

Living with and Beyond Cancer Board

IT Remote Monitoring System: Functionality requirements and options appraisal

**Sharon Cavanagh
December 2015**

Introduction

Integral to the successful implementation of stratified model of follow-up is the setting up of a robust IT remote monitoring system. Remote monitoring assists the specialists to schedule and review surveillance tests for patients who have completed treatment for cancer, without the need for a face to face outpatient appointment to convey the result. Its primary role is to support low risk patients treated with curative intent who are suitable to be supported on a self-managed pathway. Therefore, a key enabler for testing and implementing stratified pathways of care is access to a safe reliable IT system that enables clinicians to schedule and monitor surveillance tests (such as mammograms, CT scans, colonoscopies).

Functionality requirements of the remote monitoring system

Stratified follow-up national pilot sites have identified the required functionality of IT systems to ensure that remote monitoring can effectively take place. The system needs to house sufficient information to enable the clinician to manage the patient without the need to access case notes.

Other functions of the system are as follows¹:

1. To pull patient data set information from PAS via the local cancer information system
2. To pull test results from local diagnostic IT systems
3. To store key diagnostic and key patient history data
4. To log any relevant treatment history during monitoring period including a log of patient contacts
5. To set individual patient range/tolerances for specific tests
6. To schedule tests based on user definable follow up schedules
7. To hold a range of template letters to enable communication of results to patients and GPs by post or electronically
8. To include an alert system that identifies test results for review, due dates exceeded or test result that exceed tolerance
9. To provide a summary history and treatment page with test results shown numerically and graphically to record the outcome of any event or test
10. To provide standard and ad hoc reporting and routine monitoring function and be amenable to clinical audit
11. To be NHS and HL7 compliant with secure access
12. To use a common file format for all data export to be able to import the data into local IT systems if required

² NHS Improvement (2011) *Effective Follow up: Testing risk stratified pathways*.15. Available at <http://www.ncsi.org.uk/wp-content/uploads/RiskStratifiedPathways-May-2011.pdf>

Options Appraisal

In addition to defining the functionality, NHS Improvement developed an options appraisal for services to make local decisions with regards to how to best take this forward. This information was published in 2013 in a document titled *"Innovation to implementation: Stratified pathways of care for people living with or beyond cancer - A 'how to guide'"*². We have outlined these options below

Option 1 - Use functionality within existing IT systems

Many IT systems have scheduling and monitoring systems available within them and may only require small adjustments to accommodate the needs for remote monitoring. IT leads or system providers will be able to provide advice on the local system capability. For example, CIMS (Clinical Information Management Systems) who supply InfoFlex have developed remote monitoring capability within their system.

Pros

- Existing familiarity of use with staff.
- Fewer interface requirements than other options.
- On-going support through existing service contracts.
- Send and receive data capability.
- Flexibility to suits local needs, e.g. audit.
- Speed of implementation.
- Less likely to require business case approval.

Cons

- May require additional licenses.
- Existing staff often do not utilise local IT system.
- System provider consultancy costs to support implementation.

Option 2 – Develop a bespoke remote monitoring solution

This suits organisations where there is local IT development team skill and capacity or local restrictions on use of external software.

Pros

- Local ownership and development.
- Fit with existing IT architecture.
- No external maintenance costs.

Cons

- Long lead in time for development (allow three months from approval and three months to test and implement).
- Existing IT workload can delay development and implementation.

Option 3 – National Cancer Survivorship Initiative (NCSI) solution

³ NHS Improvement (2013) *Innovation to implementation: Stratified pathways of care for people living with or beyond cancer - A 'how to guide'*. Available at <http://www.ncsi.org.uk/wp-content/uploads/howtoguide.pdf>

NHS Improvement, North Bristol NHS Trust (NBT), Royal United Hospital Bath and national clinical advisors have developed a remote monitoring solution to support prostate and colorectal cancer. Both modules are designed to interface with the local cancer registry and diagnostic systems such as pathology, radiology and endoscopy systems. Within each module the specialist can view all their patients with a diagnosis of prostate or colorectal cancer. Once selected for enrolment to a self-managed pathway, the specialist enters diagnostic details, treatment and relevant drug therapy, comorbidity and any other relevant information. Test results are automatically drawn into the modules and displayed numerically, graphically or as text. Standard outcome letter templates are generated from the system to send to the patient and the GP. Maintenance and development of the NCSI system is available to sites through a service level agreement (currently £5,000 per annum) with North Bristol NHS Trust. Assistance with local installation is also available on request.

Pros

- Available to any NHS organisation.
- Capable of interface with any IT system.
- No license issues.
- Remote installation of system including any future upgrades.
- Recent upgrade (March 2013).

Cons

- Importing external solutions may not align with local IT strategy.
- Requires server capacity.
- 'Virtual clinics' are still required on PAS to capture activity data.
- Annual cost of £5000.

Option 4 – Primary care solution

Examples exist of primary care based IT systems for monitoring surveillance tests. Whilst these have not been tested by the NCSI there are systems available as an option for those considering a primary care based solution.

Pros

- Care transferred closer to home.
- Potential reduction in cost to commissioners.
- Releases maximum capacity within secondary care.

Cons

- Not viable by individual practice due to the small patient numbers. A clinical commissioning group option might be feasible.
- Professional education required to establish and maintain disease knowledge base.
- Reaching GP consensus to manage surveillance tests.
- Less immediate access to specialist for advice on abnormal or equivocal results.
- Manual entry of enrolment data.

Option 5 – National breast screening system (NBSS) – mammography only

Set up a parallel recall system for breast cancer patients who require annual mammograms. This is the same as, but separate to, the national breast screening programme and mirrors the model set up for managing high risk familial patients who require annual rather than three yearly mammograms.

Pros

- Excellent clinical governance.
- Very low risk of patients being missed as processes, system and staff involved are the same as those delivering the national breast screening service.

Cons

- Limited use as does not link to radiology information systems.
- Set up and license costs.
- Implementation more difficult for non- screening sites.
- System cannot be adapted without NBSS approval.
- Unsuitable for use through mobile units.

Contact: David Solomon at Temenos for further information on this option dsolomon@temenos. Temenos are the IT suppliers for the national breast screening system.