



# Key Issues in the Future of Health Care

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**"Here's my  
sequence..."**



Source: Nature Medicine, Volume 6, Number 5, May 2000

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# Genetics and our healthcare system

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Accelerating 17 year gap between science and practice: how?

Evidentiary standards for coverage: RCTs? Retrospective studies?

Access: framework for what is/isn't covered

Return on investment – what matters most?

Linking the data together – integrating a fragmented healthcare system

Protocols – who writes and endorses them?

- You can be wired up and connected – but who writes the 'rules'?

# Adoption of Health Care Technology Today is at Least 17 Years from Research to Clinical Practice

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Takes 4–6 years for a new technology to have >25 citations in the medical literature<sup>1</sup>

Delay for changes in treatment recommendations in textbooks is >10 years<sup>2</sup>

Two million articles published in medical journals annually<sup>3</sup>

Big issue – lack of information infrastructure to “prompt” providers

<sup>1</sup> Altman DG, Goodman SN: Transfer of technology from statistical journals to the biomedical literature: Past trends and future predictions. *JAMA* 1994;272:129-32

<sup>2</sup> Antman EM, Lau J et al: A comparison of results of meta-analyses of randomized control trials and recommendations of clinical experts: Treatments for myocardial infarction. *JAMA* 1992;268:240-8.

<sup>3</sup> Mulrow CD. Rationale for systematic reviews. *Br Med J* 1994;309:597-9.

# Evidentiary Basis for Decisions

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U.S. Food, Drug, and Cosmetic Act of 1962 imposed randomized trial data for drug effectiveness

Should same standard be true for genetic screening, disposition testing, and pharmacogenomics?

- Bradford-Hill Criteria for causation from observational studies

# Framework for Access

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Genetic screening

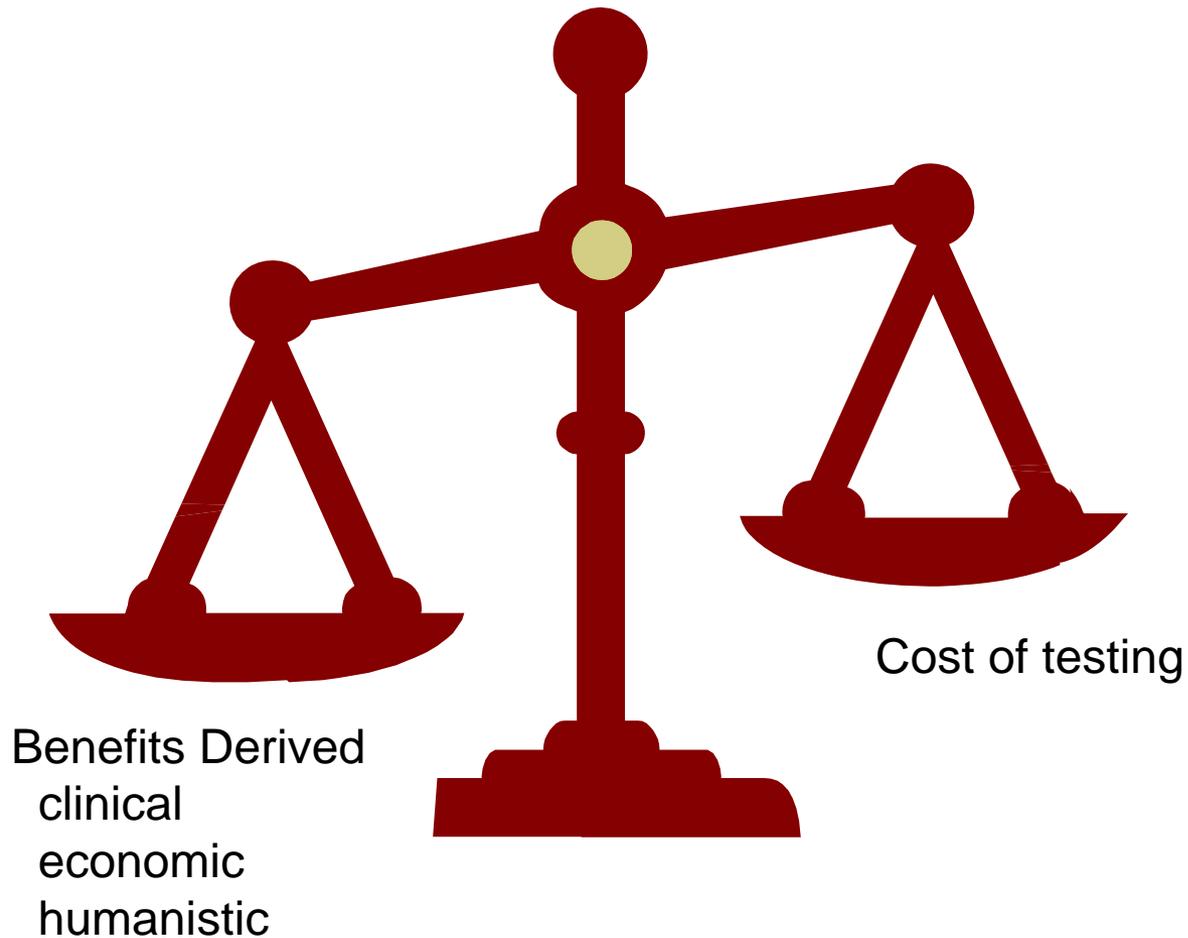
Genetic predisposition testing

Genetic monitoring of effect

Pharmacogenetics/genomics

# Return on Investment

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# Return on Investment

## What's Needed for Coverage

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### Health Economic Evaluation?

- Cost-benefit analysis (i.e. both costs and benefits in dollars – simple math over some time horizon?)
- Cost-effectiveness analysis (i.e. cost/life year saved or per quality adjusted life year)?

Or is it tallying costs on the one hand and tallying benefits on the other hand – and making balanced judgement some other way?

# Linking Data Together

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Today, here is where data reside

- Health plans have encounter, hospitalization information
- PBMs have prescription information
- EMRs have ambulatory care information
- Labs have laboratory value information
- PHRs have personal health information

# Linking Data Together

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## Framework Needed

- Standardization of data
- Placement of all data into a single repository somewhere
- Providing roles-based access to the data

Without this – cannot leverage what we collect

# Protocols

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Layering onto data

Rule-based system that informs decisions

But who writes the rules?

Goes beyond guidelines

Example: Seniors edits in DUR result in change in therapy 25% of the time\*

Source: Monane M et al JAMA 1998

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# HealthCare Reform

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Opportunity is NOW

Genetic science is exploding

- Need to harness our healthcare delivery system to make it meaningful