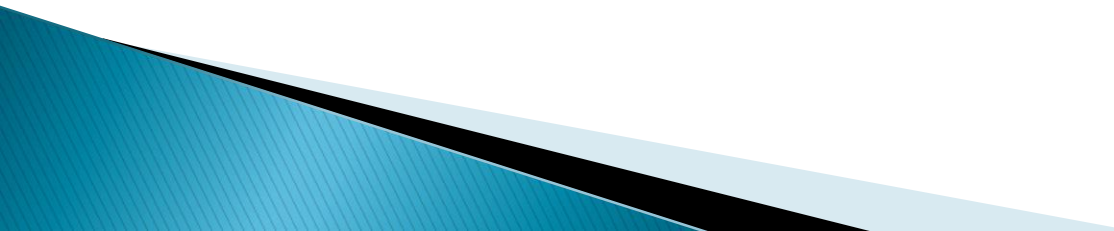


Health Services Research

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Objectives for today

- ▶ Provide an overview of health services research (HSR)
 - History, definitions, etc...
 - ▶ Identify and discuss the intersection of HSR and epidemiology, policy, etc.
 - ▶ Discuss examples of HSR
- 

Acronyms!!!

P4P

ACA

CBO

NCHSR

ARRA

IOM

CDC

HSR

PPACA

A

ACO

CMS

ResDAC

PDP

H

NAM

PCOR

HCFA

DHEW

P

FFS

DHHS

MACRA

P4R

R01

MCO

SGR

NIH

FDA

PCORI

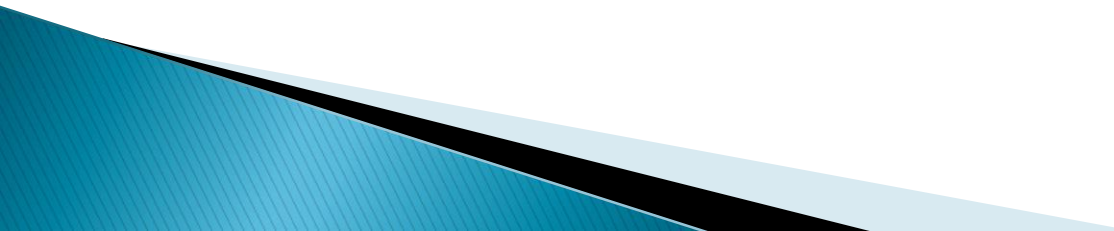
AHRQ

MDS

HIPAA

OMB

Historical Context of HSR

- ▶ Relatively young field
 - ▶ Developing and evolving since the middle of the last century (1960's forward)
 - ▶ Late 1980's, 1990's recognized as a specialty; graduate degree status
- 

Evolving health care system & HSR

- ▶ 1966 – Federal government health services research study section established
- ▶ 1969 – National Center for Health Services (NCHSR) Research in DHEW established
 - “A field that develops methods for improving access to care, moderating the rate of medical care prices, and assuring the effectiveness of care.”
- ▶ 1972 – Report of the Panel on Health Services Research and Development of the President's Science Advisory Committee
 - “Health services research seeks to improve the network for providing health care so that the fruits of biomedical research are readily available to all citizens.”

Evolving health care system & HSR

- ▶ 1979 – Institute of Medicine Report:
“Health services research is inquiry to produce knowledge about the structure, processes, and effects of personal health services.”
- ▶ 1995 – Institute of Medicine Committee:
“Health services research is a multidisciplinary field of inquiry, both basic and applied, that examines the use, costs, quality, accessibility, delivery, organization, financing, and outcomes of health care services to increase knowledge and understanding of the structure, processes, and effects of health services for individuals and populations.”

Health services research . . .

- ▶ is inquiry to produce knowledge about the structure, processes, or effects of personal health services. A study is classified as health services research if it satisfies two criteria: it deals with some features of the structure, processes, or effects of personal health services; At least one of the features is related to a conceptual framework other than that of contemporary applied biomedical science. (IOM, 1979)

Health services research . . .

- ▶ is a multidisciplinary field of inquiry, both basic and applied, that examines the use, costs, quality, accessibility, delivery, organization, financing, and outcomes of health care services to increase knowledge and understanding of the structure, processes, and effects of health services for individuals and populations. (IOM, 1995)

Health services research . . .

- ▶ is the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations. (Academy for Health Services Research and Health Policy, 2000)

Kathleen N Lohr and Donald M Steinwachs. Health Services Research: An Evolving Definition of the Field. Health Serv Res. 2002 February; 37(1): 15-17.

Health services research . . .

- ▶ examines how people get access to health care, how much care costs, and what happens to patients as a result of this care. The main goals of health services research are to identify the most effective ways to organize, manage, finance, and deliver high quality care; reduce medical errors; and improve patient safety. (Agency for Healthcare Research and Quality, 2002)

Identifiable Issues

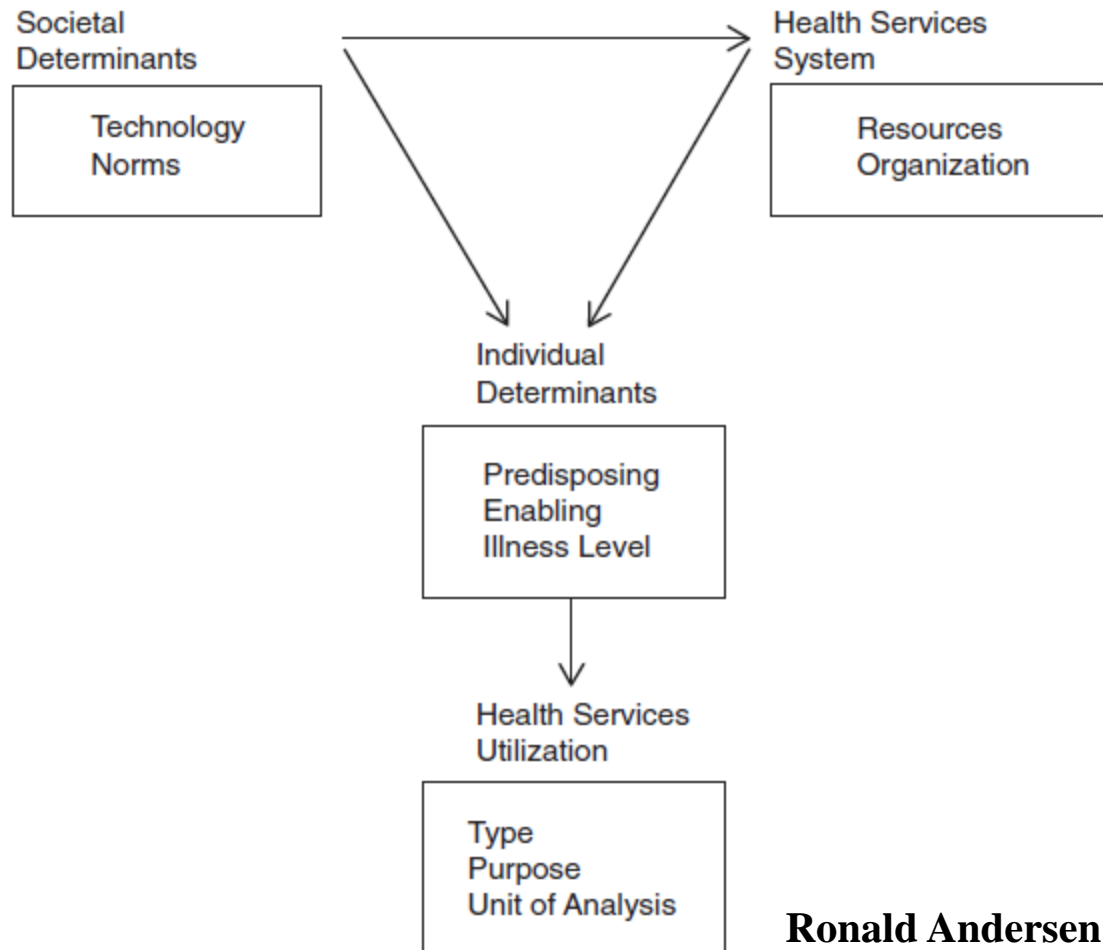
- ▶ Access
 - ▶ Quality
 - ▶ Utilization
 - ▶ Cost
- 

HSR as a Discipline: Theoretical/Conceptual Frameworks

Access and Utilization:

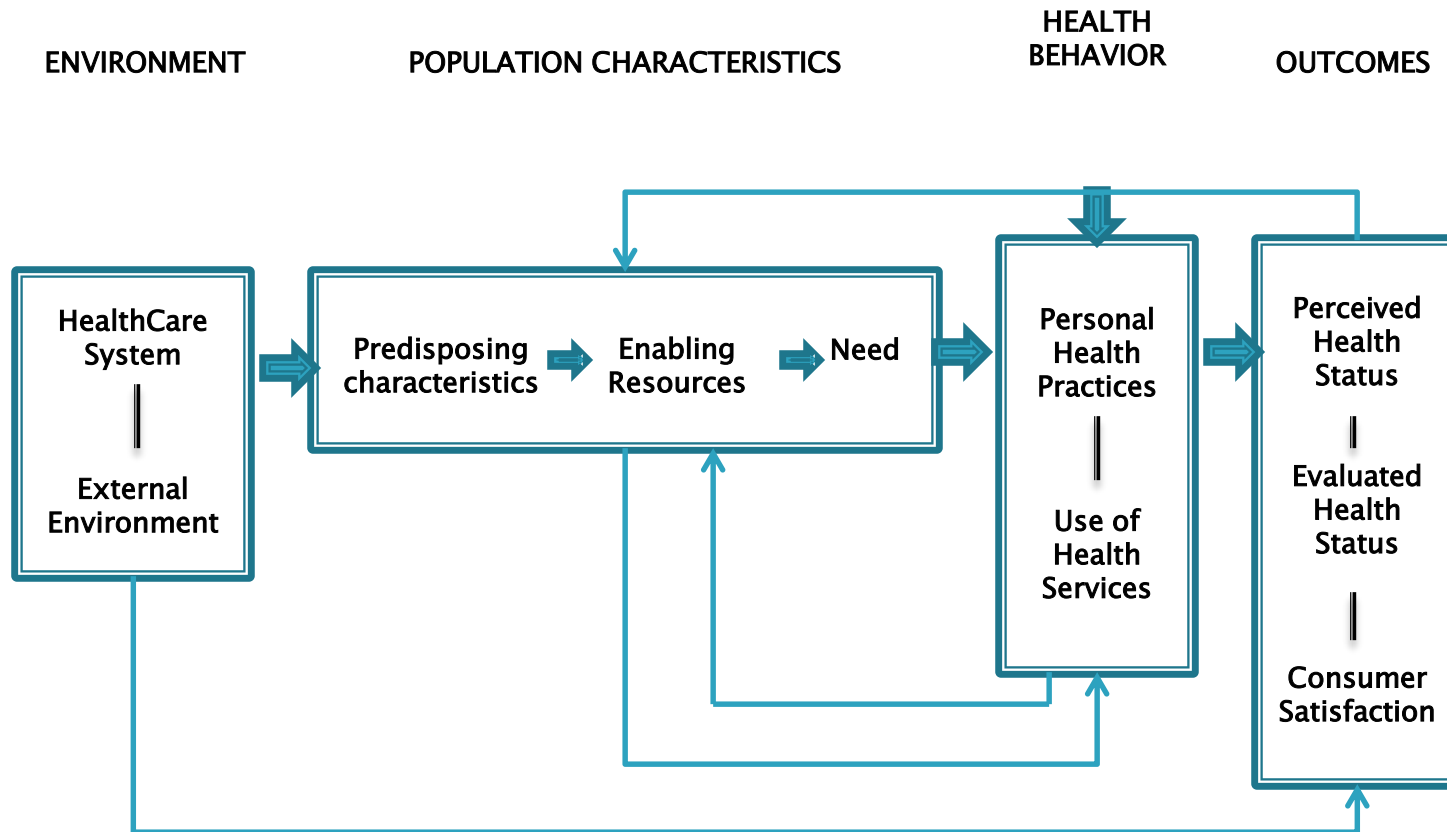
- ▶ Ronald Andersen and John F. Newman. Societal and Individual Determinants of Medical Care Utilization in the United States. *The Milbank Memorial Fund Quarterly*. Vol. 51, No. 1, Winter, 1973.
- ▶ Lu Ann Aday and Ronald Andersen. A Framework for the Study of Access to Medical Care. *Health Serv Res*. 1974 Fall; 9(3): 208–220.
- ▶ Ronald Andersen. Revisiting the Behavioral Model and Access to Medical Care: Does it Matter? *J Health Soc Behav* 1995 Mar; 36(1):1–10.

Model of Access and Utilization:



Ronald Andersen and John F. Newman.
Societal and Individual Determinants of
Medical Care Utilization in the US. The
Milbank Memorial Fund Quarterly.
Vol. 51, No. 1, Winter, 1973.

Model of Access and Utilization:



Ronald Andersen. Revisiting the Behavioral Model and Access to Medical Care: Does it Matter? J Health Soc Behav 1995 Mar; 36(1):1-10.

HSR as a Discipline: Theoretical/Conceptual Frameworks

Quality

- ▶ Avedis Donabedian, Evaluating the Quality of Medical Care. The Milbank Memorial Fund Quarterly, Vol. 44, No. 3, Pt. 2, 1966 (pp. 166–203).
 - **Structure,**
 - **Process, and**
 - **Outcome(s)**

HSR as a Discipline: Research Data and Methods

- Systematic review / meta-analysis
- Data
 - Observational
 - Claims data analysis
 - Surveys
- Economic
 - Cost benefit/effectiveness/utility analysis
 - Resource use
 - Budget impact analysis
 - Efficiency and waste
- Case-mix adjustment
- Patient-reported outcomes (e.g., quality of life)

Evolving Relationship between HSR and Policy

- ▶ Impact of Federal policies on healthcare services and vice versa!
 - Medicare
 - e.g., First-dollar coverage for preventive services under ACA 2010
 - Medicaid
 - e.g., Coverage expansion under ACA 2010
 - Children's Health Insurance Program (CHIP/SCHIP)
 - e.g., Coverage expansion under Children's Health Insurance Reauthorization Act 2009

Evolving relationship (cont)

- ▶ State systems (50+ different)
- ▶ International–different models
 - Government as predominant payer

Examples

- ▶ The Health Insurance Experiment (RAND Study)
 - Controlled trial -- rare in HSR
 - One of largest and longest HSR studies ever undertaken -- planning began in 1971
 - Sought to improve Federal and private policy on financing medical services
 - What services should be covered?
 - How should they be covered (cost sharing)?

The Health Insurance Experiment (cont)

- ▶ By 1970 RCTs standard for clinical research, rarely used for research directed at policy
- ▶ Design:
 - Six study sites
 - Families assigned to one of 14 different fee-for-service (FFS) insurance plans which varied the amount of cost sharing or to a prepaid group practice (staff model HMO)

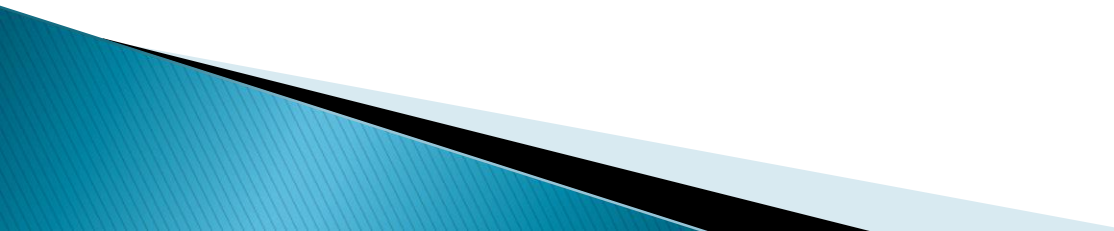
The Health Insurance Experiment (cont)

- ▶ 70% participated for 3 years, remainder for 5 years; n=7,691
- ▶ Results reported effects on use and effects on health for both the FFS and HMO options
 - Newhouse, J. Controlled experimentation as research policy. In Ginzburg (ed) Health Services Research. Harvard Univ Press, 1991.
 - Numerous published articles: Robert H. Brook, John E. Ware, William H. Rogers, Emmett B. Keeler, Allyson Ross Davies, Cathy Donald Sherbourne, George A. Goldberg, Kathleen N. Lohr, Patti Camp, and Joseph P. Newhouse.

The Health Insurance Experiment: Key Findings

- ▶ Those paying for a share of their care used fewer services than those given free care
- ▶ Cost sharing :
 - Reduced the use of both highly effective and less effective services in roughly equal proportions.
 - Did not significantly affect the quality of care received by participants
 - Had no general adverse effects on participant health, with several exceptions:
 - Free care led to improvements in hypertension, dental health, vision, and selected serious symptoms
 - Improvements were among the sickest and poorest patients.

Disadvantages to HSR as RCTs

- ▶ Expensive (all \$ in one basket!)
 - ▶ Environment may change during experiment
 - ▶ Prospective – can take too much time
 - ▶ Interdisciplinary team needed to get it right
- 

Health services research on quality

- ▶ 1991 Harvard study (NEJM)
 - 48,000–98,000 Americans die in hospitals from preventable medical errors
- ▶ 2005 Commonwealth Fund
 - 1 out of 5 American families, 8.1 million households, have experienced medical or prescription drug errors with serious results

Bleich S. Medical errors: five years after the IOM report. Issue Brief (Commonw Fund). 2005 Jul;(830):1–15.

Medical error research led to intervention research

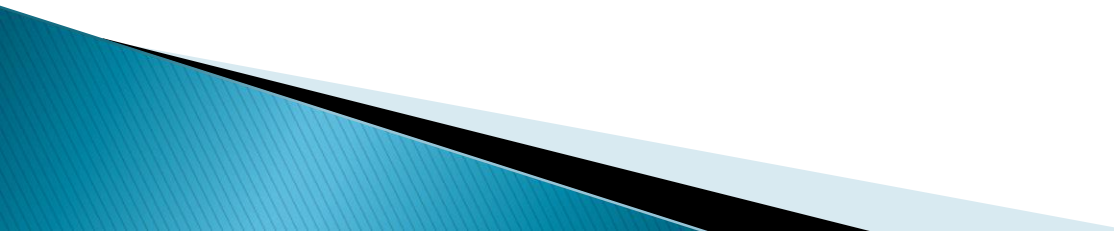
- ▶ IOM, 1999, To Err is Human, \$2 billion/year inpatient hospital costs due to drug errors
- ▶ 1993, Brigham & Women's Hospital, Boston, one of first hospitals computerized prescribing order entry (CPOE) designed to reduce errors
- ▶ 1998, Bates (JAMA), documented CPOE reduced error by 55%

D Bates, J Teich, J Lee, et al.. The Impact of Computerized Physician Order Entry on Medication Error Prevention. J Am Med Inform Assoc. 1999 Jul-Aug; 6(4): 313–321.

National Quality Forum (NQF)

- ▶ “NQF reviews, endorses, and recommends use of standardized healthcare performance measures.”
- ▶ Non-profit, independent organization
- ▶ Does not develop measures
- ▶ Measure endorsement –
 - “Good Housekeeping Seal of Approval”
- ▶ <http://www.qualityforum.org/Home.aspx>

Intersection of HSR and Epidemiology

- ▶ At the simplest level, study of populations and use of services or care provision
 - ▶ Defining and measuring outcomes (patient or system level, cost)
 - ▶ Can apply similar methods, although RCTs more difficult in HSR
 - ▶ Results can impact programs, organization and policy
- 

Examples–Matches epi parent study with utilization/cost data

- ▶ Dementia Cost Study, PI, Jay Magaziner, PhD
 - Conducted epidemiology study of dementia among new admissions to nursing homes.
 - Identified population of persons with and without dementia; data collected on nursing home environment.
 - 1992–95
 - 59 Maryland NHs
 - Matched person–level epi data of parent study to Medicare/Medicaid person–level and facility data

Dementia Cost Study (cont)

- ▶ N= 640 with dementia, 636 w/o dementia
- ▶ Tracked 1 year pre-admission and up to 2 years post-admission
- ▶ Results:

Medicare expenditures peaked in the month immediately preceding admission and dropped to preadmission levels by the third month in a nursing home.

 - Stuart, B., Gruber-Baldini, A.L., Fahlman, et al. Medicare Cost Differences Between Nursing Home Patients Admitted with and without Dementia. *Gerontologist*, 45, (4), 2005, 505–515. PMID: 16051913.
 - Quinn, C.C., Gruber-Baldini, A.L., Port, C.L., et al.. The Role of Nursing Home Admission and Dementia Status on Diabetes Care. *Journal of American Geriatrics Society*, 57:1628–1633, 2009. PMID: 19682125/PMCID: PMC3010243.

Example– Medicare Claims and Survey Data

- ▶ Stuart, B., Shaffer, T., Simoni–Wastila, L., et al. Variation in Anti–diabetic Medication Intensity Among Medicare Beneficiaries with Diabetes Mellitus. *American Journal of Geriatric Pharmacotherapy*, 5 (3), 2007, 195–208.
 - goals: to provide national estimates showing how the intensity of anti–diabetic medication regimens for Medicare beneficiaries with DM varies by level of medical spending (a proxy for overall disease burden); and to identify potential predictive factors associated with the observed differences.
 - 2002 Medicare Current Beneficiary Survey (MCBS) data to benchmark intensity of anti–diabetic medication regimens for Medicare beneficiaries with DM arrayed by decile of cumulative medical care spending. N=1956
 - Results: high–cost Medicare beneficiaries with DM received substantially less intensive anti–diabetic regimens compared with those incurring more modest medical expenditures in 2002.

Example–Observational Data

- Quality improvement project:
 - What differentiates nursing homes (NHs) that perform well on publicly reported Centers for Medicare and Medicaid Services (CMS) quality measures.
 - 147 NHs across 12 northeast states owned by 1 for–profit, multi–facility organization in 2006 and 2007.
- Minimum Data Set (MDS),
 - patient admission information, facility staffing metrics, and CMS QM data.
- Results: Factors found consistently significant ($P < \text{or} = .05$)
 - High risk pressure ulcers (HRPrUs), percent admissions with PU and percent residents with end–stage disease.
 - For low risk incontinence (LRI), significant association with percent residents readmitted; percent incontinent of bladder on admission.
 - ADL decline showed significant associations with licensed nurse turnover and facilities in specific states.

Horn, SD, Siobhan, S, Sharkey, S, et al. Beyond CMS Quality Measure Adjustments: Identifying Key Resident and Nursing Home Facility Factors Associated with Quality Measures. *Journal of American Medical Directors Association*. 11 (7), 2010, 500-5.

Example– Survey & Claims Data

- ▶ Objective:
 - Measure 3-yr medication possession ratios (MPRs) for reninangiotensin-aldosterone system (RAAS) inhibitors and statins for Medicare beneficiaries with diabetes; assess whether adherence associates with lower spending on traditional Medicare services.
- ▶ Medicare Current Beneficiary Survey (MCBS) 1997–2005
- ▶ Results:
 - Higher levels of adherence with RAAS-inhibitors and statins by Medicare beneficiaries with diabetes results in lower cumulative Medicare spending over 3 years with savings exceeding the cost of the drugs.

Stuart, B. et al Does Medication Adherence Lower Medicare Spending Among Beneficiaries with Diabetes, 2011. Health Services Research Vol 46 (4), 1180-1199.

Where are we today?

- ▶ 2009 – American Recovery and Reinvestment Act (ARRA)
 - \$1.1B in Comparative Effectiveness Research (CER)
- ▶ 2010 – Affordable Care Act
 - Established the Patient Centered Outcomes Research Institute (PCORI)
 - Patient–Centered Outcomes Research (PCOR)
 - Sunsets in 2019
 - Future is uncertain

Resources

- ▶ www.academyhealth.org
- ▶ www.ahrq.gov
- ▶ www.pcori.org
- ▶ Journals:
 - Health Services Research
 - Health Affairs
 - Medical Care

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- ▶ 410.706.6989