University of Strathclyde Glasgow

Centre for Sustainable Delivery

NHS SCOTLAND

NHS Scotland Rapid Cancer Diagnostic Services (RCDS)

Evaluation Summary

February 2024

Introduction

Compelling evidence has emerged in recent years from Rapid Diagnostic Centres (RDCs), based on the Danish model, and continue to be embedded across NHS England and NHS Wales. They offer a timely, often one-stop environment for clinically complex patients with potentially serious non-specific symptoms suspicious of cancer, such as weight loss, fatigue, nausea and abdominal pain.

In NHS Scotland, around 60% of cancers are diagnosed through an urgent suspicion of cancer (USC) route, therefore the remainder of cancers come through alternative routes (for example, routine or urgent referrals from primary care or presentation via Accident and Emergency). Earlier detection is vital, with waits remaining challenged across NHS Scotland as a result of the Covid-19 pandemic, and cancer diagnoses via emergency routes often associated with later stage disease and poorer clinical outcomes.

Prior to Scotland's two-year pilot, patients that do not meet the Scottish Referral Guidelines for Suspected Cancer, or who present with non-specific suspicious symptoms, would have to undergo a series of tests coordinated by primary care. This could result in delayed diagnosis and unnecessary examinations being performed with potential poorer patient outcomes.

Rapid Cancer Diagnostic Services (RCDS) were formed within existing NHS Scotland infrastructure to provide primary care with access to a new fast-track diagnostic pathway for patients with these non-specific symptoms suspicious of cancer.

Scottish Government policy in recent years, including the NHS Recovery Plan, published August 2021, Cancer Recovery Plan – Recovery & Redesign: An Action Plan for Cancer Services, published 2020, and most recently the Cancer Strategy for Scotland (2023-2033), published June 2023, commit to growing Scotland's network of RCDSs.

Following a competitive procurement process, the University of Strathclyde was invited by the Centre for Sustainable Delivery (CfSD), hosted by NHS Golden Jubilee, to evaluate Scotland's pilot RCDS site, to better understand their role and ensure optimal components are embedded in future models.

An interim report was published November 2022 with a final report, assessing the first two years of RCDSs in NHS Scotland published February 2024.

Full details of the study objectives, design, setting and methods can be found in the University of Strathclyde's report.

This document has been produced to summarise its findings for key stakeholders.

At the time of the final report's publication, there were five RCDSs live in NHS Scotland – NHS Ayrshire & Arran, NHS Dumfries & Galloway, NHS Fife, NHS Borders and NHS Lanarkshire.

For any further information on anything in this document please contact the Cancer Improvement and Earlier Diagnosis Team via cfsdcancerandedteam@nhs.scot.

Key Findings

Over the two-year evaluation period**:**

- 3,616 RCDS referrals were received and 2,489 (~69%) accepted. The remainder of referrals were largely either redirected to site-specific cancer pathways (~14%) or did not progress onto the RCDS pathway as they didn't meet referral criteria (~13%). The remainder of referrals (4%) were redirected for a number of reasons including a patient being unfit for the pathway; a suspected recurrence for investigation on a site-specific cancer pathway; a non-urgent non-cancer diagnosis suspected; and another patient been seen by the RCDS in the last 3 months (as per RCDS exclusion criteria).

- The overall mean time to vetting was 1.5 days (median 1 day, and IQR* 0-2 days).

- The conversion rate from RCDS referral to cancer was 11.9%. Literature suggests that similar pathways' conversion rates vary between 7.2%- 15%.

- A pre-cancer diagnosis was made in 6.4% of cases and non-cancer or no diagnosis given to the remainder (40.7% and 41.1% respectively).

- The overall mean time from RCDS referral to outcome was 16.3 days (median 14 days, IQR 10-21 days).

- The vast majority of patients that were not diagnosed with cancer were directed back to primary care (>50%).

- CT scanning was the most frequent diagnostic test performed.

- A range of cancer types were diagnosed - Lung and Hepato-Pancreato-Biliary (HPB) are the two most commonly found.

- The overall median time from RCDS referral to cancer treatment was 62 days (IQR 42.5-102 days).

- A higher proportion of females were referred - 58.5% to 41.5% male. Mean age of referrals was 68 years (median 70) – a higher age was noted in patients with a cancer diagnosis.

- Unexplained weight-loss was the most common symptom - weight loss was distributed similarly between cancer and non-cancer diagnoses whilst 'unexpected lab results,' 'GP gut feeling' and 'nausea/appetite loss' were found to be noticeably more common in patients diagnosed with cancer. Cognitive impairment was the only co-morbidity with a positive correlation to a cancer diagnosis.

- Clinical Frailty Scores (CFS) for RCDS patients had a modal score of 4 (vulnerable). Cancer patients tended to have a higher score in comparison to patients not found to have cancer. As with clinical frailty scores, higher ECOG ^ performance scores (0= fully active, 4= completely disabled) tended to correlate with cancer diagnoses.

* IQR is a measure of statistical dispersion, which is the spread of the data. The IQR may also be called the mid-spread, middle - 50%.

^ The ECOG Performance Status Scale describes a patient's level of functioning in terms of their ability to care for their self, daily activity, and physical ability (walking, working, etc.).

Key Themes

RCDS Referrals

Overall, the quality of RCDS referrals was ‘reasonable’. However, there were referrals with missing data – often relating to blood bundles and weight. The correlation of ‘unexpected lab results’ to a cancer diagnosis highlights the importance of ensuring that the initial tests are completed at the point of referral. Additionally, despite a national patient information resource being developed with third sector and patient representatives, some patients were not aware that they had been referred to a RCDS.

RCDS Delivery

Having a single point of contact is perceived by patients and professionals to be an optimal component of the RCDS. Having both virtual and face to face options (i.e. a hybrid model) appear to support patient preference and accessibility.

The essential role of Radiology was clear from the evaluation and having dedicated slots supports the rapidity of the pathway. Meanwhile, the Multidisciplinary Team (MDT) is considered an important component of the RCDS particularly for complex cases requiring further investigation.

Post-RCDS Pathway

A significant proportion of patients (81.8%) who go through a RCDS are promptly provided with the reassurance of a non-cancer or no diagnosis, reducing their and their family’s anxiety. The experience of these patients, once they leave a RCDS, can be variable and dependent upon a number of factors, including the extent of any unresolved symptoms. Ensuring sufficient access to primary care clinicians and tackling longer waiting times for specialist referrals (urgent or routine) are areas where wider system improvements could help support the experience and care of those patients post-RCDS discharge.

Professional Experience

Professionals involved in the RCDS who were interviewed expressed high levels of satisfaction with the service, both in terms of the positive impact it had for patients, and the opportunity for experiential learning that it provided them. Such positive experiences were also reflected in primary care survey results with >85% in year 1, and 84% in year 2 reporting a rating of 4 or more (out of 5 - higher score better) for overall RCDS experience.

> **‘I like that I'm making a positive difference for patients. You know, there's more to it than just sticking them through the scanner and then telling them what it is. I'm finding it professionally very engaging and satisfying as well, because I've got that bit more time with people and I feel like we're kind of getting to the root of what's going on.’**
>
> **(Prof 21).**

Patient Experience

Positive patient experience appears to be mainly attributed to the speed of referral, reduction in waiting times for diagnostic tests, having a single point of contact and enhanced information and communication throughout the RCDS pathway.

- Smart Survey data (from 601 patients) demonstrated that over 96% rated the service as 8 or more out of 10 (higher score being positive).
- Approximately 94% responded positively when asked about the level of care provided by the medical staff working together.
- 99% felt they were treated with dignity and compassion during their time under the care of the RCDS.

> **The pathway experience was in sharp contrast to everything else. To have that little diamond in the middle, where you really felt held and cared for, you know, that somebody was on it.'**
>
> **(Patient 31)**

Quality communication with the patient during the pathway was noted and appears to be attributed to the single point of contact that was provided to patients when they start the pathway, either by a Pathway Navigator or Clinical Nurse.

The quality of information provided by these individuals, and the availability of them to answer any questions that the patient may have, provided reassurance.

This quality of communication was evidenced both in patient interviews and survey responses.

- Almost 98% of survey respondents felt that they could ask questions or get more information as needed while under the RCDS's care.
- 92% knew of a named contact that could provide this information.
- 90% who tried to contact their named contact found it easy to do.
- 94% of respondents reported that they were given clear information about next steps.
- 94% said the results of their tests were explained in a clear way by the RCDS team.

The speed at which patients move through the pathway and the reduction in time worrying about test results, appeared to greatly enhance the patient experience.

- 88% of survey respondents agreed that their referral to RCDS helped them understand the cause of symptoms more quickly.
- 94% felt that the time taken to complete the tests was "about right".

The Optimal Components

Based on this extensive evaluation, the following components have been found to contribute to an effective RCDS model in NHS Scotland for patients with non-specific symptoms suspicious of cancer (in no particular order):

1. Prompt vetting and triage of referrals by the RCDS team, from primary care or otherwise.

2. Personalised single point of contact provided for each patient.

3. Coordinated testing, including close liaison with the Radiology department given the reliance on Computed Tomography (CT) scans as a diagnostic test.

4. Diagnostic decision-making by the RCDS team/MDT.

5. Appropriate onward referrals by the RCDS team for patients with an initial diagnosis or suspicion of cancer to a site-specific cancer pathway.

Cost/Effectiveness

The RCDS model in Scotland is cost effective, comparing favourably to findings from other similar countries. For example, costs are in line with previous research undertaken by NHS Wales, with Scotland's mean cost per RCDS patient of £650 (£646.18 in Wales). A mixed-methods model (virtual and face-to-face clinics) is expected to be more cost effective.

The RCDS model in Scotland tends to benefit from economies of scale; the average cost per patient tends to fall as activity increases.

The NHS Wales evaluation found that the cost per patient with similar presenting symptoms, who were not managed through a RDC (similar model to Scotland's RCDS), was in excess of £2,000. They concluded that, on this basis, their RDC model was cost effective.

The University of Strathclyde carried out a cost effectiveness analysis comparing RCDS to a general surgical clinic (the assumed default if no RCDS was available) for NHS Fife and NHS Dumfries & Galloway. The RCDS was significantly quicker than the estimated time to diagnosis in a general surgical clinic (11.4/ 13.6 days compared to 77.5/ 78.7 days respectively). On the basis of improved quality of life measures in those patients who have a diagnosis over those waiting to receive a diagnosis, RCDS was cost effective compared with a general surgical clinic. This provides additional information to the Welsh analysis and is supportive of the RCDS model.

In NHS Ayrshire & Arran, the RCDS was compared with GP direct access to CT as the pathway for patients with non-specific symptoms suggestive of cancer. Access to GP direct access to CT scanning is outlined in guidance from the Scottish Clinical Imaging Network (2023). Using 2022 data from NHS Ayrshire & Arran, the conversion rate to cancer from direct access to CT was 11.3%. The time from CT request to report was longer in the direct access pathway than the RCDS (mean 27.5 days versus 21.9 respectively). Unfortunately, a robust cost-effectiveness analysis could not be carried out based on the information available. Given that the two pathways ran in parallel, and both detected cancer above the Scottish Referral Guidelines for Suspected Cancer threshold (3%), it is likely that RCDS and direct access complemented each other to diagnose a wider range of patients.

Conclusion

The evaluation of Scotland's RCDSs to date shows that the model delivers a quality service at speed, is cost effective and highly valued by patients and staff.

The RCDS reduces the median time from referral to diagnosis for patients with non-specific symptoms suspicious of cancer.

It demonstrates, for those Boards where GP direct access to CT is already established, that a RCDS model can work in parallel to meet different primary care needs. Primary care education and clear guidance will prove integral in ensuring these services work in tandem and help get the right patient onto the right pathway earlier.

RCDSs were formed to address inequitable access to a cancer diagnostic pathway for those that don't meet the Scottish Referral Guidelines for Suspected Cancer. In doing so, the RCDS model is now operating under more favourable conditions than site-specific pathways. Ensuring learning from this gold-standard model is filtered into site-specific pathways will be key to avoid a widening inequality gap.

A Clinical Review of the Scottish Referral Guidelines for Suspected Cancer will be undertaken in 2024 and will consider a nationally agreed non-specific symptoms pathway. Whether this cohort then become tracked on a 62-day pathway will be considered as part of a forthcoming Clinical Review of Cancer Waiting Times (CWT) standards in Scotland.

The evaluation has also highlighted areas for future research, including longer-term patient follow-up, particularly those with a non-cancer diagnosis. This would help to better understand pathway efficiencies post-discharge and quantify the true impact of the RCDS model.

"Scotland's Rapid Cancer Diagnostic Services (RCDS) are working well. They're achieving what they set out to do – find cancer – while delivering a high standard of quality care at speed. RCDS patients are complex and the specialist input that the RCDS can offer them, and concerned primary care clinicians, marks a gear-change in how we diagnose cancer in Scotland. RCDSs should be used as an exemplar for cancer care with learning embedded across all pathways."

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