

Reviewing MAL-ED study details on the “Data Set page”

This exercise will introduce you to the “Data Set page”, where you can find study procedures, methodologies, Case Report Forms (the forms used for data collection), data dictionaries, key study personnel, associated publications, and other information associated with each study. It is always a good idea to explore the information of the Data Set page before you start exploring the data to make sure you understand the study design.

Reviewing study details on the Data Set page

1. Under the “Explore the Studies” section on the homepage, there are separate “Cards” that contain general information (study design, dates, sites, outcomes of interest, and numbers of participants) about each study. Cards that are greyed out indicate studies we are currently working to load onto the site; data from these studies will be available in the near future. You can scroll through to view all of the study cards. How many sites have data loaded onto ClinEpiDB from the MAL-ED study¹?

The screenshot shows the ClinEpiDB homepage. The top navigation bar includes 'Search a Study', 'Workspace', 'Community', and 'Contact Us'. The main section is titled 'Explore the Studies' and displays four study cards. The MAL-ED Study card is highlighted with a red circle around the 'Download Data' button. The 'News' sidebar on the right contains updates about ClinEpiDB releases.

Study Name	Study Design	Sites	Participants	Outcomes
GEMS1 Case Control	Case-Control	7 S. Asian and African Sites, 2007-2011	22,567 children	Incidence and impact of moderate-to-severe diarrhea
GEMS1A Case Control	Case-Control	7 S. Asian and African Sites, 2011-2013	14,242 Participants	Incidence and impact of less-severe diarrhea (LSD)
India ICEMR Longitudinal Cohort Study	Longitudinal	2 sites in India from 2013-2015	397 participants from 110 households with 1,249 observations	Longitudinal birth cohort of the first 2 years of life
MAL-ED Study	Longitudinal	8 Sites, 2009-2014	Over 200 Participants from each of 8 sites	Etiology, Risk Factors and Interactions of Enteric Infections and Malnutrition and the Consequences for Child Health and Development Study

2. Click on “Study Details” on the MAL-ED card to open the MAL-ED Data Set page. The MAL-ED Data Set page is where you will find more information about the study description, design, associated publications, investigators, and contact information for the MAL-ED study.

The screenshot shows the ClinEpiDB homepage with the 'Explore the Studies' section. The MAL-ED Study card is highlighted with a red circle around the 'Study Details' link.

¹ MAL-ED data from 8 sites (Bangladesh, Brazil, India, Nepal, Pakistan, Peru, South Africa, and Tanzania) are available on ClinEpiDB.

3. Scroll down the MAL-ED Data Set page to see what types of study details are available.

ClinEpiDB

Search a Study

Workspace

Community

Contact Us

Danica

Data Set: MAL-ED Study

Summary: The Etiology, Risk Factors, and Interactions of Enteric Infections and Malnutrition and the Consequences for Child Health (MAL-ED) Study, led by the Fogarty International Center of the National Institutes of Health and the Foundation for the National Institutes of Health, has been established at sites in 8 countries with historically high incidence of diarrheal disease and undernutrition to examine the central hypothesis that enteropathogen infection contributes to undernutrition by causing intestinal inflammation and/or by altering intestinal barrier and absorptive function.

Primary publication: The MAL-ED study: a multinational and multidisciplinary approach to understand the relationship between enteric pathogens, malnutrition, gut physiology, physical growth, cognitive development, and immune responses in infants and children up to 2 years of age in resource-poor environments. MAL-ED Network Investigators et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S193-206

Primary contact: David Spiro, Fogarty International Center, National Institutes of Health, Bethesda, Maryland

EuPathDB release # / date: ClinEpiDB /

SEARCH THE DATA

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1 Annotation, curation and identifiers

▼ Associated Publications

- The MAL-ED study: a multinational and multidisciplinary approach to understand the relationship between enteric pathogens, malnutrition, gut physiology, physical growth, cognitive development, and immune responses in infants and children up to 2 years of age in resource-poor environments. MAL-ED Network Investigators et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S193-206
- Infant Nutritional Status, Feeding Practices, Enteropathogen Exposure, Socioeconomic Status, and Illness Are Associated with Gut Barrier Function As Assessed by the Lactulose Mannitol Test in the MAL-ED Birth Cohort. Lee et al. Am. J. Trop. Med. Hyg. 2017;97(1):281-290
- The etiology, risk factors, and interactions of enteric infections and malnutrition and the consequences for child health and development study (MAL-ED): description of the Tanzanian site. Mduma et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S325-30
- Development of the Dzimauli community in Vhembe District, Limpopo province of South Africa, for the MAL-ED cohort study. Bessong et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S317-24
- Santa Clara de Nanay: the MAL-ED cohort in Peru. Yori et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S310-6
- Demographic, socioeconomic, and health characteristics of the MAL-ED network study site in rural Pakistan. Turab et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S304-9
- Bhaktapur, Nepal: the MAL-ED birth cohort study in Nepal. Shrestha et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S300-3
- Establishment of the MAL-ED birth cohort study site in Vellore, Southern India. John et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S295-9
- Geography, population, demography, socioeconomic, anthropometry, and environmental status in the MAL-ED cohort and case-control study Sites in Fortaleza, Ceará, Brazil. Lima et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S287-94
- The MAL-ED cohort study in Mirpur, Bangladesh. Ahmed et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S280-6
- Evaluating associations between vaccine response and malnutrition, gut function, and enteric infections in the MAL-ED cohort study: methods and challenges. Hoest et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S273-9
- The MAL-ED cohort study: methods and lessons learned when assessing early child development and caregiving mediators in infants and young children in 8 low- and middle-income countries. Murray-Kolb et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S261-72
- Modeling environmental influences on child growth in the MAL-ED cohort study: opportunities and challenges. Richard et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S255-60
- Infant feeding practices, dietary adequacy, and micronutrient status measures in the MAL-ED study. Caulfield et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S248-54
- Assessment of environmental enteropathy in the MAL-ED cohort study: theoretical and analytic framework. Kosek et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S239-47
- Methods of analysis of enteropathogen infection in the MAL-ED Cohort Study. Platts-Mills et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S233-8
- Microbiologic methods utilized in the MAL-ED cohort study. Houpt et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S225-32
- Disease surveillance methods used in the 8-site MAL-ED cohort study. Richard et al. Clin. Infect. Dis. 2014 Nov 01;59 Suppl 4():S220-4
- Pathogen-specific burdens of community diarrhoea in developing countries: a multisite birth cohort study (MAL-ED). Platts-Mills et al. Lancet Glob Health 2015;3(9):e564-75
- Measuring socioeconomic status in multicountry studies: results from the eight-country MAL-ED study. Psaki et al. Popul Health Metr 2014 Mar 21;12(1):8

Contact David Spiro

Contact Institution Fogarty International Center, National Institutes of Health, Bethesda, Maryland

4. See if you can use the information on the MAL-ED Data Set page to answer the following questions:

- **Question 1: At what ages were participants enrolled in the MAL-ED study?**
- **Question 2: At what ages were blood samples collected from study participants?**
- **Question 3: Where can you find the Case Report Forms used in the MAL-ED study?**

Answers:

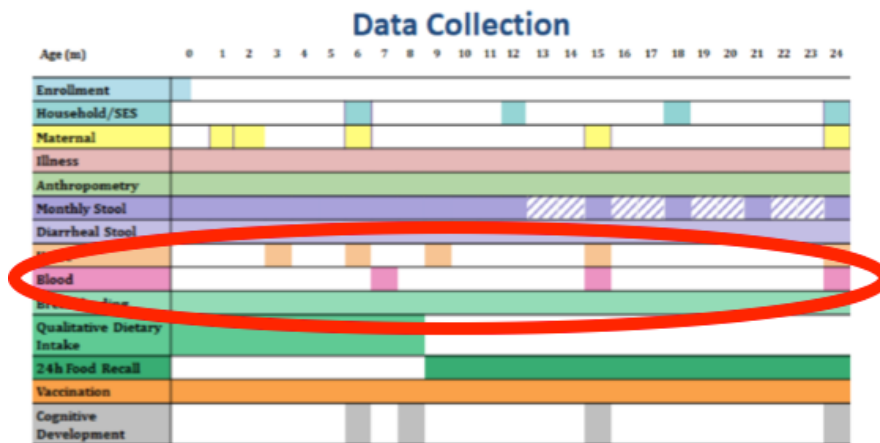
- **Question 1:** Participants were enrolled within the first 17 days of life.

Methodology, Study Design Details: In contrast to cross-sectional and case-control studies, the MAL-ED study was designed as an observational study that used a prospective longitudinal design to directly address a complex system of exposures and health outcomes in children born and living in eight culturally and geographically diverse resource-constrained communities in low and middle income countries. Children were enrolled within the first 17 days of life and were visited twice weekly through to 24 months of age to collect data as represented in the figure below. Each site recruited more than 200 children over a 24-month time period – targeting a smooth and constant monthly enrolment across this time frame – to assess seasonal effects of exposures. Details of the study design and descriptions of data and sample collection have been published (*Clinical Infectious Diseases*, vol. 59, suppl. #4, November, 2014).

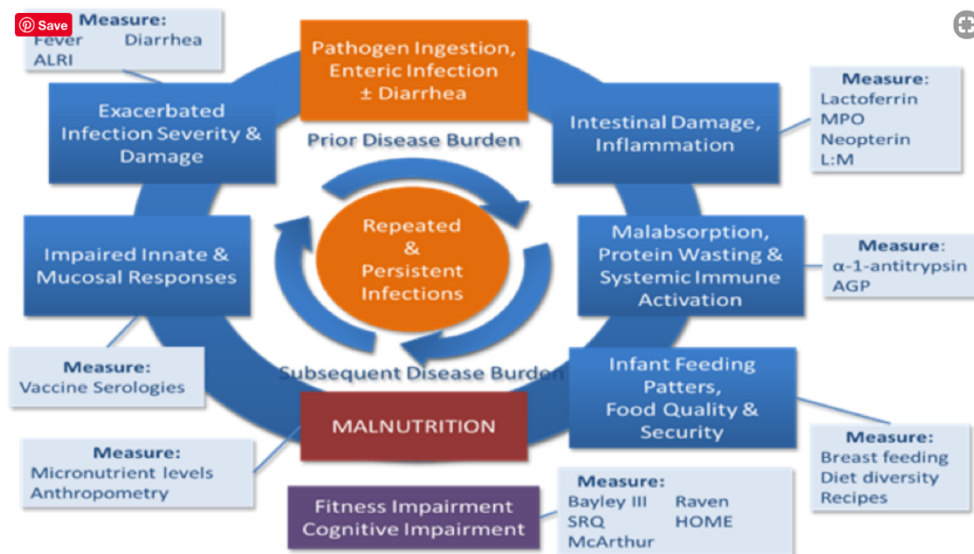
Subjects were enrolled after signed informed consent was obtained according to appropriate procedures agreed to for this project. All sites used a common standardized protocol that was developed and agreed to by study investigators, and was reviewed and approved by national, local and organizational review boards, as appropriate and required, for each collaborating institution.

The aim of the MAL-ED study is to improve scientific understanding of the complex interrelationships among enteropathogen infection, dietary intake, nutritional status, gut physiology, growth, immune function and vaccine response, and cognitive development. The timing of data and sample collection and the assessments determined are shown here.

- **Question 2:** Blood was collected from study participants at 7, 15, and 24 months of age.



- **Question 3:** Scroll down to the “Case Report Forms and Data Dictionaries” section. There, you can find a link to download the “Case report form codebook”. The original case report forms are contained in this download file.



Developing appropriate interventions designed to break this “vicious cycle of poverty” is a long term goal. It is anticipated that knowledge derived from MAL-ED will help the public health community to better engineer prevention strategies and interventions that are envisioned to minimize those factors that contribute to lost lifetime potential.

Publications from the project can be found by clicking here: [PubMed Search for MAL-ED](#)

Case Report Forms and Data Dictionaries:

- [Case report form codebook](#) - The codebook for each case report form is included as a separate sheet
- [Analytic dataset codebook](#) - The codebook for each analytic dataset is included as a separate sheet