Strengthening cancer screening in Montenegro

Overview

In 2008, the Government of Montenegro developed a National Cancer Control Plan outlining ways to address the growing cancer burden in the country, including a recommendation to implement national screening programmes for colorectal, breast and cervical cancers. In line with this priority, the Institute of Public Health began an information-driven initiative to increase uptake of cancer screenings, selecting colorectal cancer for initial piloting of a new screening programme. The initiative was designed with input from a wide variety of stakeholders and supported by the Ministry of Health. Efforts to improve cancer screenings focused on the population aged 59 to 64 years, encouraging all men and women in this age group to uptake free screenings via targeted outreach messages to their mobile phones. General practitioners are financially incentivized to conduct required outreach and a partnership with the telecommunication company has allowed all phone communication as part of the initiative to be delivered at no charge. Reaching the public using this method has been found to be highly successful; 89% of the target population received outreach messages resulting in a 68% screening uptake rate in the first year of the initiative. Participants are screened with specially developed risk questionnaires and submit a stool sample for fecal occult blood testing. If samples test positive, patients are referred for a colonoscopy and specialist care. The pre-existing electronic information system assists referral processes and also enables monitoring and evaluation of the initiative by the Institute of Public Health. The initiative is currently ongoing and its five-year aim is to reduce colorectal cancer mortality by 15% among the target population. Following the success of the colorectal cancer-screening pilot, the Institute of Public Health has begun preparations for implementing a similar cervical cancer screening programme, with breast cancer screening also planned in the future.

Problem definition

The rise of noncommunicable disease in an ageing population has contributed to a growing cancer burden in Montenegro. In 2010, cancer accounted for 14% of total mortality, making it the third highest cause of death.[1] Specifically, incidence of colon cancer has seen the greatest increase, rising from 490 000 cases in 1990 to 715 000 in 2010.[1] The reactive orientation of screening services and lack of preventive services for noncommunicable disease have contributed to poor cancer mortality rates and limited the effective provision of proactive cancer care (Box 1).

Box 1
What problems did the initiative seek to address?

- Rising cancer burden with high mortality rates observed for cancer patients.
- Lack of a proactive, preventive approach to cancer care.

Health services delivery transformations

Timeline of transformations

In 2008, the Government of Montenegro released the National Cancer Control Plan as part of its overarching strategy for the control of noncommunicable diseases (Table 1). The Plan put forward a recommendation to develop a comprehensive cancer screening programme, prioritizing cervical, breast and colorectal cancers. In response, a pilot screening programme for colorectal cancer was developed to improve early detection rates. In 2013, after a three-year planning period, implementation of the initiative was rolled out, reaching national coverage by 2014. Preparations are now underway to extend the screening initiative to other priority cancers.

Description of transformations

Selecting services. The initiative has prioritized increasing the availability and timely use of preventive services for colorectal cancers through implementing a comprehensive screening programme targeting people aged 59 to 64 years. Screening services are provided free-of-charge to all eligible participants. Patients accessing the screening programme receive a questionnaire-based risk assessment and fecal occult blood test. If tests return positive, patients are referred for a colonoscopy and, if necessary, surgical intervention and cancer treatment.

Table 1
What were the chronological milestones for the initiative?

2008	National Cancer Control Plan released by the government; recommendation made to develop cancer screening programmes to address high cancer mortality rates.
2009	Action on cancer screening recommendation proposed; colorectal cancer selected as the target for a pilot screening programme.
2010	Planning and design of screening initiative; necessary funding for activities secured.
2011	Partnership with telecommunication company formed to enable outreach messaging.
2013–2014	Rollout of colorectal cancer screening initiative; full coverage across all municipalities achieved in 2014.
Present	Preparations underway to develop a cervical cancer screening programme.

Designing care. The most distinct feature of the initiative has been described as "the shift from a passive approach to colorectal cancer screenings to one that engages and mobilizes the public by having general practitioners use interactive communications." The initiative has targeted the population directly, sending invitations and reminders to participate in cancer screenings using telecommunication. If patients cannot be reached via mobile phone, they will be invited to participate in screening when they next visit their general practitioner.

Two screening questionnaires for use in general practice have been designed to assess patients' risk for colorectal cancer prior to a fecal occult blood test. A triage system has been designed where patients with elevated questionnaire scores receive a fecal occult blood test. The care pathway follows European guidelines for quality assurance in colorectal cancer screening and diagnosis. Fecal occult blood tests are processed and the results are reported back to patients within 12 days. A colonoscopy for patients is scheduled within one month of a positive screening notification. The cancer treatment pathway following a positive colonoscopy test has not been altered by the initiative.

Organizing providers. Earlier health reforms to strengthen the gatekeeping role of general practitioners have been leveraged and the initiative relies on general practitioners to engage patients, coordinate screenings and make necessary referrals. The Institute of Public Health receives and analyses collected stool samples and reports results back to general practitioners. General practitioners continue to act as the central coordinators of cancer services for patients following a positive diagnosis, assisted by the electronic medical record system in place which allows information sharing with other providers across care levels.

Managing services. The Institute of Public Health acts as the leader and coordinator of the initiative, with municipalities responsible for ensuring general practitioners implement the initiative as required. The Ministry of Health provided an initial supply of 15 000 containers for the collection of stool samples, however the Institute of Public Health has now incorporated containers into their regular budget. Laxatives are donated by a pharmaceutical company through arrangements organized by the Ministry of Health.

Improving performance. A three-day training course for general practitioners was held at the Institute of Public Health to educate providers on the initiative and equip them with the necessary knowledge for performing required tasks. Training included educating providers on conducting outreach, completing screening questionnaires and referring patients with positive test results.

Engaging and empowering people, families and communities

A significant effort has been made to increase the population's awareness on the importance of cancer prevention and screening services. Specially designed educational materials have been distributed and television, radio and other media channels have been used to run informational campaigns and promote screening services. These activities are working towards increasing population awareness of cancer screening and cancer risk to overcome barriers to screening uptake, such as feelings of embarrassment or shame and fears of positive test results.

Health system enabling factors

The government released the National Cancer Control Plan as part of a wider strategy on addressing the rising burden of noncommunicable disease. This Plan made the recommendation to strengthen screening for priority cancers and created a platform from which the initiative could develop. The Institute of Public Health led the design and implementation of the initiative,

Table 2
How was the delivery of health services transformed through the initiative?

Before	After
Selecting services	
No active cancer screening programmes in place.	Active colorectal cancer screening programme available free to all people between 59 and 64 years of age; future screening programmes for cervical and breast cancer anticipated.
Designing care	
No cancer screening tools or guidelines in place.	Patients actively recruited to participate in screenings; screenings conducted according to European guidelines for colorectal cancer screening and diagnosis; screening questionnaires developed to assess cancer risk.
Organizing providers	
Strengthened primary care system allows general practitioners to act as gatekeepers to specialist care; electronic medical records system links providers and facilitates referrals.	General practitioners conduct colorectal cancer screenings and refer patients to specialists as needed; general practitioners continue to act as main care coordinators for patients.
Managing services	
No resources for cancer screening available.	Institute of Public Health leads and coordinates screening activities; municipalities responsible for ensuring general practitioners implement the initiative as required.
Improving performance	
No training on cancer screening provided.	Ad hoc training on the screening programme provided for all general practitioners.

with efforts supported throughout by the Ministry of Health (Table 3). The Ministry has made financial incentives available to general practitioners and other providers active in the screening programme, encouraging their participation in the initiative.

As almost everyone in Montenegro has a mobile phone, this was described as “the easiest way” to engage the target population and encourage uptake of screening services. A partnership between a telecommunication company and the Institute of Public Health provides free SMS text messages and phone calls for outreach activities, as well as a list of telephone numbers for individuals falling within the target population. Leveraging of the cellular network has been a key enabling factor for the initiative to effectively and efficiently communicate with the target population.

The Institute of Public Health monitors municipalities’ performance, assisted by the strong electronic information system already in place prior to the initiative. Each step of the screening process is entered into patients’ electronic medical records, including information from the risk-assessment screening questionnaires. Data collected through this system is accessed by the Institute for Public Health for monitoring and evaluation purposes.

Outcomes

Over the next five years the initiative is aiming to reduce colorectal cancer mortality by 15% in the 59 to 64 year target age-group. Colorectal cancer screening has achieved national coverage and uptake of screenings has been shown to be high. While the initiative is still in the early stages of implementation, a number of positive outcomes are already observable (Box 2).

Change management

Key actors

Change was initiated by the Ministry of Health who established the policy framework on which to build the initiative. Design and development of the initiative was led

Table 3
How has the health system supported transformations in health services delivery?

System enablers	Example
Accountability	• National Cancer Control Plan provided a policy platform for the initiative.
Incentives	• Financial incentives offered to health professionals to support the cancer screening programme.
Information	• National Cancer Control Plan helped identify needs and inform programme activities. • Phone lists provided by the telecommunication company used to identify and connect with the target population. • Strong electronic medical records system enables monitoring and evaluation of the initiative.
Innovation	• Partnership with the telecommunication company provides free SMS text messages and calls for outreach.

Box 2
What were the main outcomes of the initiative during the first year of implementation?

- On average, 89% of the target population was invited to receive screenings. Average population uptake of screenings in response to invitations was 68%.
- Approximately 22 000 fecal occult blood tests and 600 colonoscopies were performed.
- Screenings led to the detection of 12 carcinomas and 35 adenomas.

by the Institute of Public Health with support from the Ministry and other stakeholders (Box 3). To engage stakeholders, the Institute of Public Health established a national team for colorectal cancer, bringing a wide range of professionals into the planning and design process and helping stakeholders to develop a sense of ownership over the initiative. Today, the Institute of Public Health continues to oversee the initiative, evaluate progress and expand activities with support from key actors.

Box 3
Who were the key actors and what were their defining roles?

- **Ministry of Health**. Made initial recommendation for a cancer screening programme; allocated funding to the initiative; worked with the health insurance fund to include colorectal cancer screening under statutory health insurance.
- **Institute of Public Health**. Led design and implementation of the screening programme; hosted trainings for health professionals; analyses samples collected through screenings; performs monitoring and evaluation for the initiative.
- **National team for colorectal cancer**. A multidisciplinary team of stakeholders including representatives from the Institute of Public Health, health insurance fund, health providers and pharmaceutical companies; supported planning and design of the initiative.
- **Telecommunication company.** Allowed outreach messages to be sent free-of-charge.
- **General practitioners**. Sent outreach messages inviting patients to participate in colorectal cancer screenings; conduct screenings and coordinate necessary follow-up care.

Initiating change

In response to the recommendation of the National Cancer Control Plan to implement cancer-screening programmes, the Institute of Public Health called on the national government to act on this recommendation and championed the realization of this goal.

Implementation

Health care providers were invited to the Institute of Public Health at the launch of the initiative to collectively receive necessary training. Now trained, general practitioners are responsible for championing engagement of the public by initiating contact with the target population through the mobile phone network. In many municipalities, general practitioners have shown overwhelmingly positive participation, managing to reach over 90% of the target population in their local area. However, outreach levels vary across localities and the Institute of Public Health is working with municipalities where engagement rates are suboptimal to help generate improvements.

Moving forward

The Institute of Public Health continues to monitor and evaluate the progress of the initiative to

ensure it remains on track to achieve its five-year goals. Using the knowledge and experience obtained from implementing the colorectal cancer screening programme, the Institute is now leading the development of a similar cervical cancer screening programme. Once this programme extension is complete, planning for an additional breast cancer screening programme is expected to begin.

Highlights

- A strong information system supported a data-driven initiative design, facilitated implementation and enabled monitoring and evaluation.
- Moving from a reactive to a proactive approach was key for reaching and engaging the target population and increasing uptake of screenings.
- Partnering with stakeholders outside of the health sector provided access to technologies and tools for engaging the public.

1 Institute of Health Metrics and Evaluation. (2015). *Global burden of disease cause patterns*. Retrieved from http://www.healthdata.org/notice-tool-migration.