

Review of Cancer Quality Performance Indicators

Acute Leukaemia

October - 2023

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Table of Contents

1.0 Executive Summary	2
2.0 Introduction.....	4
2.1 Cancer Quality Performance Indicators	4
2.2 Acute Leukaemia in Scotland	7
3.0 Methodology.....	7
3.1 Overview	7
3.2 In Scope	8
3.3 Out of Scope.....	8
3.4 Limitations of the Review Process	8
3.5 Data Analysis	9
3.6 Key Lines of Enquiry Development	9
3.7 Review Meetings.....	10
4.0 QPI Review Findings	10
4.1 QPI 1: Complete Diagnostic Panel.....	10
4.2 QPI 3: MDT Discussion	13
4.3 QPI 9: Tissue Typing for Transplant.....	16
4.4 QPI 12: Palliative Treatment	19
5.0 Conclusion	23
6.0 Recommendations	25
7.0 Acknowledgement	25
8.0 Leukaemia Care	26
9.0 References.....	26
10.0 The Review Team	26
11.0 Appendix	27

1.0 Executive Summary

During spring 2020, the Scottish Government asked Healthcare Improvement Scotland (HIS) to carry out an external review of the Cancer Quality Performance Indicators (CQPIs) to provide national comparability, highlight areas of concern and unwarranted variation on a national scale. Thus supporting the aims and ambitions of the Scottish Government cancer recovery plan.

Please click on the link below to access the Recovery and redesign: cancer services – action plan.

[Recovery and redesign: cancer services – action plan](#)

The HIS CQPI team (the review team) developed a rolling programme of reviews beginning with melanoma before progressing to acute leukaemia.

Using the acute leukaemia data for 2017-2020 from the Scottish Cancer Registry and Intelligence Service (SCRIS) dashboard, the review team identified where performance across the three regional cancer networks and 14 territorial NHS boards differed significantly from the QPI target or Scotland overall. At the time this work was carried out the 2017-2020 data was the most up-to-date available. Acute leukaemia QPI data is reported on the SCRIS dashboard as an aggregated three year percentage due to the small number of cases recorded by each NHS board. It is different to other tumour specific groups (TSG) where data from one year is reported.

The analysed data covers the pre-pandemic period and the initial stages of the pandemic period. This has impacted on both the review processes and the delivery of cancer care. In some cases the NHS boards have cited the pandemic in their evidence. The review team state in the report where this has been taken into account.

Following analysis of the data, key lines of enquiry (KLoE) were developed and shared with the regional cancer networks. Following analysis of the network responses to our KLoE, it was agreed that review meetings were unnecessary. While the review team included all acute leukaemia CQPIs on the SCRIS dashboards as part of the analysis, the focus of the review was to identify unwarranted variation - there is an explanation of unwarranted variation on page nine of this report, along with areas of concern. The table in appendix 1 summarises unwarranted variation based on the target for acute leukaemia QPI data 2017-2020.

The NHS boards were able to demonstrate they were meeting the relevant targets for the following acute leukaemia QPIs:

- QPI 5 (i): AML Early Deaths (Between 16 & 60)
- QPI 5 (i): AML Early Deaths (Over 60)
- QPI 5 (ii): ALL Early Deaths (Between 16 & 60)
- QPI 5 (ii): ALL Early Deaths (Over 60)
- QPI 7: Deaths in Remission (16 yrs. and over)
- QPI 10 (i): Intensive Chemotherapy in Older Adults
- QPI 13: Early Deaths in Patients with Acute Promyelocytic Leukaemia

Analysis of the above QPIs showed no evidence of unwarranted variation. Performance for these QPIs were judged to be 'in control' and are therefore not included in the report.

Clinical trial QPIs for acute leukaemia are currently under review at a national level. To avoid potential duplication of work, the undernoted QPIs were not included in this review:

- QPI 8: Clinical Trials with Curative Intent (Between 16 & 60)
- QPI 10 (ii): Intensive Chemotherapy in Older Adults treated within a clinical trial
- QPI 11: Clinical Trials with Non Curative Intent
- QPI 14: Clinical Trials and Research Study Access

Analysis of the data identified unwarranted variation in the following four QPIs at a NHS board level.

- QPI 1: Complete Diagnostic Panel
- QPI 3: Multi-Disciplinary Meeting
- QPI 9: Tissue Typing for Transplant
- QPI 12: Palliative Treatment

During the HIS review, there was a formal review of acute leukaemia QPIs, which resulted in a change in definition of some QPIs. Some QPIs and targets were changed at formal review, however the main changes relate to the target levels. Many targets were reduced to account for the growing number of patients that are ineligible for a trial or where a trial is not the optimal choice of treatment. In addition, the changes reflect the decrease in number of trials that are available. However, even under the refined QPI definitions, not all NHS boards will meet these targets.

Overall, performance for acute leukaemia QPIs across Scotland is good with many QPI targets being met. There are some specific issues highlighted in the report, particularly around documentation, which need to be addressed. NHS boards and cancer networks need to work together to develop

regional solutions, where possible, in order to develop a consistent approach to drive forward improvement.

The regional cancer networks facilitate NHS boards to collaborate and work to improve the quality of cancer care across their regions. The performance against the QPIs and the required improvement action remains the responsibility of the individual NHS boards. We will follow up on progress made within 12 months of publication of this report.

2.0 Introduction

2.1 Cancer Quality Performance Indicators

The National Cancer Quality Programme CEL 06 [2012] describes a national governance process and improvement framework for cancer care. Please click on the link below for further information about the National Cancer Quality Programme.

https://www.sehd.scot.nhs.uk/mels/cel2012_06.pdf

The CEL 06 (2012) states that Healthcare Improvement Scotland will undertake national external quality assurance by reviewing cancer quality performance indicators. The HIS CQPI team have previously carried out reviews of CQPIs from 2012-2017 and 2019.

Cancer QPIs are small sets of outcome and process focused, evidence-based indicators. They relate to key points in the cancer patient pathway deemed to be critical in providing good quality care. Currently, there are 19 specific tumour type sets of indicators.

The QPIs were developed collaboratively by expert groups of clinicians from the three regional cancer networks, NHS National Services Scotland's Information Services Division (now Public Health Scotland Data and Intelligence) and HIS.

The overarching aim of QPIs is to make sure that activity at NHS board level is focused on the following key areas:

- To improve survival rates whilst reducing variance, and
- to ensure safe, effective and compassionate person-centred cancer care.

Each QPI title is designed to be clear and measurable of indicated target performance across Scotland. The QPIs are calculated by dividing the numerator by the denominator.

Numerator: Actual number of patients who receive appropriate pathway of care and treatment specific to their tumour group.

Denominator: Total number of patients eligible for appropriate pathway of care and treatment specific to their tumour group.

The list of CQPIs which have been developed in collaboration with the three regional cancer networks, Public Health Scotland and HIS can be found by clicking on the following link:

[Cancer Quality Performance Indicators \(CQPI\)](#)

The three regional cancer networks operating in NHS Scotland are:

- The West of Scotland Cancer Network (WoSCAN), made up of NHS Ayrshire & Arran, NHS Forth Valley, NHS Greater Glasgow & Clyde and NHS Lanarkshire.
- The South East Scotland Cancer Network (SCAN), made up of NHS Borders, NHS Dumfries & Galloway, NHS Fife and NHS Lothian.
- The North Cancer Alliance (NCA), made up of NHS Grampian, NHS Highland, NHS Orkney, NHS Shetland, NHS Tayside and NHS Western Isles.

The regional cancer networks act as a conduit between Scottish Government and the NHS boards, to ensure key stakeholder representation on national groups and to maintain alignment with the new Scottish Government Cancer Strategy (2023). The regional cancer networks are also responsible for the regional collation and reporting of a range of data (including QPI data) to support service improvement, helping ensure cancer services are delivered to a high standard regionally and nationally.

NHS boards remain responsible for the delivery of cancer services and for individual NHS board performance against each tumour specific group suite of QPIs. In the instances when a NHS board does not meet the QPI target, the NHS board is required to produce an action plan with details of improvement work that will be undertaken. This should include:

- Details of the required improvement actions and who is responsible for implementation.
- Timescales for completion of the improvement actions.
- The planned approach to measure progress.
- Details of the required additional funding or development of a business case.

Action plans are collated regionally, form part of the individual TSG regional cancer network audit report, and are provided to the networks respective NHS boards.

In the instance when all NHS boards in a region fail to meet the target for particular QPIs, the regional cancer network works with them to support improvement work at a regional level. However, the responsibility and accountability for implementing and driving forward the required improvement firmly rests with the individual NHS boards.

In spring 2020, the Scottish Government asked HIS to carry out an external review of cancer QPIs to provide national comparability and highlight areas of concern and/or unwarranted variation on a national scale.

With input from an expert review team, HIS seeks to provide external quality assurance of the cancer QPI process and will:

- Identify national challenges and unwarranted variation in performance against cancer QPIs,
- document underlying issues and explanations pertaining to challenges and variation,
- review the action plans developed to improve performance, at an NHS board level,
- evaluate the impact of action plan implementation,
- highlight concerns and themes for universal learning and reviews, and
- be informed, by triangulating local, regional and national CQPI intelligence to add value and avoid duplication.

NHS Scotland has experienced an unprecedented level of pressure during 2020/2021 due to the COVID-19 pandemic. The Scottish Government published a new recovery action plan for cancer services in December 2020 that reviews the circumstances in which cancer services operate and introduces a wide range of new actions and areas of focus for cancer services. These actions will both redesign cancer services to benefit patients and increase services' resilience to future rises in COVID-19 prevalence.

One of the key aims of the cancer recovery plan is to 'Adopt a once for Scotland' approach where appropriate to cancer services. This will see the same prioritisation and delivery of services is used across Scotland, helping to ensure patients across Scotland receive equitable access to care and treatment.

By identifying and highlighting unwarranted variation and areas of concern across Scotland, the review process will support the aims and ambitions of the cancer recovery plan.

2.2 Acute Leukaemia in Scotland

In Scotland, more than 30,000 people are diagnosed with cancer each year. This report is about acute leukaemia; a cancer of white blood cells. In Scotland in 2020, there were 231 new cases of adult acute lymphoblastic and acute myeloid leukaemia and 223 registered deaths. The causes of most cases of acute leukaemia is still unknown.

The age-standardised net survival for males diagnosed with acute leukaemia from 2013-2017 in Scotland is slightly higher than that for females, at 1 and 5 years following diagnosis:

- Males 76.9% (1 year) to 60.9% (5years)
- Females 73.9% (1year) to 57.2% (5years) ¹

Net survival is a measure that takes detailed account of background mortality among cancer patients, to reflect the survival from the cancer itself. This enables a fair comparison of survival trends for different cancers, either over time, between the sexes, or between population groups. Net survival from acute leukaemia in Scotland is higher than in England, and better than many countries in Europe, but it is lower than in Sweden and France. ²

3.0 Methodology

3.1 Overview

3.1.1 Principles

The HIS Quality Assurance Directorate (QAD) adheres to the following core quality assurance principles for all our assurance work:

- User-focused – we put people who use services at the heart of our approach.
- Transparent and mutually supportive, yet independent – we promote and support a complementary approach to robust self-evaluation for improvement with independent validation, challenge and intervention as required.
- Intelligence-led and risk-based – we take a proportionate approach to inspection and review which is informed by intelligence and robust self-evaluation.
- Integrated and co-ordinated – we draw on the collective participation of relevant scrutiny bodies and other partners to share intelligence and minimise duplication of effort; and

- Improvement-focused – we support continuous and sustained quality improvement through our quality assurance work.

3.2 In Scope

The following are considered in scope for the review process:

- Review and analysis of SCRIS dashboard data.
- Review of relevant NHS board, network and national audit reports.
- Review and analysis of information from regional cancer networks and NHS boards.
- Discussions at the review meetings with cancer clinicians and regional network staff.
- Other publicly available information including net and cause specific survival where available.
- Discussions with representatives from the third sector organisation, Leukaemia Care, to include the perspectives of acute leukaemia patients.

3.3 Out of Scope

The following are out of scope for the review process:

- Assessing the accuracy of the SCRIS dashboard data.
- Consideration of the methods of collecting and calculating the CQPIs.
- Reviewing the selection and definition of CQPIs.
- Reviewing waiting time data targets.

Clinical trial QPIs for acute leukaemia are currently under review at a national level. To avoid potential duplication of work, the undernoted QPIs were not included in this review:

- QPI 8: Clinical Trials with Curative Intent (Between 16 & 60)
- QPI 10 (ii): Intensive Chemotherapy in Older Adults treated within a clinical trial
- QPI 11: Clinical Trials with Non Curative Intent
- QPI 14: Clinical Trials and Research Study Access

3.4 Limitations of the Review Process

The review process relies on data from the SCRIS dashboard, information provided by the regional cancer networks, NHS boards and other publicly available information. The data analysis and reviewing of action plans is limited to that timeframe. Many important aspects of the quality of acute leukaemia cancer care lie outside the scope of the review because the suite of CQPIs does not address them. The nature of the data available makes it possible to compare geographical entities in Scotland, but not to assess gender or socio-economic disparities in service delivery. In addition, by reviewing

acute leukaemia in isolation, themes that cut across multiple tumour groups may only emerge after we have completed additional reviews.

3.5 Data Analysis

The primary source of data was the three-year aggregated acute leukaemia data (2017-2020) from the SCRIS dashboard. Further analysis of this data was carried out by the review team to provide a deeper understanding of unwarranted variation across regional cancer networks and boards. In addition to the dashboard data, the review team analysed publicly available intelligence, including audit reports and other documentation provided by the regional cancer networks.

During this HIS review, there was a formal review of acute leukaemia QPIs, resulting in changes to definitions of some of the QPIs. The changes have been added to the relevant QPIs.

Unwarranted variation is when lower performance cannot be explained by chance variation in data - particularly evident when numbers are small, or by factors that cannot be changed by NHS boards such as geographic and demographic factors. The review team identified unwarranted variation using funnel plots, which highlight when an NHS board's performance is significantly different from the QPI target or overall performance of Scotland, to account for chance variations in smaller groups. In addition, when this analysis highlighted a greater degree of variation than expected across all areas, the review team assumed this to be due to unchangeable factors and adjusted for this, ensuring that the focus remained on unwarranted variation. By understanding unwarranted variation, the review team focused on more meaningful differences rather than potentially temporary fluctuations in data, or differences due to factors that cannot be changed by healthcare, such as age and gender composition.

3.6 Key Lines of Enquiry Development

The review team scrutinised the data and intelligence, with a focus on unwarranted variation and clinical concerns – for example, trends highlighting a decrease in performance. Following this analysis, the team developed key lines of enquiry (KLoE) for each network and NHS board.

The review team asked the regional cancer networks and NHS boards to provide a narrative on the highlighted CQPIs; including any identified problems, any further analysis, progress, and outcomes from action plans.

3.7 Review Meetings

Following analysis of the network responses to our KLoE, it was decided that review meetings were unnecessary. The review team requested additional information from two WoSCAN NHS boards, NHS Greater Glasgow & Clyde and NHS Lanarkshire, regarding QPI 3 (Multi-Disciplinary Team (MDT)) and QPI 9 (Tissue Typing for Transplant) which are detailed in the report.

4.0 QPI Review Findings

4.1 QPI 1: Complete Diagnostic Panel

Numerator: Number of patients with acute leukaemia undergoing treatment with curative intent where complete diagnostic panel undertaken defined as:

- (i) Morphology
- (ii) Immunophenotyping
- (iii) Cytogenics
- (iv) Molecular marker analysis, and
- (v) Storage of genetic material for routine diagnostic testing.

Denominator: All patients with acute leukaemia undergoing treatment with curative intent.

Rational: A complete diagnostic panel is needed to aid diagnosis and prognosis and determine the most appropriate treatment.

Target: 90%

Changes To CQPI

Molecular marker analysis added to the QPI description of requirements.

National Summary of QPI 1 Performance

After analysis, NHS Greater Glasgow & Clyde is the only NHS board to evidence unwarranted variation for this QPI. NHS Greater Glasgow & Clyde report that performance is due to poor documentation issues (rather than a failure to store genetic material) but presented no evidence to support this. If genetic material was stored and not recorded, this still raises considerations around the accuracy of patient records and the associated quality of care. This is an important QPI for patients, as a complete

diagnostic panel is required to aid diagnosis and prognosis and determine the most appropriate treatment.

WoSCAN

Performance based on 2017-2020 data

Target 90%

- **WoSCAN: 88.4% (Numerator/Denominator=145/164)**
- NHS Ayrshire & Arran: 100% ††
- NHS Dumfries & Galloway: 80% ††
- NHS Forth Valley: 100% (N/D=20/20)
- NHS Greater Glasgow & Clyde: 81.6% (N/D=71/87) *
- NHS Lanarkshire: 95.6% (N/D=43/45)

* 2 - 3 standard deviations below the target.

†† Indicates values that have been redacted where there is a risk that individuals could be identified.

Comparative regional cancer network performance and the overall Scottish performance

- SCAN: 95% (N/D= 97/102)
- NCA : 95% (N/D=55/58)
- Scotland: 92% (N/D= 297/324)

Identified Issues

Analysis identified unwarranted variation in NHS Greater Glasgow & Clyde with their performance between 2 - 3 standard deviations below the target. In addition, NHS Dumfries & Galloway did not meet the target for this QPI.

The review team asked the reasons why NHS Greater Glasgow & Clyde and NHS Dumfries & Galloway had not met the target for this QPI:

- The NHS boards explained the main reason for non-compliance with this QPI relates to documentation of storage of genetic material. When reviewing patient records it is not clear to audit staff if the genetic material has been stored or not.

Improvement Actions

NHS Greater Glasgow & Clyde and NHS Dumfries & Galloway advised the team the following improvement actions have been implemented:

- A review of all patients who did not meet this QPI has been carried out to determine if genetic material has been stored and documented in their records. Alternatively, to establish if the genetic material has not been stored and the reasons documented in the patients notes to explain why it has not been stored.
- An action has been proposed by the WoSCAN Lead Clinician to the regional Managed Clinical Network to review and document the genetic sample requirements for adult acute lymphoblastic leukaemia referrals and to ensure this information is clearly communicated to users.
- Processes are in place across all WoSCAN NHS boards to ensure audit staff can easily identify the information explaining the reasons why genetic material is not stored, if this is the case.
- A reminder has been sent by the WoSCAN Lead Clinician to staff who attend the MDT highlighting the importance of clearly recording the reasons for not storing genetic material.

Our Assessment

NHS Greater Glasgow & Clyde suggested that it may be a documentation issue but provided no evidence to support this is the case. If genetic material was not stored and not recorded, it still raises considerations around the accuracy of patient records and the associated quality of care.

The review team do acknowledge that improvements have been implemented since the previous reporting period (2014-2017). However, there is a need for further improvement across NHS Greater Glasgow & Clyde, potentially with the use of a pro-forma to ensure a consistent approach across the NHS board.

Recommendation

The review team recommend NHS Greater Glasgow & Clyde implement the use of a pro-forma to ensure all patients with acute leukaemia undergoing treatment with curative intent have genetic material stored and that this is clearly documented in their patient records.

4.2 QPI 3: MDT Discussion

Numerator: Number of patients with acute leukaemia discussed at the MDT within eight weeks of diagnosis.

Denominator: All patients with acute leukaemia.

Rationale and Evidence: Evidence suggests that patients with cancer managed by a MDT have better outcomes. There is also evidence that the multidisciplinary management of patients increases their overall satisfaction with their care

Target: 95%

National Summary of QPI 3 Performance

Following analysis¹, the review team did not identify unwarranted variation in any NHS board. However all WoSCAN NHS boards and NHS Highland did not meet the target. This is an important QPI in terms of the patient journey, as evidence suggests that patients with cancer managed by a MDT have better outcomes. There is also evidence that the multidisciplinary management of patients increases their overall satisfaction with their care.

WoSCAN

Performance based on 2017-2020 data

Target 95%

- **WoSCAN: 86.9% (Numerator/Denominator=299/344)**
- NHS Ayrshire & Arran: 84.1% (N/D=37/44)
- NHS Dumfries & Galloway: 82.6% (N/D=19/23)
- NHS Forth Valley: 92.9% (N/D=39/42)
- NHS Greater Glasgow & Clyde: 87.7% (N/D=143/163)
- NHS Lanarkshire: 84.7% (N/D=61/72)

Comparative regional cancer network performance and the overall Scottish performance

- SCAN: 97% (N/D=187/193)
- NCA: 95% (N/D=137/144)
- Scotland: 91% (N/D=623/681)

¹ Initial analysis highlighted greater variation than expected across all areas. Funnel plot limits at two and three standard deviations were adjusted for this.

Identified Issues

The review team asked the reasons why no WoSCAN NHS board had met the target for this QPI:

- Some acute leukaemia patients need extensive molecular and cytogenetic results and even Next Generation Sequencing (NGS) data to inform the MDT discussion. NGS is used to detect variants and mutations in cancer cells. If these cases are discussed at MDT, before this information is available, then the MDT discussion will not be fully informed and potentially an incorrect treatment plan may be decided. If there is a delay in receiving the information, the patients may not meet this QPI.
- All WoSCAN NHS boards have reviewed and provided detailed evidence for all cases which did not meet this QPI. In many cases when the disease is advanced, patients may not survive and die within eight weeks before the MDT is due to take place.

Improvement Actions

The review team reviewed all WoSCAN NHS board actions plans, which highlighted the need to examine local processes and identify ways in which to improve timely MDT discussion. These are detailed below:

- NHS Lanarkshire introduced new measures last year to highlight to the MDT coordinator all new patients diagnosed with acute leukaemia at the time of diagnosis. This helps ensure the cases are captured and discussed at MDT within the eight week timeframe. Performance has risen from 68.2% in 2018/2019 data to 89.3% in 2019/2020.
- NHS Greater Glasgow & Clyde now have a Clinical Nurse Specialist in post who manages a patient database, documents a weekly leukaemia team discussion and prompts patient discussion at the appropriate MDT.
- NHS Dumfries & Galloway have implemented changes to the registration process to ensure all patients are formally discussed at the MDT.
- NHS Ayrshire & Arran had a number of patients who presented with advanced and/or rapidly progressive disease and died within a few days of the planned MDT discussion. For this reason, these patients are often discussed at monthly Mortality and Morbidity meetings rather than the MDT.

Our Assessment

The review team acknowledge that patients may die before the MDT meeting and therefore the QPI definition could be changed to reflect this. The review team feel patients who die before the 8-week target should be an exclusion in this QPI.

The review team also acknowledge that there are a number of complex tests associated with diagnosis of acute leukaemia and these results are needed before the patient is presented at the MDT discussion.

However, the review team note performance is generally better across the other regional cancer network NHS boards than across WoSCAN NHS boards.

Recommendation

The review team recommend WoSCAN NHS boards and WoSCAN work together to share good practice and, where possible, develop a regional solution to ensure timely MDT discussions take place. This will help develop a consistent approach and drive forward improvement.

In addition, the review team recommend all WoSCAN NHS boards closely monitor their performance, ensuring the improvement actions are effective. The review team will review progress of the WoSCAN NHS boards' performance in 12 months from publication of this report.

NCA

Performance based on 2017-2020 data

Target 95%

- **NCA: 95.1% (Numerator/Denominator=137/144)**
- NHS Grampian: 95.5% (N/D=64/67)
- NHS Highland: 91.7% (N/D=33/36)
- NHS Tayside: 97.6% (N/D=40/41)

Comparative regional cancer network performance and the overall Scottish performance

- SCAN: 97%(N/D=187/193)
- WoSCAN: 86.9% (N/D=299/344)
- Scotland: 91% (N/D=623/681)

Identified Issues

The review team asked for an explanation why NHS Highland did not meet this QPI:

- NHS Highland stated that they have reduced MDT coordinator capacity in comparison to other NHS boards, so consultant hematologists are highlighting patients for discussion at MDT. As there is limited MDT coordinator capacity, there was no mechanism to identify the patients not discussed at MDT.
- NHS Highland highlighted that small numbers can affect the performance for this QPI. Small numbers are more prevalent across NHS Highland, which has the lowest catchment population of the North of Scotland cancer centres.

Improvement Action

- The MDT coordinator, based at Raigmore Hospital has recently developed procedures to ensure all relevant patients are now listed for MDT discussion. These procedures include the use of a rolling cancer-tracking list and reviewing the patient results from Hematological Malignancies Diagnostic Service based in Leeds.

Our Assessment

The review team acknowledge the improvement action taken by NHS Highland. The review team feel this should improve performance enabling NHS Highland to meet this target in the future.

4.3 QPI 9: Tissue Typing for Transplant

Numerator: Number of patients with acute leukaemia between 16 and 65 treated with curative intent with a specimen sent to the laboratory for tissue typing at diagnosis.

Denominator: All patients with acute leukaemia between 16 and 65 being treated with curative intent.

Rationale and Evidence: Tissue typing is essential for patients who are eligible for transplant and being treated with curative intent. It ensures timely progression to transplant should that be required.

Target: 90%

Changes To CQPI

Exclusion added for patients with Acute Promyelocytic Leukaemia (APML) as this group would not be expected to require a transplant.

Footnoted added that tissue typing should be performed within 7 days of diagnosis.

National Summary of QPI 9 Performance

The review team identified unwarranted variation in the following NHS boards²:

- NHS Greater Glasgow & Clyde
- NHS Lanarkshire

The overall performance of Scotland was 76%, which is well below the target of 95%. This is an important QPI for patient outcomes as tissue typing is essential for patients who are eligible for transplant and being treated with curative intent. It ensures the diagnosis is correct to ensure a suitable tissue match.

WoSCAN

Performance based on 2017-2020 data

Target 90%

- **WoSCAN: 67.5% (Numerator/Denominator = 81/120)**
- NHS Ayrshire & Arran: 83.3% (N/D=5/6)
- NHS Dumfries & Galloway: 100% ††
- NHS Forth Valley: 100% ††
- NHS Greater Glasgow & Clyde: 57.8% (N/D=37/64) *
- NHS Lanarkshire: 65.6% (N/D=21/32)

* 2 - 3 standard deviations below the target.

†† Indicates values that have been redacted where there is a risk that individuals could be identified.

Comparative regional cancer network performance and the overall Scottish performance

- SCAN: 80% (N/D=56/70)
- NCA: 93% (N/D=38/41)
- Scotland: 76% (N/D=175/231)

² Initial analysis highlighted greater variation than expected across all areas. Funnel plot limits at 2 and 3 standard deviations were adjusted for this.

Identified Issues

Analysis identified unwarranted variation in NHS Lanarkshire and NHS Greater Glasgow & Clyde with performance of NHS Greater Glasgow & Clyde between 2 - 3 standard deviations below the target. In addition, NHS Ayrshire & Arran did not meet the target.

The review team asked why NHS Ayrshire & Arran, NHS Lanarkshire, NHS Greater Glasgow, & Clyde did not meet this QPI:

- NHS Ayrshire & Arran, NHS Lanarkshire and NHS Greater Glasgow & Clyde have reviewed all cases who did not meet this QPI. One of the main reasons is that a transplant is not always an appropriate treatment option for some patients. This includes patients with high-risk disease, for example APML, or patients with comorbidities and/or fitness issues that would preclude transplantation. The QPI definition has recently been changed with an exclusion added to support the treatment option that a transplant is not appropriate for some patients.
- In some cases tissue typing is performed beyond seven days of diagnosis. The reason for this is not being documented and therefore not picked up by audit staff.

Improvement Actions

NHS Ayrshire & Arran, NHS Lanarkshire and NHS Greater Glasgow & Clyde have carried out the following improvement actions:

- A reminder has been sent to all WoSCAN NHS boards to record the reasons at MDT why tissue typing was not performed in patients being treated with curative intent.
- In NHS Greater Glasgow & Clyde, a specific question was added to the current MDT documentation which acts as a prompt.
- Although NHS Greater Glasgow & Clyde have taken action, they want to improve this further by adding a specific question to the new Microsoft Office 365 MDT form, however this is not yet in operation.

Our Assessment

The recent change in QPI definition to exclude APML cases will ensure the QPI is a more accurate quality measure of the patient pathway.

The review team note the improvement actions, but are not confident this will ensure NHS Ayrshire & Arran, NHS Lanarkshire and NHS Greater Glasgow & Clyde will meet the target in the next reporting period.

Recommendation

The review team recommend NHS Ayrshire & Arran, NHS Lanarkshire and NHS Greater Glasgow & Clyde closely monitor their performance, ensuring the improvement actions for tissue typing of patients eligible for transplant are effective and driving forward change. In particular, the review team believe a more robust approach than reminding staff may be required to generate improvement. The review team will review progress of the WoSCAN NHS boards' performance in 12 months from publication of this report.

4.4 QPI 12: Palliative Treatment

Numerator: Number of patients with acute myeloid leukaemia who are suitable only for treatment with non-curative intent who receive an appropriate palliative systemic anti-cancer therapy (SACT) regime.

Denominator: All patients with acute myeloid leukaemia who are suitable only for treatment with non-curative intent.

Rationale and Evidence: treatment with palliative SACT is recommended to optimise disease control while avoiding serious treatment-related toxicities. Evidence suggests palliative SACT in this indicator has an associated quality of life benefit for patients.

Exclusion: Patients who refuse chemotherapy treatment. Patients with adverse cytogenetics.

Target: 55%

Changes to CQPI

Target reduced from 55% to 40% to account for a more realistic clinical cohort of patients e.g. the increasing elderly population and number of frail patients.

QPI terminology changed to focus on those patients that are not suitable for remission inducing SACT rather than those being treated with 'non-curative' intent.

Exclusion wording changed to '...decline SACT treatment' for consistency.

National Summary of QPI 12 Performance

Analysis³ identified unwarranted variation in the following NHS boards:

- NHS Fife

³ Initial analysis highlighted greater variation than expected across all areas. Funnel plot limits at 2 and 3 standard deviations were adjusted for this.

- NHS Dumfries & Galloway
- NHS Forth Valley
- NHS Greater Glasgow & Clyde
- NHS Lanarkshire
- NHS Highland
- NHS Grampian

This QPI is important for patients as treatment with palliative SACT is recommended to optimise disease control while avoiding serious treatment-related toxicities. Evidence suggests palliative SACT in this indicator has an associated quality of life benefit for patients.

SCAN

Performance based on 2017-2020 data

Target 55%

- **SCAN: 53.3% (Numerator/Denominator = 24/45)**
- NHS Borders: 50% ††
- NHS Fife: 31.3% (N/D=5/16)
- NHS Lothian: 68% ††

†† Indicates values that have been redacted where there is a risk that individuals could be identified.

Comparative regional cancer network performance and the overall Scottish average

- WoSCAN: 36.5% (N/D=38/104)
- NCA: 52% (N/D=25/48)
- Scotland: 44% (N/D=87/197)

Identified Issues

The review team asked the reasons why NHS Fife did not meet the target:

- NHS Fife advised the patients who did not meet this QPI were deemed unfit for chemotherapy and received the best supportive care or alternative treatment.

Our Assessment

NHS Fife explained the reason for not meeting the target was the high number of patients with co-morbidities, which precluded SACT treatment. NHS Fife's performance has declined from the previous

reporting period (2014-2017) when it achieved 52% (11/21). The review team will review the performance of NHS Fife in 12 months from publication of this report to ensure that it meets the new target of 40%.

WoSCAN

Performance based on 2019/20 data

Target 55%

- **WoSCAN : 36.5% (Numerator/Denominator=38/104)**
- NHS Ayrshire & Arran: 100% (N/D=11/11)
- NHS Dumfries & Galloway: 60% (N/D=6/10)
- NHS Forth Valley: ++
- NHS Greater Glasgow & Clyde: 30.2% (N/D=16/53)
- NHS Lanarkshire: ++

++ Indicates values that have been redacted where there is a risk that individuals could be identified.

Comparative regional cancer network performance and the overall Scottish average

- SCAN: 53.3% (N/D=24/45)
- NCA: 52% (N/D=25/48)
- Scotland: 44% (N/D=87/197)

Identified Issues

The review team enquired why NHS Forth Valley, NHS Greater Glasgow & Clyde and NHS Lanarkshire did not meet the target:

- We were advised that all NHS boards have carried out a thorough review of all cases, which confirmed that patients were not suitable for treatment due to multiple co-morbidities and were only suitable for supportive and palliative care.
- The NHS boards advised that older patients are increasingly being considered for remission induction therapy, thereby reducing the proportion of patients eligible for palliative treatment. This leaves an older and more fragile cohort eligible for palliative treatment than was previously the case.

Our Assessment

As part of the QPI formal review, the target has been reduced from 55% to 40%. This will ensure the QPI takes account of a more realistic clinical cohort of patients e.g. the increasing numbers of both elderly and infirm patients. However, the review team believe further refinement of this QPI is required to ensure this QPI is a more accurate reflection of the patient quality journey.

The review team will review the performance of NHS Forth Valley, NHS Greater Glasgow & Clyde and NHS Lanarkshire in 12 months' time to ensure performance levels have improved.

NCA

Performance based on 2017-2020 data

Target 55%

- **NCA: 52% (Numerator/Denominator=25/48)**
- NHS Grampian: 53.3% (N/D=8/15)
- NHS Highland: 40% (N/D=8/20)
- NHS Tayside: 69.2% (N/D=9/13)

Comparative regional cancer network performance and the overall Scottish average

- SCAN: 53.3% (N/D=24/45)
- WoSCAN: 36.5% (N/D=38/104)
- Scotland: 44% (N/D=87/197)

Identified Issues

The review team enquired why NHS Grampian and NHS Highland did not meet the target:

- Both NHS boards carried out a review of all cases who did not meet this QPI. The NCA provided written assurance that all patients who would benefit from a palliative SACT regime are offered this within the North of Scotland.
- As part of the QPI formal review, the target has been reduced from 55% to 40%. The new QPI definition will take account of the older population and small patient denominators particularly in the North of Scotland.

Our Assessment

All NCA NHS boards are already at or above the new target so the review team expect all NCA NHS boards will meet this target in the future.

5.0 Conclusion

Analysis showed no evidence of unwarranted variation for the following four acute leukaemia QPIs. Performance for these QPIs were judged to be 'in control' and therefore not included in the report:

- QPI 5 (i): AML Early Deaths (Between 16 & 60)
- QPI 5 (i): AML Early Deaths (Over 60)
- QPI 5 (ii): ALL Early Deaths (Between 16 & 60)
- QPI 5 (ii): ALL Early Deaths (Over 60)
- QPI 7: Deaths in Remission (16 yrs. and over)
- QPI 10 (i): Intensive Chemotherapy in Older Adults
- QPI 13: Early Deaths in Patients with Acute Promyelocytic Leukaemia

Clinical trial QPIs are currently under review at a national level. To avoid work that would be irrelevant after a review of the QPIs, these were not included in this review:

- QPI 8: Clinical Trials with Curative Intent (Between 16 & 60)
- QPI 10 (ii): Intensive Chemotherapy in Older Adults treated within a clinical trial
- QPI 11: Clinical Trials with Non Curative Intent
- QPI 14: Clinical Trials and Research Study Access

Analysis of the data identified the following CQPI performance which showed unwarranted variation at the NHS board level.

- QPI 1: Complete Diagnostic Panel
- QPI 9: Tissue Typing for Transplant
- QPI 12: Palliative Treatment

Overall, performance for acute leukaemia QPI across Scotland is good with many QPI targets being met. However, of the four QPIs included in the review process, unwarranted variation was evident across NHS Greater Glasgow & Clyde in three QPIs:

- QPI 1: Complete Diagnostic Panel
- QPI 9: Tissue Typing for Transplant
- QPI 12: Palliative Treatment

In both QPI 1 and QPI 9 the performance of NHS Greater Glasgow & Clyde was 2 - 3 standard deviations below the target.

Unwarranted variation was also evident in NHS Lanarkshire in two QPIs:

- QPI 9: Tissue Typing for Transplant

- QPI 12: Palliative Treatment

The review team acknowledge the improved performance of NHS Greater Glasgow & Clyde in QPI 1 (Complete Diagnostic Panel). However, analysis indicates unwarranted variation across NHS Greater Glasgow & Clyde. Although NHS Greater Glasgow & Clyde highlight this as a documentation issue, rather than a failure to store genetic material, there is no evidence that this is the case. If genetic material was stored and not recorded, it still raises considerations around the accuracy of patient records and the associated quality of care. The review team feel there is a need for further improvement across NHS Greater Glasgow & Clyde, potentially with the use of a pro-forma to ensure a consistent approach across the NHS board.

The review team accept the recent changes to QPI 9 (Tissue Typing for Transplant) with the exclusion added for patients with APML, which will better reflect the improved patient journey. The review team believe that once the changes are embedded, it is likely performance will improve.

The team also acknowledge the lowering of the target in QPI 12 (Palliative Treatment) from 55% to 40% to account for a more realistic clinical cohort of patients, take account of the increasing elderly population and number of frail patients. However, in order to make this QPI more meaningful, the review team believe this QPI needs to be further refined with a clearer definition of patients who are eligible for this treatment.

The review team acknowledge the WoSCAN NHS boards and WOSCAN regional cancer network should improve their collaborative approach, to share good practice and where possible, develop regional solutions, with a consistent approach that will drive forward improvement. This is of particular relevance to QPI 3 (MDT meeting) with no WoSCAN NHS board meeting the target. In addition, WoSCAN NHS boards could learn from NCA NHS boards and SCAN NHS boards and adopt good practice to improve performance levels across WoSCAN.

While the regional cancer networks facilitate NHS boards to collaborate and work to improve the quality of cancer care across their respective regions, their performance against the QPIs and the required improvement action remains the responsibility of the individual NHS boards. The review team will follow up on progress made within 12 months of publication of this report.

6.0 Recommendations

QPI 1

The review team recommend NHS Greater Glasgow & Clyde implement the required improvement actions to ensure all patients with acute leukaemia undergoing treatment with curative intent have genetic material stored and that this is clearly documented in their patient records. The review team recommend the use of a pro-forma across the NHS board to ensure a consistent approach.

QPI 3

The review team recommend WoSCAN NHS boards and WoSCAN work together to share good practice and, where possible, develop a regional solution to ensure timely MDT discussions take place. This will help develop a consistent approach and drive forward improvement.

In addition, the review team recommend all WoSCAN NHS boards closely monitor their performance ensuring the improvement actions are effective. The review team will review progress of the WoSCAN NHS boards' performance in 12 months from publication of this report.

QPI 9

The review team recommend NHS Ayrshire & Arran, NHS Lanarkshire and NHS Greater Glasgow & Clyde closely monitor their performance ensuring the improvement actions for tissue typing of patients eligible for transplant are effective and driving forward change. In particular, the review team believe a more robust approach than reminding staff may be required to generate improvement. The review team will review progress of the WoSCAN NHS boards' performance in 12 months from publication of this report.

7.0 Acknowledgement

This review has been conducted during the COVID-19 pandemic and HIS would like to thank all those involved for their support and commitment to the review process during such an unprecedented and extremely challenging period for NHS Scotland.

8.0 Leukaemia Care

To ensure that the patient perspective informed this review, the review team worked with the HIS Community Engagement Directorate and the Scottish Medicines Consortium to identify relevant charities for each TSG. For acute leukaemia, the review team met with service users and staff from Leukaemia Care, which is the UK’s leading leukaemia charity. After publication, Leukaemia Care would be encouraged to share the findings of the report with their service users.

9.0 References

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10.0 The Review Team

Name	Title
Dr Nadeem Siddiqui	Review Chair – Consultant Gynaecological Oncologist, NHS Greater Glasgow & Clyde
Dr Peter Sandiford	Review Deputy Chair, Consultant in Public Health Medicine
Lesley Aitken	Senior Reviewer
Tiffany Bonnar	Programme Manager
Jo Elliot	Programme Manager
Emma Kerr	Project Officer
Tim Norwood	Data & Measurement Advisor

11.0 Appendix

Appendix 1

Table summarising unwarranted variation from target for acute leukaemia QPI data 2017-2020

	NCA						SCAN				WoSCAN			
	NHS Grampian	NHS Highland	NHS Orkney	NHS Shetland	NHS Tayside	NHS Western Isles	NHS Borders	NHS Dumfries & Galloway	NHS Fife	NHS Lothian	NHS Ayrshire & Arran	NHS Forth Valley	NHS Greater Glasgow & Clyde	NHS Lanarkshire
QPI 1: Complete Diagnostic Panel	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 3: MDT Discussion	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 5 (i): AML Early Deaths (Between 16 & 60)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 5 (j): AML Early Deaths (Over 60)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 5 (ii): ALL Early Deaths (Between 16 & 60)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 5 (ii): ALL Early Deaths (Over 60)	○	○	*	*	○	*	○	○	○	○	*	○	○	○
QPI 7: Deaths in Remission (16 yrs and over)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 8: Clinical Trials with Curative Intent (Between 16 & 60)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 9: Tissue Typing for Transplant	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 10 (i): Intensive Chemotherapy in Older Adults	○	○	*	*	○	*	*	*	○	○	○	○	○	○
QPI 10 (ii): Intensive Chemotherapy in Older Adults treated within a clinical trial	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 11: Clinical Trials with Non Curative Intent	○	○	*	*	○	*	*	*	○	○	○	○	○	○
QPI 12: Palliative Treatment	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 13: Early Deaths in Patients with Acute Promyelocytic Leukaemia	*	*	*	*	*	*	*	*	*	*	*	*	*	*
QPI 14: Clinical Trials and Research Study Access	*	*	*	*	*	*	*	*	*	*	*	*	*	*

* No data matching QPI criteria or not enough data available

○ Performing at a level consistent with or better than the target

○ Between 2 and 3 standard deviations from the target

● More than 3 standard deviations from the target

Table summarising unwarranted variation from the Scotland average for acute leukaemia QPI data 2017-2020

	NCA						SCAN				WoSCAN			
	NHS Grampian	NHS Highland	NHS Orkney	NHS Shetland	NHS Tayside	NHS Western Isles	NHS Borders	NHS Dumfries & Galloway	NHS Fife	NHS Lothian	NHS Ayrshire & Arran	NHS Forth Valley	NHS Greater Glasgow & Clyde	NHS Lanarkshire
QPI 1: Complete Diagnostic Panel	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 3: MDT Discussion	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 5 (i): AML Early Deaths (Between 16 & 60)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 5 (j): AML Early Deaths (Over 60)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 5 (ii): ALL Early Deaths (Between 16 & 60)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 5 (iii): ALL Early Deaths (Over 60)	○	○	*	*	○	*	○	○	○	○	*	○	○	○
QPI 7: Deaths in Remission (16 yrs and over)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 8: Clinical Trials with Curative Intent (Between 16 & 60)	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 9: Tissue Typing for Transplant	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 10 (i): Intensive Chemotherapy in Older Adults	○	○	*	*	○	*	*	*	○	○	○	○	○	○
QPI 10 (ii): Intensive Chemotherapy in Older Adults treated within a clinical trial	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 11: Clinical Trials with Non Curative Intent	○	○	*	*	○	*	*	*	○	○	○	○	○	○
QPI 12: Palliative Treatment	○	○	*	*	○	*	○	○	○	○	○	○	○	○
QPI 13: Early Deaths in Patients with Acute Promyelocytic Leukaemia	*	*	*	*	*	*	*	*	*	*	*	*	*	*
QPI 14: Clinical Trials and Research Study Access	*	*	*	*	*	*	*	*	*	*	*	*	*	*

* No data matching QPI criteria or not enough data available

○ Performing at a level consistent with or better than the target

○ Between 2 and 3 standard deviations from the target

● More than 3 standard deviations from the target

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or email his.contactpublicinvolvement@nhs.scot

Healthcare Improvement Scotland

Edinburgh Office
Gyle Square
1 South Gyle Crescent
Edinburgh
EH12 9EB

Glasgow Office
Delta House
50 West Nile Street
Glasgow
G1 2NP

0131 623 4300

0141 225 6999

www.healthcareimprovementscotland.org