State of the Department of Population Medicine

Richard Platt
Professor and Chair
Executive Director, HPHCI

Answering the need for a new approach

- Mission: Improve health care delivery and population health through innovative research and teaching
Teaching Center- a hotbed of inspiration and initiative

SPECIAL ARTICLE

GORDON T. MOORE, MD, MPH, THOMAS S. INUI, MD, SCM, JOHN M. LUDDEN, MD, and STEPHEN C. SCHOFENBAUM, MD, MPH

The "Teaching HMO": A New Academic Partner

Abstract—Health care reform is a potential threat to the academic missions of medical schools and academic health centers. Efforts to maintain care, the success of their missions, may also represent a way for medical schools to improve their academic missions. Harvard Medical School and the Harvard Community Health Plan, a large health maintenance organization, have formed the HMO in order to enhance the teaching function of the academic health center. This initiative is an example of a model that replicates, in a managed care organization, the long-standing and highly successful teaching hospital academic structure in academic medical centers. The authors describe this model in detail, show how the Harvard-Columbia model works, and explain the benefits such institutions now in creating a joint entity, the model for medical schools and large HMOs to create vibrant practice settings for teaching and research in medicine and health care, including (primary care medicine) that have been substantially neglected in recent years, and that the "teaching HMO" may have the potential to transform academic medicine in the next century just as the teaching hospital transformed it in this century. Acad Med. 2000;75(4):385-400.

"...alliances between medical schools and large HMOs can create vibrant practice settings for teaching and research..."

The ‘90s: Research and Teaching Take Off

- 1994: 1st Federal award, an FDA pharmacoepidemiology cooperative agreement
- 1996: Launch of the Thomas O. Pyle and Robert H. Ebert Fellowships
- 1998: NIH funds what will later be named Project Viva
- Leadership of 5 HMS courses
  - Patient/Doctor I & II
  - Epidemiology and Critical Reading of the Literature
  - Nutrition and Preventive Medicine
  - Ambulatory Care Clerkship
Areas of focus

1. Comparative effectiveness research
   Identifying best treatments for individuals and populations

2. Delivery systems based research
   Improving clinical care processes and outcomes

3. Prevention research
   Reduce the risk of acquiring disease and/or prevent its consequences

4. Policy research
   Assess the impact of health policies, financing, and administration

5. Surveillance and public health research
   Develop methods to use health care data to support public health

Cross-cutting strengths in data and methods

DPM’s Major Research Partners

- Health plans
- Practices
- Hospitals
- Health departments
DPM’s Research Groups

CHeRP | CENTER FOR HEALTHCARE RESEARCH IN PEDIATRICS

Founding Director
Tracy Lieu

Associate Director
Alison Galbraith

Interim Director
Ann Chen Wu

Center for Child Health Care Studies

Founding Director
Tracy Lieu

Interim Director
Ann Chen Wu

Associate Director
Alison Galbraith
DPM’s Research Groups

CHeRP CENTER FOR HEALTHCARE RESEARCH IN PEDIATRICS

PROMoTeR

CORAL DIVISION OF CHRONIC DISEASE RESEARCH ACROSS THE LIFECOURSE

DEPARTMENT OF POPULATION MEDICINE

HARVARD AFFILIATED SCHOOL

Harvard Pilgrim Health Care Institute

FOUNDED DIRECTOR
Matt Gillman

DIRECTOR
Emily Oken

ASSOCIATE DIRECTOR
Jason Block
DPM’s Research Groups

CHeRP | CENTER FOR HEALTHCARE RESEARCH IN PEDIATRICS

FOUNDERING DIRECTOR
Steve Soumerai

Health Policy and Insurance Research

DIRECTOR
Frank Wharam
DPM’s Research Groups

**CHeRP**
CENTER FOR HEALTHCARE RESEARCH IN PEDIATRICS

**PROMoTeR**
Promoting Health for Tomorrow's Researchers

**TIDE**
Therapeutics and Infectious Disease Epidemiology

**CarPE**
Center for Cancer Policy and Program Evaluation

Patient Oriented Research in the Epidemiology of Skin Diseases

**DPM’s Research Groups**

**Therapeutics and Infectious Disease Epidemiology**

**TIDE 2009**

**DIRECTOR**
Richard Platt

**TIDE 2017**
Areas of focus

1. Comparative effectiveness research
   Identifying best treatments for individuals and populations

   - Cluster randomized trial
   - 43 hospitals, 74 ICUs, 74,256 admissions
   - Universal decolonization resulted in a 44% decrease in bloodstream infections
   - Adopted by most US hospitals

Clinical Trials to Prevent Healthcare Associated Infection

Targeted versus Universal Decolonization to Prevent ICU Infection

- Cluster randomized trial
- 43 hospitals, 74 ICUs, 74,256 admissions
- Universal decolonization resulted in a 44% decrease in bloodstream infections
- Adopted by most US hospitals

Huang NEJM 2013:368:2255
Areas of focus

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Cross-cutting strengths in data and methods

Childhood Infections

Antibiotics: Handle Them with Care: After Decades of Increase, New Studies Are Showing That the Rate of Antibiotic Use for Children Has Now Started to Decline

Byline: Jonathan Finkelestein, M.D., M.P.H., and Grace Lee, M.D., M.P.H.

Antibiotics really are wonder drugs—they have saved countless children’s lives over the past century. But many of these medicines are now losing their punch, as disease-causing bacteria learn to resist them. Can parents help stop this insidious process? As it turns out, we can. The surest way to preserve the power of antibiotics is simply to avoid overusing them.
**Collaborating Organizations**
Department of Ambulatory Care and Prevention, Harvard Medical School
Massachusetts Department of Public Health
Blue Cross and Blue Shield of Massachusetts
Harvard Pilgrim Health Care
Tufts Health Plan
Massachusetts Division of Medical Assistance

**Endorsed By**
U.S. Centers for Disease Control
Massachusetts Chapter of the American Academy of Pediatrics

Funded by the U.S. Agency for Healthcare Research and Quality
The REACHMass Creed

GRANDIOSITÉ

FLEXIBILITÉ

TENACITÉ

Asthma Care

Mismatching among guidelines, providers, and parents on controller medication use in children with asthma

Most Parents Do Not Understand Their Children’s Asthma Medications, News Study Shows
- High Five – a cluster randomized trial in pediatric practices to prevent and manage overweight in children
- Reduced TV watching, but not BMI

**Distributed Research Networks: PCORnet**

**High Five For Kids**

Grow healthy the High Five way!
- **Sugary Drinks**
  No more than 4 ounces per day
- **Fruits and Vegetables**
  At least 5 servings per day
- **Fast Food**
  No more than 1 time per week
- **TV**
  No TV in the room where your child sleeps
  No more than 1 hour per day
- **Active Play**
  At least 1 hour per day

**PCORnet: The National Patient-Centered Clinical Research Network**
Using PCORnet’s Electronic Health Records

- PCORnet Antibiotics and Childhood Growth study
- Assess effect of antibiotic prescribing on height/weight
- Uses electronic health records of 700,000 children in 37 PCORnet institutions
- PIs: Matt Gillman, Jason Block at DPM, Chris Forrest at Penn 15 Investigators, 37 institutions
- Coordinating Center at HPHC Institute

Distributed Pragmatic Trial Networks: NIH Collaboratory

Transformative
Transforming the way clinical trials are conducted.
Learn more >
Rethinking Clinical Trials™
Areas of focus

1. **Comparative effectiveness research**
   *Identifying best treatments for individuals and populations*

2. **Delivery systems based research**
   *Improving clinical care processes and outcomes*

3. **Prevention research**
   *Reduce the risk of acquiring disease and/or prevent its consequences*
Project Viva

Project Viva: a study of health for the next generation

- Prospective study of mothers and children
- 1999-2002 recruited women in early pregnancy from 8 Atrius practices
- 2128 live singleton births, 1576 remain enrolled as of 2017
- In-person visits x2 in pregnancy, after delivery, and in infancy, early childhood, mid-childhood, early teen, and (ongoing) mid-teen (ages 16+)
- 175+ publications, 40+ grants (continuous NIH funding)

Cohort leadership and analyses

Cohort Profile: The Promotion of Breastfeeding Intervention Trial (PROBIT)

Rita Patel, Emily Oken, Natalia Bogdanovich, Lidaa Matsub, Zinaida Seykovskaya, Beverley Chalmers, Ellen D Hodgson, Konstantin Vlichos, Michael S Kramer, and Richard M Martin
Elucidating the links between behaviors and health

The Scales Have Tipped on Fish and Pregnancy
The benefits of eating fish during pregnancy vastly outweigh the risks. So why do the recommendations still put women off from seafood?

By Anne Barro

Counts of Establishments on Commute from Work to Home

Changes in the food environment over time: examining 40 years of data in the Framingham Heart Study.

Developing policies to promote healthy lifestyle

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Vaccine Cost-effectiveness and Decision-making

THE LANCET

Cost-effectiveness of pneumococcal conjugate vaccination in the prevention of child mortality: an international economic analysis

Anouchka Siche, Erin Levine, Maria D’Knoll, Farzana MuHill, Tracy A Liu

Led to the Gates Foundation adding pneumococcal vaccine to its global health program

Vaccine Financing

JAMA

Gaps in Vaccine Financing for Underinsured Children in the United States

Lee. JAMA 2007; 298: 638

“The current vaccine financing system has resulted in gaps for underinsured children in the United States, many of whom are now unable to receive publicly purchased vaccines in either the private or public sectors.”
Asthma Health Policy

Original Investigation JAMA Pediatrics
Financial Barriers to Care Among Low-Income Children With Asthma
Health Care Reform Implications

Vicki Fang, PhD; Rana Graetz, PhD; Alison Galbraith, MD, MPH; Courtney Hamity, MPH; Jie Huang, PhD; William M. Vollmer, PhD, John Hsu, MD, MBA, MSCE; Ann Chen Wu, MD, MPH

**IMPORTANCE** The Patient Protection and Affordable Care Act (ACA) includes subsidies to reduce patient cost sharing for low-income families. Limited information on the cost sharing among children is available to guide these efforts.

**OBJECTIVE** To examine the associations between cost sharing, income, and care among children with asthma.

**DESIGN, SETTING, AND PARTICIPANTS** A telephone survey in 2012 about the prior year within an integrated health care delivery system. Respondents included parents of children aged 4 to 11 years with asthma. Of these, 25.9% of children in public subsidies, 21.7% were commercially insured with household incomes at or below 250% of the federal poverty level (FPL) and 18.2% had higher cost-sharing levels. 

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Unintended effects of medication policy

**Research**
Changes in antidepressant use by young people and suicidal behavior after FDA warnings and media coverage: quasi-experimental study

**BMJ** 2014; 348: doi: https://doi.org/10.1136/bmj.g3596 (Published 18 June 2014)

Cite this as: BMJ 2014;348:g3596
Innovative Longitudinal Methods

- US: Triplicate prescription policy reduces benzodiazepine use, not hip fractures

- Thailand: Universal health coverage increases insulin use

- Monthly visits missed
  -干预 vs. 控制，每月差异 - 所有患者

- Tanzanias: 预约系统减少了HIV感染孕妇的错过访问

- UK: Pay for performance does not improve care for patients with hypertension

- Rigorous Analyses of High-deductible Health Insurance

- Women in high-deductible plans delay breast cancer care

- Low-Socioeconomic-Status Enrollees In High-Deductible Plans Reduced High-Severity Emergency Care

- JAMA The Journal of the American Medical Association

- HealthAffairs TOPICS JOURNAL
Policy impact

Citations of DPM work

▪ “Racial and ethnic differences in obesity may also be partly explained by differences in risk factors during the prenatal period and early life.” (p. 6) 

▪ “…early introduction of solids (prior to six months) increases the risk for childhood obesity.” (p. 15) ibid

▪ “Between 1980 and 2001, the prevalence of overweight infants under six months almost doubled…” (p.11) 

▪ “…television exposure was correlated with fast-food consumption in preschool children…” (p. 18) 

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Develop methods to use health care data to support public health
Practice of Epidemiology


W. Katherine Yih, Grace M. Lee, Tracy A. Lieu, Robert Ball, Martin Kulldorff, Melissa Rett, Peter M. Wahl, Cheryl N. McMihill-Walraven, Richard Platt, and Daniel A. Salmon
Sentinel Partner Organizations

Sentinel distributed database*

- Populations with well-defined person-time for which most medically-attended events are known
  - 223 million unique member IDs
  - 425 million person-years of observation time
  - 43 million people currently accruing new data
  - 5.9 billion dispensings
  - 7.2 billion unique encounters
  - 42 million people with \( >1 \) laboratory test result

* As of January 2017
Distributed EHR Networks for Public Health: MDPHnet

Integrating Clinical Practice and Public Health Surveillance Using Electronic Medical Record Systems

Michael Kompas, MD, MPH, Jason McVetta, Ross Lazansky, MBBS, MPH, Emma Egleston, MD, MPH, Gillian Harvey, MPH, Benjamin A. Knusel, MD, PhD, W. Katherina Yin, PhD, MPH, Patricia Daly, RN, MS, Paul Oppenheimer, MPH, Brianna Beegger, MPH, Michael Loo, MD, Chalmie Kobyli, JD, MA, David Henley-Grove, MPH, Alfred DoMaria Jr, MD, Richard Platt, MD, MSc.

MDPHnet: Secure, Distributed Sharing of Electronic Health Record Data for Public Health Surveillance, Evaluation, and Planning

www.esphealth.org
MDPHnet: RiskScape – a public health dashboard

MDPHnet: Obesity – prevalence of BMI >30
Changing National Surveillance Strategy

Developing a New, National Approach to Surveillance for Ventilator-Associated Events*

Shelley S. Magill, MD, PhD; Michael Klompas, MD, MPH;2,3,6; Robert Balk, MD4,6; Suzanne M. Burns, RN, ACNP, MSN, RRT-NP; Clifford S. Deutschman, MS, MD;5; Daniel Diekema, MD2,6; Scott Fridkin, MD; Linda Greene, RN, MPS6; Alice Guh, MD, MPH; David Gutterman, MD2,3; Beth Hammer, RN, MSN, ANP-BC6,14; David Henderson, MD15; Dean Hess, PhD, RRT16,17,18; Nicholas S. Hill, MD6,19; Teresa Horan, MPH2; Marin Kelle, MD20; Mitchell Levy, MD16,21; Edward Septimus, MD22,23; Carole VanAntwerpen, RN, BSN24,25; Don Wright, MD, MPH26; Pamela Lipsett, MD, MHPE2,27

Critical Care Medicine 2013;41:2467-2475

Cultivating skills and honing futures

- Courses for medical students
- Health Policy and Insurance Research Fellowship
- General Internal Medicine and Primary Care Fellowship
- Pediatric Health Services Research Fellowship
- Primary Care and Population Medicine Residency Program
- Medicines and Insurance Coverage (MedIC) Initiative
A new course for students -- Watch this space!

Essentials of the Profession II

- Required month-long course for 3rd and 4th year HMS students

HPI Teaching Activities
Fellowships and Awards

- Thomas O. Pyle Fellowship
- Ebert Fellowship
- Launch of Ebert Mid-Career Development Award

New prize

Suzanne and Robert Fletcher Prize in Population Medicine

- $1000 prize for the best paper on a topic in Population Medicine written by an HMS or HSDM student
- Papers will be judged by an expert panel of DPM faculty
Endowed Chairs

Emily Oken, MD, MPH
Michael Klompas, MD, MPH, FRCPC

Administration
Directors of Administration

Kim Eberlein  Carol Stolberg  Ellen Edelberg  Virginia Hinrichsen  Sheila Fireman

Research Services Data Center
The future: Areas of focus

1. Comparative effectiveness research
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