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Current Perspective

Towards better implementation of cancer screening in Europe through improved monitoring and evaluation and greater engagement of cancer registries

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Abstract Proposals to improve implementation, monitoring and evaluation of breast, cervical and colorectal cancer screening programmes have been developed in a European project involving scientists and professionals experienced in cancer registration (EUROCOURSE). They call for a clear and more active role for cancer registries through better interfaces with cancer screening programmes and adapting data contents of cancer registries for evaluation purposes. Cancer registries are recognised as essential for adequate evaluation of cancer screening programmes, but they are not involved in screening evaluation in several European countries. This is a key barrier to improving the effectiveness of programmes across Europe. The variation in Europe in the implementation of cancer screening offers a unique opportunity to learn from best practices in collaboration between cancer registries and screening programmes. Population-based cancer registries have experience and tools in collecting and analysing relevant data, e.g. for diagnostic and therapeutic determinants of mortality. In order to accelerate improvements in cancer control we argue that cancer registries should take co-responsibility in promoting effective screening evaluation in Europe. Additional investments are vital to further development of infrastructures and activities for screening evaluation and monitoring in the national settings and also at the pan-European level. The EUROCOURSE project also aimed to harmonise implementation of the European quality assurance guidelines for cancer screening programmes across Europe through standardising routine data collection

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and analysis, and definitions for key performance indicators for screening registers. Data linkage between cancer and screening registers and other repositories of demographic data and cause of death and where available clinical registers is key to implementing the European screening standards and thereby reducing the burden of disease through early detection. Greater engagement of cancer registries in this collaborative effort is also essential to develop adequate evaluation of innovations in cancer prevention and care.

1. Introduction: the challenge

Detection of cancer in its early stages in combination with prompt, appropriate treatment has become an important element in cancer control in recent decades. The aim of early detection is to reduce mortality and other serious consequences of advanced disease. In the case of cervical or colorectal cancer screening, incidence can also be reduced. Reduction of mortality may be accomplished if earlier treatment improves life expectancy, loco-regional control of disease and quality of life and/or permits equally effective therapy with fewer side-effects (Fig. 1). Universal access to prompt and effective diagnosis and treatment is a key to achieve the potential impact of early detection of cancer [1]. The concept of early detection of cancer has evolved since the 1968 report of the World Health Organisation (WHO) [2]. These widely acknowledged principles have been further modified through experience gained from implementation of population-based cancer screening programmes [3] recommended for bowel, breast and cervical cancer screening by WHO [4] and the European Union [5], provided the services are comprehensive and of high quality.

To achieve maximum benefits with minimum health risk, quality must be ensured at every step in the cancer screening process, including:

- identification and personal invitation of each eligible individual;
- performance of the screening test, examination or procedure;
- diagnostic work-up of people with detected abnormalities;
- when indicated, treatment, surveillance and aftercare.

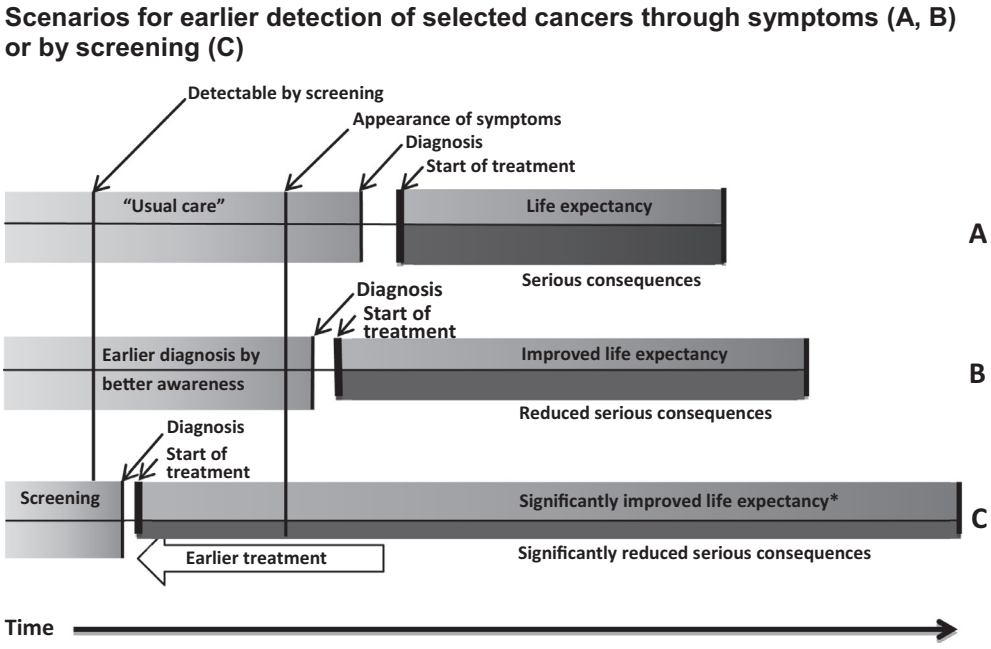

Fig. 1. Scenarios for Early detection of selected cancers through symptoms (A and B) or by screening (C). (A) Time intervals between appearance of symptoms, diagnosis, and start of treatment of a cancer can be weeks to months, and depend upon access to specialised care. (B) Earlier diagnosis and treatment of some cancers due to better awareness of symptoms may increase life expectancy and reduce serious consequences of the disease, especially with good access to treatment. Some over-diagnosis may also occur. (C) Before symptoms appear, screening in people at-risk leads to even earlier detection and treatment of some cancers, albeit with some over-diagnosis; but with an increased life expectancy and less serious sequels of the cancer, provided screening services are adequate. Ideally, the intervals between positive screening results or the appearance of symptoms, and diagnosis and the start of treatment of cancer should be as short as possible. Well-organised screening programmes can shorten the interval between diagnosis and start of treatment by prompt referral to qualified clinical units. They also provide an organisational framework for implementation of quality assurance that helps improve the benefits and limit the harms of screening, such as complications of treatment and over-diagnosis. *Source:* (1), adapted from the Inaugural address of Professor Harry de Koning; Rotterdam, the Netherlands: Erasmus MC, 2009.