



JULY 2024

# Coalition-Building between the US and China on Women's Cancer Detection, Treatment, and Care

*Roundtable Summary*

## BACKGROUND

Cancer is one of the leading causes of death in the US and China. In 2022, approximately 2.4 million new cancer cases were diagnosed in the US and 4.8 million new cases of cancer in China. That year, an estimated 605,000 Americans and 2.6 million Chinese died from cancer.<sup>1</sup>

Of the top 10 (by incidence) cancers in China, four are women's cancers. Furthermore, the incidence rates have been growing in China, driven by a complicated mix of factors, including better cancer detection through increased screening and an increase in lifestyle risk factors. And rapidly aging populations continue to escalate the cancer burden.

Breast cancer rates are rapidly increasing in most Asian countries, which is attributed to the increasing prevalence of breast cancer risk factors (including Westernized lifestyle exposures). In the US, breast cancer rates have stabilized but disproportionately impact minority populations and people in geographic regions with limited access to high-quality medical care. In fact, breast cancer is expected to become the most common cancer in women in both the US and China. And, although

cervical cancer has steadily declined in younger women in the US due to the human papillomavirus (HPV) vaccination, it is on the rise in older women. More than half of the world's burden from cervical cancer is in Asia Pacific, where 350,000 women are diagnosed each year.

Despite successes in cancer control and prevention in both countries, there is more to do. The US and Chinese governments have announced a commitment to health as a potential area of bilateral cooperation.<sup>2</sup> To inform that commitment and recognize the importance of and relative underinvestment in women's cancers, the Milken Institute has launched an initiative, "Coalition-Building between the US and China on Women's Cancer Detection, Treatment, and Care." Through this initiative, the Milken Institute seeks to harness the power of the nonprofit, public, and private sectors to address barriers to improving cancer patients' outcomes.


To kick off the initiative, the Milken Institute, in collaboration with the US-China Business Council (USCBC), hosted a day-long roundtable in Hong Kong in March 2024 to identify potential opportunities for US-China bilateral cooperation. The Milken Institute brought together 40 delegates from China and the US from across the biomedical ecosystem to surface actionable ideas for collaboration that can advance solutions to the most vexing challenges facing the elimination of women's cancer. Participants included those from the US National Institutes of Health's National Cancer Institute, the US Department of Commerce, the US Department of State, the US Department of Health and Human Services' Health Attaché from Beijing, the Chinese National Cancer Center, medical centers in Hong Kong, and member companies of the USCBC in the life sciences industry.

## ROUNDTABLE EMERGING THEMES

### A Dynamic Landscape Presents Many Opportunities for New Innovations

China has a long history of cancer screening but faces challenges related to the country's very large population, diverse geography of urban and rural settings, limited health resources, low uptake for (free) screening programs, and cancer screening quality. However, the public needs screening education, and local professionals need training. Participants explained that breast cancer screening faces a number of challenges in China, including that Chinese women have smaller and denser breasts (which makes detecting cancers by mammography harder), and mammograms are very expensive, are not available in many places, and require an expert to read the scans. Ultrasounds are user-dependent and hard to read (although there may be a role for AI in the future), but new volumetric ultrasounds can be portable and automatically read the scan (i.e., user-independent). New markers for breast cancer are being investigated (e.g., based on inflammatory/vascular activity), and liquid biopsies are getting approved.

Innovations in precision medicine now exist, including advanced mass spectrometry to accelerate multi-omics translational research, fully automated next-gen sequencing instruments (that don't require a trained operator and only require a very small sample size), enhanced capillary electrophoresis instruments to diagnose, genotype, and monitor for cancer re-occurrence, and novel technologies looking at genomics and epigenomics. However, participants explained that hurdles exist for translating innovations into clinical use, including access barriers (including price) and acceptability of the innovations.



Participants talked about using mobile screening machines (MRI, ultrasound, mammogram) to access hard-to-reach populations. Some success stories were shared in which hundreds of women were screened daily, leading to next-stage screening for many women who could have otherwise been missed, but funding is the barrier to scaling this practice. Another example referenced was colposcopy (to identify malignant cervical lesions), which requires women to come to the clinic and trained professionals to conduct the procedure and take a biopsy to be sent to a lab for interpretation, which is difficult to do in areas without such infrastructure. Alternatives to colposcopy are being developed (e.g., hand-held devices that can take and send pictures to a remote expert to interpret), and AI could be incorporated to streamline interpretation.

Further, the removal of abnormal (pre-cancerous) cells is now done with an electrically heated loop, which may not be feasible in under-resourced areas that lack electricity and may result in poor side effects without a highly trained workforce. Other ways to do this are being developed (e.g., cryopreservation to freeze cells).

Finally, participants reminded us that women's cancers include very different cancer types, so we should not think of all cancers in the same way. For some cancers, like cervical, we understand the cause and course of the disease, while for others, like ovarian, the cause remains unknown, and we still have not clearly identified a pre-malignant stage. These differences impact our current tools for prevention, screening, and treatment, and therefore, the challenges and potential solutions will differ.

In other words, there is no one-size-fits-all approach for all women's cancers. In addition, specific cancer types (e.g., genetically profiled breast cancer sub-types) are not necessarily single-disease entities but rather heterogeneous conditions that require different prevention, screening, and treatment approaches.

## Cervical Cancer Screening Offers a Unique and Immediate Opportunity for Collaboration

Cervical cancer offers a unique opportunity among women's cancers for screening and early intervention, given that its cause (infection with high-risk subtypes of HPV) is well-understood, and this cancer has a long pre-malignant phase. In addition, tools exist for the prevention, screening, and treatment of cervical cancer, including vaccines to protect against HPV infection, HPV testing to detect infections, and procedures to identify abnormal cells (which can then be removed) with a biopsy to detect cancers. However, challenges remain to getting all women eligible for cervical cancer screening tested.

Participants explained that moving from current cervical cancer screening approaches (visualization of the cervix with vinegar solution or Pap smear) to HPV polymerase chain reaction (PCR) testing offers the advantages of being cheaper, easier (e.g., Pap smears cannot be read in most places in China), and faster (two to three hours versus one to two weeks). These advantages can facilitate a "test and treat" paradigm since the woman needs to stay for only a few hours to get the result, and if needed, immediately get a second exam and determine treatment on the spot versus having to come back to the clinic, which may be burdensome. Furthermore, HPV testing offers the ability to track what HPV strains are circulating to inform vaccine development.

### ***Mobilization of Pandemic PCR Machines for HPV Testing***

One idea that workshop participants agreed is promising to explore is the mobilization of idle PCR machines for HPV testing in China. Participants explained that many hospitals in China, including in rural areas, procured PCR machines for the COVID-19 pandemic, and many people were trained to use them for pandemic SARS-CoV-2 screening. However, these PCR machines are currently unused in labs that were closed after they were no longer needed for the pandemic. While the group wasn't sure of the specific reasons why the PCR machines are not currently being used for HPV testing, it was noted that these machines were put in a separate lab and were never part of the main workflow of the hospital lab (where Pap smears are collected), so it could be that hospitals simply don't realize their potential for use in HPV testing (and testing for other infections and conditions as well). One participant explained that those PCR machines were validated using SARS-CoV-2 assays and would need to be validated for use in HPV testing (an opportunity for collaboration).

### ***Use of Self-Sampling by Women to Increase Screening Rates***

Another suggestion was to consider the use of self-sampling by women done at home to increase cervical cancer screening rates. Participants noted that, as with any test, validation of the diagnostic used to detect HPV (including with what type of sample—vaginal, or potentially urine or menstrual blood) will be important to ensure an accurate diagnosis. This is especially important because most HPV infections clear on their own and don't lead to cancers, so a risk exists for overtreatment. One participant mentioned research from Malaysia that found that self-testing empowers women; another shared that while providers expressed significant hesitancy about women's self-swabbing, the women surveyed loved it and said that they felt empowered and confident, especially when self-sampling was combined with education.

Workshop participants agreed that a pilot of a cervical cancer screening program could be a good immediate next step to explore. The program could include COVID-19 pandemic PCR machine deployment and/or self-sampling. Participants suggested choosing one rural Chinese province so that the pilot remains focused and trust can be built among collaborators.

## **Women's Cancer Prevention, Screening, and Treatment Still Suffer from Stigma and Awareness Gaps**

Participants described a number of gaps in communication about women's health cancers that present opportunities for collaboration to increase awareness and understanding. First, even though the governments of both China and the US support women's cancer prevention, screening, and treatment, there is still a stigma attached to women's cancers, especially gynecologic cancers. For example, a participant shared that women in a breast cancer study (in Malaysia and Kenya) noted that stigma was a significant barrier to them visiting a doctor and seeking a diagnosis. This is because of the shame associated with having breast cancer—the women often do not want to tell their husbands, and once the husbands are aware, they may not want their wives to visit the doctor. Participants agreed that education at the population level is needed to help destigmatize women's cancers.

Second, many women don't know enough about preventing, screening for, and treating women's cancers (for example, what HPV is or how it is transmitted, or why they need an HPV vaccine or an HPV test). Conversations about HPV prior to screening are a suggested best practice, and further

population-based and individual-based communications regarding these issues are needed. In fact, participants advised that basic awareness and understanding of the diseases themselves are also needed.

Third, vaccine hesitancy presents an obstacle to vaccination against HPV. Communications on why women need an HPV vaccine and combatting myths that prevent girls (and boys) from getting the vaccines are important in raising vaccination coverage rates. Participants mentioned that hesitancy challenges extend beyond just vaccination, and addressing similar issues for cancer screening would be helpful.

Finally, participants noted that mental health continues to emerge as a global health issue, and the stigma of a cancer diagnosis brings up mental health concerns. Patient groups are talking about women's mental health, and one participant described noticing a hunger for access to woman-tailored mental health care.

## **Enhancing Cross-Border Information Exchange and Data Sharing Is Valuable**

### ***Cross-Border Patient Group-to-Patient Group Exchange***

One opportunity for cross-border collaboration proposed at the roundtable is for women's cancer patient groups to connect to share experiences, best practices, insights, and recommendations for communication, outreach, advocacy, and other topics (i.e., set up an "exchange"). Patient groups can educate each other on topics of mutual interest as well as work together to educate the broader public on important topics (e.g., screening awareness, vaccine confidence, destigmatizing women's cancers) that can help each patient organization advance its own agenda and solve mutual challenges for the benefit of cancer patients globally. Given the maturity of US-based cancer patient organizations, there might be an opportunity for patient organizations in both regions to connect to exchange learnings and educational materials to improve the lives of those impacted by women's cancer. One participant recommended the group not necessarily aim to replicate what has been done elsewhere but consider how to "leapfrog" (skip steps) and start with an advanced model of collaboration, integrating past learnings. Importantly, participants emphasized that any initiative bringing together cross-border organizations needs to be cognizant of the language and cultural differences among the organizations.

### ***Cross-Border Hospital-to-Hospital Exchange***

Attendees also raised the idea of a cross-border hospital-to-hospital exchange to address the need for workforce education and training for hospital staff. Participants shared that this happens today, and some US hospitals have international offices to coordinate this kind of engagement, but these engagements are underutilized. One participant noted that such an exchange could be done more efficiently than flying doctors back and forth to do onsite visits (e.g., sharing written information on management models from the US).

As mentioned above, any initiative bringing together cross-border organizations needs to be cognizant of the language and cultural differences among the organizations. In addition, attendees noted that hospital-to-hospital engagements usually work better in hospitals in large cities than rural settings.

In addition to sharing best practices and procedures, one specific need mentioned was for training physicians and others in the use of screening machines. While more machines are still needed in more places, many local hospitals in China have purchased screening machines through a recent government support plan but still need training, so we need to ensure training is embedded with screening machine purchases (AI may help with this).

### ***Research Collaborations and Data Sharing***

Participants expressed a need for stronger US-China research collaborations. One reason cited was the need for data from broader, more diverse populations across different ethnicities. For example, 60 percent of all studies in oncology are biomarker-driven, so it is imperative to ensure researchers study biomarkers from datasets containing a diverse population (including individuals from China). Further, research collaborations can facilitate the sharing of best research practices, working together to address global problems, and ensuring the stability of the cross-border innovation ecosystem. Research collaborations between companies, it was noted, require significant negotiation and time to form, especially when the companies are from different countries, so identifying ways to streamline that process would be helpful.

Many participants described the current restrictions on sharing data (clinical data, genetic data, clinical samples) across borders as a major challenge to research and clinical collaborations, noting that in some cases, this means no data from China are included in the dataset for a study (including AI studies). New regulations on data from China were welcomed, although it is unclear at this point what impact those regulations will have, and participants expressed a need for clear direction and help in navigating the ambiguity of orders from both the US and China.

Many participants would like to move to open data sharing and encouraged the group to consider creating approaches to advance the policy discussions to advance this issue. One idea suggested that using existing tools (e.g., the database of Genotypes and Phenotypes) could function as a first step to demonstrate how China could share data in the public domain. In addition, a number of participants raised the idea of opening up a “green channel” for sharing clinical data and clinical samples. Also, many felt that the unique position of Hong Kong could allow it to serve as a data-sharing conduit (collaboration zone) between the US and China.

## **POTENTIAL AREAS FOR BILATERAL COLLABORATION**

Based on the roundtable discussion, the following topics emerged as potential areas for future collaboration:

### **Expand access to cervical cancer screening HPV tests through a pilot in rural China**

- Test an approach to expand access to cervical cancer screening HPV tests by leveraging PCR machines distributed in China during the COVID-19 pandemic.
- Test an approach to increase screening rates by utilizing the self-sampling of women in the pilot.
- Identify emerging best practices for cross-border knowledge sharing, including evidence-based self-sampling approaches.

### **Close awareness and information gaps and destigmatize women's cancer**

- Enhance education and public awareness of women's cancer, including information about the disease, prevention, vaccines, screening tests, and treatments.
- Increase HPV vaccine confidence.
- Reduce the stigma associated with women's cancer.
- Support cancer patients' mental health.

### **Facilitate patient engagement and education through a patient group-to-patient group exchange**

- Facilitate a patient group-to-patient group exchange between the US and China to encourage sharing of lessons and insights, and increase patient engagement, self-advocacy, and group impact.
- Enhance education and public awareness of women's cancer risk, early detection, screening, prevention, and care.

### **Improve workforce education and training with a hospital-to-hospital exchange**

- Improve skills-based training for hospital staff.
- Increase hospital-to-hospital sharing of best practices across both regions.

### **Promote research collaborations and data sharing**

- Examine the potential role of Hong Kong and/or "green channels" in sharing clinical data between the US and China to promote research exchange.
- Facilitate open research communication channels between academic institutions and research entities.
- Share best practices and learnings across institutions.

## **NEXT STEPS**

The Milken Institute, in collaboration with USCBC participating members and other potential partners, will explore the following potential areas for bilateral cooperation to assess the feasibility of identifying one initiative to kick off in 2024: (1) expand access to cervical cancer screening HPV tests through a pilot in rural China, (2) create a patient group-to-patient group exchange to facilitate patient engagement and education, and (3) establish a cancer prevention and control workforce training exchange.

# APPENDIX: ROUNDTABLE ATTENDEES

**Craig Allen**, President, US-China Business Council

**Stephen Birrell**, Founder and Chief Medical Officer, HAVAH Therapeutics

**Karen K.L. Chan**, Clinical Professor and Chairperson, Department of Obstetrics and Gynaecology, University of Hong Kong; Chief of Service, Queen Mary Hospital, Hong Kong; President, Hong Kong College of Obstetricians and Gynaecologists

**Scarlett Chen**, Managing Partner, Verge HealthTech Fund

**Wanqing Chen**, Director, Office of Cancer Screening, Chinese National Cancer Center

**Belinda Chng**, Director, Milken Institute

**Sung Hee Choe**, Managing Director, Milken Institute

**Hadly Clark**, Director, Milken Institute

**Richard Ditzio**, Chief Executive Officer, Milken Institute

**Ruben Duran**, Director, Global Public Policy—International Government Affairs, MSD

**Erika Elvander**, Health Attaché, US Department of Health and Human Services

**Deborah Gildea**, Director, Vaccines Public Policy for Japan, China and Asia Pacific, MSD

**Stephen Gruber**, Vice President, City of Hope National Medical Center

**Ming Hsieh**, CEO and Founder, Fulgent Therapeutics

**Sammi Hung**, Regional Head, Fosun Pharma

**Jason Jen**, Medical Lead of Hong Kong, MSD

**He Jie**, President, Chinese National Cancer Center

**Benjamin Kostrzewa**, Foreign Legal Consultant, Global Regulatory, Hogan Lovells Hong Kong

**Esther Krofah**, Executive Vice President, MI Health, Milken Institute

**Nisa Leung**, Managing Partner, Qiming Venture Partners

**Nicole Li**, Head, Central Government Affairs, Gilead

**Roberta Lipson**, Founder, United Family Healthcare

**Jing Liu**, Chief Operating Officer, Fujun Genetics

**Xiaojing Liu**, Associate Director of Government Affairs, Johnson and Johnson China

**Jason Lo**, Vice President of Strategy and BD, Thermo Fisher Scientific China





**Stella Luk**, Senior Medical Director, Fosun Pharma

**Ding Ming**, Global Senior Vice President and General Manager China Operations, Clinical Research Group, Thermo Fisher Scientific

**Douglas Ostertag**, Economic Chief, US Consulate General Hong Kong and Macau

**Ningze Pang**, Associate Brand Director, Eli Lilly

**Geoffrey Parrish**, Deputy Senior Commercial Officer, US Consulate in Hong Kong & Macau, International Trade Administration, US Department of Commerce

**Youlin Qiao**, Director of the Department of Cancer Epidemiology, Chinese National Cancer Center

**Simranjit Singh**, CEO AMEA, Guardant Health

**Victor Ting**, Policy & Public Affairs Lead, Pfizer Hong Kong and Macau

**Natalie Tong**, Commercial Specialist, US Commercial Service Hong Kong, International Trade Administration

**Wilson Wong**, Associate Marketing Director, Fosun Pharma

**Josie Wu**, Head of Marketing Team of Oncology Business Unit, Pfizer

**June Xu**, Manager, Government Affairs and Business Advisory Services, US-China Business Council

**Rose Yang**, Senior Investigator, Integrative Tumor Epidemiology Branch, National Cancer Institute

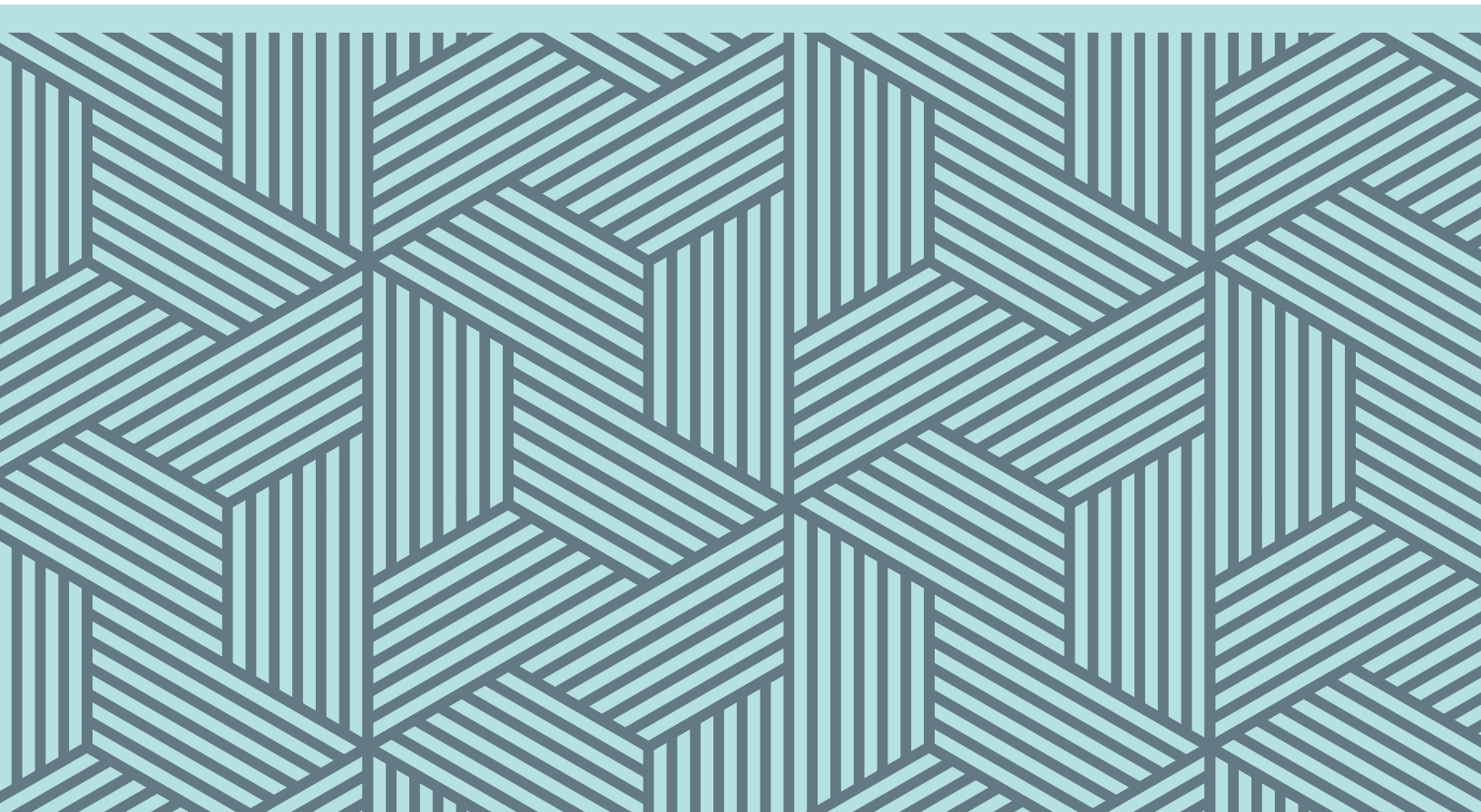
**He Yonghong**, Research Professor, Tsinghua Shenzhen International Graduate School

**Lipei Zhang**, Vice President, Beijing Office, US-China Business Council

**Justin Zhao**, Vice President, Head of Government Affairs and Policy, Johnson & Johnson China

# ENDNOTES

1. J. Ferlay et al., (2024), Global Cancer Observatory: Cancer Today (version 1.1), Lyon, France: International Agency for Research on Cancer, accessed April 1, 2024, <https://gco.iarc.who.int/today>.
2. "Readout of President Joe Biden's Meeting with President Xi Jinping of the People's Republic of China," The White House, November 14, 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/11/14/readout-of-president-joe-bidens-meeting-with-president-xi-jinping-of-the-peoples-republic-of-china/>.





# ACKNOWLEDGMENTS

We would like to acknowledge our generous sponsors of the roundtable, Fulgent Genetics, United Family Healthcare, and MSD.

## ABOUT US

### About the Milken Institute

The Milken Institute is a nonprofit, nonpartisan think tank focused on accelerating measurable progress on the path to a meaningful life. With a focus on financial, physical, mental, and environmental health, we bring together the best ideas and innovative resourcing to develop blueprints for tackling some of our most critical global issues through the lens of what's pressing now and what's coming next.

### About FasterCures

FasterCures of the Milken Institute is working to build a system that is effective, efficient, and driven by a clear vision: patient needs above all else. We believe that transformative and life-saving science should be fully realized and deliver better treatments to the people who need them.

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