Case Western Reserve University
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Informed Consent and Genetic Research:

Risks, Uncertainty and Genome-Wide Association Studies

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This morning…

Consent Process

- Goals
- Participants
  - Boundaries

GWAS

- What is it?
- How is it different from other research?
- What can it serve as a reminder for good practice?

The relationship: Investigators and Research Subjects

Researchers need subjects to participate

Participants must volunteer

Must understand the choice that is being presented

Both sides need to understand the boundaries

What is GWAS?

Research studies that explore the connections between specific genes (genotype) and their outward expression (phenotype)

Goal is to discover genetic factors that contribute to the development, progression, and treatment of disease

Possible because of technology that allows for quick and accurate analysis of whole genome samples

Requires large numbers to identify statistically significant genetic variations

Points to Consider for IRBs and Institutions
http://grants.nih.gov/grants/gwas/gwas_ptc.pdf
11/29/2007

NIH Policy for sharing GWAS Data:

Who?

NIH Supported or Conducted Genome-Wide Association Studies (effective as of January 25, 2008),

- Data Sharing Plan is part of the grant application and proposal

What?

Policy that creates a database (The **d**ata**b**ase of **G**enotypes and **P**henotypes or "dbGaP"), a repository at the National Center for Biotechnology Information (within the National Library of Medicine)

- Genotype: consists of single nucleotide polymorphisms (SNPs) – between 300,000 to 1 million SNPs per sample
- Phenotype: data on health conditions, behavioral characteristics and measureable or observation traits

NIH Policy for sharing GWAS Data: Institutional and IRB consideration…

Information gathered (SNP pattern) is unique to individuals, vary among ethnic groups, and possible to identify family relationship.

"It is anticipated that technological and analytical capacity

GWAS “Points to Consider” regarding Informed Consent

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Benefits

• Public benefit through the advancement of science

Risks

• Distinguish between genetic (DNA/single gene) and genomic (interaction among genes) research?
  • A tree verses a forest
• Privacy risks (your data will be released to the public, insurers, employers, law enforcement officers
• Security breaches
• Relevant risks to family members
• Relevant risks to identifiable populations or groups?

GWAS "Points to Consider" regarding Informed Consent

Return of Research Results

- Procedures in place to report back to investigator with key/code
- Under what conditions/findings
  - Clinical validation
- Method of contact (institutional website vs. direct contact)
  - Question of scope / boundaries

Privacy and Confidentiality

- Who has the information, what is the level of care/responsibility required

GWAS "Points to Consider" regarding Informed Consent

Withdrawal of Consent

- Who is the contact person?
- What institution?
- What about children who are enrolled who reach the age of maturity?
- Proxy Consent?

- Clear understanding that once data is released from the NIH GWAS Database – it cannot be withdrawn
  - Future or further release of information

GWAS "Points to Consider" regarding Informed Consent

Other Considerations:

- Commercial Use
- Cultural Considerations
  - Consent
  - Stigma
  - Special laws

The challenge

There is a lot of information to considered when designing a protocol, drafting a consent form, and recruiting a research participant into your GWAS study.

The NIH GWAS database is something that must be incorporated into the study

How do we not treat it like an "add on"

Some Suggestions

Separate GWAS study from the discussion of and consent relating to the database

Allow time to discuss

Admit to uncertainty and ignorance

Draft the consent form questions (limitations and scope) with your specific research population in mind

- Values and motivations