

Public Health Genomics and Translational Research

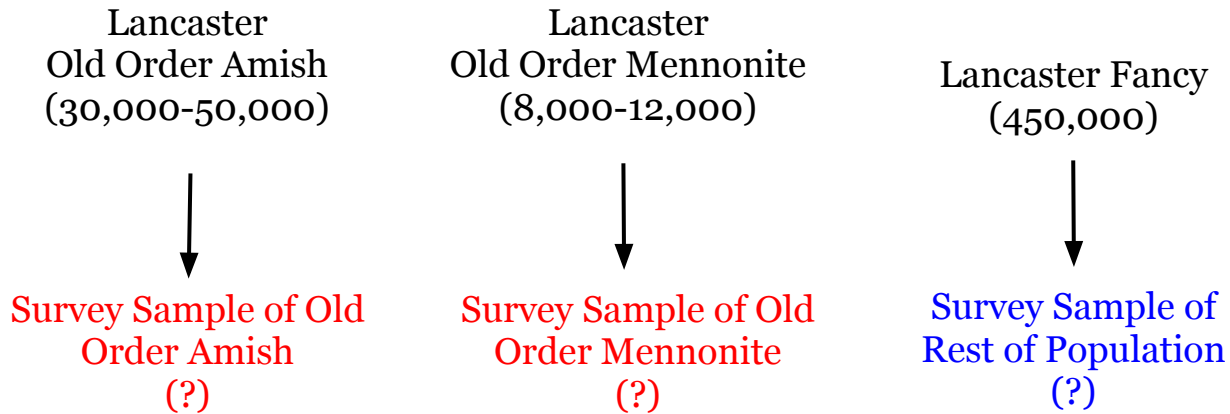
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Goals

- Draft and distribute a health survey to the Lancaster County Plain communities
 - Including the collection of genetic samples
- Design a course in Public Health Genomics (PBH471) for Spring 2014 that will involve students in this work

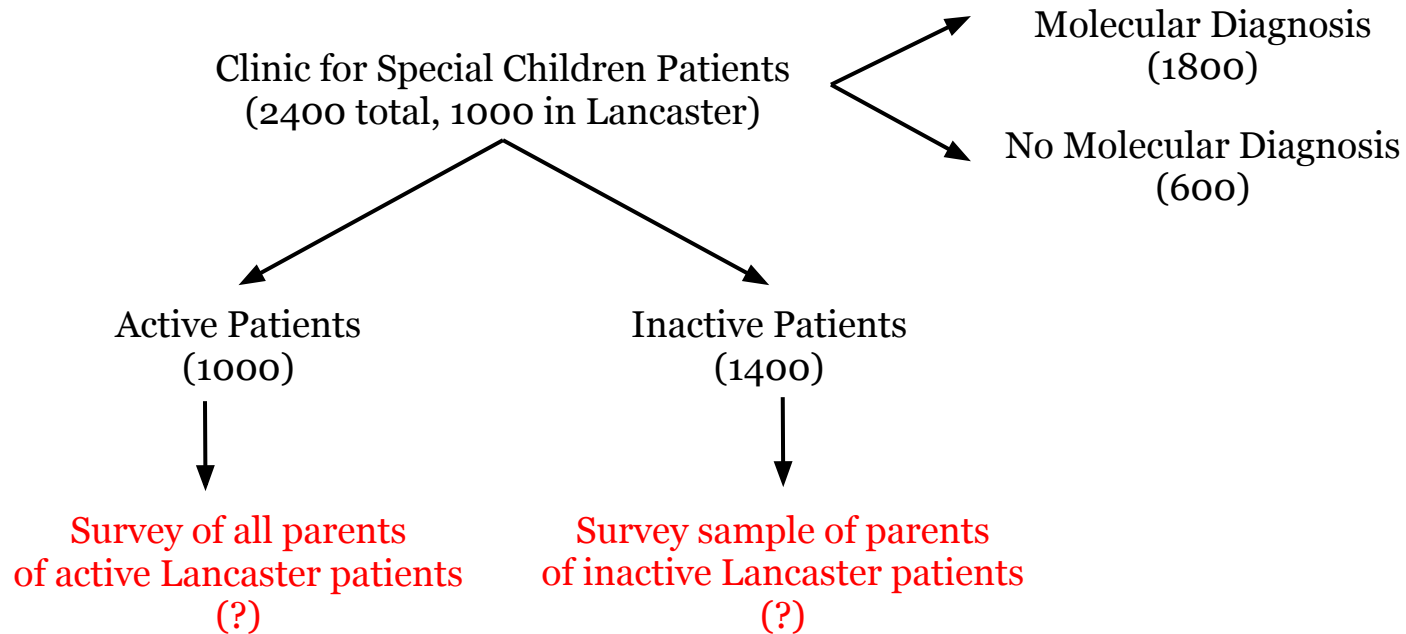
Sampling

Populations



Sampling

Clinic for Special Children patients



*Numbers are close approximations

General Health

- Baseline physical and mental health measures in the Plain communities of Lancaster County
- Other topics:
 - Preventive care
 - Environmental exposures
 - Chronic health conditions
 - Access to care
 - Social support
 - Mental health attitudes
- Free writing space

Cultural Impact

- Survey will also include culturally implicative questions about:
 - Fatalism
 - Genetic testing
 - Willingness to integrate modern medicine into their lives

Genetic Sample

Buccal swab to screen 30-35 genes

- 15 common Plain disease genes
 - Maple Syrup Urine Disease (MSUD)
 - Glutaric Aciduria (GA1)
 - Bipolar disorder
 - Ellis-Van Creveld Syndrome (EVC)
- 15 common polymorphic alleles
 - Blood type
 - Eye color
 - Factor V Leiden

Questions

- What is our obligation to individuals we identify as at-risk for disease?
- What is our obligation to individuals we identify as at-risk for passing disease genes on to their children?
- How do we fulfill these obligations?

Public Health Genomics (PBH471)

The application of genomics, *the interaction between the human genome, behavior, and the environment*, to improving the health of the whole community.

Public Health Genomics (PBH471)

○ Topics include:

- Pedigree analysis
- Genetic testing
- Newborn screening
- Prevalence of disease genes
(using the Summer 2013 Health Survey)
- Epigenetics
- Social epidemiology
- Public policy
- Human Genome Project