesign)	❍	❍	❍
b. Commissioners (e.g. use of financial incentives Contracts, CQUIN etc.)	❍	❍	❍
c. Professional Bodies and National Societies (e.g. performance management)	❍	❍	❍
d. Public Involvement	❍	❍	❍
e. Regulators (e.g. Care Quality Commission/Monitor/General Medical Council/ Nursing and Midwifery Council)	❍	❍	❍
f. Government / Department of Health / National Health Service England (e.g. through policy initiatives/ Outcomes Framework)	❍	❍	❍
g. NHS Litigation Authority (e.g. risk management)	❍	❍	❍
h. Other (please specify)	❍	❍	❍

Q28.0.1 Other (please specify)

Ascertainment (recruitment) rate for the NCA is specified

A methodological approach for establishing ascertainment (recruitment) rate is in place. This may be from established clinical systems such as surgical log or other types of data sources e.g. national registries

Q29 Please complete the following for the most recently reported round of data collection: Is the total number of eligible patients / service users for the NCA known?

- ❍ Yes
- ❍ No

Q29.1 Please specify total number of eligible patients

Q29.2 Is the NCA based on the whole population (i.e. not a sample)?

- ❍ Yes
- ❍ No

Q30 Is the NCA based on a sample as opposed to the whole population?

- ❍ Yes
- ❍ No

Q30.1 If a sample of a patient population has been used, was a check made to ensure the sample is representative?

- ❍ Yes
- ❍ No

Q30.2 How was this done?

Q31.1 Were there any potential biases identified within the sampling strategy?

- ❍ Yes
- ❍ No

Q31.2 Please specify potential biases identified

Q32.1 Please specify the target sample size

Q33 Please specify the actual number of patients recruited

Q34 Was the difference between eligible and recruited number of patients (ascertainment (recruitment) rate) reported in the annual report?

- ❍ Yes
- ❍ No

Q34.1 Please explain reasons for failure to recruit all eligible patients (word limit 100)

Q35 Are other data sources used to calculate ascertainment / recruitment rate?

- ❍ Yes
- ❍ No

Q35.1 Please specify types of data sources

	Yes	No
a. Hospital Episode Statistics	❍	❍
b. Surgical logs	❍	❍
c. Theatre management systems	❍	❍
d. Case note review	❍	❍
e. Primary care databases	❍	❍
f. Community care databases	❍	❍
g. Mental Health databases	❍	❍
h. Other (please specify)	❍	❍

Q35.1.1 Other (please specify)

Q36 Geographical coverage

Please specify evidence of extent of coverage by region (defined here by former Strategic Health Authorities/Academic Health Science Network) of the NCA

	Number		
	i) Number of eligible units	ii) Number of units participating at beginning of the audit	iii) Number of units participating until the end of the audit (i.e. did not drop out)
a. East midlands			
b. East of England			
c. London			
d. North east England			
e. North west England			
f. South central			
g. South east coast			
h. South west England			
i. West midlands			
j. Yorkshire and the Humber			
k. Other (please specify)			
l. Other (please specify)			

Q36.1 If the NCA cannot be reported using the above table, please upload appropriate table showing your geographical breakdown

Data Quality Plan:

- Definition and recording of data variables
- Each core variable that is essential for analysis and reporting is clearly defined (such as those listed below) to improve the clarity of definition and reliability of recording for each data variable.
-

Demographics can include: ·

- Unique identifier (NHS number) ·
- Patient demographic (date of birth e.g. DD/MM/YYYY, postcode) ·
- Administrative information (outpatient, inpatient, emergency) ·
- Principle diagnosis and co-morbidities using ICD codes
-

Process can include: ·

- Procedural intervention using OPCS codes ·
- Prophylaxis measures ·
- Adherence to guidelines e.g. care bundles
- Outcomes can include ·
- Short term outcome e.g. re-admissions or 30 day mortality ·
- Long term outcome e.g. survival or revision rates for surgery

Q37 Please specifies the data variables for the most recently reported round of data acquisition.
How many core data variables essential for analysis and reporting are used in the audit?
How many additional data variables are used for extended analysis?

Q38

	Yes	No
Is there a user manual available to participating sites which includes a data dictionary that defines variables and their measurement?	❍	❍
Does the data acquisition system use integrated electronic prompts to guide data entry	❍	❍
Are diagnostic ICD codes used?	❍	❍
Are there clear data definitions for each variable (structure, process and outcomes)?	❍	❍

Q38.0.1 Please upload user manual

Q38.1 which system is used for diagnostic coding (please specify)

Q39 Are OPCS (procedural) codes used?

- ❍ Yes
- ❍ No
- ❍ Not applicable

Q39.1 Which system is used for coding procedures? (Please specify)

Q39.2

	Yes	No	N/A
Are all continuous data recorded as a numeric value? (E.g. Weight = 64kg, and not mapped to a category 60-70kg.)	❍	❍	❍
Where multiple readings are required, is there clear instruction about which reading is recorded? (E.g. patient's peak flow performed three times, with the best result recorded.)	❍	❍	❍

Q40 Data acquisition

Data acquisition from existing sources is clearly identified and active steps have been taken to minimise the data collection burden on participating sites.

	Yes	No
a. Is there an identified individual responsible for the data acquired at the local unit (of analysis)?	❍	❍
b. Is there an electronic data acquisition platform for the national clinical audit?	❍	❍

Q40.1 is there a plan to acquire data electronically?

- ❍ Yes
- ❍ No

Q41 Are existing data sources used?

- ❍ Yes
- ❍ No

Q41.0.1 Does this response apply to all participating local units?

- ❍ Yes
- ❍ No

Q41.0.2 Existing data sources used

	You may select more than one			
	Integral data source for audit	Dataset for audit enrichment	Validation dataset	Other please specify
Patient administration systems	❑	❑	❑	
Pathology systems	❑	❑	❑	
Histology systems	❑	❑	❑	
Theatre management systems	❑	❑	❑	
Surgical logs	❑	❑	❑	
Incident reporting systems e.g. Datix	❑	❑	❑	
Commissioning systems	❑	❑	❑	
Hospital Episode Statistics	❑	❑	❑	
Cancer registries	❑	❑	❑	
Office of National Statistics	❑	❑	❑	
Other (please specify)	❑	❑	❑	

Q42 Data Completeness

All core data variables should record data completeness

All core data variables should aim for 100% completeness

	Level of completeness
	(%)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	

Data Quality

All coded variables require validation checks for coding of diagnoses and procedural interventions (e.g. endoscopy). Data should be validated via an alternative source.

Range of continuous variables should be checked.

Consistency between fields should be checked.

Q43 Please answer the following for validating data.

	Yes	No
Has the reliability of the data been ensured? (E.g. coding audit where different coders are given the same information to code).	❍	❍
Are exceptional values flagged? (E.g. Blood pressure recorded diastolic 150 and systolic recorded as 15).	❍	❍
Are consistency checks performed? (E.g. prostate cancer cannot be recorded as female)	❍	❍
Other (please specify)	❍	❍

Q43.1 Other (please specify)

Statistical methods for analysing variation in performance outcomes by units of analysis

Comparative performance between units should be described using cross-sectional or longitudinal methods appropriate to the aims.

Process for defining outlier units and / or assessing improvement over time should be given in the annual report.

Q44 a) What methods of data presentation are used to compare performance between units (of analysis)?

	Yes	No
a. Tables	❍	❍
d. Funnel Plots	❍	❍
b. Caterpillar plots	❍	❍
c. Run charts or control charts	❍	❍
e. Other (please specify)	❍	❍

Q44.1 Other (please specify)

Patient safety

Clear robust systems and processes are in place to ensure patient safety issues or outliers are identified and acted on promptly. A policy in keeping with DH/HQIP guidance in relation to outliers is in place.

Q45 Are outliers identified?

- ❍ Yes
- ❍ No

Q46 What methods are used to identify outliers between units (of analysis), please specify?

	Yes	No
a. Funnel plots	❍	❍
b. Other statistical process control methods e.g. run charts	❍	❍
c. Other please specify (e.g. Box plots, Q-Q plots)	❍	❍

Q46.0.1 Other (please specify)

Q47 Are processes and systems in place to ensure patient safety issues or outliers are identified and addressed?

- ❍ Yes
- ❍ No

Q48 Please answer the following questions on outliers.

	Yes	No
a. Is there an outlier policy?	❍	❍
b. If yes to a, does it conform to DH/HQIP guidance for timeliness of response?	❍	❍
c. Does the National Clinical Audit Board (or Partner Organisation) advise and support local units (of analysis) in addressing any patient safety issues when identified?	❍	❍

Q48.0.1 Please upload outlier policy

Outcome measures should be risk-adjusted, preferably by a validated scoring system (if one exists), or list of adjustment variables given together with the rationale.

Q49 Are outcome measures risk adjusted?

- ❍ Yes
- ❍ No

Q49.1 What risk adjustments are applied to the outcome measures?

- ❍ a. Validated risk adjustment model
- ❍ b. Unvalidated risk adjustment model

Q49.2 Is the risk adjustment model publically available?

- ❍ Yes
- ❍ No

Data feedback by units of analysis

All data analyses are approved by the NCA Board and supports (where possible) continuous feedback of local data to: ·

- Support improvements in care consistent with good practice.
- Permit local units (of analysis) to comment on their data prior to any publications.

Q50 What is the frequency of feedback per annum to individual local units (of analysis)?

- ❍ One time
- ❍ Two times
- ❍ Six times
- ❍ Three times
- ❍ Twelve times
- ❍ Four times
- ❍ Eleven times
- ❍ Ten times
- ❍ Nine times
- ❍ Eight times
- ❍ Seven times
- ❍ Five times
- ❍ Units have continual access to their own data
- ❍ Results are not fed back to units

Q50.1 Have the local units (of analysis) had the opportunity to respond to their data prior to any reporting publically?

- ❍ Yes
- ❍ No

Published Data

Data are disseminated and publically available in machine readable format (i.e. Comma Separate Variables or open dataformat) using data.gov or NCA website.

Q51 Are the NCA findings disseminated?

❍ Yes

❍ No

Q51.1 To whom are the NCA findings disseminated?

	Yes	No
a. Patient/user groups	❍	❍
b. Commissioning organisations	❍	❍
c. Provider organisations	❍	❍
d. Care Quality Commission	❍	❍
e. Other please specify	❍	❍

Q51.1.1 Other (please specify)

Q52 How are the NCA findings disseminated?

	Yes	No
a. Mail	❍	❍
b. Web	❍	❍
c. E-mail	❍	❍
d. Webinar	❍	❍
e. Teleconference	❍	❍
f. Symposium / conferences	❍	❍
g. Peer review journal	❍	❍
h. Other (please specify)	❍	❍

Q52.0.1 Other (please specify)

Q53 Are the data machine readable?

❍ Yes

❍ No

Q54 In addition, the following documents must be uploaded:

	Uploaded	
	Yes	No
1. The most recent (since 1st April 2012) published annual report. (Published means that findings of the NCA are in the healthcare and public domains.)	❍	❍
2. Governance structure	❍	❍
3. Audit protocol	❍	❍
4. Audit project plan	❍	❍
5. Patient/carer/service user information sheet(s)	❍	❍
6. Patient consent form (where required)	❍	❍
7. Section 251 exemption number	❍	❍
8. Participant manual	❍	❍
9. Outlier policy	❍	❍

Q55 Please check all entries for each applicable section prior to submission. Have you completed and checked your responses to the questionnaire?

❍ Yes

❍ No

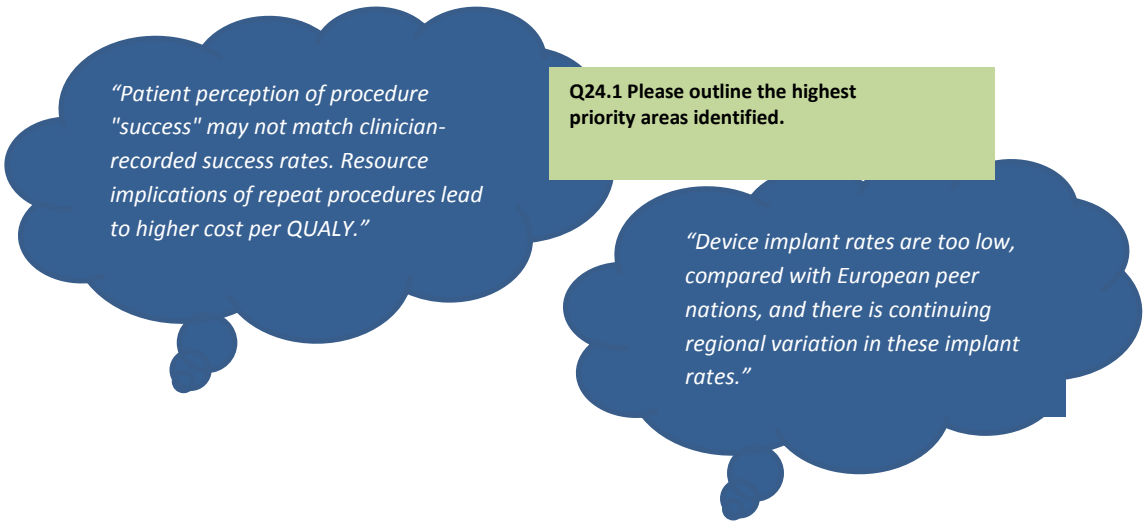
Clicking on the forward button will take you to a survey summary of your answers. You may download and print this for your records and verification. Changes may still be made at this point by clicking the back button. Clicking on the forward button again from that page will then submit the form. AFTER THAT, NO FURTHER CHANGES CAN BE MADE.

Thank you for taking the time to complete the HQIP NCA Self Assessment Form

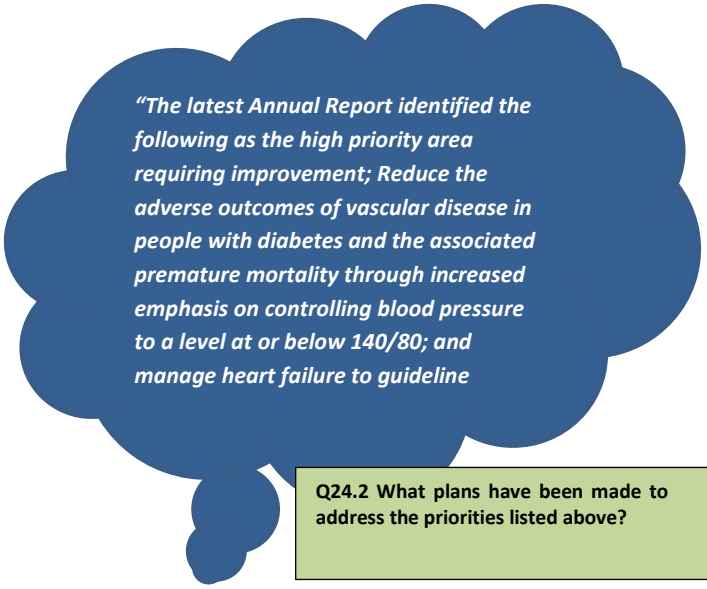
Appendix 5: Examples of case vignette for improvements at local and national level, priority areas and action plans in place

Examples of impact locally and nationally

Examples of priority areas:



Examples of actions in place:



Q24.2 What plans have been made to address the priorities listed above?