



NATIONAL CANCER INSTITUTE



Center for Global Health

STRENGTHENING GLOBAL CANCER RESEARCH & CONTROL

U.S. Department of Health & Human Services | National Institutes of Health

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Message From the Director



Today we have an unparalleled opportunity to make scientific and public health advances in the prevention and control of cancer worldwide. The projected increase in global cancer incidence and mortality, particularly in low- and middle-income countries, calls for coordinated international efforts in research and programs to leverage the tools and technologies available for cancer control. Coordinated and collaborative strategies for basic, clinical, and translational research, including implementation science and capacity building, are needed to improve cancer control efforts worldwide. The National Cancer Institute (NCI) is poised to lead these efforts through international partnerships and innovative programs geared toward local regions.

It is through our collective expertise and scientific rigor, combined with an unwavering commitment to advancing cancer research and control in every corner of the world, that CGH's mission is fulfilled.

Since its establishment in 2011, NCI's Center for Global Health (CGH) has worked to incorporate coordinated research and outreach efforts into the framework of each and every program and initiative. For this, I want to acknowledge our dedicated staff at CGH, as well as our partners across NCI, the National Institutes of Health (NIH), and at various international organizations with whom I am privileged to work.

Their hard work ensures that our programs are rooted in evidence, our cancer control efforts are rooted in sustainability, and our partnerships are rooted in trust. It is through our collective expertise and scientific rigor, combined with an unwavering commitment to advancing cancer research and control in every corner of the world, that CGH's mission is fulfilled.

The following report highlights a selection of our recent activities. These activities reflect our vision to support programs that address gaps in global research and planning across the cancer control continuum; develop and strengthen partnerships; and monitor and evaluate our efforts, disseminating best practices and driving improvements in cancer control. We look forward to working closely with national and international colleagues to achieve our common goal of reducing the global burden of cancer.

A handwritten signature in black ink that reads "Edward L. Trimble". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Edward Trimble, MD, MPH
Director, NCI Center for Global Health

A stethoscope is positioned on a world map that features various medical icons such as a caduceus, a microscope, and a person. The map is spread out on a desk. In the background, a laptop is open, and a stack of papers with yellow tabs is visible. The entire scene is overlaid with a light blue tint.

Overview of Center for Global Health Priority Areas

1. Strengthening Global Cancer Research and Resource-Appropriate Cancer Control Strategies

The vision of the CGH is to be a catalyst to reduce the global burden of cancer through coordination, collaboration, and communication among a diverse range of international stakeholders. We focus on supporting research and planning for cancer control, addressing all areas of the continuum, from prevention—including risk factors common to other non-communicable diseases (NCDs)—and early detection to treatment and palliative care. Cross-cutting areas, which include cancer surveillance and epidemiology, implementation and dissemination of evidence-based interventions, and global health diplomacy through cancer research, among others, are also of key importance.

2. Building a Global Cancer Research Community

Sustainable partnerships in the landscape of global cancer control are an essential part of our work. We collaborate with national and international partners, both internal and external to the U.S. government, including foreign governments, academic institutions, and nongovernmental organizations. Through these partnerships, we are building a global cancer research community to support activities that improve cancer research and cancer control in low- and middle-income countries (LMICs). This work is mutually defined by our priorities and the partner country's own priorities and needs, in response to the growing burden of cancer and other NCDs. We aim to fund rigorous empirical research and guide evidence-based program implementation and translation into policies and programs for long-term sustainability, and to address various needs in global cancer control research and planning.

3. Translating Research Results Into Practice

To strengthen research and planning for cancer control and sustain partnerships globally, it is our responsibility to translate the results of the efforts we support, setting an example of accountability and generating evidence that can be used to prioritize next steps and improve decision making. Through the dissemination of the results and the impact of our activities, we contribute to best practices for cancer control and help improve the body of knowledge in the various fields along the cancer control continuum. It is also an important component for continued communication with our partners, and for establishing new partnerships. At CGH, our constant efforts to monitor and evaluate our activities ensure that

the research and cancer control programs we support are having the intended impact in the field, and help us identify areas for improvement in future years.

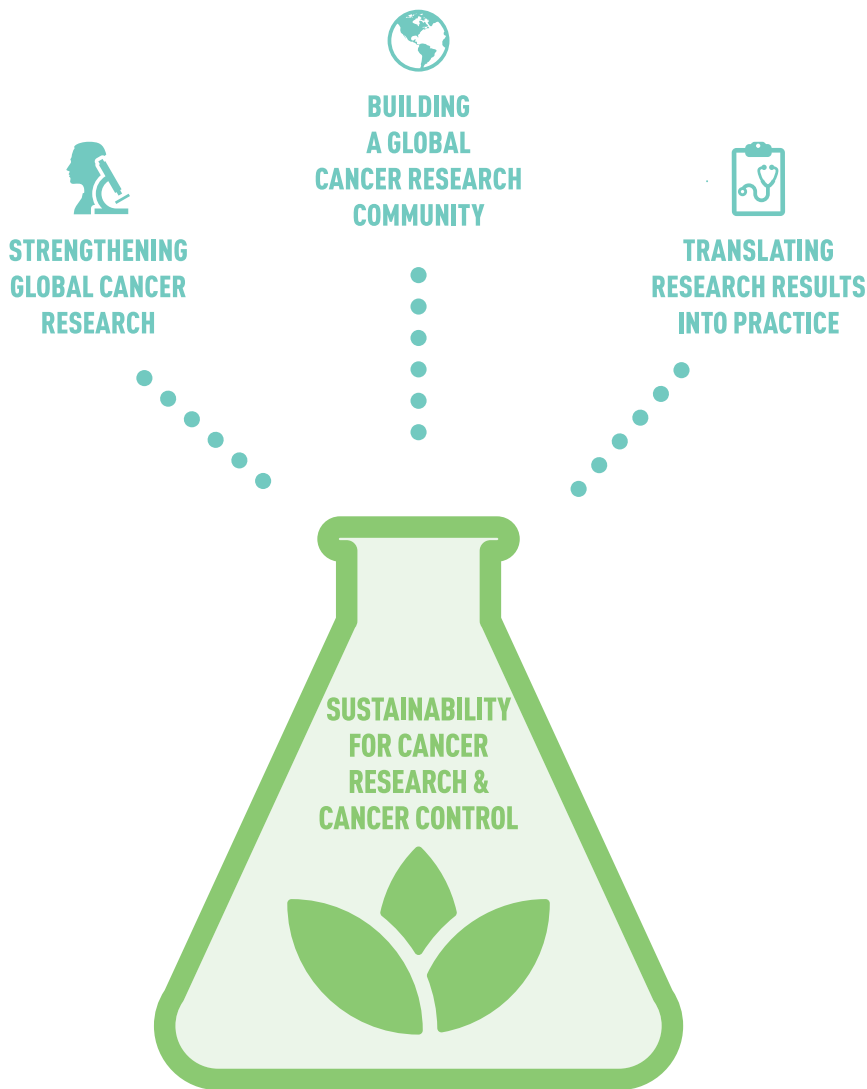


Figure 1: Center for Global Health strategic priorities.

The intersection of the three CGH priority areas ensures that the cancer research and control efforts we support are evidence-based and sustainable in LMICs. The areas complement one another to create an opportunity for empirical research, develop human resources and infrastructure, and sustain partnerships that will help carry the work forward in the years to come.

A close-up photograph of a group of African women smiling. The woman in the foreground is wearing a blue and red patterned headwrap. Behind her, another woman wears a blue headwrap with yellow and green circular patterns. The background is slightly blurred, showing more people and a clear sky. A teal horizontal line is positioned above the text.

Center for Global Health Initiatives

Cancer Control Leadership Forums (CCLF)

Since 2013, we have organized regional CCLF to train country leaders in the development and implementation of evidence-based cancer control plans. Four to seven countries participate in each of the regional forums, with each country invited to bring a delegation of representatives from government agencies, civil society organizations and other nongovernmental organizations, cancer institutes, and academia who work in cancer and other NCD programs, research, and policy.

During these forums, we discuss building and sustaining effective partnerships for cancer control planning, using data and surveillance information to inform policy decisions and mobilize in-country support, effectively implementing and evaluating the plans, and strengthening research and collaboration. Our intended outcomes for the forums are

- an enhanced understanding of the importance of evidence-based national cancer control planning and implementation; and
- a written action plan developed by each country to advance the development and/or implementation of its national cancer control plan.

We are currently evaluating the effectiveness of the CCLF initiative in order to guide future programming and funding decisions. We collect baseline information regarding cancer control planning and implementation in the participating countries three months prior to each forum in order to inform its development. At the end of the three-day, in-person workshop, we employ surveys to assess content delivery, participant satisfaction, and knowledge gain. More than 90 percent of the participants reported that our forum has improved their knowledge of cancer control planning and implementation.

After the forum, we provide technical assistance through quarterly calls to help countries implement the action plan developed during the forum. We also monitor forum outcomes for the next 12 months through these quarterly calls, and verify that the plan aligns with the country's plan for NCDs and that it meets the targets proposed by the World Health Organization (WHO) Global Action Plan for the Prevention and Control of NCDs. We have organized seven forums and supported 38 country delegations since 2013, covering the Middle East and North Africa (Turkey, 2013), Southeast Asia (Malaysia, 2014), Southeastern Africa (Zambia, 2014), the Pacific Islands (Australia, 2014), the Caribbean (Trinidad and Tobago, 2015), Latin America (Mexico, 2015), and Central Asia (Uzbekistan, 2015). We will evaluate how the forum content is

>90%

OF PARTICIPANTS SAID

CCLF IMPROVED THEIR
KNOWLEDGE OF
CANCER CONTROL
PLANNING & IMPLEMENTATION

<http://www.cancer.gov/globalhealth>

IN SOUTHEAST ASIA

93%

OF CCLF PARTICIPANTS

MADE PROGRESS
ON THEIR
ACTION PLANS

<http://www.cancer.gov/globalhealth>

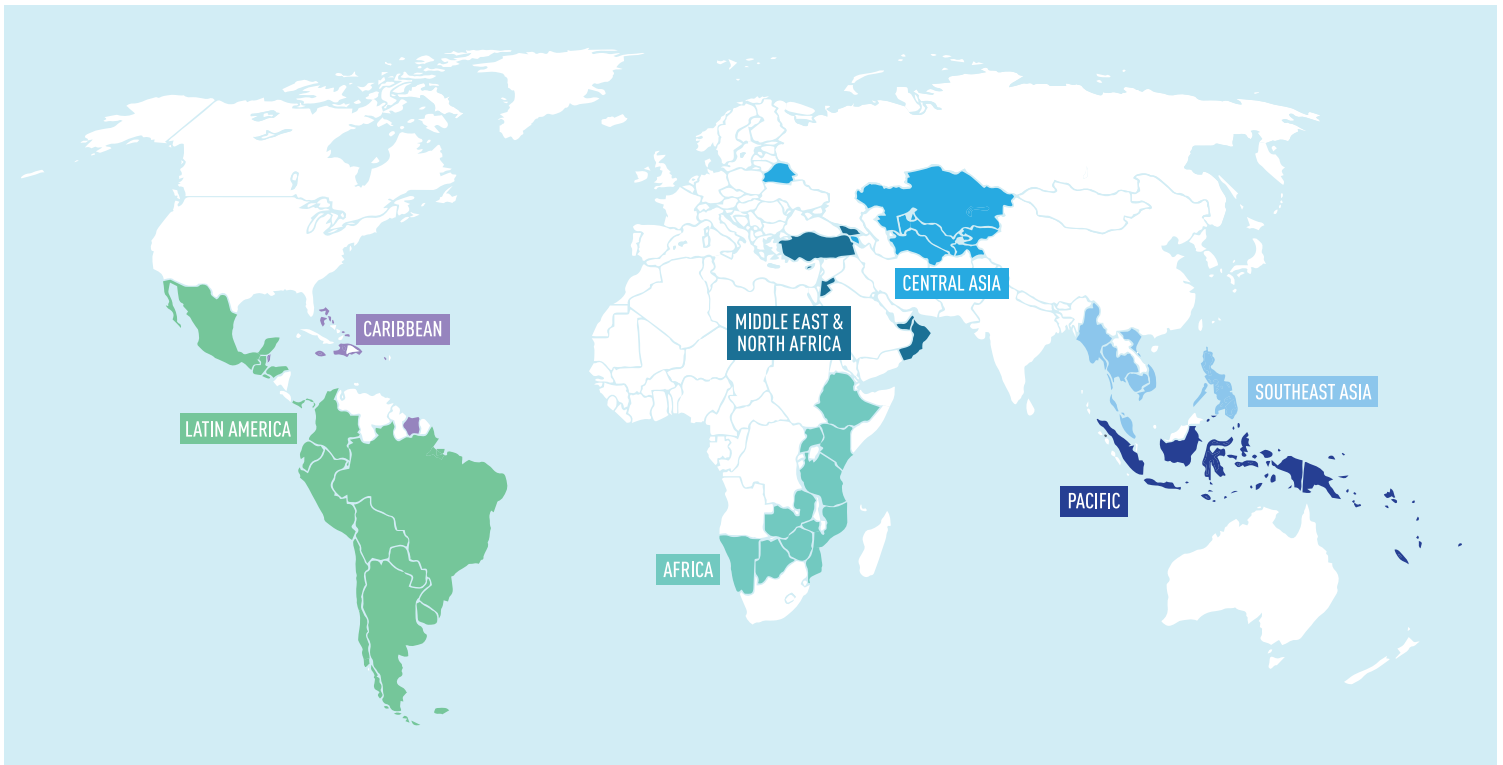


Figure 2: Summary of the regions and countries supported through the CCLF (Pearlman PC, Vinson C, Singh T, Stevens LM, Kostecky B. Multi-stakeholder partnerships: breaking down barriers to effective cancer-control planning and implementation in low- and middle-income countries. *Science & Diplomacy*. 2016. <http://www.sciencediplomacy.org/article/2016/multi-stakeholder-partnerships>. Accessed June 30, 2016.).

reflected in the 12-month action plans and their progress. In Southeast Asia, 93 percent of the participants reported making progress on their 12-month action plans.

International Cancer Control Partnership (ICCP)

Since 2013, ICCP has strengthened planning for cancer control by encouraging decision makers to prioritize cancer control in their countries, providing technical assistance for the development of cancer control plans, and coordinating the development and dissemination of cancer control planning materials and tools. We serve as members of the partnership steering committee, together with the Division of Cancer Control and Population Sciences (DCCPS), the Union for International Cancer Control (UICC), the Programme of Action for Cancer Therapy of the International Atomic Energy Agency, WHO, and the International Agency for Research on Cancer (IARC), among others.

The partnership created a “one-stop shop” online portal (<http://www.iccp-portal.org>) for cancer planners. The online portal pools many vital resources for countries implementing cancer-related commitments from the WHO Global Action Plan for the Prevention and Control of NCDs and the WHO NCD Global Monitoring Framework. The ICCP portal includes

- a searchable database of published national cancer control plans;
- a library of tools and materials for cancer planners; and
- information on worldwide case studies and best practices for cancer control planning.

Cancer Detection, Diagnosis, and Treatment Technologies for Global Health

We coordinate this partnership with the National Institute of Biomedical Imaging and Bioengineering (NIBIB), aiming to create a low-cost technology program designed to spur investigators to adapt, engineer, and apply new technologies for global research in cancer control. Other divisions, offices, and centers that are part of this collaboration include DCCPS, the Division of Cancer Treatment and Diagnosis, the Division of Cancer Biology, the Center to Reduce Cancer Health Disparities, the Office of HIV and AIDS Malignancy, and the Center for Strategic and Scientific Initiatives.



GCPM CANCER RESEARCH & CONTROL PROJECTS

INCREASED FROM

800+

TO

1,800

BETWEEN

2015

2016

<http://www.cancer.gov/globalhealth>

The NCI-NIBIB affordable technology program focuses on expediting the development and validation of clinical tools using a multi-disciplinary and highly collaborative approach. Research is specifically focused on

- identifying, treating, or addressing high-priority, treatable cancers in LMICs;
- developing technologies that are affordable within the LMIC context; and
- creating business and dissemination plans for the results of the research.

We funded seven projects from our first round of applications in 2015, in the areas of cervical cancer prevention, diagnosis, and treatment; oral cancer treatment; prevention of hepatocellular carcinomas; and breast cancer detection and diagnosis. Projects will be implemented and further evaluated in the coming years across Africa (Nigeria and South Africa), Asia (India and the Philippines), and Latin America (Brazil, Colombia, Mexico, and Peru).

Founding Partner in the Global Cancer Project Map (GCPM)

As part of CGH's interest in pursuing geospatial mapping of cancer research projects and programs around the world, CGH served as the principal investor in the development and launch of the GCPM from 2014 to 2016. The GCPM is an interactive, web-based tool that enables cancer control researchers and planners and healthcare professionals to search a repository of cancer research projects. CGH is committed to supporting geospatial mapping tools for cancer research and control and continues to look for new and exciting ways to provide mapping resource tools.

Symposium on Global Cancer Research

We initiated the Symposium on Global Cancer Research in 2013 as a satellite meeting of the Annual Conference of the Consortium of Universities for Global Health (CUGH) in order to facilitate information exchange among global health and cancer research professionals from CUGH, NCI-Designated Cancer Centers, and elsewhere. Interactive discussions fostered network building, and we used participant feedback to identify new themes, new ideas, and next steps for the field, as well as to determine how the work and priorities of NCI-Designated Cancer Centers align with our signature themes and priorities.

In April 2016, we sponsored the 4th Annual Symposium on Global Cancer Research in partnership with CUGH; Stanford University; the University of California, San Francisco; and GO. The Symposium brought together more than 250 university faculty members, promoting communication and discussion around innovative and low-cost cancer-related technologies.

A close-up photograph of two women from an Indian ethnic group, smiling warmly. The woman on the left wears a vibrant pink top with intricate beaded and embroidered patterns and a matching headscarf. The woman on the right wears a colorful, floral-patterned top and a green and blue striped headscarf. Both are adorned with traditional jewelry, including necklaces and earrings. The background is a soft-focus outdoor setting with green foliage.

Other Collaborative Efforts

CGH in South Asia—Promoting Partnerships for Capacity Strengthening and Research

Aiming to strengthen cooperation in research for cancer control, the CGH South Asia Office in New Delhi plays a significant role in implementing and facilitating cancer control programs in the region. Assisted by the U.S. Embassy in India, and together with the U.S. Department of Health and Human Services, we signed a Memorandum of Understanding (MoU) with four major Indian governmental bodies responsible for cancer control: the Ministry of Health and Family Welfare, the Department of Biotechnology, the Indian Council of Medical Research, and the All India Institute of Medical Sciences. This MoU also established the U.S.-India Health Initiative as a forum to discuss the implementation of bilateral programs.

As part of the initiative, we have

- provided technical assistance in planning the new Indian National Cancer Institute;
- hosted two high-level delegation visits from India to NCI and NCI-Designated Cancer Centers to discuss the operational aspects of a cancer institute (June 2014 and April 2015); and
- planned, facilitated, and implemented workshops in India related to cancer epidemiology, best practices for cancer screening, NCI's Provocative Questions, and Cancer Research in the Media.

The proceedings of the workshop on best practices for cancer screening were published as "Recommendations for screening and early detection of common cancers in India," in *Lancet Oncology* (July 2015), as a national starting point for developing and implementing strategies in cancer control.

United States-China Program for Biomedical Collaborative Research

Launched in 2011 to develop partnerships and research for cancer control, this program received an NIH Director's Award in 2013. Since its inception, it has supported comparative and mechanistic studies and research on novel technologies. NCI (including CGH in a leadership role), the National Institute of Allergy and Infectious Diseases, the National Institute of Mental Health, the National Institute of Neurological Disorders and Stroke, and the Office of AIDS Research supported three calls for proposals, with the National Natural Science Foundation of China (NSFC) matching the funds to support Chinese scientists. The program contributed funding for 108 awards, which

THE U.S.-CHINA RESEARCH PROGRAM

HELPED FUND

108

AWARDS

THAT GENERATED

53

PUBLICATIONS

AND

1

PATENT

<http://www.cancer.gov/globalhealth>

have generated 53 publications and one patent (US 8,933,075) associated with the work of the U.S. and Chinese research teams, and it has trained hundreds of U.S. and Chinese scientists in research for cancer control.

We have taken the lead role at NIH to evaluate this program, originally leading the submission and approval process for the trans-NIH working group. Accomplishments include the ability to access and study unique populations, allowing for comparison across geographic and genetic differences; access to endemic sites in biomedical research; opportunities for training, through student, fellow, and faculty exchange among the partner institutions; and expanding the knowledge and capacity of both NIH and NSFC laboratories. We worked with program directors to survey principal investigators, generating a formal evaluation report to guide the discussions that would frame future collaborations with NSFC.

Partnerships for Enhanced Engagement in Research (PEER) and the Implementation Science Master Course

We are a committed partner of PEER, a United States Agency for International Development (USAID)-led competitive grants program that supports scientists in LMICs to develop research and capacity-building activities. Under PEER, we helped develop funding opportunities in key areas of the cancer control continuum, such as

- the impact of reducing indoor secondhand smoke exposure on neonates and of air pollution on infant and maternal health in Indonesia; and
- the effects of a smoking cessation intervention for families of children with tuberculosis in the Philippines.

In 2014, we started the Implementation Science Master Course in collaboration with the PEER team at USAID to lay the groundwork for the development of research proposals related to implementation science, covering topics such as models and theories in research, evaluation, implementation, and grant development. The course is delivered through a series of six webinars and a three-day in-person training session.

The first Master Course was offered during the 2014 World Cancer Congress, in Australia. Our next course took place in Southeast Asia, culminating in the in-person training session at USAID's Regional Development Mission for Asia, in Bangkok, Thailand (June 2015). There, participants learned about implementation science and its methods for effective application to cancer control in national, regional, and community settings in LMICs.

Women's Empowerment Cancer Advocacy Network (WE CAN) Advisory Training: Breast and Cervical Cancers Education and Advocacy Workshop

Our partnership with WE CAN supports advocates and civil society organizations in LMICs to organize advocacy summits and develop advocacy for research along the cancer control continuum. The summits aim to strengthen regional women's cancer advocacy networks and empower leaders on evidence-based cancer control. Since 2013, we have co-sponsored workshops in Tajikistan, Tanzania, Peru, and Romania. The most recent summit, which was developed in collaboration with the Pan American Health Organization and the Peruvian Ministry of Health, took place in Lima, Peru, in March 2015. More than 70 healthcare workers were trained as regional cancer care coordinators using evidence-based breast cancer knowledge summaries and training materials to support the implementation of a national cancer control plan (Plan Esperanza).

Strengthening Cancer Surveillance

With our focus on research for cancer control, we support a variety of activities in cancer surveillance in coordination with other NCI divisions, offices, and centers, as well as with external collaborators such as the U.S. Centers for Disease Control and Prevention (CDC), the IARC Global Initiative for Cancer Registry Development (GICR), Pink Ribbon Red Ribbon (PRRR), and UICC. We provide technical assistance for the monitoring and evaluation of cancer surveillance activities and the dissemination of their results, and we support advocacy and capacity building through workshops.

We have worked with PRRR to support the strengthening of cancer registries in Zambia, Botswana, and Ethiopia. We support IARC GICR and have led site visits, prepared assessments, and developed workshops for cancer registration in Zambia, Kenya, Mongolia, China, Thailand, Vietnam, the Philippines, Malaysia, Vietnam, and Indonesia.

In Kenya, we held the Kenya Cancer Research and Control National Stakeholder Meeting in 2014, in which one of the four defined focus areas was strengthening cancer control and care through pathology and cancer registries. Our outcomes included the development of action plans for strengthening Kenya's three population-based cancer registries and creating new ones, as well as plans for establishing Centers of Pathology Excellence to upgrade pathology services in the country and expand pathology training opportunities.

THE CGH & WE CAN
PARTNERSHIP

HELD 4 WORKSHOPS

AND TRAINED 70+ HEALTHCARE WORKERS

IN 2015

<http://www.cancer.gov/globalhealth>

Tobacco Control

We strongly support global research for tobacco control because we understand that it is an important part of the cancer control continuum. Tobacco control requires further research investments in LMICs, where policies and programs to curb tobacco use and promote cessation are often weak, not properly implemented, or nonexistent. We partner with the DCCPS Tobacco Control Research Branch to offer funding opportunities, especially for innovations in mobile health; develop and facilitate training workshops and other educational opportunities, providing technical expertise in tobacco control research; ensure that empirical research is translated into policy and programs; and build further collaboration with other stakeholders working in tobacco control internationally.

Our commitment is translated through support to research programs, such as PEER (more details on page 14), with two research grants studying the effects of secondhand smoke on maternal and child health in Indonesia, and one research grant studying the interplay of tuberculosis programs and tobacco cessation programs in the Philippines. In addition, we have developed and hosted several workshops worldwide, such as

- the Data to Action tobacco control workshops, in partnership with CDC, in India (2013);
- the second Indonesian Tobacco Control Research Dissemination Conference and Capacity Building Program, with Muhammadiyah University of Yogyakarta and Johns Hopkins School of Public Health, which attracted more than 125 researchers (2015);
- a workshop integrating tobacco control epidemiology into CDC's Field Epidemiology Training Program, in partnership with Gadjah Mada University (Indonesia), for more than 40 graduate students, of whom five received mini-grants to implement their research proposals (2015);
- an international tobacco control research workshop in partnership with the Turkish Tobacco and Alcohol Market Regulatory Authority, the Turkish Ministry of Health, and WHO, which attracted researchers and government officials from more than 12 countries in the Middle East and Central and Eastern Europe (2015); and
- the Building Blocks of Tobacco Control pre-conference workshop during the 2014 World Cancer Congress in Melbourne, Australia, which aimed to follow up with CCLF participants who had expressed a need to further their knowledge about the role of tobacco control and tobacco control research in cancer control planning.

Future Directions



The Center for Global Health continues to strengthen research and planning for cancer control, create cancer research networks, and translate research results into practice to reduce the burden of cancer worldwide. We have taken the lessons learned from past engagements and are applying them as we undertake new programs and implement new ideas to advance cancer research, promote implementation science, and build sustainable collaborations within the cancer community.

Looking ahead, we are focusing our efforts on three major areas to further support NCI's goal to advance global cancer research, build expertise, and leverage resources across nations to address the challenges of cancer and reduce cancer deaths worldwide.

Training the Next Generation of Cancer Researchers

CGH will continue in our work to support training for the next generation of researchers and healthcare providers for addressing existing and future challenges in cancer research and control. We will leverage our current networks to build expertise worldwide and will help develop new networks that will emphasize collaboration on regionally relevant cancer research. We will develop a range of interactive workshops and training opportunities on the diverse areas of the cancer control continuum. These activities will support the advancement of tobacco control and implementation science in LMICs and will follow up and expand on our previous successes, such as the CCLF and the Implementation Science Master Course. In addition, we have recently launched the NCD Regional Centers for Research Excellence initiative, which will establish a network of regional hubs in LMICs to provide stable infrastructure for the coordination of NCD, injury, and disability research.

Expanding Partnerships

An essential element of the work we do begins and ends with successful partnerships. CGH seeks to establish new partnerships with U.S. and foreign governments, nongovernmental organizations, academic institutions, and civil society groups to strengthen existing global health programs, leverage shared expertise and resources, and inform cancer control planning and research strategies. In addition, we will explore new models of partnerships that focus on public-private approaches in the context of LMICs. In collaboration with teams of engineers, oncologists, and global health and industry leaders, we will address unmet needs in cancer control worldwide through the development of new, inexpensive diagnostic tools and therapeutics and the adaptation of existing technologies that can be delivered in a cost-effective manner.

Promoting Global Cancer Control

CGH is committed to promoting resource-appropriate cancer control and healthcare delivery practices worldwide. We will continue to rigorously evaluate our programs, grants, and collaborations to ensure that we are supporting evidence-based research that affects practices and policies at the community, country, and regional level. Through initiatives such as the Global Cancer Project Map, we are able to provide a visualization of ongoing international efforts related to cancer research, care, and outreach using an interactive online tool that integrates pertinent project information with epidemiological information and fosters collaboration. We have achieved many successes thus far, inspiring and supporting the development of programs and networks that will be successful in reducing the global burden of cancer.

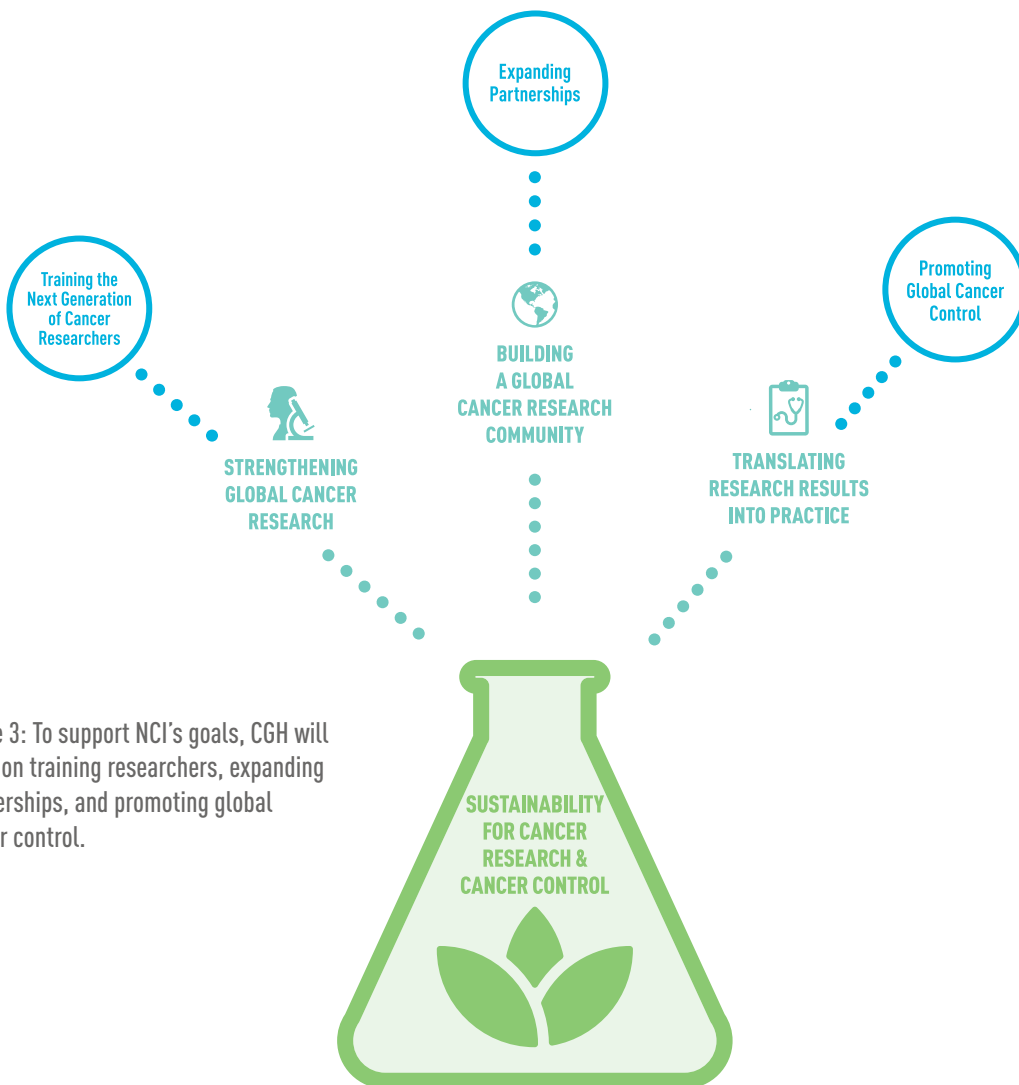


Figure 3: To support NCI's goals, CGH will focus on training researchers, expanding partnerships, and promoting global cancer control.

To learn more about CGH, visit
<http://www.cancer.gov/globalhealth>

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NCIGlobalHealth@mail.nih.gov



Appendix: List of Abbreviations

CCLF	Cancer Control Leadership Forums
CDC	U.S. Centers for Disease Control and Prevention
CGH	Center for Global Health
CUGH	Consortium of Universities for Global Health
DCCPS	Division of Cancer Control and Population Sciences
GCPM	Global Cancer Project Map
GICR	Global Initiative for Cancer Registry Development
GO	Global Oncology
IARC	International Agency for Research on Cancer
ICCP	International Cancer Control Partnership
LMICs	Low- and Middle-Income Countries
MoU	Memorandum of Understanding
NCD(s)	Non-communicable disease(s)
NCI	National Cancer Institute
NIBIB	National Institute of Biomedical Imaging and Bioengineering
NIH	National Institutes of Health
NSFC	National Natural Science Foundation of China
PEER	Partnerships for Enhanced Engagement in Research
PRRR	Pink Ribbon Red Ribbon
UICC	Union for International Cancer Control
USAID	United States Agency for International Development
WE CAN	Women's Empowerment Cancer Advocacy Network
WHO	World Health Organization



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