National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

Overview of quality assurance

Colorectal Cancer Screening Programme *in the Netherlands*

Introduction

The Dutch Colorectal Cancer (CRC) Screening Programme targets men and women between the ages of 55 and 75 years. The National Institute for Public Health and the Environment – Centre for Population Screening (RIVM-CvB) directs, manages and coordinates this national population screening programme. Its daily execution is performed by five regional Screening Organisations.

The screening programme process can be divided into five stages, as shown in Figure 1:
Stage 1: Selection and invitation
Stage 2: Screening
Stage 3: Informing and referral
Stage 4: Diagnostics
Stage 5: Treatment and surveillance

A detailed overview of the process is shown in the flowchart summary of the programme structure, which can be found at www.rivm.nl/en/colorectal-cancer-screening-programme.

This factsheet describes all the quality assurance measures within the Dutch CRC screening programme.

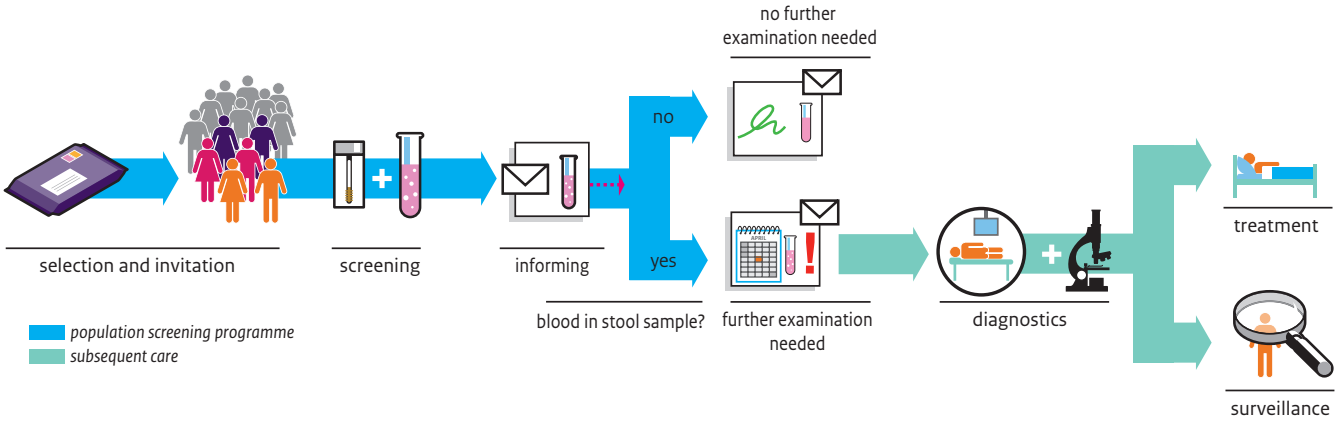

Figure 1: Primary process of the CRC screening programme

Basic assumptions underpinning quality assurance

The basic assumptions underpinning our quality assurance programme are taken from existing national laws and regulations (as stated in the Policy Framework - Cancer Screening Programmes), and the standard operating procedures used by the different parties in the chain. The Health and Youth Care Inspectorate in the Netherlands monitors compliance with applicable laws and regulations; responsibility for the development, management, implementation and auditing of the standard operating procedures falls on the different parties themselves.

Quality requirements, frameworks and protocols

A range of additional quality requirements, frameworks, and protocols are drawn up to ensure that the CRC screening programme is of optimum quality and performed uniformly.

Dutch CRC screening quality requirements

The national quality requirements of the CRC screening programme are developed by the RIVM-CvB, in close coordination with the relevant parties. This involves devising (additional) quality requirements for the screening organisations, the screening laboratories, the colonoscopy centres and the pathology laboratories.

Documents stipulating the quality requirements necessary contain, for instance, provisions about the educational level of personnel, lead times and data management. Certain quality requirements act as selection requirements which an organisation must meet before it is allowed to perform activities within the screening programme. Other requirements act as audit requirements which organisations must meet while performing activities within the screening programme. Examples are shown in Table 1.

No	Indicator	Description	Selection requirement	Audit requirement
Screening laboratories				
1.1	Continuity of primary activities	Securing the continuity of the primary activities	Not applicable	Demonstrable
Screening organisations				
4.1	Certification	A certified quality system conforming to CCKL and/or ISO 15189.	Demonstrable	Demonstrable
4.2	Internal audits	Yearly internal process audit of the Colorectal Cancer Screening Programme activities.	Not applicable	Demonstrable
Colonoscopy centres				
6.2.4	Care	24-hour care must be guaranteed in case complications develop. An evening, night and weekend schedule needs to be in place for 24-hour accessibility OR clear arrangements must be made with another centre/hospital.	Demonstrable	Demonstrable
Pathology laboratories				
8.3.2	Organisation of the procedure of patient material	The procedure of patient material must be organised in such a way that the risk of mix-ups and loss of this material is limited to a minimum. To achieve this the laboratory must take adequate steps throughout the process of material receipt until the results are authorised.	Not applicable	Demonstrable

Table 1: Examples of selection and/or audit requirements.

Frameworks and protocols

Besides the standard operating procedures and professional guidelines of the parties involved, there are frameworks and protocols developed specifically for the Dutch CRC Screening Programme. These are all included in the 'Framework for the Execution of CRC Population Screening', a framework which sets out who is responsible for the execution of CRC population screening and all the applicable rules and procedures. This framework is written for all (medical) professionals involved in screening, including laboratory assistants, endoscopists, pathologists and employees of the screening organisation.

These frameworks and protocols are:
- Legal framework – data exchange with cancer population screening programmes;
- Communication regarding framework of cancer population screening programmes;
- Technical dataset - pathology;
- Technical dataset - colonoscopy;
- Memo regarding Governance data set and related messages;
- Protocol for Risk Management;
- Protocol for Quality Assurance FIT;
- Protocol for Selecting and auditing the coloscopy centres and the endoscopists;
- Protocol for Selecting and auditing pathology laboratories;
- National set of indicators;
- Covenant regarding data exchange;
- Protocol for Interval carcinomas;
- Memo - Working with body material.

Two professional guidelines have been specifically developed for the CRC screening programme:
- The Dutch College of General Practitioners: Practical guideline - colorectal cancer screening programme;
- The nationwide network and registry of histopathology and cytopathology in the Netherlands (PALGA Foundation): National Protocol on Colonbiopt.

Quality assurance for the execution of the screening programme

Screening organisations

Screening organisations are responsible for the quality of their screening programme's execution and their own quality assurance systems. The quality assurance measures taken by the screening organisations involve:
- Monitoring the quality of the execution of the CRC screening programme, e.g. by auditing the closing agreements made with suppliers of equipment and materials;
- Organising quality assurance by deploying coordinating professionals and putting a quality platform in place;
- Signalling problems with the execution of the programme, and reporting these to the RIVM and advisory boards;
- Giving advice to the RIVM and advisory boards about (possible) improvements;
- Making adjustments to the screening programme's execution.

Coordinating professionals

Independent reviewing of the quality of the CRC screening programme at national level is done by coordinating professionals:
- The reference tasks related to the FIT-analysis are performed by the national monitoring FIT official;
- The test-coordinating gastroenterologists (TCG) assess the admission of endoscopists to the CRC screening programme;
- The regional coordinating gastroenterologists (RCG) are responsible for the independent quality assurance of the colonoscopy and co-ordination of the diagnostics;
- The regional coordinating pathologists (RCP) assess the admission of the pathology laboratories to the CRC screening programme, and are responsible for the independent quality assurance of the pathology.

The main tasks of the coordinating professionals are:
- Advising about, or testing whether, equipment or professionals can be admitted to the CRC screening programme;
- Monitoring the quality of the execution of the CRC screening programme;
- Amongst other tasks, facilitating the advancement of the knowledge and expertise of employees;
- Signalling of, and advising about, incidents and accidents which occur during the execution of the CRC screening programme;
- Advising about different quality assurance aspects.

Quality platform

The four screening laboratories use a quality platform to assure a uniform execution of the CRC screening programme. The main tasks are:
- Making sure the execution of the CRC screening programme is uniform;
- Making sure there is sufficient capacity in case of calamities;
- Monitoring the execution of the CRC screening programme;
- Providing advice to the screening organisations about quality improvements.

Quality assurance of the results of the screening programme

The RIVM-CvB is responsible for monitoring the results of the Dutch CRC screening programme at national level. The results of the screening programme need to meet the publicly-held values of quality, accessibility and affordability. Each year, a national monitoring report is prepared and published by an independent scientific institution. Indicators are clearly defined and, if necessary, updated. The aim of monitoring is to secure and, if necessary, adjust the processes followed by the CRC screening programme and to ensure that these are aligned with the national health-care system. See Figure 2 for an example of the results of a monitoring report, which can also be found at the *website*.

Incidental evaluation is also done yearly to examine additional issues and any questions that arise during annual monitoring.

Once every four years, a report containing the most important results of a thorough evaluation of the CRC screening programme is prepared and published by an independent scientific institution. Important assessments from this report are:

- Effect evaluation: assessment of the incidence and stage distribution of CRC, and CRC-related mortality reduction;
- Cost-effectiveness evaluation;
- Deeper analyses are performed after the screening programme results over a number of years have been interpreted, such as in-depth participation analyses or analysing the results after multiple rounds of participation.

			2018 total	2017 total
Invited	1,080,445	1,105,741	2,186,186	1,939,980
Participated	757,775	831,547	1,589,322	1,415,025
Participation rate	70%	75%	73%	73%
Participation rate without reminder	57%	64%	61%	62%
Referral rate	5.5%	3.6%	4.5%	5.1%
Colonoscopy participation	83%	82%	82%	84%
Positive predictive value CRC and/or AAD	45%	37%	42%	46%
Detection rate *	20.3	11.0	15.4	19.4
per 1,000 screened individuals *				

Figure 2: Example, illustrating results of a national monitoring report (2018)

Advancement of knowledge and expertise

Awareness of relevant new information and developments in the relevant workings fields is important to make sure the screening programme is performed as optimally as possible. The basic assumption is that advancement of knowledge and expertise lies with the individual professionals, their professional associations and employers.However, extra education is offered and even mandatory for certain professionals.

The extra education aims to:

- Broaden understanding of the content, organisation and processes employed by the CRC screening programme;
- Broaden understanding of national agreements and quality requirements needed to make sure the CRC screening programme is performed in a uniform manner and to a high standard;
- Develop, enhance and/or test new and existing knowledge and skills.

Different educational methods are therefore used:

- Information to line staff: training by the screening organisations, based on the frequently asked questions and answers;
- GPs: practical guidelines of the colorectal cancer screening programme, and an e-learning package about the CRC screening programme (both not mandatory);
- Screening laboratories: benchmarking by analysing control stool samples (mandatory);
- Endoscopists: the endoscopist accreditation programme consists of 3 modules: (1) a colonoscopy registration module, (2) three theoretical e-learning modules combined with online assessment of the knowledge acquired, and (3) a practical evaluation of colonoscopy and polypectomy skills (all mandatory);
- Pathologists: two e-learning modules: (1) to complete to get an accreditation to work in the CRC screening programme, and (2) to be completed within 6 months of accreditation. Thereafter, the pathologists has to achieve 5 (or more) ongoing training points within 5 years.

The Dutch screening context

In the Dutch governmental context in which this screening programme was realised, various Dutch government parties are involved in considering, deciding and implementing population screening programmes.

In the Netherlands, it is the Minister of Health, Welfare and Sport (VWS) who is responsible for health screening programmes and who determines the priorities etc. The Netherlands Organisation for Health Research and Development (ZonMw) and the Health Council have primarily a preparatory role/task. The Centre for Population Screening of the National Institute for Public Health and the Environment (RIVM-CvB) is responsible for the coordination and five Screening Organisations implement the screening. ZonMw funds research programmes and the Health Council provides (independent) advice to VWS on health interventions.

We formulated the steps in this factsheet to be as general as possible. Each country, therefore, must take their own healthcare system into account when planning and realising their own population screening programme.

For more information

General information about the Dutch CRC screening can be found at:
www.rivm.nl/en/colorectal-cancer-screening-programme

An introduction to the CRC screening programme in the Netherlands is available at:
www.rivm.nl/documenten/factsheet-lessons-learned-from-introduction-of-colorectal-cancer-screening-programme

Factsheet Overview of programme structure:
www.rivm.nl/documenten/factsheet-overview-of-programme-structure

Questions? Please contact us at: *cvb@rivm.nl*

Published by

National Institute for Public Health and the Environment, RIVM
P.O. Box 1 | 3720 BA Bilthoven
The Netherlands
www.rivm.nl/en

September, 2020

Committed to *health and sustainability*

012216