

CHHS

CLINICAL & RESEARCH PARTNERS

COLLABORATING SCIENTIFIC INSTITUTIONS

Participating hospitals will enroll 2,000 mother-infant pairs (MIPs) over 6 years

Multiple urine samples will be collected from each MIP

Urine samples will be analyzed for levels of target herbicides

HOSPITALS

Franciscan Health Indianapolis
Indiana

Gundersen Health System
La Crosse, WI

Additional Hospitals
TBD

LABS

Centers for Disease Control
Atlanta, GA

Indiana University
Indianapolis, IN

Others
TBD

RESEARCH GROUPS

Ramazzini Institute
Bologna, Italy

George Washington University
Washington, D.C.

Boston College
Boston, MA

SPONSORED SCIENCE

Research priorities recommended by Heartland Study Science Advisory Board

Management Team provides final review and approval

Fiscal management by --  **Franciscan HEALTH FOUNDATION**

ANALYTICAL METHODS

Herbicide Levels in Amniotic Fluid
Dr. John Fagan, Health Research Institute, Fairfield, IA

Herbicide Biomonitoring Methods Ring Trial
Health Research Institute
Ramazzini Institute
Others TBD

BIOMONITORING

Analysis of Historic Urine Samples
Dr. Jill Reiter, Indiana University School of Medicine

EPIGENETICS

Epigenetic Markers of Herbicide Exposure
Dr. Robin Mesnage & Dr. Michael Antoniou, King's College, London

The Heartland Study 
www.heartlandstudy.org



TARGET HERBICIDES = Glyphosate, Dicamba, & 2,4-D