Accelerating Vaccines Critical to Global Health

2017 Annual Report

International Vaccine Institute

Signatories to IVI's Establishment Agreement

IVI's Global Outreach

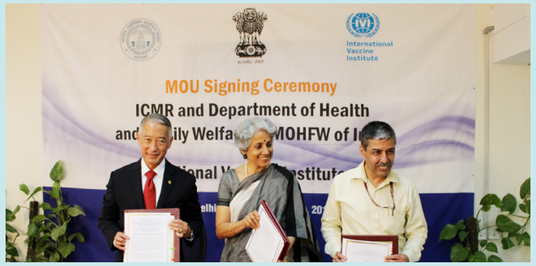
Vision Developing countries free of suffering from infectious disease

Mission Discover, develop and deliver safe, effective and affordable vaccines for global public health

Table of Contents

The Year in Review

Eubiologics' OCVs Euvichol® and Euvichol-Plus®, which was prequalified by the WHO in 2017



MOU signing between IVI and the Government of India (ICMR and the Department of Health and Family Welfare, of the Ministry of Health and Family Welfare)

IVI's 20th Anniversary Celebration

Dr. Park Neung-hoo, Minister of Health and Welfare of the Republic of Korea, delivers his congratulatory speech at IVI's 20th Anniversary Global Vaccine Forum.

Former UN Secretary General, Ban Ki-moon's visit to IVI

US-Japan Emerging Infectious Diseases (EID) conference, co-hosted by IVI in Seoul on February 7

DCVMN annual general meeting co-hosted by IVI in Seoul on September 25

IVI addresses the Rotary International Districts 3640 & 3650 joint conference in Seoul with RI President John Germs in attendance

Annual Letter

“We are confident that IVI is well-positioned to continue along its growth trajectory, made possible by the continued commitment and generosity of our supporters, friends and partners.”

Dear Friends,

It is my great pleasure to share IVI’s progress and achievements in 2017, a proud continuation of our 20 years of efforts to advance global health, and an opportunity to renew our commitment to discovery, development and delivery of safe, effective, and affordable vaccines for public health. IVI, based in Seoul, Republic of Korea is the world’s only international organization devoted exclusively to making vaccines available and accessible in developing countries.

In 2017, we celebrated our 20th anniversary and renewed our commitment to continue our mission into our third decade. Towards that end, we followed through with our strategic refresh, and stepped up efforts to implement a way forward; continuing our strides in cholera, typhoid fever and other programs, while also taking on new initiatives.

On the research and development front, 2017 saw a substantial increase in the availability of our first vaccine (the oral cholera vaccine) via EuBiologics due to the WHO’s licensure of Euvichol-Plus®, a plastic tube presentation of Euvichol®. The vaccine’s licensure increased EuBiologics’ annual OCV production to 25 million doses. In October, the WHO launched the Ending Cholera: A Global Roadmap to 2030, an ambitious strategy to reduce cholera deaths by up to 90 percent by 2030. The WHO calls IVI’s OCV a ‘Game Changer’ in the fight against the disease. With the OCV supply improving, IVI will shift emphasis from OCV development to OCV delivery in order to accelerate the vaccine’s use in the populations who need it the most.

As an example, IVI initiated the delivery of OCV (MOCA) in Mozambique (funded by the Korean International Cooperation Agency, KOICA) that will vaccinate more than 180,000 residents at risk of cholera. This project also entails the monitoring and evaluation of OCV to measure vaccine- and cost-effectiveness, plus the implementation of Water quality, Sanitation and Hygiene (WASH) to help prevent the disease and other infections.

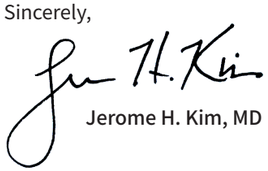
IVI completed Phase I clinical trials of our second vaccine (Vi-DT typhoid conjugate) and started Phase II testing in collaboration with SK Chemicals of Korea and BioFarma of Indonesia. These efforts seek to accelerate clinical development and WHO prequalification of the typhoid conjugate vaccine. The Institute also launched a project to develop a new type of tuberculosis vaccine in conjunction with Harvard University. In our efforts to increase contributions to global health security, IVI joined the Global Health Security Agenda (GHSA) Steering Group as an advisor and became a member of the JEE Alliance.

We welcomed three new members to our Board of Trustees: Mr. Malcolm Sweeney, a senior finance executive; Dr. Chris Varma, an experienced entrepreneur and investor in the life sciences industry; and Dr. Ros-Mari Bålöw, the former Senior Research Officer from the Swedish International Development Agency (SIDA). Together, they bring a wealth of experience, insight and expertise to IVI within their respective fields.

In 2017, we expanded cooperation with our key stakeholders and new partners. At the request of the Korean Ministry of Health & Welfare (MOHW), IVI successfully initiated the effort to establish RIGHT (Research Investment in Global Health Technology), a public-private partnership fund involving the Bill & Melinda Gates Foundation and Korean industry, which intends to finance work on vaccines, drugs and diagnostics for global health. IVI also entered into an MOU with India to officially welcome the country as the third financially-contributing member state, after Korea and Sweden.

Meanwhile, IVI saw its financial sustainability improve significantly, with a much stronger outlook going into 2018 and 2019. We are confident that IVI is well-positioned to continue along its growth trajectory, made possible by the continued commitment and generosity of our supporters, friends and partners. I would like to express our profound gratitude to the Bill & Melinda Gates Foundation and the governments of Korea, Sweden, and India for their commitment to IVI. I also wish to thank the Korea Support Committee for IVI (KSC) and our many partners and collaborators.

Sincerely,



Jerome H. Kim, MD

Vaccine Development & Delivery

Accelerating vaccines critical to global health to ensure everyone's right to good health, regardless of geography

We develop vaccines against infectious diseases which are of global health concern (e.g., MERS, Zika) and which affect developing countries (e.g., cholera, typhoid fever, dengue fever). Vaccine development and commercialization can be costly, lengthy and fraught with risk, and there are few incentives for companies to pursue development of a vaccine against neglected diseases and/or within a limited market.

IVI bridges this gap by partnering with vaccine manufacturers, governments and philanthropists, and by mobilizing resources and funding to develop and license vaccines for the public-sector market. We drive vaccine innovation by transferring our in-house technological innovations to vaccine manufacturers and partnering with them on training, clinical testing, and production.

In exchange for technology and support, manufacturers make a proportion of their product accessible to the public sector at a low price via an "access agreement". Because we do not make a profit from intellectual property, we partner with multiple companies on tech transfer. This, in turn, helps ensure sufficient vaccine supply for the public-sector market.

We have brought to market a low-cost oral cholera vaccine that is WHO-prequalified and stockpiled by the WHO for emergency use. More than 20 million doses of the vaccine have been deployed to prevent and control cholera in about 20 countries. IVI is currently developing vaccines against typhoid fever and MERS, and has launched a research program on tuberculosis in collaboration with Harvard University.

A vaccination campaign was conducted through collaboration by Rotary International, IVI and local partners to immunize more than 27,000 residents at risk of cholera in Banke, Nepal from late 2016 to early 2017.

20,000,000

the number of doses of vaccine deployed to prevent and control cholera

20

the number of countries the vaccine has been deployed in

Cholera

The Cholera Program aims to accelerate the development of oral cholera vaccines to meet the growing demand worldwide and to ensure optimal delivery of the vaccine to cholera-endemic and epidemic regions through various public-private partnership approaches.

Development

Our cholera story dates back to 2006 when IVI reformulated an oral cholera vaccine (OCV). The technology was transferred to manufacturers and IVI partnered with some of them on development and commercialization. Since then, two oral cholera vaccines, Shanchol™ and Euvichol® and Euvichol-Plus® are WHO-prequalified and available for purchase.

Product	Status
Shanchol™ Shantha Biotechnics; part of the Sanofi group, **India**	• Licensed in India in 2009; WHO-prequalified in 2011 • Used in vaccination campaigns (co-coordinated by IVI in 2015) against endemic and epidemic cholera in Ethiopia, Malawi and Nepal; tested in Bangladesh in a single dose regimen trial sponsored by IVI from 2014-2017
Euvichol® **Euvichol-Plus®** plastic tube presentation (EuBiologics), **South Korea**	• Licensed in South Korea in January 2015 • WHO-prequalified in December 2015; thimerosal-free version prequalified in September 2016; Euvichol-Plus® was WHO-prequalified in August 2017 • Additional manufacturer and new plastic tube presentation of the vaccine increased global supply to 25 million doses for 2017
Cholvax® Incepta Vaccine, **Bangladesh**	• Under clinical development; clinical trials initiated in 2016 and continued in 2017 • To be licensed in Bangladesh only; country has very high cholera burden of cholera

Euvichol-Plus®

We continue to work on the oral cholera vaccine. A thimerosal-free version of Euvichol® was WHO-prequalified in 2016, and Euvichol-Plus®, a plastic tube presentation of Euvichol®, was WHO-prequalified in August 2017.

In addition to removing thimerosal from the vaccine, the use of a 600-liter fermenter and of plastic tubes allowed for the increase of production capacity to 25 million doses per year.

We are also working on optimizing vaccine use. The oral cholera vaccine is typically administered in two doses over a 14-day interval. However, a single-dose regimen was tested in collaboration with icddr,b on a large scale single-dose study in Bangladesh. Vaccinated participants were followed for 24 months after vaccination, showing the single dose is mildly protective for all cholera cases, while more protective for severe cholera. The use of a single dose vaccine would be advantageous in specific contexts such as outbreaks, refugee camps, and other emergency situations.

Delivery

We continue to support delivery efforts of the OCV. IVI, with international partners and national health authorities, has conducted OCV vaccinations in Ethiopia, Malawi, and Nepal in 2015-2017. IVI, KOICA, and other partners will conduct a cholera vaccination campaign in Mozambique in 2018 with Euvichol-Plus®, vaccinating about 180,000 people.

We also conduct the Cholera Surveillance in Malawi (CSIMA) project, funded by the Bill & Melinda Gates Foundation (BMGF). CSIMA aims to establish a cholera surveillance platform in two districts of Malawi to assess the effectiveness of OCV following an emergency vaccination campaign in early 2015. This evidence will be useful to funders, policymakers, and countries who have cited the need for more data on use of the vaccine in real-life situations to support decision-making on vaccine introduction.

Typhoid

The Typhoid Program aims to accelerate the development and introduction of new-generation typhoid vaccines in two ways: 1) development of new typhoid conjugate vaccines in collaboration with manufacturers; and 2) generation of evidence on the burden of typhoid in Africa.

Jiwook Kim/ IVI. Typhoid conjugate vaccine trial in progress in Manila, the Philippines

Development

We developed a typhoid conjugate vaccine using platform technology from the U.S. National Institutes of Health, conjugating the Salmonella Typhi Vi polysaccharide to diphtheria toxoid (Vi-DT). Conjugate vaccines have the advantage of conferring protection to infants (a high-risk group) against typhoid as well as generating T-cell-based immune responses. IVI transferred this technology to 3 manufacturers: SK Chemicals in South Korea, Biofarma in Indonesia, and Incepta in Bangladesh. We have received grants from the Gates Foundation to work with SK Chemicals (IVI will lead clinical development) and Biofarma (IVI will provide technical support). These collaborations aim to obtain vaccine licensure in their respective countries and then receive WHO prequalification for procurement in the Gavi/ UNICEF market.

In 2017, a Phase I clinical trial for SK Vi-DT was completed in Manila, the Philippines. There were 144 study participants enrolled. The trial showed no vaccine safety concerns and a 100% seroconversion rate. Biofarma's Phase I was also completed in 2017 and the results were similar. Phase II trials of the SK and Biofarma vaccine candidates are expected to start in Q1 and Q2 of 2018, respectively. Exploratory steps for a Phase III trial have been undertaken.

Dr. Florian Marks (third from left), IVI's Head of Epidemiology, tours a laboratory at the University of Ibadan in Nigeria, a partner organization of the SETA program

Delivery

We conduct epidemiologic and socio-economic research on typhoid in Africa in order to close the knowledge gap on disease burden on the continent. While typhoid is recognized as a public health problem in Asia and Africa, information on its true burden is lacking, making it difficult to justify vaccination policy and to assess the impact of typhoid vaccination.

From 2011 to 2015, we conducted the Typhoid Fever Surveillance in Africa Program (TSAP), which evaluated the typhoid burden through standardized surveillance at 13 sites in 10 sub-Saharan African countries. One of the major findings of TSAP is confirmation that enteric fever caused by S. Typhi and non-typhoidal Salmonella is a significant problem in Africa. A follow-up study, Severe Typhoid in Africa (SETA) launched in 2016, is currently being implemented in various sites in 6 African countries. SETA aims to assess severe disease outcomes of invasive Salmonella infections and its economic burden. The results will guide policy and introduction of vaccines in this region of the world.

Countries collaborating with this study include: Burkina Faso, Madagascar, Ghana, Nigeria, Democratic Republic of the Congo and Ethiopia. IVI began surveillance activities in Burkina Faso, Ghana and Madagascar in 2016; and in Ethiopia, Nigeria, and Democratic Republic of the Congo in 2017. Analyses of samples collected during the project's first year were performed at IVI during 2017. Monitoring activities and data collection are ongoing.

Dengue

IVI is the secretariat of the Global Dengue & Aedes-Transmitted Diseases Consortium (GDAC), a consortium of four partners – IVI, the International Vaccine Access Center (IVAC) at Johns Hopkins University, Sabin Vaccine Institute, and the Partnership for Dengue Control (PDC) at Fondation Merieux.

GDAC is a global alliance to fight dengue and other Aedes mosquito-transmitted diseases under one strategic umbrella. Each partner has specific areas of expertise: IVAC focuses on health economics, strategic demand forecasting and vaccine development; Sabin focuses on communications and advocacy; PDC focuses on integration of vaccine and vector control, diagnostics, clinical case management, and pathogenesis. In addition to serving as the Secretariat of the consortium, IVI is responsible for disease burden and epidemiology, laboratory testing, modeling, policy and access, and regulatory issues. Working together, GDAC aims to promote data generation and synthesis, accelerate innovations in research, and support implementation of new and existing tools in the fight against dengue and Aedes-transmitted diseases.

GDAC was created in August 2016 by merging the Dengue Vaccine Initiative (DVI) with the Partnership for Dengue Control, with the intent of expanding the mission from dengue vaccines to a broader scope, encompassing comprehensive prevention and control measures for Aedes-transmitted diseases including dengue, Zika, yellow fever and chikungunya.

There are specific projects of GDAC conducted via support of the Bill & Melinda Gates Foundation as well as other funds from multiple industry partners. These projects include dengue burden field studies in Africa, Asia and South America, support for national regulatory authorities (NRAs) reviewing dengue vaccine candidates, and the convening of dengue prevention board meetings to address key issues in the prevention and control of Aedes-transmitted diseases. Other GDAC activities include the development of a centralized database for clinical trials of the U.S. NIH's dengue vaccine candidate conducted by sub-licensees of this vaccine supported by funds from the NIH. Efforts are being made to obtain additional funding for proposed GDAC activities, with a focus on integrated vaccine/vector control.

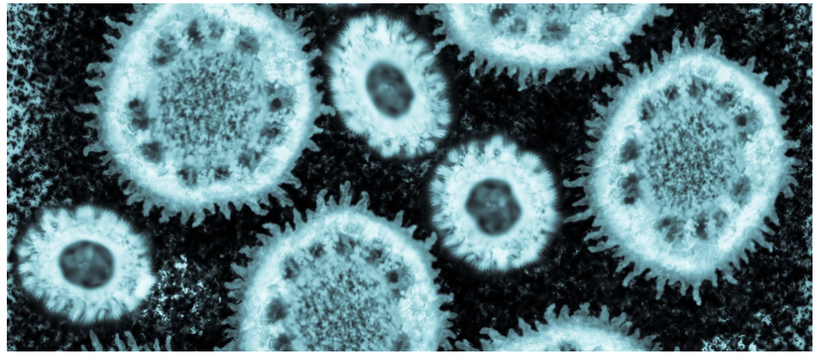
IVI continued to make progress in dengue in 2017. Field studies were completed at all sites, including three studies in Africa, and additional lab testing is underway at IVI. Additionally, GDAC held its annual meetings, including the Asia-Pacific Dengue Prevention Board (APDPB) and the Americas Dengue Prevention Board (AmDPB). The APDPB meeting was held in Thailand in June 2017, and the AmDPB meeting was held in Brazil in August to address the topic of "Dengue in the time of Zika". Additionally, GDAC continued working on capacity building with National Regulatory Authorities (NRAs). In addition to the NRAs of "first wave" countries for dengue vaccine registration (Brazil, Colombia, Indonesia, Malaysia, Mexico, Philippines, and Thailand), the NRAs of Vietnam and Sri Lanka were added in 2017. GDAC also started working with 6 developing country manufacturer licensees of the US NIH dengue vaccine candidate in 2017, supported by funding from the NIH, to develop a central database for clinical trial data generated by the manufacturing licensees.

Overall, 2017 has been a constructive and fruitful year for GDAC in terms of continued efforts to increase the readiness of low- and middle-income countries to introduce dengue vaccines.

MERS

IVI launched the MERS Program in late 2015 with funding from the Samsung Life Public Welfare Foundation. The five-year grant will accelerate the development of MERS vaccines, with the aim of demonstrating the safety and immunogenicity of two MERS vaccines in Phase II trials conducted in South Korea. If proven safe and immunogenic, these vaccines can be deployed in clinical efficacy trials at possible outbreak sites. IVI will partner with two vaccine manufacturers in early-stage clinical development of their MERS vaccine candidates by providing technical and financial support, as well as support in project management and coordination.

IVI and GeneOne Life Sciences signed a Collaboration and Access Agreement to support GeneOne's MERS DNA vaccine candidate in 2016, and Phase I/IIa clinical trials for GeneOne's vaccine were approved by the Korean Ministry of Food and Drug Safety (KMFDS) in 2017.



Lab Highlights

We design, formulate and evaluate promising vaccine candidates at the preclinical stage, and develop technologies to support vaccine development and evaluation.

CLINICAL RESEARCH

In 2017, IVI's Clinical Research Lab started the Korean Ministry of Food and Drug Safety (MFDS)'s project of studying the establishment and management of a Reference Laboratory for vaccine clinical evaluation. CRL has also been working on the development of vaccine evaluation systems for typhoid, Zika, and MERS-CoV, with support from the Ministry of Health and Welfare (MOHW).

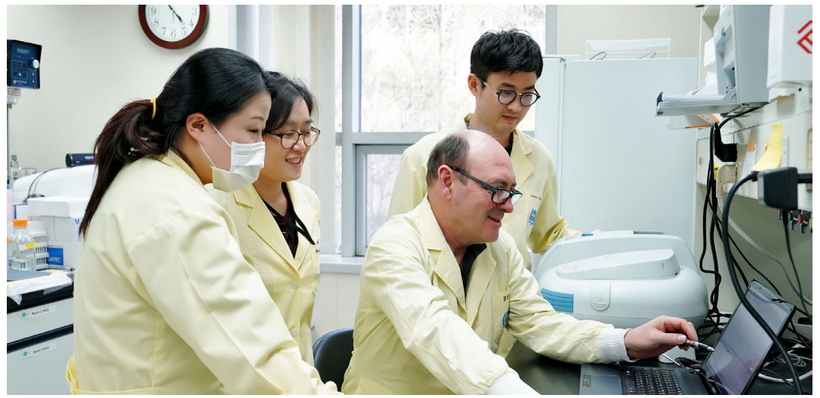
Additionally, IVI is partnering with the Korean Centers for Disease Control and Prevention (KCDC) to develop a rapid test kit and ELISA for the detection of antigen/antibody of viral hemorrhagic fever viruses including the Ebola virus, as well as to develop neutralizing antibodies. Discussions are also ongoing with the Korean Ministry of Health & Welfare to support the development of a novel mucosal adjuvant.

CRL participated in the NIBSC/WHO collaborative studies funded by the Bill & Melinda Gates Foundation, a multi-national project involving seven laboratories from six countries, to evaluate an international standard serum for Typhoid Vi-conjugate vaccines. IVI's in-house assay has been demonstrated to be the best non-commercial alternative among seven laboratories' methods for typhoid vaccine clinical trials. As a result, a further collaborative study is planned in 2018 with all participants set to use IVI's in-house ELISA as standard method. The report, BS2307, is accessible at WHO ECBS (http://www.who.int/biologicals/ WHO_ECBS/en/). In addition, MFDS requested that CRL lead a project to develop additional human standard serum for a typhoid vaccine and awarded them a 3-year grant in early 2018.

Based on the result of the project "Broadly protective Shigella vaccine development" funded by PATH, CRL is seeking a grant for "Advancing process development, manufacturing, formulation and stabilization of a novel broadly-protective Shigella vaccine candidate for use in low-resource settings" in collaboration with PATH.

VACCINE DEVELOPMENT

IVI's Vaccine Process Development (VPD) Lab is developing several vaccine candidates and transferring vaccine technologies developed at IVI. Redevelopment of a potency assay, which is used for release of oral cholera vaccine (OCV), was completed in 2017. The assay will be qualified and transferred to Incepta Vaccine Ltd., a developing country vaccine manufacturer in Bangladesh for the release of their OCV (Cholvax). VPD is working on the development of conjugation processes and assays for several pneumococcal serotypes to develop a pneumococcal conjugate vaccine.



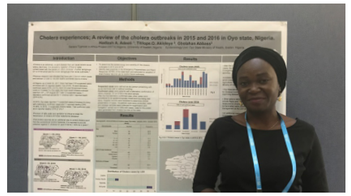
In 2017, VPD received two grants to work on a tuberculosis vaccine. A grant from the US NIH is aimed at the development of a TB vaccine using a Multi Antigen Presentation System (MAPS) in collaboration with Boston Children's Hospital (Prof. Rick Malley) and Harvard Medical School (Prof. E. Rubin). The other grant, from the Korea Center for Disease Control and Prevention, seeks to develop a TB vaccine in collaboration with KCDC.

Capacity Building

To bolster our vaccine development and delivery programs, we engage in capacity building within the vaccine industry. We help build knowledge in the vaccine spectrum through training, technology transfer, technical assistance, and educational partnerships. While our focus is on developing countries, we support vaccine professionals and organizations around the world.

Trevor Toy / IVI

Dr. Ann Ginsberg, Chief Medical Officer at Aeras, gives the plenary lecture to address development of tuberculosis (TB) vaccine at the 17th Vaccinology Course



A participant attends the poster presentation session

One of the longest-running vaccinology courses in Asia, IVI's Vaccinology Course has trained more than 1,200 people. The week-long course promotes vaccine sustainability in developing countries by training early- to mid-career vaccine professionals from low- and middle-income countries (LMICs) and fosters the development of collaborative networks and partnerships among LMICs.

The 17th Vaccinology Course, which was co-hosted by the Korea Human Resources Development Institute for Health and Welfare (KOHI), a state-run agency under the Ministry of Health and Welfare of Korea, brought together 147 participants from 19 countries. More than 30 experts from international agencies, including IVI and the World Health Organization; research organizations, including the U.S. National Institutes of Health; industry; universities; and non-profit organizations served as faculty members. Course evaluations from the participants found the quality of the course overall to be high. The trainees included 10 students from developing countries who were awarded fellowships. Planning is underway for the 18th Vaccinology Course, scheduled in September, 2018 at IVI.

Vaccinology Course,
September 4-8, 2017

1,200

the number of people trained in IVI's Vaccinology Course

147

the number of participants in the 17th Vaccinology Course

19

the number of nationalities of participants in the 17th Vaccinology Course

Vaccine Safety

VAEIMS:

IVI developed a new software tool, the Vaccine Adverse Events Information Management System (VAEIMS) for the WHO Global Vaccine Initiative (GVSI), of which IVI is a participating partner. VAEIMS was developed by IVI to efficiently transfer vaccine safety data from peripheral health care centers to a central database. This will help improve reporting, monitoring, and management of vaccine safety data by public health authorities, enabling them to respond more quickly to public vaccine safety issues.

In 2017, IVI scientist Deok Ryun Kim (far left) with collaborators of WHO CO and the National Immunization Program, Ministry of Health, Lao PDR

Following its pilot launch in Sri Lanka in 2015, the tool was rolled out in Chile and Iran in 2016, and deployed in Lao PDR, Cambodia, Mongolia, and Vietnam in 2017; and initiated the development of a safety database for dengue vaccine in 2017. Based on positive feedback from the participating countries, there are plans to expand VAEIMS to include an online version, a training program for NRAs, and the expansion of implementation in further countries.

Partnerships

In 2017, IVI was accepted as an advisor to the Global Health Security Agenda (GHSA) Steering Group and as a member to the JEE Alliance, which allowed IVI to join a global network focused on achieving the common goals of preventing, detecting, and responding to infectious disease threats. IVI also continued its biannual graduate course in vaccinology via the Seoul National University Graduate School of Public Health.

IVI also collaborates with the Yonsei University School of Public Health to conduct a Master's Program in Global Health Security for developing countries with support from the Korean International Cooperation Agency (KOICA). Since this program's inception, IVI staff have provided lectures to the program's students (~30 individuals from developing countries around the world) and will provide internships for up to 1/3 of the students.

IVI has taken a leadership role in an effort to establish the Research Investment for Global Health Technology (RIGHT) fund, a public-private partnership involving the Korean government, the Gates Foundation, and Korean biopharmaceutical companies to support the development of vaccines, drugs, diagnostics, and other select technologies for global health. The RIGHT fund will build international partnerships, harness the power of academic research, and leverage the translational science, technology, and manufacturing acumen of Korean companies and institutions to find promising new solutions to critical problems in global health.

Dr. Seth Berkley, CEO of Gavi, the Vaccine Alliance, speaks about oral cholera vaccines developed by IVI at a Developing Country Vaccine Manufacturers Network meeting which IVI co-hosted in Seoul in September 2017.

Students visit IVI as part of the Master's Program in Global Health Security for developing countries conducted jointly by Yonsei University School of Public Health in Seoul and IVI with support from the Korean International Cooperation Agency (KOICA)

Long-term IVI supporter and violinist Lee Sang Hee and Friends are honored at the IVI 20th Anniversary Celebration

Prof. Park Sang Dai, Chief Advisor to the Korea Support Committee for IVI, is honored at the IVI 20th Anniversary Celebration for his contributions to IVI's founding and development

Impact

In 2017, IVI scientists authored or co-authored 56 articles that were published in peer-reviewed scientific journals. Fifty were in the Scientific Citation Index (SCI) including high-profile journals such as *The New England Journal of Medicine* and *Nature Medicine, Science, Lancet Infectious Disease, Lancet Global Health*.

56

the number of articles published in peer-reviewed scientific journals

50

articles published in Scientific Citation Index (SCI) journals

Impact of the Oral Cholera Vaccine

A global cholera vaccine stockpile, managed by the WHO, was created in 2013 using the oral cholera vaccines developed by IVI. The stockpile created a previously non-existent market for oral cholera vaccines. It is estimated >20 million doses of the vaccine have been deployed in epidemic and endemic situations in nearly 20 countries so far (including India, Bangladesh, Ethiopia, Malawi, Iraq, South Sudan, Haiti, Tanzania, Cameroon, Guinea, Nepal, and the Democratic Republic of Congo).

Globally, OCV production was low, with demand exceeding supply. The WHO had to turn down requests from countries for supplies of vaccines that could not be filled because of the shortage.

That all changed when Euvichol® was approved in December 2015, followed by Euvichol-Plus®, employing a user-friendly plastic container, approved by the WHO Prequalification Program in December 2017. The addition of Euvichol-Plus® has increased global supply to more than 25 million doses for 2017, with the potential for further increased production in the future. More importantly, the extra capacity has contributed to reversing the cycle of low demand, low production, high price and inequitable distribution to one of increased demand, increased production, reduced price and increased access. Euvichol-Plus®, priced at about $1.30 per dose, is 25 percent cheaper than Euvichol®, and it will therefore enable aid and vaccine delivery organizations to procure more doses of OCV at the same cost.

With the vaccines and other tools now available to combat cholera, in October 2017 the WHO launched 'Ending Cholera—A Global Roadmap to 2030,' an ambitious strategy aimed at reducing cholera deaths by 90 percent by 2030. The stage has been set for the vaccine to make bigger contributions to combating cholera worldwide.

While supply has increased, there is room for improvement in the uptake of the vaccine. Funders, policymakers, and countries have cited the need for more advocacy and evidence on use of the vaccine in real-life situations to support decision-making on vaccine introduction.

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Our Donors

Core funding is provided by the Governments of the Republic of Korea and Sweden. We now welcome India, who recently became a financially contributing member state to IVI.

Public- and private-sector organizations and individuals also provide support, both monetary and in-kind, for the Institute's research and programs. Prominent organizations and individuals in Korea also provide support thanks to efforts of the Korea Support Committee for IVI (KSC). Your generosity is deeply appreciated.

Governments, International Organizations and Major Donors

Republic of Korea

Ministry of Health and Welfare (MOHW)

Korea Centers for Disease Control & Prevention (KCDC)

Ministry of Education (MOE)

Ministry of Foreign Affairs (MOFA)

Korea Health Industry Development Institute (KHIDI)

Ministry of Food and Drug Safety (MFDS)

Ministry of Trade, Industry and Energy (MOTIE)

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Korea International Cooperation Agency (KOICA)

Bill & Melinda Gates Foundation

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Swedish International Development Cooperation Agency (SIDA)

Republic of India

German Federal Ministry of Education and Research (BMBF)

World Health Organization (WHO)

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Korea Association of Otorhinolaryngologists

Community Chest of Korea

Seoul National University R&DB Foundation

Gyeongbuk Institute for Bio Industry

Ewha Womens University

Yonsei University

Yanghyun Foundation

Chong Kun Dang Kochun Foundation

Korea Exchange Bank Foundation

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Green Cross

SamjinGlobalnet Co., Ltd.

Seoul Dairy Cooperative

Celltrion

Coreana Cosmetics

Lee Sang Hee and Friends

Sky 72 Golf & Resort

Sartorius Korea Biotect. Co., Ltd.

Korea Industrial Safety Association

RAPHAS Co., Ltd.

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Korea Vaccine Co., Ltd.

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Seoul Pediatric Clinic

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Korea Fashion Association

Collaborators

Ajou University
Republic of Korea

Armauer Hansen Research Institute (AHRI)
Ethiopia

AVIR Green Hills Biotechnology AG

Bandim Health Project

Bangladesh Institute of Child Health
Bangladesh

Beams Biotechnology Co., Ltd.

Bernhard Nocht Institute for Tropical Medicine
Germany

Bharat Biotech
India

BioFarma
Indonesia

Bio-Korea
Republic of Korea

BOSTON CONSULTING GROUP

Pusan National University
Republic of Korea

Catholic University
Republic of Korea

Celltrion
Republic of Korea

Centers for Disease Control, R.O.C.
Taiwan

Centre de Recherches Médicales de Lambaréné
Gabon

Centre MURAZ / AGIR
Burkina Faso

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Republic of Korea

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Republic of Korea

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India

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U.S.A.

Coalition for Epidemic Preparedness Innovations

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Republic of Korea

Emory University
U.S.A.

Ethiopian Health and Nutrition Research Institute
Ethiopia

EuBiologics
Republic of Korea

Ewha Womens University
Republic of Korea

Fred Hutchinson Cancer Research Center
U.S.A.

Gavi, the Vaccine Alliance
Switzerland

Global Health Innovative Technology (GHIT) Fund
Japan

Global Health Investment Fund
U.S.A.

Global Health Security Agenda

Global Health Technology Coalition

Green Cross
Republic of Korea

Group for Technical Assistance
Nepal

Gyeongbuk Institute for Bio Industry
Republic of Korea

Hallym University
Republic of Korea

Hanyang University
Republic of Korea

icddr,b
Bangladesh

Incepta Vaccine
Bangladesh

Incheon National University
Republic of Korea

Indian Council of Medical Research
India

Indian Immunologicals Limited
India

Institut Pasteur
Republic of Korea

Institut Pasteur du Cambodge
Cambodia

Institut Pasteur
Senegal

Institut Supérieur des Sciences de la Population (ISSP)
Burkina Faso

Instituto Butantan
Brazil

International Society for Vaccines (ISV)
U.S.A.

JEE Alliance

Johns Hopkins University – International Vaccine Access Center (IVAC)
U.S.A.

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Kangwon National University
Republic of Korea

Kenya Medical Research Institute
Kenya

Kilimanjaro Christian Medical Centre
Tanzania

Konkuk University
Republic of Korea

Korea Center for Disease Control & Prevention
Republic of Korea

Korea Institute of Tuberculosis
Republic of Korea

Korea National Institute of Health (KNIH)
Republic of Korea

Korea Research Institute of Bioscience and Biotechnology (KRIBB)
Republic of Korea

Korea University
Republic of Korea

Kumasi Centre for Collaborative Research in Tropical Medicine
Ghana

Kyunghee University
Republic of Korea

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Republic of Korea

Mahidol University
Thailand

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Taiwan

Metrosalud ESE / Unidad Hospitalaria communa Santa Cruz, Medellín
Colombia

Ministry of Food and Drug Safety
Republic of Korea

Ministries of Health
Ethiopia, Malawi, South Sudan

Ministries of Public Health
Brazil, Colombia, Thailand

Ministry of Health and Population
Nepal

National Institute for Communicable Diseases (NICD)
South Africa

National Institute of Cholera & Enteric Diseases (NICED)
India

National Institute of Hygiene and Epidemiology (NIHE)
Vietnam

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U.S.A.

Oromia Regional Health Bureau
Ethiopia

Oxford Economic Forecasting
UK

Pan American Health Organization (PAHO)

Panacea Biotec Ltd.
India

Patan Hospital
Nepal

PATH
U.S.A.

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Republic of Korea

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Medellín, Colombia

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U.S.A.

Sanofi Pasteur
France

Secretaria de Salud
Medellín, Colombia

Sejong University
Republic of Korea

Seoul National University
Republic of Korea

Shantha Biotechnics
India

SK Chemicals
Republic of Korea

Stanford University
U.S.A.

Takeda Pharmaceutical Company Limited
Japan

Technical University of Berlin (TUB)
Germany

Transgovernment Enterprise against Pandemic Influenza of Korea (TEPIK)
Republic of Korea

UNICEF
Nepal

United States Centers for Disease Control and Prevention (CDC)
U.S.A.

University of Alabama at Birmingham, U.S.A.

University of Antananarivo
Madagascar

University of Antioquia
Columbia

University of Florida
U.S.A.

University of Gezira
Sudan

University of Gothenburg
Sweden

University of Melbourne
Australia

University of Ouagadougou
Burkina Faso

University of Oxford
UK

University of Queensland
Australia

University of Vermont
U.S.A.

University of Virginia
U.S.A.

University of Wisconsin
U.S.A.

VaBiotech
Vietnam

Walter Reed Army Institute of Research (WRAIR)
U.S.A.

Washington University
U.S.A.

Wellcome Trust Sanger Institute
UK

WHO Initiative for Vaccine Research (IVR)

WHO Programme for Immunization Preventable Diseases (IPD)
Nepal

WHO Regional Office for Europe (EURO)

WHO Regional Office for South-East Asia (SEARO)

WHO Regional Office for the Western Pacific (WPRO)

World Health Organization (WHO)

Yonsei University
Republic of Korea

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Established in 1998, the Korea Support Committee for IVI (KSC) is a nonprofit organization based in Seoul, Korea that mobilizes local support for IVI. KSC consists of prominent leaders from government, industry and academia in Korea who contribute their time and expertise to support IVI.

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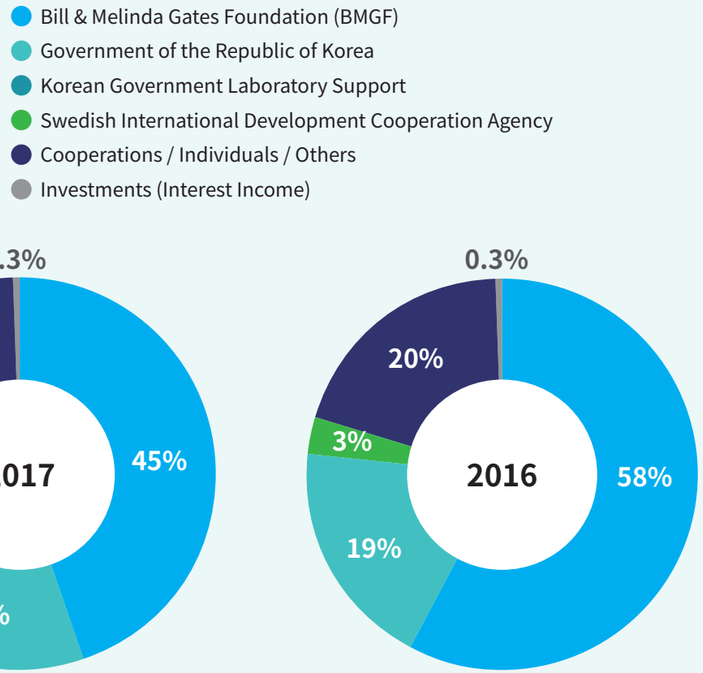
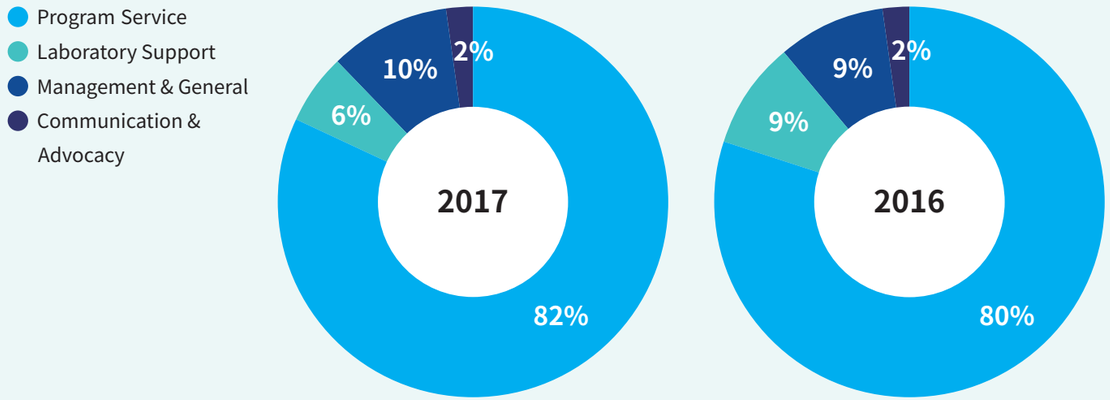
Finances

Revenue (in USD)	2017	2016
Bill & Melinda Gates Foundation (BMGF)	12,378,492	15,205,867
Government of the Republic of Korea	5,022,300	4,813,476
Korean Government Laboratory Support	446,978	-
Swedish International Development Cooperation Agency (Sida)	793,596	780,368
Corporations / Individuals / Others	9,039,548	5,149,713
Investments (Interest Income)	115,729	112,108
Total Revenue	**27,796,643**	**26,061,531**



Total Expense (in USD)	2017	2016
Program Service	21,409,516	20,009,212
Laboratory Support	1,514,689	2,188,346
Management & General	2,496,354	2,223,861
Communications & Advocacy	521,743	608,234
Total Expense	**25,942,303**	**25,029,653**
Foreign Exchange Gain (Loss)	**72,316**	**179,765**
Net Surplus (Deficit)	**1,926,656**	**1,211,643**



Assets	2017	2016
Cash and Cash Equivalents	3,389,308	5,676,076
Bank Deposits	15,696,083	15,980,280
Other Current Assets	555,329	763,775
Other Assets	1,275,619	1,064,298
Total Assets	**20,916,339**	**23,484,429**

Liabilities and Net Assets	2017	2016
Grant Funds-Deferred Support	11,557,615	15,803,851
Other Current Liabilities	2,354,718	2,734,583
Other Liabilities	131,355	-
Net Assets	6,872,651	4,945,995
Total Liabilities and Net Assets	**20,916,339**	**23,484,429**

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