

Health, equity, and women's cancers 3



Changing global policy to deliver safe, equitable, and affordable care for women's cancers

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Breast and cervical cancer are major threats to the health of women globally, particularly in low-income and middle-income countries. Radical progress to close the global cancer divide for women requires not only evidence-based policy making, but also broad multisectoral collaboration that capitalises on recent progress in the associated domains of women's health and innovative public health approaches to cancer care and control. Such multisectoral collaboration can serve to build health systems for cancer, and more broadly for primary care, surgery, and pathology. This Series paper explores the global health and public policy landscapes that intersect with women's health and global cancer control, with new approaches to bringing policy to action. Cancer is a major global social and political priority, and women's cancers are not only a tractable socioeconomic policy target in themselves, but also an important Trojan horse to drive improved cancer control and care.

Introduction

Closing of the cancer divide for women across the globe requires the translation of evidence into political and policy action. However, policies connecting research to the delivery of safe, affordable, and equitable care for women's cancers is complex, and significant political action will be required to radically improve future outcomes. But what do we already know about women's health and women's cancers? Women are both consumers and providers of health care and, as such, their role within and their impact on health systems impacts all aspects of sustainable development.¹ But while research into strengthening of health systems provides a range of options to build safe and affordable systems of care,² the global context for women's cancers is starkly unequal, with life expectancies ranging from 37 years to 72 years.³ The challenge for policy makers in closing the equity gap

is to maximise population health with the resources at their disposal, while taking into account equity and social values.⁴ Cancer control is increasingly a social, economic, and political priority. Addressing of global inequities in women's cancers can serve to drive the multisectoral discourse forward, to influence policy making, and to mobilise the necessary resources required to improve cancer care and control more broadly.

Rapid sociodemographic and cultural changes, such as changing reproductive patterns, are also altering the patterns of both breast and cervical cancer. The inescapable processes of ageing and globalisation will continue to act as drivers of the cancer transition and impose further strains in countries still coping with infectious diseases as well as maternal and child mortality. Poverty, social exclusion, and cultural values—including those affecting the status of women and girls—can act in concert, in a self-reinforcing negative cycle to increase both the global burden and socioeconomic impact of women's cancers.

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This is the third in a **Series** of three papers about health, equity and women's cancers

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Search strategy and selection criteria

We searched PubMed and Web of Science databases for articles published between January, 2001, and February, 2016. MeSH terms included [women and cancer], [women, health AND policy], [policy AND breast AND cervical]. A broader strategy was also used to search for women's health policy documents in grey literature using the same MeSH terms through World Bank, WHO, UN, and International Monetary Fund websites, as well as through a variety of non-governmental sources (Organisation for Economic Co-operation and Development, International Committee of the Red Cross, International Organizing Committee, 2001 [IOC, Report of the International Conference on Health Research for Development, Bangkok]). Bibliometric analysis of research into women's cancers and modelling of surgical burden for women's cancers was done as previously described.¹¹

Key messages

- Programmes of action for prevention and care for women's cancers are very cost-effective with a high economic return on investment. In low development settings, capacity for surgery, pathology, and radiotherapy needs to be scaled up and built upon, using both structural and domestic funding.
- Action needs to be taken against cultural and social attitudes that prevent women from presenting with early disease. Embedding of a gender perspective within health and health financing policy requires that women's health and cancers are viewed as a shared agenda, with active engagement from political and health leaders, civil society, and global health funders at both a domestic and international level.
- To effectively show the link between priority women's cancers and local and global health and development goals will be crucial. Women's cancers need to be considered an integral part of women's health policy both to achieve universal health coverage and the Sustainable Development Goals.

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The first two papers in this Series^{5,6} introduced the social and economic burdens of breast and cervical cancers, as well as the opportunities and challenges to dramatically improve access to timely, quality, and affordable cancer care and control for women. In this final Series paper, we explore the global health and public policy landscapes that intersect with women's health and global cancer control; and draw upon recent commissions, as well as burgeoning global health movements—including universal health coverage (UHC), the Sustainable Development Goals (SDG), and the new Global Strategy on Maternal, Neonatal, Child, and Adolescent Health—to suggest a new way forward that can bring policy to action (panel 1).

Evidence to policy: health intelligence and research

Throughout this Series, the need for improved evidence and intelligence (how that evidence is analysed and

disseminated) has been emphasised. Trends in incidence, mortality, and survival need to reflect the reality of women's cancers, which is not adequately achieved through the extrapolations and modelling upon which much of global policy currently rests. Mortality vital registration in India is 9% and in China is 4.2%—two countries with the largest number of women with breast and cervical cancer.⁷ Globally, the collection of basic vital registration remains an area of serious neglect (appendix).⁸ Furthermore, most data for countries across the African continent are extrapolated from one country; two-thirds of all mortality data held by WHO are also modelled.⁹

The situation is also grave for health intelligence on cancer care. As the recent Commissions on global surgery,¹⁰ global cancer surgery,¹¹ and radiotherapy¹² clearly illustrate, most low-income and middle-income countries (LMICs) and many high-income countries (HICs) are unable to provide even the most basic process

Panel 1: From policy to practice—a view from the African front line

Africa has been a major focus for cancer control policy making. Yet much of the literature is at odds with the trajectories and experiences of patients and health-care professionals. Furthermore, the African solution to women's cancers is a myth propagated by a failure to understand the huge variety of settings, cultures, and development agendas. To revolutionise breast and cervical cancer outcome in Africa, many factors should be considered.

Provide improved pay and incentives for health providers working in the public sector and have policies in place to guard against conflict of interests

In many African countries, physicians and health providers usually hold jobs in the governmental hospitals, universities, and other health systems during the day, or even run their private clinics while holding a governmental job. In the afternoons and evenings, these same individuals work somewhere else or operate their own private hospitals and clinics. Patients usually prefer to see these providers in their private clinics because they assume that since they are paying money, they will receive better attention and health care than in the governmental institution. This situation has negative effects on health providers, as well as the patients and the efficiency of the health system in general. Understandably, because health providers are not well compensated by the government, they need supplemental income to make ends meet, contributing to fatigue. Health providers will not have time to invest in contributing new strategies to develop improved health systems, or to inform public policy. Even worse, most health providers leave their country for richer countries in the Middle East, Europe, and the USA for better pay or work environments than they receive in their own country. As a result, cancer outcomes are poor, and the consequent loss of lives further leads to cancer stigmatisation and fear in African communities.

Senior physicians need to empower the younger generation, accommodate input from African diaspora in developed countries, and let go of their societal stature as the only authority in cancer treatment

The young generation of health providers will have up-to-date knowledge and improved training and networking with colleagues. The African diaspora can act as a bridge, to share their expertise from their adopted country to their country of origin. Through such long-term collaborations they can serve to improve cancer control capabilities by training others in models of care, and current best practices in education, clinical care, and research. Senior health providers often hold onto their positions long after retirement, which can frustrate young people and cripples their progress through unfair practices such as appointments based on personal relationships rather than merit.

Invest in primary care physicians to operate neighbourhood health clinics

Patients with minor illnesses, but not cancer, usually see such physicians. Community physicians are uniquely positioned to serve as agents for cancer awareness, an early warning system for identification of breast and cervical cancer risk, and can provide a communication channel to the specialists and advanced treatment centres.

Invest in nursing schools and nurse practitioners

Nurses have been serving traditional roles in Africa in helping physicians deal with communicable diseases, and in serving as helping hands in different medical departments. Most often, specialisation in cancer, training, or policies to recognise, reward, and develop the nursing sector, is not possible. University nursing programmes have started to appeal to young men and women in Africa. Investment in rehabilitation and development of this sector will not only attract brilliant brains, but also positively influence the cervical and breast cancer outcomes.

data (eg, number of facilities delivering cancer care, trained surgical and radiotherapy staff). Furthermore, reliable information about disparities between outcomes within countries absolutely requires high-resolution data.^{10–12} Evidenced-based policy making for women's cancers needs good quality cancer registration, as well as improvements in collecting health intelligence on cancer care.

Until such time as countries strengthen their health intelligence systems, a more creative use of surrogates can also help inform policy, including metrics of equity, economics, and other measures of women's health. For example, Maternal and Child Health (MNCH) surveys are a rich source of data for women's health in many countries with developed methodologies and real world data. A recent study of Nigeria¹³ has found that despite overall improvements since 2000, stagnation in basic MNCH interventions and a massive north–south divide with only one in five women covered in the north. Such data would also suggest a similar picture for breast and cervical cancers, or at least frame how an in-country needs assessment should be conducted.

The pathway to effective policy for women's cancers requires the generation of evidence through research.^{14–16} Our analysis for this Series paper of global research in breast and cervical cancers suggests that the key to strengthening this link is through indirect actions designed to incentivise research collaboration between countries. As reviewed in the first Series paper,⁵ breast cancer is a greater burden than is cervical cancer in HICs and middle-income countries (MICs), and research activity is commensurately higher. However, in low-income countries (LICs) cervical cancer dominates both disease burden and research activity (figure 1). However, global research activity is heavily concentrated in HICs, which publish 88% of breast and 73% of cervical research, whereas LICs publish only 0.1% of breast and 0.7% of cervical research. For LICs, a large proportion of productivity in LICs for breast and cervical cancer research is conducted with an HIC partner. Does this matter? Research partnerships between high-income and low-income settings can have certain value, but only if done in a truly collaborative manner, respecting social and cultural contexts. Such research collaborations are more likely if conducted in the service of the country in question. Local policy relevance is increased when the research underpinning the evidence-informed recommendations are locally based.^{17,18}

Indirect policy actions such as the introduction of new evaluation criteria to existing peer review processes can foster non-traditional research, such as implementation and social science, and facilitate translation from research to policy. The UK's own Research Excellence Framework represents a key step towards acknowledging the importance of research excellence beyond the traditional peer review of

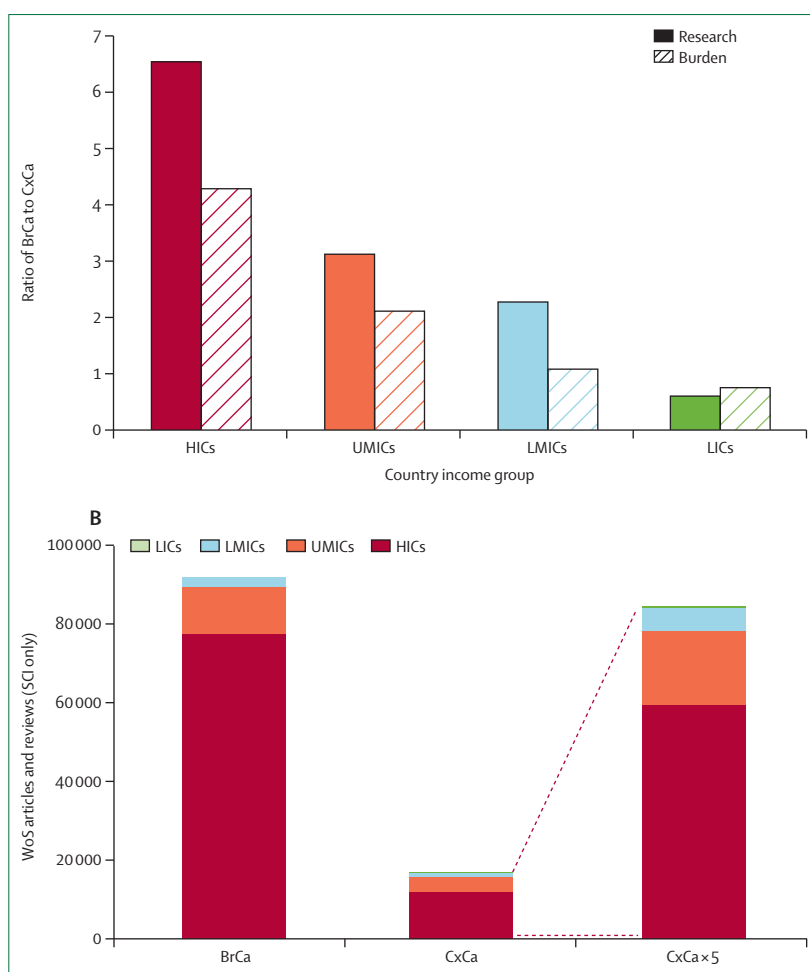


Figure 1: Research outputs for breast and cervical cancers stratified by income group (A) Ratio of breast cancer research to cervical cancer research and ratio of breast cancer disease burden to cervical cancer disease burden; and (B) all original research outputs in breast cancer and cervical cancer research (2000–14). BrCa=breast cancer. CxCa=cervical cancer. CxCa x5=cervical cancer output times 5. HICs=high-income countries. UMICs=upper middle-income countries. LMICs=lower middle-income countries. LICs=low-income countries. WoS=Web of Science. SCI=Science database.

publications, by including impact criteria that consider both the significance and reach.¹⁹ These initiatives are of particular importance in research on women's cancers, in which cultural values and social factors play a significant part in the priority placed on women's health in general, and on breast or cervical cancer control in particular.^{5,20}

Yet while high-income research in women's cancers is substantial, the research focus is very biased towards systemic therapies and basic science, at the expense of equally important areas, such as surgery and palliative care, for example. Globally, context appropriate research into novel cost-effective interventions for the treatment of both cervical and breast cancer is scarce, particularly in health systems research to improve treatment pathway quality and efficiency and enable earlier presentation.²¹

See Online for appendix

Global health movements and cross-sector actors

Global health, non-communicable diseases (NCDs), and cancer represent a complex network of intersecting national and international policy arenas, often at odds with each other and frequently disconnected. Context is crucial to successfully drive radical transformation to close the cancer divide for women. To dissect the complex literature and policy actions relevant for women's cancers we have focused on three major cross-sector currents—Social Determinants of Health, SDGs, and UHC.

Maternal and child health have had a substantial research and global health policy focus over the past 20 years. The 2008 Commission on Social Determinants of Health remains one of the most important global health roadmaps. Progress in women's cancers still rests on the failure or success of properly addressing these basic determinants.²² Confrontation of the root causes of poor health outcomes in women's cancers requires countries to adopt the Commission's report and action them. Strong policy guidance on the effect of gender inequality is available at country level, particularly from the WHO Social Determinants of Health unit. Although the principles for action are universal, the contexts for implementation are not. As studies of health care and equity have shown, for example in India, the heterogeneity in the scale and interplay between these determinants and between states and across class, income, education, and geographic divides needs context-specific analysis and policies linked to accountable and responsible political office.²³

As the world looks towards the SDGs, and in particular, the health-related target to achieve UHC, how should women's cancer care, research, and advocacy communities interface with these broader and deeper global health initiatives? The focus now is on a pro-poor progressive universalism approach to achieve both improved outcomes and increased financial risk protection; the emphasis is on guaranteed services that the government commits to providing for its population. However, many countries have yet to deliver these basic commitments with an explicit, prioritised framework.²⁴ What is clear is that all the issues facing UHC are magnified when considering the delivery of services for women's cancers. However, prevention of cervical cancer and early diagnosis and treatment of breast cancer clearly fit into the value frameworks for UHC in terms of being guaranteed services with high priority. Accepting of the doctrine of progressive universalism means that policies around the provision of treatment services for cervical and breast cancer need to take a more nuanced, stratified, and scalable approach (appendix).

Since the UN High Level Summit on NCDs in 2011,²⁵ the post-2015 SDGs have taken shape around a bewildering list of targets and indicators. Buried within this list are a variety of domains relevant to women's cancers (appendix). The SDGs provide both opportunities and challenges. Challenges include the primary issue for women's cancers

concerning scaling up of primary and secondary prevention for cervical cancer, as discussed by Denny and colleagues in the second Series paper,⁶ and cost-effective models of care for invasive breast and cervical cancer. Although surgery and radiotherapy can be integrated into affordable pathways of care, upfront capital expenditures are high and lead times for training require sustained revenue streams.^{11,12} However, low total health expenditures and the cost of delivering services for both infections and NCDs for many countries are a significant barrier to cancer investments.²⁶ Radical reductions in global and within-country inequities in women's cancer outcomes will require national multi-sectoral investments which, apart from some unique countries that have delivered good health at low costs,²⁷ have yet to be realised in most LMICs.²⁸ Our analysis from this Series clearly shows that women's cancers are major threats to national health outcomes and to development. Advocates, civil society, and health-care professionals need to clearly articulate how the agendas for cervical and breast cancer fit SDG targets and indicators. Furthermore, this work should be linked with the broader SDGs such as gender equality, which is widely recognised as being essential to sustainable development.²⁹ Even in LMICs with good track records of delivering improved population health outcomes, gender inequality as measured by the UN Development Programme gender inequality index is still relatively poor (eg, Thailand ranking 69th and Bangladesh 116th). The key policy opportunity is to link forces with other women's advocates in both health and non-health fields to drive greater investment for women's cancers.

Global and domestic financing

Economic and fiscal policies are powerful levers to improve health equity for women and to promote improved outcomes for women's cancers. Health services addressing women's cancers in LMICs are mostly underdeveloped and under-resourced relative to population need despite the availability of cost-effective prevention and treatment for cervical and breast cancer, as described elsewhere in this Series.^{5,6} Cancer policy and financing mechanisms should also address the substantial financial, social, cultural, and geographical barriers that prevent many women accessing timely cancer care. In particular, investment in cancer services for women should be accompanied by policies that promote gender equality and risk protection against the costs of cancer care. How, though, do we integrate what is already known about effective and sustainable economic policy to deliver better global care for women's cancers, and how do major global initiatives around health financing (eg, Every Woman Every Child) fit?

Prioritisation of high-impact, cost-effective health and clinical interventions

Cost has often been cited as a major barrier to delivering comprehensive cancer care in low resource contexts.

For the WHO Social Determinants of Health unit see http://www.who.int/social_determinants/en/

However, high-impact, cost-effective interventions for breast and cervical cancer exist for countries at all stages of economic development.²⁶ Many groups, including the Institute of Medicine,³⁰ the Disease Control Priorities Network,³¹ the Breast Health Global Initiative,³² and the Commission on Investing in Health³³ have identified or endorsed a stratified approach to scaling up cancer services for women by focusing on implementation of key population health and clinical interventions. The Disease Control Priorities Group recently estimated that implementation of a basic cancer control package in LMICs—which included prevention of cervical cancer through vaccination, and diagnosis and treatment of early cervical and breast cancer—would cost as little as \$5.72 per capita annually in upper MICs, \$1.72 in lower MICs, and \$1.70 in LICs.³¹ These figures are equivalent to 3% of current public health spending in LMICs.³¹

Role of UHC policies to ensure financial risk protection against the costs of cancer

Out of pocket payments for health and cancer care dominate in most LMICs.^{34,35} Out of pocket payment for cancer care is associated with high levels of catastrophic health expenditure and impoverishment, and women are at greater risk than men are of financial catastrophe from accessing cancer treatment.³⁴ UHC and the elimination of health-associated impoverishment have emerged as key health priorities and as policy goals at both a domestic and international level.^{33–38} Introduction of UHC represents a transition away from out of pocket expenditure to pooled, publicly financed health care that offers financial risk protection against the costs of seeking and receiving care.

The definition of a UHC essential services package is crucial, and should expand beyond traditional packages focused exclusively at maternal and child health and infectious diseases to also incorporate key services for breast and cervical cancer. Gender considerations are also required when addressing issues of access.³⁹ Well-designed UHC policies in LMICs can, and have, facilitated substantial improvements in access to health services, health-associated impoverishment, and health outcomes including for breast and cervical cancer.³⁹ For example in Mexico, the introduction of *Seguro Popular* from 2003, a national public health insurance programme aimed at provision of health coverage for the poor and uninsured, substantially expanded access to key cancer services for women.⁴⁰ Services covered include cervical screening and mammography, as well as cervical and breast cancer treatment.⁴¹ Inclusion of breast and cervical cancer within the essential services package in Mexico resulted in reductions in catastrophic expenditure and treatment discontinuation, and improved access to curative treatment.^{29,42,43} Similar success has been achieved for priority women's cancers in Thailand through use of explicit multi-criteria decision analysis frameworks in the development of UHC policies and packages.^{44,45} These frameworks objectively assess factors

such as disease burden, equity, economic, and social impact and cost-effectiveness in the coverage of interventions.⁴⁵

Financial sources for women's cancers

A wide range of policy instruments for financing must be mobilised and effectively used to deliver improved cancer care for women globally.⁴⁶ Health financing is often poorly aligned with population needs. Countries, donors, and multilateral agencies have often lacked the structural and political flexibility to respond to a rapidly changing health environment. As a result, health services targeted to NCDs, including cancers, receive very little domestic and international health funding relative to the increasing burden they impose.

The Commission on Investing in Health³³ identified three main ways in which countries could increase their health financing to scale up health services for new challenges such as women's cancers: increased mobilisation of domestic resources (eg, progressive general taxation, taxation of tobacco, taxation of multinational corporations); intersectoral reallocations and efficiency gains (eg, elimination of fuel subsidies); and contributions from external resources (eg, international financing, both from traditional sources and innovative financing models). Rapid economic growth in many MICs—the very countries facing the greatest burden from cancer—is creating fiscal space for increased domestic spending on health, including cancer care and control. Many large MICs, including China and India, are actively engaged in development of comprehensive cancer control strategies, funded almost entirely through domestic health spending.⁴⁷ Women's cancers should explicitly be included within these programmes from the outset. Perhaps most important is that the needs of women at greatest risk of dying from breast and cervical cancer are adequately addressed in the design, financing, and delivery of these cancer services. Such consideration is necessary to promote equity, close the increasing divide between rich and poor, and prevent development of a two-tiered system of cancer care. For example, in India most breast and cervical cancer deaths occur among women of low socioeconomic standing in rural areas,⁴⁸ yet most hospitals providing high quality, comprehensive cancer care are located in major urban centres and are often private, rendering them geographically and financially out of reach for those most affected.⁴⁹ Long-standing issues in India—and in many other LMICs—regarding poor health financing, access, availability, and quality of health care, particularly in the public sector, must be addressed simultaneously to grow an equitable cancer care programme for women.⁵⁰

Development assistance for health (DAH), provided by donors and international agencies, has been a major source of health financing for basic health care during the past 20 years. DAH rose sharply between 2000 and 2010, before plateauing at around US\$32 billion dollars

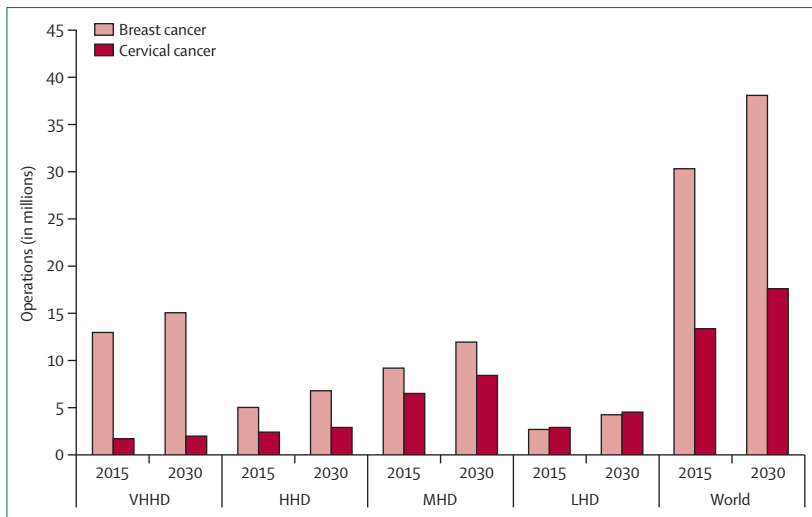


Figure 2: Global surgical procedures needed to treat breast and cervical cancer in 2015 and 2030, by development group

Data from Human Development Index category.¹¹ VHHD=very high human development. HHD=high human development. MHD=middle human development. LHD=low human development.

(\$USD, 2011 value) by 2013.⁵¹ Many health stakeholders in LMICs believe the priorities and focus of DAH granting agencies have strongly dictated the development and delivery of health services in their countries, and have also heavily influenced domestic health agendas and spending.⁵² In general, this belief has been unfavourable for mobilisation of resources for women's cancers. For example, in 2011, NCDs accounted for 49.8% of the burden of disease in LMICs but received only 2.3% of DAH.⁵¹ By contrast, HIV/AIDS accounted for 3.7% of the burden and received 45.9% of DAH, and maternal, newborn, and child health accounted for 21.0% of the burden of disease and received 32.2% of DAH. Unfortunately, maternal, newborn, and child health funding has typically not included women's cancers, despite the associated negative effects on maternal, newborn, and child health outcomes.⁵

A major realignment of health financing with health needs is required from DAH for women's cancers to receive resources commensurate with the health, welfare, and economic burden they impose. Rigorous economic analysis, particularly regarding cost, payment, affordability, and value for money has also typically been absent from country-level decision making on which cancer treatments to fund. This knowledge gap has contributed to the phenomenon of rising cancer costs without significant health gains on the one hand and the ill-founded perception that cancer care is unaffordable on the other. It follows, therefore, that health financing decisions should also be grounded in evidence, ideally drawn from the local context, wherever possible. External donors and granting agencies need to support locally identified priorities and needs, provide predictable, long-term financial and technical commitments, and

coordinate their activities with other external and domestic partners.

An investment approach

Provision of affordable, timely, quality comprehensive cancer control and care for women in LMICs might be most effectively achieved through a coordinated scale-up of strategic investments in health systems, rather than through issue-specific advocacy for vertically oriented programmes addressing specific women's cancers—referred to as an investment framework approach. This approach departs from vertical health financing models of the Millennium Development Goal era, which focused on financing discrete interventions for individual diseases, and inadvertently contributed to resource competition and fragmentation of health-care delivery. Instead, such an approach identifies a key set of evidence-based priority interventions and places these in the context of the broader economic, social, and environmental factors required to enable successful delivery. Investment frameworks provide guidance for stakeholders on how to optimise resource allocation to maximise social and economic returns and should be tied to tangible goals such as to increase the provision of surgical services for women's cancers for which there is a major global need (figure 2).

The Commission on Investing in Health³³ has included priority interventions for breast and cervical cancer into its recommendations for an essential health coverage package for NCDs, as has the Disease Control Priorities Project³¹ through its essential cancer services package. Both groups stress these interventions should be delivered as part of investments in the overall health system. The objectives outlined in the Every Woman, Every Child Global Strategy are well aligned with the requirements to improve global cancer care for women, though the initiative does not explicitly consider priority women's cancers.⁵³ Similarly, the Global Investment Framework for Women's and Children's Health,⁵⁴ which outlines the context, key enablers, and health, social, economic, and environmental gains of investment in cost-effective interventions to reduce maternal, neonatal, and child deaths has significant synergies with women's cancers and could be expanded to include priority interventions for breast and cervical cancer. Finally, the Addis Ababa Action Plan⁵⁵ on Transformative Financing for Gender Equality and Women's Empowerment provides the most comprehensive set of policy and financing actions aimed at closing the investment gaps, and provides another useful platform into which women's cancer policies can be built.

Strengthening of care for women's cancers

Of all women's cancers, cervical cancer is an attractive target because it has enormous costs if not prevented or treated early (human, social, and economic), and cost-effective and feasible methods already exist to implement proven primary and secondary prevention strategies—

Panel 2: Women's cancers: building on success

Women's cancers have an important opportunity to use the political momentum and platforms that maternal care and family planning initiatives have delivered globally in the past 50 years. Since the introduction of the oral contraceptive pill in the mid-1960s, a global movement to improve the health of mothers and their children mediated by family planning campaigns and associated interventions to improve maternal and child survival have been powerful policy drivers.⁵⁷ Countries that have undergone a rapid economic and demographic transition, such as Chile, reflect the benefit of using pre-existing maternal health services, particularly in the community, to address cervical cancer, the so-called surfing approach. This approach builds on health policies whose central idea is that women under a specific and organised gender health programme, such as the one existing in Chile since the mid-1960s, can build on networks designed for maternal and child health to now include cancer care.⁵⁸

particularly scale-up of human papillomavirus (HPV) vaccination.⁶ Policy needs to follow the model of Gavi, the Vaccine Alliance, and similar organisations to shape markets. In 2012, Gavi negotiated with manufacturers to reduce the HPV vaccine price to US\$4.50 per dose for eligible countries, far less than the \$100 per dose of the vaccine in the USA or the lowest public available price at that time of \$13 per dose through the Pan American Health Organization Revolving Fund. With HPV vaccines more affordable, Gavi could now invite eligible LICs to apply for HPV vaccine support. This step opened the door for LIC to provide HPV vaccines through routine immunisation. All the evidence presented in this Series indicates that this intervention, coupled with population-based screening programmes, can radically reduce the burden of cervical cancer in a generation.

The needs assessment, models of care, models of capability enhancement and economic considerations of the costs of increasing service delivery, and the cost of inaction have been explored in considerable depth in a suite of *Lancet* and *Lancet Oncology* Commissions.^{10–12,56} What has arisen from these Commissions is a recognition that basic surgical care and pathology for all cancers including women's cancers is poor or absent in many LMIC settings. Our data (figure 2) clearly show, for example, the global need in LMICs for more surgical capacity, which should go hand in hand with radiotherapy treatment as well. Many countries, for example Zambia, have already shown significant progress in building surgical and pathological expertise into district settings, and also creating a major centre to deal with more advanced and complex breast and cervical disease (panel 2). Initiatives such as Breast Health Global Initiative, and more recently the American Society of Clinical Oncology (ASCO), and the National Comprehensive Cancer Networks (NCCN), have also provided countries with the

Panel 3: Linking of policy change in women's cancers to cultural and religious norms

Instilling of new behavioural and social norms that align with policy requires engagement with cultural and religious frameworks through which cancer and cancer control behaviours are assigned value. The rapidly increasing world population of Muslims, presently 23% of the world's population (1.6 billion people) and expected to represent 30% (2.8 billion people) of the world's population by 2050, presents a unique opportunity to link religion and culture to drive policy making for women's cancers. Because diverse groups of Muslim women share in beliefs, values, and practices that similarly impact their health behaviours and might influence cervical and breast cancer disparities, this group's religion and culture have potential for substantial positive effects on outcomes.⁶²

A particular example is the American Muslim community in Chicago. This community is a growing and diverse population of between 5 and 7 million people out of a population of 321 million, and is comprised predominately of African Americans (35%), Arabs (25–30%), and south Asians (20–25%). Several community-based surveys evidence an underuse of breast and cervical cancer screening by American Muslims, with lower than national average cervical (84% received a Papanicolaou [Pap] smear once in their life) and breast cancer screening rates (77% received mammography once in their life but 37% not within the past 2 years).^{63,64} Furthermore, psychological factors associated with religion exist with screening; women who tended to interpret disease as a manifestation of God's punishment had a lower odds of having Pap-smear testing, while those with higher levels of positive religious coping had lower odds of having a mammogram.⁶⁵ Tailoring of screening policies to address religion-associated barriers by introduction of other religious beliefs that have greater resonance with participants; reframing of barrier beliefs such that they are consistent with the health behaviour desired; and use of religious scholars to invalidate theologically inaccurate beliefs have all helped to gain greater traction for prevention, particularly of cervical cancer.

templates to resource-stratify care provision in both these cancers, which should be used in parallel to strengthen hospital-based care systems.⁵⁹

The delivery of effective, safe, and timely systems of care is predicated on early detection and presentation. Breast cancer screening has benefits, but also significant harms.^{6,60,61} As such, countries should make their own evidence-based decisions as to the effectiveness and cost-effectiveness of introduction of population breast-screening programmes, on the basis of transparent and rational processes. Unlike breast screening however, the effectiveness of cervical screening is far less controversial, and should now be considered a core public health measure. However, serious sociopolitical and cultural barriers remain to the successful implementation of screening policies and programmes, and early presentation in many countries that have to be addressed in parallel and with the same priority afforded to up-scaling care (panel 3).^{20,66,67}

Women's cancers: where now in public policy?

Women's cancers clearly have the advantage of spanning two major health policy and financing domains: women's health and cancer care, though this advantage has been poorly used in terms of policy development. Political commitment, resources, and programmes already exist for maternal and child health in almost every country in the world. These frameworks could be

Panel 4: Call to action

In keeping with the UN Secretary General's call for the elimination of cervical cancer as a public health concern by 2030, we have two recommendations:

- 70% of girls aged 9–13 years should be immunised against human papillomavirus.
- 70% of women age 30–49 years should be screened for cervical cancer at least once, with timely, affordable, and effective treatment of pre-cancerous cervical lesions.

Aligned with the poverty, health-associated, and gender-associated Sustainable Development Goals, by 2030 all women who develop breast cancer—regardless of country, socioeconomic status, ethnicity, or migration status—should have equal opportunity to be diagnosed at an early stage of disease (ie, as appropriate with imaging, biopsy, and quality pathology including at least hormone receptors), with timely access to potentially curative treatment (at least a good quality modified radical mastectomy, including axillary node dissection, and tamoxifen if hormone receptor positive).

In keeping with the palliative care resolution of WHA resolution 67.19, supportive and palliative care should be available to all women with advanced cancer.

expanded to promote primary prevention (eg, through HPV vaccination) and early detection of breast and cervical cancer in LMICs, at little incremental cost in terms of delivery. Although diagnosis and treatment of cervical and breast cancer requires a different set of health services than does maternal health (namely pathology, radiology, surgery, chemotherapy, hormonal therapy, and radiotherapy), establishment of basic stratified services in many countries is now achievable. Furthermore, establishment of women's cancer services could be used as a platform from which to develop more comprehensive cancer policies, programmes, and services.⁶⁸

Prevention and early detection offers the most cost-effective long-term strategy for the control of cancer even in low resource settings. In some sub-Saharan African countries, greater than 50% of cancer cases are now attributable to infectious agents, compared with fewer than 5% in many HICs, including the USA and Australia.⁶⁹ Hepatitis B vaccines have dramatically reduced carrier rates and studies have shown their long-term effect of protection against liver cancer.⁷⁰ 70% of cervical cancer cases can be prevented with HPV vaccines; an even greater proportion of cases will be preventable with newer multivalent vaccines, although these are currently too costly for most settings.⁷¹

Time-bound, measurable indicators are now urgently needed to assist countries in achieving the SDG and WHO Global Action Plan-related mortality reduction targets for cervical and breast cancers, for which cost-

effective interventions exist.⁶ An HPV vaccine coverage target of 70% for girls aged 9–13 years is considered to be a cost-effectiveness threshold,⁷¹ and 70% population coverage for cervical cancer screening (by relevant modality, according to WHO guidelines⁷²) is aligned with cancer screening policy in many HICs.

Population-based screening mammography for early detection of breast cancer continues to generate debate in HICs, and the role of clinical breast examination as a screening modality is still under evaluation in LMICs.⁶ Screening mammography is recommended by WHO for women aged 50–69 years in well-resourced settings or limited resource settings with relatively strong health systems, only where an extensive set of specific conditions are met to ensure overall programmatic quality; for women aged 40–49 years, screening is not recommended except in well-resourced settings “if conducted in the context of rigorous research and monitoring and evaluation”.⁷³ In light of the limited effect that breast screening is likely to have in LMICs for some time to come, it is time to recommend that countries rapidly improve equitable access to early diagnosis (ie, diagnostic imaging, biopsy, and quality pathology including at least hormone receptor assessment), with timely access to potentially curative treatment (at least a good quality modified radical mastectomy—including axillary node dissection and tamoxifen if hormone receptor positive). Identification of measurable indicators for such interventions will be challenging, but are achievable (panel 4).

Embedding of a gender perspective within health and health financing policy requires that women's health and women's cancers are viewed as a shared agenda, with active engagement from political and health leaders, civil society, and global health funders at both a domestic and international level. The link between priority women's cancers and local and global health and development goals needs to be shown. Policymakers building on synergies with established health movements including women's health and the cancer and NCD movement will also help to advance the agenda (appendix).

Between Gavi's launch in 2000 and 2013, 3·5 million of the 6 million future deaths averted were attributable to the widespread implementation of hepatitis B vaccination. This recognition helped pave the way for greater prominence for HPV vaccines against cervical cancer. HPV vaccination in Gavi-supported countries over the period between 2016 and 2020 could avert an estimated 600 000 future deaths of adult women.⁷⁴ The advantage for the community focused on women's cancers is that this intervention will provide an unprecedented degree of legitimacy for highlighting the influence of other sectors on determinants and risk factors. No progress will be made on the four main NCDs without progress on, for example, sustainable consumption and production (goal 12), equity and women's empowerment (goal 5), or safe cities and

human settlements (goal 11). Many of these links are well established at global level, but they can also be powerful in going beyond the intersectoral policy rhetoric at country level.

Contributors

All authors were responsible for key messages and final draft. OG led the Series.

Declaration of interests

We declare no competing interests.

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