USAID
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U.S. Agency for International Development

Global Health Research and Development Strategy

2017–2022

October 2017

All photos: Amy Fowler/USAID

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Executive Summary

The U.S. Agency for International Development (USAID) is pleased to present its new Global Health Research and Development Strategy (2017–2022). This strategy details USAID's ongoing commitment to addressing some of the world's most challenging health and development issues through technology development, research and evaluation, and introduction and scale-up of real world, evidence-based solutions.

The United States has long recognized that our nation's security and prosperity depend on our ability to address health challenges around the world, including emerging infectious diseases with the potential to threaten the health of Americans at home. USAID has played a critical role in promoting U.S. interests abroad by investing in research and development (R&D) that has led to essential breakthroughs in prevention, diagnosis, and treatment of global diseases. Harnessing the power of research has resulted in more efficient and effective programs and advancements in our efforts to prevent maternal and child deaths, control the HIV/AIDS epidemic, and combat infectious diseases and emerging threats.

Over the next five years, USAID will continue to leverage its extensive network of partners and concentrate on those areas where it is uniquely qualified and has a comparative advantage. USAID will pursue the vision of research and innovation translated into action to improve the health, well-being, and resilience of people around the world. USAID will support collaborative research from the local to the global level, generating evidence on interventions, policies, approaches, and technologies that increase the impact of health programs globally. In order to accomplish this, USAID will focus on three interrelated goals:

1. *To accelerate the development, introduction, scale-up, and sustained use of health technologies, tools, and approaches to address critical unmet needs and emerging challenges.*
2. *To identify, generate, and apply evidence to influence the adoption, implementation, and health impact at scale of priority life-saving health and development interventions.*
3. *To strengthen the capability and resilience of people, systems, and partnerships to conduct research and utilize results to improve health outcomes.*

The U.S. Government's investments in global health R&D help build stronger families, communities, and nations. These investments foster stability and economic growth globally and protect Americans from emerging diseases, such as Ebola and Zika. The true challenge before us now is not only to sustain our progress, but also to deepen and accelerate our efforts, while increasing efficiencies to ensure optimal use of every dollar. Answering President Donald Trump's call "to free the earth from the miseries of disease and to harness the energies, industries, and technologies of tomorrow" will improve lives around the world and here at home.

Global Health Research and Development: Accelerating Success

For more than 50 years, the U.S. Agency for International Development (USAID) has played a pivotal role in saving lives and improving the health of populations around the world through evidence-based development programs. Thanks to critical support of Congress and the American people over various administrations, USAID has contributed to major gains in global health, collaborating with host governments and many other partners and working to strengthen the capacity of countries, so they can ultimately graduate from USAID assistance. Since 2000, these collective efforts have averted more than 49 million deaths from tuberculosis (TB), including among people co-infected with HIV, leading to a 22 percent decline in TB mortality and a 21 percent decline in TB incidence.[1] During the same period, malaria mortality rates have decreased by 62 percent.[2] Since 2003, the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) investments, with USAID support, have helped reduce new HIV infections among children by 60 percent in the 21 countries in sub-Saharan Africa with the greatest HIV/AIDS burden.[3] Today, there are 45 percent fewer maternal deaths and less than half the number of under-5 deaths than there were in 1990.[4]

These successes have been facilitated by USAID's support for global health research, focused on improving the implementation of programs and advancing new technologies and innovative approaches to address critical unmet needs. USAID's global health research is used to develop targeted technologies and generate practical evidence and tools. These tools are directly applied to make programs more efficient, sustainable, and cost-effective, thereby enabling them to scale up more rapidly and reach more people. USAID-funded research has led to many key successes, such as the development and adoption of more effective strategies to prevent maternal, child, and newborn mortality and malnutrition, groundbreaking innovations in contraceptive methods, prophylactic applications of antiretroviral drugs to prevent HIV infections, and new drug formulations for malaria (see page 14 for illustrative examples).

Despite the tremendous progress that has been made in global health over the last several decades, many challenges remain in our ever-changing world. As such, R&D must remain a vital component of USAID's efforts to solve health problems. The highly mobile and interconnected nature of our world has contributed to the emergence and rapid spread of a variety of health threats, including epidemic-prone diseases that may arise in low- and middle-income countries (LMICs), such as Ebola and Zika, as well as some drug-resistant infections that also pose a potential risk to America's health security. USAID's investments in R&D, and those of its partners, are necessary to develop new breakthroughs in prevention, detection, and treatment of emerging threats as well as longstanding global scourges such as HIV/AIDS, TB, and malaria. In addition, much of the suffering caused by disease, which particularly affects the world's poorest and most vulnerable, persists not because we do not have the solutions but because of the complexity of adapting these solutions to fit different contexts. One such example is the global burden of disease from diarrhea, which is largely preventable by known interventions. R&D is crucial to understanding how to better tackle these implementation challenges. Lessons learned internationally can be applied domestically to help reach disadvantaged populations in the United States.

Finally, USAID's global health research partnerships with other countries, donors, and the private sector build reliable scientific capacity and global research networks. The capacity and networks expedite the identification of threats like infectious disease outbreaks, while strengthening the economic development of other countries and expanding markets related to healthcare and technology for American companies and institutions. They can also prevent health outbreaks, improve surveillance, and address malnutrition. Ultimately, focusing on partnerships is critical to planning for country ownership and capacity and USAID's eventual exit strategy.

1. World Health Organization. (2016).Global Tuberculosis Report. Geneva, Switzerland: WHO Press. Available at: http://www.who.int/tb/publications/global_report/en/
2. World Health Organization. (2016). World Malaria Report. Geneva, Switzerland: WHO Press. Licence:
CC BY-NC-SA 3.0 IGO. Available at: http://www.who.int/malaria/publications/world-malaria-report-2016/report/en/
3. PEPFAR. (2017). PEPFAR 2017 Annual Report to Congress. Available at: https://www.pepfar.gov/documents/organization/267809.pdf
4. WHO, UNICEF, UNFPA, World Bank Group, and the United Nations Population Division. (2015). Trends in maternal mortality: 1990 to 2015: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva, Switzerland: WHO Press. Available at: http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2015/en/; You, D., Hug, L., Ejdemyr, S., and Beise, J. (2015). Levels & Trends in Child Mortality. Report prepared for the UN Inter-agency Group for Child Mortality Estimation. Available at: http://www.childmortality.org/files_v20/download/igme%20report%202015%20child%20mortality%20final.pdf

Vision, Mission, and Goals of the Strategy

Vision

Research and innovation are translated into action to improve health, well-being, and resilience of people around the world.

Mission

To support collaborative research from the local to the global level, generating evidence on interventions, policies, approaches, and technologies that increase the impact of health programs globally.

To achieve its global health research and development mission, USAID will focus on three interrelated goals:

1. HEALTH TECHNOLOGIES, TOOLS, AND APPROACHES

To accelerate the development, introduction, scale-up, and sustained use of health technologies, tools, and approaches to address critical unmet needs and emerging challenges.

2. IMPLEMENTATION SCIENCE

To identify, generate, and apply evidence to influence the adoption, implementation, and health impact at scale of priority life-saving health and development interventions.

3. RESEARCH AND DEVELOPMENT SYSTEMS

To strengthen the capability and resilience of people, systems, and partnerships to conduct research and utilize results to improve health outcomes.

This strategy outlines USAID's global health research goals and describes the main approaches that the Agency will employ to achieve those goals across different technical areas and diseases (see Figure 1, page 6). By identifying common goals and approaches, the strategy will remain adaptable and flexible as priorities evolve over time. The strategy was informed by and vetted with a variety of stakeholders, both within and outside of the U.S. Government. These stakeholders were consulted to provide feedback on the importance of global health research, USAID's unique role, and the adequacy and appropriateness of the strategy's goals.

USAID's Role in Global Health Research and Development

USAID coordinates its global health research closely with other U.S. Government agencies, including the National Institutes of Health, the U.S. Centers for Disease Control and Prevention, the Food and Drug Administration, and the Department of Defense. Additionally, USAID coordinates with other bilateral donors and non-governmental and philanthropic organizations. USAID's work emphasizes research that is directly applicable to service delivery programs, complementing the strengths of other U.S. Government agencies. Over the next five years, USAID will continue to collaborate with other U.S. Government agencies and other partners to ensure research activities are efficient and complementary.

In addition, as an Agency with long-standing expertise across sectors, USAID enlists diverse partners from a range of areas such as economic growth, democracy and governance, and food security to inform its health efforts. USAID takes a multi-sectoral approach to achieving its health objectives, working to help countries implement more sustainable and holistic programs that allow people to live healthier and more productive lives.

During the strategy consultation process, stakeholders consistently stated that USAID's comparative advantages in research and development include the Agency's strong in-country presence, implementation expertise, and its engagement with partner governments and local communities. USAID uses its knowledge of the local context, programs, and constraints to help inform prioritization to ensure research efforts ultimately result in sustainable impact where the need is greatest. USAID is well positioned to catalyze local research and support partner countries and communities to develop and apply solutions that have global relevance and local action. In addition, stakeholders stated that USAID's capacity to form strong partnerships was a key asset to maximize the impact of global health research efforts. This includes partnerships with host governments, other U.S. Government agencies, private companies, bilateral and multilateral agencies, donors, non-governmental and faith-based organizations, academia, and other stakeholders within civil society that USAID engages from the beginning stages of the research process.

FIGURE 1. USAID'S CURRENT GLOBAL HEALTH PRIORITIES AND TECHNICAL AREAS OF FOCUS

USAID's Bureau for Global Health focuses on saving and improving lives by pursuing three core priorities, while strengthening health systems:

1. Preventing maternal and child deaths
2. Controlling the HIV/AIDS epidemic
3. Combating infectious disease threats

USAID's specific technical areas

- TB, malaria, and neglected tropical diseases
- Emerging pandemic threats (Global Health Security)
- Nutrition
- Maternal, newborn, and child health
- Prevention, care, and treatment of HIV/AIDS
- Family planning and reproductive health
- Water, sanitation and hygiene (including household air pollution)

USAID's comparative advantage in forming fruitful partnerships is central to the Agency's health R&D approach. USAID recognizes that governments and private entities have complementary strengths and leverages these through diverse, dynamic, and mutually beneficial public-private partnerships that enable resources to be stretched further to achieve development outcomes more effectively and sustainably. Partnerships with the private sector allow USAID to support innovation, develop new technologies, expand the range of technical expertise and skills, streamline operations, and promote the development of sustainable, healthy markets. Relationships with private sector partners, as well as country governments and multilateral organizations, enable USAID to play an important convening role, bringing partners together to engage in collaborative global health research.

USAID's Approach to Global Health Research and Development

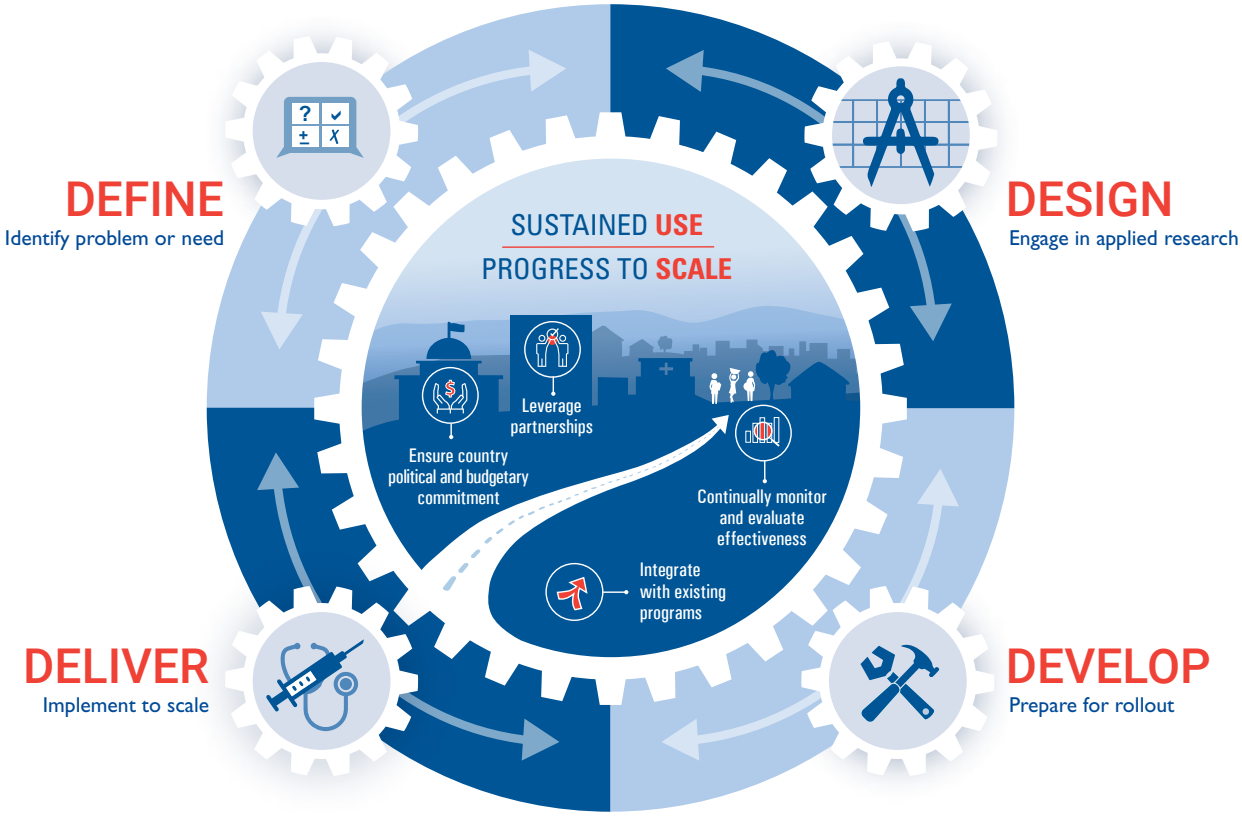
Consistent with the framework used in USAID's prior strategies, the Agency's global health research will continue to be guided by a "research-to-use" approach, which is divided into four interconnected and iterative phases (see Figure 2):

- **Define:** Identifying the problem or need through stakeholder engagement, research synthesis, and information sharing.
- **Design:** Potential solutions or existing interventions to the identified problem are evaluated using "applied research," which assesses the efficacy and cost-effectiveness of the proposed solutions.
- **Develop:** Prepare for the introduction of the new or refined approach and/or intervention by conducting market analyses, feasibility, and pilot assessments.
- **Deliver:** Introduce or implement the approach and/or intervention with the aim of achieving sustained scale of the solution, which is critically important to the strategy, and will improve health at the country level and also foster collaborative learning at the global level.

In addition to these phases, USAID implements ongoing monitoring and evaluation of all programs to inform the research and improve outcomes.

USAID is continually employing its knowledge of program implementation to inform how interventions will be used and which are most needed to influence research priorities. An important aspect of USAID's approach is the use of multidisciplinary methods. These methods include those from biomedical research, epidemiology, demography, mathematical modelling, social science fields such as economics, anthropology, and political science, and best practices from the private sector, like human-centered design and early and comprehensive product launch planning. By using these complementary methods and drawing on the expertise of USAID's deep reservoir of partners, the Agency is able to better understand disease burden, risk factors, behaviors and norms, and other health determinants to inform health strategies and approaches. USAID's R&D decision-making is also guided by broader principles of the Bureau for Global Health and the Agency, including sustainable development, value for money, gender equity, and protecting the most vulnerable.

FIGURE 2. AN ILLUSTRATION OF USAID'S APPROACH TO GLOBAL HEALTH RESEARCH AND SUSTAINED IMPLEMENTATION



Goals of USAID's Global Health Research and Development Strategy

1. HEALTH TECHNOLOGIES, TOOLS, AND APPROACHES

To accelerate the development, introduction, scale-up, and sustained use of health technologies, tools, and approaches to address critical unmet needs and emerging challenges.

Effective new or refined technologies serve a critical role in addressing pressing health issues across the spectrum of prevention, diagnosis, and treatment. These technologies may build on or replace those already in use or take an innovative and novel approach in addressing a health problem. Important gaps in scientific evidence also exist regarding which approaches are the safest and most effective to prevent or treat certain health conditions and what factors influence the transmission dynamics and burdens of diseases.

Whether a concept for a new technology or improved intervention lives up to its promise depends not only on its effectiveness in highly-controlled trials, but also on whether it is designed for and responsive to the populations it is intended to serve. Innovative technologies, approaches, and tools must not only be effective, but also cost-effective and able to be introduced, scaled rapidly, and be sustainable in the real-world environments in which they will be utilized. Therefore, USAID's approach is to "begin with the end in mind" to ensure technologies and interventions prioritized for development and introduction will ultimately be appropriate for the intended context and recipients. USAID can uniquely capitalize on its country-specific knowledge and implementation expertise to ensure designs and strategies account for user and provider needs, resource-limited service delivery challenges, and other constraints from inception.

USAID will employ the following actions to achieve this goal:

Prioritize R&D based upon health impact potential: USAID will continue to collaborate closely with private and public partners, using objective criteria and evidence to develop informed decisions on what new technologies and research are the most important to respond to critical unmet public health needs and emerging threats. USAID will also use these relationships to develop well-defined target priorities for new technologies. Critical product characteristics should include safety, efficacy, cost-effectiveness, acceptability to both beneficiaries and providers, delivery feasibility, and overall potential for public health impact.

Intensify private sector engagement: USAID will continue to strategically use Global Development Alliances and proven mechanisms such as Grand Challenges and Broad Agency Announcements to enable partnership and risk-sharing with the private sector, leveraging complementary expertise to develop innovative and sustainable solutions to complex public health challenges.

Ensure cohesive "end-to-end" coordination and planning: The development and introduction of global health technologies and more effective approaches requires the skills and input of a number of partners. USAID and its partners will continuously strive to strengthen the efficiency of partnership structures and utilize collaborative work-planning, which clearly outlines the responsibilities of the various partners, the resources required, the risk at different stages, and go/no-go decision criteria. Best practices outlined in USAID's IDEA to IMPACT series will continue to serve as a guide to help practitioners accelerate impact through better coordination and earlier planning for product introduction and scale.

Evaluate progress, risk, and priorities systematically: USAID will regularly and systematically evaluate the progress of research and technologies by assessing risk and progress at every stage. Independent analyses of issues related to regulatory constraints, safety, manufacturability, acceptability, cost-effectiveness, and feasibility of scaling up to population-level coverage informs decisions, thereby enabling the adjustment of strategies, priorities, and risk-mitigation measures. Using this rigorous approach, USAID will increase the efficiency of its R&D funding and enable maximum health impact.

Employ market mechanisms and private sector tools: USAID will continue to utilize market shaping, innovative financing mechanisms, and other market-based tools to identify and overcome market inefficiencies for a more suc-

cessful launch and accelerated scale-up of new technologies and improved interventions. By addressing transaction costs, insufficient market information, and imbalanced risks, USAID can use its purchasing power, technical knowledge, and convening power to leverage the expertise and active engagement of the private sector. Private sector tools include employing social and behavioral research methods that actively engage potential beneficiaries, providers, and other stakeholders throughout the development and introduction process to ensure decisions are informed by the needs and expectations of those benefiting from the product or intervention.

Achievement of this goal will result in:

- Accelerating development and introduction of technologies that have the potential of having a high impact on improving health outcomes.
- Identifying which interventions are most effective against high priority health problems.
- Generating new knowledge that will have applicability to health globally, including in the United States.
- Addressing market inefficiencies, leveraging private capital, and partnering with the private sector to develop new and refined technologies and accelerating access to them.
- Designing innovative technologies and end-to-end analyses that result in reduced risk and more efficient and cost-effective investments while considering end-users, providers, stakeholders, and local contexts.

Illustrative Examples of USAID's Work under Goal 1

- **The OPTIMIZE Consortium is an innovative global partnership between public and private sector organizations focused on accelerating access to simpler, safer, more affordable, and more effective HIV treatments through the development and testing of novel drug combinations and formulations. These clinical activities are paired with an integrated approach to ensure accelerated access to these improved HIV treatment regimens through prioritization of evidence generation for global guidelines updates, collaboration to address packaging and registration issues, and coordinated product launch planning across national and global procurers and other stakeholders. Together, these efforts can enable an increasing number of people to access HIV treatment, including an additional 2 million people in South Africa alone. Further, through a companion project called EQUIP, service delivery innovations such as multi-month dispensing and self-testing can further increase the efficiency of HIV testing and treatment.**
- **USAID's support in the developmeant of a new re-mapping protocol for lymphatic filariasis has resulted in improved disease control efforts and reduced costs. For example, the protocol was successfully used in Tanzania and Ethiopia to "shrink the map" of where to provide treatment for lymphatic filariasis (a painful and disfiguring neglected tropical disease) by identifying and deprioritizing areas of low prevalence, which saved tens of millions of dollars in drug and distribution costs. The methodology was approved by the Word Health Organization (WHO) Scientific and Technical Advisory Group and will now be utilized in other countries.**

2. IMPLEMENTATION SCIENCE

To identify, generate, and apply evidence to influence the adoption, implementation, and health impact at scale of priority life-saving health and development interventions.

Although new health technologies, tools, and practices can help address critical unmet needs, an even larger gap exists between the development of evidence-based policies, programs, and interventions and their effective translation, introduction, and ultimately, implementation at scale. It is critical not only to know what interventions to provide, but also how to provide them most effectively in specific contexts and under specific constraints. This is why USAID prioritizes implementation research to understand how to evaluate, in real time, new and existing interventions with a focus on introduction and scale-up. Although many pilot interventions may show results on a small scale under highly controlled conditions, the transition to implementation at scale under real-world conditions is often much more complicated. Failure to address these issues can delay roll-out, contribute to unnecessary costs, and limit impact.

USAID's approach is grounded in engagement of a broad set of critical stakeholders throughout the research-to-use process, starting with planning and prioritization, moving to introduction, and including rigorous study of these processes to identify bottlenecks and course-correct in real time. To generate the political and stakeholder commitments that will ultimately enable public health impact, it is essential to ensure research is embedded in real-world policy, practice, and implementation. USAID's approach is underpinned by implementation research that is developed with partner country stakeholders to generate locally relevant evidence. At the same time, many findings about what works and what does not work with regard to implementation have relevance beyond a single country. Hence, USAID also supports cross-country collaboration to share emerging lessons and experiences. The successes of one country in addressing implementation challenges often inspire leaders in other countries to take action to revise their own policies, plans, and practices.

Illustrative Examples of USAID's Work under Goal 2

- **USAID is currently supporting implementation research to document and refine country-led approaches to roll out WHO's new guidelines on community management of possible severe bacterial infections in neonates where in-patient treatment is not possible. This multi-country effort will not only inform and strengthen the ability of the health systems to implement the new guidelines in the study sites, but also will inform adoption of the approaches for national scale-up. USAID and its partners will play a key role in sharing lessons learned globally, through concerted dissemination of findings and through establishing a community of practice comprised of researchers, implementers, and policymakers from across the globe.**
- **USAID is collaborating with the United Nations Children's Fund (UNICEF) to develop a tool that summarizes evidence on health system strengthening efforts. The final tool will be incorporated into the "UNICEF's EQUIST" web-based platform and will provide data and evidence to help policymakers and advocates make evidence-based investment decisions to strengthen health systems.**

USAID will employ the following actions to achieve this goal:

- **Develop and regularly update, when appropriate, prioritized research agendas within and across countries:** USAID Bureau for Global Health will provide technical support to encourage field missions to develop and engage in the context of programmatic investments to prioritize global health research and learning agendas, soliciting input from local stakeholders. In parallel, USAID will also engage and collaborate with key partners to build consensus on what specific research topics should be prioritized for cross-country learning and to identify the most promising practices for testing, refinement, and scale-up.

- **Embed implementation research/science in programs with real-time feedback:** Beginning in the early stages of planning, USAID will proactively integrate research into the implementation platforms it supports and existing public health systems. Continuous feedback loops between the embedded research and programs/interventions will enable timely improvements on an ongoing basis, while also strengthening capacity of implementers to understand, conduct, and use research.

- **Synthesize data and strengthen use of evidence for decision-making:** USAID will support collaborative reviews and analyses of evidence to compile practical knowledge drawn from multiple field experiences. USAID will support countries to utilize findings from these evidence syntheses and other studies on disease burden, determinants of health, and cost-effectiveness analyses to inform policies and service delivery programs.

- **Identify and scale high impact practices for service delivery:** USAID will support testing of innovations and promising practices for improving service delivery, identification and synthesis of evidence on highly effective practices, and widespread implementation of these approaches. Some key areas of interest will be high impact practices related to community-based service delivery, improving quality of care at scale, and promoting positive changes in behaviors and social norms that influence health.

- **Develop and refine tools and approaches to improve health system performance:** To improve service delivery and health system performance, USAID will work with partners to increase use of cost-effectiveness analyses, develop improved operational approaches and tools that identify priority areas for health systems strengthening, and measure and demonstrate progress in key indicators over time. These tools and approaches will be tested in countries to make refinements and to support development of guidance for future use in other countries.

Achievement of this goal will result in:

- Increasing the number of feasible and cost-effective interventions applied at scale and supporting cost-effectiveness analyses.

- Identifying new innovations in global health service delivery.

- Reducing the lag time between scientific breakthroughs and widespread access.

- Improving the ability of USAID and partners to use research results to inform programs in their local contexts.

- Instilling a culture that promotes the generation and use of evidence to inform decisions.

- Using proven tools and frameworks to improve health system performance and service delivery.

- Addressing bottlenecks in prevention and control of infectious diseases.

3. RESEARCH AND DEVELOPMENT SYSTEMS

To strengthen the capability and resilience of people, systems, and partnerships to conduct research and utilize results to improve health outcomes.

While there is substantive scientific and technical capacity among individuals and networks in USAID partner countries, the health research systems that support them are often overburdened and under-resourced. This lack of capacity can have detrimental global effects, which can extend to the United States, such as through delayed identification of and response to infectious disease outbreaks until after a disease has begun to spread beyond national borders. Therefore, building the capacity of partner countries to respond more quickly to potential outbreaks is important to protect the safety of the global community as well as Americans here at home. Strengthening these systems also empowerss and maximizes local talent and enables communities and countries to conduct their own research without external assistance, often leading to global benefits. USAID has consistently supported efforts in this area by partnering with country institutions, such as universities and policy think tanks, on research projects often involving a training and/or mentoring component to ensure sustainability. As USAID strengthens local systems in developing countries, the Agency also draws on its extensive networks of U.S.-based academic and research institutions, as well as private companies, other donors, implementing partners, and local missions, to develop strong international partnerships, which continue long after USAID's support ends.

Through these efforts, USAID engages individuals within institutions that may not traditionally focus on science and technology, such as non-governmental organizations and diverse government agencies that use the knowledge and technology generated through research for cross-sectoral benefit. For example, through collaborations with the livestock or agricultural sector, capacity can be built to detect diseases in the food supply before they spread to humans. USAID's efforts also complement those of other U.S. Government agencies such as the National Institutes of Health and the Department of Defense, which are more focused on building the capacity of a different cadre of scientists who will eventually help to form a productive research community in country. Building on its existing relationships, USAID seeks to ensure a systematic approach to strengthening research capabilities of local organizations and institutions to better implement, monitor, and evaluate health research activities, use information to inform decision-making, and promote knowledge sharing.

USAID will employ the following actions to achieve this goal:

- **Strengthen institutional research capacity:** USAID will partner with U.S.-based academic and research institutions to build the capacity of local institutions and systems in LMICs to conduct mutually beneficial, high-quality, and efficient research. This will include building relevant research management systems, including financial, administrative, and quality assurance capacity, while strengthening systems used by ministries of health and other partners for research-related policy development, oversight, and prioritization.

- **Build research capacity of emerging leaders:** USAID will help to foster environments that provide better opportunities for young scientists and public health professionals and mentorship opportunities for senior scientists in the United States and in developing countries to design and lead research with local, regional, and global relevance and ownership.

- **Expand international research networks:** USAID will facilitate knowledge sharing and learning across and within countries through supporting global and regional networks, systematic multi-disciplinary analyses of advances and challenges, web-based knowledge-sharing platforms, and efforts to engage stakeholders to build consensus within and across global, national, and local settings.

- **Engage partners including civil society and community advocates to ensure responsive research:** USAID will continue to partner with civil society to ensure research follows Good Participatory Practice (GPP) guidelines while being responsive to communities and effectively disseminating and interpreting results for the public. These efforts nurture trust in the research endeavor and enable clear communication of the relevant findings locally and globally.

- **Improve systems for data management, collaborative data analysis, and data platforms:** USAID will provide focused support to improve data management systems that contribute to research and research utilization within programs. The Agency will also strengthen mechanisms that facilitate open-data sharing and collaborative analysis of data from research studies and from real-world public health programs.

Achievement of this goal will result in:

- Increasing capacity of public and private actors in USAID partner countries to conduct and utilize research without depending on external donor assistance.

- Strengthening individual and institutional capacity, contributing to self-sustaining health research systems in partner countries and fruitful long-term regional and global research partnerships.

- Increasing productivity of young scientists and public health professionals to lead research and implementation science projects and to publish manuscripts.

- Sharing results globally based on high quality research, which can inform analysis of topics such disease trends, surveillance, and risk factors.

Illustrative Examples of USAID's Work under Goal 3

- **Through USAID's long-term partnership with the International AIDS Vaccine Initiative (IAVI), sustainable leadership has been developed in key areas of HIV vaccine design and development. This has been done by expanding the scope of the pioneering Vaccine Immunology Science and Technology for Africa (VISTA) program, which pairs leading global institutions with U.S.- and Africa-based clinical research centers to transfer next-generation technologies to areas most affected by the epidemic. This program depends upon premier American Universities and U.S. Government agencies like the National Institutes of Health and the Department of Defense as key partners in these efforts.**

- **USAID has supported the WHO Special Programme for Research and Training in Tropical Diseases (TDR) to implement capacity building for tuberculosis-related research through the Structured Operational Research and Training IniTiative (SORT IT) program, which trains public health workers to conduct research using data from their own programs. Through a year-long process involving three week-long trainings coupled with ongoing mentoring from an experienced researcher, participants propose a research topic to improve service delivery in their context, gather and analyze data from the programs on which they work, and then write a paper and policy brief. While USAID's support for SORT IT has been specific for TB research, this highly practical approach is now been applied by WHO-TDR and its partners to build the research capacity of implementers working on many other diseases in a rapidly expanding number of countries throughout the world.**

Examples of USAID's Global Health Research and Development

Chlorhexidine

Chlorhexidine is a low-cost antiseptic. USAID funded clinical trials in Bangladesh, Nepal, and Pakistan that demonstrated the application of chlorhexidine to the umbilical cord stump prevents newborn infections and saves lives. Following these trials, a Saving Lives at Birth grant piloted the scaling of chlorhexidine in Nepal. Today, chlorhexidine is fully operational in 50 of the 75 Nepalese districts, covering more than 65 percent of all births, saving approximately 4,000 babies to date. Further, the experience and achievements regarding chlorhexidine uptake in Nepal have served as a model for other countries, with 21 countries currently in the process of piloting or scaling up the life-saving antiseptic.

Respectful Maternity Care

Disrespectful treatment and abuse of women around the time of labor and delivery have long been anecdotally understood to be a disincentive for women to utilize facilities for delivery. USAID supported two implementation research studies in Tanzania and Kenya to measure levels of abuse and to involve health professionals in developing solutions. Using this regionally derived evidence, USAID has been able to support governments and nationally owned movements to institutionalize respectful care. Concurrently, USAID has worked with WHO and the White Ribbon Alliance to advance evidence-informed practices in respectful maternity care, which have collectively served to elevate research results into the global discourse, laying the foundation for the inclusion of the Experience of Care within the new WHO Standards of Care to Improve Maternal and Newborn Quality of Care in Facilities.

Antimalarial Drugs

During 2011–2014, two new antimalarial drugs, Eurartesim and Pyramax, were launched by the Medicines for Malaria Venture, a product development partnership for antimalarial drugs supported by the U.S. Government through the U.S. President's Malaria Initiative (PMI), the Bill & Melinda Gates Foundation, and others. Two novel classes of malaria drugs are in the final stages of clinical trials, and if all goes according to plan, they will be on the market by 2018. These new treatments offer the greatest hope for an alternative to artemisinin-based combination therapies in the next few years.

TB GeneXpert

Tuberculosis is the leading infectious disease killer in the world, claiming 1.8 million deaths annually. USAID and partners supported development, trials, and implementation research with the new Xpert molecular diagnostic, allowing its rapid introduction and a revolution in how TB is diagnosed because the test is rapid, accurate, and practical. By June 2014, the global partners had procured more than 7.5 million Xpert tests in the public sector in 108 countries. As a result, TB transmission was cut, suffering was alleviated, and money was saved.

Fighting Ebola Grand Challenge

During the 2014 Ebola outbreak, proper hydration was critical for keeping patients alive. Infusion pumps are commonly used for this purpose, but they are large, expensive, and require electricity. Most healthcare workers in West African Ebola treatment centers were using gravity-drip bags, counting IV fluids drop by drop to ensure patients received the right dose at the right rate. The Fighting Ebola Grand Challenge provided funding to Shift Labs in Seattle to further develop and validate a compact device, DripAssist, that monitors fluid flow for a fraction of the cost of hospital pumps. Healthcare workers have praised DripAssist as a game-changing solution. It has received approval by the Food and Drug Administration and is ready for use during another outbreak.

Saving Lives at Birth

The leading cause of death for mothers in the poorest parts of the world is postpartum hemorrhage. While the gold standard therapy for management of postpartum hemorrhage is an oxytocin injection, the drug degrades in hot climates unless refrigerated and can only be administered by trained personnel. With funding from Saving Lives at Birth, Monash University, Melbourne, Victoria, Australia, is developing a heat stable, simple-to-use, dry powder oxytocin inhaler that is safe and works as well as current practice. The product has been licensed to GlaxoSmithKline to co-develop, register, and distribute it in regions with high rates of maternal mortality. Once available, inhaled oxytocin has the potential to save about 20,000 more lives a year than the current formation.

Conclusion

The USAID Global Health Research and Development Strategy (2017–2022) will guide USAID's work in research and development over the next five years. The Strategy demonstrates USAID's commitment to prioritizing health-related research and development as a critically important component of the larger effort to achieve the Agency's health and development objectives. Further, this document identifies common goals and approaches to global health research across USAID's technical areas and will remain flexible to adapt as priorities and goals change over time.

The challenge now is to sustain the progress made to date, while deepening and accelerating USAID's efforts to achieve its global health and development objectives. Informed by cutting-edge evidence and analysis, USAID will continue working to identify the most promising opportunities from early stage research and assessment, to field implementation and use. The U.S. Government's investments in global health research and development improve and save lives, and these investments foster stability, contribute to economic growth, strengthen U.S. national security, and expand markets related to healthcare and technology for American companies and institutions.

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