Advancing vaccines and vaccinations during and after the pandemic

About Sabin Vaccine Institute

Our mission is to make vaccines more accessible, enable innovation and expand immunization across the globe. Adapting to a constantly changing environment drives transformation at Sabin.

Explore how, throughout 2020, we reimagined our work to continue strengthening global immunization programs and advancing vaccine research.
Letter from the Chair & CEO
Without equity, we can never unlock the full potential of vaccines. Sabin’s founders understood this, which is why Sabin has always worked to create a future where everyone who needs a vaccine can access one. It’s the reason our approach prioritizes collaboration across communities, immunization professionals, funders and national and international decision makers. And in a year where its importance has never been clearer, it has fortified our resilience and agility.

The vaccine ecosystem is undergoing a paradigm shift as a result of COVID-19. Throughout the course of the pandemic, Sabin’s staff and partners have stepped up in remarkable ways and with exceptional grit and dedication. They developed turnkey solutions for keeping field work on track, brought education and collaboration programs online and produced strategic communications to meet current conversations and needs. One goal has driven these efforts — to ensure that no one in need of a vaccine is left behind.

“Without equity, we can never unlock the full potential of vaccines.”

Throughout 2020, Sabin showed itself to be an organization ready to adapt and innovate for the benefit of families and communities who, due to where they live, face threats from COVID-19 as well as infectious diseases such as typhoid, influenza or Ebola. We leveraged existing platforms to augment frontline worker capacity in lower-resource settings and created solutions for safely gathering data for decision makers around how new vaccines can tackle age-old diseases. And we continued to further vaccine research and development in pre-clinical and clinical phases to create much-needed vaccines.
We are particularly encouraged by our work advancing vaccines for Ebola Sudan and Marburg viruses, which received an additional $20 million from the Biomedical Advanced Research and Development Authority. This funding, a follow-up to their initial $20.5 million investment in 2019, will enable the next phase of our vaccine development program, which included a Phase 1B clinical trial and non-human primate pilot efficacy and immunogenicity studies of the vaccines.

All our work was also carried out against the backdrop of movements demanding racial justice and equality. Sabin's staff and board reflected on and explored what this means for Sabin and our work. We reaffirmed our commitment to diversity, equity and inclusion in our practices and programs and took action to identify and act on areas for improvement. We know that by engaging and elevating the voices of the communities we serve at every step — from vaccine development to vaccination acceptance and demand, and the impact that vaccines have on the communities we serve — we move closer to achieving our goals.

"Throughout the course of the pandemic, Sabin's staff and partners have stepped up in remarkable ways and with exceptional grit and dedication."

During this challenging time, we found strength in reflecting on the unyielding vision of our founders, including our founding president, Phil Russell, who passed away in January 2021. Phil's groundbreaking research in infectious disease and vaccines and work with the U.S. Government, the World Health Organization and a host of other partners, paved the way for Sabin and many other organizations to respond rapidly to vaccine and vaccination challenges, including COVID-19. Phil's intelligence was matched only by his generous spirit and sheer determination. His legacy to Sabin and the world is immeasurable.
As we write this, we are optimistic that with the availability of a number of safe and effective vaccines, the end of the COVID-19 pandemic is within sight. We mourn the lives taken too soon. And we are heartened by the nimble, selfless and indomitable responses seen in both the global scientific and public health communities. Many gaps remain to be filled. With the partnership of our supporters and vaccine stakeholders at all levels, we stand ready to help reshape the new normal of vaccine development, roll out, uptake and perception across the world.

Thank you for being a part of this journey and our work.

Sincerely,

Axel Hoos, MD  
Board of Trustees Chair

Amy Finan  
Chief Executive Officer
Tribute to Phil Russell
As we began putting together this report, we were saddened to learn of the passing of Sabin Founder, Past President, Past Chairman of the Board and Trustee Philip Russell in January 2021. A physician, scientist, soldier, family man and global health advocate, Major General (Ret) Philip Russell (Phil) dedicated his life and career to protecting people from infectious diseases.

Born in Syracuse, New York, in 1932, Phil received his medical degree from the University of Rochester and entered the U.S. Army. His assignments brought him to Pakistan, Thailand and Vietnam, where he witnessed the myriad causes and tragic consequences of infectious diseases. These experiences solidified the prevention of infectious disease as his life’s work.
Phil served as Commander of Walter Reed Army Institute of Research, conducting laboratory and clinical research on viral and parasitic diseases and authoring or co-authoring more than 100 published research articles. His three-decade military career earned him a Legion of Merit and the Distinguished Service Medal before retiring in 1990 as Commander of the United States Army Medical Research and Development Command as a Major General. He then embarked upon 30 years of service to nonprofit organizations, including a professorship at Johns Hopkins School of Hygiene and Public Health.

Phil was far more than a founding president here at Sabin. He was a friend, trusted counsel and eager problem solver. He brought a mix of integrity, scientific expertise and dogged resolve to his work with Sabin and all his endeavors. His contributions continue to shape U.S. Government vaccine development policy and strategy, including Operation Warp Speed's design and philosophy. Phil is survived by his wife of 65 years, Connie, three children, six grandchildren and three great grandchildren, in addition to many whom he mentored and the millions of people around the world whose lives have been saved by his groundbreaking work. He is dearly missed.
Our Commitment to Diversity, Equity & Inclusion
Our Commitment to Diversity, Equity & Inclusion

As Sabin contributes to creating a future where everyone can access the health care they need and contribute equally to the scientific and global health fields, addressing societal inequities and racial injustice is at the forefront of our strategic development.

Sabin condemns racism in all its forms, and in 2020, we made a commitment to actively advance diversity, equity and inclusion (DEI) at all levels of the organization and across our local, regional and international partnerships.

Initial steps taken last year were to look inward to ensure our policies, programs and culture are creating an environment where all people's perspectives and contributions are valued equally. We set an action plan and began to implement it. We acknowledged our gaps in knowledge, bringing on a consulting firm to help us assess the current state and based on that, develop a forward-looking DEI strategy. At the same time, we hired our first vice president of employee engagement as part of our strategy in response to our growth and to help us achieve the culture we envision at Sabin.

We believe diversity and justice also must be integral to our work in the field, prioritizing the voices of those most affected by infectious diseases. We are building off our on-the-ground initiatives informed by the communities we serve:
- Our research led by typhoid-impacted communities in Pakistan, Bangladesh and Nepal has produced invaluable data to support the introduction and uptake of new conjugate vaccines against typhoid.

- Our work studying drivers of vaccine acceptance invests in local researchers in India, Kenya, Pakistan, Uganda and Sierra Leone and elevates knowledge of community behaviors and needs.

- And our work with immunization professionals leading implementation of community vaccine programs at national and subnational levels in 123 countries augments efforts to shape equitable vaccine roll outs along with the resources we provide to meet their needs.

We are dedicated to widening access to vaccinations and developing vaccines for underserved populations. As public health advocates, we pledge to do what is necessary so that the organization and our programs fully embody this commitment.
Persevering in the Face of COVID-19

When the world paused due to COVID-19, Sabin staff and partners stepped up so that vital research and programs tackling critical vaccination questions could continue. Together, our staff and partners persevered to help ensure that more vaccines will be available and in demand:

Engaged more than 1,000 people from 50 countries with virtual dialogues around vaccine misinformation.
Sabin Vaccine Institute

1,300 immunization professionals
123 countries

Reached nearly 1,300 immunization professionals in 123 countries with supportive, capacity-strengthening resources and a revitalized community of peers.

4,000 BLOOD SAMPLES

Gathered more than 4,000 blood samples in three countries to support investigations into low-cost surveillance tools for typhoid.

110 immunization professionals
50 countries

Surfaced insights from more than 110 immunization professionals, representing 50 countries across three regions, to understand and illustrate the challenges countries face in readying for an equitable, rapid COVID-19 vaccine rollout.

200 vaccine & public health experts
43 countries

Surveyed more than 200 vaccine and public health experts from over 43 countries to capture emerging lessons from COVID-19 to inform future vaccine research and development.
Sabin Vaccine Institute

**SABIN ADVANCED EBOLA AND MARBURG VACCINE CANDIDATES**

- **Manufacture:**
  - Released GMP working cell bank and working virus seed

- **Non-clinical:**
  - Successfully completed the proof-of-concept non-human primate study

- **Assay Development:**
  - Key clinical/non-clinical immunoassays are developed and under qualification/validation

- **Clinical:**
  - Ready to initiate phase; start clinical trial in 2021

*Vaccinates the first participant February 2021*

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**PIVOTING IN A PANDEMIC**

Interviews with effective leaders from around the globe

Profiles of extraordinary leaders who have adapted to advance research and public health in the midst of the COVID-19 pandemic
Generating Evidence for Vaccine Decision Making
Achieving a scientific breakthrough in developing a new vaccine is only the first step toward saving lives. Realizing the promise of new vaccines requires country-level policies and decision making about whether, when and how to roll out immunizations, informed by research and community insights. Sabin continues to be a leader in accelerating these processes through research, surveillance and local collaborations.

**SEAP and SEES Studies**

In 2020, Sabin led two vaccine effectiveness studies focused on dengue in Brazil and typhoid in Pakistan. In both countries, new vaccines have been introduced in limited locations. Sabin has worked with local partners to measure the impact of the initial roll outs — invaluable research that will inform public health policy and help guide immunization programs.

Despite the COVID-19 pandemic, Sabin was able to continue this vital work, along with two surveillance studies monitoring enteric fever in Bangladesh, Nepal and Pakistan. When lockdowns began, our teams working on our Surveillance for Enteric Fever in Asia Project and our Sero-epidemiology and Environmental Surveillance study faced enormous challenges. Understandably, local staff and supplies were diverted to address COVID-19. Yet, the teams were determined to find creative solutions, adapting protocols and safety procedures. As a result, they were able to continue monitoring typhoid and paratyphoid cases in hospitals and homes.
Progress made in these studies was complemented by resources and communications designed to keep a spotlight on urgent vaccine work beyond COVID-19. A special supplement of *Clinical Infectious Diseases* highlighted a comprehensive review of discussions from the 2019 *International Conference on Typhoid & Other Invasive Salmonelloses* outlined the latest in diagnostics, surveillance, drug resistance and impact of new typhoid conjugate vaccines.

**PriorityVax**

As local and regional stakeholders alike continued to allocate limited resources and balance competing needs, Sabin's PriorityVax provided a framework for incorporating local context and data to create sustainable policies. A case study of the interactive platform's use in Uganda was published in *BMJ Global Health* in November.
Exploring Vaccine Acceptance & Demand Dynamics
While the supply side of immunization (access, availability and affordability) remains an important focus of global immunization, the demand side of immunization is receiving long-overdue attention. Dynamics surrounding vaccine acceptance are at the core of Sabin's Vaccine Acceptance and Demand programming, which aims to address both structural barriers to vaccine access and the need for accurate, trustworthy sources of information.
Vaccine Uptake

In 2020, Sabin collaborated with stakeholders across the immunization landscape — from policy makers to journalists — to address the complex social and behavioral drivers of vaccine uptake.

Social and Behavioral Grants Program

Our Social and Behavioral Interventions for Vaccination Acceptance Grants Program expanded, awarding grants to five research partners in India, Kenya, Pakistan, Sierra Leone and Uganda. Originally piloted in 2019 to research the social and behavioral elements of vaccine acceptance, the program seeks to understand challenges to vaccine acceptance and assess locally driven solutions to overcome them. In 2020, partners also incorporated study of COVID-19 misinformation, providing key understandings of the social and behavioral factors that affect drivers and perceptions of vaccinations during epidemics.
Social Media Research

Sabin’s partnership with the International Vaccine Access Center at Johns Hopkins University yielded a review of published research on how social media impacts vaccine knowledge, attitudes and behaviors. Although research examining this link is relatively nascent, social media is a key source of vaccine information and offers broad opportunities for strengthening vaccine knowledge through tailored interventions. This work is already informing 2021 investments into further research.

Vaccine Acceptance

Throughout 2020, Sabin continued to leverage the power of communications, particularly digital media, to foster vaccine acceptance:

Immunization Advocates

Our Immunization Advocates program continued to support journalists and health workers who play a vital role in public health by promoting fact-based information about vaccines. We conducted virtual trainings with more than 50 journalists across Eastern Europe with Thomson Reuters Foundation and in Brazil with Agência Bori, equipping reporters to expand their vaccine knowledge and network of expert sources. We also launched a collaboration with the International Pediatrics Association (IPA) to connect health workers in Eastern Europe and Latin America and globally to IPA’s new online training program on communications and ongoing opportunities for engaging as a network of champions for vaccines and immunization.
The programme provided a fresh insight into reporting on immunisation in the modern world. I'm sure that all of the acquired knowledge, as well as my newly established contacts and networks, will bolster my health reporting.”

YELENA STEPANOVA,
‘REPORTING ON VACCINATION AND IMMUNISATION’ PROGRAMME PARTICIPANT

Report on Vaccination Hesitancy
The Sabin-Aspen Vaccine Science & Policy Group's report, "Meeting the Challenge of Vaccination Hesitancy," was released in May capturing reflections from the 2019 meeting. The Group called for an urgent, coordinated effort that harnesses the power of social media, social behavioral research and community-focused communications to make vaccine acceptance "the new normal."
Vaccine IQ

Vaccine IQ - Our social media campaign designed to educate the public on how vaccines work and their safety — expanded to address COVID-19 head on. Messages and campaign assets, including videos, were created to complement vaccine development headlines and help break down key terms and the R&D process.

Boost/UNICEF Webinar Series

In response to emerging needs within the Boost Community and other immunization stakeholders, Sabin partnered with UNICEF in the fall to host a webinar series that reached more than 1,200 immunization professionals. The series provided participants with tools and resources to identify and combat misinformation and disinformation in their day-to-day work.
Strengthening Capacity to Support Global Immunization
Even when demand for vaccines rises, barriers still exist to get a vaccine to every person who needs and wants one. Hence, Sabin works to strengthen countries' immunization programs at the regional, national and local levels:

**Boost Community**

Our **Boost Community** for immunization professionals across the globe seeks to foster community, capacity strengthening and peer-to-peer learning for individuals managing complex routine immunization programs. Since launching in January 2020, the network grew to more than 1,250 members in 123 countries. With the onset of COVID-19, Boost quickly pivoted to support immunization professionals navigating complex and uncertain contexts by providing courses designed to strengthen their leadership and community organizing capacity.

**Bright Spots Initiative**

Through the Boost Community's **Bright Spots** initiative, we highlighted stories of innovation and partnership in sub-national immunization service delivery in Ethiopia, Nigeria, Tanzania, India, Pakistan and Cameroon. From immunization in conflict settings to community engagement and bottom-up approaches to planning, Bright Spots shines a light on the work that is happening on the ground and inspires immunization professionals everywhere to learn, adapt and take action in their own communities.
COVID-19 Vaccine Equity Project

To support ministries of health in low- and middle-income countries (LMICs) as they prepare to operationalize COVID-19 vaccine programs, our Boost Community launched the COVID-19 Vaccine Equity Project. Aiming to put equity at the center of these vaccine programs, our Boost team is sharing learnings across global communities and connecting immunization peers across the world.

SEAP and SEES Studies

Despite incredible barriers due to the pandemic, our Applied Epidemiology team continued working with partners throughout South Asia to support local surveillance capacity in community-based health systems. Phase II results from our Surveillance for Enteric Fever in Asia Project were published and more than 4,000 blood samples were collected as part of our Sero-epidemiology and Environmental Surveillance study, providing invaluable data, genomic sequencing and surveillance resources to inform local and national public health decisions.

Vaccinology Course

Sabin's Ciro de Quadros Vaccinology Course for Latin America, a vaccinology training class for immunization stakeholders from Latin American and Caribbean countries, pivoted to virtual learning. Instead of replicating the in-person course, the shift to a virtual setting prompted opportunities to refresh course design, scale up the program by applying lessons from best practices for adult learning, and boost engagement with attendees.
Powering Vaccine Research & Development
Sabin Vaccine Institute

Research and development (R&D) is the cornerstone of advancing life-saving vaccines and, thus, a crucial facet of Sabin's mission. As a global health organization, Sabin's R&D team is focused on developing vaccines against diseases that mostly affect marginalized or vulnerable communities. We are working to move these much-needed vaccines through development and then to licensure and/or emergency use authorization.

**Ebola Sudan & Marburg Vaccine Development**

Sabin continued to advance vaccine R&D for two of the world's most deadly viruses, *Ebola Sudan* and *Marburg*. With a contract valued at $128 million and following an initial $20.5 million in 2019, an additional $20 million was provided in 2020 from the Biomedical Advanced Research and Development Authority (BARDA) with the U.S. Department of Health and Human Services. With this multi-year commitment from BARDA, we helped set the stage for two promising vaccine candidates to move into clinical trials and completed critical manufacturing milestones.

Our pre-clinical efforts included testing our vaccines' abilities to trigger an autoimmune response and completing a pre-clinical vaccine proof-of-concept study, both vital steps in the development process. As a result, in 2021 Ebola Sudan and Marburg vaccine candidates are both expected to enter into a Phase I clinical trial with 16 participants being initiated in each.

Vaccine manufacturing efforts included successful process development, completion of small-scale production of vaccine lots for use in pre-clinical studies and production to support clinical trials. As part of our commitment to the National Institutes of Health (NIH), we also manufactured required quantities of Ebola Sudan and Marburg vaccine material for the NIH's Vaccine Research Center.
Universal Influenza Vaccine

In addition to advancing vaccines through clinical development, we also brought together experts from diverse communities to tackle pressing questions and hurdles to vaccine R&D, such as the pursuit of universal influenza vaccine.

Influenzer Initiative

Our Influenza Vaccine Innovation Program — designed to accelerate momentum and advance novel approaches for developing universal influenza vaccines (UIV) — pivoted to capture and translate lessons from COVID-19 to prevent another and potentially more deadly pandemic. We assessed changing practices and policies across the science and technology landscape, vaccine development and regulatory science, public-private partnerships and pandemic preparedness in 43 countries. Findings, including how beneficial changes might be sustained, were published in a December white paper and presented at the 2020 European Scientific Working Group on Influenza conference. Our ongoing Influenzer Initiative multimedia series featured videos and commentaries from a diverse range of thought leaders and experts reflecting on the transformative implications of COVID-19 and the future of UIV development.
VaxHunt Game

Simultaneously, we leveraged the popularity of online games and real-world understanding of viral threats with VaxHunt: The Quest to Prevent the Next Pandemic. This game seeks to inspire students and early investigators to fuel vaccine innovation and scientific breakthroughs. VaxHunt received STEM.org’s authenticated trustmark and has been distributed to their 15,000+ network of educators.

“Powering Vaccine R&D” Report

In September, the Sabin-Aspen Vaccine Science & Policy Group convened virtually for their annual meeting where they probed the evolving vaccine R&D ecosystem through the lens of SARS, Ebola, HIV and COVID-19. Discussions centered on vaccine development for both pandemic and endemic pathogens, incentives in the vaccine ecosystem and the need to revisit and restructure vaccine development models. The resulting “Big Ideas” are explored in the Group’s report, “Powering Vaccine R&D: Opportunities for Transformation.”
Showcasing Leaders in Vaccinology & Global Health
Sabin awarded our **2020 Albert B. Sabin Gold Medal** to Professor Gordon Dougan, F.Med.Sci., FRS, for more than three decades of leadership in vaccine R&D and advocacy focused on equitable access to vaccines. His work ushered in breakthroughs in the application of genomics in vaccine development and new waves of life-saving immunizations.

His research with the Wellcome Foundation and the Wellcome Trust Sanger Institute directly led to the development of the acellular pertussis vaccine and conjugate vaccines against typhoid fever and cholera. These life-saving breakthroughs continue to impact vulnerable communities worldwide: In 2019, more than 20 million cholera vaccines were distributed to nine countries for prevention campaigns and emergency responses, while Pakistan became the first country to introduce typhoid conjugate vaccines into their routine immunization system. Professor Gordon's commitment to engaging researchers in low- and middle-income countries (LMICs) and getting vaccines to those who need them most has also borne invaluable collaborations, including between the World Health Organization and Gavi, the Vaccine Alliance.
The Inaugural Rising Star Award honoring an early-career professional who has demonstrated extraordinary leadership in the field of immunization was conferred upon Katherine E. Gallagher, MSc, PhD. Her doctorate work analyzed barriers to the human papillomavirus (HPV) vaccine delivery in 45 LMICs — insights that continue to inform global vaccine recommendations addressing HPV, which leads to an estimated 311,000 deaths annually. In 2014, Dr. Gallagher took the lead on coordinating a Phase I Ebola vaccine trial in Tanzania during an ongoing outbreak and followed up by implementing Phase II trials for the same vaccine in Sierra Leone. Currently, she is focusing on how to make the pneumococcal conjugate vaccine more accessible in LMICs, where close to half a million children under the age of 5 die each year due to the disease.
Influenzers in Action

Highlighting Influenza Innovators

Released in February, the Influenzer Initiative video “Collaborative Convergence: Influenza Innovators” highlighted leading researchers and the power of converging new thinking and technologies for the development of universal influenza vaccines. Weeks later, these scientific leaders began tackling COVID-19. Our Influenzers in Action campaign chronicled how the knowledge, tools, and capacity long-focused on reducing threats from influenza pandemics have now formed the global response to COVID-19.

Pivoting in a Pandemic

Sabin’s “Pivoting in a Pandemic” multimedia series, launched in September, spotlighted leaders adapting during COVID-19 in Bangladesh, Brazil, Pakistan, Nepal, Nigeria and Uganda. Narratives share innovative actions and lessons learned while protecting communities from COVID-19 and continuing to promote routine immunizations and advance research.
Financials
Amidst a turbulent year, the partnership of our steadfast supporters gave us the ability to adapt and continue creating a world where all people can access the vaccines they need. You made our work possible.

We honor your dedication with a commitment to accountability, transparency and efficiency: 87 percent of our expenses go directly to programs that advance our mission. We're proud to have received a four-star rating from Charity Navigator, its highest, for 12 out of the last 14 years.

For more, please read our full audit report.
How We Used Our Funds in 2020

- **87%** $18,118,911 on programs
- **12%** $2,406,971 on organizational management & administration
- **1%** $279,144 on resource development & fundraising to support future growth

Program Expenditures in 2020

- **55%** $10,044,278 on vaccine research & development
- **45%** $8,074,633 on global immunization
Conclusion
2020 showed us the devastating consequences of a global pandemic and the extraordinary power of collaboration and innovation.

As Sabin forges ahead toward a post-pandemic future, we know that the vaccine and immunization landscape has been forever altered. And we’re ready to meet this moment. We will continue to amplify the needs and insights of the communities we serve, while building on strategic partnerships to reshape vaccine research and development, access and acceptance across the globe.

We can't do it alone. Thank you to each and every one of our supporters. Your shared commitment to this work is saving lives and creating a healthier future for our world.

To help us continue improving lives through immunization, please donate below.

Please Donate

Make a Contribution

2020 marked 10 years of pro bono services delivered by Covington & Burling LLP to Sabin — a decade of dedication providing Sabin with strategic advice related to our core mission. In addition, Covington's support has allowed Sabin to utilize more of our financial resources to advance our vision of a future free of vaccine-preventable diseases. We are immensely grateful.
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(as of 5/2021)

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President, Global Immunization

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Program List

Applied Epidemiology
Boost
Influenzer Initiative
PriorityVax
Vaccine Acceptance and Demand
Research and Development