

Private-Public Partnership in Pre-competitive Research: an American Perspective

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Toward Precision Medicine: Building a Knowledge Network for Biomedical Research and a New Taxonomy of Disease

Committee on a Framework for Development a New Taxonomy of Disease;
National Research Council

available from The National Academies Press at http://www.nap.edu/catalog.php?record_id=13284

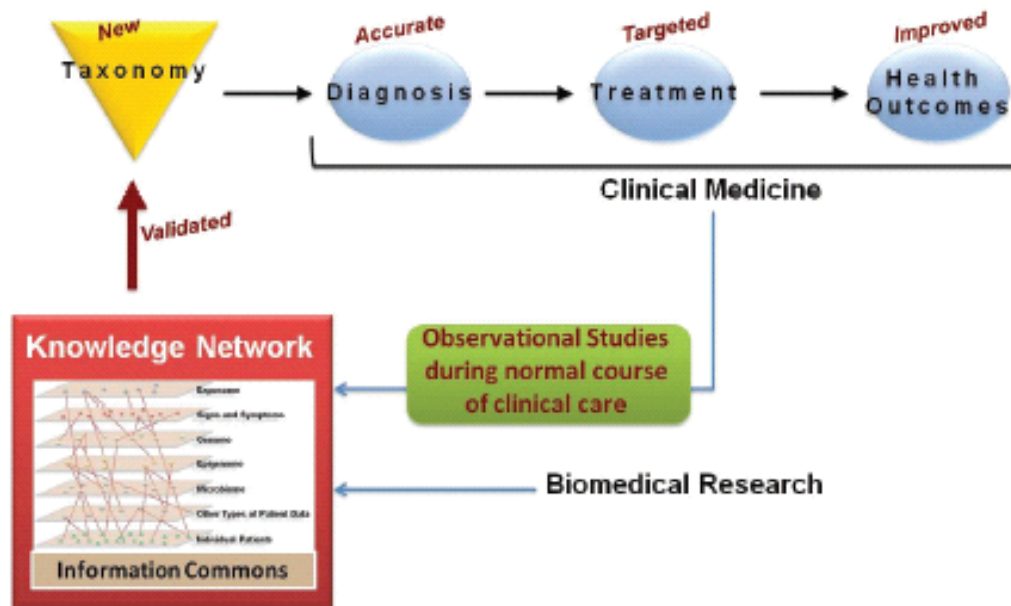
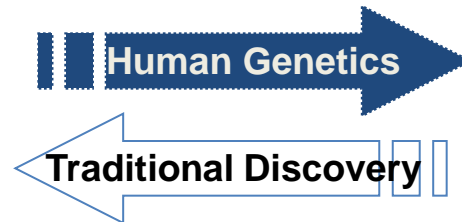


FIGURE S-1 Creation of a New Taxonomy first requires an "Information Commons" in which data on large populations of patients become broadly available for research use and a "Knowledge Network" that adds value to these data by highlighting their inter-connectedness and integrating them with evolving knowledge of fundamental biological processes.

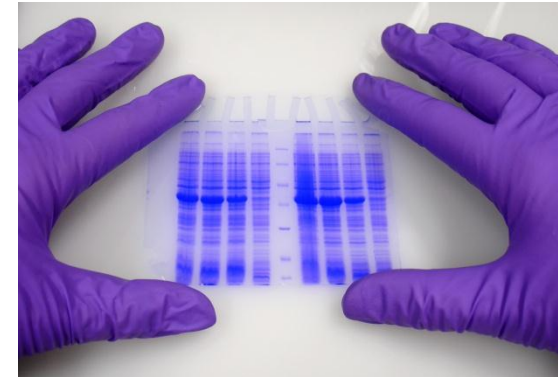
SOURCE: Committee on A Framework for Developing a New Taxonomy of Disease.

Bedside to Bench

Clinical Outcome



Molecular Targets



Clinic to target:

- ▶ Defined unmet clinical need
- ▶ Quantitative translation from human genetics to **optimized therapy based on an understanding of human biology**

vs.

Target to clinic:

- ▶ Poor alignment of molecular understanding to clinical need
- ▶ Animal models inconsistently predictive of human disease and outcomes

Human genetics links clinical outcomes to the relevant human biological knowledge required to impact unmet medical needs

Biobanks and Biomolecular Resources

Most of our current knowledge on diseases as well as available diagnostic assays and drugs are based on systematic investigation of human biological samples and medical data

Access to high quality biological samples is the #1 roadblock for cancer research (NCI, USA)

Biological resources are the essential raw materials for the advancement of biotechnology, human health, and research and development the life sciences (OECD 2001)

The Challenges

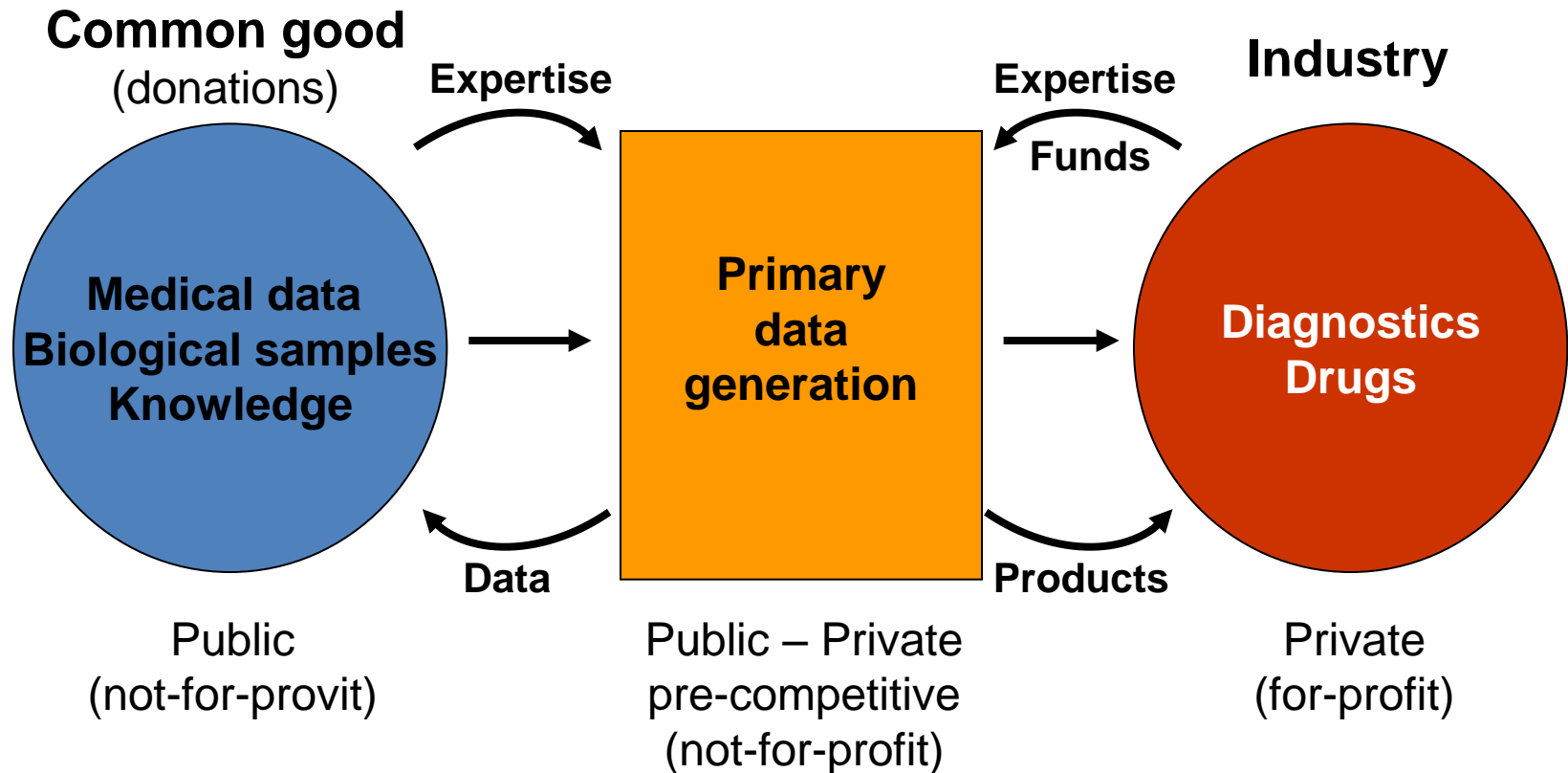
Bio-specimen research occurs in a complex and diversely regulated environment

Biospecimen research interfaces health care and citizens- public good vs. IP and profit

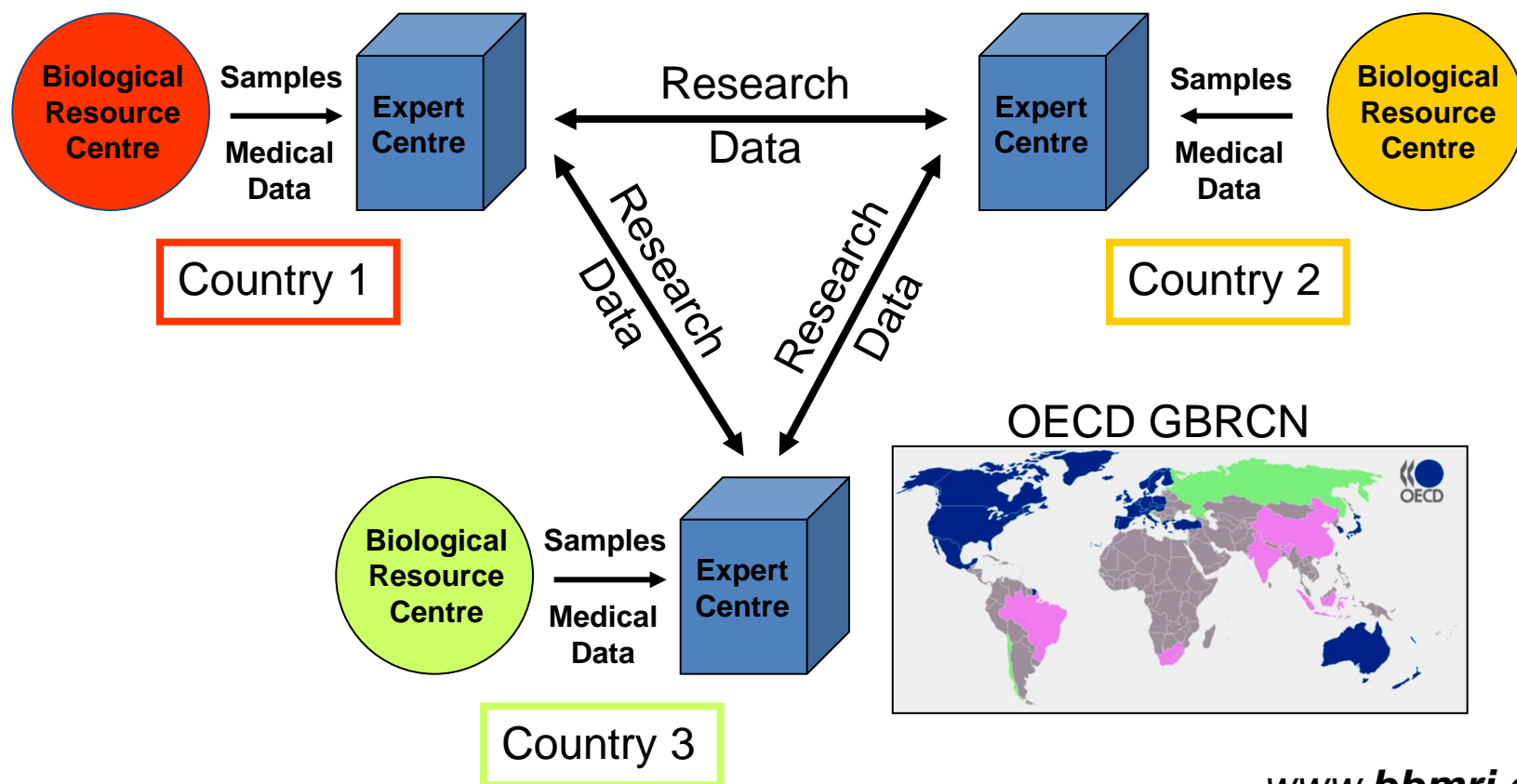
Potential Solution: “Expert Centres”

- Keep the detailed clinical data and related bio-specimens with the clinicians and scientists who generated them and who have established relationships with the study subjects and the local culture.
- Use public-private scientific collaborative expertise and resources to obtain the key biologic knowledge required to address specific health outcomes.
- Make the newly discovered basic biological knowledge publicly available with no IP restrictions where it can be used by all to improve health outcomes

Expert Centres: win-win for public and private sectors

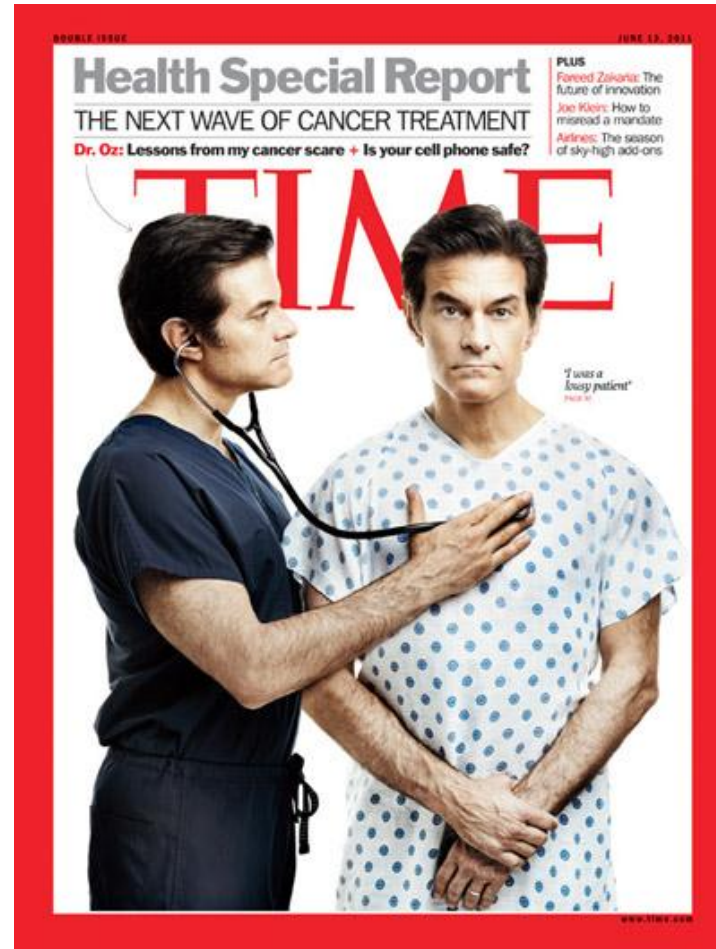


Expert Centres as Highways for Transnational Research Collaborations





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