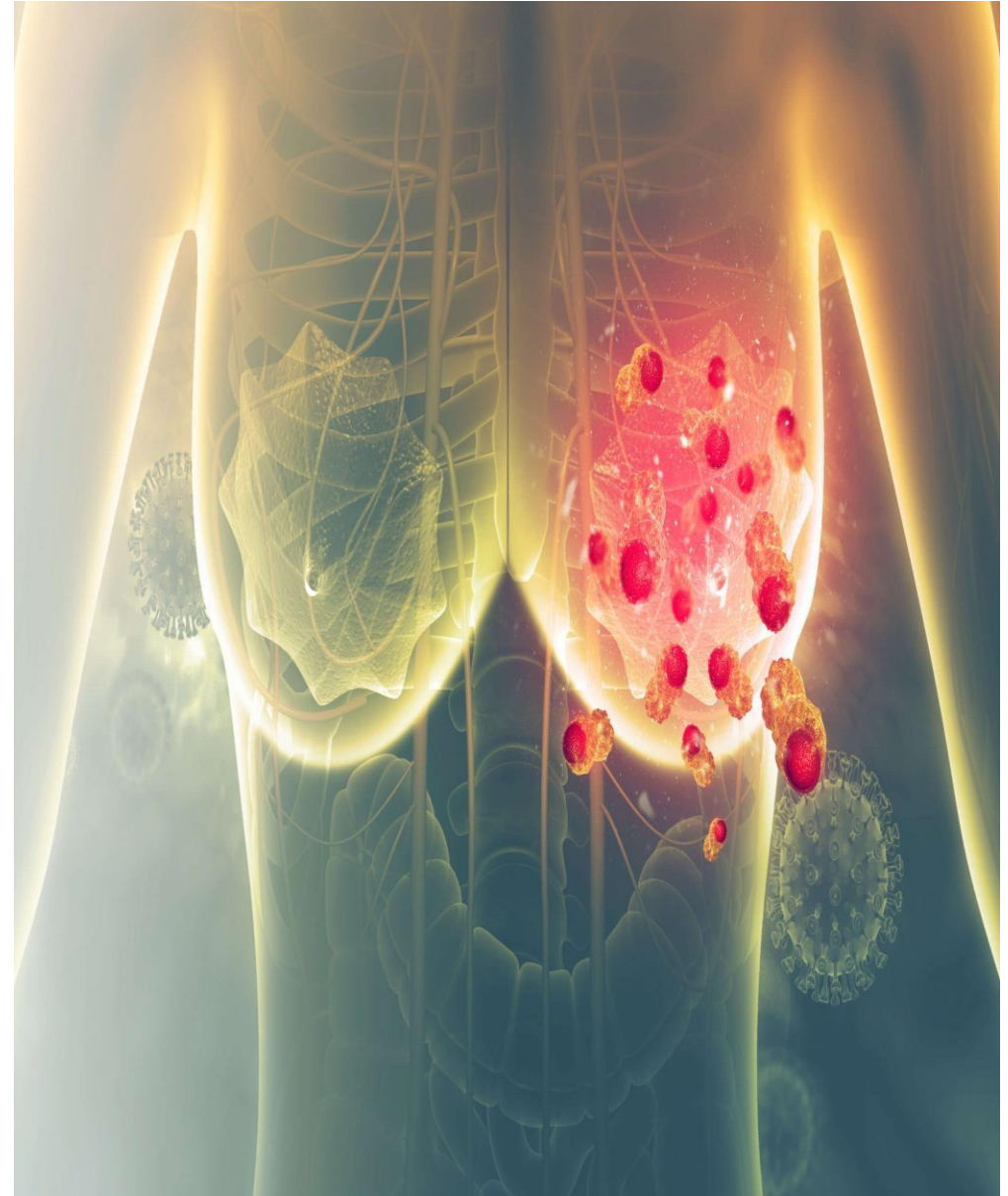


Breast cancer in British women over 70 years

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Breast Cancer

- Breast cancer facts:
 - Breast cancer is the most common cancer for women in England with around 41,500 women diagnosed each year.
 - More than 13,500 women aged 70 and over are diagnosed with breast cancer in England each year, and around 5,400 women in this age group die from the disease annually.
 - The decision to target this age group is based on considerations of both effectiveness and efficiency in reducing breast cancer mortality and morbidity.



Joan Brown, 81,
cancer survivor

1 in 3 women who get breast cancer are over 70, so don't assume you're past it.

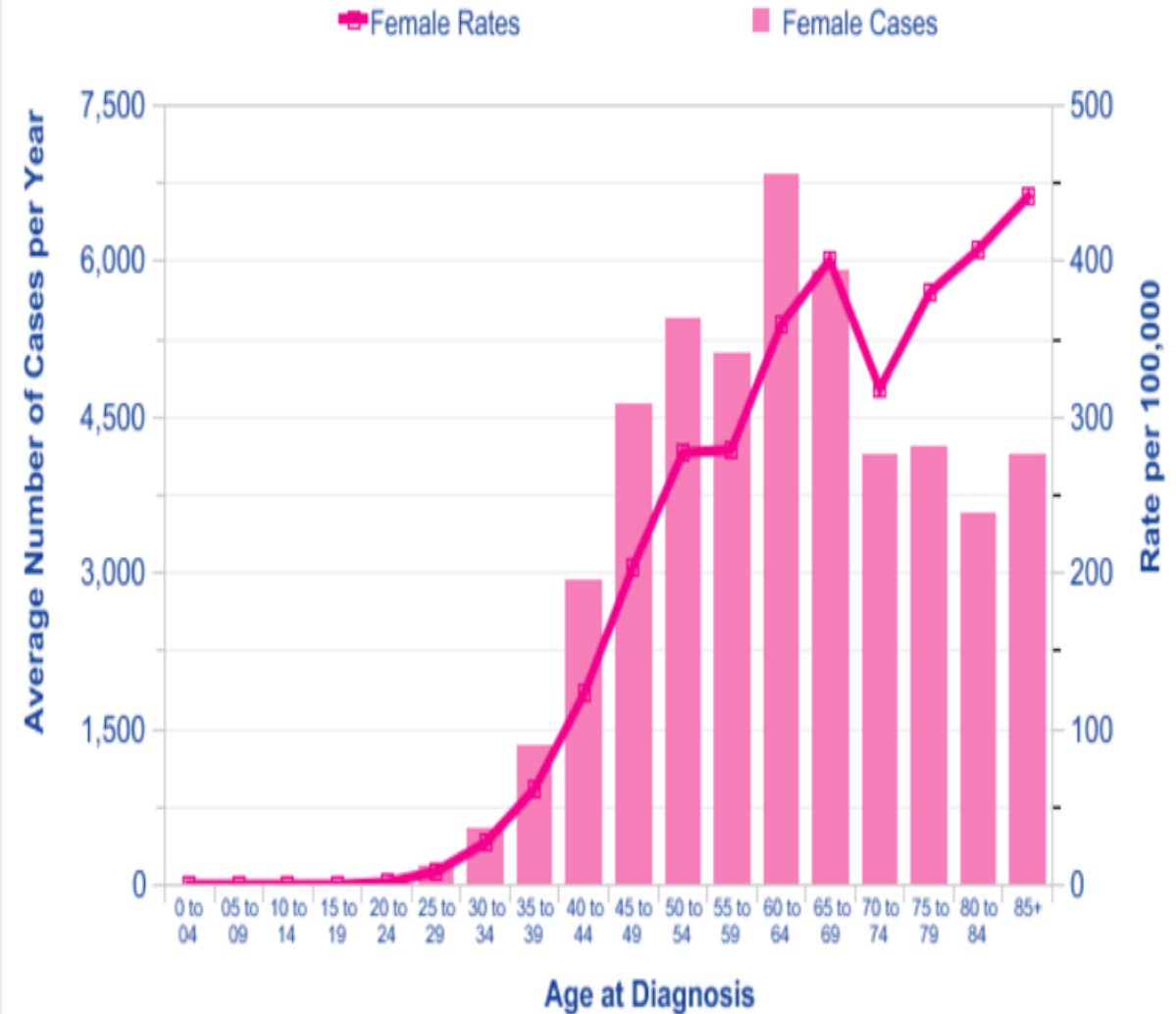
A lump isn't the only sign of breast cancer. If you're worried about any changes to your breasts, tell your doctor straight away. Finding it early makes it more treatable and could save your life.

**BE CLEAR
ON CANCER**

nhs.uk/breastcancer70

JUSTIFICATION:

- ❖ Women between the ages of 70 and 71 are routinely invited for screening as part of the NHS Breast Screening Programme, which follows the National Institute for Health and Care Excellence's (NICE) recommendations. Statistics demonstrating that the incidence of breast cancer rises with age and that a sizable percentage of new cases are diagnosed in women over 70 lend credence to this approach. (NICE, 2016)
- ❖ Women 70 years of age and older have a higher chance of receiving a breast cancer diagnosis and are more likely than women in younger age groups to have their tumours discovered later in life.
- ❖ This information was recently published in the British Journal of Cancer. Routine screening for early detection can improve treatment outcomes and lower mortality rates in this population. (Cancer Research UK, 2023)

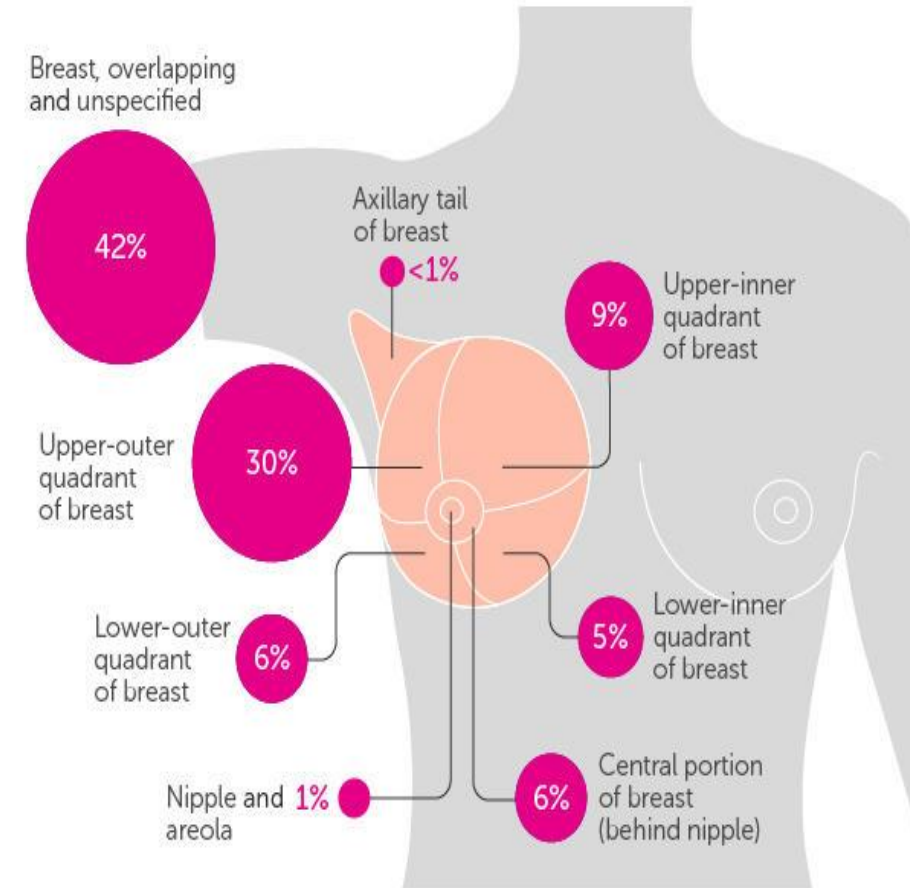


❖ Moreover, research indicates that older women may be more susceptible to treatment-related problems due to their higher frequency of comorbidities. Thus, while reducing overdiagnosis and needless procedures, tailored screening in this age group enables the detection of clinically important breast tumours.

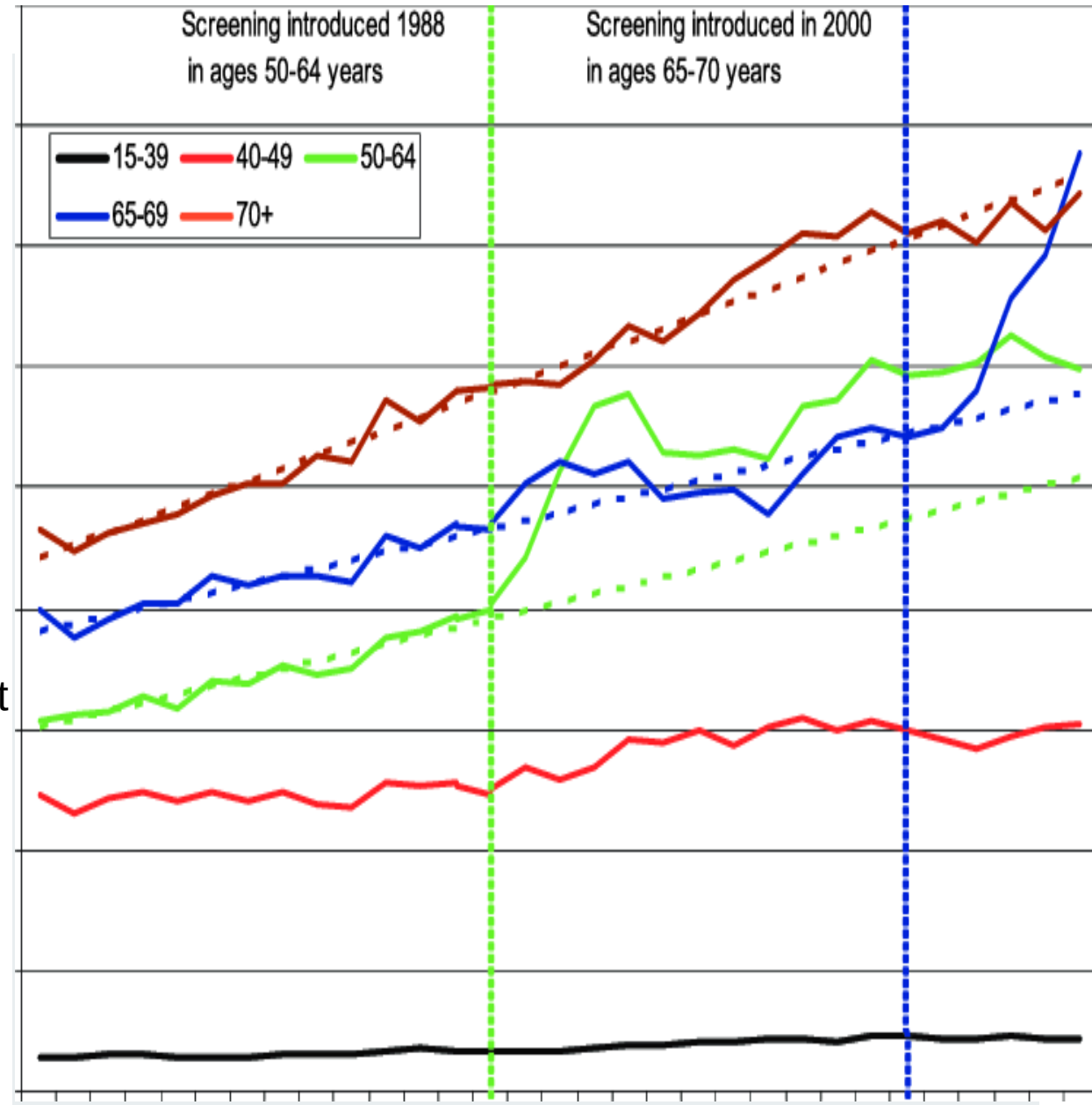
(Johnson, C., et al.,2022)

❖ In conclusion, national guidelines, statistical evidence of higher incidence and later-stage diagnosis in this age group, and new research emphasizing the possible advantages of early detection in lowering breast cancer mortality and morbidity all contribute to the decision to prioritise breast cancer screening for Britishwomen 70 years of age and older.(Smith, A. & Jones, B.,2022)

Invasive breast cancer cases: percentage distribution by anatomical site



- ❖ Breast cancer incidence rises with age; women over 70 years old account for a sizable fraction of newly diagnosed cases. About one in seven UK women will receive a breast cancer diagnosis at some point in their lives, and the risk rises with age. (Cancer Research UK, 2023)
- ❖ **Mortality:** Breast cancer is still a major cause of death for older women, despite declining rates
- ❖ **Incidence:** over time As a result of improvements in screening, diagnosis, and treatment. The characteristics of the tumour, the stage at diagnosis, and the availability of healthcare services can all affect mortality rates.
- ❖ (Department of Health and Social Care, 2021)



- ❖ **Screening Participation:** As part of the NHS Breast Screening Programme, women between the ages of 70 and 71 are invited to get standard mammograms every three years. However, due to variables including accessibility, awareness, and health state, participation rates may differ among older age groups.(NHS,2022)
- ❖ **Stage at Diagnosis:** Research indicates that older women are more likely than younger women to receive a diagnosis of breast cancer later in life. Treatment options and prognosis may be affected by this. (Forbes, et.al.,2012).
- ❖ **Treatment:** Comorbidities, preferences, and general health all play a big role in the treatment decisions that older women choose for breast cancer. Treatment plans can be customized to meet the needs and circumstances of each patient, even though standard treatments include surgery, chemotherapy, radiation therapy, hormone therapy, and targeted therapies.(NICE,2021)

Key Facts

Women Screened

2.20M
women screened
(aged 45+) within the programme



↑ 34% in ten years, from 1.64M in 2006-07

Uptake

71.1%
took up invitation
(aged 50-70)



↓ 1.0% compared to 2015-16

Cancers Detected

18,402
women (aged 45+)
had cancers detected



8.4 cases per 1,000 women screened

- ❖ Review recent papers and publications from reputable sources like Cancer Research UK, the Office for National Statistics (ONS), or the NHS for the most current and comprehensive statistical data on breast cancer in British women over 70. These groups release data and reports on cancer incidence, mortality, participation in screening, and treatment results regularly. (Cancer Research UK, 2021)



LET'S BE AWARE!

You have a good chance to cure breast cancer if you find and treat it early.

If you think something's wrong, don't wait.

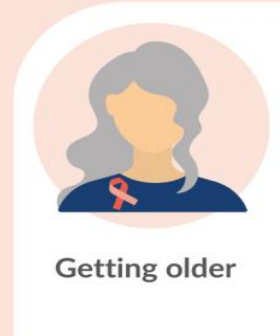
Seek care immediately.



Possible Consequences of Not Addressing Breast Cancer in British Women Over 70 Years:

- Delayed Diagnosis
- Increased Mortality
- Decreased Quality of Life
- Higher Healthcare Costs
- Impact on Families and Communities
- Missed opportunities for prevention and early intervention
- (Lavelle, K., & Moran, A., 2018)

Some risk factors cannot be changed:



While others can be changed:

1 in 4
breast cancers are
thought to be
preventable through
lifestyle choices

Maintaining a
healthy weight



Being physically
active



Not drinking
much alcohol



Brief Description of a Health Promotion Intervention:

- Educational Workshops
 - Community Outreach Programs
 - Promotional Campaigns
 - Tailored Messaging
 - Partnerships with Healthcare Providers
- (NHS,2022)

4 Steps Mothers & Daughters Can Take Together to Reduce Breast Cancer Risk



Reduce your use of products with phthalates

Chemicals in some detergents, storage containers, toys, and personal care products (like fragrance, nail polish, deodorant, hair care, and body lotion). Phthalates are indicated by a number 3 in the recycling triangle.



Reduce your use of products with BPA

A chemical in some plastic bottles and plastic containers, and in the lining of some cans. BPA is indicated by a number 7 in the recycling triangle.



Make healthy choices

When possible choose to use more fragrance-free products; use glass containers for cooking, serving, and storing foods and drinks; microwave food in glass containers, not plastic containers or plastic wrap; and add fresh or frozen fruits and vegetables to your family's meals, instead of using canned foods.



Live a healthy, active lifestyle and make it something you and your children do together

Include whole grains and beans, including soy, in your children's diet and reduce your use of foods with high amounts of animal fat (like beef, pork, or chicken fat; butter, cream, or cheese) when you shop, cook, or eat out.

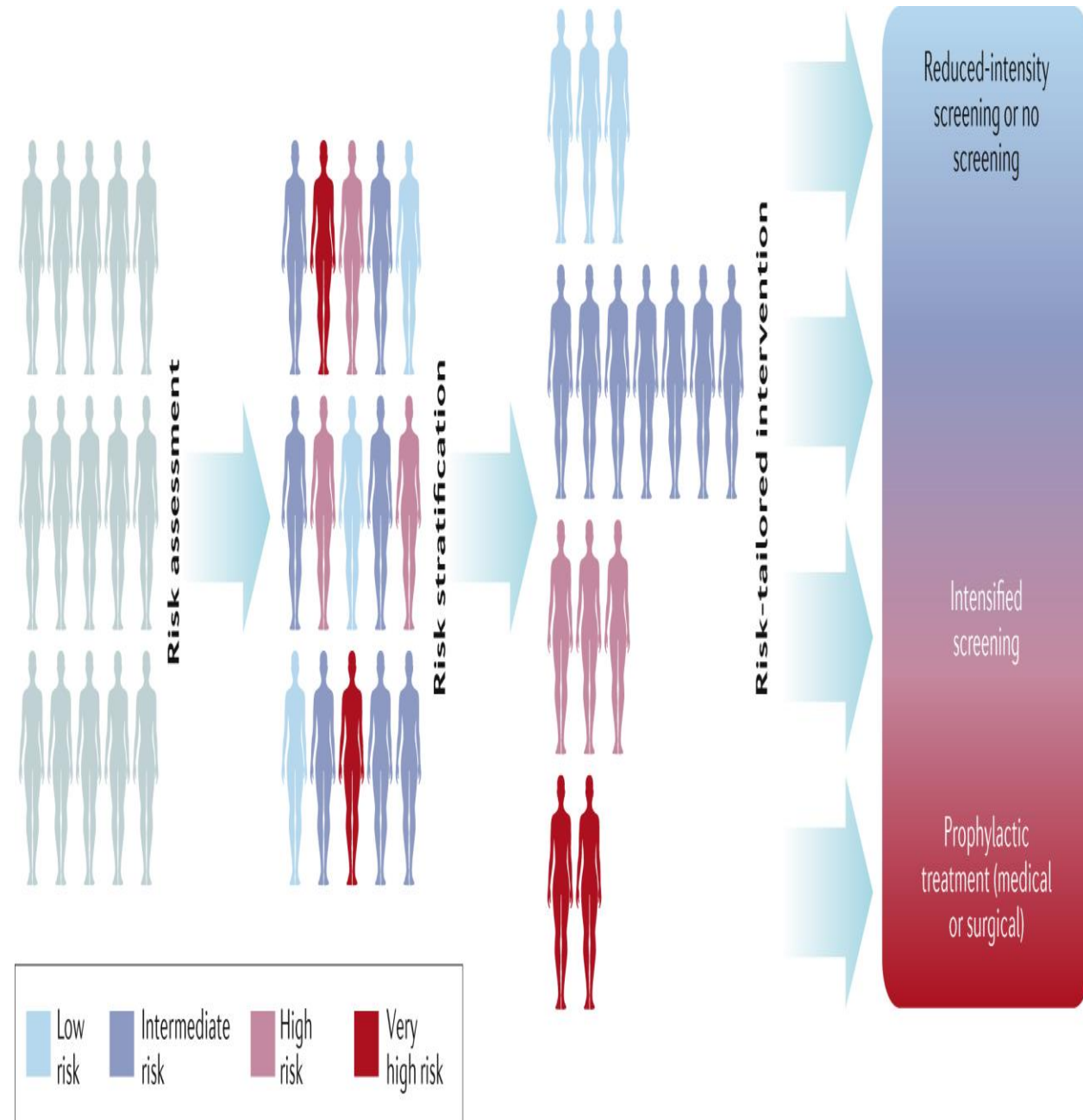


The Breast Cancer and the Environment Research Program (BCERP) is a network of scientists, physicians, and community partners, funded by the National Institutes of Health (NIH), studying the effects of environmental exposures that may affect breast cancer risk later in life.

- ❖ **Access to Medical Services:** Make sure that patients have easy and cheap access to medical services, such as clinical consultations, follow-up treatment, and breast cancer screening programs. Provide fair access to preventative care for all older women by addressing obstacles to it, including those related to language, finances, transportation, and cultural considerations.
- ❖ **Community Involvement:** Include representatives from the local government, medical professionals, advocacy groups, and neighborhood associations in the development and execution of programs aimed at preventing breast cancer. Create alliances to pool resources, collect money, and rally support for initiatives aimed at preventing violence against senior women. (Beldad, D., & Hegner, M. 2018).



- ❖ **Evaluation and Monitoring:** To gauge the prevention plan's efficacy, pinpoint areas in need of development, and monitor results over time, put in place systems for continuous evaluation and monitoring.
- ❖ **To help with decision-making:** Strategy revision as necessary, use quantitative indicators like screening participation rates, incidence rates, and mortality rates in addition to qualitative input from program participants and stakeholders. With the ultimate goal of lowering the incidence of breast cancer and enhancing health outcomes in this demographic, stakeholders can work together to design and carry out a comprehensive breast cancer prevention plan that is suited to the particular requirements of British women over 70 by using this planning model.(NHS,2021)



❖ Evaluation of Risk Elements:

Use digital platforms to administer questionnaires or evaluations to collect data on personal risk factors for breast cancer in women who are older than 70. Provide interactive resources, such as quizzes or tools, in the digital intervention to assist participants in understanding potential preventive measures and their individual risk factors.

❖ Screening Techniques:

Remind and motivate older women to make and keep mammography appointments in accordance with national recommendations by integrating them into the digital intervention. Describe the advantages of routine breast cancer screening and the process for using the digital platform to get screening services.(Cancer Research UK,2021)

Types of Breast Cancer Screening Tests



Breast exam



Breast ultrasound



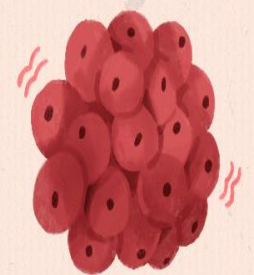
Mammogram



Breast MRI



Breast biopsy



Staging

❖ Health Awareness and Education

Using digital resources including articles, films, infographics, and interactive modules, provide instructional content about breast cancer risk factors, symptoms, screening recommendations, and lifestyle changes. Provide healthcare experts to lead webinars or online workshops where they may deliver specialized information and promptly address participant questions.(NHS,2022)

❖ Interventions in Lifestyle:

Include interactive meal planners, workout programs, and goal-setting tools in the digital intervention to encourage healthy lifestyle choices. In order to encourage behavior change, provide participants with tailored feedback and suggestions based on their preferences and health goals.(NHS,2022)



BALANCED
DIET



HEALTHY
WEIGHT



ACTIVE
LIFESTYLE



NO SMOKING



REDUCE
ALCOHOL

❖ Obtaining Healthcare Services:

Provide details on how to use the digital platform to obtain healthcare services, such as clinical consultations, support services, and breast cancer screening programs. Provide telemedicine sessions or virtual consultations to elderly women who might have trouble obtaining standard healthcare treatments.(Digital Health London,2021)

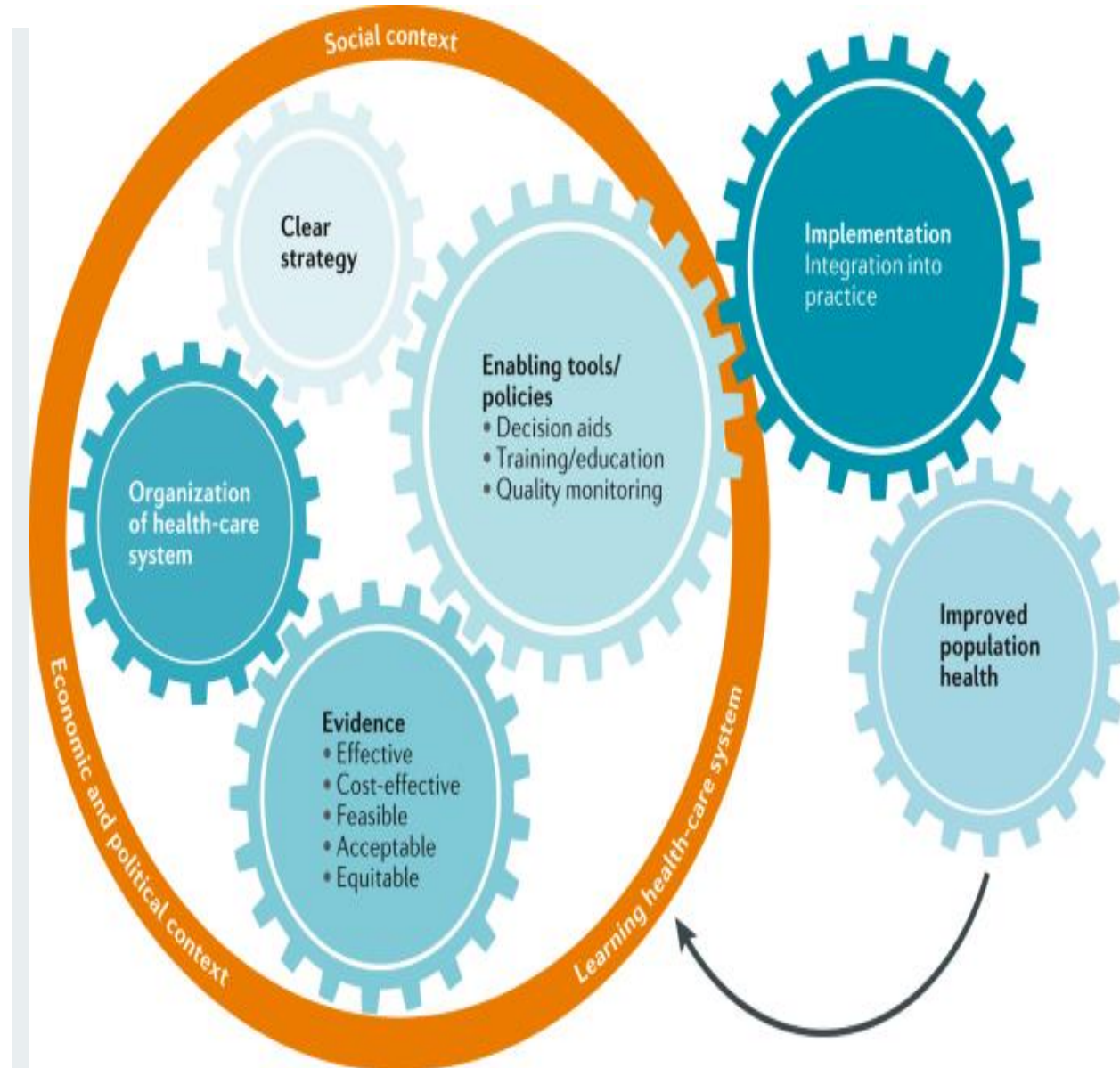
❖ Participation in the Community:

Within the digital intervention, lead online forums or support groups where participants can interact with one another, exchange stories, and offer assistance to one another. Work together with neighborhood associations and medical professionals to publicize the digital intervention and inspire older women in a variety of communities to participate.(Public Health England,2020)



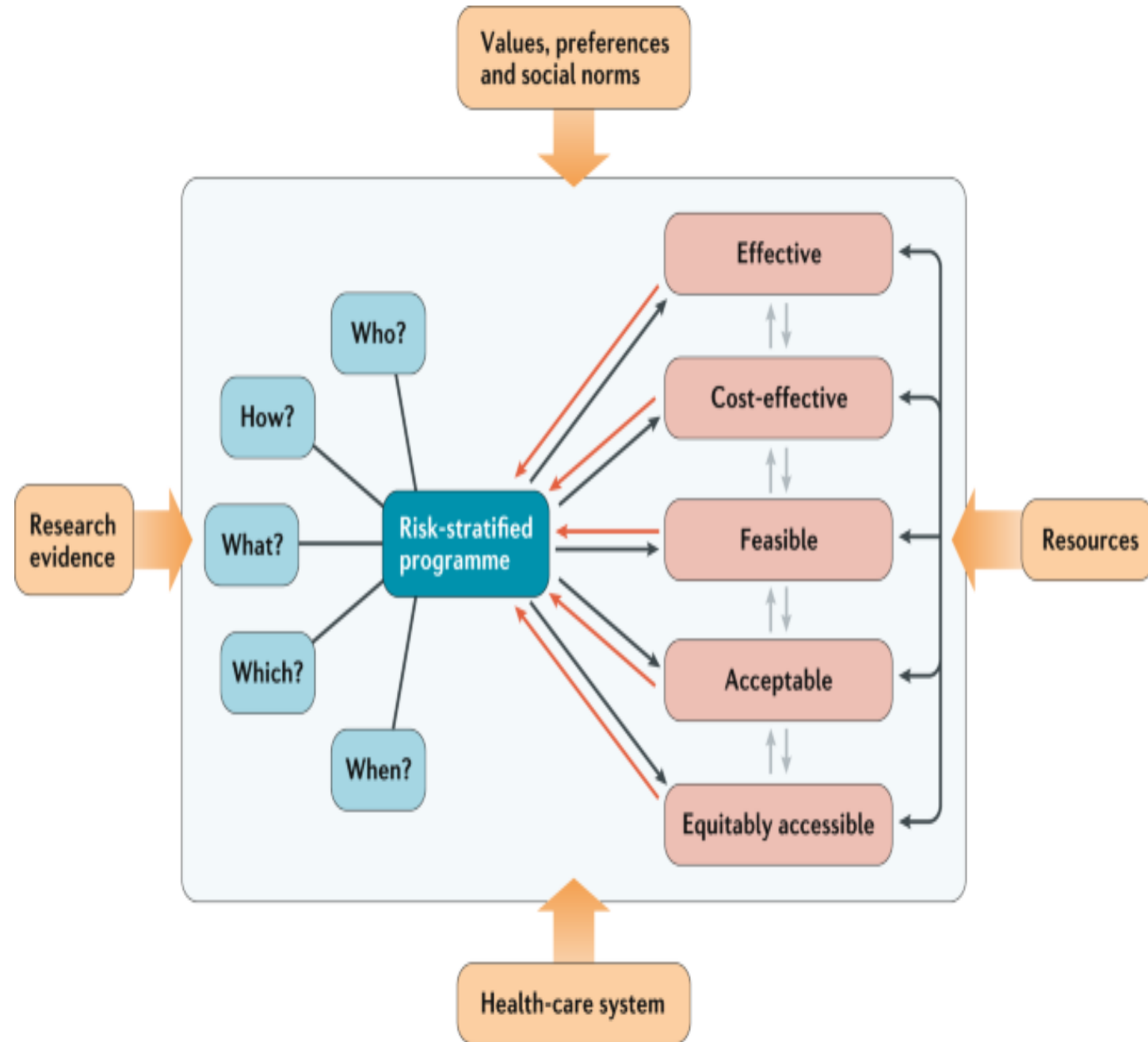
Planning Model to Prevent Breast Cancer

- ❖ **Evaluation of Risk Factors:** Start by carrying out a comprehensive evaluation of the risk factors connected to breast cancer in women who are older than 70. Age, family history, genetic predisposition, hormonal influences, lifestyle choices (food, exercise, alcohol use, etc.), and reproductive history are a few examples of these.
- ❖ **Screening Techniques:** Create screening techniques that are suited to the unique requirements of senior women, accounting for variables such as life expectancy, comorbidities, and breast density. In addition to promoting routine mammography screening as advised by national guidelines, take into account the advantages and disadvantages of other screening modalities for high-risk patients, such as MRI or ultrasound.(World Health Organization,2018).



❖ Assessment and Observation:

Track user demographics, participant engagement, and outcomes including knowledge gain, behavior modification, and screening uptake by utilizing digital analytics. To determine areas for improvement and gauge user satisfaction with the digital intervention, gather input via surveys, polls, and user ratings. Iterate on the features and content of the intervention based on data-driven insights, and continuously assess how well it is accomplishing its objectives.(NCCN,2021)



Health Education and Awareness: Conduct health education initiatives to increase older women's knowledge of breast cancer risk factors, symptoms, and the value of early detection and screening. spread knowledge and encourage breast health literacy, make use of a variety of platforms, including social media, educational resources, community workshops, and encounters with healthcare providers.(Colditz,G., & Bohlke, K.,2014).

Lifestyle Interventions: To address modifiable risk factors linked to breast cancer, including lifestyle interventions in the preventative plan. Encourage senior women to take up healthy habits including eating a well-balanced diet high in fruits and vegetables, getting regular exercise, cutting back on alcohol, quitting smoking, and keeping a healthy weight.(NCCN,2021)



Bariares

The National Health Service (NHS) is the main healthcare provider in the United Kingdom. By offering professional knowledge, pertinent health information, and screening services for breast cancer, the NHS may support the intervention. The integration of digital intervention with the current healthcare systems may also be aided by NHS Digital.

Cancer Research UK is a preeminent body in the UK for cancer advocacy, education, and research. They can offer resources, promotional support, access to research findings to inform the intervention, and experience in breast cancer prevention and screening.(Cancer Research UK,2021)

Healthcare Professionals: Physicians, nurses, radiologists, oncologists, and other medical specialists can help patients learn about the intervention, offer advice on breast health, respond to inquiries, and make referrals for breast cancer screening easier.(NHS,2021)



- ❖ **Community Organisations:** In order to promote the intervention, raise awareness, and give participants additional support and resources, local community organisations, charities, and support groups that concentrate on women's health, ageing, and cancer may be very helpful partners.
- ❖ **Digital Health Companies:** By offering their technical know-how, user experience design skills, and data analytics capabilities, companies that specialise in telemedicine, digital health technologies, and mobile applications can work together to develop and implement the digital intervention.
- ❖ **Academic Institutions:** Through research collaborations and knowledge sharing agreements, universities and research institutions with expertise in public health, health communication, and digital interventions can contribute to the intervention's design, evaluation, and dissemination. (NHS, 2021)



- ❖ **Government Health Agencies:** To make sure the intervention is in line with national health priorities and strategies, agencies like Public Health England (PHE) and the Department of Health and Social Care (DHSC) can offer financing support, policy guidance, and strategic coordination.
- ❖ **Digital Platforms and Social Media Influencers:** By focusing on health and wellness, utilizing digital platforms and social media influencers can assist expand the intervention's audience, interact with target audiences, and promote participation through content sharing and other promotional activities.
- ❖ **Ageing and Women's Advocacy Groups:** These groups can speak up for the needs of the target population, offer suggestions for the design of the intervention, and assist in making sure it is inclusive, culturally aware, and accommodating of a range of need (Beldad, A.& Hegner, S.,2018). .



- ❖ **Industry Partners:** To support the development, implementation, and sustainability of the intervention, pharmaceutical firms, healthcare technology vendors, and other private sector partners may provide cash support, in-kind donations, or sponsorship opportunities.(Wisniewski, P.& Coyne, I.,2016).



Partnerships

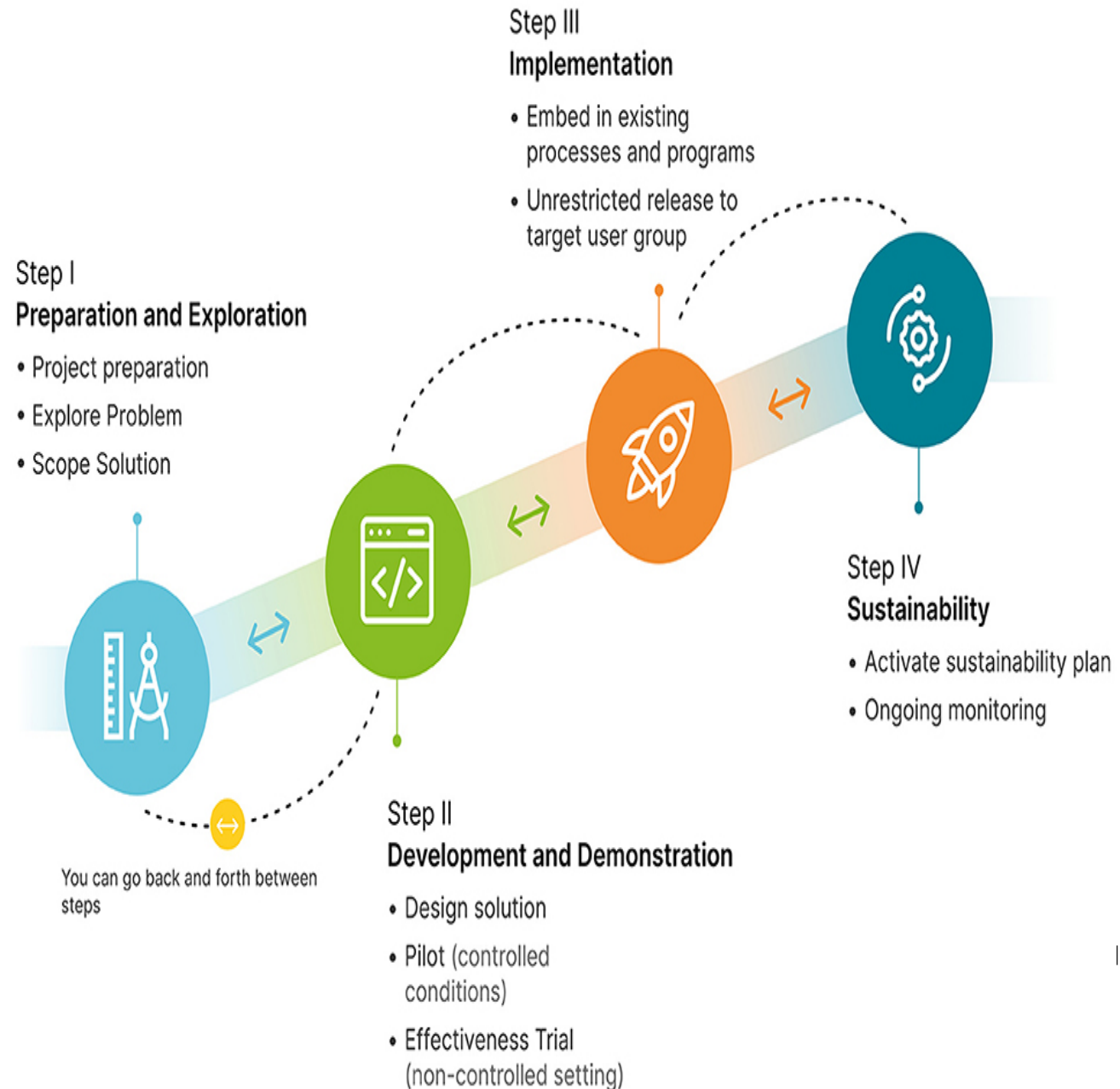
2022



Potential Barriers to successful Implementation of Delivery of Digital Health Intervention

Digital Literacy

- Access to Technology
 - Language and Cultural Diversity
 - Health Literacy
 - Trust and Credibility
 - Privacy and Data Security Concerns
 - Physical and Cognitive Limitations
- (National Cancer Institute, 2017)



- Social Isolation and Loneliness:
- Healthcare Provider Endorsement:
- Socioeconomic Disparities
- A multimodel strategy is needed to address these potential obstacles, including customising the digital intervention to older women's need and preferences, offering sufficient resources and support to improve digital literacy and access and working with health care providers and community partners to foster engagement and trust. (WHO,2021).

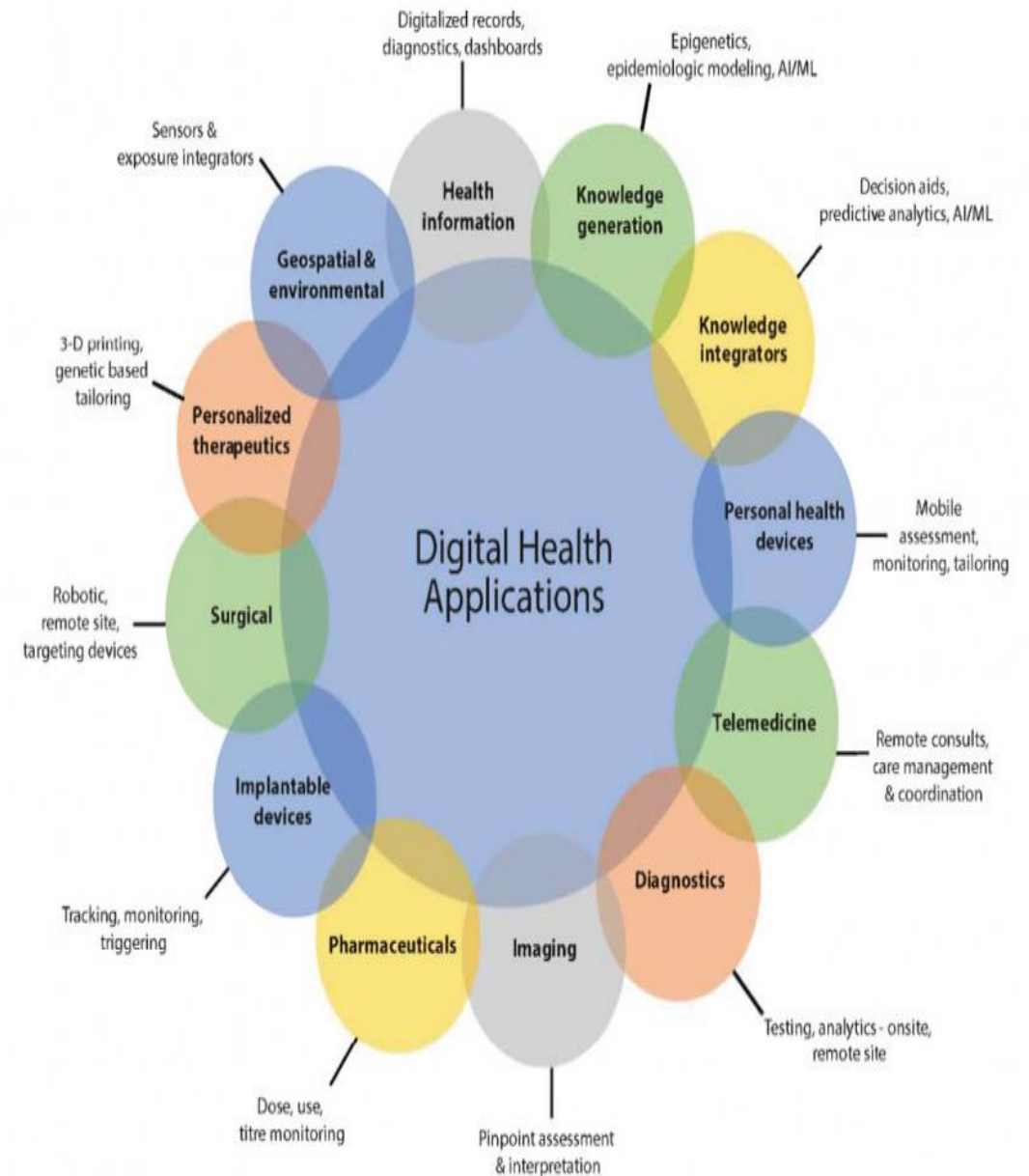
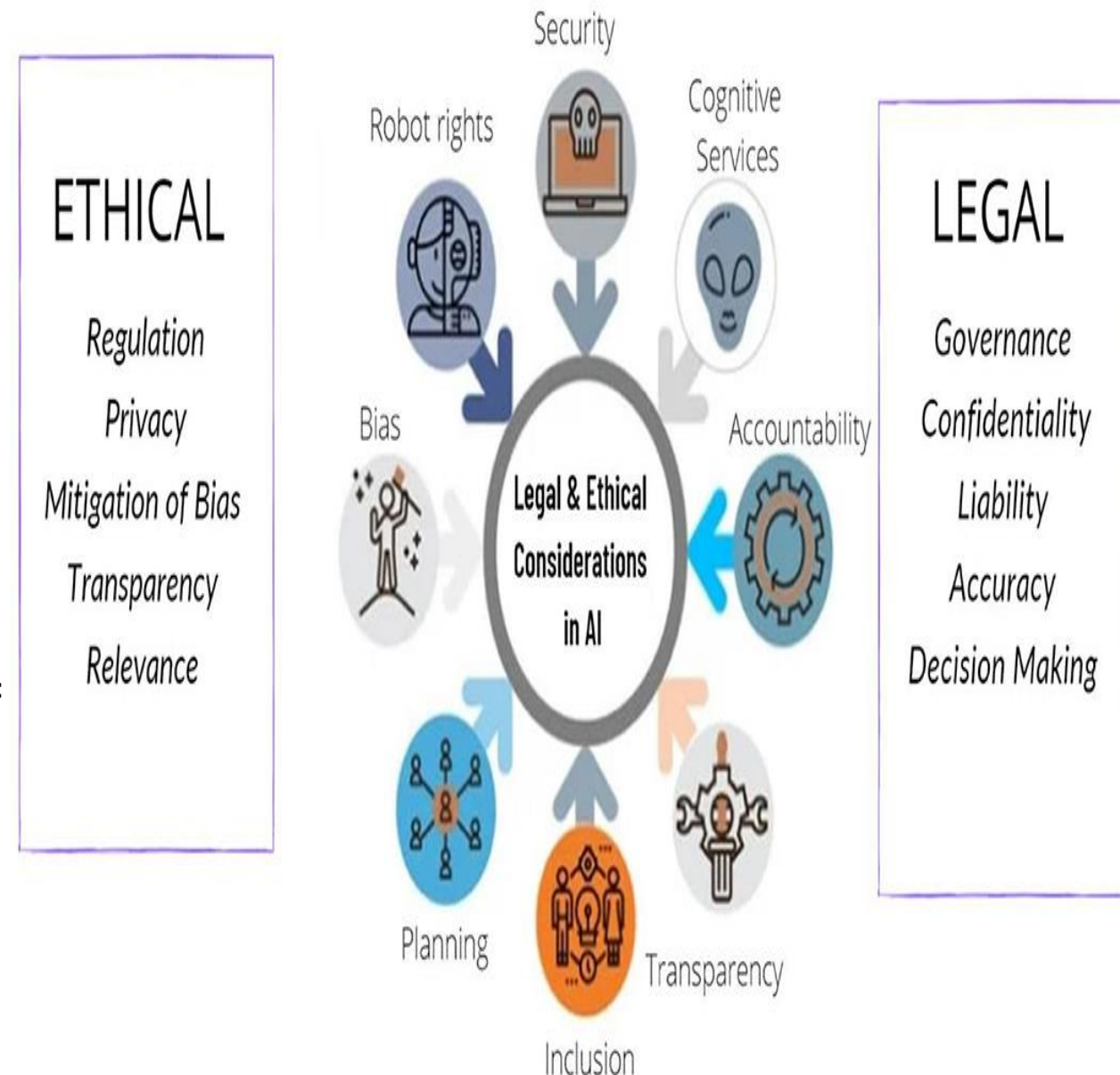


FIGURE 1 | Evolving Applications of Digital Technology in Health and Health Care

SOURCE: National Academy of Medicine. 2019. *Digital Health Action Collaborative, NAM Leadership Consortium: Collaboration for a Value & Science-Driven Health System.*

Legal and ethical issues associated with the successful implementation and delivery of the digital health promotion intervention in breast cancer in British women over 70 years

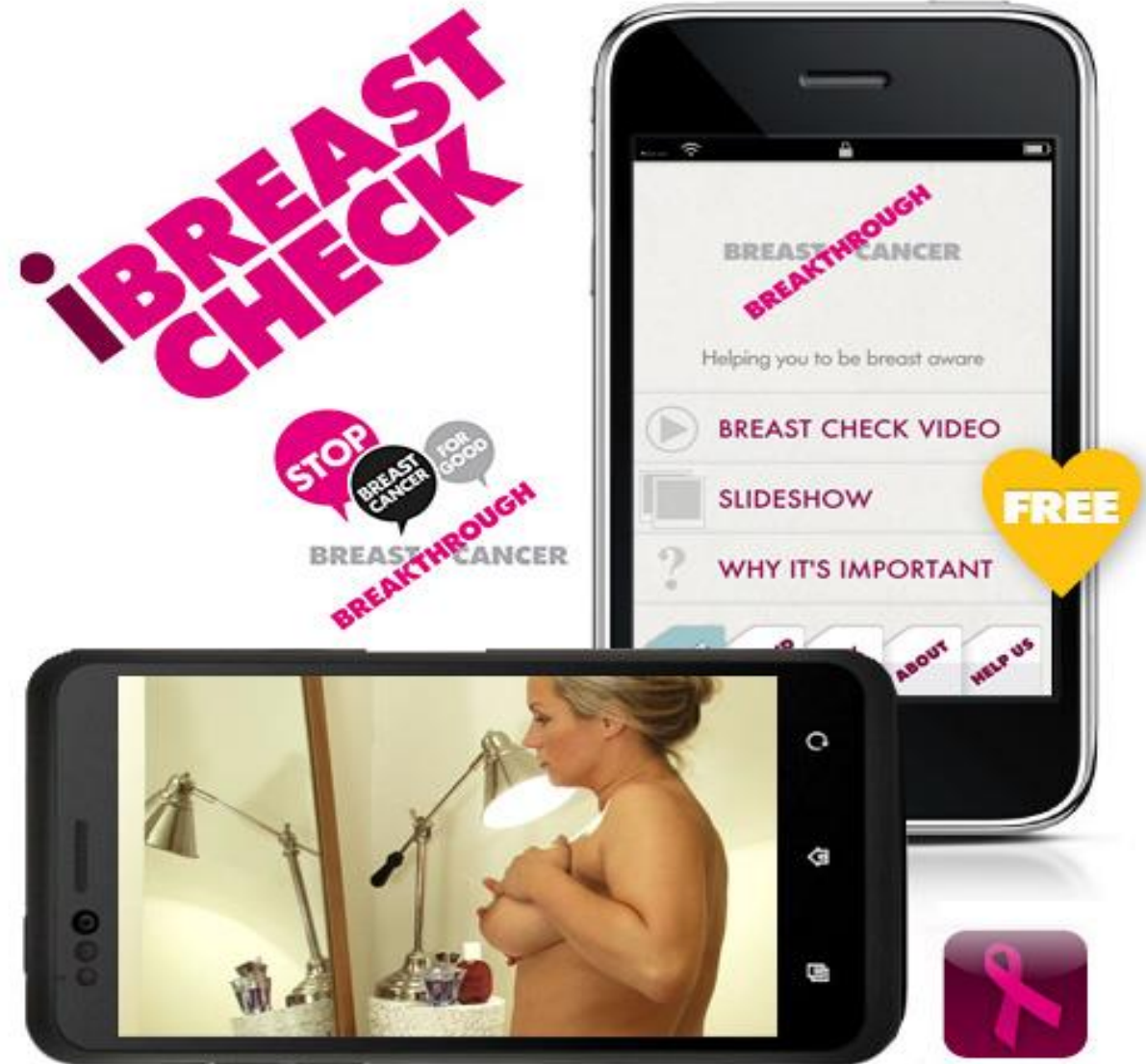
- Data Privacy and Confidentiality
- Informed Consent
- Security of Digital Platforms
- Equitable Access
- Accuracy and Trustworthiness of Information
- Health Equity and Bias
- Professional Standards and Codes of Conduct
- Monitoring and Evaluation(Beauchamp,L.&Childress, F.,2019).



Benefits of Breast Check App

Enhanced Awareness: The app offers educational tools and data regarding the symptoms risk factors, and significance of early detection through routine screening for breast cancer. This gives older women more knowledge and confidence to take preventative measures to safeguard their breast health.

Convenience and Accessibility: The app provides older women with an easy-to-use platform to easily obtain resources and information about breast health. Mobility and transportation barriers are reduced since they can learn about breast cancer prevention, screening recommendations, and self-examination skills from the comfort of their own homes. (Information Commissioner's Office (ICO), 2021).

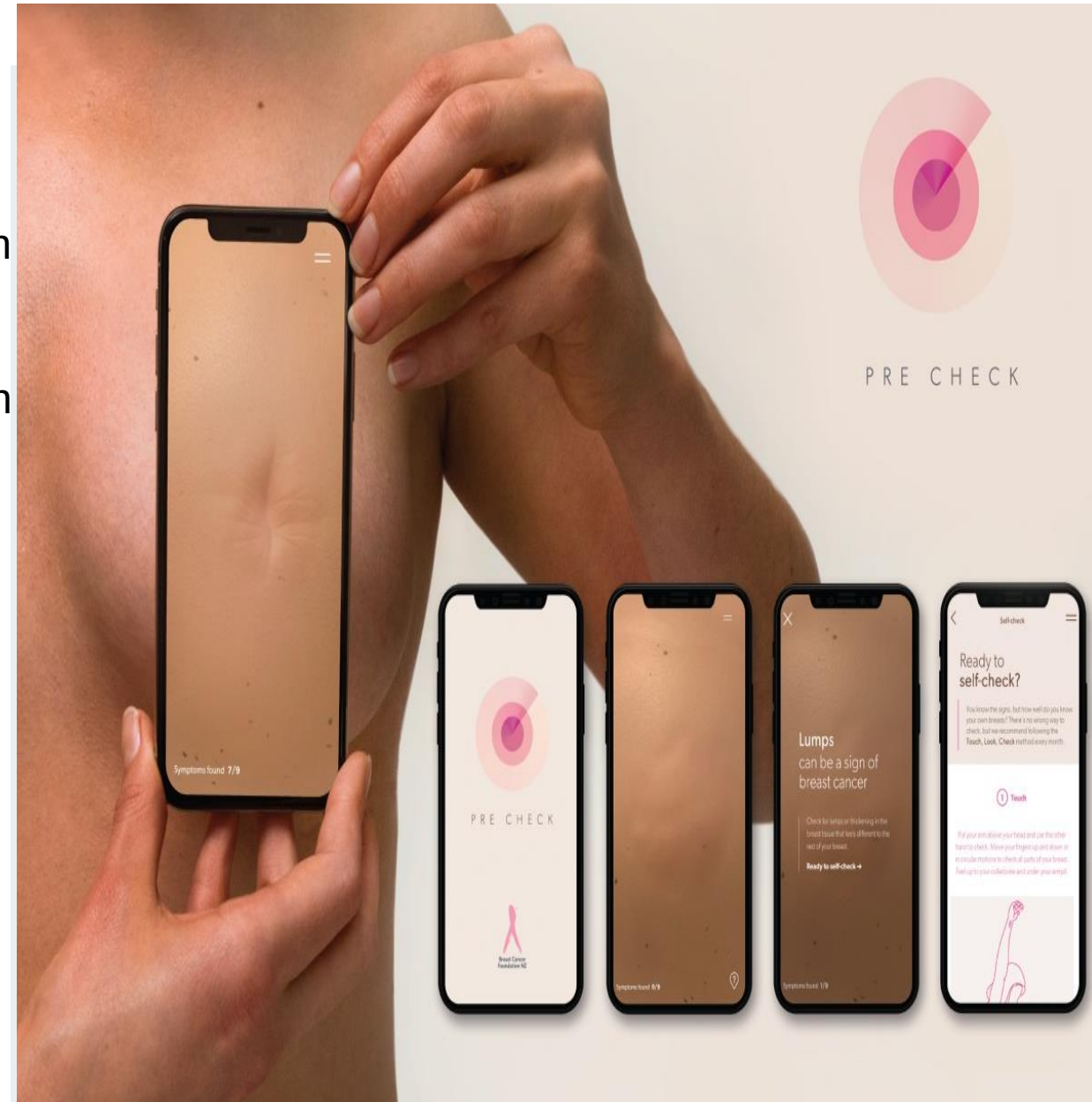


- ❖ **Personalised Risk Assessment:** Depending on an individual's age, family history, lifestyle choices, and other pertinent variables, the app may provide features to evaluate their personal risk factors for breast cancer. Older women can make more educated decisions regarding their breast health and have a better understanding of their particular risk profile by receiving personalised risk assessments.
- ❖ **Encouragement of Screening Participation:** In accordance with national guidelines, older women should arrange and attend routine mammography screenings. To that aim, the app may provide prompts and reminders. This contributes to higher screening rates in this population, which results in earlier breast cancer discovery and better treatment outcomes. (National Institute of Standards and Technology (NIST), 2018)



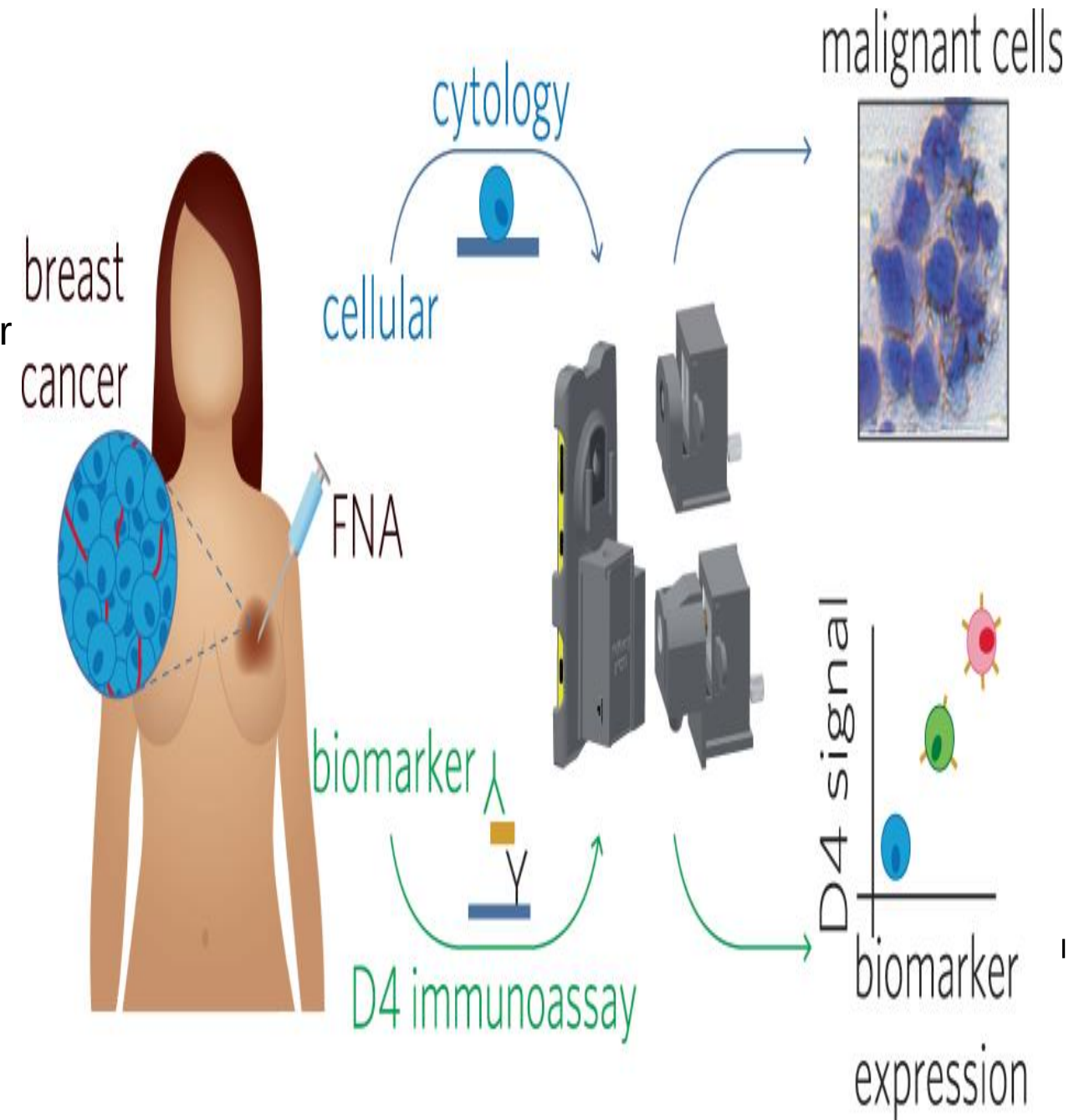
Support for Self-Examination: The app might offer instructions on how to conduct self-examinations of the breasts and identify alterations or anomalies in the tissue. Giving elderly women the information and abilities to conduct routine self-examinations can help identify possible problems with their breast health in between screening visits.

Peer Support and Community involvement: Through social networking tools, support groups, and discussion forums, the app may promote community involvement and peer support. Elderly women can build a sense of community and empowerment in maintaining their breast health by interacting with peers, exchanging experiences, and offering support to one another.(Beauchamp, L. & Childress,F.,2019).



❖ **Tools for Tracking and Monitoring:** The app might include features for tracking and keeping tabs on metrics linked to breast health, like screening history, results from self-examinations, and lifestyle choices. This enables senior women to monitor their development over time and maintain accountability for their breast health objectives.

❖ **Timely Information and Updates:** The app can provide users with up-to-date information about developments in screening technologies, changes to screening guidelines, and research on breast cancer. Giving older women access to the most recent evidence-based information gives them the power to make knowledgeable decisions regarding the care of their breasts. (National Institute of Standards and Technology (NIST), 2018).



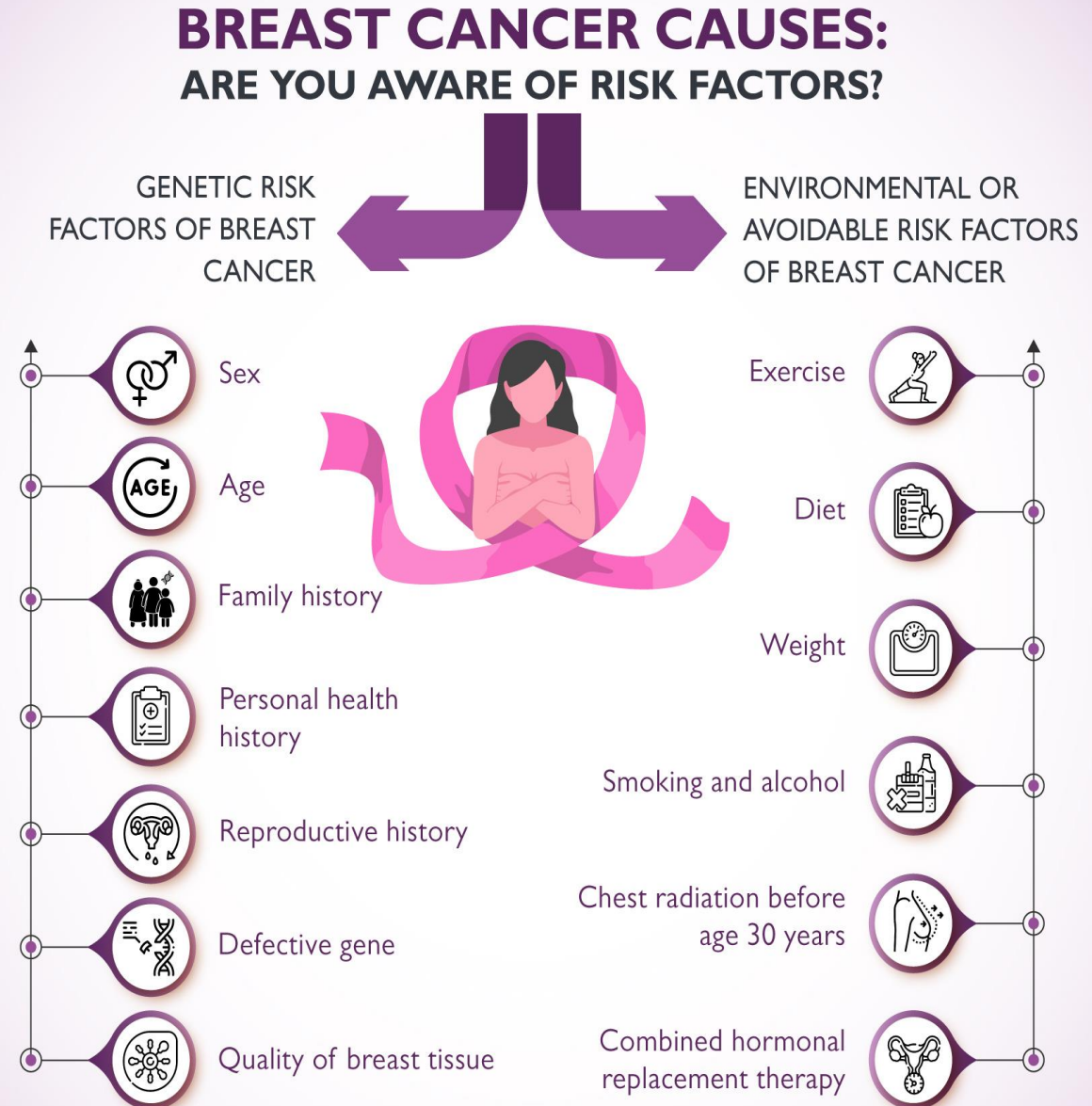
❖ Policies:

- ❖ **Screening Guidelines:** Given the app's success in promoting screening, officials may decide to modify the screening guidelines to allow for digital health interventions in regular breast cancer screening programmes for senior citizens.
- ❖ **Data Protection legislation:** To guarantee that the privacy and confidentiality of user information are sufficiently protected, legislators may be prompted to review and update data protection legislation in light of the app's collection and administration of personal health data.
- ❖ **Health Technology Assessment:** To help guide decisions on the integration of digital health promotion interventions, such as the Breast Check app, into healthcare systems, policymakers can conduct health technology assessments to determine the efficacy, cost-effectiveness, and safety of these programmes.



Research

- ❖ **Epidemiological Studies:** To evaluate the app's effect on breast cancer outcomes, including screening uptake, early detection rates, treatment adherence, and survival rates among British women over 70, researchers may carry out epidemiological studies. Digital health interventions: Studies examining the effectiveness, usability, and user experience of digital health promotion interventions for older women with breast cancer can shed light on the most effective ways to develop, execute, and scale programs.
- ❖ **Health Inequalities:** Studies may look into how digital health interventions might help with health disparities based on socioeconomic position, ethnicity, geography, and access to healthcare resources that are associated with the outcomes of breast cancer in older women.(HON,2021)



Education

- ❖ **Health Literacy Programmes:** Given the app's success in raising awareness of breast cancer and encouraging self-care practices, educational initiatives to incorporate digital health literacy programmes into formal and informal learning environments for senior citizens may be prompted.
- ❖ **Continuing Professional Development:** To improve their understanding of digital health promotion tactics and their ability to use digital tools like the Breast Check app in clinical practice, healthcare professionals can participate in CPD events.
- ❖ **Campaigns for Public Health:** Digital and social media platforms can be used by public health campaigns and educational projects to spread information about breast cancer awareness, encourage preventive behaviours, and motivate older women to participate in screening programmes.(WHO,2020)



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