

Improving Cancer Services

Elevator Statement : Early Diagnosis of Cancer

The Early Diagnosis Intelligence Programme is designed to help NHS organisations identify where there may be opportunities to diagnose cancer earlier by combining publicly available NHS datasets with advanced analytics and practical intelligence methods.

Rather than measuring performance alone, the programme seeks to understand the factors that influence whether patients are identified and referred early enough to achieve the best possible outcomes.

By combining datasets covering cancer diagnosis, referral activity, disease prevalence, population risk factors and patient outcomes, the programme creates Opportunity Signals that help identify where additional support, investigation or intervention may improve earlier diagnosis and ultimately improve survival, quality of life and healthcare efficiency.

Early Diagnosis of Cancer Intelligence Framework

Draft Strategic Discussion Paper v1.0

For Stakeholder Review and Contribution

Draft Content – Stakeholder Review in Progress

This page forms part of an ongoing development programme and is currently being reviewed by stakeholders and subject matter experts. Content may change as feedback is received and incorporated. We welcome constructive comments and suggestions during this review period.

We believe this may ultimately attract the broadest stakeholder interest because it sits at the intersection of:

- NHS Cancer Programmes
- Cancer Alliances
- ICBs
- Primary Care
- Pharmaceutical Industry
- Charities
- Public Health

Executive Summary

Earlier diagnosis remains one of the most important determinants of cancer outcomes.

Patients diagnosed at earlier stages are generally more likely to experience:

- Improved survival
- Less intensive treatment
- Better quality of life
- Reduced healthcare utilisation

Despite significant national efforts, variation in early diagnosis continues to exist across England.

This paper explores how publicly available NHS datasets may be combined to create practical intelligence frameworks that help identify where opportunities for earlier diagnosis may exist.

Particular attention is given to:

- Generic Early Diagnosis Opportunity Signals
- Lung Cancer Early Diagnosis Opportunity Signals
- Risk Referral Ratio methodology
- Stage at Diagnosis
- Referral intelligence
- Population risk indicators
- CQOLS outcome intelligence

The paper is intended to stimulate discussion regarding how intelligence can be used to support earlier diagnosis and improve patient outcomes.

Chapter 1

Understanding the Challenge

For many cancers, earlier diagnosis is associated with:

- Improved survival
- Better treatment options
- Reduced treatment burden
- Better quality of life

Despite improvements, significant variation remains in:

- Referral behaviour
- Stage at diagnosis
- Diagnostic activity
- Patient outcomes

Understanding these variations remains challenging because cancer diagnosis is influenced by many factors including:

- Population risk
 - Health-seeking behaviour
 - Primary care activity
 - Diagnostic capacity
 - Referral pathways
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Chapter 2

Why Existing Intelligence Is Not Enough

Many current systems focus upon:

- Cancer incidence
- Stage at diagnosis
- Waiting times
- Referral volumes

Whilst valuable, these measures often tell us:

What happened

rather than

Where opportunities for improvement may exist.

Most systems also stop measuring success once diagnosis has occurred.

Chapter 3

Available Intelligence Sources

Stage at Diagnosis

Providing information regarding:

- Stage 1
 - Stage 2
 - Stage 3
 - Stage 4 diagnosis
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Cancer Waiting Times

Including:

- Faster Diagnosis Standard
 - 62-Day Pathway
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Referral Intelligence

Including:

- e-Referral activity
 - Suspected Cancer Referrals
 - Diagnostic activity
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GP Practice Intelligence

Including:

- QOF disease registers
 - Smoking prevalence
 - COPD indicators
 - Population risk indicators
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ePACT Prescribing Intelligence

Potential indicators including:

- Respiratory medicines
 - COPD-related prescribing
 - Carbocysteine utilisation
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CQOLS

Providing long-term outcome intelligence.

Chapter 4

The Generic Early Diagnosis Opportunity Signal

The Generic Early Diagnosis Opportunity Signal seeks to identify organisations that may benefit from additional support or investigation.

The framework combines multiple indicators associated with:

- Risk
- Discovery
- Referral activity
- Diagnostic performance

The objective is not to create league tables.

Instead, the framework seeks to identify:

Potential Opportunity

for discussion and improvement.

Chapter 5

Lung Cancer Early Diagnosis Opportunity Framework

Lung cancer represents an important test case because:

- Outcomes remain poor
- Earlier diagnosis can significantly improve outcomes
- Strong risk indicators exist

Potential intelligence components include:

Population Risk

- Smoking
- COPD
- Respiratory disease

Prescribing Intelligence

- Respiratory prescribing
- Carbocysteine

Referral Activity

- e-Referrals
- Suspected cancer pathways

Outcomes

- Stage at diagnosis
 - Survival
 - CQOLS outcomes
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Chapter 6

Risk Referral Ratio Methodology

One of the most promising developments within the framework.

The methodology compares:

Estimated Population Risk

against

Observed Referral Activity

to identify situations where:

- Risk appears relatively high
- Referral activity appears relatively low

This may indicate opportunities for:

- Additional investigation
- Targeted support
- Service improvement

The concept follows a similar philosophy to the LSSI4 framework:

- Simple
 - Transparent
 - Action-focused
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Chapter 7

The Unique Contribution of CQOLS

Most early diagnosis programmes focus upon:

- Diagnosis
- Treatment
- Survival

CQOLS extends the story.

It helps answer:

Why does earlier diagnosis matter?

Potential benefits include:

- Better quality of life
- Better physical functioning
- Better emotional wellbeing
- Better long-term outcomes

CQOLS therefore provides an important link between:

Diagnosis → Treatment → Survivorship

Chapter 8

Service Improvement Opportunities

Potential applications include:

GP Practice Support

Cancer Alliance Programmes

Targeted Awareness Campaigns

Community Outreach

Diagnostic Pathway Improvement

Personalised Support

Chapter 9

Health Economics Considerations

Current Burden

Later diagnosis may be associated with:

- More intensive treatment
 - Increased healthcare utilisation
 - Reduced quality of life
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Consequences of Inaction

If opportunities for earlier diagnosis are missed:

- Treatment complexity may increase.
 - Healthcare costs may increase.
 - Quality-of-life outcomes may worsen.
 - Opportunities for prevention may be lost.
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Potential Benefits of Intervention

Earlier diagnosis may:

- Improve outcomes.
 - Reduce treatment burden.
 - Improve quality of life.
 - Improve healthcare efficiency.
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Future Evaluation Opportunities

Areas for future work include:

- Risk modelling
 - Predictive analytics
 - Referral optimisation
 - Economic evaluation
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Chapter 10

Strategic Questions for Stakeholders

- Are we identifying the right risk indicators?
- How should referral intelligence be interpreted?

- What additional datasets should be included?
 - How should opportunity signals be used?
 - How can CQOLS contribute to early diagnosis evaluation?
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Chapter 11

Conclusions

The objective of the framework is not to judge performance but to identify where opportunities for earlier diagnosis may exist.

By combining risk indicators, referral behaviour, diagnostic activity and long-term outcome intelligence, organisations may be better able to target support and improve patient outcomes.

The ultimate objective is not simply earlier diagnosis itself, but improving survival, quality of life and long-term wellbeing for people affected by cancer.
