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Drivers of Clinical Practice in the 'Omics' Era

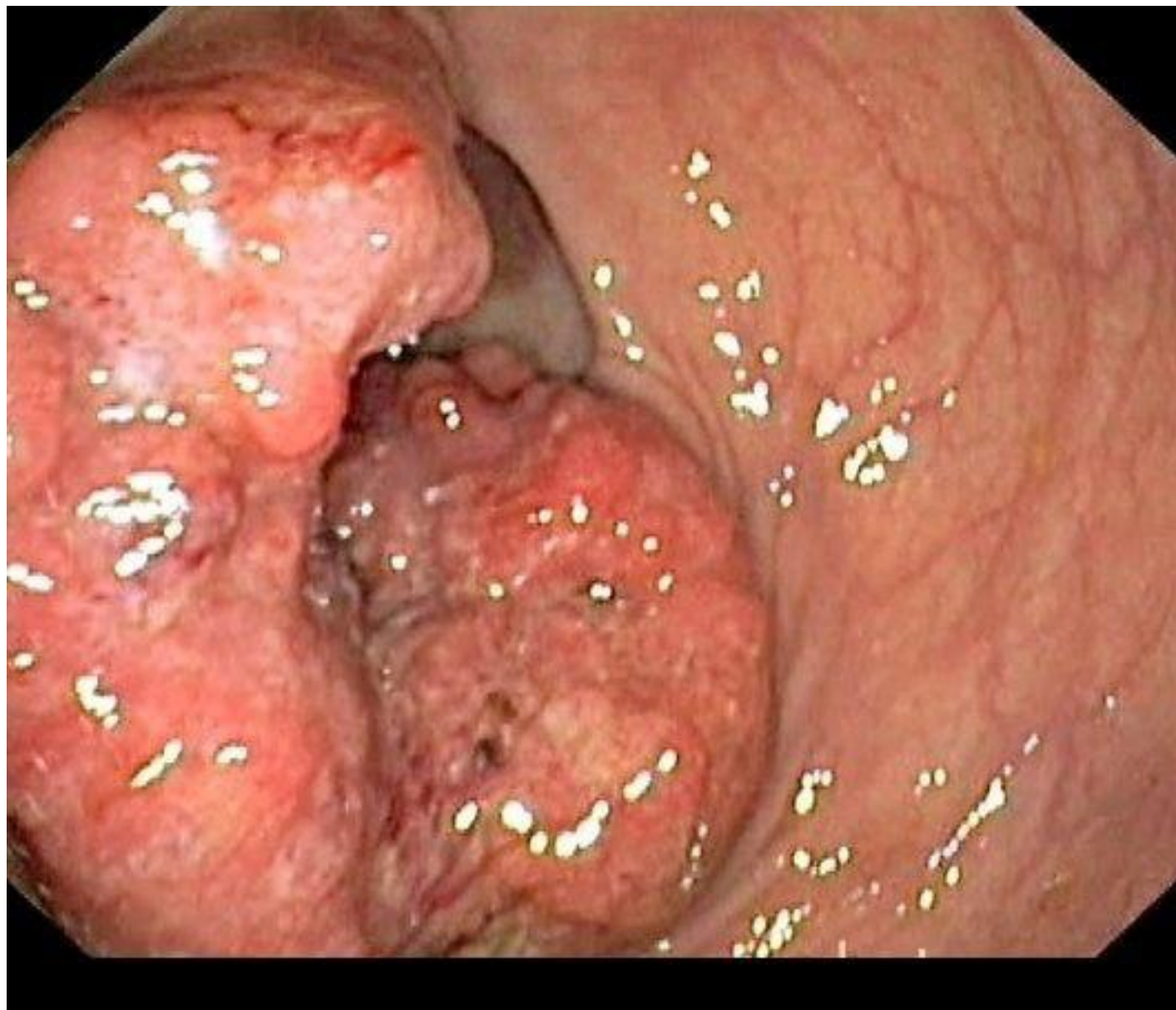
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ONLINE FIRST

Personalized Medicine vs Guideline-Based Medicine

Jeffrey J. Goldberger, MD, MBA

Alfred E. Buxton, MD

TWO PHILOSOPHICAL APPROACHES TO THE IMPLEMENTATION of optimal health care are emerging—the use of evidence-based guidelines and the application of personalized (or “precision”) medicine. Even though both approaches have important merits, they both also can present conflicting priorities that must be reconciled before they can be best leveraged.

guidelines are applied to individual patients based on their clinical characteristics from the guideline recommendations. The generalizability of trial results is affected by a number of factors, such as where patients were recruited, tertiary referral centers,

The President’s Council on Bioethics noted that personalizing of medical treatments based on the genetics of each patient

JAMA. 2013; 309(24):2559-2560.

American College of Surgeons Task Force on Professionalism 2003



Charter on medical professionalism*Lancet* 2002; **359**: 520–22**Medical professionalism in the new millennium: a physicians' charter***Medical Professionalism Project**

Physicians today are experiencing frustration as changes in the health-care delivery systems in virtually all industrialised countries threaten the very nature and values of medical professionalism. Meetings among the

society. In these circumstances, reaffirming the fundamental and universal principles and values of medical professionalism, which remain ideals to be pursued by all physicians, becomes all the more

Ann Intern Med. 2002;136:243-246.

PERSPECTIVE

Medical Professionalism in the New Millennium: A Physician Charter

Project of the ABIM Foundation, ACP-ASIM Foundation, and European Federation of Internal Medicine*

To our readers: I write briefly to introduce the Medical Professionalism Project and its principal product, the Charter on Medical Professionalism. The charter appears in print for the first time in this issue of *Annals* and simultaneously in *The Lancet*. I hope that we will look back upon its publication as a watershed event in medicine. Everyone who is involved with health care should read the charter and ponder its meaning.

on the globe will read the charter. Does this document represent the traditions of medicine in cultures other than those in the West, where the authors of the charter have practiced medicine? We hope that readers everywhere will engage in dialogue about the charter, and we offer our pages as a place for that dialogue to take place. If the traditions of medical practice throughout the world are not congruent with one another, at least we may make

The Charter: Three Core Principles

1. Primacy of patients' welfare
2. Patient autonomy
3. Social justice

The Charter: Ten Commitments

1. Professional competence
2. Honesty with patients
3. Patient confidentiality
4. Maintaining appropriate relationships with patients
5. Managing conflicts of interest

The Charter: Ten Commitments

6. Improving quality of care
7. Improving access to care
8. A just distribution of finite resources
9. Scientific knowledge
10. Professional responsibilities



Competence & Knowledge

- Do we know, and agree, on what this technology tells us?
- Do we know, and agree, on how to use it?
- Single gene sequencing
- Whole genome sequencing



CAUSES AND PREVENTION

Risk Factors +

The Genetics of Cancer

NCI Cancer Genetics Services Directory

Cancer Prevention Overview

Cancer Prevention Overview—for health professionals

Research

BRCA1 and BRCA2: Cancer Risk and Genetic Testing

ON THIS PAGE

- What are *BRCA1* and *BRCA2*?
- How much does having a *BRCA1* or *BRCA2* gene mutation increase a woman's risk of breast and ovarian cancer?
- What other cancers have been linked to mutations in *BRCA1* and *BRCA2*?
- Are mutations in *BRCA1* and *BRCA2* more common in certain racial/ethnic populations than others?
- Are genetic tests available to detect *BRCA1* and *BRCA2* mutations?
- Who should consider genetic testing for *BRCA1* and *BRCA2* mutations?

Original Investigation

Clinical Interpretation and Implications of Whole-Genome Sequencing

Frederick E. Dewey, MD; Megan E. Grove, MS; Cuiping Pan, PhD; Benjamin A. Goldstein, PhD; Jonathan A. Bernstein, MD, PhD; Hassan Chaib, PhD; Jason D. Merker, MD, PhD; Rachel L. Goldfeder, BS; Gregory M. Enns, MB, ChB; Sean P. David, MD, DPhil; Neda Pakdaman, MD; Kelly E. Ormond, MS; Colleen Caleshu, MS; Kerry Kingham, MS; Teri E. Klein, PhD; Michelle Whirl-Carrillo, PhD; Kenneth Sakamoto, MD; Matthew T. Wheeler, MD, PhD; Atul J. Butte, MD, PhD; James M. Ford, MD, PhD; Linda Boxer, MD; John P. A. Ioannidis, MD, PhD; Alan C. Yeung, MD; Russ B. Altman, MD, PhD; Themistocles L. Assimes, MD, PhD; Michael Snyder, PhD; Euan A. Ashley, MRCP, DPhil; Thomas Quertermous, MD

JAMA. 2014;311(10):1035-1044. doi:10.1001/jama.2014.1717

Proportional Contribution to Premature Death

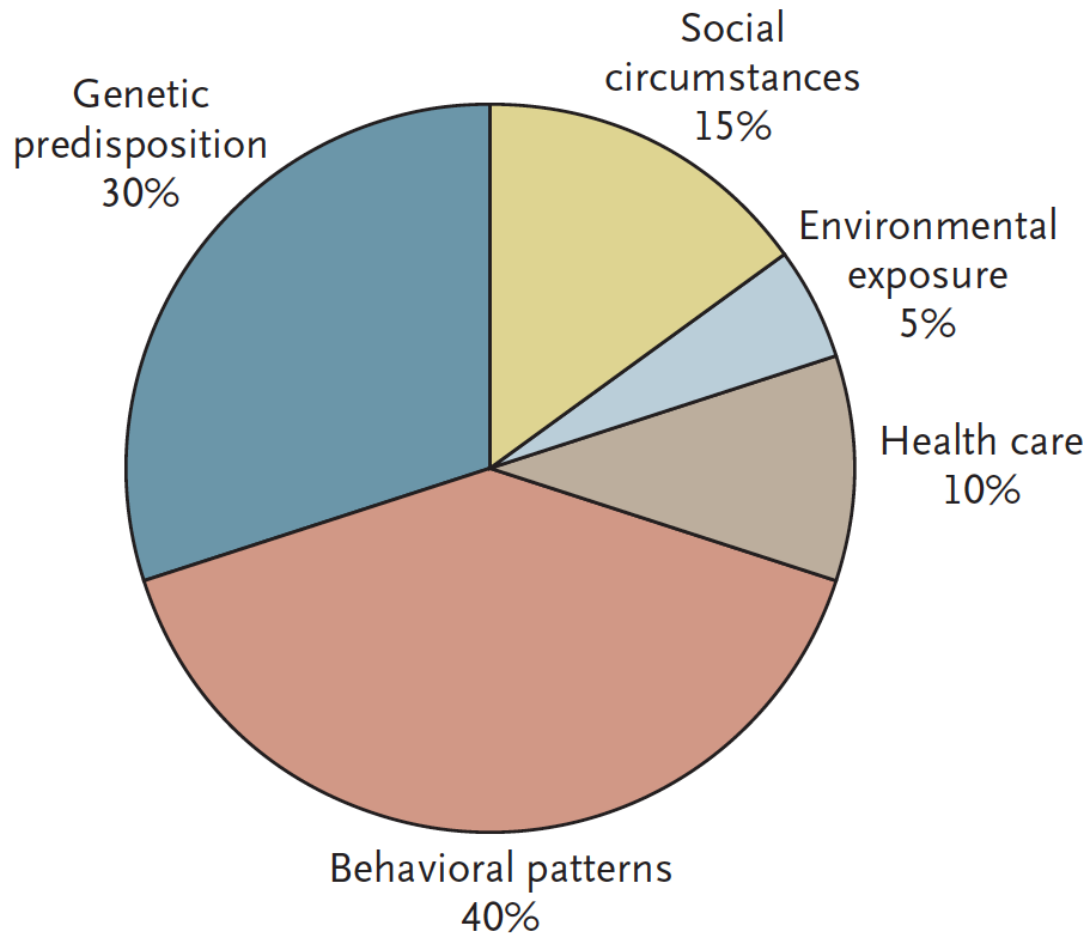


Figure 1. Determinants of Health and Their Contribution to Premature Death.

Adapted from McGinnis et al.¹⁰

Steven A. Schroeder, M.D.
N Engl J Med 2007;357:1221-8.

Quality, Access and Cost

- How long does it take to get a test result?
- What are the out of pocket costs for the patient?
- Can I rely on the results?

Honesty & Confidentiality

- New information
- Do patients want to know?

Take Away Messages

- Most clinicians, especially young doctors, are conceptually ready to embrace genomic medicine
- There seems to be little consensus about its use
- Concerns about access to tests & turnaround time
- Challenged by how to interpret the information, and communicate it easily and simply to patients
- Worried about incidental findings



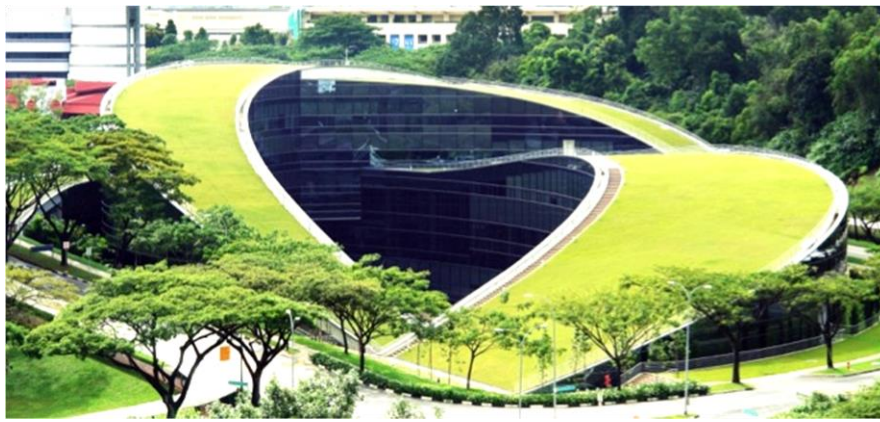
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