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Enhancing patient-centred approaches to optimise early-breast cancer care

**A review of current practice and opportunities
for improvement in Japan**

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About this Report

“Enhancing patient-centred approaches to optimise early-breast cancer care: a review of current practice and opportunities for improvement in Japan” is a research report by Economist Impact examining the existing breast cancer care pathway in Japan and the factors that help or hinder the goal of achieving optimal patient-centred care.

The research aims to understand the unmet needs within the health system and opportunities for improvement. We analyse how Japan can improve patient-centred care and build awareness, promote screening, early detection, diagnosis and prognosis, and ensure access to high-quality treatment, including supportive and palliative care.

Our goal is to help develop patient-centred care pathways and improve long-term outcomes for women with breast cancer in Japan. We hope to do this by identifying unmet needs for early breast cancer care and analysing factors that act as barriers or facilitators to delivering patient-centred early breast cancer care. Our report uses a research method called ‘force field analysis’ which maps out forces that promote or hinder patient-centred care and highlights opportunities and gaps that drive change.

Economist Impact conducted a primary research programme to raise awareness and stimulate

discussion among key stakeholders in Japan. We conducted an initial evidence review and convened an expert panel to help design the ‘force field’, which encompasses practices favouring and hindering optimised patient-centred early breast cancer care. Alongside this, Economist Impact co-facilitated a workshop with various key stakeholders to understand national-level challenges in Japan. This country report resulted from this research and workshop insights.

Our thanks go to the Japan stakeholders who attended the local country workshop and shared their insights and experience (in alphabetical order):

Workshop participants

- Assoc. Prof. **Ataru Igarashi**, Ph.D., Associate Professor, Department of Public Health, School of Medicine, Yokohama City University
- Dr **Takanori Ishida**, M.D., Ph.D., Professor, Graduate School of Medicine Medical Sciences Surgery Breast and Endocrine surgical Oncology, Tohoku University
- Dr **Shinji Ohno**, M.D., Ph.D., F.A.C.S., Deputy Hospital Director, Center Chief, Breast Oncology Center, Center Institute Hospital
- **Naomi Sakurai**, President, Cancer Solutions Co., Ltd.

- Dr **Toshinobu Sato**, M.D., Ph.D., Professor, Kurume University

Moderator

- Prof. **Kohei Onozaki**, MS, Professor, Division of Health Policy and Management, St. Luke's International University

In addition, we are grateful to the following people who served as our Asia-Pacific regional expert panellists (in alphabetical order):

- **Libby Burgess**, Chair, Breast Cancer Aotearoa Coalition, New Zealand
- Dr **Polly SY Cheung**, Founder, Hong Kong Breast Cancer Foundation, Hong Kong
- Dr **Julia Gandhi**, Executive, Committee member, Breast Cancer Foundation (BCF), Singapore; Chair, Women in Pharma, ISPE, Singapore.
- Prof. **Chisato Hamashima**, Professor, Division of Health Policy, Department of Nursing, Faculty of Medical Technology, Teikyo University, Japan

- Prof. **Mikael Hartman**, Senior Consultant and Head of Breast Services, National University of Singapore, Singapore

- Prof. **Chiun-Sheng Huang**, Professor and Chairman, Director of Breast Care Centre National Taiwan University Hospital, Taiwan

- Prof. **Ava Kwong**, Chief of Breast Surgery Division, The University of Hong Kong, Hong Kong

- Prof. **Bruce Mann**, Director of Breast Tumour Stream, Victorian Comprehensive Cancer Centre, Australia

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This research programme was conducted by the Economist Impact team. This research team consisted of Gerard Dunleavy, Neeladri Verma, Emily Tiemann, Jocelyn Ho, and Yogita Srivastava.

Executive summary

Breast cancer is the most commonly diagnosed cancer among Japanese women, with a rapidly increasing incidence.¹ This disease, often seen in middle-aged women, is the fifth leading cause of cancer-related death in Japanese females² and a cause of psychosocial burden. Cancer stage and other clinical factors at diagnosis predict prognosis in breast cancer patients.²

Breast cancer diagnosed at an early stage, when it is not too large and has not spread, is more likely to be treated successfully than breast cancer diagnosed at an advanced stage. Advanced breast cancer not only creates an urgent health challenge but also impedes the quality of life, and brings significant economic costs for patients, their families and public health systems.

There are significant opportunities to improve early breast cancer care in Japan by understanding the patient-centred care pathway for early breast cancer diagnosis and treatment and investigating the unmet needs in managing breast cancer.

Using an evidence-based approach that incorporates a review of existing data and an expert panel meeting, we designed a force field analysis to assess existing policies and system performance across four domains of the patient

journey: population awareness, screening and diagnosis, treatment, and survivorship.

Indicators within each domain were selected based on evidence of their impact on promoting or deterring optimisation of patient-centred care for early breast cancer. We then conducted a workshop to discuss our findings and gain the perspective of key experts in Japan to flesh out key opportunities for improvement. We drafted scores for indicators within these four domains based on our research and insights from the workshop. This report combines in-depth research and force field analysis of early breast cancer care in Japan.

Key findings:

- **Awareness:** Improving health literacy and breast awareness are fundamental to optimising early breast cancer care however, in Japan, there is low knowledge about the signs and symptoms of breast cancer. To improve this, the government and non-governmental organisations (NGOs) are working together to spread awareness of the disease and the importance of early detection. The Ministry of Education targets young individuals by educating them on cancers to improve understanding and remove the social stigma associated with the condition.

- **Screening and Diagnosis:** The actual screening participation rate is not known. The low participation rates reflected in Japan's national survey suggest a significant barrier to early breast cancer diagnosis. The lack of a system to monitor voluntary breast cancer screening participation in workplace screenings and the lack of clear recommendations and a centralised strategy for all municipalities could lead to low screening rates. Early diagnosis using genetic tests to detect hereditary cancer in at-risk populations would also help enhance patient-centred care and improve outcomes.
- **Treatment:** Japan focuses on innovative treatment options and personalised medicine to enhance patient-centred care. However, despite the treatment coverage, patients have reported financial burdens. Japan has free access to hospitals and financing mechanisms to support patients, but sometimes patients do not fully understand the system and cannot leverage the full benefits leading to a cost burden. Improving the availability of integrated mental health services is another way to enhance patient-centred care.
- **Survivorship:** Follow-up care and continuity of support for cancer survivors are both important elements of patient-centred care, but these receive a different amount of focus in Japan. In particular, although acknowledged, psychological support is identified as an unmet need that must be addressed.

We conclude with the following opportunities to optimise early breast cancer care and improve outcomes for people living with breast cancer in Japan:

1. To encourage greater screening participation, knowledge is key:

In Japan, expanding the educational

opportunities for people to acquire knowledge about the importance and benefits of breast cancer screening and early detection is key to improving screening participation and promoting earlier diagnosis.

2. For accurate management, data should be integrated:

to better understand and monitor the status of screening in Japan, there is a need to develop an integrated platform to combine the various systems of breast cancer screening (population-based and voluntary), which would improve accuracy and enable better recommendations.

3. Move from diversified to centralised:

To achieve more uniform outcomes for all municipalities, some broader cancer control measures, policies and guidelines should be operated under a prefectural basis rather than under local governments, and reporting requirements should be clearer.

4. Simplify and digitise:

There is a need to simplify and digitise procedures and systems to increase efficiency and reduce the load that is felt by patients and healthcare professionals. Encouraging follow-up care via teleconsultations and providing follow-ups at smaller, local clinics rather than large hospitals, would not only help in cost containment but also save time for patients and doctors, improving follow-up care.

5. Invest for the future:

For young early breast cancer patients and survivors, there should be a more tailored approach to addressing their medical, psychosocial, and financial needs to enable them to have the best chance at living long, productive, and healthy lives.

Introduction

In Japan, approximately 1 million people are diagnosed with cancer each year.³ Breast cancer accounts for 21.4% of all female cancers, making it the most common cancer in women in Japan.³ Crucially, it is also a common cause of morbidity and avoidable mortality in women.

The timeliness of diagnosis and treatment impacts the extent of cancer spread (or cancer stage). Early and intermediate-stage cancers are confined to the primary or source organ and adjacent areas, such as lymph nodes, while advanced-stage cancers usually spread elsewhere in the body. Early Stage Breast Cancer includes both precancerous stage (ductal carcinoma in situ) and invasive cancer of the breast (adenocarcinoma) – clinical Stages I, II and IIIA. In Japan, the 5-year survival of is more than 90% for breast cancer patients.⁴

To deliver collaborative, coordinated, and accessible care, most health systems are moving towards the patient-centred care (PCC) model, especially for managing chronic conditions like cancer.⁵ Patient-centred care delivers the right care at the right time and place and addresses patient values and preferences through information sharing, empathy, empowerment, and health promotion. PCC is crucial to high-quality care because it improves patient and health system outcomes.⁵

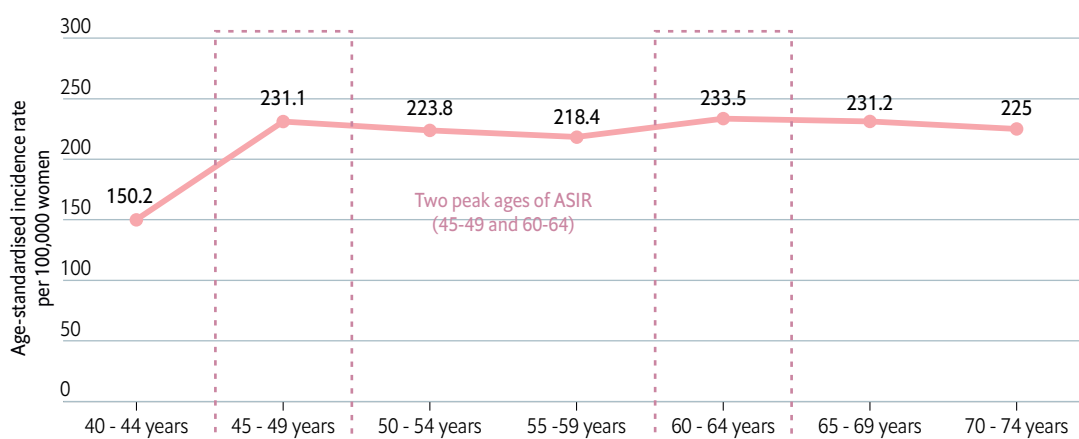
This report aims to understand key factors that affect the early breast cancer care pathways in Japan and gain insight into how patient-centred approaches to early breast cancer care can be enhanced.

The burden of breast cancer in Japan

Breast cancer is the most common cancer diagnosed in women in Japan, with almost 92,000 new cases diagnosed in 2020.³ Breast cancer is seen more frequently in middle-aged Japanese women⁶, with the two peaks in the 45–

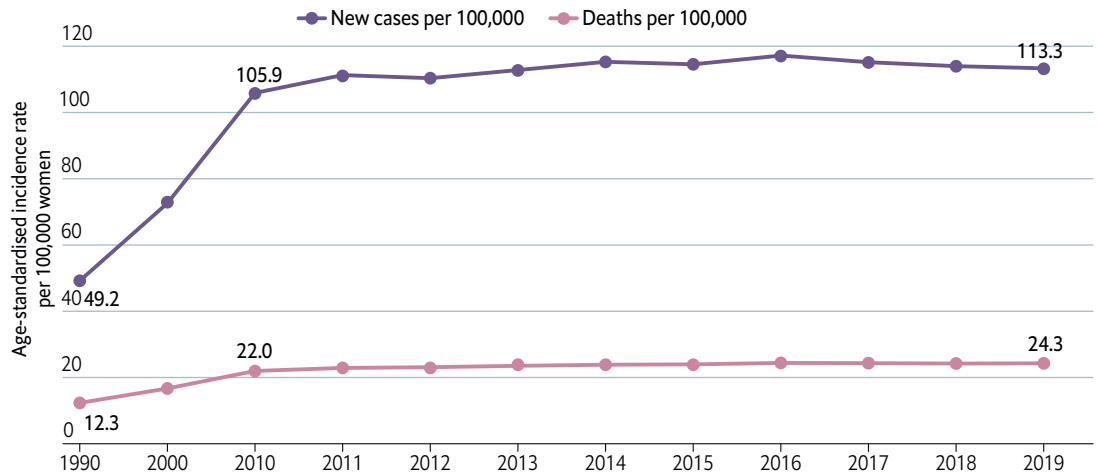
49 and 60–64 age groups.^{7,8,9} The disease poses a high burden in Japan with an overall incidence rate of 8.9%, a 5-year prevalence rate of 228.74 per 100,000 population (all ages)³, and 0.39 million disability-adjusted life years (DALYs)¹⁰.

Figure 1: Age-standardised breast cancer incidence in women by age groups, Japan 2018



Source: Mizukoshi MM et al., A Comparative Analysis of Breast Cancer Incidence Rates between Australia and Japan: Screening Target Implications. *Asian Pac J Cancer Prev*. 2020.⁹

Figure 2: Age-standardised incidence and death rates for breast cancer in women, Japan 2019

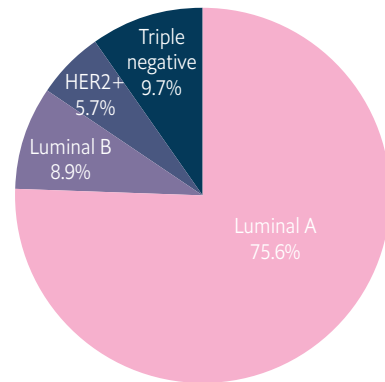


Source: The Institute for Health Metrics and Evaluation (IHME) Data, 2019.¹⁰

Breast cancer is among the leading causes of death in Japan, with an overall mortality of 4.1%³, and mortality has been increasing at all ages.¹¹ In 2019, there were 14,935 deaths due to breast cancer in Japan.¹²

Breast cancer management and outcomes depend on the presence or absence of biomarkers. Triple Negative and HER2+ subtypes show poor prognosis and tend to relapse more often within 1–2 years of treatment.¹³ In Japan, the triple-negative subtype is seen in 9.2% of women and HER2+ in 5.7% of women.⁷ Luminal A is the most frequently seen subtype, but the incidence of triple-negative type disease is significantly higher in younger patients (34 years old).¹³

Figure 3: Distribution of breast cancer subtypes, Japan



Source: Annual report of the Japanese Breast Cancer Registry for 2017 (5) and Onitilo AA et al Breast cancer subtypes based on ER/PR and HER2 expression: comparison of clinicopathologic features and survival. Clin Med Res. 2009.¹⁴

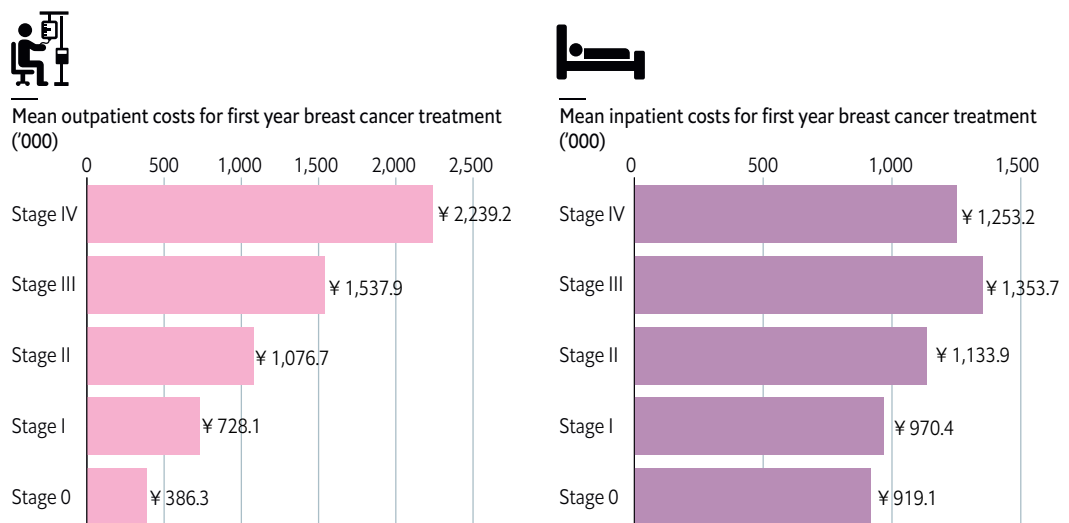
The cost of breast cancer in Japan

In Japan, as breast cancer is commonly seen in younger women (in late 40s) compared to other cancers, patients with breast cancer are expected to live with the disease for a longer time¹³, resulting in a severe economic burden of treatment and a high social burden.¹¹ Direct costs, morbidity, and mortality costs have been estimated to be as high as 713.5 billion yen in 2014, 730.0 billion yen in 2017, and 743.8 billion yen in 2020.¹¹ The increased cost of breast cancer is due to high mortality costs, estimated

to be 35.7 million yen in 2020, depending on the average age at death (67.5 years in 2020).¹¹

50% of breast cancer care costs are consumed by patients below 60 years old¹⁶, and the higher costs of inpatient and outpatient treatments for Stages III and IV breast cancer (Figure 4) confirms that treating advanced stage breast cancer is associated with significant increases in costs compared to early-stage cancers, partly due to the personalised therapy and additional tests involved with advanced cancer treatment.¹⁶

Figure 4: Average first year breast cancer treatment cost (Japanese Yen) by cancer stage in Japan



Source: Watanabe T et al., First-Year Healthcare Resource Utilization Costs of Five Major Cancers in Japan. *Int J Environ Res Public Health*, 2021.¹⁶

The current state of patient-centred care for early breast cancer in Japan

The Japanese healthcare system is moving towards decentralisation in the long term, meaning that most decisions in healthcare are handled by lower levels of government instead of the central government. The system is also characterised by its universal healthcare coverage, which provides free access to any medical institution without a referral, as well as a broad scope of insurance benefits and lower out-of-pocket costs.¹⁷


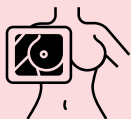


In Japan, cancer is identified as an important public health issue. In 2006, the Ministry of Health, Labour and Welfare (MHLW) enacted the Cancer Control Act to promote cancer prevention, reduce cancer deaths, level up cancer medical services, and enhance early detection.¹⁸ To standardise oncology care across the country, Japan has 402 designated cancer care hospitals (DCCH) as of 2020.¹⁹ These facilities play an important role in treating major cancers, including breast cancers, in each region. Additionally, the prefectural governments designate medical facilities specialised in cancer care to strengthen the prefectural-level cancer care system in collaboration with national DCCHs and improve

the quality of cancer care.¹⁹ However, not all patients attend DCCHs; some may be diagnosed or treated in non-designated hospitals.^{19,20}

The breast cancer care continuum spans from population awareness to referral, screening, diagnosis, treatment, follow-up, rehabilitation and, if applicable, palliative care. The patient's journey outlines steps within defined timescales, and there are clear, bright spots (enablers) and some areas of further improvement (resistors) noted in Japan for optimising patient-centred care for early breast cancer patients.

Combining the evidence review findings and Asia-Pacific regional expert interviews, the most influential forces affecting optimised patient-centric breast cancer care have been mapped for Japan (methodology explained in the appendix). Table 1 summarises the various forces that have been identified as either driving (enablers) or hindering (resistors) the optimisation of patient-centric breast cancer care in Japan, and the following section presents the scores allocated to each factor based on the research and workshop insights and explores each factor in detail (refer to appendix I for methodology).

Table 1: Overview of enablers and resistors for optimising patient-centred early breast cancer care in Japan

Domains	Enablers	Resistors
Population awareness 	Education: The government has made efforts to promote the importance of breast cancer awareness through various campaigns.	Health literacy: There is low knowledge and awareness of the signs and symptoms of breast cancer.
Screening & Diagnosis 	Screening recommended: According to Guidelines for Cancer Prevention Priority Health Education and Cancer Screening by MHLW, mammography screening for women aged 40 years and older is advised (especially recommended for those aged 40-69 years) every 2 years.	Participation: The participation rates are low for eligible Japanese women and have not reached the national aim of 50% of the target population.
	Availability of genetic testing: BRCA1/2 genetic testing has been covered by national insurance for eligible patients since 2020.	Supplemental screening options: There is an area of improvement to provide a holistic approach to population-based breast cancer screening, especially for women with dense breasts, by improving the availability and awareness of ultrasonography adjunct screening.
Treatment 	Decision making: National guidelines recommend that healthcare professionals and patients engage in shared decision making.	Prefecture variations: There are differences in access to care between and within different prefectures.
	Option of precision medicine: Availability of cancer genomic profile tests under national health insurance provide an exciting opportunity for precision medicine.	Cost of care: Many cancer patients have reported a high financial burden despite national health insurance coverage often because patients do not fully understand the system and cannot leverage its full benefits.
	Access to innovations: The Japan Breast Cancer Research Group provides breast cancer patients with access to a variety of clinical trials.	Mental health treatment as integral part of cancer care: Psychological distress, including anxiety and depression, are common among breast cancer patients and must be given more clinical and research attention.
Survivorship 	Follow-up care: In 2018, the National Cancer Centre Japan developed its first cancer survivorship Guidelines.	Continuity of care: Cancer-free patients experience a high psychological burden which is negatively impacted by a lack of available support services.

Population Awareness

Population awareness is pivotal in achieving patient-centred care for early breast cancer patients, as it facilitates early detection of the disease. Three Basic Plans to promote cancer control were launched in Japan in 2007, 2012, and 2018. The 2007 plan required that all government-designated cancer centres develop integrated care pathways for cancer patients, and the 2012 plan expanded its focus to mitigate difficulties in returning to work or education, encourage better support to cancer survivors and their relatives, and raise public awareness

Education and spread of breast cancer awareness through campaigns has been identified as a significant enabler in driving better patient-centred breast cancer care in Japan. The government of Japan has taken steps to educate the public on breast cancer, focusing on adolescents and young adults (AYAs). Educating AYAs about cancer at a time when they are learning about life is expected to positively impact cancer-preventing behaviours in adulthood, increase their parents’ awareness of cancer, and positively impact behaviour around screening.²³ The Ministry of Education, Culture,

Table 2: Mapping enabling and resisting forces for population awareness in Japan

		Strong ← Weak				Weak ← Strong				
	Enabling Forces	4	3	2	1	1	2	3	4	Resistors Forces
Population awareness	Education: The government has made efforts to promote the importance of breast cancer awareness through various campaigns.									Health literacy: There is low knowledge and awareness of the signs and symptoms of breast cancer.

“Being breast-aware means taking care of your breasts, paying good attention and immediately seeing a specialist when you notice any changes, and having a thorough breast cancer check-up routinely even when there is no noticeable change.”

Dr Takanori Ishida, Professor, Graduate School of Medicine Medical Sciences Surgery Breast and Endocrine surgical Oncology, Tohoku University

around cancer survival.²¹ In the 2018 plan, The MHLW stated its commitment towards patient-centred cancer care in Japan and highlighted the government’s overarching goal to raise awareness among “Our people, not only cancer patients”, to overcome cancer.²¹

Sports, Science and Technology is developing a health education curriculum for students, and in 2017, adopted animated cancer educational materials for junior and senior high school children created by the Japan Cancer Society.²⁴

NGOs such as The Japan Cancer Society are also involved in promoting breast cancer awareness, including the importance of self-breast examinations, cancer screenings and early detection, and have been organising the Pink Ribbon Festival since 2003.²⁴ “A variety of companies participate in Pink Ribbon and awareness-raising activities, which I think is pretty big”, explains Ms Naomi Sakurai, President, Cancer Solutions Co., Ltd.

Education is a considerable driver in promoting patient-centred early breast cancer care. However, Japan can further improve this factor

by promoting knowledge among people to fully utilise the provisions of breast cancer care offered by the government, such as adjunct ultrasound screening for patients with dense breasts and financing aids for cancer care. This step will enhance patients' understanding of the system to leverage it when needed.

However, low health literacy around breast cancer has been noted among the Japanese people. A 10-country survey of adults in 2014 found that Japanese people (of both sexes) were the least confident in their ability to name symptoms of breast cancer, with only 54% of adults knowing that a lump in the breast was a symptom of the disease.²⁵ "The general public should know what Breast Awareness is, and we should be conscious of the condition", expresses Dr Takanori Ishida, Professor, Graduate School of Medicine Medical Sciences Surgery Breast and Endocrine surgical Oncology, Tohoku University. "Being breast-aware means taking care of your breasts, paying good attention and immediately seeing a specialist when you notice any changes,





and having a thorough breast cancer check-up routinely even when there is no noticeable change."

Research has shown that a low level of health literacy is associated with less uptake of prevention and early detection services such as breast cancer screening.²⁶ "The health literacy is low and varies between income groups. For instance smoking is one of the causes of cancer, and the smoking rate in Japan is higher in groups with lower household income. Screening rates also tend to be higher in groups with longer years of education. We note very few new participants for screening; the same people come all the time." says Ms Sakurai.

Screening and Diagnosis

In 2004, Japan officially recommended that women start mammographic screening at 40 years old and once every two years after that. According to cancer screening guidelines by the MHLW, breast cancer screening is particularly recommended for those aged between 40 to

Table 3: Mapping enabling and resisting forces for screening and diagnosis in Japan

		Strong ← Weak				Weak ← Strong			
		4	3	2	1	1	2	3	4
		Enabling Forces				Resistors Forces			
Screening & Diagnosis	<p>Screening recommended: According to Guidelines for Cancer Prevention Priority Health Education and Cancer Screening by MHLW, mammography screening for women aged 40 years and older is advised (especially recommended for those aged 40-69 years) every 2 years.</p>								
	<p>Availability of genetic testing: BRCA1/2 genetic testing has been covered by national insurance for eligible patients since 2020.</p>								
									
									
		<p>Optimisation of patient-centred early breast cancer care</p>				<p>Participation: The participation rates are low for eligible Japanese women and have not reached the national aim of 50% of the target population.</p>			
						<p>Supplemental screening options: There is an area of improvement to provide a holistic approach to population-based breast cancer screening, especially for women with dense breasts, by improving the availability and awareness of ultrasonography adjunct screening.</p>			

69 years.²⁷ However, due to the lack of clear recommendations for the upper age of screening, many older women do not pay enough attention to breast screening and self-examination, which could contribute to the high mortality rate.^{28,29}

Japan has various systems of breast cancer screening which provide citizens opportunities to be screened: 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); voluntary workplace screenings and comprehensive health check-up.^{17,30} Breast cancer screenings broadly fall under two categories in Japan. The first is population-based (countermeasure type) screening, which aims to reduce mortality in the population, and the second is voluntary cancer screening, which is offered at workplaces and includes physical examinations and screening.

“Women tend to put their family members ahead of their health. Some younger women also sometimes find mammography very painful and don’t want to do it again. How to persuade these women to get screened is the issue ”

Dr Shinji Ohno, Deputy Hospital Director, Center Chief, Breast Oncology Center, Center Institute Hospital.

“The countermeasure type screening uses taxpayers’ money for funding and thus mandates detailed reporting on the number of people screened, the number of breast cancer cases identified etc. On the other hand, voluntary screenings, often workplace screening programmes, do not always have a reporting requirement. In some prefectures, the rate of voluntary screening is not fully understood.

In this regard, it is said that there are regional disparities in Japan”, Dr Ishida explains. Currently, Japan has no system to comprehend the actual screening status by integrating countermeasure-based and voluntary cancer screening. Therefore, most prefectures do not understand the correct level of cancer screening. The recommended screening for breast cancer is identified as an enabling factor that could be improved by refining the screening recommendation, developing policies to improve screening output, and building a system to monitor voluntary breast cancer screening participation.

Hereditary breast cancer is diagnosed based on the presence of BRCA1/2 mutations. Carriers of these mutations in the Japanese population have been found to have a cumulative breast cancer risk of 72% (BRCA1) and 69% (BRCA2).³¹ BRCA1/2 genetic testing for breast cancer patients has been covered by Japanese national insurance since April 2020.³² With the inclusion of this diagnostic test, it is possible to detect women with a high risk of the hereditary breast at early stages for better overall treatment outcomes. This is a significant driver of patient-centred early breast cancer care.

The low participation rate in the breast screening programme and limited screening options for women with dense breasts are identified as challenges in optimising patient-centred early breast cancer care.

In Japan, a large-scale survey called the Comprehensive Survey of Living Conditions is undertaken every three years to capture fundamental aspects of the nation’s livelihood, such as health, medical care, welfare, pension and income etc.³³ The government bases the cancer screening rates on these voluntary questionnaire-based surveys, which have a response rate of around 70%³³. In 2016, according to the Comprehensive Survey of Living Conditions, only 44.9% of the target women in Japan had undergone mammography screening

within the past two years.³⁴ The survey in 2019 reported increased participation rates, yet, the participation remained low at 47.4%, not meeting the target goal of 50% set in the “Basic Plan to Promote Cancer Control Programs (third term)” national strategy.³³ Thus, though the surveys do not provide an accurate picture of breast cancer screening participation, the results suggest that despite being highly subsidised, the screening mammography uptake remains low in Japan.

There can be several reasons for the low participation rate. “Women tend to put their family members ahead of their health. Some younger women also sometimes find mammography very painful and don’t want to do it again. How to persuade these women to get screened is the issue”, says Dr Shinji Ohno, Deputy Hospital Director, Center Chief, Breast Oncology Center, Center Institute Hospital.

Japanese women often have thin breasts and a high breast density compared with those of Western countries, and in Japan, high breast density was observed in 78% of non-symptomatic women and 87% of breast cancer patients.³⁵ Although ultrasonography is available, it is not routinely recommended for population-based breast cancer screening in Japan.³⁶ The higher prevalence of women with dense breasts in Japan calls for personalised, supplemental screening modalities.

“Women in their late 40s, report a high proportion of dense breasts,” states Dr Ishida. “Mammography is the only modality scientifically proven to reduce mortality, but it does not

provide enough benefit in women with dense breasts, as it can only detect breast cancer in 70% of these cases. Ultrasound can be a helpful adjunct in such patients.”

Treatment

The Japanese Breast Cancer Society produced the Breast Cancer Clinical Practice Guidelines (2018 edition). The guidelines act as a support tool for shared decision-making between the doctor and patient.³⁷ “Concerning patient-centred care, there are a variety of discussions in Japan”, remarks Dr Ohno, “Shared decision-making and other advanced care planning are progressively advancing and becoming increasingly popular. However, there are still discussions on how much the patients are involved.” A study analysing discrepancies between the healthcare provider and patient perceptions surrounding breast cancer treatment found that most physicians and nurses thought that treatment decisions should be made either through discussion between patients and physicians or by patients themselves with consideration of the opinion of their treating physician.³⁸ However, a higher percentage of patients (especially elderly patients) thought that physicians should determine treatment.³⁸ This tells us that though shared decision-making forms the core of patient-centred care in a clinical setup, this enabler only has some impact and is still developing in Japan.

Three cancer genomic profile tests are available under the Japanese universal health insurance system as of 2021. These tests can assist in determining the best cancer treatment strategies specific to the individual’s genome, thereby providing the best possible treatment outcomes.³⁹ A study looking at Japanese precision cancer medicine usage reported that only a tiny fraction of the patients underwent germline testing. The results suggested a need for earlier indications for precision cancer medicine and broader insurance coverage to

“Overall productivity loss due to breast cancer treatments is estimated to be 85.3-355.2 billion yen”

Assoc. Prof. Ataru Igarashi, Ph.D., Associate Professor, Department of Public Health, School of Medicine, Yokohama City University

increase the number of germ-line testing and to improve patient-centred care.⁴⁰ There is an exciting opportunity for cancer genomic profile tests to be developed to their full potential, providing accessible precision medicine for breast cancer patients.³⁹ We may see this as a strong enabler in future.

Japan Breast Cancer Research Group (JBCRG) provides breast cancer patients access to various clinical trials and builds critical evidence among the Japanese population to inform better care.⁴¹ Investigator-driven clinical research aims to improve breast cancer treatment, focusing on tailored therapies to achieve the best outcome for individual patients.⁴¹ Several clinical trials are being conducted in collaboration with international research organisations⁴¹, and one area of improvement is providing better transparency for patients to access trial data.

Japan has 47 prefectures, which differ noticeably in terms of area and population size. Each

prefecture executes its action plans to promote anticancer measures based on the Basic Plan to Promote Cancer Control Programmes by Japan's Ministry of Health, Labour and Welfare.⁴² Some perform better than others, and a variation can be seen in health outcomes among the different prefectures. There is also a variation in the number of designated cancer care hospitals in the secondary healthcare service areas, which can mean increased travel time for patients to access cancer care in Japan.¹⁸ However, equalising cancer care is a key objective of Japan's government²² therefore, its impact on patient-centred early breast cancer care is weak.

In Japan, the estimated direct and indirect labour losses due to breast cancer treatments are significant.¹¹ Assoc. Prof. Ataru Igarashi, Associate Professor, Department of Public Health, School of Medicine, Yokohama City University highlights, "Based on my recent analysis of productivity loss due to breast cancer treatments - the productivity loss by lost workdays (absenteeism)

Table 4: Mapping enabling and resisting forces for treatment in Japan

		Strong ← Weak				Weak ← Strong				
	Enabling Forces	4	3	2	1	1	2	3	4	Resistors Forces
Treatment	Decision making: National guidelines recommend that healthcare professionals and patients engage in shared decision making.			→		←				Prefecture variations: There are differences in access to care between and within different prefectures.
	Option of precision medicine: Availability of cancer genomic profile tests under national health insurance provide an exciting opportunity for precision medicine.			→		←				Cost of care: Many cancer patients have reported a high financial burden despite national health insurance coverage often because patients do not fully understand the system and cannot leverage its full benefits.
	Access to innovations: The Japan Breast Cancer Research Group provides breast cancer patients with access to a variety of clinical trials.			→		←				Mental health treatment as integral part of cancer care: Psychological distress, including anxiety and depression, are common among breast cancer patients and must be given more clinical and research attention.

is 51.6 billion yen per year, and productivity loss from a decreased work efficiency before/during treatments (presenteeism) is 33.7-303.6 billion yen. The overall productivity loss is estimated to be 85.3-355.2 billion yen.” Despite efforts of national health insurance to protect patients from paying high out-of-pocket costs, Japanese cancer patients still experience some financial burdens. A study on financial toxicity showed that 60% of patients had to resort to cutting down on spending for food, clothing or leisure to cope with the high costs of cancer treatment.⁴³ Therefore, cost of care is identified as a barrier towards optimising patient-centred breast cancer care to an extent. “While Japan has free access to hospitals and a public system to support patients financially compared to other countries, the “application principle,” whereby patients must understand the system and apply to use it, is one of the challenges preventing patients from leveraging the system,” says Ms Sakurai.

Japan has an advanced healthcare system, and is known for innovative treatment options available to cancer patients. However, 50% of cancer patients have been shown to suffer from mental disorders, especially depression and anxiety, in Japan.⁴⁴ An insufficient number of psycho-oncologists and lack of early detection and treatment of psychological distress experienced by cancer patients and their families is a barrier to optimising early breast cancer care.⁴⁵ Japan should focus on providing holistic, patient-centric care for early breast cancer patients by integrating psychological care.

Survivorship

The number of survivors among patients with breast cancer in Japan has been increasing steadily. “It’s a disease that, when detected and treated at an early stage, Stage 0 and Stage I, is almost curable with a 5-year survival rate of nearly 100%”, explains Dr Ohno.

Follow-up care is a positive factor in optimising early-stage breast cancer in Japan. As the number of cancer survivors continues to increase, the Japanese government has recommended research to develop evidence-based clinical practice guidelines for the mid-and long-term effects of cancer, which include the voices of patients.⁴⁶ This is a driver of patient-centred early breast cancer care, and its impact will continue to be seen in the future with greater implementation of these guidelines.

Continuity of care is identified as a considerable resisting force in Japan that hinders the optimisation of the patient-centric approach, partly due to the lack of support for cancer-survivors who seek postoperative psychological assistance. By increasing the availability of these services, the quality of life could be improved for breast cancer survivors.

By focusing on strengthening enabling forces and reducing the impact of resisting forces throughout the disease pathway, Japan has an opportunity to improve the provision of early breast cancer care.

Table 5: Mapping enabling and resisting forces for survivorship in Japan

		Strong ← Weak				Weak ← Strong				
	Enabling Forces	4	3	2	1	1	2	3	4	Resistors Forces
Survivorship	Follow-up care: In 2018, the National Cancer Centre Japan developed its first cancer survivorship Guidelines.									Continuity of care: Cancer-free patients experience a high psychological burden which is negatively impacted by a lack of available support services.

Table 6: Summarised force-field analysis

		Strong ← Weak				Weak → Strong				
	Enabling Forces	4	3	2	1	1	2	3	4	Resistors Forces
Population awareness	Education: The government has made efforts to promote the importance of breast cancer awareness through various campaigns.				→	←				Health literacy: There is low knowledge and awareness of the signs and symptoms of breast cancer.
Screening & Diagnosis	Screening recommended: According to Guidelines for Cancer Prevention Priority Health Education and Cancer Screening by MHLW, mammography screening for women aged 40 years and older is advised (especially recommended for those aged 40-69 years) every 2 years.				→	←				Participation: The participation rates are low for eligible Japanese women and have not reached the national aim of 50% of the target population.
	Availability of genetic testing: BRCA1/2 genetic testing has been covered by national insurance for eligible patients since 2020.				→	←				Supplemental screening options: There is an area of improvement to provide a holistic approach to population-based breast cancer screening, especially for women with dense breasts, by improving the availability and awareness of ultrasonography adjunct screening.
Treatment	Decision making: National guidelines recommend that healthcare professionals and patients engage in shared decision making.				→	←				Prefecture variations: There are differences in access to care between and within different prefectures.
	Option of precision medicine: Availability of cancer genomic profile tests under national health insurance provide an exciting opportunity for precision medicine.				→	←				Cost of care: Many cancer patients have reported a high financial burden despite national health insurance coverage often because patients do not fully understand the system and cannot leverage its full benefits.
	Access to innovations: The Japan Breast Cancer Research Group provides breast cancer patients with access to a variety of clinical trials.				→	←				Mental health treatment as integral part of cancer care: Psychological distress, including anxiety and depression, are common among breast cancer patients and must be given more clinical and research attention.
Survivorship	Follow-up care: In 2018, the National Cancer Centre Japan developed its first cancer survivorship Guidelines.				→	←				Continuity of care: Cancer-free patients experience a high psychological burden which is negatively impacted by a lack of available support services.

Opportunities to improve and optimise early breast cancer care in Japan

As we look to improve and optimise early breast cancer care in Japan, some actions suggested by the experts in our workshop could be implemented to begin moving towards better patient-centred early breast cancer care in Japan.

1. To encourage greater screening participation, knowledge is key

High awareness of healthcare is a motivating factor for undergoing breast cancer screening, and expanding the educational opportunities for people to acquire knowledge about this is key to improving participation.⁴⁷ “There is some evidence available which implies that early detection of breast cancer would reduce mortality rates. But physicians cannot make a difference to mortality rates until eligible people present themselves for screening,” says Assoc. Prof. Igarashi. The reasons why breast cancer screening is important should be better explained to the general public, with better evidence outlining the benefits, and procedures associated with cancer screening should be simplified to better promote earlier diagnosis. “While early detection at Stages 1 and 2 have much higher survival, breast conservation is more likely, and there are much lower medical care costs. We need to make sure people understand these advantages,” says Dr Ohno. “We need to find new, better ways of communicating the importance of screening”, agrees Dr Ishida “Maybe offering an incentive could be an idea, to persuade people to participate, make it seem like an opportunity that may otherwise be missed out on”.

2. For accurate management, screening data should be integrated

Japan has various systems of breast cancer screening, including population-based screening and voluntary screening offered through employers, medical institutions or screening organisations. However, voluntary screening has no reporting requirements, partly due to a lack of a legal basis for workplace screening, and therefore there is currently no system to accurately ascertain the actual status and rates of cancer screening in Japan. “If there were a way to unify or integrate all the screening, it would be easier to know how many women are being screened,” says Dr Ishida. Moving towards a more integrated approach for screening tracking (perhaps through social security numbers or Personal Health Records) would increase accuracy, which would, in turn, enable better recommendations and protocols to be put in place.

3. Move from diversified to centralised

Japan is divided into 47 prefectures, each of which consist of numerous municipalities. These municipalities are responsible for implementing cancer control measures with funds from local allocation taxes, and conducting population-based screening programs, including for breast cancer. Due to various reasons such as funding as well as different demographics and needs, there are variations in the screening process and accuracy control among these local governments. A suggestion could be to operate cancer control measures on a prefecture basis

“Very high-level policies such as cancer screening should be centralised, especially if we agree that outcomes from all municipalities should be the same.”

Dr Toshinobu Sato, Professor, Kurume University

instead of relying on local governments. “Very high-level policies such as cancer screening should be centralised” says Dr Toshinobu Sato, Professor, Kurume University, “especially if we agree that outcomes from all municipalities should be the same. There are nearly 2,000 local governments - for each of them to decide is a lot to ask”. And this is especially relevant since some municipalities have a larger budget and more resources to contribute, which can lead to unequal access. Instead of giving the responsibility to municipalities to raise their screening attendance rates in their respective areas, for unified outcomes to be achieved, cancer control measures should be operated on a prefectural basis.

4. Simplify and digitise

When a woman is diagnosed with breast cancer, often the last thing on her mind is about the navigation of services, which can include undergoing a detailed examination, choosing a cancer care hospital, and making treatment decisions; this should be simpler. “The system we have is old-fashioned, with individuals having to ‘ask’ for services,” says Dr Sato. Though Japan is a highly digitalised economy, the medical sector has not advanced as much. “Japan is behind in the digital transformation, but now with the remarkable progress of digital systems, and lessons that we learned from covid, this could change”, adds Dr Sato. Online medical care and teleconsultations are beginning to increase in popularity in Japan, as well as the provision of follow-ups at smaller, local clinics rather than large hospitals. This should be encouraged, to increase convenience as well as to save on transportation costs. And there are

other benefits to moving to a digital system: “It also helps with the limited resources that we have for medical care,” says Assoc. Prof. Igarashi. Streamlining processes and allocating appropriate digital resources would save time for healthcare professionals, and ultimately provide better experiences for patients.

5. Invest for the future

Early breast cancer patients are usually younger, with 55.5% of breast cancer survivors in Japan being of working age.⁴⁸ Younger patients also show a poorer prognosis than older patients, often require more intensive therapies, and experience many survivorship-associated problems including fertility preservation, comorbidities, and long-term follow-up.⁴⁹ “Younger patients diagnosed at earlier stages means they have a long way to go from there, and they are probably very anxious about the future and reductions in income - this increases the degree of damage. Conversely, when people are older, they may be less likely to be concerned in an economic sense,” says Assoc. Prof. Igarashi. More focus should be given to providing the optimal diagnosis, treatment, and follow-up care for younger adults with breast cancer, which should have a tailored approach. This may involve specialised multidisciplinary teams to accommodate unique needs, from medical, financial and psychosocial. “Support for the younger generation naturally involves the economy, but the presence of psychologists is also important, such as social workers”, says Dr Ishida, “Do we have enough psychologists who can discuss a variety of concerns?” A tailored approach is critical to improving breast cancer associated outcomes and enabling young patients to have the best chance at living long, productive, and healthy lives.

Several positive initiatives are driving patient-centred care in Japan. Yet, there are areas where improvements could be made, such as enhancing health literacy, improving the screening participation, and offering more

References:

- ¹ Liu R, Kitamura Y, Kitamura T, Sobue T, Sado J, Sugawara Y, Matsuo K, Nakayama T, Tsuji I, Ito H, Suzuki T, Katanoda K, Tominaga S. Three-Prefecture Cohort Study Group. Reproductive and lifestyle factors related to breast cancer among Japanese women: An observational cohort study. *Medicine (Baltimore)*. 2019.
- ² Nakamura K, Okada E, Ukawa S, Hirata M, Nagai A, Yamagata Z, Kiyohara Y, Muto K, Kamatani Y, Ninomiya T, Matsuda K, Kubo M, Nakamura Y. Characteristics and prognosis of Japanese female breast cancer patients: The BioBank Japan project. *Journal of Epidemiology* 2017.
- ³ International Agency for Research on Cancer, World Health Organisation. The Global Cancer Observatory - Japan Cancer Profile 2020 [Available from: <https://gco.iarc.fr/today/data/factsheets/populations/392-japan-fact-sheets.pdf>].
- ⁴ Okawa S, Tabuchi T, Morishima T, Koyama S, Taniyama Y, Miyashiro I. Hospital volume and postoperative 5-year survival for five different cancer sites: A population-based study in Japan. *Cancer Science*. 2020.
- ⁵ Gagliardi AR, Wright FC, Hong NJL, Groot G, Helyer L, Meiers P, Quan ML, Urquhart R, Warburton R. National consensus recommendations on patient-centered care for ductal carcinoma in situ Breast Cancer Research and Treatment. 2019.
- ⁶ Nakamura K, Okada E, Ukawa S, Hirata M, Nagai A, Yamagata Z, Kiyohara Y, Muto Z, Kamatani Y, Ninomiya T, Matsuda K, Kubo M, Nakamura Y. Characteristics and prognosis of Japanese female breast cancer patients: The BioBank Japan project. *Journal of Epidemiology*. 2017.
- ⁷ Hayashi N, Kumamaru H, Isozumi U, Aogi K, Asaga S, Iijima K, Kadoya T, Kojima Y, Kubo M, Miyashita M, Miyata H, Nagahashi M, Niikura N, Ogo E, Tamura K, Tanakura K, Yamamoto Y, Yoshida M, Imoto S, Jinno H. Annual report of the Japanese Breast Cancer Registry for 2017. *Breast Cancer* 2020.
- ⁸ Tokutake N, Ushiyama R, Matsubayashi K, Aoki Y. Age-specific incidence rates of breast cancer among Japanese women increasing in a conspicuous bimodal distribution pattern. *Proceedings of Singapore Healthcare*. 2021.
- ⁹ Mizukoshi MM, Hossian SZ, Poulos A. Comparative Analysis of Breast Cancer Incidence Rates between Australia and Japan: Screening Target Implications. *Asian Pac J Cancer Prev*. 2020.
- ¹⁰ IHME. Global Burden of Disease Data. Japan 2019 [Available from: <https://vizhub.healthdata.org/gbd-compare/>].
- ¹¹ Matsumoto K, Haga K, Kitazawa T, Seto K, Fujita S, Hasegawa T. Cost of illness of breast cancer in Japan: trends and future projections. *BMC Research Notes*. 2015.
- ¹² Vital Statistics Japan 2019. Health and Welfare Statistics Association. Ministry of Health Labour and Welfare [Available from: <https://www.mhlw.go.jp/english/database/db-hw/vs01.html>].
- ¹³ Shibuta K, Ueo H, Furusawa H, Komaki K, Rai Y, Sagara Y, Kamada Y, Tamaki N. The relevance of intrinsic subtype to clinicopathological features and prognosis in 4,266 Japanese women with breast cancer. *Breast Cancer*. 2011.
- ¹⁴ Onitilo AA, Engel JM, Greenlee RT, Mukesh BN. Breast cancer subtypes based on ER/PR and Her2 expression: comparison of clinicopathologic features and survival. *Clin Med Res*. 2009.
- ¹⁵ Ohno S, Chen Y, Sakamaki H, Matsumaru N, Tsukamoto K. Factors associated with humanistic burden and indirect cost among patients with cancer in Japan. *Journal of Medical Economics* 2020.
- ¹⁶ Watanabe T, Goto R, Yamamoto Y, Ichinose Y, Higashi T. First-Year Healthcare Resource Utilization Costs of Five Major Cancers in Japan. *Int J Environ Res Public Health*. 2021.
- ¹⁷ Sakamoto H, Rahman M, Nomura S, Okamoto E, Koike S, Yasunaga H. Japan Health System Review. World Health Organization, Regional Office for SouthEast Asia. 2018.

18. Tanaka H, Ishikawa KB, Katanoda K. Geographic Access to Cancer Treatment in Japan: Results From a Combined Dataset of the Patient Survey and the Survey of Medical Institutions in 2011. *J Epidemiol*. 2018.
19. Okawa S, Tabuchi T, Nakata K, Morishima T, Koyama S, Odani S, Miyashiro I. Three-year survival from diagnosis in surgically treated patients in designated and nondesignated cancer care hospitals in Japan. *Cancer Science*. 2021.
20. Saito MK, Morishima T, Ma C, Koyama S, Miyashiro I. Diagnosis and treatment of digestive cancers during COVID-19 in Japan: A Cancer Registry-based Study on the Impact of COVID-19 on Cancer Care in Osaka (CanReCO). *PLOS One*. 2022.
21. Takahashi M. Cancer survivorship: current status of research, care, and policy in Japan. *Japanese Journal of Clinical Oncology*. 2016;46:599–604.
22. Japan NCC. Cancer Control Act Basic Plan to Promote Cancer Control Programs [Available from: <https://atlas.ncc.go.jp/media/2.-Cancer-Control-Act-Basic-Plan-to-Promote-Cancer-Control-Programs.pdf>].
23. Suzuki K, Yamanaka M, Minamiguchi Y, Hayashi N, Yamauchi E, Fukawa A, Tsuda Y, Fujisaka Y, Doi T, Shiino I, Tomari Y. Details of Cancer Education Programs for Adolescents and Young Adults and Their Effectiveness: A Scoping Review. *J Adolesc Young Adult Oncol*. 2022.
24. Japan Cancer Society, Public Interest Foundation. [Available from: https://www.jcancer.jp/wp-content/uploads/jcancer18_All_nohin.pdf].
25. Oncology" GHaMTvok. GE press prelease, "GE Healthcare breast cancer 10-country awareness survey". 2014 [Available from: http://newsroom.gehealthcare.com/wp-content/uploads/2014/10/VoK-Dense-Breast-Study-MillwardBrown-GE-Proposed_100114.pdf].
26. Oldach BR, Katz ML. Health literacy and cancer screening: A systematic review. *Patient Education and Counseling*. 2014;94(2):149-57.
27. Health MoHLaW. Guidelines for cancer prevention-focused health education and implementation of cancer screening [Available from: <https://www.mhlw.go.jp/content/10900000/000838645.pdf>].
28. Mubarik S, Sharma R, Hussain SR, Iqbal M, Nawsherwan, Liu X, Yu C. Breast Cancer Mortality Trends and Predictions to 2030 and Its Attributable Risk Factors in East and South Asian Countries. *Front Nutr*. 2022
29. Uchida K, Ohashi H, Kinoshita S, Nogi H, Kato K, Toriumi Y. Breast cancer screening and the changing population pyramid of Japan. *Breast Cancer*. 2015.
30. Sauvaget C, Nishino Y, Konno R, Tase T, Morimoto T, Hisamichi S. Challenges in breast and cervical cancer control in Japan. *Lancet Oncol*. 2016.
31. Haneda E, Sato A, Suganuma N, Sebata Y, Okamoto S, Toda S, Kohagura K, Matsubara Y, Sugawara Y, Yamanaka T. Efficacy of Clinical Guidelines in Identifying All Japanese Patients with Hereditary Breast and Ovarian Cancer. *Int J Environ Res Public Health*. 2022.
32. Hayashi S, Kubo M, Kaneshiro K. Genetic medicine is accelerating in Japan. *Breast Cancer*. 2022;29:659–65.
33. Ministry of Health Labour and Welfare, Summary report of comprehensive survey of living conditions 2019 [Available from: https://www.mhlw.go.jp/english/database/db-hss/dl/report_gaikyo_2019.pdf].
34. Lim YX, Lim ZL, Ho PJ, Li J. Breast Cancer in Asia: Incidence, Mortality, Early Detection, Mammography Programs, and Risk-Based Screening Initiatives. *Cancers*. 2022.
35. Sawada T, Akashi S, Nakamura S. Digital volumetric measurement of mammographic density and the risk of overlooking cancer in Japanese women. *Breast Cancer*. 2017.
36. Ohnuki K, Tohno E, Tsunoda H, Uematsu T, Nakajima Y. Overall assessment system of combined mammography and ultrasound for breast cancer screening in Japan. *Breast Cancer*. 2021.
37. Iwata H, Saji S, Ikeda M, Inokuchi M, Uematsu T, Toyama T, Horii R, Yamauchi C. The Japanese Breast Cancer Society Clinical Practice Guidelines, 2018 edition: the tool for shared decision making between doctor and patient. *Breast Cancer*. 2020.

- ³⁸ Sakai H, Umeda M, Okuyama H, Nakamura S. Differences in perception of breast cancer treatment between patients, physicians, and nurses and unmet information needs in Japan. *Supportive Care in Cancer* volume 2020.
- ³⁹ Fukada I, Mori S, Hayashi N. Assessment of a cancer genomic profile test for patients with metastatic breast cancer *Sci Rep*. 2022.
- ⁴⁰ Higashigawa S, Matsubayashi H, Kiyozumi Y, Kado N, Nishimura S, Oishi T, Sugino T, Fushiki K, Shirasu H, Yasui H, Mamesaya N, Fukuzaki N, Kunitomo K, Horiuchi Y, Kenmotsu H, Serizawa M. Present status of germline findings in precision medicine for Japanese cancer patients: issues in the current system. *Jpn J Clin Oncol*. 2022.
- ⁴¹ Clinical Trials, Japan Breast Cancer Research Group. [Available from: <https://jbcrg.jp/en/clinicaltrials/>].
- ⁴² Tomoko T, Chikako Y, Masayo H, Takahiro H, Yasushi T, Fumihiko W. Development of a New Tool for Better Social Recognition of Cancer Information and Support Activities Under the National Cancer Control Policy in Japan. *Journal of Public Health Management and Practice*. 2021;27(2):E87-E99.
- ⁴³ Honda K, Gyawali B, Ando M. Prospective Survey of Financial Toxicity Measured by the Comprehensive Score for Financial Toxicity in Japanese Patients With Cancer. *J Glob Oncol*. 2019.
- ⁴⁴ Igarashi T. Mental Health Treatment Should Be an Integrative Part of Caring for Cancer Patients, Caregivers and Families in Japan. *JMA Journal*. 2018.
- ⁴⁵ Akechi T. Psycho-oncology: History, Current Status, and Future Directions in Japan. *JMA Journal*. 2018.
- ⁴⁶ Matsuoka YJ, Okubo R, Shimizu Y, Tsuji K, Narisawa T, Sasaki J, Sasai H, Akashi-Tanaka S, Hamaguchi T, Iwasa T, Iwata S. Developing the structure of Japan's cancer survivorship guidelines using an expert panel and modified Delphi method. *Journal of Cancer Survivorship*. 2020.
- ⁴⁷ Okayama M, Nagaoka T, Sugisaki K. Cancer Screening Rate and Related Factors in the Japanese Child-Rearing Generation. *Healthcare* 2022.
- ⁴⁸ Mitsui K, Endo M, Imai Y. Predictors of resignation and sick leave after cancer diagnosis among Japanese breast cancer survivors: a cross-sectional study. *BMC Public Health*. 2021.
- ⁴⁹ Futamura M, Yoshida K. Current status of AYA-generation breast cancer: trends worldwide and in Japan. *Int J Clin Oncol*. 2022.

Appendix I

Overall Methodology

Our primary aim of this research programme was to understand the patient-centred approaches to early breast cancer in Japan and the ways in which care can be enhanced.

Economist Impact’s approach to achieve this aim is comprised of the following components:

1. Literature review: to understand the various data available on patient-centred early breast cancer care in Japan and identify the factors that either strengthen or hinder patient care.
2. Meeting of experts across the Asia-Pacific region: to incorporate the expertise of those working directly on patient-centred care for early breast cancer patients in the region, to refine the focus of the research programme, and capture key aspects and best sources of information to help develop the Japan-specific force-field.
3. In-country Japan workshop: to incorporate insights from experts working in Japan including oncologists, surgeons and patient advocates.

The review started with a broad view of the issues related to breast cancer care in the Asia Pacific Region including epidemiology of breast cancer subtypes, current prevalence rates, outcomes, early identification and diagnostic models, clinical pathways and delivery modes within early-stage breast cancer with a focus on patient-centred care.

To ensure a more nuanced view of early breast cancer care and treatment, we identified four

Scoring criteria for force-field analysis

Scoring	Enablers	Resistors	
1	Weak Impact	Force has little impact on optimal patient-centred care	Force exists but has little impact on optimal patient-centred care or can be easily addressed
2	Some Impact	Force has some impact, but is still developing, is not widely utilised or implemented, or only certain groups may take it into consideration	Force poses some resistance to optimal patient-centred care but can be addressed with planning and resources
3	Considerable Impact	Evidence of the presence of the force, but not being followed or utilised sufficiently to deliver optimal patient-centred care	Force poses considerable resistance to optimal patient-centred care, but the impact can be minimised with extensive planning and resources.
4	Strong Impact	Force is a high-quality, generally accepted standard of practice and/or provides optimal patient-centred care	Force poses strong resistance to optimising patient-centred early breast cancer care

domains of patient-centred care – Population Awareness, Screening and Diagnosis, Treatment, and Survivorship. For each of these areas we triangulated primary (expert engagement) and secondary (desk research) data to identify enablers and resistors for optimising patient-centred cancer care specific to Japan. We then developed a scale from 1 – 4 to assess the impact of each force had (see the scoring criteria table below). Supported by information found in the research phase of this study, we scored the individual parameters from 1 – 4 depending on the impact a force has in enabling or hindering patient centred care. We followed a consensus-based process to arrive at final scores for the force-field analysis.

To tailor the force field to Japan, the perspective of the key experts was captured and used to refine the scores. This was carried out in a workshop setting. The workshop was conducted in Japanese and an impartial facilitator worked iteratively with stakeholders to help them think more clearly about the relevant issues. Care was taken to ensure that as broad a range of potential stakeholders were included in the process as possible. Five participants took part in the workshop, representing the range of expertise from healthcare to patient advisory groups.

During the workshop, the qualitative scores for each parameter were shared with the workshop participant to get their thoughts on the various enablers and resistors that influence optimising patient-centred early breast cancer care in Japan. This analysis helped in the identification of priority areas and issues at the country level and opportunities for improvement to tackle the greatest unmet needs in early breast cancer care.

While every effort has been taken to verify the accuracy of this information, Economist Impact cannot accept any responsibility or liability for reliance by any person on this report or any of the information, opinions or conclusions set out in this report. The findings and views expressed in the report do not necessarily reflect the views of the sponsor.

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