

The Dutch ScreenIT: a central information system supporting cancer screening data sharing



STATUS

Implementation completed
Program ongoing

LAST UPDATE

Select a date

THE NETHERLANDS • NATION-WIDE
Breast cancer screening

PROBLEM & OBJECTIVE

PROBLEM The previous system, iBOB was only made for the breast cancer screening programme; it was a semi-structured reporting system and the workflow had to be manually checked.

OBJECTIVE The ScreenIT system was intended to be a new and modern IT-infrastructure used for the central management of all screening-related information at the individual level (mammographs, information system, image management system [IMS]). Its use was intended to be compulsory for all the screening employees and screening radiologists.

REFERENCES & DOCUMENTATION

- The availability of the [ScreenIT software](#) was published on GitHub (July/August 2020)
- [Figure](#) (link needed)
- [Figure](#) (link needed)

CONTACT

The Dutch center for public health and the environment (RIVM-CvB)
Center for population screening

<https://www.rivm.nl/en/population-screening-programmes>
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KEY COMPONENTS / STEPS

- Define strategy by the Dutch screening organisations and the cooperating screening radiologists (end 2016)
- Set-up stakeholder management and consultation (i.e., RIVM, hospitals)
- Define requirements of the system in terms of functionality
- European tender launched by the screening organization and financed by the Ministry of Health
- Building / configuring information systems and hardware
- Education of the field by teach-the-teacher method: 100 co-workers were trained on a testing environment; in addition to an on-line training program, to play and learn before the systems went live.
- Go live (mid-2019) with technical assistance from a central source, including consultants from the vendor that built the system
- Accounts are rol-based (two factors authentication). Screening organizations have ISO 27010, NEN7510-13 certification, which are Dutch standards for information security in health care; only pseudomised data can be exported. All quality reports are anonymized. Patients can ask for their own data from the screening organisations.

KEY CONTEXTUAL FACTORS

ScreenIT supports the three screening programmes: breast, cervix and colorectal. Every step in the screening process is automatically checked. ScreenIT is 100% structured reporting, the exchange of data with other systems is done according to IHE-standards. The system contains screening data, referral data, follow-up data, the results of the diagnoses in the hospital, link to images (Images of 7.5 million studies are in separated IMS [Sectra]).

The State initiates, sets up and finances the three cancer screening programs and five prenatal and neonatal population screening programmes in the Netherlands. Once every 2 years, women aged between 50 and 75 are invited to visit a mammography unit to be screened for breast cancer. Approximately 75% of invited women participate (i.e. approximately 1 million women every year).

Several actors are involved in cancer screening data management:

- The Dutch Ministry of Health which is politically and financially responsible;
- The Dutch center for public health and the environment (RIVM), responsible for management of breast cancer screening (governmental institute);
- The Dutch screening organizations, responsible for operations (primary process);
- Employees of the screening organizations (i.e., radio diagnostic technicians who perform the mammograms, radiologists who assess the mammograms, administrative coworkers who schedule referrals to general practitioners and plan screening appointments).
- Other groups involved are hospitals (radiology and oncology departments) that exchange images and diagnostic outcomes.

MAIN IMPACTS / ADDED VALUE

- The initiative modernized all screening hardware and software: new mammographs, new Image Management System. All processes were harmonized and optimized, structured reporting, full IHE compliant, automatic workflow control, user-friendly, privacy and security by design.
- Online screening data sharing makes more flexible and client-friendly planning possible. A major advantage is that data is easier and quicker to access for the hospital where the client is referred to. Mammograms can be uploaded immediately.
- Most of the source code of ScreenIT is available (from august 2020 on) to be used by other parties / nations, thanks to the open source software.
- By law, all information is stored for 20 years from the last time a client was screened. Older data is automatically deleted.

LESSONS LEARNED

- The importance of involving stakeholder and all end users in identifying the requirements of the tender
- The importance of involving screening organization employees in developing the process and user interfaces
- The importance of a controlled European tender process (which guides how you consider the requirements you set for a system and positions the organisation to get the best product for the lowest price). A good strategy hereby is very important
- The importance of a team effort with strong project management and positive attitude to accompany the transition to the new management system (i.e., an optimistic focus on the goal)
- The importance of an open mind towards necessary changes with respect to the initial requirements
- The importance of availability of developers in the workplace, also for professionals who are not skilled in the new equipment and therefore need help in the field the first weeks after going live
- The importance of a good team with enough capacity for an extended period after going live