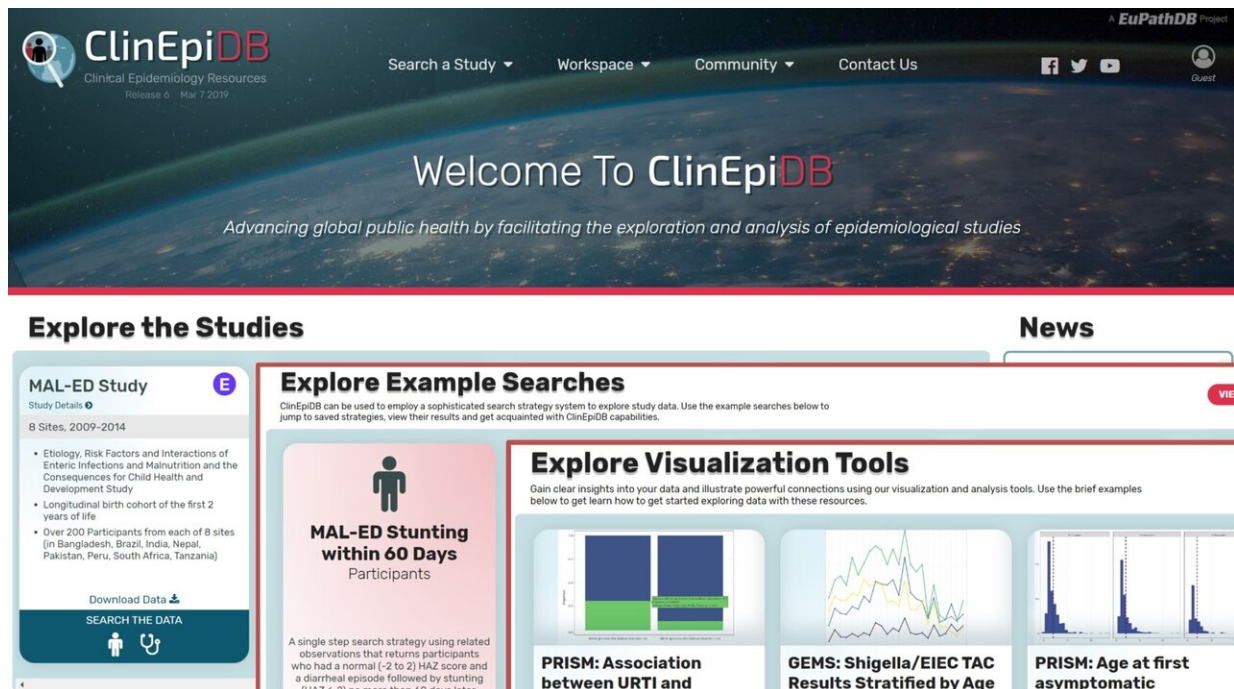# ClinEpiDB data resource releases childhood malnutrition and intestinal disease study

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A rich set of data on childhood intestinal infection and malnutrition is now available to researchers around the globe via ClinEpiDB, a dynamic data resource. The site has released information from the global MAD-ED study, a nearly decade-long research collaboration between the Foundation for the National Institutes of Health, Fogarty International Center, and an international network of investigators. Credit: ClinEpiDB/University of Pennsylvania

As the big data revolution continues to evolve, access to data that cut

across many disciplines becomes increasingly valuable. In the field of public health, one barrier to sharing data is the need for users to fully comprehend complex methodological details and data variables in order to properly conduct analyses. The Clinical Epidemiology Database, ClinEpiDB.org aims to address these barriers by not only providing access to huge volumes of data, but also providing tools to help interpret complex global epidemiologic research studies. The development of ClinEpiDB has been led by a collaboration between the University of Pennsylvania's School of Arts and Sciences, Perelman School of Medicine, University of Georgia's Institute of Bioinformatics, University of Liverpool's Institute of Integrative Biology.

On March 7th ClinEpiDB released data, methodology, and documentation from "The Etiology, Risk Factors, and Interactions of Enteric Infections and Malnutrition and the Consequences for Child Health and Development" (MAL-ED) study. The MAL-ED study represents a nearly decade-long research collaboration between the Foundation for the National Institutes of Health (FNIH), Fogarty International Center, and an international network of investigators. The MAL-ED study was designed to help identify environmental exposures early in a child's life that are associated with shortfalls in physical growth, cognitive development, and immunity. The study characterizes gut function biomarkers on the causal pathway from environmental exposure to growth and development deficits and assesses diversity across geographic locations with respect to exposures and child health and development. The MAL-ED consortium has published a significant library of peer-reviewed publications and ClinEpiDB now makes the MAL-ED data highly visible and accessible in new and exciting ways.

ClinEpiDB is also home to the Global Enteric Multicenter Study (GEMS) which contains data from more than 22,000 children from seven sites in South Asia and Africa and was the largest-ever study to investigate the causes to moderate-to-severe diarrheal illness in children

in lower- to middle-income countries. The most recent ClinEpiDB release also contains data from GEMS1A, a continuation of the GEMS study that broadened its scope to include less-severe diarrheal episodes. The addition of MAL-ED adds to the growing resource of high-quality maternal and child global health data.

"Over 10 years, our international network of investigators collaborated through MAL-ED to better understand the complicated relationships among intestinal infections, nutrition and other environmental exposures on child development," said Michael Gottlieb, Ph.D., FNIH Deputy Director of Science (retired) and lead Principal Investigator for the MAL-ED study. "The MAL-ED Network generated a high-quality data set, possibly the largest of its kind, on various research areas—from cognitive abilities to gut function to immunological response. We are pleased to make this dataset available through ClinEpiDB so it can be used by researchers far into the future to increase scientific understanding, test new research hypotheses, and design and implement better intervention strategies to reduce childhood morbidity and mortality."

MAL-ED sites (located in Iquitos, Peru; Fortaleza, Brazil; Haydom, Tanzania; Limpopo, South Africa; Bhaktapur, Nepal; Naushero Feroze, Pakistan; Vellore, India; Dhaka, Bangladesh) allowed for comparisons to be made among and between children living in geographically and culturally diverse urban and rural environments and in countries at different levels of economic development. MAL-ED data in ClinEpiDB account for over 1.3 million observations covering anthropometrics, nutrition, vaccination status, diarrheal and respiratory disease episodes and countless other details collected by community field workers in 2009-2014. The current release includes longitudinal data from children followed two times a week for the first 24 months of life. Future data releases will contain data for some children up to 5 years of age. ClinEpiDB allows users to walk through these data easily via an intuitive

interface, enabling point-and-click filtering, simple queries and more complex "search strategies." See https://youtu.be/535PcFrBH8M for a video introduction to this resource. ClinEpiDB will continue to grow and provide increased access to malaria and maternal and child health global datasets thus facilitating epidemiologic research in an open data environment while protecting patient identity.

Provided by University of Pennsylvania