

2017

ANNUAL REPORT

IMPROVING LIVES THROUGH IMMUNIZATION

**Our mission is to make
vaccines more accessible,
enable innovation and
expand immunization
across the globe.**

“Sabin is committed to making sure all people are protected against vaccine-preventable diseases, regardless of who they are or where they live. That's why our work focuses on diseases that primarily afflict communities in poverty. In 2017, Sabin evaluated a number of promising vaccine candidates for future development that have the potential to protect the lives of millions of people around the world.”



–**AMY FINAN**, CHIEF EXECUTIVE OFFICER, SABIN VACCINE INSTITUTE
[READ THE Q&A](#)



“Sabin focuses on strong partnerships and collaboration at the regional, country and global levels. We work across the spectrum of vaccines from research to delivery, and along the way we assist everyone from the regional immunization manager to the minister of finance in addressing the many challenges that limit access to and uptake of vaccines.”

–**BRUCE GELLIN**, M.D., M.P.H., PRESIDENT,
GLOBAL IMMUNIZATION, SABIN VACCINE INSTITUTE

“Many of the challenges facing public health and the development and utilization of vaccines have been the same over the years — the inability of industry to pursue many of the vaccines that aren't economically viable, as well as the slow, plodding activities of the international organizations and our government. It leaves a space for a small organization that can adapt and exploit new ideas quickly. Sabin fills a major niche in the vaccine field because we are able to move quickly.”



–**RETIRED MAJOR GENERAL PHILIP K. RUSSELL**, M.D.,
BOARD OF TRUSTEES AND PAST CHAIR, SABIN VACCINE INSTITUTE

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LETTER FROM THE CHAIR & THE CEO

For 25 years, Sabin has been a trusted partner, working with countries, the World Health Organization (WHO), Gavi, the Vaccine Alliance, the Bill and Melinda Gates Foundation, and regional stakeholders to improve immunization. From vaccine research to policy solutions, Sabin addresses the challenges facing immunization by working across borders with local, regional and global partners.

In 2017, we welcomed new leadership, launched initiatives and continued our efforts to enable vaccine access and uptake, advance vaccine knowledge and innovation, and support research and development for vaccines and immunization.

From Tbilisi to Nairobi, Sabin convened country stakeholders and regional decision makers to discuss issues as varied as vaccine confidence, immunization legislation and new typhoid vaccines. By bringing together people from different countries with different areas of expertise to share knowledge and evaluate potential solutions, we pollinate new ideas, inspire leadership and cultivate consensus.

We are building upon Dr. Albert Sabin's legacy of spurring innovative thinking in the service of immunization across the spectrum, from vaccine discovery to uptake. Sabin is fostering networks to drive innovation, from vaccine development to public understanding of vaccines.

Last year, Sabin evaluated opportunities to support vaccine development for diseases that have been overlooked despite posing a threat to billions of people. We identified a number of promising vaccine candidates and are exploring partnerships to continue development of these much-needed vaccines.

Sabin's landmark surveillance study to establish the burden of typhoid and paratyphoid in Bangladesh, Nepal and Pakistan, completed its first year of enrolling participants in 2017. Data from the study shaped WHO's Strategic Advisory Group of Experts (SAGE) recommendations and contributed to Gavi, the Vaccine Alliance's decision to dedicate \$85 million to help low-income countries introduce the typhoid conjugate vaccine, where typhoid kills more than 128,000 people each year, primarily children.

In December, we received funding from the Page Family Foundation for a new initiative to spark innovation that will speed the development of next-generation influenza vaccines. Sabin will foster partnerships and dialog among diverse groups to develop new ideas to drive development of a universal flu vaccine that offers broad, long-lasting protective immunity against both seasonal and pandemic strains of influenza.

At Sabin, we believe that when we draw on a wider net of collective intelligence and capabilities, we identify better solutions. Together, we increase knowledge and understanding and expand opportunities that ultimately save lives every day.

AXEL HOOS,
M.D., Ph.D.,
Chair,
Board of Trustees,
Sabin Vaccine Institute

AMY FINAN,
Chief Executive Officer,
Sabin Vaccine Institute

ACCELERATING VACCINE INTRODUCTIONS

THE FIRST TYPHOID CONJUGATE VACCINE

One-third of the world's population is at risk of contracting typhoid and paratyphoid, two bacterial diseases collectively known as enteric fever. These diseases are spread through food and water contaminated with different serovars of *Salmonella enterica*. Typhoid alone sickens 12 million people and kills more than 128,000 people every year, primarily among children in endemic countries in Asia and Africa. The threat of typhoid is made more urgent by the growing rate of drug resistance. While typhoid can be treated with antibiotics, the number of cases resistant to available antibiotics is increasing, with some strains developing multi-drug resistance. The mounting threat of drug-resistant typhoid is leaving patients with fewer accessible and affordable treatment options.

Fortunately, newly developed typhoid conjugate vaccines offer improved protection against typhoid, thereby reducing the need for antibiotics and potentially slowing the emergence of drug-resistant typhoid strains. Furthermore, the new vaccines offer critical advantages over previously available typhoid vaccines, including longer duration of protection, fewer doses required and the ability to protect children under two years of age. In 2017, Sabin successfully implemented several initiatives to support the introduction of typhoid conjugate vaccines around the globe by leading a surveillance program to quantify the burden of disease in Asia and through its Coalition against Typhoid.

TYPHOID SURVEILLANCE — FROM EVIDENCE TO ACTION

Surveillance data is important to inform decision making for typhoid prevention strategies. Only by knowing the burden of typhoid — and knowing where and at what

age people are affected — can we implement effective evidence-based public health measures and plan for vaccine introductions.

To address the need for accurate data, Sabin launched a landmark surveillance study to determine the burden of typhoid and paratyphoid in Bangladesh, Nepal and Pakistan: the Surveillance of Enteric Fever in Asia Project (SEAP). Through SEAP, Sabin has established a surveillance network of seven hospitals and 12 laboratories, collaborating with local partners to identify patients with enteric fever.

Sabin has collected data from more than 9,600 individuals as of December 31, 2017, making it the largest typhoid surveillance study ever conducted. Data generated by SEAP not only establishes the burden of disease, fatality rate and complications, but also provides baseline measures for vaccine effectiveness studies and assessments of other prevention and control measures. Additionally, the study includes the development of a biobank of *Salmonella* strains for use in future research, including studies designed to assess the development of drug resistance, one of the greatest threats to typhoid treatment.

Sabin's surveillance data quickly moved from evidence to action when it was analyzed to inform the global introduction of a new typhoid conjugate vaccine. Sabin provided the WHO's SAGE Typhoid Working Group with complete data sets for use in the evaluation of the new typhoid conjugate vaccine, alongside disease data from other regions. And, in November, Gavi, the Vaccine Alliance, reviewed the data set from SAGE before deciding to dedicate \$85 million to help low-income

countries introduce the typhoid conjugate vaccine. The surveillance data have been invaluable in updating recommendations for typhoid vaccine use and will continue to be analyzed as an evidence base in the development of future prevention and control interventions.

By the end of 2017, of 9,600 patients enrolled in Sabin's study and nearly 3,000 were identified as enteric fever positive — the most of any typhoid surveillance study to date.

We are proud of the role Sabin is playing to provide the evidence needed to promote vaccination in typhoid-endemic regions, reduce disease incidence, protect young children and decrease the need for antibiotics.

Learn more about Sabin's Surveillance for Enteric Fever in Asia Project in Pakistan, Bangladesh, and Nepal.

THE COALITION AGAINST TYPHOID

A strong advocacy base, which includes representation from a range of sectors, is essential to successful implementation of integrated typhoid prevention and control efforts. Through its typhoid initiatives, Sabin has worked tirelessly to build such a global network of advocates to ensure policies and resources are available to address a myriad of issues related to typhoid diagnostics, treatments, vaccines, and water, sanitation and hygiene interventions. Critical to these efforts has

been Sabin's Coalition against Typhoid, which biennially hosts the International Conference on Typhoid and Other Invasive Salmonellosis.

In early April, more than 250 researchers from 38 countries gathered in Kampala, Uganda, for Sabin's 10th International Conference on Typhoid and Other Invasive Salmonellosis. The three-day conference — the world's only such meeting devoted to the diseases — centered on the theme "From Evidence to Action," as attendees reviewed crucial developments and data in advance of key meetings where the typhoid conjugate vaccine was reviewed and ultimately recommended.

Expanding partnerships and collaborations is essential to continuing these exciting successes. In 2017, the Coalition against Typhoid and the Typhoid Vaccine Acceleration Consortium (TyVAC) joined forces to Take on Typhoid. TyVAC is a partnership between the Center for Vaccine Development and Global Health at the University of Maryland School of Medicine, the Oxford Vaccine Group at the University of Oxford, and PATH dedicated to accelerating the introduction of new typhoid conjugate vaccines and focusing attention on the impact of typhoid fever.

88% of respondents to a post-conference survey said they planned to implement techniques learned at the Coalition against Typhoid conference in their work.



More than 250 researchers from 38 countries attended Sabin's 10th International Conference on Typhoid and Other Invasive Salmonellosis.

SUPPORTING COUNTRIES TO IMPROVE IMMUNIZATION POLICIES

SUSTAINABLE IMMUNIZATION FINANCING, POLITICAL WILL AND LEGISLATION

Many lower-income countries have greatly expanded their immunization programs with support from Gavi, the Vaccine Alliance. But as their economies grow and Gavi withdraws its support, countries are required to scale up domestic financing to fully fund their immunization programs. This transition can be challenging for countries that have relied on donor funds, but now are required to achieve self-sufficiency by allocating national funds to protect citizens with life-saving immunizations.

A decade ago, Sabin launched a pilot program in 15 Gavi-supported countries to assist these countries in

taking long-term financial ownership over their immunization programs. In subsequent years, Sabin's Sustainable Immunization Financing (SIF) Program worked with a total of 23 countries to support national immunization programs, develop and pass legislation to establish immunization as a national priority, design novel immunization financing mechanisms, and create long-lasting domestic advocacy coalitions to support immunization.

Sabin's regional SIF senior program officers worked closely with their respective ministries of health and finance, as well as parliamentarians, to build political will and support for immunization. Sabin organized and led activities that encouraged stakeholders to share information and work together to determine the



Workshop participants in Senegal discuss how to use economic evidence to increase sustainable funding for immunization.

best course of action for their countries. Through this approach, the SIF Program effectively supported each country in its transition toward sustainable financing of immunization programs.

Time after time, we have seen how essential country ownership is to building sustainable immunization programs. In 2017, Sabin successfully supported transitions from Gavi support to national ownership in numerous countries, such as Madagascar, Kenya, Senegal and the Democratic Republic of the Congo (DRC). Positive outcomes in these countries included development of new legislation, immunization financing laws, and greater use of economic evidence to increase sustainable immunization funding.

As an example, Sabin supported the creation of a parliamentary network for immunization in DRC, which engaged provincial officials and encouraged them to establish budget lines and allocate sufficient funds.

In early 2017, Sabin also held regional workshops in Moldova and Georgia to discuss legislation, focused not only on financing immunization, but also on improvements to immunization services and expanding coverage through regulation.

With the support of grants from the U.S. Centers for Disease Control and Prevention (CDC) and Gavi, Sabin has been instrumental in assisting countries in developing novel domestic policies and funding solutions that would help ensure sustainable immunization programs for decades to come. Although the SIF Program will conclude in 2018, Sabin remains committed to supporting the development of country-led, evidence-based solutions to extend the full benefits of immunization to all people, regardless of who they are or where they live. In the year ahead, Sabin plans to hold final workshops for parliamentarians from seven Eastern European countries to advance immunization in the region.

"At the beginning, people said, 'What is this regarding advocacy, what is this regarding finances?' Vaccination was considered work done by partners, meaning it was them and not us who supported the program. But since then we have gained awareness that vaccinations are an important part of our society's development."

—HON. GRÉGOIRE LUSENGE, Parliamentarian
and President of the DRC Parliamentary
Support Network for Immunization

SPURRING INNOVATIVE APPROACHES TO TACKLE INFLUENZA

A NEW INITIATIVE TO ACCELERATE DEVELOPMENT OF A UNIVERSAL FLU VACCINE

On the 100 year anniversary of the 1918 Spanish flu pandemic, which killed up to five percent of the world's population, we are more vulnerable than ever to the next influenza pandemic, which could strike at any time. Sabin received funding for a multi-year initiative to foster innovative approaches to speed the development of a universal flu vaccine — one that offers broad, long-lasting protective immunity against both seasonal and pandemic strains. Sabin's initiative will feature several strategic partnerships, including collaborations with the Aspen Institute and the World Economic Forum.

"At our current pace, the world is, at best, a decade away from developing a universal flu vaccine, and only a significant disruption of our current research path will change that."

—BRUCE GELLIN, M.D., M.P.H., President, Global Immunization,
Sabin Vaccine Institute (published in *USA TODAY*)

EMPOWERING IMMUNIZATION MANAGERS

THE WORLD'S LARGEST NETWORK OF IMMUNIZATION MANAGERS

Effective immunization programs rely on trained immunization managers who facilitate every element, from cost-effective vaccine procurement to the vigilant monitoring of vaccine safety and efficacy. Their continued professional development is essential, but they often work in isolation from colleagues and without access to robust management tools and resources.

In an effort to address these challenges, Sabin launched the International Association for Immunization Managers (IAIM) in 2013 with support from the Bill and Melinda Gates Foundation. After several years of growing the association, immunization managers from 30 countries attended IAIM's Joint Regional Meeting for the Americas and Europe in Madrid, Spain, in early 2017 to discuss an issue of increasing concern: vaccine acceptance and demand. Attendees from low-, middle- and high-income countries discussed how to foster vaccine confidence through strategies informed by behavioral science. Ninety-one percent of survey respondents reported that they felt better equipped to address specific vaccine perceptions after attending the meeting.

Building on four years of work and progress, Sabin began an extensive evaluation of IAIM in late-2017 with the goal of offering additional educational opportunities to a greater number of members and better serving the needs of immunization managers. The evaluation included input from hundreds of immunization managers who provided detailed recommendations for new tools and services. Sabin is continuing to work with immunization managers to maximize the value of the IAIM professional peer network.

Today, the IAIM Network is the largest international network of immunization managers and offers opportunities to connect with peers, share knowledge, and strengthen technical and managerial skills. The Network provides immunization professionals from more than 100 countries with learning opportunities and resources, leveraging the expertise of partners from across government, civil society, industry and academia. By engaging in a peer community and strengthening management and leadership skills, immunization managers can grow from professional support, ultimately resulting in increased immunization coverage.

"Sabin has created this platform whereby the members from all different countries gather and share and learn the best practices... We may work in different countries, but we share a common goal. [The IAIM Network] helps us exchange ideas from different countries that will help us work much better and easier at home."

—DOLLEY TSHERING, District Health Officer, Trongsa District, Bhutan

IMPROVING SCIENTIFIC KNOWLEDGE

THE CIRO DE QUADROS VACCINOLOGY COURSE FOR LATIN AMERICA

As part of Sabin's mission to improve knowledge about vaccines and build the capacity of those we work with, Sabin organizes an annual vaccinology training course for immunization professionals from Latin American and Caribbean countries. Among its focus areas, the course provides critical information about new vaccines to help ensure that immunization officials understand current policies, recommendations and technical guidelines, leading to stronger uptake of vaccines. Started in 2011 and named in honor of Sabin's late Executive Vice President, Dr. Ciro de Quadros, the program updates participants on advances in epidemiology, immunology, immunization recommendations and effective communication strategies. In December 2017, some 40 delegates from 12 countries and more than 30 expert speakers in vaccinology gathered in Buenos Aires, Argentina, for the seventh annual Ciro de Quadros Vaccinology Course for Latin America. To date, more than 240 immunization professionals from 19 countries have had the opportunity to learn from some of the world's leading experts on vaccinology by attending Sabin's course. In order to extend the program's reach to other professionals, a textbook based on the course will be shared online in 2018.

WORKSHOPS TO ENABLE JOURNALISTS TO REPORT ACCURATELY ON VACCINES

With the growth of new media and online news outlets, the role of journalists to inform and educate their communities is increasingly important in shaping vaccine demand. Whether it is a minister of finance or a parent, both want to be informed decision makers. Accurate, timely media coverage can combat the spread of misinformation and address the concerns of parents and policy makers, while driving demand for vaccines. Yet, in many parts of the world, journalists may lack the training necessary to evaluate scientific research or health claims. To promote more effective coverage of immunization in mainstream and social media, Sabin has conducted workshops for journalists since 2011. During the workshops, journalists engage with vaccine scientists and policy makers to gain a greater understanding of vaccine science, safety and policy so they are better prepared to accurately report on immunization to the communities they cover.

Workshop topics include an introduction to vaccinology and clinical trials, available vaccines and those on the horizon, vaccine safety, and national immunization policies. The workshops prepare journalists to report on the many vaccine-related stories that may arise in their communities and cultivate a sense of responsibility to inform the public about immunization-related news. Sabin has partnered with several universities and professional societies to host the workshops. This includes collaborations with the Pan American Health Organization, the CDC, and the World Federation of Science Journalists on sessions in Peru, Brazil and Chile. In November, Sabin hosted 28 Latin American journalists from 18 countries for a workshop in Argentina. The impact of the workshop was immediate. In the weeks following the workshop, attendees published articles in regional news outlets, including La Prensa, Salud Panama, El Observador and ABC Color, that incorporated the information discussed during Sabin's training. Sabin is now adapting this approach to other regions, tailoring the curriculum and speakers to address local issues. Sabin plans to host the next journalist workshop in Eastern Europe and to expand the program to additional regions in the coming years.

CHAMPIONING IMMUNIZATION AT ALL AGES

WORKSHOPS PROMOTING ADOLESCENT HEALTH AND IMMUNIZATION

Immunization plays a critical role in keeping preteens and teens healthy and protected from vaccine-preventable diseases, including influenza, whooping cough, tetanus, diphtheria, meningococcal disease and cancers caused by human papillomavirus. For various reasons, however, adolescents often do not receive recommended vaccinations. To better understand why this occurs and ultimately improve teen immunization rates, Sabin kicked off a series of three regional workshops in 2017 focused on promoting adolescent health and immunization. Health professionals from across the Middle East and North Africa attended the first two-day interactive workshop in Dubai, United Arab Emirates. By bringing together government health officials, adolescent health researchers and infectious disease scholars with immunization experts, the workshop helped participants identify tangible approaches they can take to achieve the promise of adolescent immunization. After all three regional workshops are held, Sabin plans to publish lessons learned so that those who could not participate can benefit from these important discussions. Improving adolescent health through immunization saves lives, and Sabin plans to continue with these workshops to ensure more adolescents receive appropriate vaccines.



Health professionals from across the Middle East and North Africa discussed adolescent health and immunization.



HONORING DR. JAN HOLMGREN

On April 25, 2017, Dr. Jan Holmgren received the 24th annual Albert B. Sabin Gold Medal in honor of his pioneering work in mucosal immunology and leadership in the development of the world's first oral cholera vaccine. His extraordinary contribution to advance global efforts to prevent cholera, an acute diarrheal disease, is particularly noteworthy given the resurgence of more frequent epidemics in resource-poor countries, increased antimicrobial resistance, and the resultant case fatality rates in excess of 20 percent for those without appropriate treatment.

Guests gathered at the National Academy of Sciences building in Washington, D.C., to celebrate a career dedicated to improving the lives of others and a commitment to working in partnership with scientists around the world to develop better vaccines. Learn more about the 2017 Sabin Gold Medal recipient in this [Q&A with Dr. Holmgren](#).

"Like Dr. Sabin himself broke new ground with an oral vaccine in 1950s, you, Dr. Holmgren, have contributed to the global community's efforts to save lives from suffering preventable and treatable diseases."

— Swedish Ambassador to the United States **BJÖRN LYRVALL**, introducing Dr. Jan Holmgren, April 25, 2017



Recipient of the 24th Albert B. Sabin Gold Medal, Dr. Jan Holmgren, with Sabin's executive team

We are proud to have received Charity Navigator's highest rating for accountability and transparency for 11 consecutive years.

FINANCES

Sabin's total operating revenue for 2017 was \$8.5 million, with net assets greater than \$13 million.

We are proud to have received Charity Navigator's highest rating for accountability and transparency for 11 consecutive years. We will continue to hold ourselves to the highest standards as we strive to achieve our vision of a world free from vaccine-preventable diseases. See a snapshot of our 2017 finances below or read the [full audit report](#).

HOW WE USED OUR FUNDS IN 2017:

76%

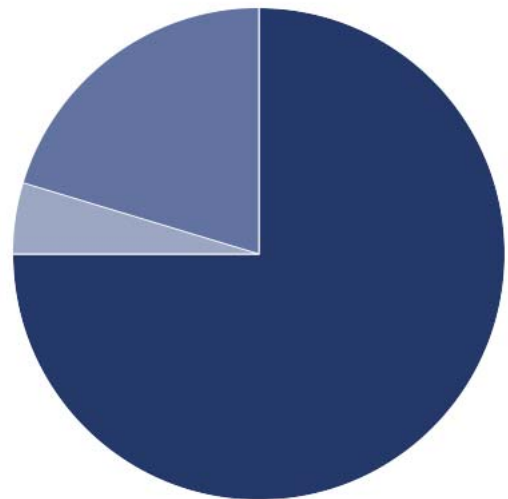
\$7,354,404 on programs

20%

\$1,983,587 on organizational management & administration

4%

\$396,723 on resource development & fundraising to support future growth



EXPENSES BY AREA:

72% - Access & Uptake

\$1,508,296 on immunization policy & financing

\$2,054,969 on typhoid research & advocacy

\$1,728,403 on projects that drive vaccine introduction & expansion

15% - Knowledge & Innovation

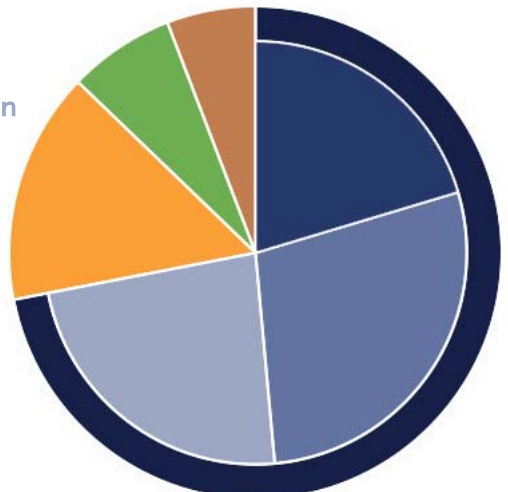
\$1,130,494

7% - Research & Development

\$516,175

6%

\$416,067 on advocacy & engagement for neglected tropical diseases (former program)



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Sabin's Board of Trustees and executive leadership are fully committed to responsible and effective stewardship of donor funding. For the 11th consecutive year, Sabin received Charity Navigator's highest rating possible for consistently executing our mission in a fiscally responsible way.

This information has been summarized from Sabin's audited financial statements. Sabin's full audit report, completed by Rogers & Co, LLP, is available at www.sabin.org.

Thank you to all of our partners and donors. We are grateful for your support, which makes Sabin's work possible.

Learn more or become a supporter at sabin.org

Thank you for being a vaccine champion!



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