National Cancer Diagnosis Audit for England - 2014

Impact Report

Covering period between May 2017 and June 2018

This work used data provided by patients and collected by the NHS as part of their care and support
Lay Summary
The National Cancer Diagnosis Audit (NCDA) is a project that helps the NHS to improve the way cancer is diagnosed. It was carried out in England and Scotland in 2016 and 2017. In England, it collected data from nearly 450 GP practices about more than 17,000 patients who were found to have cancer during 2014. GPs reported key facts about each patient journey from the first time they came in to see their GP with relevant symptoms to when the diagnosis of cancer was confirmed with specialist tests.

Information was collated and reported back to practices. This allowed identification of good practice, and helped GP practices and individual GPs to reflect on areas for improvement. It supported them to identify better processes to enable earlier cancer diagnosis and achieve improved patient experience and outcomes. This reflective process was supported, where possible, by Cancer Research UK Facilitators and Macmillan GPs.

Many GP practices and individual GPs said they did value the ability to compare their approaches with colleagues and the opportunity to reflect on how they might improve. Several GPs changed their practice as a result. The audit also received attention in the national media and supports several related research projects.

The experience gained will help improve the way diagnosis audits are carried out in 2019 and onwards, encouraging wider participation. These future audits will deliver even more detailed insights into how patients are diagnosed with cancer, as well as more opportunities for service improvements.

Executive Summary
Early diagnosis of cancer is critical to drive improvement in patient experience and outcomes. To better understand patient pathways to cancer diagnosis and to inform quality improvement efforts, the National Cancer Diagnosis Audit (NCDA) collected data on 17,042 cancer patients diagnosed in 2014 from 439 GP practices in England.

The audit had a strong quality improvement (QI) component and participating practices were encouraged to use the audit results to highlight and share good practice, and identify areas for improvement. Practices reported a number of QI activities based on audit results, including changes to referral behaviour, safety netting protocols and bowel screening promotion. CCG-level and regional level feedback was also made available where possible to strengthen local cancer intelligence and inform service improvement initiatives beyond practice-level.

The audit results were presented at a number of national and international conferences in 2017 and 2018. The paper outlining the key findings, published in the BJGP in December 2017, received attention in the national and professional press, as well as on social media.
NCDA Impact Report - England

Contents
Lay Summary .............................................................................................................. 2
Executive Summary ............................................................................................... 2
Foreword .................................................................................................................. 4
Background .............................................................................................................. 4
   The Importance of Early Diagnosis of Cancer ................................................... 5
   The NCDA ............................................................................................................ 5
Impact Evaluation ..................................................................................................... 6
Local feedback ......................................................................................................... 7
   Practice reports .................................................................................................. 7
   Facilitator activity ............................................................................................... 7
Reasons for taking part and value gained ............................................................... 9
Practice quality improvement activities .................................................................. 11
   Case Study 1 – Referrals and Safety Netting ..................................................... 13
   Case Study 2 – Bowel Screening and Patient Management ............................... 14
Quality improvement toolkit and events ................................................................ 15
Regional impact ...................................................................................................... 15
   Case Study 3 – Local Impact ............................................................................ 16
Online information .................................................................................................. 17
Conferences and presentations .............................................................................. 17
National publication ............................................................................................... 18
   Paper ................................................................................................................... 18
   Press and media coverage .................................................................................. 18
Blogs and other publications ................................................................................ 19
   Social media ....................................................................................................... 19
Conclusion and forward view .................................................................................. 20

The audit was delivered in partnership with:

Foreword
Cancer patients, their carers and clinicians share with us numerous stories of their cancer diagnoses, both good and not so good. What is clear is that there is room for improvement as late diagnosis, for some types of cancer in particular, remains the norm. This is a complex and multifaceted problem. Data provide an incredibly powerful tool to help us understand what happens when someone is diagnosed with cancer. We can learn what works well and what we might need to change to achieve better services, experiences and outcomes for patients and families. Good data drive quality improvement.

That is why Cancer Research UK joined forces with Public Health England, NHS England, the Royal College of GPs and Macmillan Cancer Support to carry out the National Cancer Diagnosis Audit (NCDA).

The audit offers unique insights into patient pathways to cancer diagnosis, with details that have never been available before, by linking data. Each practice that took part received a tailored feedback report, and many were eager to review their results, using them to evidence good practice and identify diagnostic challenges and learning opportunities.

Overall, the data show that GPs generally refer patients promptly. But there are, of course, instances where delays happen - and it is those where the audit data can really help to improve care. Many practices have already used the feedback from the audit to inform changes within their own practice.

For patients, this means that at a practice and local level their data has made a difference and led to service improvements that could benefit them, their family and their neighbours.

And at a national level, the audit data provides vital evidence to help inform important national decisions regarding cancer services.

This audit would not have been possible without the hundreds of GPs and other practice staff who took part, nor without the thousands of cancer patients who contributed their data. We would like to thank them all for making this important piece of work possible.

We have learnt a great deal from the most recent NCDA and are using these insights to improve the audit process for the next round. We hope that even more practices will decide to take part to enable us to produce more meaningful regional reports, and so that even more GPs will be helped to reflect on how they can improve the early diagnosis of cancer.
Background

The Importance of Early Diagnosis of Cancer

Early diagnosis of cancer is key to improving patient outcomes and experiences. If cancer is diagnosed at an early stage, there may be more treatment options available and the chances of survival are increased. Unfortunately, England still lags behind other comparable countries when it comes to cancer survival. Earlier diagnosis is an important part of the solution to improve cancer outcomes in England.

Primary care plays a pivotal role in the early diagnosis of cancer, as the GP is often the first point of contact for a patient experiencing a symptom that could be a sign of cancer. In order to improve the early diagnosis of cancer, we need to understand patient pathways from first symptom through to date of diagnosis. This will allow us to highlight and share examples of good practice and identify the causes of avoidable delays and areas for intervention and quality improvement.

In 2015, the Cancer Taskforce recommended that “NHS England should [...] oversee an annual audit of cancer diagnosis” (Recommendation 82). The National Cancer Diagnosis Audit (NCDA), which is a collaboration between Cancer Research UK, Public Health England, NHS England, The Royal College of General Practitioners (RCGP) and Macmillan Cancer Support, delivers on part of this recommendation.

The NCDA

The NCDA in England collects data from primary care and combines these with data from the Cancer Registry to further our understanding of patient pathways to cancer diagnosis and to stimulate quality improvement activity, particularly in primary care.

The first round of the NCDA took place between 2016 and 2017 and collected data on cancers diagnosed in 2014 in order to obtain a baseline reference point before the NICE NG12 Referral Guidelines were published.

In England, 439 practices took part in the audit (5.4% of all practices), submitting data on 17,042 cancer diagnoses (5.7% of all cancer diagnoses in 2014). Patients included in the NCDA were representative of the 2014 national incident cohort. Participating and non-participating practices were similar on age profile, patient experience score, conversion and detection rates, but participating practices were larger, had slightly fewer patients per GP and higher TWW referral rates (see Swann et al. BJGP 2018).

During data collection via an online portal, GPs entering data were made aware when a case warranted further review and were encouraged to reflect on non-standard cases and patients who had experienced avoidable delays.

Following completion of data collection, each participating practice was issued with a tailored feedback report summarising their audit results and providing a national comparator (based on n=17,043 cases): a comparator to a cluster of similar practices, and a CCG comparator where participation within the CCG was high enough.

Practices were offered a quality improvement (QI) toolkit developed by RCGP and Cancer Research UK (CRUK), and support from dedicated staff (CRUK Facilitators) and colleagues (Macmillan GPs) to reflect on their data and plan quality improvement activity in practice meetings.
Impact Evaluation
To understand the impact of audit participation and resulting quality improvement activity on clinical practice, two surveys were conducted in November and December 2017. CRUK facilitators were asked to complete a survey to understand the activities they had done with practices between June and November 2017 (when practice level reports of the audit were available for download in England). This was cross-referenced with facilitator activity logged on CRUK’s reporting system Facilitator Activity Insights Reporting System (FAIRS). The other survey was sent to all registered users of the online data collection portal to understand the experience of those who took part in the audit. Portal users were asked to identify their CCG, but the survey was otherwise anonymous.

Additionally, CRUK facilitators worked with practices that had implemented change in response to the audit, to gather case studies that could be shared with others in order to disseminate learning more widely, including to practices that had not taken part.

Other information on impact, including publications, conference presentations media coverage, and web traffic was also gathered.

This document summarises the findings from the two surveys and provides examples of case studies where practices implemented changes following the NCDA. It also provides an overview of national dissemination activity and impact.
Local feedback

Practice reports
Tailored feedback reports were produced by PHE for all practices that had submitted data to the NCDA. Reports were made available to practices for download from the online portal on 30th May 2017 until 30th November.

Within 2 days of reports being made available, nearly a quarter of practices (24%) had downloaded their reports, indicating that practices were keen to view their results and had been anticipating the release of the reports. Nearly half of practices (49%) accessed their report within three weeks. By the end of the download period on 30th November, over three quarters of practices (78%) had downloaded their reports.

When reports were made available, GPs were encouraged to look at their practice’s results in detail, to discuss the findings with a CRUK facilitator and/or a Macmillan GP, and to present the findings to others at the practice.

Facilitator activity
The CRUK facilitator team logged 144 NCDA-related activities between June and December 2017. The type of contact varied. 47 email engagements and 74 face-to-face meetings were logged with a clear shift after June from email to face-to-face. In November facilitators disseminated the RCGP QI toolkit, which was logged as ‘QI tool dissemination’ activity.

Figure 1 – Documented facilitator contacts (from FAIRS) by type (June to December)

Facilitator engagements logged on FAIRS varied by area, which was expected due to different levels of uptake with the audit across England.

Figure 2 – Documented facilitator contacts (from FAIRS) by area (June to December)
During face-to-face meetings, facilitators met with individual GPs, practice teams, as well as CCGs and other organisations (also see Regional Impact section). With practices, facilitators often discussed the tailored feedback reports and highlighted examples of good practice and areas that may require further review, and could warrant action. Practices often decided to carry out a more detailed review of cases highlighted by the audit, or more recent cases with characteristics highlighted by the audit, to reflect further and gain learning that could lead to quality improvement.

“*I reviewed the NCDA report with the 5 practice GPs. They were really interested in the report, the practice had late diagnosis of colorectal cancer and 3 of the 6 were emergency presentations. The practice are going to complete SEAs on the cases and share the clinical learning.*” CRUK facilitator East of England

“*I met with [name of GP] to go over the NCDA report before she shared findings with the wider team. We had a useful discussion and agreed actions around SEAs to undertake, and looking into improving early diagnosis of colorectal cancer.*” CRUK facilitator Thames Valley

Some facilitators also presented audit findings to CCGs and other relevant organisations and groups, including at GP educational events.

“*I presented the NCDA results for the [County] Cancer Steering group- covering 3 CRUK areas. Everyone found it a useful discussion*” CRUK facilitator East Midlands

In November 2017, 42 CRUK facilitators completed a survey on their NCDA-related activity, 28 of whom had conducted at least one NCDA-related practice visit (range: 1 to 8); however, several also noted that they had further visits planned in the coming months.

Facilitators reported that most practice visits initially focused on going over practice reports and identifying areas for quality improvement. Half reported that discussions also covered opportunities for QI, but only 22% reported focusing on concrete planning of QI activity.

Figure 3 – Practice visit focus (from facilitator survey; 32 responded, 10 skipped question)
NCDA Impact Report - England

Following practice visits, over two thirds of facilitators (69%) felt that practices had a better understanding of their NCDA results. And nearly half (44%) reported that the practices that had been visited had changed, or were planning to change, processes based on the audit feedback (also see Practice quality improvement activities section).

Figure 4 – Impact of practice visit (from facilitator survey; 32 responded, 10 skipped question)

Reasons for taking part and value gained
In a survey, which was conducted among registered users of the portal between November and December 2017, 25 portal users who had taken part in the NCDA shared their feedback. They were asked about their reasons for taking part in the audit, as well as the value they had gained from participating.

The main reason for taking part in the audit was to improve cancer care and outcomes at the practice (84%, n=21), followed by wanting to understand how the practice compared to other services (68%, n=17), wanting to demonstrate quality improvement for appraisal/re-validation (60%, n=15) and wanting to identify good practice (60%, n=15).

When asked about the value gained from the audit, all respondents identified at least one value they had gained. On average, respondents identified 3 values (range: 1 to 8). Most commonly respondents felt the audit had helped to identify good practice, to better understand how a practice benchmarks to others, and to highlight diagnostic challenges.

Reasons for taking part and the value gained responses were mapped to understand how many respondents felt that they had gained a value related to their expectation / reason for taking part (see Figure 5).
87% (n=13) of respondents who had taken part to identify good practice (n=15) were able to do so. Similarly, 80% (n=4) of those who wished to provide evidence for CQC inspection (n=5) were able to use the audit results for this purpose.

However, only around half (47%; n=7) of those who stated they did the audit to demonstrate quality improvement for appraisal/re-validation (n=15) said they had used the audit in this way. And only 19% (n=4) of those who had stated that improving cancer care and outcomes at the practice was a reason for taking part (n=21) later stated they had achieved this. However, all respondents who reported not having gained the value of ‘improved care and outcomes’ reported at least one other value gained (average of 3 other values gained, range: 1 to 6). But it is important to consider that the survey was done only 6 months after results became available, and changes in outcomes may only be evident several months after any actions taken in response to the audit are implemented and have taken effect.

These findings help to understand why GPs set out to do the audit and where additional value may be gained.

The majority of respondents to the survey stated that they had read their practice report and discussed it with colleagues at their practice (84%, n=21). 60% (n=15) had presented the audit findings to colleagues at their practice and 8% (n=2) had also presented results to colleagues outside the practice. One respondent reported having discussed the results with their local CCG. Seven respondents stated that they had discussed the results with a Cancer Research UK facilitator, and three had discussed results with a Macmillan GP.

Portal users were also asked to rate the usefulness of the tailored practice reports on a scale of 0 (not useful at all) to 10 (extremely useful). The median rating given was 7 (Range: 1 to 9).
NCDA Impact Report - England

Figure 6 – Usefulness of tailored practice reports (from portal user survey; 25 responded)

*One of the two respondents who rated the report as a 1 had previously stated that they had not read the report

Practice quality improvement activities
In the portal user survey, 14 of 25 respondents (56%) reported having made and/or planning to make some changes at individual and/or practice level.

Figure 7 – Responses to question on planned changes / changes made following NCDA (from portal user survey; 25 responded; 11 (44%) reported no changes made)

Where practices made concrete plans for change and quality improvement, these most often focused on referral behaviour, safety netting protocols and bowel screening uptake.

"Lower threshold for referral for patients who do not clearly meet 2 week wait criteria, but there is clinical suspicion of cancer." Portal User 1

"More awareness of re-referring patients when 'negative 2ww' results received and patient remains symptomatic." Portal User 14

"Increased awareness of patient factors delaying presentation and access to a diagnosis. More explicit use of safety nets in this context." Portal User 6
The range of actions taken in response to findings from the audit demonstrates individual and practice-level learning. Detailed case studies with long term follow-up will support sharing of learning more widely, including to practices that did not take part.

Eleven of 25 respondents (44%) stated that they had not made any changes and were not planning to make changes following audit participation and discussion of results. However, of these respondents, ten (91%) stated the audit had helped them to identify good practice, six (55%) reported a better understanding of how their practice compared to other services, and five (45%) had used the audit as evidence for CQC inspection. It may be that the audit results for these practices were deemed satisfactory (not showing a need for change/quality improvement), evidencing good practice and favourably comparing to other services. However, five (45%) of these respondents also reported that the audit had helped them to identify patients for more detailed review, showing that even for those who did not, ultimately, make changes, the audit could support review and reflection.

Further value will be gained when the audit is repeated and changes over time will be highlighted, incl. the impact of any quality improvement undertaken. Repeat audit will also allow tracking of the impact of national service innovation (e.g. availability of direct access tests, introduction of optimal pathways etc.) and guidelines, such as NG12.
Case Study 1 – Referrals and Safety Netting

About the practice: Suburban, fairly affluent training practice with a list size of approx. 10,000 patients in 2014 of whom a quarter were aged over 65. The practice also covered several nursing homes.

Why did the practice take part?

“We feel it is good practice to reflect on our cancer cases, detection rate etc. We are a training practice, so it’s useful to have greater insight to share with medical students and GP trainees.”

What did the practice learn during data collection?

“For cases where there was a delay the audit process made us look at what the causes were and if a primary care delay was identified then these were discussed at our clinical meetings and/or written up as Significant Event Analyses.

For cases where the diagnosis was in A & E we also looked further at the patient’s history to see if an earlier diagnosis could have been made.”

What did the practice learn from their tailored report?

“We did identify some delays with lung cancers. At the time it could take up to two weeks to get a chest X-ray report back from hospital. If result was abnormal we would try to bring patient in for face-to-face consultation to explain next steps. We did recall a local issue with chest X-ray reporting, and indeed all X-rays, during the period the audit looked at (2014).

The audit report showed our practice was similar in terms of figures as others that took part in the audit which was encouraging, given we are a large practice with high numbers of elderly.”

What changes did the practice make?

“We are now safety netting our 2ww referrals to ensure patients do receive an appointment within 2 weeks. The practice secretaries keep an electronic log to track this. We also discussed the findings at a clinical meeting and in our appraisals.”

What has been the impact of the changes?

“Clinical staff are more informed, and non-clinical staff more involved in safety netting 2ww referrals.”
Case Study 2 – Bowel Screening and Patient Management

About the practice: Semi-rural training practice with a list size of 9,500 patients. The practice has a largely Caucasian patient population (>90%).

Why did the practice take part?

“To understand where we stood in relation to national benchmarking and see what changes were needed to encourage good practice. As a training practice this was also an opportunity for a GP registrar to gain first-hand experience in bringing about change in practice working alongside the GP principals.”

What did the practice learn during data collection?

“We found a trend for undertaking investigations (as we have rapid access to diagnostics locally) prior to referral. We also discovered that two audited patients who were MCA competent had refused referral until a critical event had led to emergency referral/admission, which was a basis for further discussion.”

What did the practice learn from their tailored report?

“Lots. The report was surprising in some ways, and undoubtedly practice-changing. Our number of appointments before referral was higher than the median, with a frequent finding of diagnostics (blood tests, x-rays, ultrasound scanning) undertaken with GP review before referral. As a practice, we have a meeting every morning of all GPs and we discuss cases in house. This leads to a collective management plan which seemed to be a good approach to management of non-specific presentations, but actually represents a delay in the referral process. This has led to an overhaul of our clinical management.”

What changes did the practice make?

“[Introduced] a change in approach from clinicians with a significant change in urgent referral practice. We [also] had a suboptimal NHS Bowel Screening uptake, which is a key area for audit and also needs attention as an organisation. One of our GP partners attended a GP Cancer Update Course and this included a number of proposals for improving the uptake of patients who default or decline bowel screening, which included heightening awareness amongst all clinicians and practice staff and actively seeking out the target population to encourage uptake by direct contact from the practice. These actions are in process at present. We are also looking for patient champions through the Altogether Better programme to encourage enhanced uptake of screening through patient activation and using an expert patient to move forward with this process.”

What has been the impact of the changes?

“A greater awareness and willingness to follow up and review patients who are expected to undertake screening [and] better communication from all clinicians about this and active review of those who have declined or defaulted screening. And a greater understanding of the urgent referral criteria.”

Any other comments?

“The initial and follow up visits from CRUK facilitator were a great focus for reviewing good practice and implementing the recommendations made.”
Quality improvement toolkit and events
To support participating practices with quality improvement activity, the RCGP and CRUK developed a Quality Improvement (QI) toolkit for the early diagnosis of cancer. CRUK made free hard copies available via the CRUK facilitator programme for all practices that had submitted data to the NCDA and an online version was published on the RCGP website (Cancer section) and the CRUK website (NCDA section).

Over 400 hard copies of the QI toolkit were distributed. Around 80 were kept by CRUK facilitators and the remainder was handed out or posted to practices that participated in the audit. Google analytics show 95 downloads of the toolkit from the RCGP website (up to June 2018) and 18 downloads from the CRUK website.

Two free half day QI workshops to launch the toolkit were held in Reading (21 September 2017) and Wakefield (5 October 2017), hosted by the RCGP. A total of 45 individuals attended the events. Most attendees were GPs, but five CRUK facilitators also took part. Feedback indicated that the workshops were well received overall, and showed increased understanding of QI methods following the sessions, and intentions to apply the QI skills gained in practice. For example, attendees stated that they would use QI methods to improve screening uptake (particularly bowel screening), raise awareness of NGL2 guidance, or do further audit and review specific sets of diagnoses.

“I have a much better understanding in QI objectives and aims and how to use those in practice.’ Attendee in Reading

“It was very useful to me even as a cancer lead – able to network and share thoughts – thank you!’ Attendee in Wakefield

Several attendees also noted that they would share what they had learned with others.

“Looking forward to sharing the QI tools and ideas with practices – lots of great ideas to quantify and measure improvement.’ Attendee in Reading

There were, however, also some negative comments, specifically regarding the way in which the workshops had been advertised, with some attendees reporting that they had expected to hear more about the NCDA findings rather than quality improvement methods.

“This was an introduction to QI with little or no reference to the NCDA data. I was glad to learn more about QI, but it was not why I came along today.’ Attendee in Reading

Regional impact
In some areas, GPs who took part in the audit proactively shared their practice reports or an overview of the findings from the audit with colleagues and with their CCGs. This sometimes led to local actions, such as further reflection and learning, or audit projects.

“Having participated as an individual practice, I have been able to use my role in our local CCG to incentivise a broader audit being undertaken by all practices in 2017/18.’ Portal User 32

Beyond practice reports, the NCDA team also produced CCG reports where ten or more practices within a CCG had taken part in the audit. Six CCG reports were produced in total (North Tyneside, Hounslow, Southern Derbyshire, North, East & West Devon, Brighton & Hove, and Southampton).
NCDA Impact Report - England

It should be noted that even where CCGs had ten or more practices that took part, the group of practices that participated in the audit was often not representative of practices within the CCG and this was noted as a caveat. However, feedback from facilitators indicated that CCGs were interested in the data and found that it supported ongoing local initiatives to improve practice, such as implementation of the optimal lung cancer pathway and work to tackle missing staging data.

“They [CCG] were pleased they were the only one in our local area with a report! [...] With emergency presentations for lung cancer: they are introducing an optimal lung pathway with the trust – this [NCDA CCG] report helps supports this.”
CRUK Facilitator

The Programme Manager was invited to present and discuss results with one CCG lead, as well as at a primary care cancer education group. In other areas NCDA reports also produced interest beyond just the practices that took part. The Wessex Facilitator team, for example, were invited to attend and present NCDA findings at two GP educational events where they shared information about the audit and QI activity and collaborated with two GPs who had taken part in the audit and shared their own learning.

**Case Study 3 – Local Impact**

*About the CCG:* inner city CCG with 42 GP practices that took part in the NCDA. CCG incentivised the NCDA locally to encourage participation and was issued with a CCG report.

**What did the NCDA report show?**

“The National Cancer Diagnosis Audit Report, showed high numbers of patients had no pre-consultation with a GP and self-referred to Accident and Emergency. The report also highlighted late diagnosis of bowel and lung cancer. The screening uptake data for the area illustrate that cervical screening and bowel cancer screening rates are below national average. These figures are worse in more deprived localities with large numbers of Black and Minority Ethnic communities.”

**What did the CCG decide to do as a result?**

“The CCG are in collaboration with the CRUK Facilitator to raise awareness of cancer and improve early diagnosis and cancer prevention. The CCG is working hard to improve screening rates and therefore the earlier diagnosis of cancer. Support is being provided to General Practice who will work to improve awareness and support patients who should be attending screening appointments. The CCG welcome the CRUK Cancer Awareness Roadshow in the area to address the low levels of cancer awareness and screening among the diverse groups that reside here and to reduce the health inequalities in screening.”

Additional to CCG reports, the NCDA team issued regional reports based on CRUK facilitator areas. These reports did not include national NCDA comparator data and were therefore of limited value, but rather designed to show the potential of NCDA data at regional level, stimulating interest in future audit rounds. As a result, the Programme Manager was invited to dial into a meeting of the South West Cancer Network to present the South West regional NCDA report, which created interesting discussion about the value of the audit at regional level of participation had been higher.
In May 2018 Public Health England also made available NCDA reports based on Cancer Alliance footprints. Like the regional reports, these often only included data from a limited number of practices and were not representative, therefore learning from these reports is likely limited; however they did include a national comparator. These reports will be used to demonstrate the potential value of the NCDA at Cancer Alliance level to encourage Alliances to support and endorse the audit in their region. Cancer Alliance reports will be made available alongside the practice and CCG reports in future audits.

Online information
Cancer Research UK and the RCGP have websites dedicated to information about the NCDA. Website traffic to these sites is monitored to provide an indication of interest in the topics and interaction with content.

CRUK’s NCDA landing page received 991 views and 754 unique views between 1 November 2017 and 31 May 2018. The section of the page focused on the key findings of the audit, which has been available since December 2017, had 290 views and 243 unique views between 19 December and 31 May. Average time spent on this part of the site was between 4 and 5 minutes. Most visitors of the NCDA-related pages were from the UK, with others accessing the pages from the US, Ireland, the Netherlands and other countries across the world.

The NCDA data collection template, which was developed to allow practices to audit diagnoses in the period between official audits, was made available in December 2017 on the CRUK website. The page that this tool is embedded within received 352 views between 1 November 2017 and 30 June 2018; after March 2018, the template was downloaded 41 times (36 unique downloads; no download data for the template is available before March).

The RCGP page covering the audit was focused on the previous audit findings (2009/10) until being updated on 8th of March 2018 (there was a delay in updating the page which had been due to be updated on 19th of December). Between 1st April and 30th June 2018, when the new content was available, the site had 233 views (190 unique views).

The RCGP also have a more generic page about cancer, which includes information about the NCDA and offers the QI toolkit for the Early Diagnosis of Cancer as a resource. On 8th of March additional information to align with the RCGP page covering the audit was added to this page, including the NCDA data collection template. Between 1st April and 30th of June, this site had 147 views (130 unique views).

Conferences and presentations
An overview of recruitment figures was presented at CRUK’s ED Conference in April 2017. Preliminary findings were presented at the PHE Cancer Data and Outcomes Conference (CDOC) in June 2017, as well as the National Cancer Research Institute Conference in November 2017. Ruth Swann (analyst) presented posters and talks at these conferences.

In March 2018, Ruth Swann presented preliminary findings from her analysis of the avoidable delay data at the British Journal of General Practice Research Conference. Four presentations (3 short orals, 1 e-poster) were presented at the Cancer and Primary Care International Network (Ca-PRI) conference in April 2018. Greg Rubin provided an overview of key findings, Ruth Swann presented on avoidable delays, Sean McPhail presented work on emergency presentations, and Jana Witt gave an overview of the quality improvement impact.
NCDA Impact Report - England

The NCDA also featured in several talks at the PHE CDOC conference in June 2018, where it was mentioned in a keynote by Jem Rashbass, and three short oral presentations by Ruth Swann (avoidable delays), Sean McPhail (emergency presentations) and Clare Pearson (vague symptom pathways), as well as a poster presented by Jana Witt (quality improvement).

Responses to presentations at conferences were generally positive. The presenting authors were asked a number of questions, including questions relating to future research with the audit data, e.g. on rare cancers, as well as questions about the quality improvement work. There was interest in the audit from a range of conference attendees, with some connections made for follow-up.

Later in 2018, Greg Rubin will be presenting a symposium at the UICC World Cancer Congress in Kuala Lumpur which will include information about the NCDA findings relating to co-morbidities.

National publication

Paper
The first paper describing the practice and patient characteristics, and outlining key findings from the English NCDA was published in December 2017 (online first) in the British Journal of General Practice (BJGP). The printed publication followed in January 2018. The paper is available as an Open Access publication at http://bjgp.org/content/early/2017/12/18/bjgp17X694169.

Figure 9 – Altmetrics for BJGP paper (as of May 2018)

Press and media coverage
The publication of the paper in the BJGP and a press release by the Press Association led to media activity in print and online media, including professional outlets and national papers such as the Times, the Daily Mirror and the Daily Mail.

The audit showed that GPs generally refer promptly (within 1-2 consultations); however, coverage in mainstream media mostly focused on the 40 day interval from presentation to diagnosis, and concerns around the ability of providers to meet the 28 day Faster Diagnosis Standard due to be introduced in 2019/20. This provided opportunities to highlight what the partner organisations are working to achieve through the audit and other initiatives: improve patient care through a validated programme of work with built-in elements of quality and service improvement.

Coverage in professional outlets included articles in GP Online, Pulse, Perspectives in Public Health and Medscape. The Pulse article was discussed by six GPs in the comments section
and comments were generally positive about the finding that GPs refer promptly, but there was a clear feeling among responding GPs that this finding would not feature in the mainstream media.

**Blogs and other publications**
To accompany the publication of the paper, partner organisations involved in the NCDA produced a number of additional publications, including two blogs (CRUK and PHE) published on 19th of December and a newsletter article (RCGP) published in January.

**Social media**
The link to the paper was shared on social media by organisations and individuals involved in the audit. The British Journal of General Practice, where the audit results were published, also tweeted about the findings. And PHE tweeted about their blog specifically.

Figure 10 – Examples of tweets relating to the BJGP paper

There were additional tweets from organisations and individuals not directly involved in the audit, including Bowel Cancer UK, BrainTumourResearch and CanTest. This demonstrates the reach of the audit beyond partner organisations and the interest of specialist organisations, such as charities focused on specific cancer types. The Programme Manager also received emails from some organisations (e.g. Pancreatic Cancer UK), interested in the audit data and has signposted to the paper and the Office for Data Release.
Conclusion and forward view
In the first year following release of practice and local level results in May 2017, the NCDA has resulted in numerous changes to individual GPs’ practice, as well as processes and systems in GP surgeries, to improve the early diagnosis of cancer. The audit also highlighted examples of good practice and audit results were used for GP appraisal, re-validation and CQC inspections.

The first paper outlining the key findings from the English audit received attention in the press and on social media, sparking debates about the time taken from first presentation and referral to diagnosis, as well as diagnostic workforce issues around primary care-led investigations.

Further research on the dataset continues to answer specific questions and provide more detailed insights into pathways to cancer diagnosis.

The lessons learnt from this audit are being used to inform and refine the approach to the next round of the NCDA, due to take place in 2019.