Clinical Decision Support

ONC ANNUAL MEETING

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National Academy of Medicine
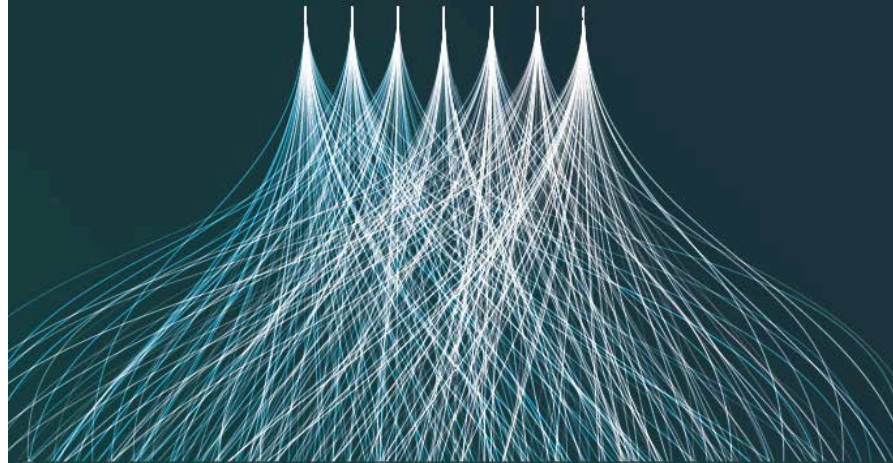
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Leadership • Innovation • Impact | *for a healthier future*

The Learning Health System Series

Optimizing Strategies for

CLINICAL DECISION SUPPORT

Summary of a Meeting Series

A Special Publication of the
NATIONAL ACADEMY OF MEDICINE

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Optimization requirements

- **Urgency**: compelling circumstances
- **Believability**: shared vision
- **Feasibility**: technology for content and delivery
- **Viability**: in the commercial marketplace
- **Reliability**: quality standards
- **Compatibility**: harmonization standards
- **Utility**: evidence of effectiveness and efficiency
- **Workability**: prepared system workflow interfaces
- **Acceptability**: patient, family, clinician readiness
- **Adaptability**: networked learnings
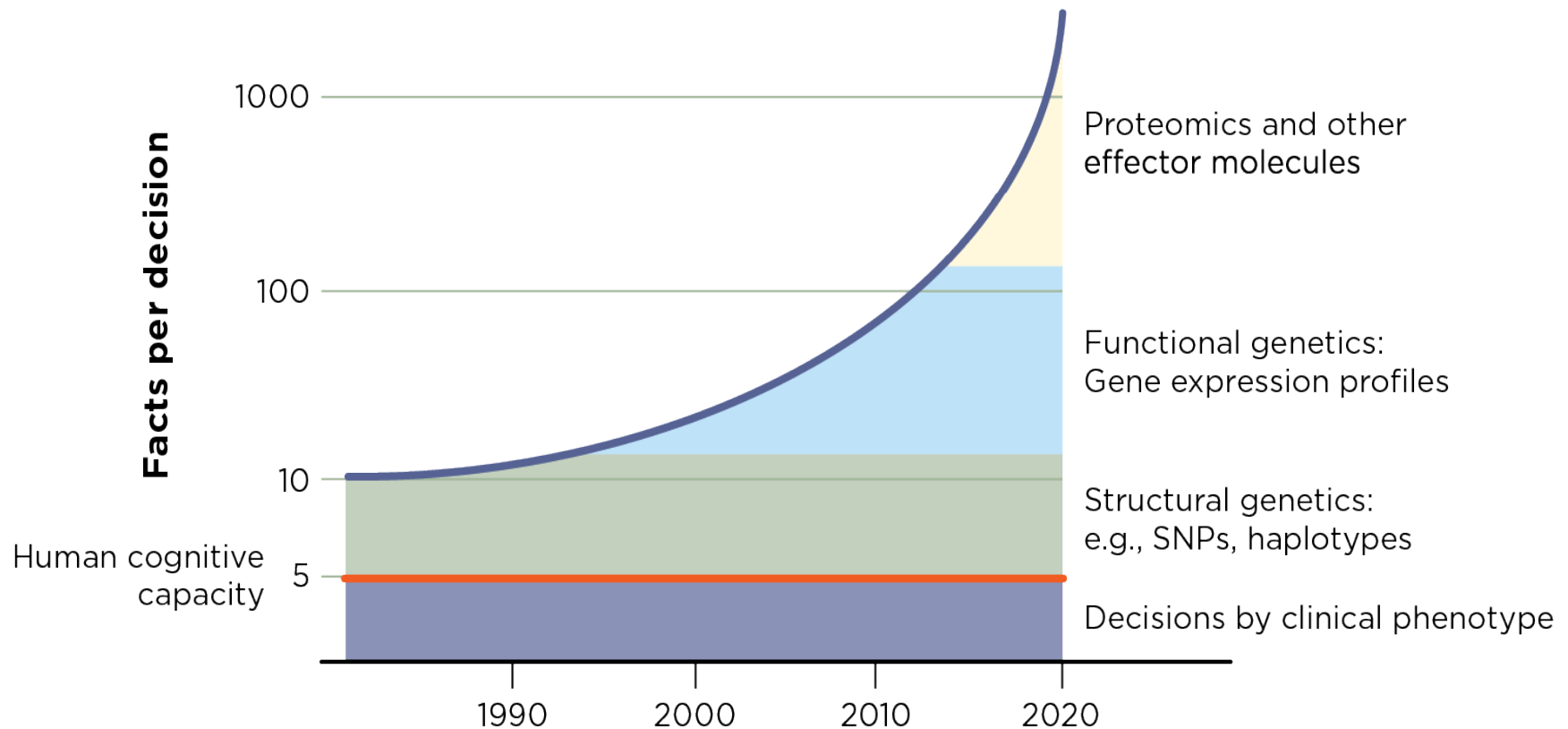
Compelling circumstances: complexity
Constantly increasing, often exponentially

- **Information –** increasing exponentially

- **Diagnostic considerations –** factors well beyond human cognitive capacity

- **Conditions –** demographics and treatment success driving co-occurring conditions

- **Clinicians –** increasing number of clinicians per individual

- **Treatment choices –** steadily growing, with increased variation by individual
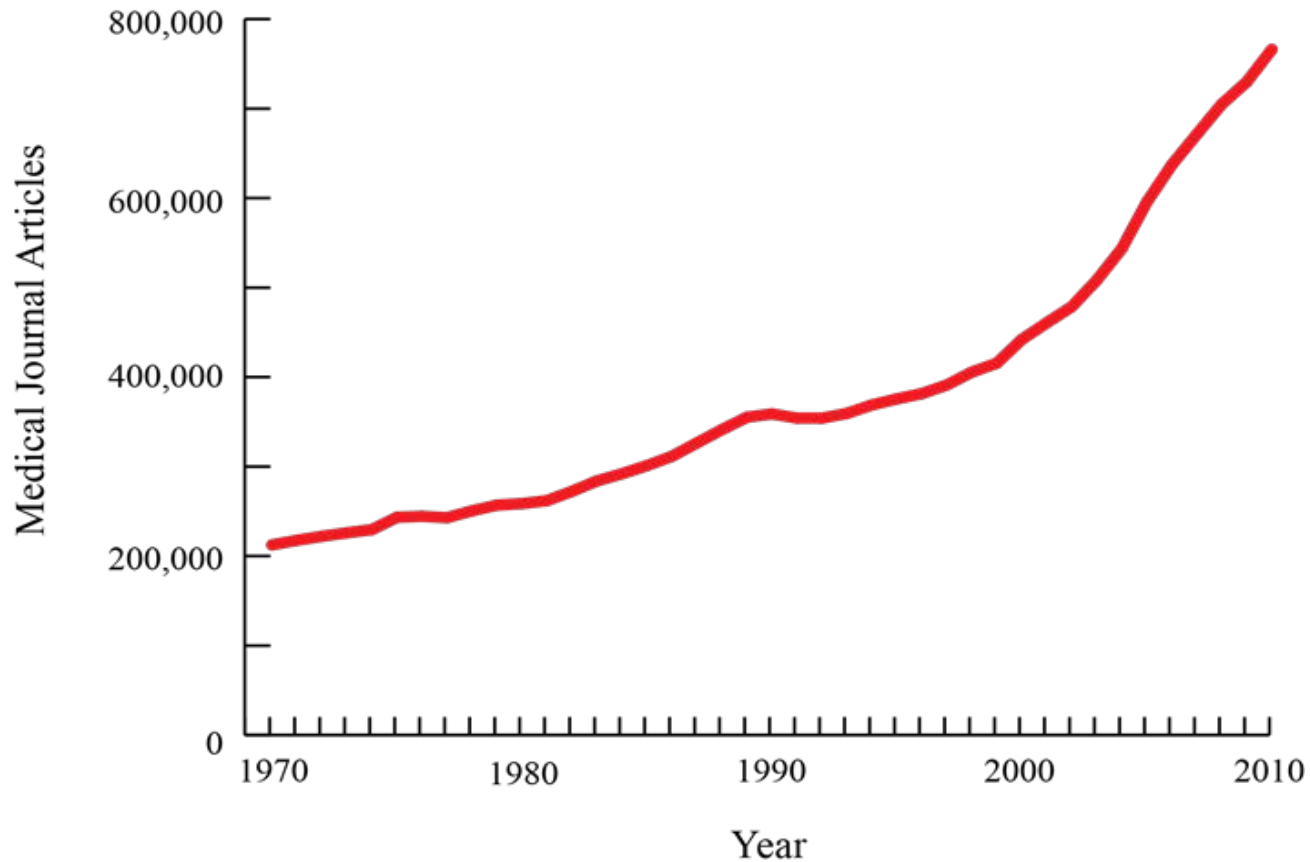
Compelling circumstances: complexity
Ever increasing diagnostic complexity

Facts per decision

1000

100

10

5

Human cognitive capacity

1990   2000   2010   2020

Proteomics and other effector molecules

Functional genetics: Gene expression profiles

Structural genetics: e.g., SNPs, haplotypes

Decisions by clinical phenotype

Compelling circumstances: complexity
Rapidly increasing literature/evidence base

Compelling circumstances: complexity
Ever increasing treatment complexity

- **More conditions –** e.g. 79 year old patient with 19 meds per day for osteoporosis, diabetes, hypertension, and COPD

- **More coordination –** e.g. over 200 other doctors are also providing treatment to   the Medicare patients of an average primary care doctor

- **More choices –** e.g. for prostate cancer: watchful waiting, laparoscopic or robotic assisted surgery, brachytherapy, IMRT, proton beam therapy, cryotherapy, androgen deprivation therapy

- **More activities –** e.g. ICU clinicians with 180 activities per person, per day

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Shared vision
A continuously learning health system

In the learning health system, science, informatics, incentives, and culture are aligned for continuous improvement and innovation—with best practices seamlessly embedded in the delivery process and new knowledge captured as an integral by-product of the delivery experience.

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Thank you!

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