Programme requirements for an effective colorectal cancer screening programme

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Insights from Europe on cancer screening
For further references see:


1. Implementation of cancer screening programmes

(a) Offer evidence-based cancer screening through a systematic population-based approach with quality assurance at all appropriate levels. The tests which should be considered in this context are listed in the Annex;

(b) Implement screening programmes in accordance with European guidelines on best practice where they exist and facilitate the further development of best practice for high quality cancer screening programmes on a national and, where appropriate, regional level…
Screening tests that fulfil EU criteria

- **Breast cancer screening**
  - Biennial mammography

- **Cervical cancer screening**
  - Papanicolaou (PAP) staining *
  - Validated liquid-based cervical cytology (LBC) #
  - Primary HPV testing #

- **Colorectal cancer screening**
  - Fecal occult blood testing (FOBT) *
  - Fecal immunochemical testing (FIT) &
  - Flexible sigmoidoscopy §

* Council recommendation of 2003
# Supplements to European Guidelines for QA in cervical cancer screening
& European Guidelines for QA in colorectal cancer screening and diagnosis
Need for quality assurance in cancer screening

- Screening is for mostly asymptomatic populations
- At any time, only a few people will have a health benefit from screening
- The risks are slight, but all participants are exposed
- Due to the very large number of people involved the risks add up
- Quality assurance keeps the balance between benefit and harm in an appropriate range.

Importance of the screening process

To achieve and maintain an appropriate balance between benefit and harm quality must be optimal at every step

Population-based screening programmes

- Aim to make the entire screening process available to each individual in the eligible population
- Personally invite each eligible individual to attend each round
- Use individual records to ensure that assessment, treatment and follow-up or surveillance take place
- Build administrative and clinical data bases for effective management and evaluation of services and programmes

Population-based programmes promote equity and quality assurance

- Identification and personal invitation of each individual in the eligible population
  - Equal chance to be invited
  - Equal chance of participating, provided communication is effective and socio-economic barriers are addressed

- Individual data on performance and outcomes
  - Failsafe mechanisms for ensuring access to assessment, diagnosis and treatment

Population-based programmes promote equity and quality assurance - 2

- Individual data on performance and outcomes, cnt’d
  - Data bases for quality-driven performance monitoring and outcome audit
  - Linkage with cancer registries for evaluating screening impact on the burden of disease

- Essential conditions for studies to continuously improve screening protocols and practice
  - Eg, randomized public health policies

Organised Screening Programmes
Minimum requirements

- **Responsible** national or regional team for implementation (coordinating service delivery, quality assurance, and reporting of performance and results)

- **Comprehensive** guidelines, **rules** & standard operating procedures

- **Quality assurance structure** with supervision & monitoring of the screening process

- **Ascertainment** of the population disease burden
Organized, population-based screening preferred in EU, recommended globally

- Infrastructure of organized, population-based programmes facilitates quality assurance

- Implementation of population-based programmes makes services with high multidisciplinary standards accessible to the entire eligible population

- Large numbers of professionals undertake further specialisation in order to meet the screening standards

- These nationwide efforts also lead to widespread improvement in diagnosis and management of cancers detected outside of screening programmes


European Guidelines for Quality Assurance in Breast, Cervical and Colorectal Cancer Screening

**Co-financing:**
- **a)** EU Health Programme & project partners
- **b)** UEGF, ACS, CDC

**Editions:**
- **4th Edition 2006**
- **Supplements 2013**
- **2nd Edition 2008**
- **Supplements 2015**
- **1st Edition 2010**
European Union quality assurance guidelines

Scope

- Best practice in the organization and management of cancer screening programmes and provision of screening services
  - General principles
  - Detailed recommendations
- Screening process up to and including diagnosis of screen-detected lesions
  - Including post-polypectomy surveillance in CRC Guidelines
- Cross-cutting themes
European Union quality assurance guidelines
Key aspects

- Adequate, unbiased information (informed choice)
- Multidisciplinary services & teamwork, standards & procedures of best practice
- Specialized training
- Targets, performance indicators & databases, including population, cancer & screening registries
- Regular audit - continuous quality improvement
- Programmatic, population-based implementation
- Effective, sustainable coordination
- Oversight and evaluation of screening impact
Methods of experience- and evidence-based guideline development

- Editorial board experienced in screening implementation and quality assurance:
  - defines scope, manages process, reviews and revises if necessary all chapters

- Multidisciplinary teams of authors
  - define key (clinical) questions in collaboration with editors & experts in systematic review (literature group)

- Literature group performs systematic reviews
  - collects & grades evidence on key (clinical) questions

- Authors write chapters and grade key recommendations

- Independent experts review chapters & recommendations

- International discussion of interim & final results
  - in network meetings for consensus & dissemination
European Guidelines for Quality Assurance in Colorectal Cancer Screening and Diagnosis

➢ Print version
  • 10 chapters, 400 pages
  • >250 recommendations
  • >750 references

➢ Web version
  • print version
  • 1000 page evidence base
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Open access publication of all chapters (2012) and overview* (2013) in *Endoscopy*

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**European guidelines for quality assurance in colorectal cancer screening and diagnosis: Overview and introduction to the full Supplement publication**

European Colorectal Cancer Screening Guidelines Working Group:


Institutions are listed at the end of the article.

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Cancer Screening in the European Union
Report on the implementation of the Council Recommendation on cancer screening - First Report*

L v Karsa, A Anttila, G Ronco, A Ponti, N Malila, M Arbyn, N Segnan, M Castillo-Beltran, M Boniol, J Ferlay, C Hery, C Sauvaget, L Voti, P Autie

Scientific basis for:


All EU Member States aim to follow EU quality assurance guidelines

Over 50 population-based programmes for breast, cervical, or colorectal cancer screening running or being established in 26 Member States

Already over 500 million screening examinations in 10-year period (over 50 million screening tests per year)

Despite substantial efforts
- less than half of the recommended tests are actually being provided
  - less than half of these are in programmes with appropriate organisation for comprehensive quality assurance

Professional, technical and scientific support for quality assurance, monitoring, evaluation and accreditation is needed

Adequate resources, including expanded collaboration between Member States, are essential.
EU Quality Assurance Guidelines for Breast and Cervical Cancer Screening Supplements*

- Breast Supplements: Digital Mammography and Pathology
- Cervical Supplements: HPV Primary Testing, Organization of Cytology- and HPV-based screening, and Implementation of HPV vaccination programmes

- Joint Annex 1 – Recommendations on successful implementation of population-based screening programmes, applicable to all currently recommended programmes in Europe (breast, cervical and colorectal)

*Financial support: EU Health Programme*
Sustainable resources for quality assurance of population-based screening programmes - Excerpt from Stockholm Statement

...successful implementation of population-based cancer screening programmes requires long-term political commitment, a comprehensive quality management programme and sustainable resources.

In a fully established programme, the proportion of the expenditure devoted to quality assurance should be no less than 10–20%, depending on the scale of the programme. In the initial years, this proportion may be substantially higher due to the low volume of screening examinations compared with the situation after complete rollout of a nationwide programme. This investment is cost-effective and will save lives.

Implementation of pop.-based cancer screening programmes: Sequential phases, (Nos. of) projects/tasks, Key conditions

1. Before planning (15)  4. Piloting or trial implementation (6)
2. Comprehensive planning (19)  5. Scaling up from pilot to service (14)
3. Feasibility testing (7)  6. Running full scale programme (5)
7. Sustainability (4)

Key conditions for success in every implementation phase:

- Coordination and autonomous programme management
- Good governance, with adequate, sustainable resources
- Societal acceptance and local ownership
- The best evidence-based practice, including comprehensive QA
- Verification of adequate performance and continuous quality improvement

European QA Guidelines for Breast and Cervical Cancer Screening, Supplements, Annex 1 a and 1 b
Implementation of cancer screening programmes: Before planning

1. Review of scientific literature.
2. Collection of information on disease incidence, stage distribution, and survival.
3. Collection of information on availability and quality of cure offered.
4. Understanding the potential role of screening in cancer control.
5. Assessment of evidence for adding screening to existing cancer control measures.
6. Collection of experience from other countries.
7. Building up professional and public understanding of the benefits and risks of screening.
8. Political will, commitment, at all relevant levels (EU, Member States and regional).
9. Decision on political responsibility for the process.
11. Availability of treatments and facilities (both competence and resources).
12. Assessment of facilitating factors/barriers for implementation of organised screening.
14. Formal decision and allocation of budget.
15. Organisation of continuous societal debate and input.
Implementation of cancer screening programmes: Comprehensive planning

1. Creation of professional dedication (understanding)
2. Planning infrastructure
3. Establishing coordinating office with supervision mandate
4. Ensuring that screening is seen as a process
5. Designation of a process owner with mandate to run and manage the quality of the programme
6. Organisational development (self-learning, quality driven)
7. A separate coordination budget.
8. Multidisciplinary case management.
9. Collaboration between screening and treatment systems.
10. Appropriate diagnostic assessment of patients
11. An appropriate screening monitoring IT-system with access and possibility to link registers e.g. population-, patient- and cancer registers
12. Comprehensive information system, serving all purposes
13. Development of a quality assurance plan, including technical QA
14. Adoption of approved QA plan
15. Definition of performance parameters and acceptable levels, including standards for health professionals
16. Contracts with health care providers
17. System for auditing, training and retraining
18. Assessment tools to exclude bad performers
19. Consideration of accreditation system or other comprehensive systems for ensuring competent service delivery.

European QA Guidelines for Breast and Cervical Cancer Screening, Supplements, Annex 1 a and 1 b
Implementation of cancer screening programmes: 
Piloting and Scaling up from pilot to service

PILOTTING
1. Budgeting.
2. Ensuring financial commitment
3. Supervision and coaching of screening staff
4. Testing the legal framework
5. Ability to exclude bad performers
6. Scientific publication of outcome

SCALING UP
1. Defining and contracting the local, regional and national programme teams, defining responsibilities
2. Setting-up infrastructure for coordination within health care settings
3. Identifying possible obstacles
4. Developing a plan for evaluation
5. Availability of staff (professional skills and numbers)
6. Multidisciplinary case management.
7. Special training, reference centre.
8. Comprehensive information system, covering all steps in the screening process
9. Collaboration between screening, treatment and IT systems
10. Technical quality assurance
11. Reduction of barriers to participation.
12. Tools to encourage compliance
13. Advocacy and collaboration with local civil society organisations.

European QA Guidelines for Breast and Cervical Cancer Screening, Supplements, Annex 1a and 1b
Considerable time is needed to successfully implement population-based cancer screening programmes

- **Careful planning and feasibility study phase**
  - 1-3 years

- **Pilot phase: randomised or non-randomised pilot settings**
  - from 3-5 to 10 years
  - depending whether to include performance only or also outcome evaluations

- **Nationwide rollout**
  - 5-10 years until fully established
Potential bottlenecks in planning and implementing colorectal cancer screening programmes

- Selecting, testing the feasibility of, and piloting the screening test and protocol.
- Establishing colonoscopic capacity of appropriate quality to avoid inappropriate waiting times in symptomatic care and in screening
- Developing and testing materials and approaches to communication that permit appropriate information about benefit and harm while as well as achievement of appropriate uptake
Quality assurance of the process of screening programme implementation

1. Comprehensive **planning** of screening process: feasibility of screening models, professional performance, organisation and financing, quality assurance (QA)

2. Preparation of all components of screening process to perform at requisite high level (including **feasibility testing**)

3. Expert **verification** of adequacy of preparations

4. **Piloting** and modification, if necessary, of all screening systems and components, including QA, in routine settings

5. Expert **verification** of adequacy of pilot performance

6. Transition of pilot to service screening and geographically phased programme rollout in other regions of the country

7. Intensive monitoring of programme rollout for early detection and correction of quality problems

8. Regular internal and **external audit** of programme performance

9. **International collaboration** in scientific evaluation of programme impact
Conclusions

Considerable time and effort is required to establish quality-assured cancer screening programmes that are accessible to the entire population that can benefit.

An organized, population-based approach, and international cooperation in the development and implementation of comprehensive quality assurance guidelines has facilitated the successful implementation of cancer screening programmes in Europe.

A similar voluntary collaborative effort could facilitate implementation of effective CRC screening programmes in Latin America.
Thank you for your attention.