

# Diarrhea Innovations Group (DIG)

Making a global impact against enteric and diarrheal illnesses



Almost half a million children under age five lose their lives to diarrhea each year. Without adequate, available, and accessible prevention and treatment options, survivors of diarrhea are often left weakened and vulnerable to re-infection and other opportunistic illnesses, leading to an unrelenting cycle of poverty and poor health. Chronic enteric infections with or without diarrhea are particularly dangerous for young children, whose brains and bodies are undergoing rapid growth and development. Repeated bouts of infection can lead to low-level gut damage and a syndrome known as environmental enteric dysfunction (EED), which impedes the absorption of nutrients and weakens the immune system. EED and associated conditions, such as malnutrition, contribute to growth stunting and deficits in cognitive development, and have far-reaching and long-lasting implications for the health of families, communities, and nations. Development and deployment of effective treatment and prevention options for enteric and diarrheal diseases has the potential to improve the long-term health and economic potential of underserved populations.

## Diarrhea Innovations Group

### Purpose

The Diarrhea Innovations Group (DIG) is a global network of innovators committed to reducing child mortality and morbidity from enteric and diarrheal diseases through the advancement of appropriate diagnostic and therapeutic technologies and approaches. It is a voluntary association of academic, nonprofit, public, and private members. The group aims to accelerate progress by focusing on solutions with the greatest potential for positive health impact in countries that bear the highest disease burden.

### Goals

- Serve as a venue for members to share knowledge, exchange information, identify partnerships, and discuss ideas.
- Serve as a venue to match innovators with potential partners and funders.

- Provide a regular forum for crowd-sourcing solutions to bottlenecks, challenges, and other issues impeding progress.

### Governance and structure

DIG is housed at PATH. It is currently co-chaired by Dr. Eugenio de Hostos, Director of Research and Preclinical Development, PATH and Dr. Mark Grabowsky, Chief Medical Officer, PanTheryx, Inc.

DIG hosts bimonthly conference calls where members have an opportunity to share research and solicit input. Previous speaker topics included potential interventions for enteric environmental dysfunction, diarrheal disease burden measured in disability-adjusted life years, liposome salt as the next generation of oral rehydration solution (ORS), and others. Each speaker presentation is followed by a member discussion.

DIG also hosts an annual in-person meeting, which is usually scheduled to coincide with the American Society of Tropical Medicine & Hygiene (ASTMH) annual conference.

The group's current membership includes more than 185 members from 27 countries and across sectors. About 45 percent of its members come from diarrhea-prevalent countries.

### Working groups

#### *Environmental enteric dysfunction working group*

EED is the manifestation of structural gut damage and impaired intestinal function that appears to result from diarrheal disease, parasitic infections, alterations in the gut microbial environment, and other causes. It is virtually ubiquitous in impoverished communities, especially in areas with limited access to clean water, sanitation, and hygiene, where children are constantly exposed to an array of enteric pathogens in their environment. EED in infants and young children has been linked to stunting, delayed cognitive development, increased susceptibility to infectious diseases, and poor oral vaccine immunogenicity. Recent data suggest that EED in pregnant women may be linked with shorter gestation and reduced infant length at birth.

DIG hosts a bimonthly working group meeting focused exclusively on EED research and development. The group's aim is to advance scientific understanding of EED, an EED case definition, and a pipeline of innovative diagnostic and assessment tools, interventions, and delivery strategies to reduce the burden of EED and associated health consequences.

## Recent work

### Improving access to diarrhea treatment

In November 2018, DIG submitted an application to the World Health Organization's (WHO) Model List of Essential Medicines (EML) Secretariat for the addition of co-packaged ORS + zinc on the core EML for children (EMLc). Clear global guidance around the use of the co-packaged ORS + zinc for diarrhea management is an important step toward harmonization with the long-standing recommendation by WHO and UNICEF around the use of both therapies, as well as creating an enabling environment to facilitate awareness and uptake at the national level. The application is now available on WHO's site:

[http://www.who.int/selection\\_medicines/committees/expert/22/ors-zinc/en/](http://www.who.int/selection_medicines/committees/expert/22/ors-zinc/en/). Additional letters of support and/or comments on the application may be submitted via email to [emlsecretariat@who.int](mailto:emlsecretariat@who.int) until March 1, 2019.

### Diarrhea symposium at ASTMH

In November 2018, DIG hosted a diarrhea symposium at the 67th ASTMH conference in New Orleans, LA. The symposium highlighted barriers and opportunities in driving down the burden of diarrheal disease among children under five, and included a panel of speakers from PATH, the Clinton Health Access Initiative, ColaLife, and the Wellcome Trust.



Panel discussion at the Diarrhea Innovations Group Symposium at the American Society of Tropical Medicine & Hygiene conference, 2018. Photo: PATH/Elena Pantjushenko.

### Tweet to Defeat

In October 2017, as part of its focus on advocacy around diarrheal disease, DIG co-hosted #overtakeDD, a global 24-hour Twitter relay. Dozens of diarrheal disease experts and advocates from around the world joined throughout the day to share research, highlight innovation, and call for greater attention to and investment in reducing the burden of childhood diarrhea. Some of the topics included rotavirus molecular epidemiology; the role of clean water, sanitation, and hygiene in reducing malnutrition; and advancing therapeutics for *Cryptosporidium*.

## Join DIG

To join the network, please email [diarrheainnovations@path.org](mailto:diarrheainnovations@path.org).



PATH is a global organization that works to accelerate health equity by bringing together public institutions, businesses, social enterprises, and investors to solve the world's most pressing health challenges. With expertise in science, health, economics, technology, advocacy, and dozens of other specialties, PATH develops and scales solutions—including vaccines, drugs, devices, diagnostics, and innovative approaches to strengthening health systems worldwide.

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