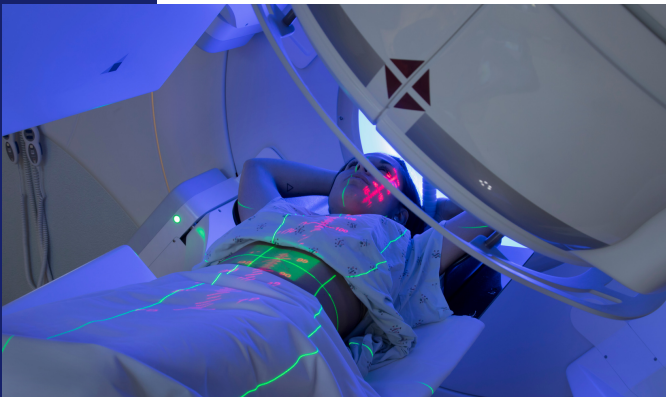


ADDRESSING **INEQUITY** IN CANCER CARE



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INTRODUCTION

Health inequity has been recognized as a growing issue in healthcare. Recent studies with the National Institutes of Health have found that the inability to access healthcare services due to geographic, financial, socioeconomic, or logistical challenges are often cited as major barriers to cancer screening.^[1] Other studies have found similar relationships between vulnerable and non-vulnerable populations. A 2022 BMC Public Health study found that cancer survival rates were lower for individuals living in both a high-income country and a resource-deprived community.^[2] A large study of New York City residents found that women living in low-socioeconomic status (SES) communities (which were predominantly populated by Black and Hispanic residents) had a 73% higher cervical cancer incidence rate than women living in high-SES communities (which were predominantly populated by White residents).^[3] Studies like these are bolstering research initiatives across the country.

In 2016, Congress passed the 21st Century Cures Act. The act provided \$1.8 billion to the National Cancer Institute (NCI) and other groups for the “Moonshot Initiative” to support research and innovation in cancer treatment. The Moonshot Initiative has three main goals: to accelerate scientific discovery, foster collaborations, and improve data sharing. In early CY22, President Biden announced Moonshot 2.0. Biden’s newest iteration of the initiative is focused on cutting cancer death rates in half within twenty-five years. Also included is an emphasis to address racial, ethnic, and socio-economic biases that can lead to significant health outcome inequities and create barriers to cancer screenings.

It was in light of the Moonshot 2.0 efforts that Executives for Health Innovation (EHI) convened a roundtable of experts to discuss the inequities in cancer research and care. Many of the participants are engaged in the White House and Moonshot 2.0 activities. They were joined by oncologists and other executives leading initiatives to reduce inequities in oncology screenings and care. The health equity discussion focused on a variety of topics, including: existing causes of inequities, efforts to ensure broader representation in trials, and effective solutions to address the challenges in cancer screening.

INEQUITIES IN CARE REVEALED BY DATA

Inequities in cancer research and care are widespread. As more clinical data is analyzed and collected, the gaps in care for vulnerable communities have only become more glaring. For example, recent studies of health disparities in cancer scanning, treatment, and death found that Black women are 40% more likely than white women to die from the same cancer.^[4]



Recent longitudinal data has further revealed how inequities present in cancer prevention later impact mortality. A Moffitt Cancer Center study found that 44.4% of cancer deaths and 42% of ‘healthy years lost’ are attributed to “preventable risk factors.”^[5] If vulnerable individuals are not diagnosed early, they are more likely to die from cancer.^[6] American Heart Association researchers found vulnerable populations are twice as likely to smoke than non-vulnerable populations, significantly increasing their odds of developing lung cancer.^[7] More than 350 people die each day from lung cancer – more than breast, prostate, and pancreatic cancers combined.^[6] Therefore, preventive healthcare and screenings could significantly impact mortality rates in vulnerable communities.”^{[5][6][7]}

The American Cancer Society (ACS) started the Cancer Prevention Study-3 in 2013. The study’s cohort of 300,000 Americans includes a range of individuals from all demographics, ages, and geolocations. The size and vast expanse of this study allows ACS to follow patients over time, and study oncology inequities in a more rigorous manner. Every three years, ACS will send out a follow up survey, including necessary testing, to every cohort in the study. The clinical trial officially ends in 2043; the data and information collected throughout the next few decades will be vital to better understanding cancer.

FACTORS IMPACTING SCREENING

Social factors, or social determinants of health (SDOH), like financial stability, education, availability of healthy food, and strong community with public resources are often considered the largest contributors to patient health outcomes.^[8] Several recent studies find these SDOH factors to be major influences for cancer incidence, stage at diagnosis, and survival rate.^[9] Experts, like many attendees at the roundtable, are focusing efforts towards assisting vulnerable populations and addressing targeted concerns.

There's a lot of talk around social determinants of health, and I think it's difficult to measure risk factors and report on risk factors without kind of acknowledging what leads to those risk factors.... understanding there are community level factors that we can be measuring such as distance to care or transportation to care.... We talk about access to care, but how far are you from a health care center, and how quickly can you get screened? And then, if you can get screened, how quickly can you actually get to care? I think that's something that we struggle with in our research.

Stephanie Melkonian, PhD, Epidemiologist,
Centers for Disease Control and Prevention



While innovative screening has grown exponentially over the last decade, this technology is not available to every community. Often, vulnerable communities have less access to screening technology that helps detect, diagnose, and treat cancer early. Access issues can be caused by a myriad of factors including cultural, social, financial, and geographical. Specifically, vulnerable communities are often located in areas without reliable broadband, leaving them unable to take advantage of mobile tools and intervention strategies. Financial, cultural, and overall trust factors may worsen the problem, by widening the health equity gap.

Another access barrier less discussed with vulnerable populations is overemployment. This term refers to an individual who works multiple jobs, and is unable to afford time off work for preventive screenings. Also, they may not be eligible for insurance. Individuals without coverage do not have health plans or primary care doctors tracking cancer screening. In addition, these underserved and underrepresented cancer patients are the least likely to be screened and also to participate in clinical trials after diagnosis.

My clinical work is mostly with the overemployed, that is people with multiple jobs simultaneously. These individuals still have very limited options in terms of cancer screening and other procedures. There are clear disparities in how covered individuals get screened compared to uninsured individuals. The burden of screening is usually on the individual when there is no insurance coverage.

Tate Erlinger, MD, VP of Clinical Analytics, Elsevier

Likewise, the inequities in clinical trial population representation have also become apparent. A 2022 Brigham and Women's Hospital study reviewed two decades worth of data from around 20,000 clinical trials. These researchers found that less than 44% of these trials report race/ethnicity data. 21% of those clinical trials reported zero Black enrollees.^[10] A Syneos Health study found that while Black Americans are 14% more likely to die from cancer, they make up less than 5% of clinical trial enrollees.^[11] Other studies have found that between 80-90% of all clinical trials skew heavily white.^[12]

Sometimes, even if researchers are working to diversify their studies, they may still have difficulty recruiting participants. Many minority populations are skeptical and lack the necessary trust to join a cohort; history has a plethora of examples of clinical trials that were exploitative and unethical (the most famous example may be the long-term Tuskegee experiment). Other barriers to participation in clinical trials include repeat travel to central sites for assessment, tests, and medications. A selection bias is inadvertently created because people with little disposable income, few transportation sources, inflexible work hours, and family care obligations are unable to participate. Patients considered affluent and white collar are more likely to have the free time and extra resources that are required to participate.^[13]

There are vast disparities in representation of vulnerable populations in research. If a population is not represented in the clinical trial research, they may not be amenable to using a therapy or treatment. This was evident during the COVID-19 response when some vulnerable populations would not use a vaccine because it was perceived as not being adequately tested on their population. It is a struggle to ensure that researchers adequately capture the population they are trying to study.

We know there's a problem, and we can't just do research every year, going on, saying that there is a problem....we actually have to make changes....or we are going to be doomed to make the same mistakes.

William Dahut, MD, Chief Scientific Officer, American Cancer Society (ACS)

The ACS Study-3 data is unique in that one of the cohorts it monitors actually mirrors the demographics of the US population, including tracking populations who have not yet developed cancer. ACS collects significant data on these subjects including bloodwork, DNA, exercise, and sleep data. Researchers use the data to test theories about cancer risk and prevention. ACS has a broad collaboration with researchers around the world to use this data to improve cancer screening for many vulnerable communities.

We are looking at ways to improve cancer diagnosis and screening tests so they can take place in one's home or near one's home. It's important for access....instead of having somebody wait all day and take off work to get their colonoscopy....this just doesn't work for a lot of the population.

William Dahut, MD, Chief Scientific Officer, American Cancer Society (ACS)

If study patients are diagnosed with cancer, ACS researchers can review radiology and pathology results from the patients over time. Researchers can track thousands of individuals to bring them back for additional blood tests, questionnaires, etc. to answer a specific question. ACS is in the process of developing a cohort of 100,000 Black women, in which 85,000 are at risk for cancer. They hope to launch the cohort in 2023. The goal is to detect cancer at an early stage in many of these women.

SOLUTIONS TO ADDRESS INEQUITIES IN SCREENING & TRIALS

Finding effective solutions to address inequities is challenging. What works for one vulnerable community may not work for others. We must work toward scaling early detection (screening) in a efficient, cost-effective manner, reaching all populations in an equitable way.

Many new solutions in the US attempt to provide screening to vulnerable individuals directly in their communities and homes. Solutions aim to not only provide first-level screening, but to immediately offer second screenings, diagnosis, and launch treatment plans. The goal is to ensure vulnerable individuals get the help they need as soon as an issue is discovered.

A similar approach is also being applied to clinical trials to ensure that underrepresented populations are included in new cancer research. Often vulnerable individuals are unable to participate in trials because of access issues. New approaches now attempt to bring clinical trials to individuals in their homes.



There's a new clinical trial team approach that's going to be supported, it includes people actually going into the home to provide an atmosphere of comfort. So even in a telehealth situation, you could have community workers, navigators, health care providers on site in the home to help with the delivery of interventions, therapeutics, medicines, all of these things and diagnosis which is really critical. If you can't get up and get to us, we may have to come to you.

Sanya Springfield, PhD, Director, Center to Reduce Cancer Health Disparities, National Cancer Institute



Tackling inequities is a global problem. Many countries are struggling with providing equitable care to vulnerable groups. Some successful examples have been employed in the United States and in other parts of the globe, such as:

- **Mobile lung cancer screening in Australia.** While people living in rural areas of Australia would go to great lengths - for example, using helicopters - to move cattle long distances - they were not taking the hundreds of miles journey for lung cancer screening. Those in urban areas had much higher screening rates. In these rural locations, mobile screening was instituted using solar powered trucks with CT scanners, combined with centralized interpretation of the images by radiologists. Healthcare workers traveled to the homes of native Australians and to large farms far away from cities and hospitals to perform scans on site. The scans were then immediately and remotely reviewed by radiologists to determine if additional diagnostics were needed at the hospital. This improved the adherence rate for the second cycle of screening, as often people would show up for the first cycle of preventive screening and then drop out. This effort drove an increased early detection rate of lung cancer, and also decreased time between diagnosis and treatment. ^[14]

Digital technologies enable us to support populations with increased risk of cancer, cancer patients, and medical professionals toward efficient, consistent, high-quality, and equitable cancer care. For example, by improving and intensifying patient engagement, we are able to build trust and awareness around the importance of participation in and adherence to cancer screening programs, driving the early detection of cancer and improving outcomes and survival all while reducing the costs of care. At the same time, we are supporting cancer care teams in personalized – but evidence-based – decision making according to the latest evidence and guidelines, reducing unwarranted variations in selecting the treatment and enrolling patients in clinical trials.

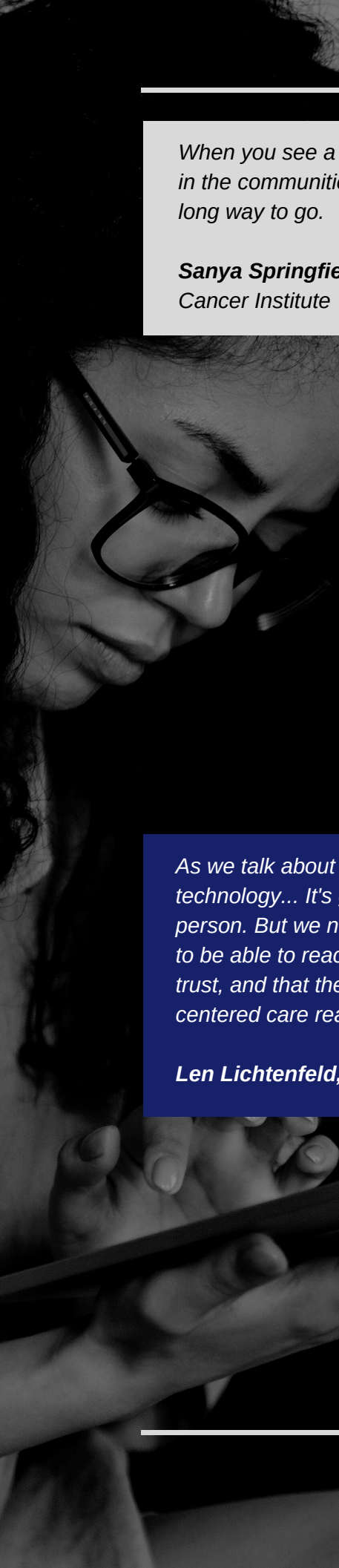
Marco Janssen, PhD, Portfolio Strategy Marketing Leader Oncology, Philips

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- **Breast cancer screening awareness amongst immigrants in Germany.** In Germany, women who had immigrated from northern African countries were lacking information on the importance of breast cancer screening, and tended to not participate and be under-represented in breast cancer screening programs. Working with care providers and telecom, a breast-care application on a smartphone was developed. The application was used by women with a migrant background from African countries living in Germany. The app developers built trust and educated the population about the importance of self-examination and participation in mammography-based breast cancer screening programs. The developers teamed up with local medical care teams and trained female technologists in mobile breast cancer screening initiatives, driving from one area to the other. Women conducting the screenings led to increased trust. These efforts resulted in increased participation and adherence rates of females with a migrant background in breast cancer screening programs.^[15]
 - **Partnering to create cancer pathways in the U.S.** The cancer care journey has become increasingly complex – for both clinicians and patients. This is because the number of people diagnosed with cancer each year is on the rise, and there are more specialists involved in their care. To combat this, Philips has partnered with Dana-Farber Cancer Institute to improve clinical pathways – the journey patients experience through diagnosis, treatment and follow up – in cancer care. The two organizations worked together to develop a tool that shares data and treatment options to oncologists to help inform clinical decisions so patients receive the best care possible. The tool aggregates all patient data and decision support so that all clinicians involved in a patient’s care have the same access to information, enabling a standard, yet personalized, care pathway – helping both patients and clinicians alike. The tool has been able to capture data and assist in coordinating care for more than 30 different types of cancer.

NATIONAL CANCER INSTITUTE (NCI) APPROACH TO MOONSHOT 2.0

The National Cancer Institute (NCI) has a broad approach to addressing inequities in research. NCI plans on focusing on four major areas to address the Moonshot goals related to underrepresented populations. They include:

1. Investing in a new pipeline of drugs, interventions, and therapeutics.
2. Expanding and creating new trial designs. The clinical trial enterprise that NCI currently has in place includes more racial ethnic populations that are geographically dispersed and populations that were unable to be included in clinical trials previously because of morbidity.
3. Increasing implementation science to ensure that the standard of care reaches all populations equally.
4. Increasing diversity of cancer researchers and the workforce. Diversity in research in the workforce provides a greater lens with greater productivity which impacts disparities.



When you see a population of individuals that look like you, it helps to address the mistrust in the communities as it relates to the healthcare system...it's a good start. We've got a long way to go.

Sanya Springfield, PhD, Director, Center to Reduce Cancer Health Disparities, National Cancer Institute

NCI is focused on three areas specific to Moonshot 2.0: supporting the cancer moonshot scholars, telehealth, and multi cancer detection. The cancer moonshot scholars' program is a program trying to train a generation of competitive cancer researchers from underrepresented populations. Many racial and ethnic minorities have had a very difficult time achieving success in research, the focus of this program is for early-stage investigators to get there. For telehealth medicine, NCI wants to build upon real world experiences, such as the health equity initiatives that took place during the pandemic. The goal of this initiative is to extend this activity. The third focus is multi-cancer detection. And again, NCI is looking for more ways to detect cancer. It'll be used as a feasibility study to launch a broader program to recruit patients, including more patients from racially and ethnically diverse populations to develop non-invasive strategies for detecting cancer.

As we talk about the gaps in cancer care... We need to figure out how we can use technology... It's going to have to be a hybrid system. It can't be all digital. It can't be all in person. But we need to find ways to use digital technology to reduce the burden...we need to be able to reach people, to talk to them and engage them in a system where they have trust, and that they believe that somebody is out there. And this is what I think patient-centered care really is about.

Len Lichtenfeld, MD, MACP, Chief Medical Officer, Jasper Health

LOOKING FORWARD

Experts and executives in oncology care recognize the challenges that create barriers to equitable health outcomes, but there is no single solution for success. Recent research has opened eyes to the wide gaps in oncology care and screening for those in vulnerable populations.

Open collaboration between the public and private industries will bolster innovation, but it will take deliberate time, resources, and effort to see meaningful change. The good news is that experts like the ones who sat around EHI's roundtable are ready to put in the work and establish new precedent through robust, long-term, and inclusive studies. The path to reaching NCI's Moonshot goals isn't right around the corner, but with necessary focus on equitable healthcare, future generations and their families will see unprecedented improvement in quality of life and cancer survival rates.

ABOUT EXECUTIVES FOR HEALTH INNOVATION (EHI)

Executives for Health Innovation (EHI) is a catalyst for healthcare transformation, convening diverse leaders from across the industry to unlock opportunities for collaborative innovation. EHI, along with its coalition of members, focuses on education, thought leadership, and advocacy.



EHI thanks Philips for their generous support of our organization's work addressing inequities in Cancer.

ABOUT PHILIPS

At Philips, we look beyond technology to the experiences of consumers, patients, providers and caregivers across the health continuum – from healthy living and prevention to diagnosis, treatment and home care. We unlock insights leading to innovative solutions that enable better care at lower cost. With leading research, design and innovation capabilities, we partner with our customers to transform the delivery of healthcare.

Learn More: <https://www.usa.philips.com/healthcare/government>

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ENDNOTES

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