Challenges in breast and cervical cancer control in Japan

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Since the mid-1990s, there has been an increasing incidence of, and mortality from, cervical and breast cancers in Japan. Such an increase has raised concerns over the efficiency of Japan's screening programmes for these cancers. Although citizens benefit from universal health coverage, the Japanese health insurance system mostly focuses on tertiary prevention and disease treatment, while secondary prevention (screening) is low priority. Citizens have multiple opportunities to be screened for cancer—either through programmes organised by municipalities, or individual or collective, opportunistic and comprehensive health check-ups on a voluntary basis. Despite this, however, participation is as low as 35% of the target population for both cancers. In this Policy Review, we discuss the challenges in the prevention of breast and cervical cancers in Japan, particularly focusing on the structure of the National Health Insurance system and the National Cancer Control Plan, reasons for low participation as a result of social and political attitudes, as well as providing recommendations to overcome these challenges. Japanese women would benefit from new measures to increase participation, a national data surveillance programme to monitor screening activities, and the implementation of a quality assurance system among all providers.

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Introduction

Although the age-standardised incidence rate of breast cancer in Japan is lower than in other developed countries (51·5 cases per 100 000 person-years in Japan; 92·9 cases per 100 000 person-years in the USA; 95·0 cases per 100 000 person-years in the UK),[1] incidence is increasing with time, as it is in most parts of the world. Surprisingly, unlike many high-income countries, which have shown a decrease in mortality over the past 20 years, there has been a concomitant rise in breast cancer mortality and incidence in Japan (annual percent change [APC] of 1·8% between 1958 and 2014 for mortality, and APC of 6·4% between 2003 and 2011 for incidence).[2,3] Breast cancer is the most common cancer in Japanese women, with 89 400 estimated cases in 2015. Breast cancer represents 21% of all female cancers in Japan, and is the fifth leading cause of cancer mortality with 13 240 deaths in 2014 and 9% of all cancer deaths in women.[4] The age-standardised incidence rate peaks at 45–49 years old, which is much earlier than in western countries.[3]

The estimated age-standardised incidence rate for cervical cancer is higher in Japan than in North America and the UK (10·9 per 100 000 person-years in Japan; 6·6 per 100 000 person-years in the USA; 7·1 per 100 000 person-years in the UK).[1] 17 800 new cervical cancer cases were estimated to be diagnosed in 2015, representing 4% of all female cancers. Cervical cancer is the eighth leading cause of cancer mortality in Japan with 2800 deaths, and 2% of all cancer deaths in women.[4] Incidence rates for cervical cancer have been increasing since the mid-1990s, especially in premenopausal and perimenopausal women (APC of 4·4% between 1994 and 2011 in women aged 15–39 years), while mortality rates are following the same trend (APC of 1·9% between 1994 and 2014 in women aged 15–39 years).[3,5] Concomitantly, the proportion of cervical cancers diagnosed at a localised stage has decreased since the mid-1990s.[6] However, Japanese cancer registries use a different staging system to the Tumour, Node, Metastasis Classification of Malignant Tumours (TNM) and the International Federation of Gynaecology and Obstetrics (FIGO) system, preventing reliable international comparisons. Determinants of increasing trends in cervical cancer incidence worldwide include changes in sexual behaviour and in age of sexual debut, multiple sexual partners, smoking habits, inadequate screening, or screening failing to detect abnormality. In a national survey in 2011, 304 (24%) of 1289 female high school students (16–18 years old) reported having sexual intercourse, whereas the proportion was only 9% in 1981, indicating that the age of sexual debut is decreasing with time. Similarly, in 2011, 522 (47%) of 1115 female university students (aged 18 years or older) reported being sexually active, whereas the proportion was only 19% in 1981.[7,8] In addition to changes in sexual behaviour, smoking in young people is becoming more prevalent. In Japan, smoking is prohibited before the age of 20 years; however, smoking bans are not followed. In a survey published in 2006,[9] 4% of girls aged 12 years were current smokers, while 16% of girls aged 17 years were current smokers. A continuous increase in tobacco consumption is observed in women aged 20–40 years.[10]

Japan is a highly developed nation in terms of health; it is a health conscious and high-risk avoidance country. The physician density is 2·3 per 1000 people (2·5 per 1000 in the USA, and 2·8 per 1000 in the UK) and the nursing and midwifery personnel density is 11·8 per 1000 people (9·8 per 1000 in the USA, 8·8 per 1000 in the UK).[11] Japanese hospitals are generally very well equipped for cancer diagnosis and treatment. In terms of diagnostic equipment, among the Organisation for Economic Cooperation and Development countries, Japan reports the highest density of CT and MRI scanners (per 1 million people), and is one of the countries with the highest density of mammographs.[12] Additionally, Japan reports the highest penetration rate of digital mammography worldwide.[13] However, radiotherapy equipment is of below-average density.[12] In 2002, Japan introduced a designated cancer

hospital referral system to improve access to specialised cancer care across the country and to organise cancer care delivery (such as reducing waiting times for diagnosis and treatment).[12]

Health insurance coverage is thought to be quite egalitarian in terms of burdens and benefits through the different programmes.[14] However, in view of the worrying increases in mortality rates for breast cancer and increases in incidence and mortality rates for cervical cancers, especially in women younger than 50 years old, we question the effectiveness of the Japanese cancer control programme for women. In this Policy Review, we describe the challenges of breast and cervical cancer prevention in Japan, focusing on the Japanese health insurance system, its screening programmes, and the different screening-related issues the country is facing.

National Health Insurance system and National Cancer Control Plan

Japanese citizens have had a universal health insurance system since 1961. For individuals younger than 75 years old, the health system is divided into two categories: (1) the National Health Insurance system (*Kokumin-Kenkou-Hoken*) for farmers, individuals who are self-employed, retirees, and dependants, and (2) the Social Insurance System (*Shakai-Hoken*) for all employees, including company employees, civil servants of national and local governments, teachers, and their dependants.[15] Each system covers roughly half of the population who are younger than 75 years old. Over 3000 insurers exist, which are allocated depending on the person's employer, occupation, or place of residence, and all health insurers are not-for-profit organisations.[16] Each health insurer can deliver health promotional activities, including cancer screening; however, preventive activities are scarcely provided and relatively little attention is paid to preventive care in general.[14,17] Few financial aids are available for preventive measures for these insurers and, as a result, cancer screening activity has little importance within the Japanese health system.[18] Citizens who are aged 75 years and over are covered by a specific health insurance called the Health Care System For The Old-Old (*Kokikoreisha-Iryo-Hoken*).[19] This health insurance for elderly people (older than 75 years) does not provide any cancer screening programme. However, because most of the recipients are retirees, they are eligible for the screening programmes provided by the municipalities, because there is no upper age limit in the national screening guidelines.

The National Cancer Control Plan, or the so-called Basic Plan to Promote Cancer Control Programmes, was approved by the Ministry of Health, Labour and Welfare, in accordance with the Cancer Control Act, in June, 2007. The plan was reviewed after 5 years in June, 2012, and is still in place. Japan does not have a unified, national, population-based breast and cervical screening programme, and secondary prevention has not been given high priority in the National Cancer Control Plan. However, citizens have several opportunities to be screened for cancer: at screenings organised by municipalities (free or for a small charge); individual opportunistic screening (fully covered by the individual); collective opportunistic screening (subsidised independently by the health insurer); cancer screening included in basic health-care checks required for employees by private companies and based on the Industrial Safety and Health Act (although, breast and cervical cancer screening are not included); and comprehensive health check-up on a voluntary basis (*Ningen dock*) and separate from the National Health Insurance system.[20] Gynaecologists in the public and private sectors also provide screening in the different settings described above.[21]

Before 1998, cancer control activities were under the responsibility of the national government. From 1998, for economic reasons, the national government decided to shift the financial burden of cancer control to the prefectural governments. Consequently, the responsibility was transferred from the central level to the prefectural and municipal levels through the Health and Medical Service for the Elderly Act.[22,23] The National Health Insurance system only covers diagnosis and treatment; prevention is not included. Screening activity and vaccination are financed by each municipality.[24] However, a paper[25] describing the activities related to the Cancer Control Act in three prefectures reported poorly developed prevention programmes, because municipalities allocated small budgets for primary prevention.

The national government provides all-purpose provisions to the municipalities, which decide where to allocate these funds. Although the central government, through the Ministry of Finance, controls fund allocation for health, large discrepancies exist in cancer control activities between prefectures and between municipalities within the same prefecture, in terms of their involvement and priorities, quality of service, quality assurance, establishment of a call–recall system, accessibility to the screening facilities (evening appointments or during holidays), cost, and implementation of evidence-based health care.[26] Budget allocation for health differs according to the size of the municipalities; small towns usually invest more in health than large cities that may have other priorities. In a 2003 survey[27] on the adherence to the cancer control plan of all 3242 municipalities, only 1153 (49%) of municipalities proposed breast cancer screening using mammography, and only 470 (20%) proposed cervical cancer screening for women younger than 30 years old. A questionnaire survey on screening activities that was given to 3522 health professionals (local government officers and experts) revealed that 2358 (99%) of 2380 people adhered to cervical cancer screening