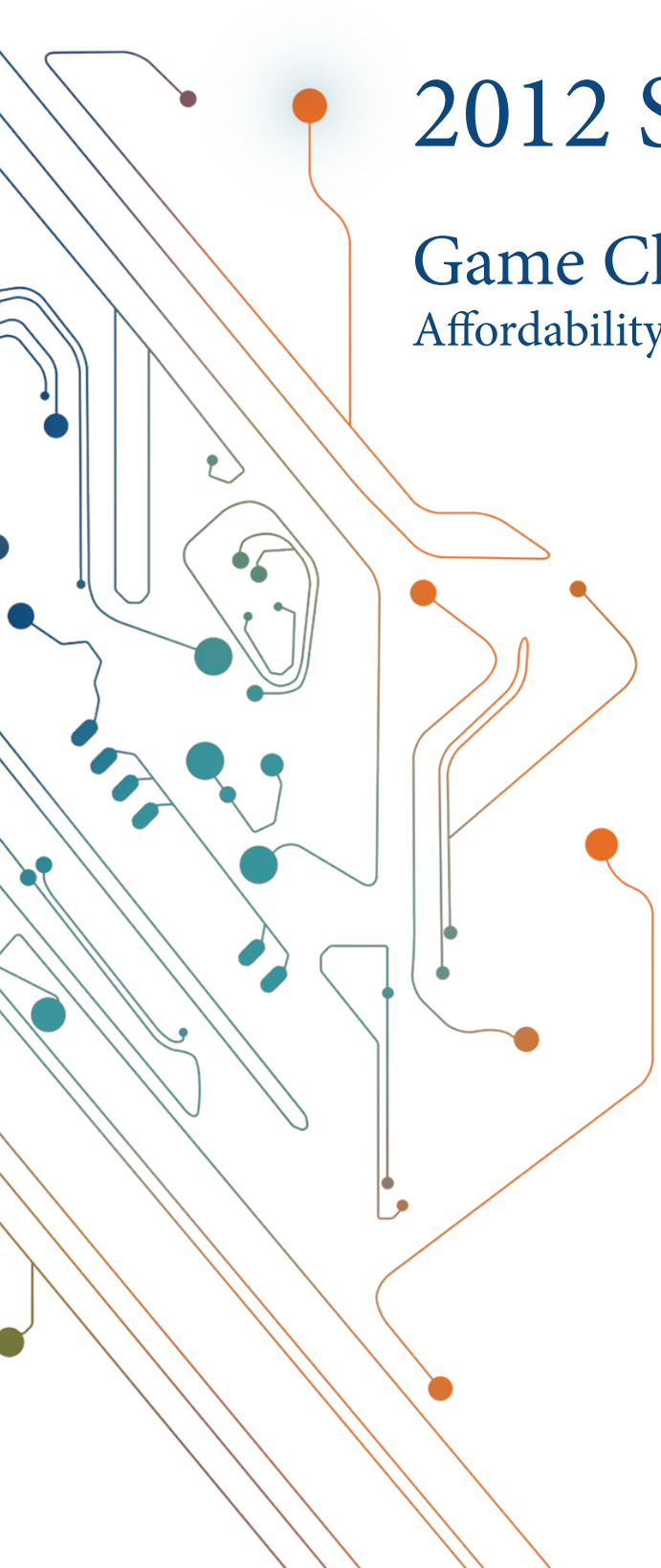
PACIFIC HEALTH SUMMIT
SEATTLE - LONDON



2012 Summit Challenge

Game Changers

Affordability and Technologies for Health

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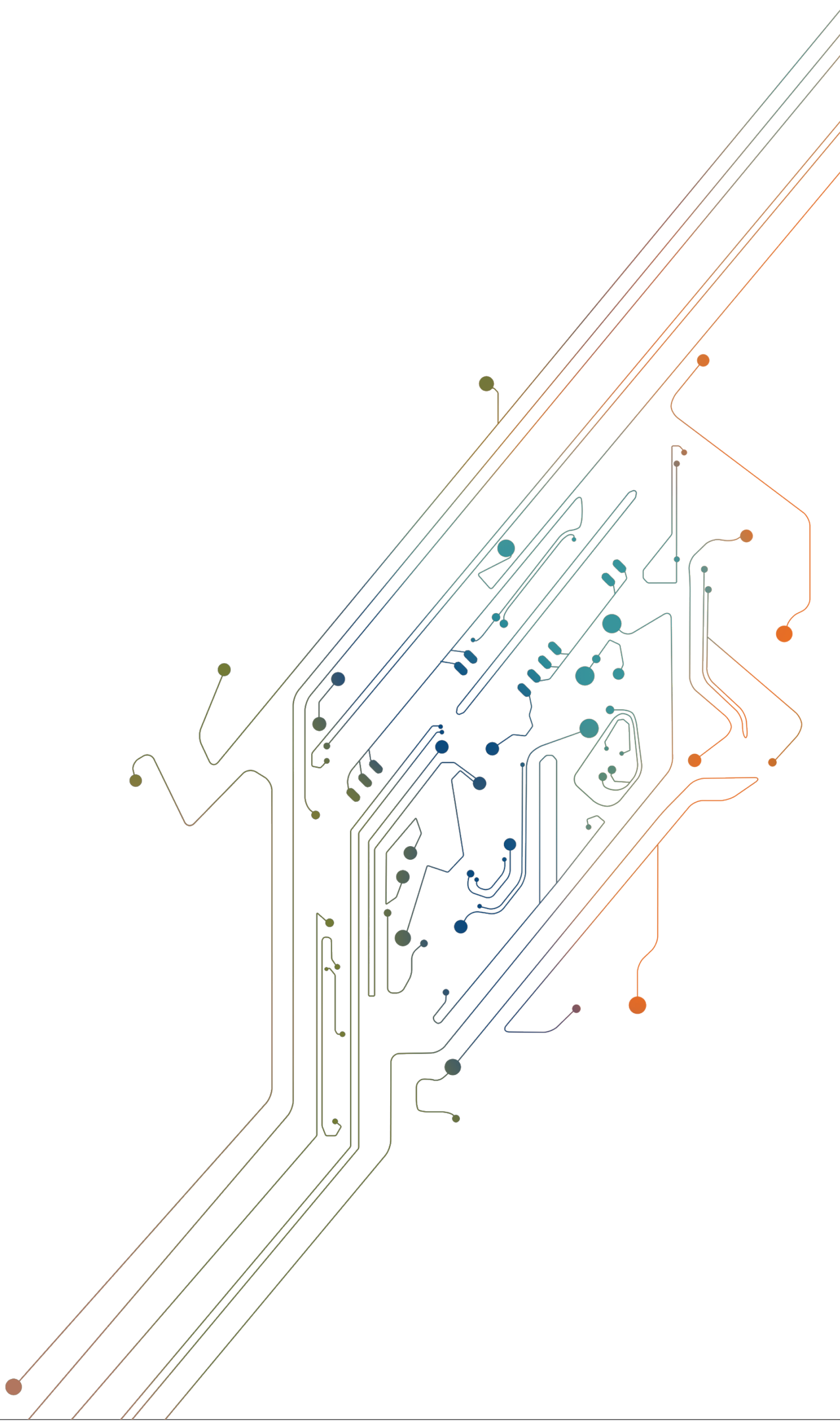


Foreword

We preface this year's theme with the title "Game Changers"—a goal that we feel everyone who is engaged in the Summit process shares, and one that we hope you will live up to during and beyond our June discussions. The thought pieces in this *Summit Challenge* provide numerous perspectives on what affordability and technologies for health mean for global health today and tomorrow, and how you—the 250 leaders assembled here—can leverage your respective experiences and resources, together with your unique energy, to make the world a healthier place.

In 2012, we deliberately chose a theme that cuts across every health field, allowing us to plunge directly into the key questions that every government, company, organization, and individual with an interest in health faces. Indeed, affordability is a critical concern in every aspect of health, particularly in light of today's increasing economic challenges. Likewise, technology—which highlights the greatest lengths of human ingenuity—is now ubiquitous to every part of daily life throughout the world.

When reading the pieces in this collection and as you prepare for the Summit discussions, we challenge you to do four things:

1. ***Be bold, be vocal.*** Do not just observe; voice your thoughts, ask daring questions, and be intrepid in your responses. It is the responsibility of each and every person in the room to make discussions outcome-oriented.
2. ***Be tangible and immediate.*** What can you do right now to make an impact? What do you need, and from whom do you need it? We each have an individual responsibility and an individual strength—let's bring that power to bear on the problems we face rather than passively waiting for a catch-all solution. It is up to each of us to create results.
3. ***Remember that affordability and technology can mean many different things.*** Definitions of these terms vary widely depending on economic, cultural, and geographical contexts. Consider all perspectives. Affordability and price are not synonyms—do not discount everything with a significant price as unaffordable, and do not discount tools with a low price as cheap. Likewise, "technology" does not always have to involve expensive instruments and tools; it can be a process, not just an object.
4. ***Consider unlikely partners. Think creatively and expansively.*** We have brought together an unusual and vibrant mix of innovators from around the world. The possibilities for fruitful partnerships are vast, especially when we engage new friends.

The thought pieces that follow will challenge you to redefine what technology is and what it can achieve for global health. They will challenge you to define affordability in the context of your own work and to understand why it may be different for your partners.

The 2012 Pacific Health Summit represents a very unique moment in time: this particular group of amazing individuals will never come together again in person to discuss these issues. Take advantage of it.

Claire Topal
Managing Director
Pacific Health Summit

Conceptual Foundation

Where We've Come From | Since its launch in 2005, the Pacific Health Summit has tackled many challenging themes, including vaccines, maternal and newborn health, MDR-TB, malnutrition, and pandemic flu. We have also approached our mission "to connect science, industry, and policy for a healthier world" by exploring how key technologies and creative engineering processes can help improve health through prevention, early detection, and early treatment of disease.

Our Focus in 2012 | How do we get appropriate technologies to the right people at the right price? The 2012 Pacific Health Summit presents the opportunity for the world's top experts from all sectors to discuss how a spectrum of technologies are, can, and will be game changers for global health. This is a critical conversation, as both developing and developed societies grapple with the need to put affordability, access, quality, and equity at the top of their health agendas, while facing an increasingly complex disease burden that is heedless of borders.

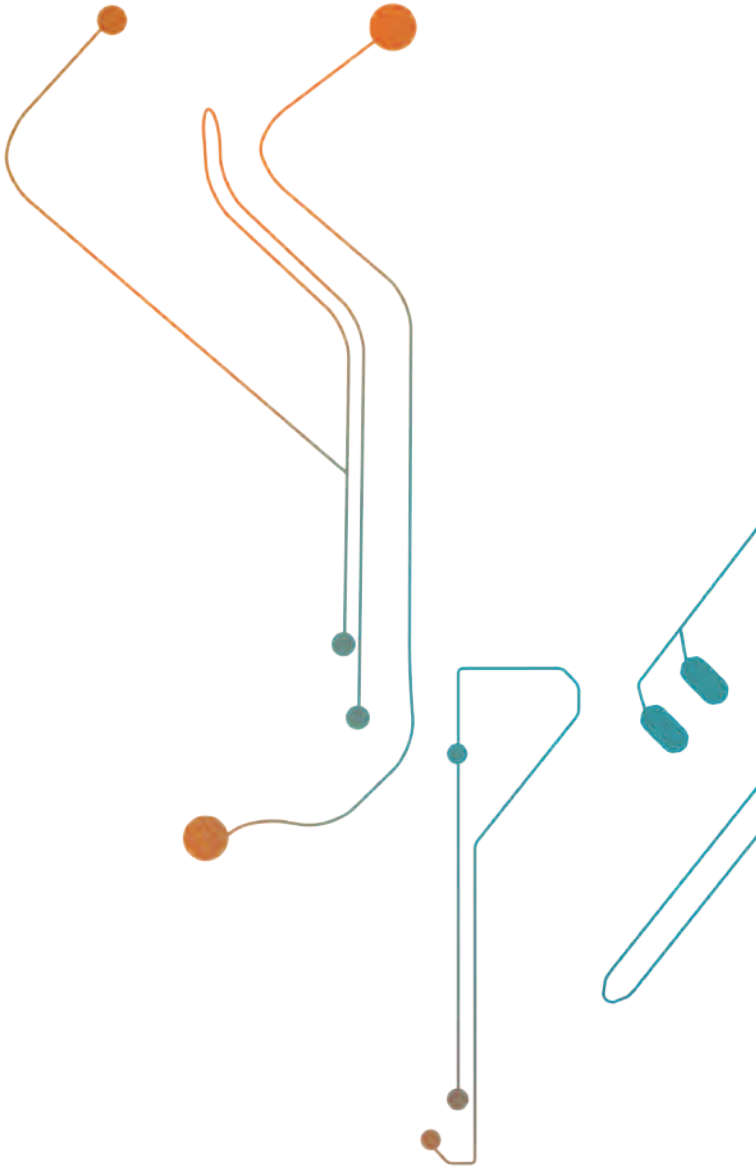
- ***Balancing Value, Accessibility, and Price:*** In assessing affordability, rather than focus exclusively on price, Summit participants are challenged to take a broader look at the life-cycle value, accessibility, and appropriateness of a wide range of technologies. Such technologies include devices, diagnostics, drugs, vaccines, information and communications technology (ICT) and mHealth, as well as operational and delivery processes, particularly for low-resource settings. How is technology currently being used, and where are the major gaps in health-related technology innovation?

- ***Emerging Sources of Innovation:*** Innovation and rapidly evolving technologies are emerging

from a diverse set of geographies. Discussions will explore how this diversity can serve as a powerful and often "disruptive" force in driving access to affordable technologies.[1]

- ***Learning from Our Misadventures:*** By sharing experiences—both failures and successes—policymakers, donors, and industry leaders will discuss how to effectively prioritize investment and implementation decisions in a field where new and improved technologies and processes are rapidly emerging.

- ***Whose Game Are We Changing?*** Are we effectively targeting the end users, and to what extent does cultural context impact technology use? Collectively, we will discuss the role of technology in addressing the shifting landscape of health and examine how today's innovations are shaping health and development for the future.



1 According to Clayton Christensen of Harvard University, who coined the term "disruptive innovation" in the 1990s, "an innovation that is disruptive allows a new population of consumers access to a product or service that was historically only accessible to the wealthy highly skilled." Wikipedia describes a disruptive technology as "helping to create a new market and value network, eventually going on to disrupt an existing market and value network (over a few years or decades), displacing an earlier technology. The term is used in business and technology literature to describe innovations that improve a product or service in ways that the market does not expect, typically first by designing for a different set of consumers in the new market and later by lowering prices in the existing market."

The Climb to a Healthier Future

Michael Birt, Executive Director, Pacific Health Summit
Director, Center for Sustainable Health, Biodesign Institute, Arizona State University

In May 1975, a large team of Chinese climbers carried a 3-meter aluminum ladder up to the Second Step, a promontory less than 300 meters from Mount Everest's summit of 8,848 meters. Long considered to be nearly impassable, the Second Step was the site of George Mallory's death in 1924.[1] But thanks to the courageous service of that Chinese team, the approach along the Northeast Ridge from Tibet has been completely transformed. Since that day in 1975, over 1,500 climbers have safely climbed what is now known as the Chinese Ladder and have tasted the ultimate joy of any mountaineer—to climb the tallest mountain and stand at the top of the world.[2]

Much like the Chinese team, the Pacific Health Summit was launched in 2005 as a means to serve, and it does so by bringing together global leaders dedicated to the Summit's mission to "connect science, industry, and policy for a healthier world." Moreover, the Chinese Ladder is symbolic of our 2012 theme, "Game Changers: Affordability and Technologies for Health." Installed at a "dead vertical," the Chinese Ladder was a game changer for the many mountaineers who would subsequently reach the summit. Once impassable, the Tibetan approach was opened—not by an expensive and complex system, but by an aluminum ladder that was light, simple, effective, and affordable! And, it was installed by a team, a team inspired by the prospect that future climbers would safely overcome the most treacherous portion of the climb to reach Everest's summit.

As we gather in London in 2012 for our eighth Summit, we face a powerful opportunity to "change the game" for global health. Never has the need been greater to bring together leaders from the

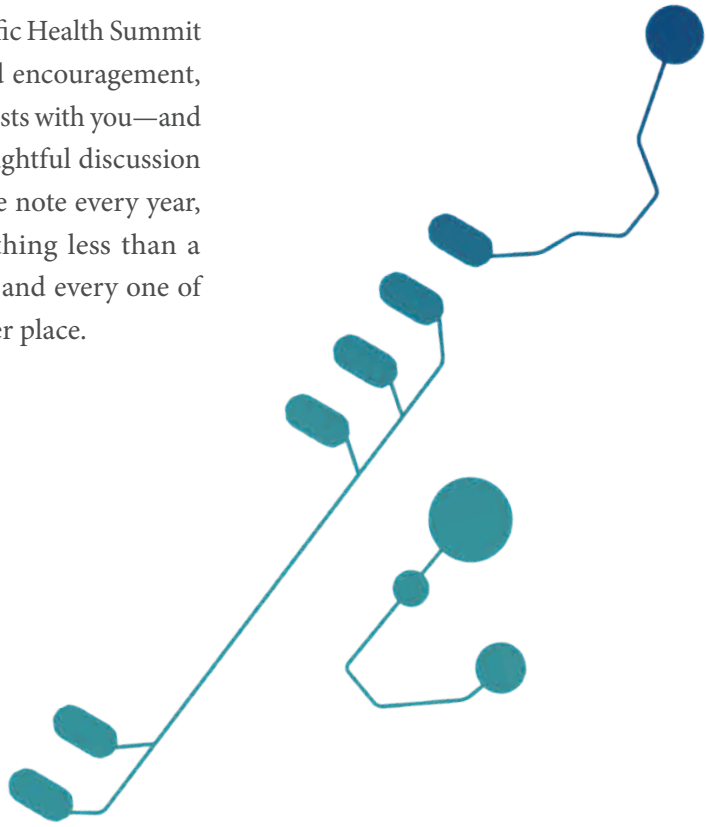
1 George Mallory was a world-renowned mountaineer who died with climbing partner Andrew Irvine in 1924 on the Northeast Ridge, although controversy continues over whether they died on their ascent or descent of Mount Everest.

2 After being replaced and carried down from the Second Step, the original ladder was installed in the Mount Qomolangma Museum in Tibet on May 27, 2008.

The Pacific Health Summit team offers its full support and encouragement, but the ultimate test of success rests with you—and your ability to move from thoughtful discussion to transformative action.

realms of science, industry, and policy to launch innovative partnerships and collaborations that foster affordability of and accessibility to better health for every corner of the globe.

The challenge is enormous, but the view from the summit is sublime. The Pacific Health Summit team offers its full support and encouragement, but the ultimate test of success rests with you—and your ability to move from thoughtful discussion to transformative action. As we note every year, our Summit Challenge is nothing less than a personal call to action to each and every one of us to make the world a healthier place.



New Dimensions: Bringing Chronic Disease to the Discussion

Lawrence Corey, President & CEO, Fred Hutchinson Cancer Research Center

Much of the emphases in global health discussions have traditionally focused on technologies that prevent, diagnose, and treat infectious disease, or on technologies that address health challenges that are often considered more specific to developing countries, such as maternal and newborn health and nutrition. The opportunity at the 2012 Pacific Health Summit is to usher in a new dimension to these discussions and examine one of the greatest and perhaps least talked about threats to health in the developing world: the increasing morbidity of chronic disease.

While diabetes and heart disease are now enormous problems in the developing world, cancer is the leading cause of death worldwide, and 60% of the world's cancer deaths are in developing countries. It is expected that cancer deaths globally will increase by 70% over the next 30 years. Many of the most common cancers in the developing world can be prevented or effectively treated. However, altering the perception of cancer by educating citizens about these advances is needed. Changing the cultural perceptions of breast examination and detection of cervical cancer are essential issues for women's health. Similarly, altering the smoking behavior of men is of critical importance.

And yet, education alone may not be enough. Technology certainly has a role, and we must ask ourselves where it can fill gaps and improve outcomes. For instance, how can health and non-health technologies such as mobile phones alter the risk factors for obesity and environmental carcinogens? What disruptive technologies exist today that can facilitate the implementation of these technologies in the global health field? How can we transform the way that these instruments are currently employed to make them more effective? The prevalence of chronic disease raises new questions and demands innovative answers. We need the unique and individual know-how and willpower of policymakers, industry leaders,

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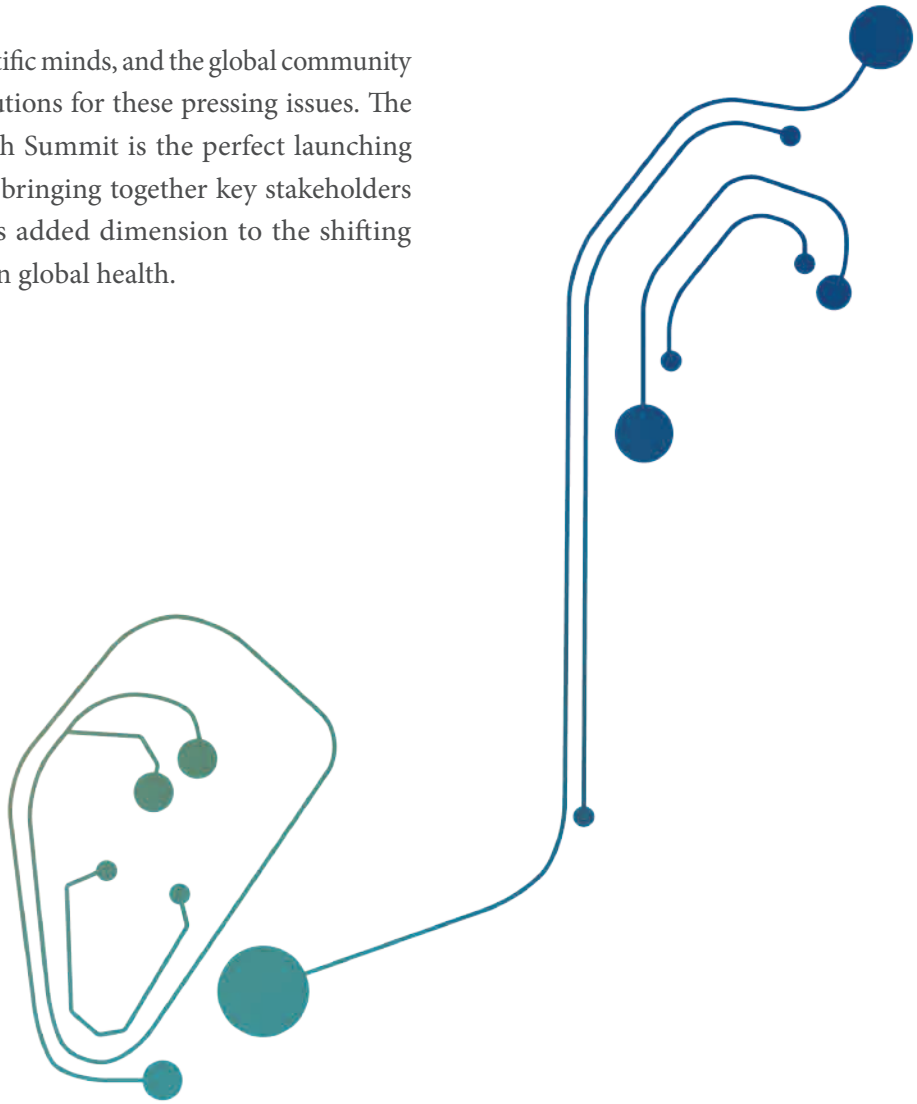
the best scientific minds, and the global community to create solutions for these pressing issues. The Pacific Health Summit is the perfect launching platform for bringing together key stakeholders and provides added dimension to the shifting discussions in global health.



The Opportunity for Technology to Reduce the Pressures on Healthcare

Sally Davies, Chief Medical Officer & Chief Scientific Advisor, Department of Health, United Kingdom

Society and healthcare worldwide are facing immense challenges brought about by rapid economic development in some countries, austerity measures in others, and profound global demographic changes that are leading to a dramatic increase in chronic diseases. Unhealthy lifestyles are increasing to epidemic proportions despite our profound understanding of the health-related consequences and the fact that patients are more empowered and interested than ever in taking active roles in their own healthcare.

We have an opportunity at this year's Pacific Health Summit, which focuses on the role of technologies and their potential to address growing public health concerns, to open a constructive debate on a number of fronts, including on how to:

- enable disruptive innovation to not only deliver improved outcomes, but also contain financial pressures
- harness mobile telephony, ICT, and the Internet to improve health delivery and outcomes
- pull genomic medicine from research into practice, especially for neglected diseases
- shift from government-supported models of care defined by medical need, to models built up from community participation and demand, particularly models designed to address chronic diseases
- facilitate knowledge and technology sharing between advanced health systems and developing health systems that have "leap-frogged"

The challenge is to move from delivering care for ill health to a wellness and well-being model. There is an imperative to support communities to create and foster healthy lifestyles alongside systematic community prevention and screening programs, including vaccination. Innovative health technologies provide the mechanisms for addressing this challenge. Our collective success is predicated on innovative research, development, and access to appropriate and affordable technologies for all.

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Affordable and Appropriate Technology: Understanding the End User

Thomas Gentile, President & CEO, GE Healthcare Systems

Investment in affordable healthcare technology is of little use unless the technology is designed and implemented appropriately for the end user. Too often, debates concerning affordability focus on cost in isolation from the specific needs of the receiving population. Fortunately, this mindset is beginning to change, as we in the healthcare industry are shifting our focus to provide appropriate healthcare solutions that involve end users throughout the development process to ensure that their specific healthcare needs are addressed.

I believe that one of the most effective methods for creating appropriate healthcare solutions is the "in-country, for-country" approach—where research, development, and manufacturing occur in the country or region of use. This method is particularly effective because it allows us to develop and utilize local knowledge throughout developing and developed countries. Local operations that are supported in a manner that fosters autonomy have the greatest ability to identify and manage the development of new products that truly meet local needs. In an interesting twist, because these locally produced products are of increasingly high quality but often lower in cost, some are finding a use for them "back home" in developed markets, a phenomenon that has become known as "reverse innovation."

Having designed appropriate technologies, the next challenge is to test, refine, and deploy them in the field—often in places where inadequate infrastructure on the ground presents serious challenges for delivering technology to patients. Through partnerships with global and local NGOs and government agencies who can provide in-country training programs and the capacity building required for testing new technologies, together we can reach end users to determine if a new technology really will be of use or not. The partnership approach can also help develop clinical protocols and provide the right training and support necessary to speed up the delivery and use of the technology.

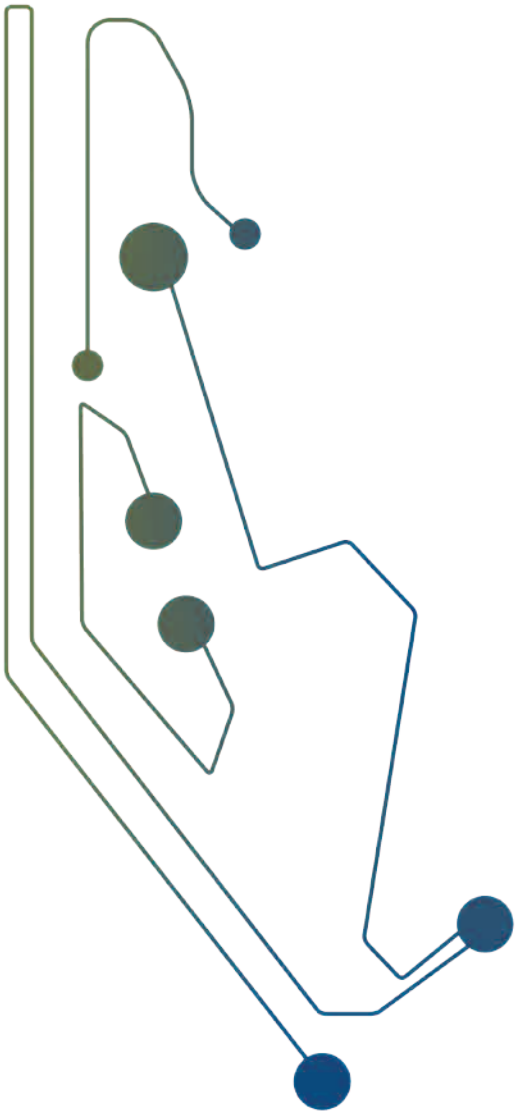
Ideas for new technological solutions continue to arise from many sources, but from my experience the ones that will succeed will be those that help patients, reduce health inequalities, and are both

Ideas for new technological solutions continue to arise from many sources, but from my experience the ones that will succeed will be those that help patients, reduce health inequalities, and are both affordable and relevant to addressing local healthcare challenges, regardless of the country in which they are being used.

affordable and relevant to addressing local healthcare challenges, regardless of the country in which they are being used. We must also not think that this strategy applies only to the lower end of the technology pyramid. Our recent work in modular, disposable biopharmaceutical manufacture shows there is a demand from countries to have indigenous bioprocessing and blood fractionation technology without the complexities of full-scale traditional manufacturing. Affordable? Perhaps. Appropriate? Certainly.

I believe reverse innovation will be the driver of radically new, affordable, and appropriate products and solutions to meet the broad range of healthcare challenges and economic realities of the different countries and regions we serve.

Everyone has a responsibility and contribution to make. The 2012 Pacific Health Summit brings together the stakeholders necessary to focus on the development and implementation of affordable and appropriate technology to reach those patients currently underserved.



Health Technologies: Reducing Cost and Improving Access

Mike Hess, Vice President, Bradycardia Research and Development, Medtronic

The field of medical device technology has always been highly specialized, with strict requirements, liability risk, and a relatively small global market with few incentives for investment from large high-tech companies. However, the past decade has brought an explosion of "adjacent" innovative technologies from other markets, such as consumer electronics, that can potentially be applied to medical technologies. Could the battery in that greeting card you received power a small, portable, easy-to-use medical device in the future? The rapid adaptation of technologies that were never designed for medical use is one of the most exciting ways for us to cross-pollinate and utilize innovation to improve access to medical devices through lower costs and increased expansion into more markets.

On the treatment side, minimally invasive therapy is a theme that permeates all areas of medical technology, from cardiovascular device implants to orthopedic repair, and is one of the most significant advances in medical technology over the last ten years. If such a procedure can be designed to be "good enough" and be delivered by a healthcare provider with less training or delivered in a less specialized, low-resource setting, it has the potential to be adopted more rapidly and have a greater impact. In addition, shorter recovery times mean less impact to the patient both economically and socially. While the initial technology costs may exceed the traditional surgical approach, the outcome is often greater patient satisfaction, faster recovery, and a higher return of investment.

Even though treatment methods have advanced, in many cases patients with advanced disease or those with serious risk factors go undiagnosed. So much of medicine treats the symptoms; however, we know that better early screening and diagnosis for serious conditions, such as diabetes or cardiovascular disease, are critical to engage early interventions that may alter disease course or to appropriately triage for more advanced therapy.

At the Pacific Health Summit, we have an opportunity to work across sectors to connect

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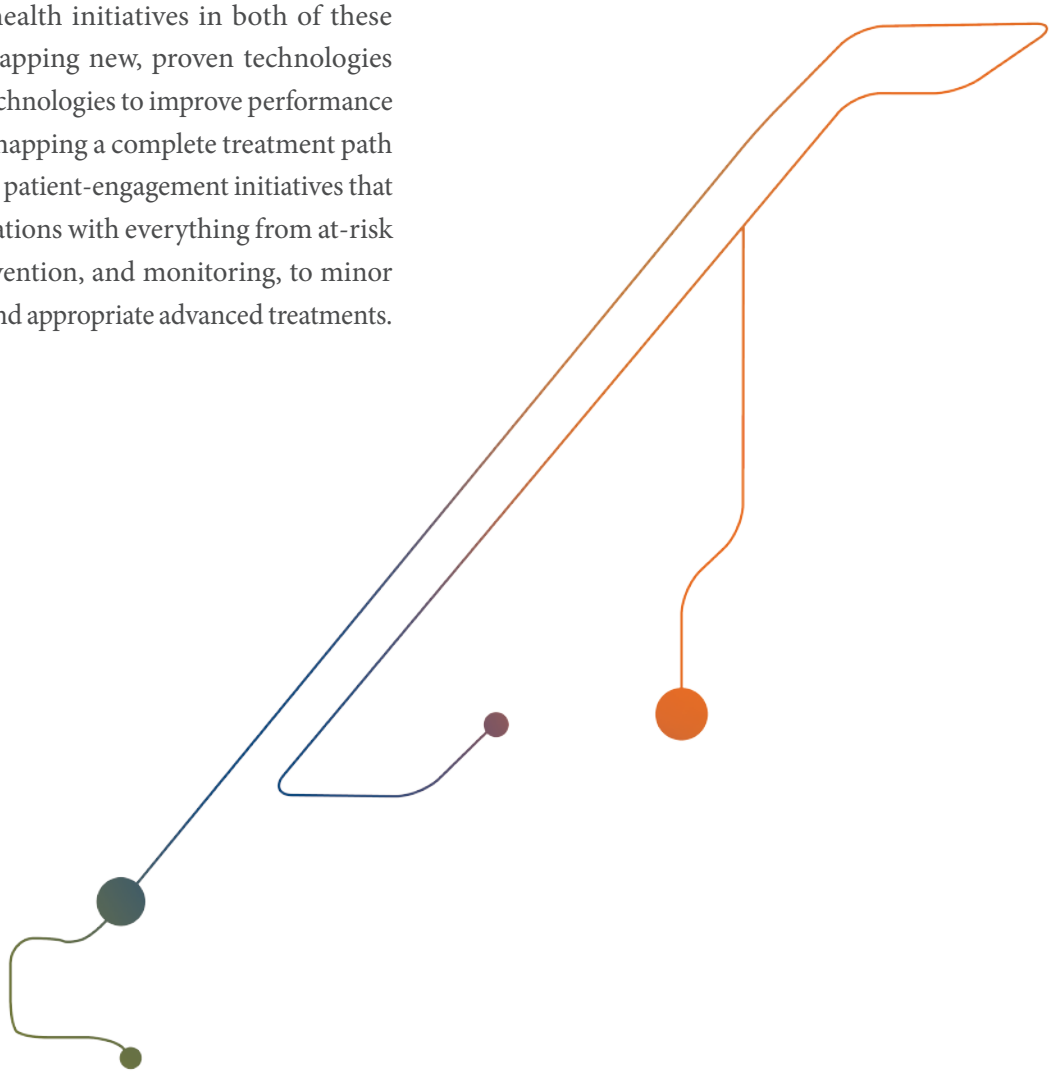
broad-based health initiatives in both of these directions—mapping new, proven technologies into medical technologies to improve performance and cost, and mapping a complete treatment path into large-scale patient-engagement initiatives that support populations with everything from at-risk diagnosis, prevention, and monitoring, to minor interventions and appropriate advanced treatments.



Leveraging Technologies for Healthcare in Rural Communities

Ashok Jhunjhunwala, Professor, Department of Electrical Engineering, Indian Institute of Technology, Madras

Suma Prashant, Vice President (Exploratory Initiatives), Rural Technology and Business Incubator, Indian Institute of Technology, Madras

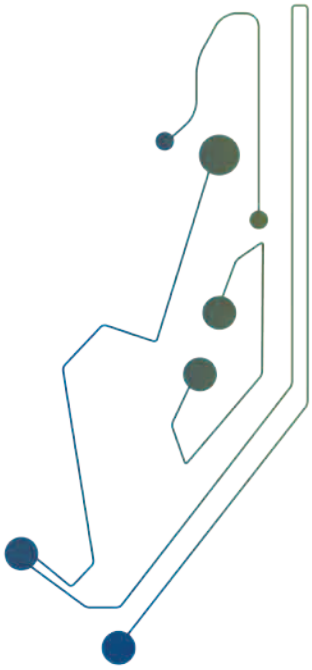
Despite major advances in healthcare throughout the world, the availability of modern health services in many rural regions of developing countries remains grossly inadequate. Although many governments have established public health clinics in some areas, they are usually understaffed and low in resources, and consequently provide inadequate services. In addition, because these clinics are sparsely scattered across rural regions, patients often have to travel very far to reach them. While most developing countries do have some private services available, they are largely unaffordable and therefore inaccessible for those in need.

As a result, individuals living in remote areas of the world often have no choice but to rely on self-sufficient healthcare, such as home remedies and traditional medicine and practitioners, which are generally far more accessible, affordable, and usually trusted within communities. While some of them provide reasonably good services, traditional healers vary widely in both their qualifications and the quality of care they provide. Furthermore, traditional healers are limited by their inability to diagnose and treat diseases such as malaria, tuberculosis (TB), HIV/AIDS, and other diseases that require advanced lab diagnostics and care.

Improving rural access to modern medicine is a complex challenge. Most developing countries have very few qualified doctors, and those who do work in developing countries usually come from urban backgrounds and are extremely reluctant to live in remote areas. Therefore, we cannot rely wholly on doctors to improve access to care. A more reasonable solution is to establish a cadre of rural healthcare practitioners (RHP), who are from and/or live in rural areas. RHPs could be nurses, pharmacists, or traditional practitioners who are able to integrate traditional and modern healthcare practices in a manner that is appropriate for and acceptable to patients in rural health clinics. The key to success will be adequate training of RHPs, and this is where technology could have a major impact.

ICT, for example, has the potential to revolutionize rural healthcare services. It can and should be utilized to train RHPs, aid their work,

The use of technological innovation in healthcare delivery is required to bring down the cost of services in hard-to-reach regions of the world, whether we are considering diagnostics, treatments, or treatment follow-up.



and provide them with access to consultancy when needed. The focus of telemedicine should be to enable and strengthen the quality of RHPs' work in the field. In addition, telemedicine can act as a screening device: if a disease is considered too complex for RHPs to address on their own, a remote doctor, through the use of ICT, can be brought in to consult.

Perhaps most importantly, the use of technological innovation in healthcare delivery is required to bring down the cost of services in hard-to-reach regions of the world, whether we are considering diagnostics, treatments, or treatment follow-up. When developing health technologies or assessing what would be most effective and sustainable in rural environments, we must consider whether they:

- are low-cost and appropriate
- do not intimidate the end user and are in tune with their lifestyle and culture and therefore will be easily accepted
- can accommodate usage by a wide spectrum of end users, including those who are semi-literate and illiterate; for example, any service that requires patients to use text messaging for communication would be limited to literate users only, whereas the same service, when provided using voice communication, could be utilized by a much broader demographic
- will work in an environment with limited infrastructure

Together, at the 2012 Pacific Health Summit and beyond, we have the opportunity to develop and implement technologies that address the affordability and accessibility of healthcare services, and that are accepted by the intended end users. Through this process, the groundwork can be been laid for achieving scalability and sustainability. Finally, we need entrepreneurs and policy leaders who can work together to build viable businesses in delivering these services. Thus, research and innovation needs to be focused on designing solutions that can be integrated into public health systems and can be commercialized to ensure long-term sustainability.

Making Science Happen

Trevor Mundel, President, Global Health, Bill & Melinda Gates Foundation

I have always believed in the promise of science and its ability to solve some of the world's most complex health problems. However, as a close observer of the scientific process and as a manager of a number of scientific enterprises, I have grown to realize that science—by itself—is not enough.

As with any complex enterprise, there are great impediments to the enterprise of science. Such impediments can be as general as an R&D portfolio being mismanaged or as specific as a leading bottleneck in translational biomedical science affecting a product's readiness to move into animal or human studies. Whether in R&D or implementation, the practical problems of science can be successfully solved through effective project management and logistical planning.

Ensuring our project plans are optimized to reduce the "white space" that exists between various activities is critical. Still, there is a deeper and more intractable reason why even ideal plans sometimes lead to disappointing results.

All R&D projects require groups of technical experts to collaborate on the design of studies and decision criteria. I have been regularly impressed by how quickly such groups can align around the interpretation of a particular data set. But beyond the data-driven aspect of design is a multitude of personal (often merely aesthetic) biases that endlessly prolong design debates, as technical groups fracture along lines of opinion. It is precisely this data-free discussion that bedevils the R&D enterprise.

Looking to the future, how do we avoid redundant discussion and debate, and create a scientific ecosystem that both drives innovation and ensures the right technologies reach those who need them most?

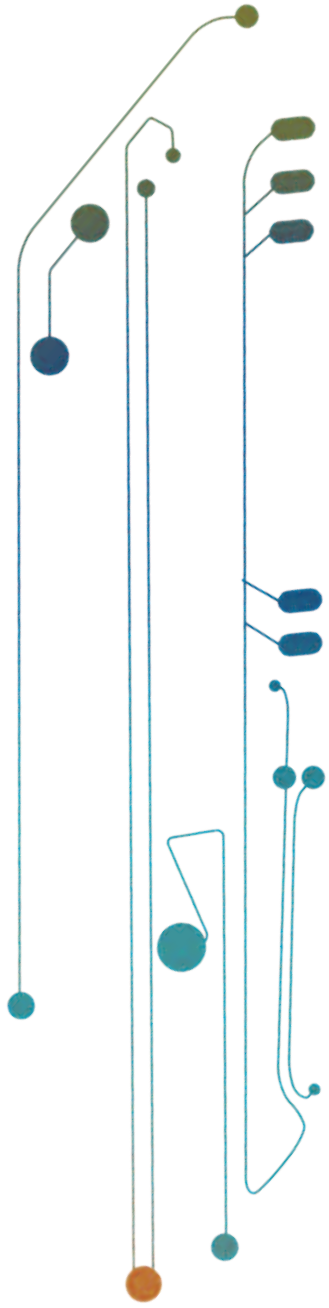
Every hour, 1,500 people in the developing world die from an infectious disease. Every single one of those deaths can and should be avoided. It is a sobering fact—but one that greatly inspires and motivates me. If this urgency can be effectively

Looking to the future, how do we avoid redundant discussion and debate, and create a scientific ecosystem that both drives innovation and ensures the right technologies reach those who need them most?

communicated to project teams, and if those teams can remain aware of the sociology of collaboration around the scientific enterprise, I believe we can achieve unimagined progress toward our global health goals.

For these reasons, I see my new role at the Bill & Melinda Gates Foundation as one of facilitator and convener, as we work with partners to create and deliver vaccines, drugs, and diagnostics. My focus will be on solutions that deliver the biggest impact to those most in need.

At the 2012 Pacific Health Summit, we have come together at a defining moment. But we are also here to define a moment. Together, we are all champions of the people and communities we serve. Let's make science happen.



Technology and Innovation for Global Health: Delivery of Innovation and Innovation of Delivery

Peter Piot, Director, London School of Hygiene and Tropical Medicine

One of the major features of our time is acceleration in science, technology, and business practices. Technological and management innovation trends with potential impacts on global health include the explosion in communication and information technology and social media; biotechnology and genomics; miniaturization and nanotechnology; cognitive sciences that provide us with a better understanding of health and health behaviors; management sciences leading to more efficient and effective access to healthcare; and food science to produce healthier and affordable food for billions.

Everything we do in both population and individual health will be affected by these developments, from disease surveillance to human resources, disease prevention, education, supply chain management, good governance, and community empowerment.

Technological innovation can be a game changer—consider a new vaccine or antiretroviral therapy—but it also has the power to drive social and economic change, be it through farmers' access to markets through mobile phones, expanded sexual behavior through social networking, or questioning of expert medical advice, the latter of which is a growing challenge in global public health as exemplified by the rise of anti-vaccine movements throughout the world. As we gather at the 2012 Pacific Health Summit to identify and discuss the potential ways in which novel technologies can change the game for global health, it is critical that we consider both the health and social impact of these innovations in addition to addressing critical questions and challenges such as the following:

- Who sets the agenda for the use of technology and innovation: those who produce technology or those who need it? How open are we to innovation coming from emerging economies?
- What are the best systems to deliver new innovations promptly and equitably across

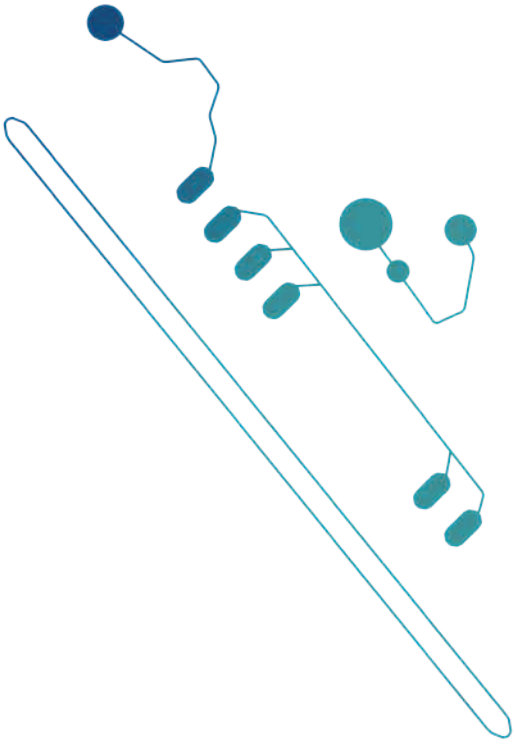
Everything we do in both population and individual health will be affected by these developments, from disease surveillance to human resources, disease prevention, education, supply chain management, good governance, and community empowerment.

the world, while expanding access to existing technologies and products? How open are health professionals to innovation of delivery outside classic health services?

- How effective are specific innovations for health? How do we assess their risks, unintended consequences, and safety?
- How can we use technologies to innovate new ways to better listen to and engage with the public?
- How can we ensure that we nurture and sustain public trust in science and technology?

Finally, while potential exists for novel technologies to address critical health needs, we need to be cognizant of the power of existing technologies that have not been utilized to their full potential. Re-examining old technologies—for example, drugs that are out of patent (e.g., tranexamic acid, a low-cost solution to help trauma patient survival) and drugs of which the properties are still not fully known but have wide-ranging impacts on health (e.g., aspirin)—or combining drugs to simultaneously act on different disease mechanisms to offer protection or reduce symptoms, can change lives.

We have the opportunity to work together to ensure the appropriate innovations are being utilized for the right impact on those who need them most.



Fueling the Future of Health through Collaboration

Paul Stoffels, Worldwide Chairman, Pharmaceuticals, Johnson & Johnson

Our collective ability to transform the health and lives of people around the world hinges squarely on our ability to innovate. While healthcare infrastructure, delivery of medical services, and access to existing drugs and technologies are crucial for sustaining healthcare, truly transformational solutions will come from new advances in science and technology. For example, the accessibility of mobile phones—even in the world's most remote regions—has opened the door for new ways to deliver healthcare information. Programs like the Mobile Alliance for Maternal Action leverage what are now widely available mobile technologies to inform and empower new and expectant mothers with health information.

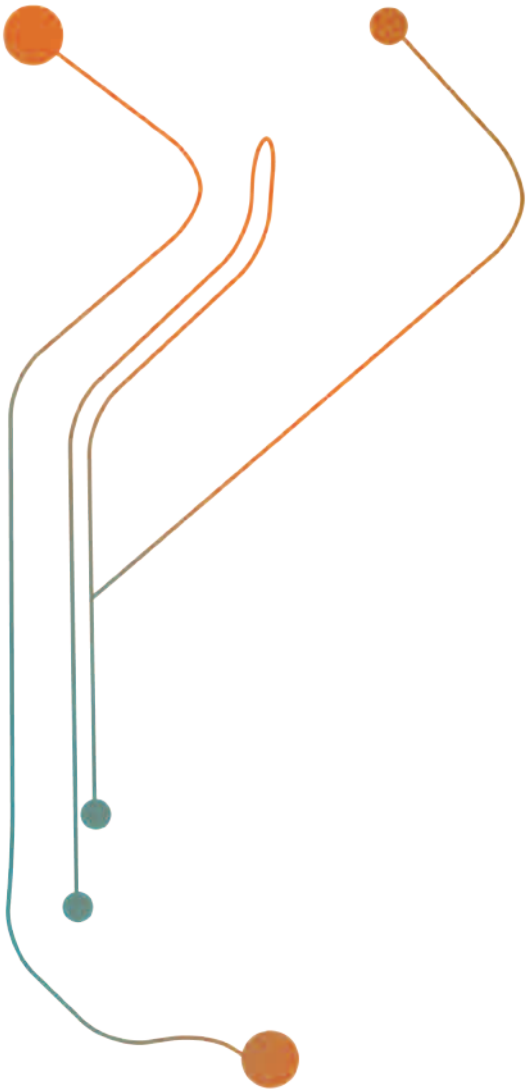
However, at the same time that scientific and technological advances offer unprecedented opportunity to make a meaningful difference in patients' lives, the barriers to successful R&D have increased, and the capital directed toward early-stage innovation, which is crucial for sustaining long-term progress, is less available than ever before. For this reason, leaders in global health must create novel, cross-sector partnerships and unique investment approaches that will enable us to tap a wider range of expertise, capabilities, and resources, in order to share in the benefits and costs of innovation and to yield more useful and affordable technologies and solutions that will contribute to new advances in healthcare. Collaboration—bringing the best minds together and sharing expertise and know-how—is one of the most important factors in enabling the delivery of transformative healthcare solutions.

There are many ways that industry can partner across sectors to deploy science and technology to bring about significant improvements in global health worldwide. For example, at Johnson & Johnson we are providing key products and capabilities to the International Partnership for Microbicides to support the development of microbicides that will help women prevent the sexual transmission of HIV/AIDS. We are developing a new TB drug in collaboration with the TB Alliance by using the new drug target we

Collaboration—bringing the best minds together and sharing expertise and know-how—is one of the most important factors in enabling the delivery of transformative healthcare solutions.

discovered for the disease—the first such target in over 40 years. We are using our drugs and virology expertise to improve HIV/AIDS care through the standardization and simplification of HIV/AIDS therapies in collaboration with the WHO, UNAIDS, other industry partners, and NGOs. We are addressing neglected tropical diseases in conjunction with the Bill & Melinda Gates Foundation and many other industry, government, and NGO partners. Finally, we are working on vaccines to prevent HIV/AIDS, TB, polio, and other infectious diseases with research partners and universities across the world.

Individually, each of us is able to bring forward new ideas and approaches that help extend and improve the lives of patients. But to make a meaningful change in global health—to address the aging and growing world population and to harness the power of exponential advances in health technologies—we must focus on bringing forward new innovation and embrace new collaborative models that amplify our collective impact.



Delivering Better Healthcare in an Ever-Changing World

Mark Walport, Director, Wellcome Trust

New technologies change lives. They disrupt our established patterns of behavior and force us to question the way we do things. Our challenge in medicine and healthcare is to exploit appropriate emerging technologies in order to improve people's well-being across the globe.

The pace of technological innovation, particularly in ICT, has increased in recent years, to the point that it feels like an almost constant revolution. It is a trend that goes beyond the latest "must-have" gadgets and apps for the wealthy. In places where wired telephony was once prohibitively expensive and impractical, leaving millions of people at risk of isolation in an increasingly technological age, mobile phones now fulfill the basic need to communicate. Moreover, they offer new opportunities for participation in all walks of life, including health.

Societies are developing new expectations of how patients interact with healthcare services. Telemedicine may allow doctors to see patients or colleagues online, involving live video links and the sharing of scans and other patient data, but its potential goes beyond remote consultations. Researchers are looking at whether mobile phones can be effective in helping people monitor or even reduce their risk factors for various conditions, including cardiovascular disease. Some people with diabetes are already monitoring their blood glucose with affordable kits at home and using their mobile phones to record and transmit the data.

Of course, data must be processed in the right way to become information, and information must be understood before it can be acted on responsibly. Citizens are becoming more aware of their personal data—where it is stored, how it is being used—and data security is a crucial factor in the introduction of new health services and products.

It is information that empowers people to make better choices. Someone who receives a diagnosis can now use the Internet to become informed about the latest research, the leading experts, and the most effective treatments. Doctors may not always appreciate the patient who comes

There is a constant need for research and innovation to keep us one step ahead of the many threats to the world's health, whether driven by human activity or natural processes.

armed with pages of search engine hits, but without such information people would not know if they were receiving the best possible care. More patients in all countries will demand better from their health services. Affordability will be key, no matter where patients live: just because a country spends 20% or more of its GDP on healthcare does not mean that services are equally affordable to the whole population.

There is a constant need for research and innovation to keep us one step ahead of the many threats to the world's health, whether driven by human activity or natural processes. The Pacific Health Summit plays its part by bringing together a special mix of people and encouraging new partnerships to develop and new products to flow. Our success will be measured by how well we respond in this ever-changing environment to innovate and deliver better health technologies to all.

Lessons Learned from Vaccines

Christophe Weber, President, GlaxoSmithKline Biologicals

In today's tough economic climate, countries are challenged to do more with less and meet the growing health needs of their populations without significantly increasing health expenditures. This comes at a demanding time, as emerging economies and developing countries face a "perfect storm" of the burdens of both infectious diseases and non-communicable diseases (NCD).

While progress has been made in controlling infectious diseases, the global fight against NCDs is just beginning. The good news is that we already have models that have shown significant impact. And perhaps one of the best models is what the international community has done around vaccines.

Vaccines are among the most cost-effective interventions. Since the creation of the GAVI Alliance in 2000, vaccines have helped prevent over 5.5 million deaths, and the industry has made great strides toward narrowing the typical time lag of 10–15 years for vaccines to reach developing countries. But there is certainly more work to be done. We must continue innovating to develop vaccine solutions suitable for use in remote, low-resource settings and find even more creative ways to increase access. However, the global immunization campaign has shown us what works, and we should ask ourselves how to apply these lessons learned to the fight against NCDs.

The first lesson is that we need a strong funding mechanism to catalyze global support. Since 2000, GAVI has created a market for vaccines in the least developed countries. This gives companies the assurance to make the significant investment needed in R&D and to increase manufacturing capacity while giving donors the confidence to invest in vaccines, knowing that their contributions will be maximized for the good of public health in developing countries.

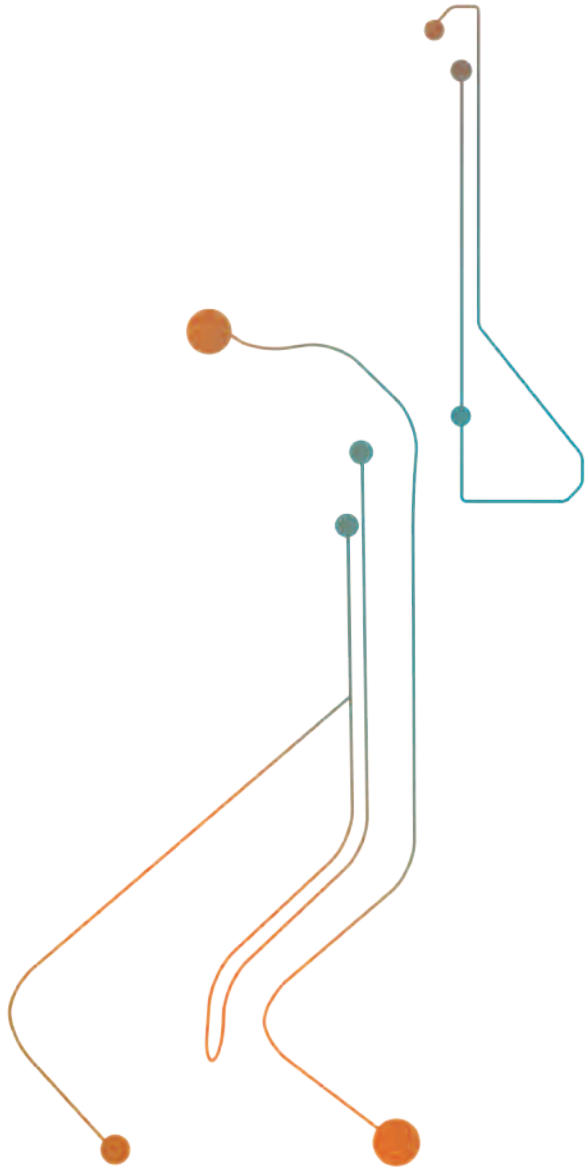
The second lesson is that success requires local buy-in and support. For decades, the vaccine movement has educated local communities in developing countries about the value of vaccines, which has helped increase awareness and effective implementation. Through similar prevention and education efforts—such as those for smoking cessation and healthy eating programs—the NCDs community can help make prevention and control priority issues.

Finally, innovative financing models can drive access and encourage private sector engagement.

To echo the goal of the Pacific Health Summit, it is important to remember that successfully tackling NCDs, infectious diseases, and other health challenges will require partnership at all levels and across all sectors, from R&D to financing to delivery.

The vaccine community has developed creative models to reduce vaccine prices for developing country markets. One example is the Advance Market Commitment, which is helping pneumococcal vaccines reach children in poor countries at a 90% discount. But financing cannot solely be the donors' responsibility. Particularly as developing countries, and populations within these countries, become economically sound, it is critical for governments to increase their health spending and financial contributions to ensure sustainability. GAVI's vaccine co-financing scheme provides a good, sustainable model for this policy.

To echo the goal of the Pacific Health Summit, it is important to remember that successfully tackling NCDs, infectious diseases, and other health challenges will require partnership at all levels and across all sectors, from R&D to financing to delivery. The private sector, across all industries, has a role to play and must work with the public sector to deliver results. I encourage us to take the lessons learned from vaccines and catalyze a global movement toward a healthier future.



About the Summit

Mission

The mission of the Pacific Health Summit is to connect science, industry, and policy for a healthier world through discussions that join scientific advances and industrial innovation with appropriate policies for the prevention, early detection, and early treatment of disease.

Participants and location

Every June, the Summit assembles 250 leaders from science, industry, policy, civil society, public health, academia, and the media, to discuss how to realize the dream of a healthier world. Through formal and informal discussions over two days, we hope to build the foundations of creative partnerships and enlist new partners in global health. The Pacific Health Summit took place in Seattle, USA from 2005 through 2009, and in 2010 began rotating between Seattle and London, UK.

Operations

The Summit is a year-round process. In addition to the June meeting, the Summit provides an ongoing forum for world leaders to improve health by collaborating on problems and solutions, sharing best practices, and forging effective partnerships. The Center for Health and Aging at The National Bureau of Asian Research serves as Secretariat for the Pacific Health Summit.

Geographical focus

Although our initial focus was the Asia-Pacific region, over the years the Summit has expanded globally. Recognizing that there are no borders around the human and financial cost of disease, we focus worldwide on innovation and opportunities.

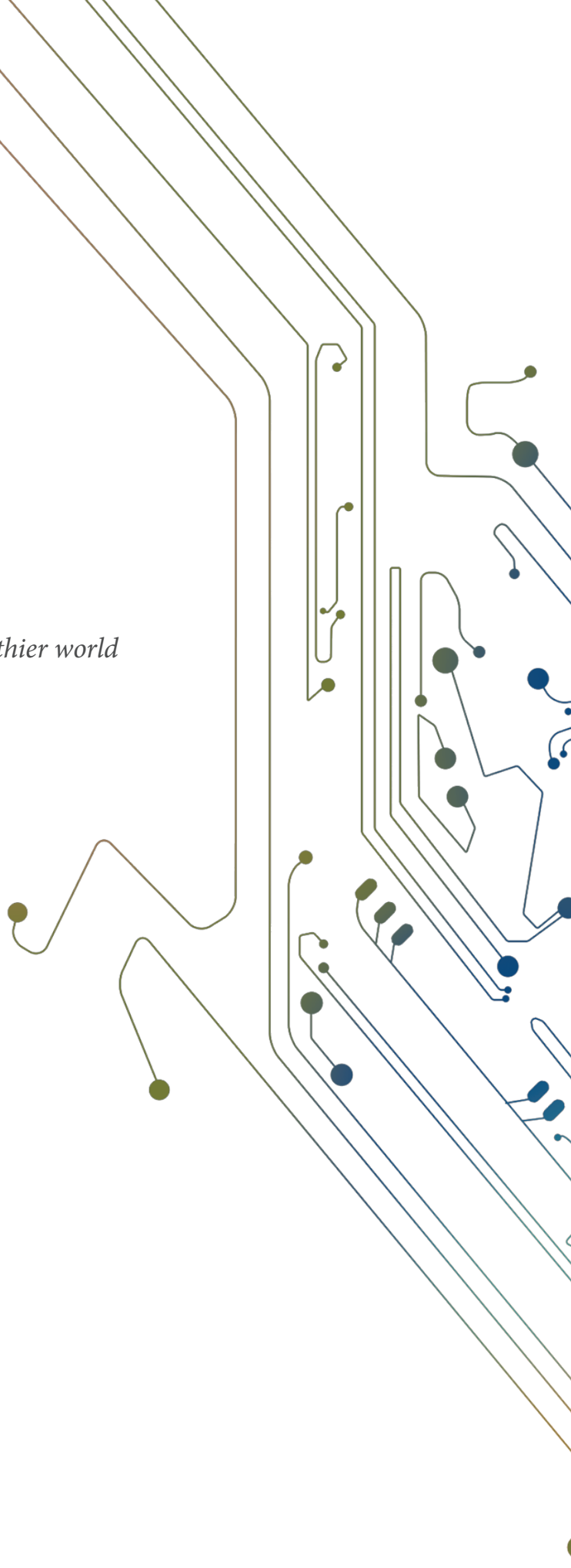
Thematic focus

Each year the Pacific Health Summit focuses on a theme designed to tackle an important problem in global health. This year our theme is "Affordability and Technologies for Health." Past Summit themes were vaccines (2011), maternal and newborn health (2010), MDR-TB (2009), malnutrition (2008), and pandemic influenza (2007), and early health (2005 & 2006).

Organization

The Summit is co-presented by The National Bureau of Asian Research, Fred Hutchinson Cancer Research Center, Bill & Melinda Gates Foundation, and the Wellcome Trust. The Summit is governed by a Senior Advisory Group.

Connecting science, industry, and policy for a healthier world



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