



Fitting Guidelines into the Real World: Addressing Complexity in Guidelines

4th Annual G-I-N Conference
Toronto

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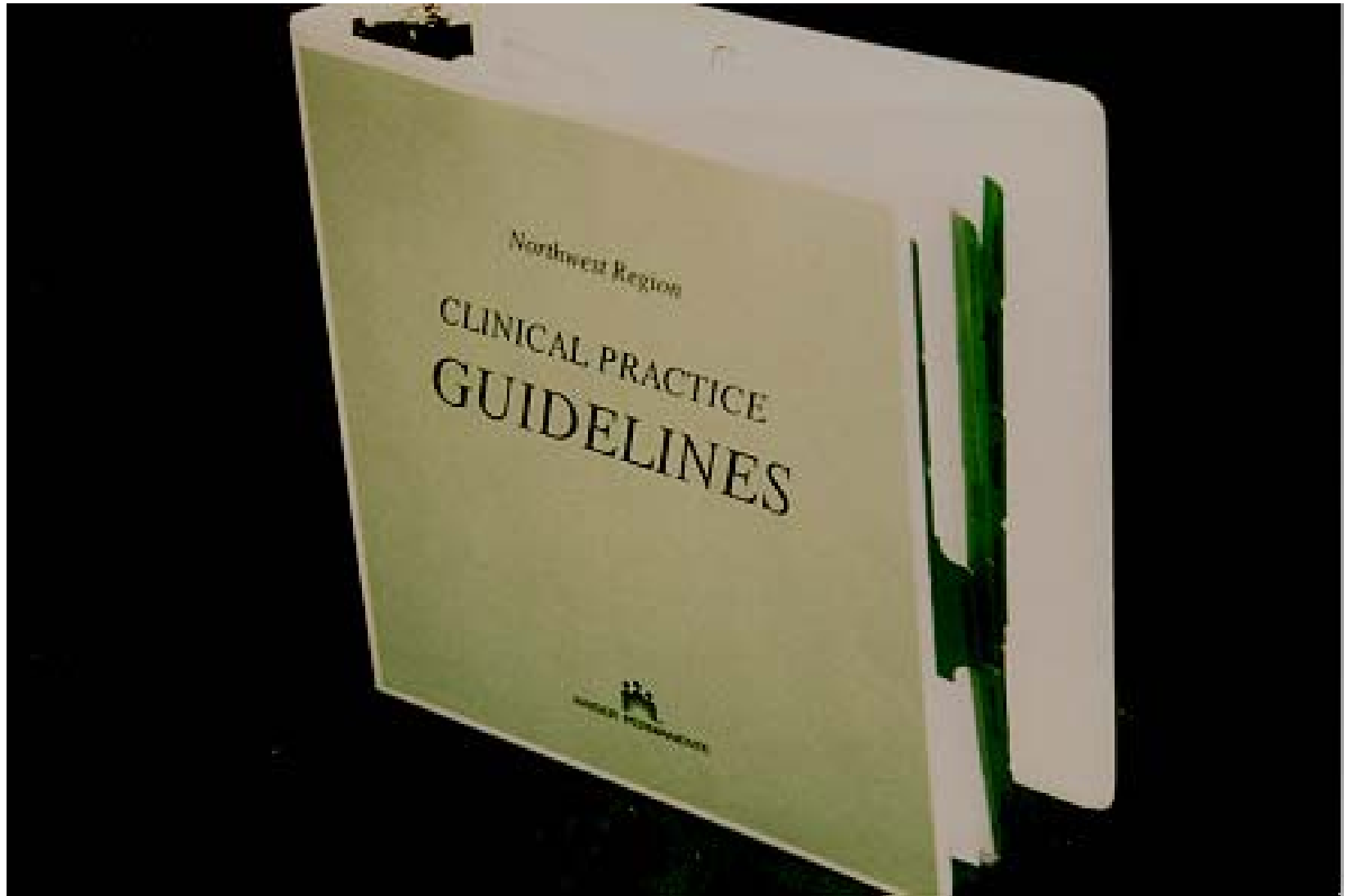
About Kaiser Permanente

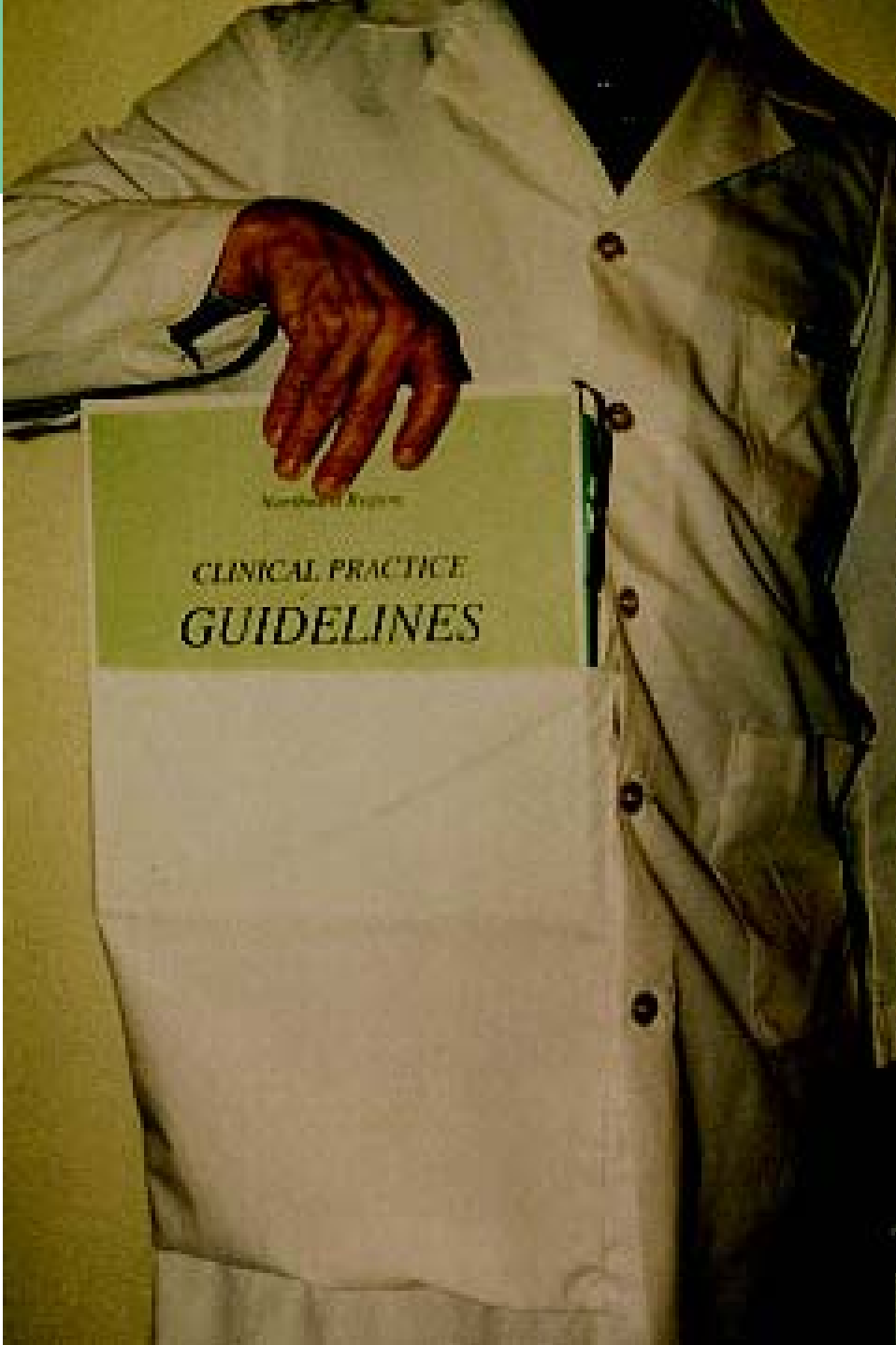


Noon-hour loudspeaker health education program in Kaiser Shipyard, Richmond.
Staff physician talking on the common cold

From *Industrial Medicine*, 14:4, April 1945

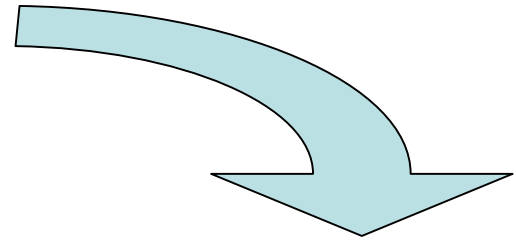
A beginning...





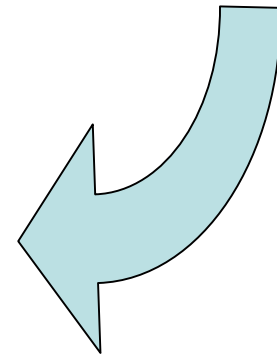
Making Guidelines increasingly effective...

What to do?



How to do it?

How to “do the how”?



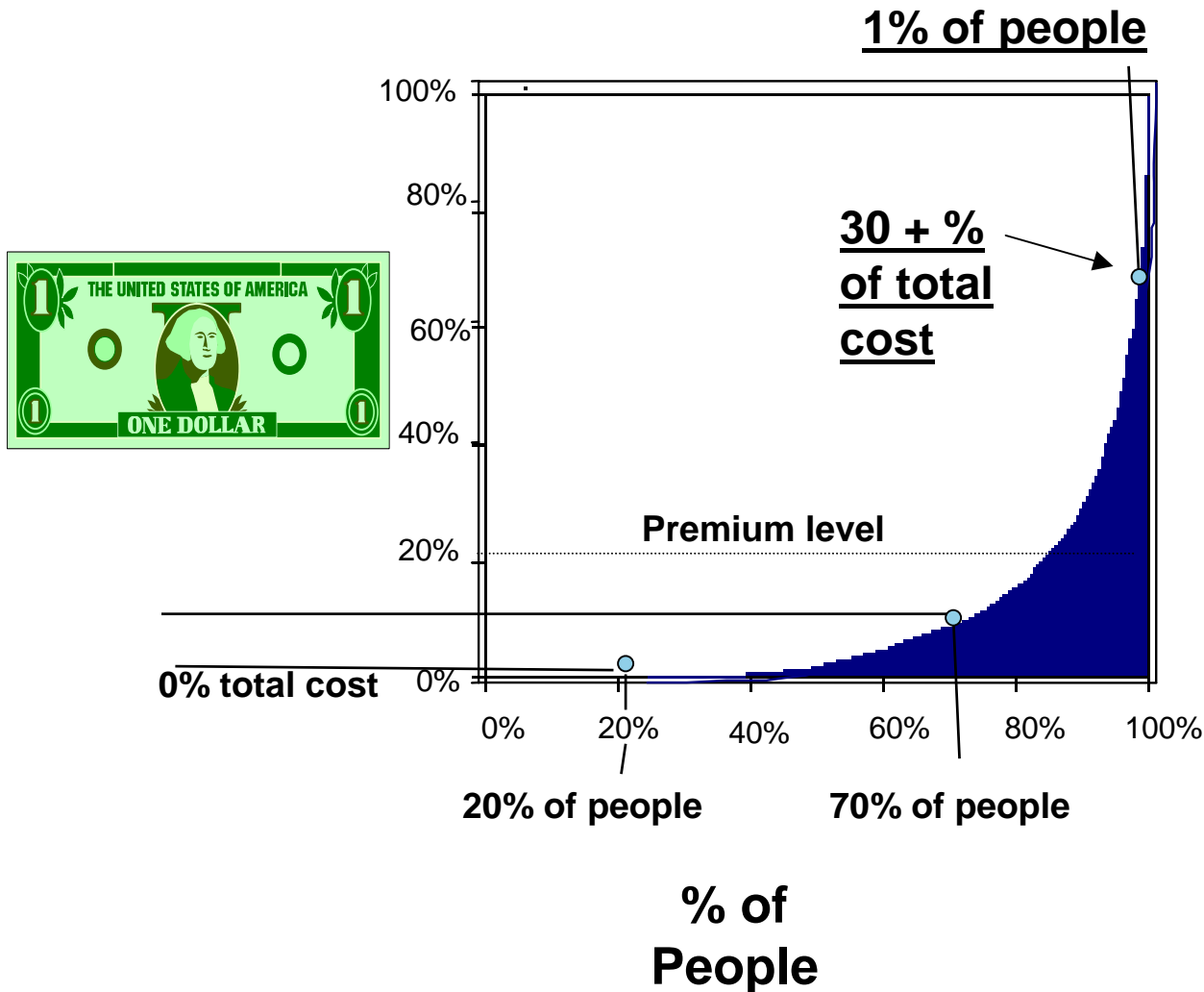
Making the right things easier...

Making Guidelines increasingly relevant...



Participants have set a goal that **by the year 2020, ninety percent of clinical decisions will be supported by accurate, timely, and up-to-date clinical information and will reflect the best available evidence.**

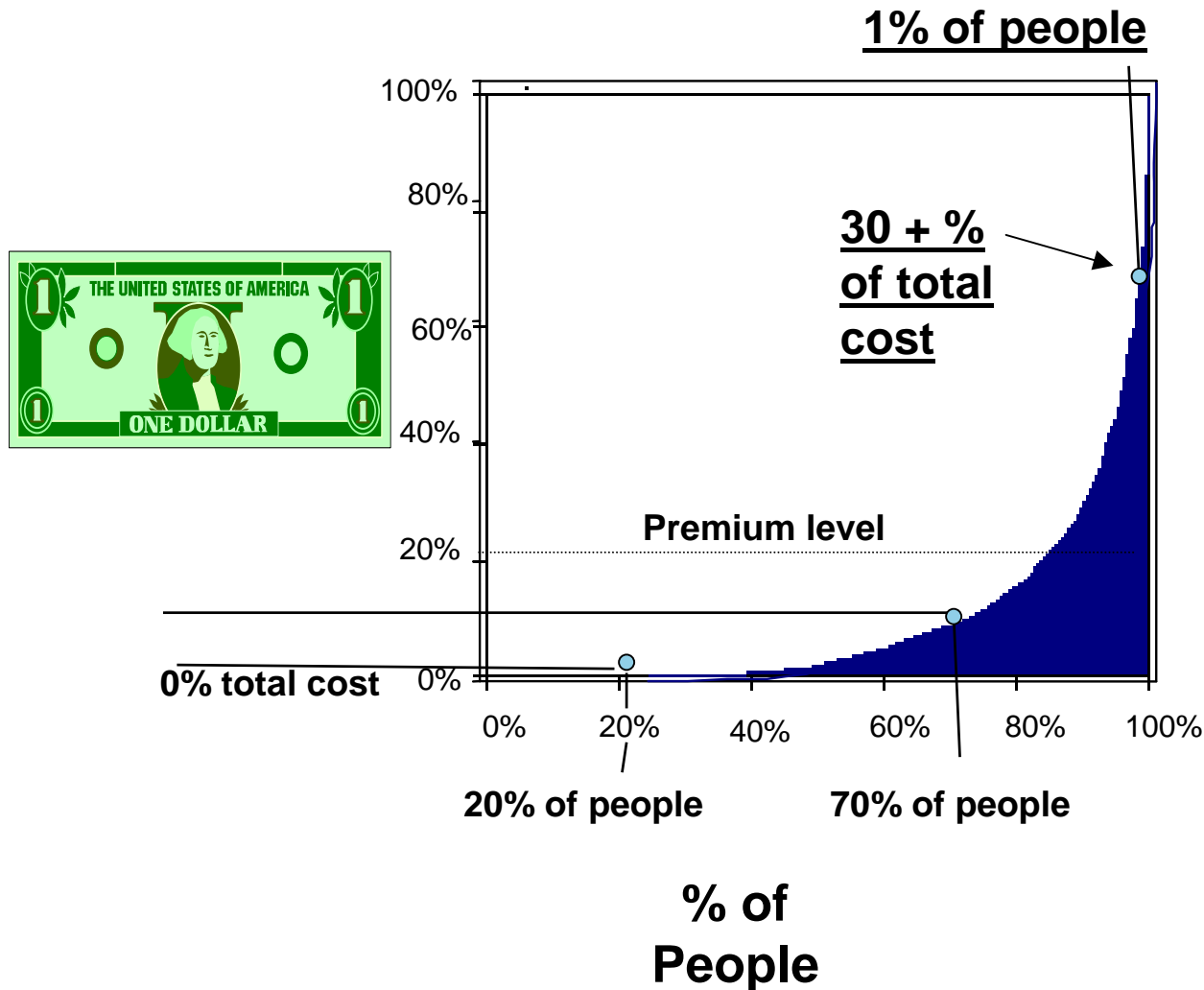
Making Guidelines increasingly relevant: The tails of the curve...

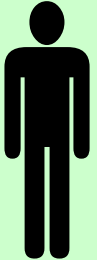


What do we know about the top 1-5%?

- Conditions?
- Current performance on usual measures?
- Opportunities?

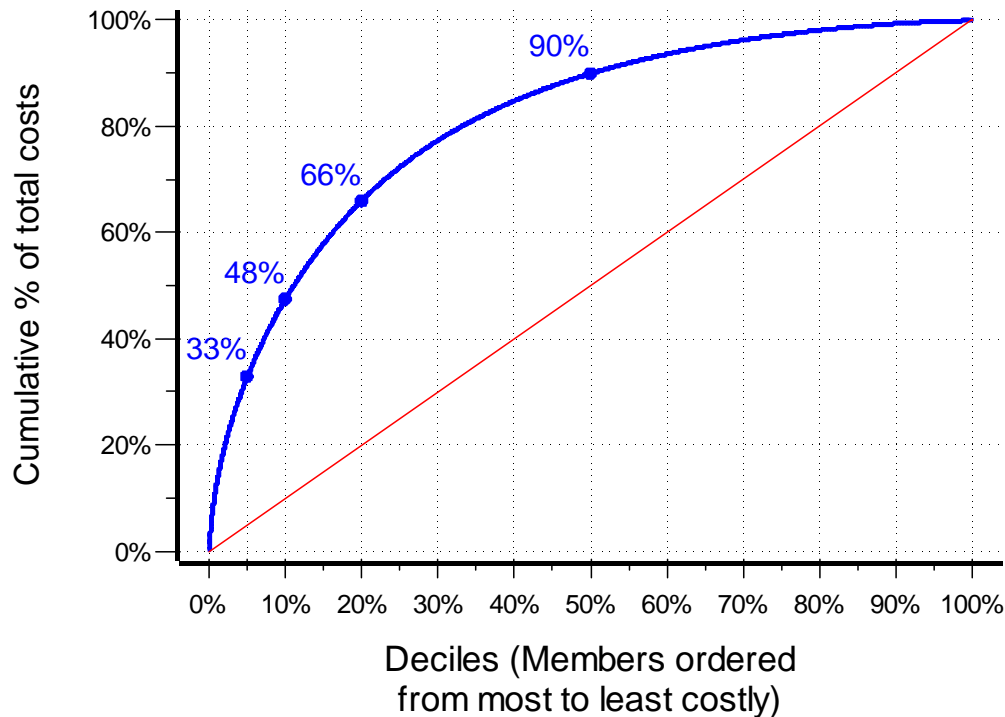
Chronic Health Conditions Underlie the Bulk of Health Care Costs



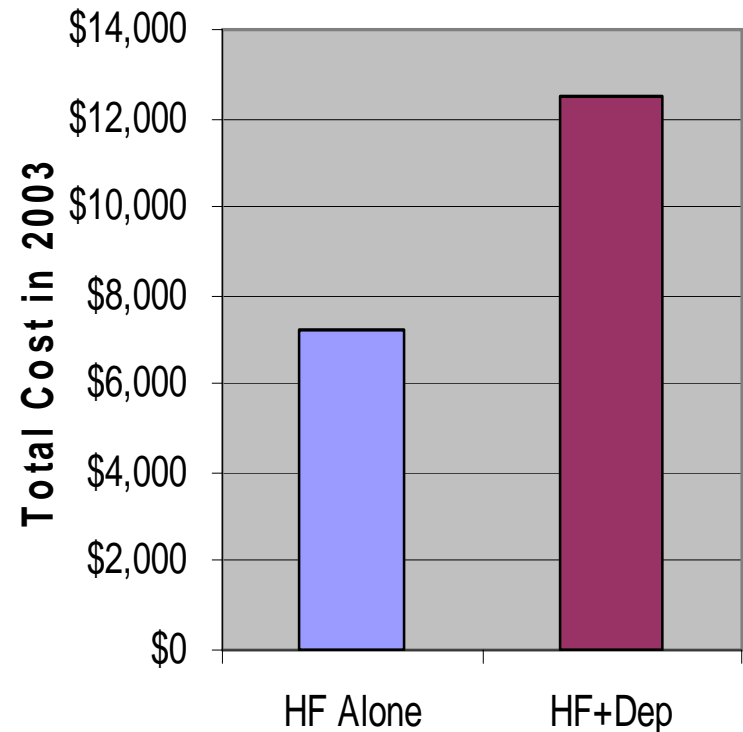
- Diabetes
 - Heart Failure
 - Coronary Artery Disease
 - Depression
 - Chronic Pain
 - Cancer
 - Asthma and COPD
 - Dementia
 - Falls
 - Obesity
 - ...
 - CO-MORBIDITIES
- 

Heart Failure

% of total costs incurred by the costliest 5%, 10%, 20%, and 50% of members with Heart Failure



Total Annual Costs: Heart Failure alone and with Depression



What is the 'quality' of care that patients with co-morbidity are receiving now?

- **Complex patients - those with multiple medical conditions - tend to have better performance on common measures of clinical performance**

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

Relationship between Number of Medical Conditions and Quality of Care

Takahiro Higashi, M.D., Ph.D., Neil S. Wenger, M.D., M.P.H.,
John L. Adams, Ph.D., Constance Fung, M.D., M.S.H.S., Martin Roland, D.M.,
Elizabeth A. McGlynn, Ph.D., David Reeves, Ph.D., Steven M. Asch, M.D., M.P.H.,
Eve A. Kerr, M.D., M.P.H., and Paul G. Shekelle, M.D., Ph.D.

N Engl J Med 2007;356:2496-504.

Conclusions

The quality of care, measured according to whether patients were offered recommended services, increases as a patient's number of chronic conditions increases.

Is “more care better” for the patient with Co- Morbidities?

The NEW ENGLAND JOURNAL of MEDICINE

SOUNDING BOARD

Potential Pitfalls of Disease-Specific Guidelines for Patients with Multiple Conditions

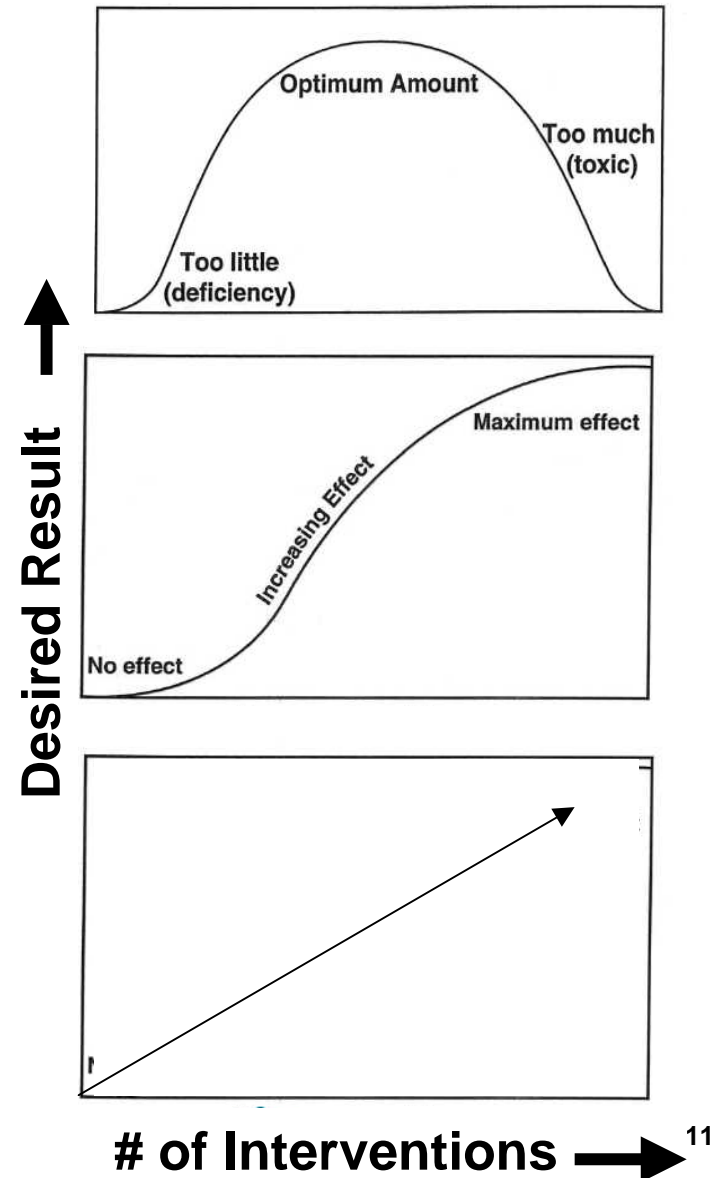
Mary E. Tinetti, M.D., Sidney T. Bogardus, Jr., M.D., and Joseph V. Agostini, M.D.

Quality-assurance initiatives encourage adherence to evidenced-based guidelines for the management of particular diseases and ensure that such adherence is monitored.¹⁻³ The best of these guidelines, developed by national organizations, systematically collect the available evidence regarding a given disease and provide recommendations, including the use of multidrug regimens, for the treatment of patients with that disease.⁴⁻⁸ The goal is to maxi-

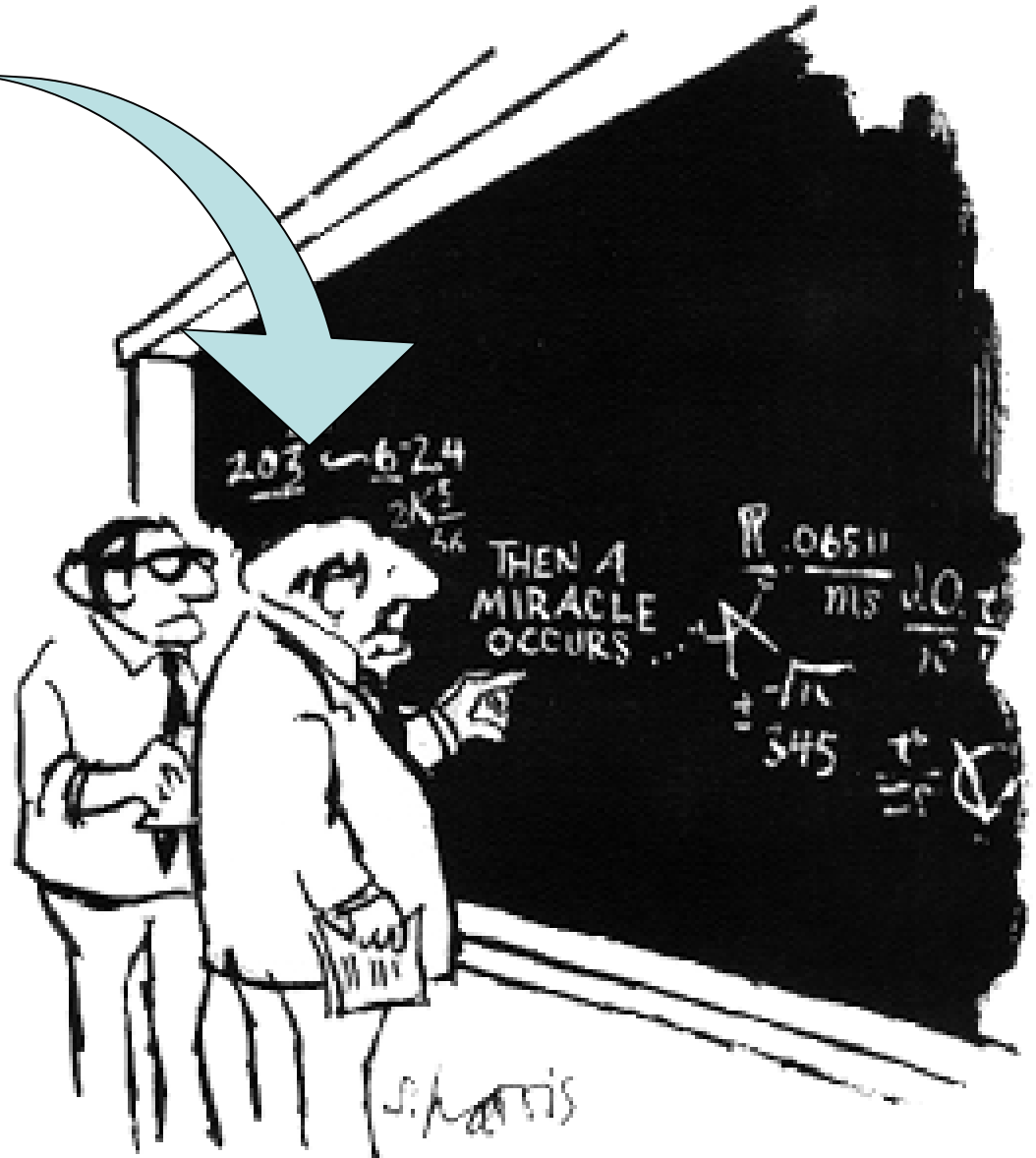
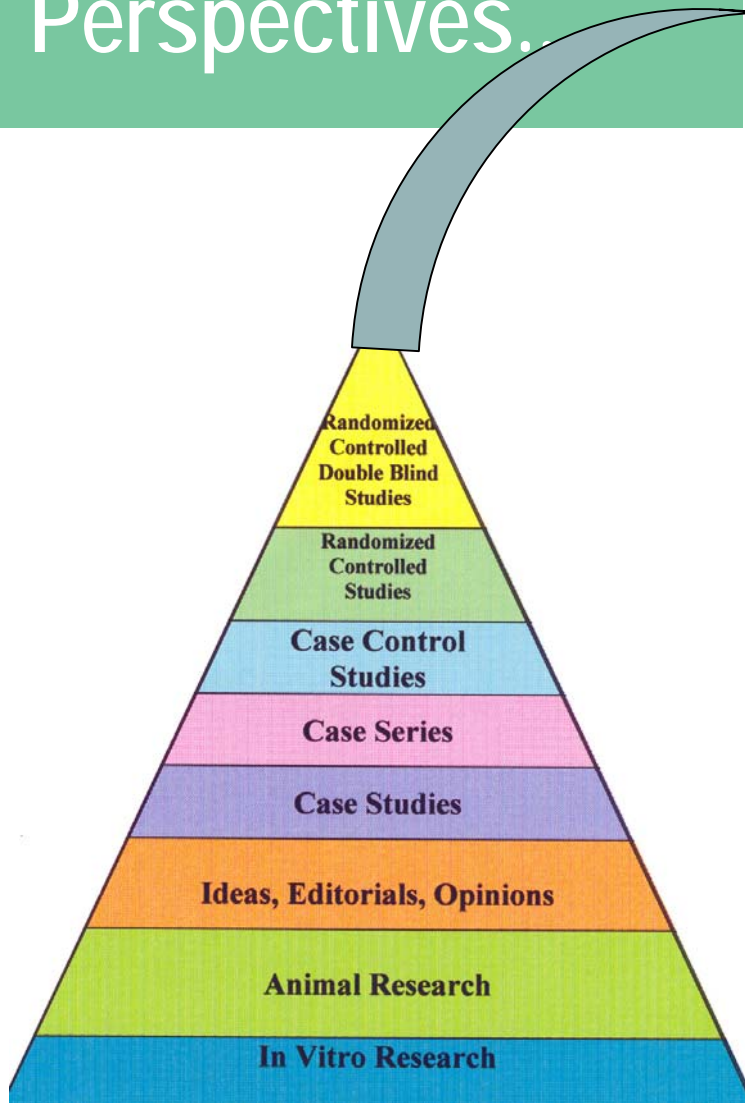
patient to take an aspirin, an ACE inhibitor, a beta-blocker, a bisphosphonate, calcium, a diuretic, a selective serotonin-reuptake inhibitor, a statin, a sulfonyleurea drug, perhaps a thiazolidinedione, and vitamin D.⁴⁻⁸ These guideline-driven medications are taken in addition to prescription and over-the-counter drugs for conditions such as allergies, pain, dyspepsia, and insomnia. Viewing disease-specific medication guidelines from this perspective raises

N Engl J Med 351;27 2870-2874 December 30, 2004

What is the “dose response” for relating the number of things you do to achieving clinical outcomes?



Perspectives...



"I think you should be more explicit here in step two."

How that miracle occurs...

One vision



How that miracle occurs...

An alternative evidence based vision

INFERENCE GAP

Bridging The Inferential Gap: The Electronic Health Record And Clinical Evidence

Emerging tools can help physicians bridge the gap between knowledge they possess and knowledge they do not.

by **Walter F. Stewart, Nirav R. Shah, Mark J. Selna, Ronald A. Paulus, and James M. Walker**

ABSTRACT: Most clinical decisions involve bridging the inferential gap: Clinicians are required to “fill in” where they lack knowledge or where no knowledge yet exists. In this context we consider how the inferential gap is a product, in part, of how knowledge is created, the limits to gaining access to such knowledge, and the variable ways in which knowledge is translated into decisions. We consider how electronic health records (EHRs) will help narrow this gap by accelerating the creation of evidence relevant to everyday practice needs and facilitating real-time use of knowledge in practice. [*Health Affairs* 26, no. 2 (2007): w181-w191 (published online 26 January 2007; 10.1377/hlthaff.26.2.w181)]

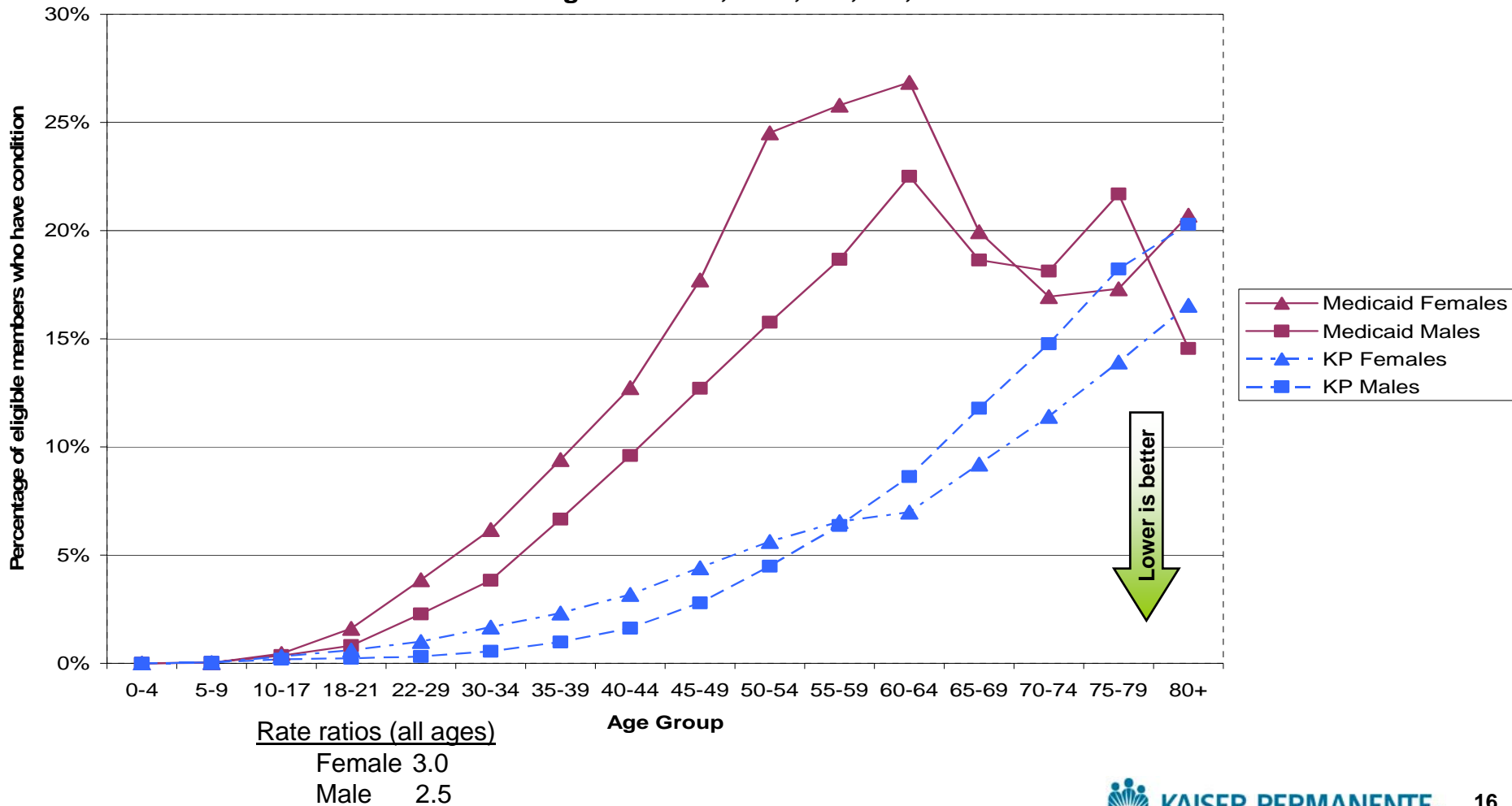
Co-occurrence and Clustering of Chronic Conditions

■ Hypotheses:

- Within a population, as conditions co-occur, some patterns of co-morbidity will be more common than others,
- Some patterns may occur in excess of just random association (“clustering”), and
- As conditions co-occur and/or cluster, management isn't necessarily the direct sum of management of the parts

Looking for patterns: Age Related Prevalence of Multiple Chronic Conditions

Prevalence of Two or More of Asthma, CAD, Chronic Pain, Depression, Diabetes, or Heart Failure, Continuously Enrolled Male and Female Medicaid and Non-Medicaid Members, 2002, Regions: NCR, SCR, CO, HA, NW



Co-occurrence and Clustering of Chronic Conditions... Approach to patterns

1) identify key patterns and test for clustering in excess of predicted co-occurrence

- Likely preferential clustering:
 - Diabetes and Coronary artery disease (and Heart Failure)
 - Coronary Artery Disease and COPD/emphysema
- Likely statistical co-occurrence
 - Diabetes and arthritis
- Interesting to find out...
 - ? Depression + _____
 - ? Key patterns of 3 or more

- What are the five most important things to accomplish with a 75 year old woman who has diabetes, heart failure, severe arthritis, and depression?

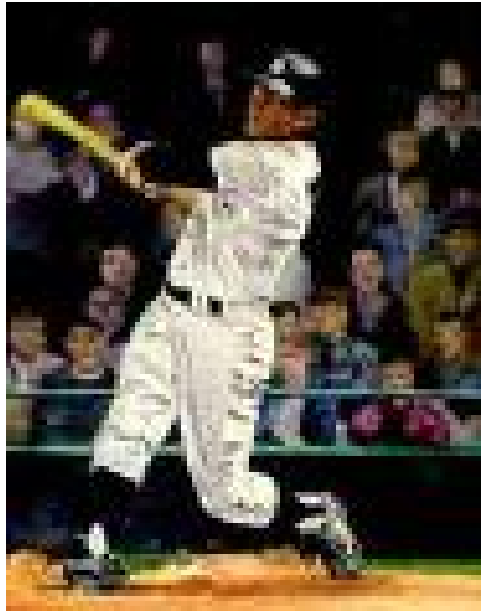
- How many of the 5 highest priority items are not 'medical'?

- What is the impact of doing something outside the highest priorities?
 - Outcomes?
 - Cost?
 - Patient quality of life and satisfaction?

Co-occurrence and Clustering of Chronic Conditions... Approach to Guidelines

- 2) For common patterns/clusters, create a "meta-GL" answering the question of how to prioritize across the many things that could be done to the select few that definitely should be done
 - *Intervention priorities also needs to broaden to include especially End of Life/palliative care screening and referral as well as other social and non-medical interventions*
- *Likely will require new methodologies*
 - *Modeling, using huge data bases*
 - *Identifying successful practice styles*
 - *Linking value trade-offs to patient preference*

Co-occurrence and Clustering of Chronic Conditions... Approach to Measurement



- 3) Rethink performance measurement to be more like a 'batting average' across patients to reflect what proportion of highest priority interventions were delivered for each individual patient (e.g. at bats)

Decision support...

The Panel Support Tool

Complete Panel View

PCP: DEMO DOC		Panel Size : 1107		Y Indicates in the registry										F/U	
Report	MRN	NAME	Age	Sex	Dx	Prev	Gap	DM	CVD	CHE	HTN	CKD	Last Seen	Rev'd	
<input type="checkbox"/>	000000161	DEMO161	76	F			20	Y				Y			
<input type="checkbox"/>	000000564	DEMO564	51	F			16	Y			Y	Y	12/16/2004		
<input type="checkbox"/>	000000951	DEMO951	42	M			15	Y							
<input type="checkbox"/>	000000931	DEMO931	48	F			13	Y			Y				
<input type="checkbox"/>	000000473	DEMO473	80	F	R		12	Y			Y	Y	9/3/2005		
<input type="checkbox"/>	000001098	DEMO1098	41	F			12	Y			Y		1/7/2006		
<input type="checkbox"/>	000000905	DEMO905	73	M	R		11	Y	Y		Y		3/20/2006		
<input type="checkbox"/>	000000256	DEMO256	54	M			11	Y			Y		12/13/2005		
<input type="checkbox"/>	000000226	DEMO226	50	F			11	Y					12/28/2005		
<input type="checkbox"/>	000000714	DEMO714	39	M			10	Y			Y	Y	10/24/2005		
<input type="checkbox"/>	000000362	DEMO362	29	F			10			Y			11/21/2005		
<input type="checkbox"/>	000000360	DEMO360	78	M			8		Y		Y	Y	4/5/2006		
<input type="checkbox"/>	000000491	DEMO491	62	F			8	Y	Y	Y	Y	Y	5/22/2006		
<input type="checkbox"/>	000000218	DEMO218	57	M			8		Y		Y		2/5/2005		
<input type="checkbox"/>	000000829	DEMO829	45	M			8	Y			Y	Y	4/30/2005		
<input type="checkbox"/>	000000098	DEMO98	42	M			8	Y					10/5/2005		
<input type="checkbox"/>	000000464	DEMO464	74	F			7		Y			Y	8/14/2006		

Changing focus...

- From the diseases a patient has...
- To the patient who has the diseases



Making Guidelines increasingly effective...

What to do?

Personalizing
evidence based care

Who?

How to do it?

How to “do the how”?

Making Guidelines 'real'...

“Don't tell me what to do, doc;

*Help me understand what this
information means for me.”*

An Oncology Patient, 1996