



**Evidence Based Medicine  
Health Information Infrastructure  
Transparency and Payment Reform**

Ward B. Hurlburt, M.D.  
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Evidence-based medicine - EBM aims to apply the best available evidence gained from the scientific method to medical decision making. It seeks to assess the quality of evidence of the risks and benefits of treatments (including lack of treatment).

[en.wikipedia.org/wiki.Evidence-based  
medicine](https://en.wikipedia.org/wiki/Evidence-based_medicine)



“Up until about 40 years ago, medical decisions were doing very well on their own, or so people thought. The complacency was based on a fundamental assumption that through the rigors of medical education, followed by continuing education, journals, individual experiences, and exposure to colleagues, each physician always thought the right thoughts and did the right things. The idea was that when a physician faced a patient, by some fundamentally human process called the “art of medicine” or “clinical judgment”, the physician would synthesize all of the important information about the patient, relevant research, and experiences with previous patients to determine the best course of action.”

David M. Eddy

Health Affairs 24 no. 1 (2005)



# **Who killed George Washington?**



# Medical management led by “expert opinion” or as a result of a “consensus conference”

- Prevention of purulent otitis media among Alaska Native children
- What is proper surgery for peptic ulcer disease?
- What is the best surgery for papillary carcinoma of the thyroid gland?

# Evidence Based Medicine

- PSA Screening – additional data
  - European trial
    - 162,243 men aged 55 – 69 years
    - 1410 men would need to be screened and 48 additional cases of prostate cancer would need to be treated to prevent one death – high risk over-diagnosis
  - American trial
    - 76,693 men aged 55 – 74 years
    - No overall reduction in mortality in the screening arm.

# Evidence Based Medicine

- A Surge in CT and MRI Scans Has Not Boosted Diagnosis Rates
  - Scientific American 10/5/10
    - A new study shows that for life-threatening injuries, a threefold increase in the number of CT and MRI scans in the emergency room has not resulted in an improvement in useful diagnosis
    - One study estimated that CT scans in the US in 2007 will lead to an additional 29,000 cases of cancer

# What is meant by “grades of evidence”?

- Level I: Evidence obtained from at least one properly designed randomized controlled trial
- Level II-1: Evidence obtained from well-designed controlled trials without randomization
- Level II-2: Evidence obtained from well designed cohort or case-control analytic studies, preferably from more than one center or research group
- Level II-3: Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled trials might also be regarded as this type of evidence
- Level III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

# How and where are the principles of evidence based medicine applied?

- Evidence-based guidelines (EBG) is the practice of evidence-based medicine at the organizational or institutional level. This includes the production of guidelines, policy, and regulations. This approach has also been called evidence based health care.
- Evidence-based individual decision (EBID) making is evidence-based medicine as practiced by the individual health care provider.



# Categories of recommendations

## US Preventive Services Task Force

- Level A: Good scientific evidence suggest that the benefits of the clinical services substantially outweighs the potential risks. Clinicians should discuss the service with eligible patients.
- Level B: At least fair scientific evidence suggests that the benefits of the clinical service outweighs the potential risks. Clinicians should discuss the service with eligible patients.
- Level C: At least fair scientific evidence suggests that there are benefits provided by the clinical service, but the balance between benefits and risks are too close for making general recommendations. Clinicians need not offer it unless there are individual considerations.

# Categories of recommendations

## US Preventive Services Task Force

### Continued:

- Level D: At least fair scientific evidence suggests that the risks of the clinical service outweighs potential benefits. Clinicians should not routinely offer the service to patients
- Level I: Scientific evidence is lacking, of poor quality, or conflicting, such that the risk versus benefit balance cannot be assessed. Clinicians should help patients understand the uncertainty surrounding the clinical service

# Recommendations Paraphrased Courtesy Neil Calonge, MD, Chair US Preventive Services Task Force

- Base decisions on evidence of effectiveness and benefit
  - When there is evidence of benefit, **do it**
  - When there is evidence of no benefit or harm, **don't do it**
  - When there is insufficient evidence to determine if there is benefit, be conservative: **use individual discretion, but if there are harms or costs, don't do it.**

# Comparative Effectiveness Research

- Revlimid has been approved by the FDA for relapsing multiple myeloma
  - Revlimid costs \$10,000 a month and is given monthly
    - Revlimid plus methotrexate results in average survival for these patients of more than 29 months
    - Methotrexate alone results in average survival for these patients of more than 20 months
    - **Nine months added survival for average cost of an additional \$290,000 plus administration fees**

# Comparative Effectiveness Research

- Tarceva is FDA approved for pancreatic cancer
  - Tarceva costs \$4,000 a month plus administration fees.
  - Tarceva plus standard therapy results in average survival of about 192 days
  - Standard therapy alone for comparable patients results in average survival of 180 days

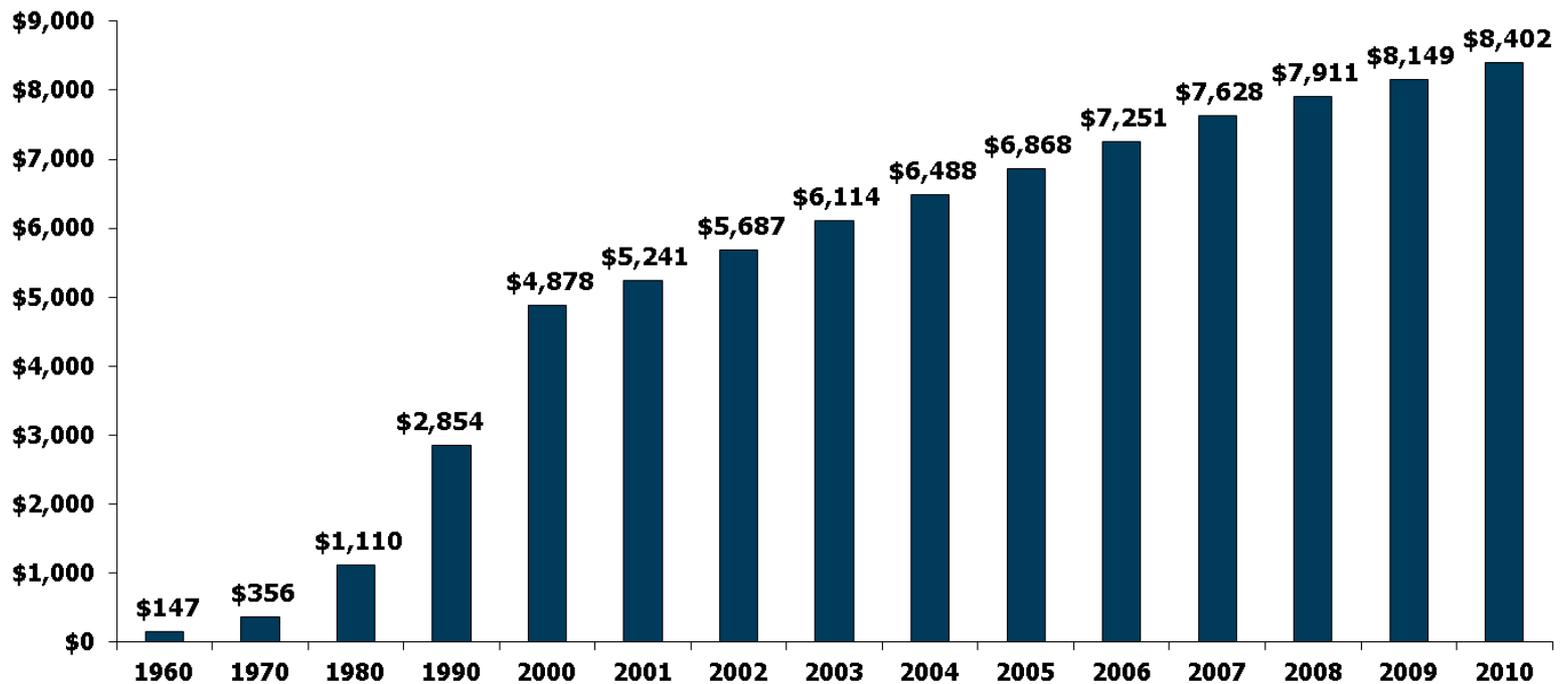
# Comparative Effectiveness Research

- Rheumatoid arthritis – a common diagnosis
  - Treatments include NSAIDs, patient education, pain management, low dose glucocorticoids, DMARDs, and the newer biologic drugs – increasing order of cost
  - Concept of QALY (Quality Adjusted Life Year)
  - Addition of DMARD (methotrexate) cost \$4,849 per QALY
  - Addition of biologic agent (e.g. Humira – adalimumab or Embrel – etanercept) costs \$157,350 per QALY (Annals of Internal Medicine)

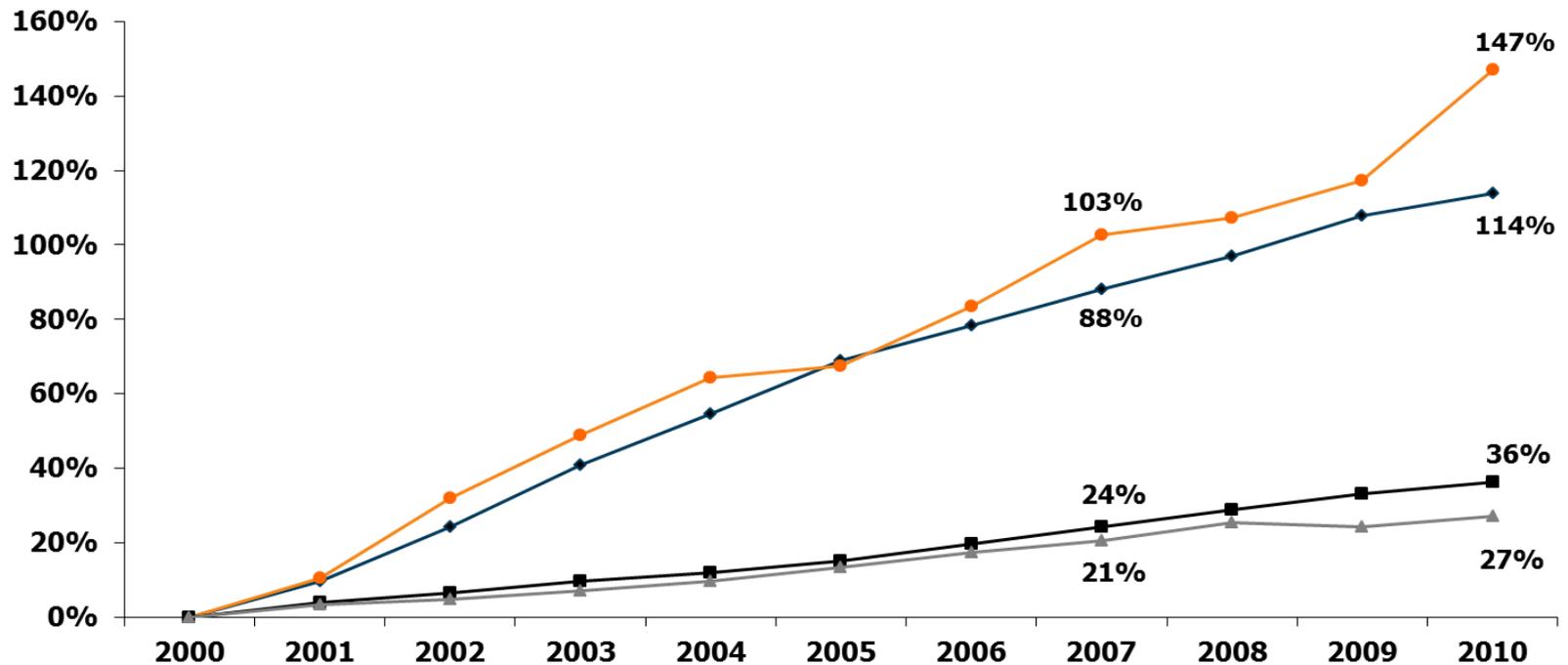
# Why do we need EBM/CER?

- Society trusts the health care sector with a huge portion of our national treasure.
- The costs of health care are placing a heavy financial burden on federal and state governments and on employers and individuals.
- We need to assure that policy and clinical decision making consider both effectiveness and cost effectiveness of health care interventions. EBM and CER allows us to do that objectively.
- Their use will improve the quality of care and value.

# National Health Expenditures per Capita, 1960-2010



# Cumulative Increases in Health Insurance Premiums, Workers' Contributions to Premiums, Inflation, and Workers' Earnings, 2000-2010



# The Washington Post

3/14/12

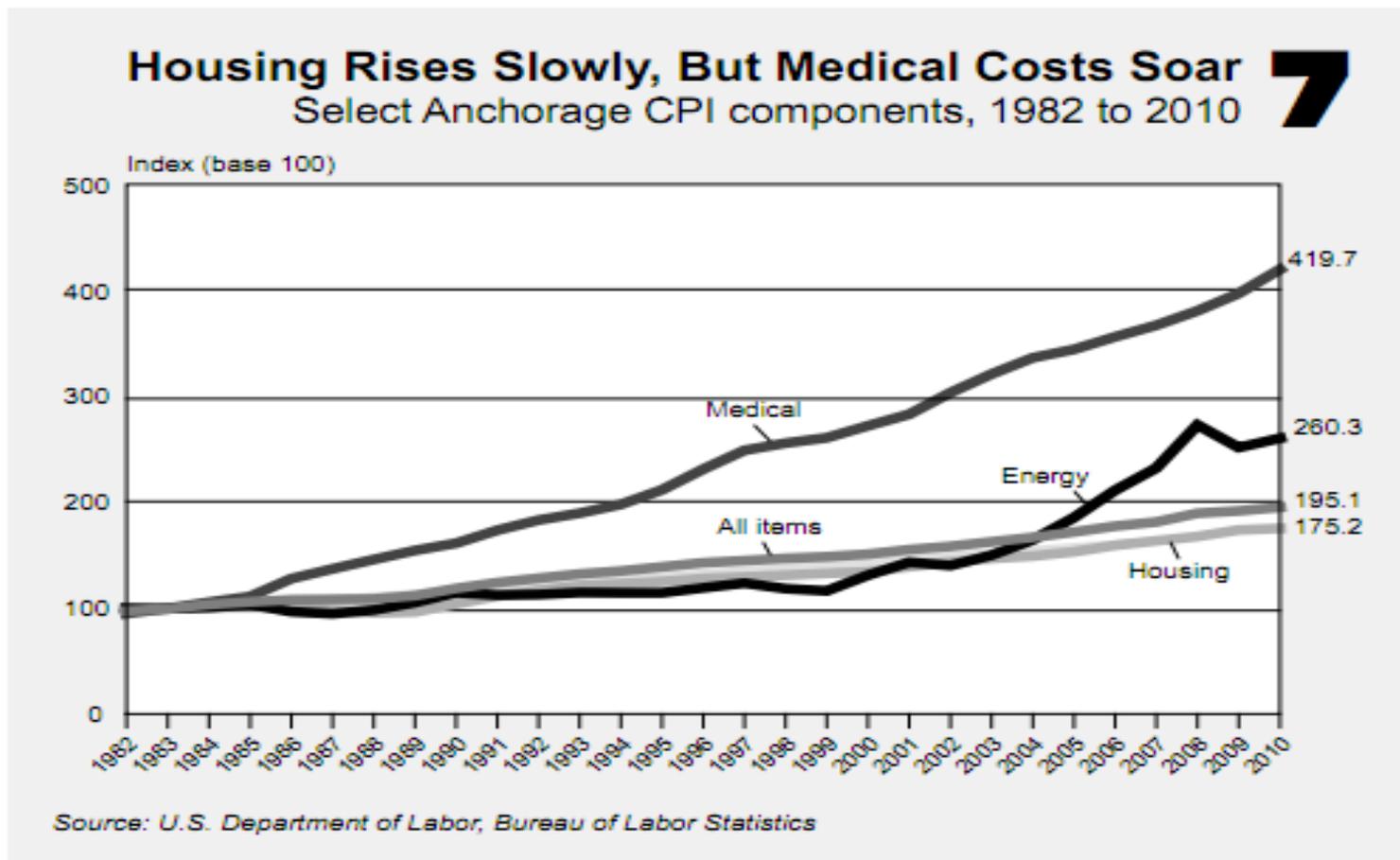
- If health insurance premiums and national wages continue to grow at recent rates and the US Health system makes no major structural changes, the average cost of a family health insurance premium will equal 50% of the household income by the year 2021 and surpass the average household income by the year 2033. If out of pocket costs are added the 50% threshold is crossed by 2018 and exceeds household income by 2030

# Health Care Costs: Expensive and Rising

- **Unites States**
  - \$2.75 trillion
  - 18% of GDP
- **Alaska (2010)** (Institute of Social and Economic Research – University of Alaska Anchorage)
  - \$7.5 billion
  - 50% of the wellhead value of all oil produced in Alaska
  - 50% of all the wages Alaskans collected

# Housing Rises Slowly But Medical Costs Soar

- During the past decade, medical costs in Anchorage increased by 46% compared to 27% nationwide



# Health Information Infrastructure

- As of September 30, 2012
  - 552 Alaska providers and 17 Alaska hospitals have registered for the EHR Incentive program
  - 233 providers and 16 hospitals have been paid for adopting certified EHR's
  - 27 providers have been paid for meaningful use stage I
  - A total of \$16,503,251.91 has been paid to eligible hospitals and providers

# Health Information Infrastructure

- CMS issued the final rule on Meaningful Use Stage 2
  - It is expected to expand the number of eligible providers effective 2013
  - It has an increased focus on patient engagement
  - Increased focus on public health and HIE
  - Better alignment of MU measures with other quality measure programs

# Health Information Infrastructure

- As of 9/26/2012
  - There are over 3138 Direct secure messaging accounts created for sharing PHI securely between health care workers
  - Over 11,102 messages have been sent by 1205 unique users

# Health Information Infrastructure

- Medicaid Reenrollment went live September 2012
- The State and the HIE are participating in a pilot of sending structured lab results from the State Lab to LaTouche Pediatrics and Anchorage Neighborhood Health Center. We expect to begin testing in November 2012.
- The HIE clinical data repository is expected to go into production in November 2012

# Transparency

- HCC voted not to pursue analysis and comparative study of SNF component of acute care spectrum
- There has been some limited notice in the media of the Milliman reports
- Payers are increasingly quoting data from the Milliman analyses
- A number of other individuals have had opportunity to use the Milliman data in talking with various groups about the challenges to health care in Alaska

# Transparency

- Milliman analyses and reports address comparative pricing and payments in Alaska and several other states for physician and acute hospital charges for various payers
- Milliman analyses regarding potential reasons for higher pricing and payments in Alaska compared to several other states
- Milliman analysis of pharmacy pricing and costs and comparisons being done now

# Payment Reform

- Very limited activity so far. The rest of the US has also seen limited activity but almost surely will be ahead of Alaska. Some ERISA plans have asked their TPAs to offer outside services for some expensive elective surgical procedures as an option. Very limited uptake on this to date.
- There is a sense among some payers that in situations where there is potential competition that the climate may be changing slightly toward the possibility for leveraging potential steerage

# Payment Reform

- Some physician groups are expressing interest in increasing their knowledge base regarding changes that are happening related to payment reform
- Some physician and institutional leaders have been outspoken in recognizing that our current situation is unsustainable and that we need leaders from within the industry to step forward as leaders