

**SOUTH EAST SCOTLAND CANCER NETWORK (SCAN)
PROSPECTIVE CANCER AUDIT**

**Acute Leukaemia 2020 - 2021
COMPARATIVE AUDIT REPORT**

Patients Diagnosed between 1st July 2020 and 30th June 2021

PATIENTS DIAGNOSED IN BORDERS, FIFE, AND LOTHIAN

Dr PH Roddie, Consultant Haematologist, NHS Lothian

Dr Kerri Davidson, Consultant Haematologist, NHS Fife

Dr Jean Leong, NHS Borders

Valerie Findlay, SCAN Cancer Audit Facilitator

Michelle Macdonald, Audit Facilitator NHS Fife

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Document History

Version	Circulation	Date	Comments
Version 1	Lead clinicians	21/02/22	Regional Sign off and agreement of actions
Version 2	SCAN Haematology Group lead clinicians	16/03/22	Addition of lead clinician's commentary
Version 3	SCAN Haematology Group	23/03/22	For final approval
Final Version	SCAN Group SCAN Governance Framework SCAN Action Plan Board Leads	08/04/2022	Assessed for disclosure. Health Board breakdowns removed.
Web Version	Published to SCAN Website	May 2024	

Chair Summary

The Acute Leukaemia QPIs underwent a second formal review and some substantial changes were made particularly in relation to entry into clinical trials. This reflected the changed landscape of acute leukaemia treatment with patients having access to a number of recently approved novel anti-leukaemia drugs some of which are not available as part of current NCRI sponsored trials.

In addition the approach to leukaemia treatment has changed in that whereas in the past patients were broadly treated with the same chemotherapy regimes treatment choices are now much more individualized and targeting to the specific molecular and phenotypic subtype of the leukaemia.

In recognition of that the QPI for clinical trial entry have been lowered and now represent more realistic targets given that the proportion of patients for whom a clinical trial would represent the best option for care is now much lower than in previous years.

Huw Roddie
SCAN Lead for Acute Leukaemia
March 2022

Action Points from 2020-21

QPI	Action Required	Person Responsible	Date for update
3	All patients should be registered at MDM, including where management would not change.	Dr K Davison (Fife)	6 th May 2022

Action Points from 2019-20

No Board specific action points were identified. The availability of appropriate clinical trials contributed significantly to QPIs which fell short of target. This was considered to be outwith the control of the contributing health boards. This should be considered at the next formal review (2021).

Acute Leukaemia QPI Attainment Summary 2020-21		% Target	SCAN	
QPI 1 Diagnostic Panel	90	N 34 D 34	100%	
QPI 3 Proportion of patients discussed at MDT	95	N 67 D 74	90.5%	
QPI 7 Patients treated with curative intent who die in first complete remission, within 1 year of diagnosis.	<10	N 0 D 8	0.0%	
QPI 8 Patients treated with curative intent, enrolled on a clinical trial (16-60 years)	25	N 5 D 16	31.3%	
QPI 13 Proportion of patients with APL who die within 30 days of diagnosis	<25	N 0 D 2	0.0%	
QPI 14 Clinical Trial and Research Study Access (N = All AL patients consented for trials/research D = 5 year average in Cancer Registry)	15	N 2 D 64	3.1%	

Introduction and Methods

Cohort

This report covers patients newly diagnosed with Acute Leukaemia in Borders, Fife, and Lothian Health Board areas between 1st July 2020 and 30th June 2021. Management and audit of patients with Acute Leukaemia in Dumfries & Galloway is via the West of Scotland Cancer Network. The results contained within this report have been presented by NHS board of diagnosis.

Dataset and Definitions

The QPIs have been developed collaboratively with the three Regional Cancer Networks, Public Health Scotland (PHS), and Healthcare Improvement Scotland. QPIs will be kept under regular review and be responsive to changes in clinical practice and emerging evidence.

The overarching aim of the cancer quality work programme is to ensure that activity at NHS board level is focused on areas most important in terms of improving survival and patient experience whilst reducing variance and ensuring safe, effective and person-centered cancer care.

Following a period of development, public engagement and finalisation, each set of QPIs is published by Healthcare Improvement Scotland¹.

Accompanying datasets and measurability criteria for QPIs are published on the PHS website². NHS boards are required to report against QPIs as part of a mandatory, publicly reported, programme at a national level.

The QPI dataset for Acute Leukaemia was implemented from 01/07/2014. As part of the National Cancer Quality Programme a systematic national review process has been developed whereby all tumour specific QPIs published are subject to formal review following 3 years analysis of comparative QPI data. The second Formal Review of the Acute Leukaemia QPIs was undertaken in June 2021.

The following QPIs have been updated:

QPI	Change	Year for reporting
1	Addition of MOLANALYSIS to measurability	2020-21
5	Change to MODE1-4 in dataset to include Remission Inducing SACT and Palliative SACT. Chemotherapy intensive and Chemotherapy low dose removed.	2021-22
8	Change in target to 25%	2020-21
9	Addition of new data field TTSAMPDATE. Exclude APML.	2021-22
10	Replace intensive chemotherapy with remission inducing SACT in measurability. Target reduced in spec ii to 25%	2021-22
12	Change to MODE1-4 in dataset to include Remission Inducing SACT and Palliative SACT. Chemotherapy intensive and Chemotherapy low dose have been removed. Target reduced to 40%	2021-22

The following QPI has been archived: QPI 11

¹ QPI documents are available at www.healthcareimprovementscotland.org

² Datasets and measurability documents are available at www.PHSscotland.org

The standard QPI format is shown below:

QPI Title:	Short title of Quality Performance Indicator (for use in reports etc.)	
Description:	Full and clear description of the Quality Performance Indicator.	
Rationale and Evidence:	Description of the evidence base and rationale which underpins this indicator.	
Specifications:	Numerator:	Of all the patients included in the denominator those who meet the criteria set out in the indicator.
	Denominator:	All patients to be included in the measurement of this indicator.
	Exclusions:	Patients who should be excluded from measurement of this indicator.
	Not recorded for numerator:	Include in the denominator for measurement against the target. Present as not recorded only if the patient cannot otherwise be identified as having met/not met the target.
	Not recorded for exclusion:	Include in the denominator for measurement against the target unless there is other definitive evidence that the record should be excluded. Present as not recorded only where the record cannot otherwise be definitively identified as an inclusion/exclusion for this standard.
	Not recorded for denominator:	Exclude from the denominator for measurement against the target. Present as not recorded only where the patient cannot otherwise be definitively identified as an inclusion/exclusion for this standard.
Target:	Statement of the level of performance to be achieved.	

Audit Process

Data was analysed by the audit facilitators in each NHS board according to the measurability document provided by PHS. Lothian and Borders data was collated by Valerie Findlay, SCAN Audit Facilitator for Haematology, Fife data was collected by Alison Robertson, Audit Facilitator for Fife.

Data capture is focused round the process for the weekly multidisciplinary meetings ensuring that data covering patient referral, investigation and diagnosis is being picked up through the routine process.

Oncology data is obtained either from the clinical records (electronic systems and case notes) or by downloads from Aria and from the Department of Clinical Oncology database within the Edinburgh Cancer Centre (ECC).

Each of the 3 health boards provides chemotherapy data but radiotherapy is provided centrally in Edinburgh Cancer Centre. Patients living closer to Dundee may opt to have oncology treatment out with the SCAN region. Collecting complete audit data for these patients remains a challenge.

The process remains dependent on audit staff for capture and entry of data, and for data quality checking

Data was recorded on TRAK in Lothian and Borders. Fife data was collected using E-case.

Lead Clinicians and Audit Personnel

SCAN Region	Hospital	Lead Clinician	Audit Support
NHS Borders	Borders General Hospital	Dr J Leong	Valerie Findlay
NHS Fife	Queen Margaret Hospital/Victoria Hospital	Dr K. Davidson	Michelle Macdonald
SCAN & NHS Lothian	St Johns Hospital Western General Hospital	Dr H Roddie	Valerie Findlay

Data Quality

Estimate of Case Ascertainment

An estimate of case ascertainment (the percentage of the population with Acute Leukaemia recorded in the audit) is made by comparison with the Scottish Cancer Registry five year average data from 2015 to 2019. High levels of case ascertainment provide confidence in the completeness of the audit recording and contribute to the reliability of results presented. Levels greater than 100% may be attributable to an increase in incidence. Allowance should be made when reviewing results where numbers are small and variation may be due to chance.

Number of cases recorded in audit	SCAN
ALL	10
AML	64
Total	74

(Patients diagnosed between 01/07/2020 and 30/06/2021)

Estimate of case ascertainment:	SCAN
Cases from Audit	74
Cancer Registry 5 year Average	64
Case Ascertainment %	116%

Cancer Registry data (2015-2019) IR2021-00827

With the aim of explaining differences between cancer registry data and audit data, Acute Leukaemia registrations for 2019 were extracted from the ACaDMe Confidential datamart and compared with Audit data from the same period. The main discrepancies are due to differences between incidence and diagnosis date, unconfirmed diagnosis and transformed/progressive disease. As numbers are small any discrepancy can disproportionately skew the average figures.

Quality Assurance

All hospitals in the region participate in a Quality Assurance (QA) programme provided by Public Health Scotland (PHS). QA of the Acute Leukaemia data was carried out in Jan 2018 and overall accuracy percentage results are shown below.

	Borders	Fife	Lothian	Scotland
Accuracy of data recording (%)	Not assessed	89.4	98.6	96.1

90 records were assessed throughout mainland Scotland excluding NHS Borders where patient numbers were considered too small. This represented 34% of Acute Leukaemia patients in the QPI cohort who were diagnosed between 1st July 2015 and 30th June 2016 and for which 261 records were submitted to PHS.

Overall, the accuracy of recording was high at 96.1% apart from two NHS Boards where the accuracies fell below the PHS recommended minimum standard of 90%. However, it should be noted that only a small sample of five records was assessed from each of these NHS Boards and different interpretation by Cancer Registry Staff mean that the performance is not a true reflection of audit practice in SCAN and around the country.

Clinical Sign-Off

This report compares data from reports prepared for individual hospitals and signed off as accurate following review by the lead clinicians from each service. The collated SCAN results are reviewed jointly by the lead clinicians, to assess variances and provide comments on results:

- Individual health board results were reviewed and signed-off locally.
- Collated results were presented and discussed at the Haematology SCAN Leads Meeting on 21/02/2022.
- Final report circulated to SCAN Haematology Group and Clinical Governance Groups on 08/04/2022.

Actions for Improvement

After final sign off, the process is for the report to be sent to the Clinical Governance groups with action plans for completion at Health Board level.

The report is placed on the SCAN website with completed action plans once it has been fully signed-off and checked for any disclosive material.

QPI Results pages:

QPI 1 Complete Diagnostic Panel

Target=90%

Numerator = Number of patients with acute leukaemia undergoing treatment with curative intent where complete diagnostic panel is undertaken.

Denominator = All patients with acute leukaemia undergoing treatment with curative intent (no exclusions).

Target 90%	SCAN
2020-21 cohort	74
Ineligible for this QPI – not fit for curative treatment	40
Numerator	34
Not recorded for the numerator	0
Denominator	34
Not recorded for exclusions	0
Not recorded for denominator	0
% Performance	100%

Comments: All Health Boards achieved the target.

The measurability was revised following the 2nd Formal Review adding Molecular Analysis to the diagnostic panel, the results are therefore not comparable to previous years.

QPI 3 MDT Discussion

Target=95%

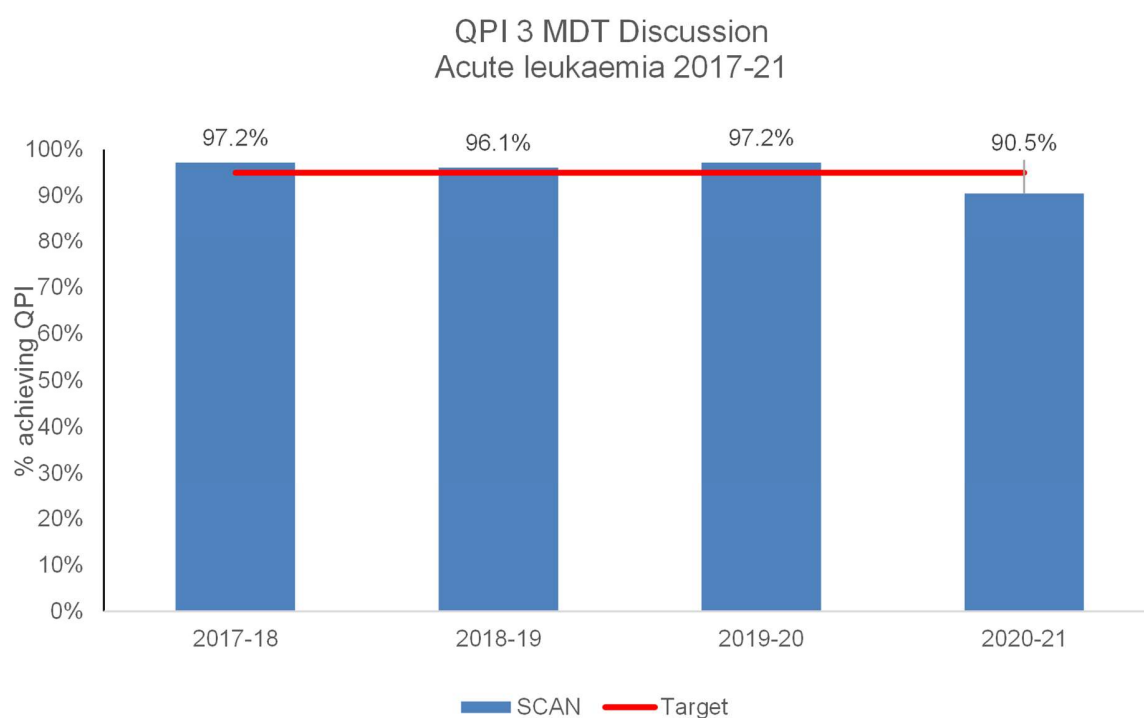
Numerator = Number of patients with acute leukaemia discussed at the MDT meeting within 8 weeks of diagnosis.

Denominator = All patients with acute leukaemia (no exclusions).

Target 95%	SCAN
2020-21 cohort	74
Ineligible for this QPI	0
Numerator	67
Not recorded for the numerator	0
Denominator	74
Not recorded for exclusions	0
Not recorded for denominator	0
% Performance	90.5%

Comments: SCAN did not meet the target with a shortfall of 4.5% (7 cases). In some cases patients were considered too frail to undergo bone marrow sampling and the result would not have changed supportive care management. All patients were reviewed and managed appropriately.

Action: All patients should be registered at MDM, including where management would not change.



QPI 5i (a) - AML Early Deaths in patients aged 16- 60 years

Target <8%

Numerator = Proportion of patients with Acute Myeloid Leukaemia being treated with curative intent who die within 30 days of treatment

Denominator = All patients with Acute Myeloid Leukaemia being treated with curative intent (no exclusions)

QPI 5i (b) - AML Early Deaths in patients aged > 60 years

Target <18%

Numerator = Proportion of patients with Acute Myeloid Leukaemia being treated with curative intent who die within 30 days of treatment.

Denominator = All patients with Acute Myeloid Leukaemia over 60 years of age being treated with curative intent (no exclusions).

QPI 5ii (a) Early Deaths ALL 16-60 years

Target <8%

Numerator = proportion of patients with Acute Lymphoblastic Leukaemia being treated with curative intent who die within 35 days of treatment.

Denominator = All patients with ALL 16-60 years being treated with curative intent (no exclusions).

QPI 5ii (b) Early Deaths ALL >60 years

Target <20%

Numerator = Proportion of patients with Acute Lymphoblastic Leukaemia being treated with curative intent who die within 35 days

Denominator = All patients with ALL >60 years being treated with curative intent (no exclusions)

QPI 5 has been updated following the second Formal Review in 2021 and will be fully reported in the 2021-22 Comparative Audit Report. As the QPI has changed significantly it was decided not to report this year with the old measurability specification.

The update involved a change to the data item "MODE of treatment where" "intensive treatment" has been replaced by "Remission Inducing SACT" which includes regimens not classed as intensive treatment but have the intention of inducing durable remission.

QPI 7 Deaths in Remission

Target <10%

Numerator = Number of patients with acute leukaemia undergoing treatment with curative intent who achieve first complete remission (CR) and die within 1 year of diagnosis, whilst in CR.

Denominator = All patients with acute leukaemia undergoing treatment with curative intent who achieve first CR.

Exclusions = Patients undergoing bone marrow /stem cell transplant

Target <10%	SCAN
2019-20 cohort	71
Ineligible for this QPI	53
Numerator	0
Not recorded for the numerator	0
Denominator	18
Not recorded for exclusions	0
Not recorded for denominator	0
% Performance	0.0%

Comments:

This QPI is reported 1 year in arrears using data collected during 2019-2020

SCAN met the target.

% Performance in previous years	SCAN
2014-15	0.0%
2015-16	0.0%
2016-17	0.0%
2017-18	7.7%
2018-19	0.0%
2019-20	0.0%

QPI 8 Clinical Trials with Curative Intent

Target 25%

Numerator = Number of patients with acute leukaemia who are treated with curative intent enrolled in a clinical trial.

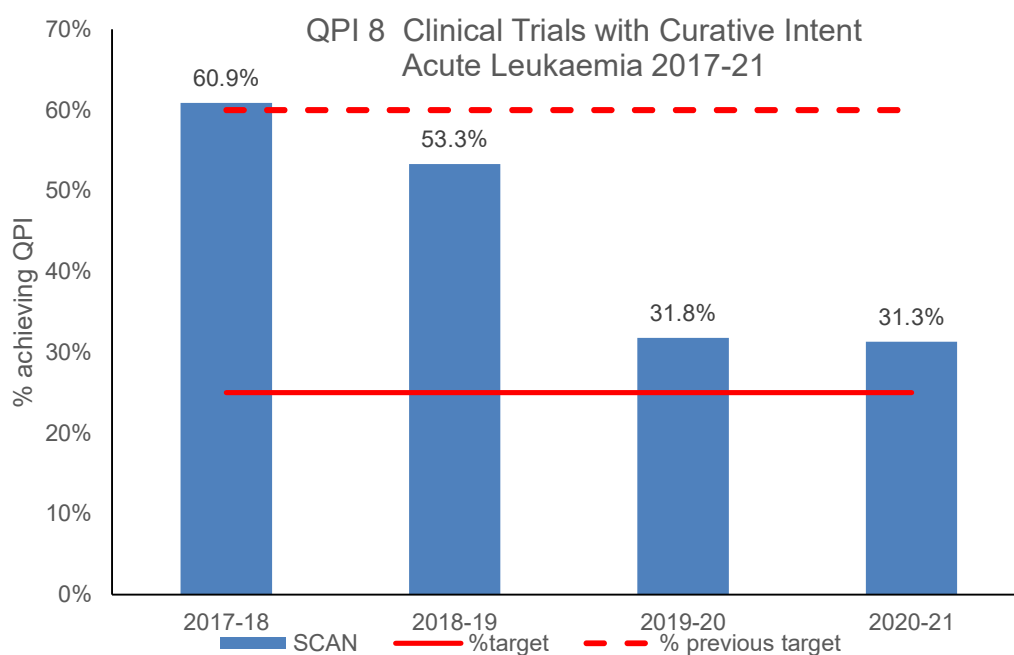
Denominator = All patients with acute leukaemia who are treated with curative intent

Exclusions = Patients who refuse entry into a clinical trial, patients over 60 years of age.

Target 25%	SCAN
2020-21 cohort	74
Ineligible for this QPI	56
Numerator	5
Not recorded for the numerator	0
Denominator	16
Not recorded for exclusions	0
Not recorded for denominator	0
% Performance	31.3%

Comments: SCAN met the target

Target reduced to 25% following 2nd Formal Review (previously 60%)



QPI 9 Tissue Typing for Transplant

Target 90%

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

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

Exclusions: Patients with Acute Promyelocytic Leukaemia (APL)

QPI 9 was updated following the second QPI Formal Review in 2021 and will be fully reported in the 2021-22 Comparative Audit Report. As the QPI has changed significantly it was decided not to report this year with the old measurability specification.

A new data field was added TTSAMPDATE which denotes the day a sample was taken for tissue typing. Patients with APL are now excluded.

QPI 10 (i) Intensive Chemotherapy in Older Adults

Target 30%

Numerator = Number of patients with acute leukaemia 60 years of age and over with PS 0-1 who receive remission inducing SACT

Denominator = All patients with acute leukaemia 60 years of age and over with PS 0-1 (no exclusions).

QPI 10(ii) Intensive Chemotherapy in Older Adults

Target 25%

Numerator = Number of patients with acute leukaemia 60 years of age and over who receive remission inducing SACT enrolled in a clinical trial.

Denominator = All patients with acute leukaemia 60 years of age and over who receive remission inducing SACT (no exclusions).

QPI 10 has been updated following the second Formal Review in 2021 and will be fully reported in the 2021-22 Comparative Audit Report. As the QPI has changed significantly it was decided not to report this year with the old measurability specification.

The update involved a change to MODE of treatment where 'intensive treatment' has been replaced by 'Remission Inducing SACT' which include regimens not classed as intensive treatment but have the intention of inducing durable remission.

The target for QPI10(ii) has been reduced to 25% to account for situations where an appropriate clinical trial is not available or patients are ineligible for open clinical trial entry due to co-morbidities or fitness levels.

QPI 12 Palliative Treatment Target 40%

Numerator: Number of patients with acute myeloid leukaemia who are not suitable for remission inducing SACT who receive appropriate palliative SACT regimen.

Denominator: All patients with acute myeloid leukaemia who are not suitable for remission inducing SACT.

Exclusions: Patients who refuse chemotherapy treatment, patients with adverse cytogenetics

QPI 12 has been updated following the second Formal Review in 2021 and will be fully reported in the 2021-22 Comparative Audit Report. As the QPI has changed significantly it was decided not to report this year with the old measurability specification.

The update involved a change to MODE of treatment where 'non intensive treatment' has been replaced by 'Palliative SACT'. The target has been lowered to 40% to account for situations where comorbidities or patient fitness levels preclude treatment with palliative chemotherapy.

QPI 13 Early Deaths in Patients with Acute Promyelocytic Leukaemia (APL)

Target <25%

Numerator = Number of patients with APL who die within 30 days of diagnosis

Denominator = All patients with APL (no exclusions)

Target <25%	SCAN
2020-21 cohort	74
Ineligible for this QPI	72
Numerator	0
Not recorded for the numerator	0
Denominator	2
Not recorded for exclusions	0
Not recorded for denominator	0
% Performance	0.0%

Comments: SCAN met the target

As numbers are small, results will become more meaningful with further years of data collection.

% Performance in previous years	SCAN
2017-18	33.3%
2018-19	No eligible patients
2019-20	25.0%

QPI 14 Clinical Trials QPI

Proportion of patients with Acute Leukaemia who are consented to a clinical trial / research.
Target =15%

Numerator = Number of patients with Acute Leukaemia consented to a clinical trial / research.

Denominator = Average 5 year incidence of Acute Leukaemia from Cancer Registry (2015 – 2019)
Cancer registry data was obtained from PHS IR2021-00827

Target 15%	SCAN
Numerator	2
Denominator	64
% Performance	3.1%

Open Trials in 2020
CALLS - CML and ALL Low Level Mutation Study
Phase I/IIa study to evaluate CCS1477 in haem. malignancies v1.0

Comment: Trial activity was halted during Covid-19 pandemic

Age Distribution

Age Range	SCAN
2020-21 cohort	74
<50 years	13
50-59 years	4
60- 69 years	11
70-79 years	27
>80 years	19

Summary of Sex and Age Distribution - Acute Leukaemia 2020- 2021

Age in years	Gender	SCAN
16-19	M	1
	F	0
20-24	M	0
	F	2
25-29	M	1
	F	0
30-34	M	0
	F	0
35-39	M	1
	F	3
40-44	M	1
	F	2
45-49	M	2
	F	0
50-54	M	0
	F	2
55-59	M	0
	F	2
60-64	M	2
	F	1
65-69	M	5
	F	3
70-74	M	10
	F	7
75-79	M	4
	F	6
80-84	M	3
	F	9
>85	M	2
	F	5
Total		74

Appendix

Acute Leukaemia QPI Attainment Summary 2019-20		% Target	SCAN	
QPI 1 Diagnostic Panel		90	N 35 D 37	94.6%
QPI 3 Proportion of patients discussed at MDT		95	N 69 D 71	97.2%
QPI 5 Patients treated with curative intent who die within 30/35 days of treatment	AML 16-60	<8	N 1 D 16	6.3%
	AML >60 years	<18	N 2 D 10	20.0%
	ALL 16-60 years	<2	N 0 D 6	0.0%
	ALL > 60 years	<20	N 1 D 4	25.0%
QPI 7 Patients treated with curative intent who die in first complete remission, within 1 year of diagnosis.		<10	N 0 D 14	0.0%
QPI 8 Patients treated with curative intent , enrolled on a clinical trial (16-60 years)		60	N 7 D 22	31.8%
QPI 9 Patients treated curatively who have tissue typing performed at diagnosis.		90	N 19 D 26	73.1%
QPI 10 Intensive chemotherapy in older adults (over 60)	PS 0-1 receiving intensive chemotherapy	30	N 13 D 29	44.8%
	Receiving intensive chemotherapy and enrolled in a clinical trial	70	N 1 D 13	7.7%
QPI 11 Proportion of patients treated with non curative intent who are enrolled in a clinical trial		10	N 1 D 27	3.7%
QPI 12 Proportion of patients with AML treated with non curative intent who receive appropriate SACT regimen		55	N 7 D 16	43.8%
QPI 13 Proportion of patients with APL who die within 30 days of diagnosis		<25	N 1 D 4	25.0%
QPI 14 Clinical Trial and Research Study Access (N = All AL patients consented for trials/research D = 5 year average in Cancer Registry)		15	N 6 D 51	22.0%