MEMORANDUM

TO: School of Medicine Faculty
ROM: Craig A Umscheid, MD, MSCE, Kendal Williams, MD, MPH, PJ Brennan, MD
DATE: 3/25/2009
RE: ARRA Collaboration Opportunities with UPHS Center for Evidence-based Practice

Dear Colleagues,

The UPHS Center for Evidence-based Practice (CEP) is interested in collaborating with investigators on upcoming federal grants made available under the American Recovery and Reinvestment Act, and can provide a number of unique opportunities and strengths for grant applications in several topic areas. In addition to publishing state of the art systematic reviews and guidelines, CEP is uniquely positioned to facilitate and enhance collaborations between investigators and the clinical operations of UPHS, particularly in the areas of quality improvement, patient safety, information systems, and cost-effectiveness. CEP can also offer expertise working with key UPHS administrative and clinical databases.

Examples of challenge areas and topics particularly relevant to CEP's activities include:

Evidence-based guidelines and reviews

- Evidence-based guidelines for HIV prevention (02-MH-101)
- Eye and vision systematic reviews (05-EY-103)

Computerized Decision Supports and Medical Informatics

- Testing default options to improve health (01-AG-104, 01-DA-108, 01-OD-101)
- Use of health informatics to increase cancer prevention (04-CA-113)

Quality Improvement and Cost-effectiveness

- Engineering improved quality health care at reduced cost (10-EB-101)
- Technologies to enhance patient safety in clinical settings (01-EB-101)
- Integrating cost-effectiveness analysis into clinical research (04-DA-106, 04-NR-101)

Translational research

- T-2 translation research pilots (15-NS-105)
- NIH partners in translational research (10-AG-105, 15-DA-102, 15-NR-101)
Please see the attached description for details on CEP’s core activities and staff. If you're interested in discussing potential collaborations, please contact Craig Umscheid at craig.umscheid@uphs.upenn.edu.
University of Pennsylvania Health System Center for Evidence-based Practice

The University of Pennsylvania Health System (UPHS) Center for Evidence-based Practice (CEP) is funded by the Penn Health System Chief Medical Officer to support the quality, safety and value of patient care at Penn through evidence-based practice. To accomplish its mission, CEP: 1) performs evidence reviews to inform high impact clinical policy and works within the clinical and administrative infrastructure of UPHS to implement these policies; 2) collaborates with industry, payors, and government on mission-related projects; and 3) offers education in evidence-based medicine to those in and outside of UPHS.

CEP's unique standing as one of the only centers for evidence-based practice in the U.S. fully funded by its home institution enables it to effectively address the most pressing clinical questions faced by medical centers while also responding to external funding opportunities from local and national organizations on mission-related topics. CEP is staffed by two physician co-directors trained in epidemiology, a health economist, specialists in infectious disease and primary care, a medical librarian, and two doctoral-level analysts who perform evidence reviews. The Center is guided by an executive board and academic and administrative advisors at Penn.

CEP Core Activities and Methodology

Evidence Synthesis
The Center performs assessments of healthcare technologies defined broadly. These include pharmaceuticals, non-pharmaceutical technologies such as medical devices, and processes of care within Penn. Assessment topics include high-cost and emerging technologies as well as low-cost procedures that affect patient safety and quality of care. Assessments are requested on key issues identified by medical, nursing and administrative leaders as well as ad hoc and standing committees (e.g. pharmacy, patient safety, and supply purchasing committees) at Penn. For each issue evaluated, CEP performs a systematic review of the evidence using well established methods and works alongside key stakeholders to produce the most valid and actionable report. These reports have been used to inform a variety of decisions ranging from formulary and purchasing decisions to those regarding medical practice. More than 50 evidence reports have been completed to date, including guideline development projects, standalone evidence reports, and short-form advisories. Three of these reports have been published (1-3), and another three have been posted on the National Guideline Clearinghouse (4-6).

Implementation of Evidence-based Practice
As CEP's mission is to support the quality and safety of care at Penn, developing and implementing strategies for translating evidence-based conclusions into routine practice is a critical part of the Center’s work. Techniques used for this purpose include presentations of reports to key stakeholders, development of clinical practice guidelines, and creation of order sets and other computerized clinical decision supports. CEP has established close ties to the infrastructure that manages information systems at Penn and holds positions in information technology oversight and operations committees at Penn, including the Penn Clinical Decision Support Oversight Committee and the Inpatient Electronic Medical Record Operations Committee. This has enabled CEP to effectively design, test, and implement multiple computerized clinical decision supports throughout the Penn Health System ranging from the
prevention and treatment of venous thromboembolism to decisions regarding the use of telemetry.

Evaluation

CEP/COHSI Collaboration
To measure the impact of its best practices implemented through computerized decision support, CEP collaborates closely with the Community Outreach Using Health System Informatics (COHSI) Core at Penn. The COHSI is co-directed by one of the CEP co-directors and is supported by the National Institutes of Health (NIH) Clinical and Translational Science Award (CTSA) to promote the use of Penn Health System information resources in support of clinical research. CEP is currently working with COHSI to measure the impact of venous thromboembolism decision supports that were launched in April 2008 and January 2009.

CEP Economic Evaluations Unit
The CEP Economic Evaluations Unit examines costs and cost-effectiveness of healthcare technologies reviewed by CEP as well as quality improvement initiatives informed by CEP and implemented within UPHS. The Unit is also engaged in measuring the impact of CEP's activities, especially the budgetary impact of its work. Local utilization and cost data on healthcare technologies are incorporated so CEP reports can be tailored to the specific circumstances of care at Penn. Practical study designs along with local clinical and administrative datasets are used to measure effectiveness and cost-effectiveness of quality improvement initiatives. Using these methods, the Unit recently assessed the impact of a unit based clinical leadership model implemented at HUP on the number of central-line associated bloodstream infections (BSI) and the associated costs and cost-effectiveness of this QI initiative to reduce hospital-acquired infections.(7)

CEP Extramural Collaborations
Outside of Penn, CEP has created successful relationships with organizations on mission-related projects. Most notably, CEP is collaborating with the Centers for Disease Control and Prevention (CDC) on several projects. CEP is working with the CDC to develop and publish three sets of guidelines, namely guidelines for: 1. prevention of catheter-associated urinary tract infections, 2. prevention of norovirus outbreaks in healthcare settings (8), and 3. preventing transmission of HIV and hepatitis through transplantation of solid organs. As part of this process, CEP has updated the guideline methodology of the Healthcare Infection Control Practices Advisory Committee (HICPAC), the committee that advises the CDC on infection control practices and publishes infection control guidelines on their behalf. (9) CEP was also commissioned by HICPAC to conduct a systematic review and estimate the proportion of reasonably preventable hospital-acquired infections and associated mortality and costs. The estimates generated by CEP have been presented in a congressional testimony as well as national scientific meetings.(10-11)

Education
CEP also offers education in evidence-based medicine to faculty, staff, residents and students in and outside of Penn. In addition to teaching medical students, residents, and fellows at Penn, CEP faculty have presented a number of lectures and workshops to local and national audiences on topics such as principles of evidence-based medicine; improving the quality, safety and value of patient care at medical centers through evidence-based practice; and implementing best practices at medical center through computerized clinical decision support.
Summary

CEP is an established health technology assessment center based within a leading academic medical institution that is equipped to assess real world patient treatment and diagnostic challenges in innovative and varied ways. At their core, they perform systematic reviews of the evidence to inform high impact clinical policy, and work within the clinical and administrative infrastructure of UPHS to implement those policies. Through their collaborations with Penn Information System leaders, they are able to implement many of their best practices through computerized clinical decision support. Integration with the NIH CTSA supported Health System Informatics Core enables CEP along with their Economic Evaluations Unit to use clinical and administrative data at Penn to measure the quality and cost impact of the best practices they implement. Outside of UPHS, CEP has helped the CDC update their guideline methodology, and has partnered with them to develop three upcoming guidelines. In total, their work has been published in peer-reviewed journals and on national websites, presented at national and international meetings, included in congressional testimony, and supported by federal funds. All of these elements make CEP a natural collaborator for researchers seeking to study the effectiveness and cost-effectiveness of health technologies and quality improvement interventions within Penn, or for those planning to systematically review the efficacy or safety of interventions within or outside the context of a guideline.

References


CEP Faculty and Staff Biographies

PATRICK J. BRENNAN, M.D.
Dr. P.J. Brennan is the Chief Medical Officer and Senior Vice President of the University of Pennsylvania Health System and Professor of Medicine at the School of Medicine and the Hospital of the University of Pennsylvania. The Co-Directors of CEP report directly to Dr. Brennan. As Chief Medical Officer, Dr. Brennan is developing greater collaboration between physicians and nurses in order to improve clinical accountability and the outcomes of care, particularly in the area of healthcare associated infections. Dr. Brennan oversees the departments of Healthcare Quality, Patient Safety, Regulatory Affairs, and Medical Affairs. He has recently developed a Center for Evidence Based Practice to apply scientific evidence to clinical operations. Dr. Brennan leads the UPHS effort to develop a new model for interactions between PENN Medicine and the pharmaceutical industry. Dr. Brennan is an infectious diseases physician and previously served as director of Infection Control for 11 years at the Hospital of the University of Pennsylvania and for periods of time held the same post at Penn Presbyterian Medical Center and the Philadelphia VA Medical Center. He also served as the director of Tuberculosis Control for the City of Philadelphia for seven years, a position he relinquished in October 2004. He is a fellow of the Infectious Diseases Society of America and The Society for Healthcare Epidemiology of America (SHEA) and is currently president of SHEA in 2008. In 2004 Secretary Tommy Thompson appointed Dr. Brennan to chair the Healthcare Infection Control Practices Advisory Committee (HICPAC) for the Department of Health and Human Services. This committee advises the Secretary and the Centers for Disease Control and Prevention Division of Healthcare Quality Promotion on a broad range of issues related to control of infectious diseases. Dr. Brennan also chairs the Sentinel Event Advisory Group of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

KENDAL WILLIAMS, M.D., M.P.H.
Dr. Williams is the Director of the University of Pennsylvania Health System (UPHS) Center for Evidence-based Practice and the Department of Medicine service-chief at Penn Presbyterian Medical Center. His clinical activity since 2004 has exclusively been as an internal medicine hospitalist within UPHS. Kendal Williams is a graduate of the University of Pennsylvania School of Medicine in 1995 and the Johns Hopkins School of Public Health MPH program in 1996. He then trained in Internal Medicine at the University of Pittsburgh Medical Center where he stayed on as chief resident and then faculty until 2004 when he came to Penn. As a faculty member at Penn, he directed a course for the medical students on Clinical Decision-Making and has lectured on the various components of evidence-based clinical reasoning. In his role as the director of the Center for Evidence-based Practice, he supervises the development of health care technology and pharmaceutical assessments and clinical guidelines designed to improve the quality and safety of patients cared for in the University of Pennsylvania Health System. Dr Williams has published clinically-focused articles on hospitalist topics and contributed to the recently published Evidence-Based Medical Consultation by Elsevier. As the director of the Center for Evidence-based Practice, he has performed, written, and edited multiple guidelines for the University of Pennsylvania Health System.
CRAIG A. UMSCHEID, M.D., M.S.C.E.
Dr. Umscheid is an Assistant Professor of Medicine in the Division of General Internal Medicine at the University of Pennsylvania School of Medicine and is Co-Director of the Penn Health System's Center for Evidence-based Practice (CEP). CEP opened in July 2006 and is funded by the Penn Health System Chief Medical Officer to support patient care quality and safety at Penn through evidence-based practice. To accomplish its mission, CEP summarizes scientific evidence for decision making at Penn about high impact drugs, devices and processes of care, and fosters evidence-based collaborative enterprises within and outside of Penn. Dr. Umscheid is also a Co-Director of the NIH CTSA supported Health System Informatics Core, where he uses Penn information resources to measure the impact of best practices implemented through computerized decision support. His areas of research interest include patient care quality and safety, and the organizational implementation of evidence to improve patient outcomes. He is currently a co-author of three upcoming guidelines from the Centers for Disease Control and Prevention, has published numerous systemic reviews and original studies, and has lectured on the development and implementation of evidence-based hospital policy. Dr. Umscheid is also active in the education of medical students as an Instructor in the Introduction to Epidemiology and Biostatistics Course and the Healthcare Systems Course, and as a Co-director of the Clinical Decision Making Course, all at the University of Pennsylvania. As a board certified internist, he practices inpatient medicine at the Hospital of the University of Pennsylvania, where he supervises health care provided by residents and medical students. He is an Associate Editor of Pharmacoepidemiology and Drug Safety, the official journal of the International Society for Pharmacoepidemiology, and is a member of the AMA, ACP-ASIM, the Society of Healthcare Epidemiology of America, Health Technology Assessment International, the Philadelphia County Medical Society, the Society of General Internal Medicine (SGIM), and the SGIM Evidence-based Medicine Task Force. Dr. Umscheid received his undergraduate degree from Cornell University, his medical degree from Georgetown University, and a Masters of Science in Clinical Epidemiology from the Center for Clinical Epidemiology and Biostatistics at the University of Pennsylvania School of Medicine, where he is currently an Associate Scholar. His post graduate training includes a Residency in Internal Medicine at the University of Chicago, and a Physician-Scientist Fellowship in the Division of General Internal Medicine at the University of Pennsylvania School of Medicine.

JALPA A. DOSHI, PH.D.
Jalpa A. Doshi, Ph.D. is Director of the Economic Evaluations Unit at the Center for Evidence-based Practice and a Research Assistant Professor of Medicine in the Division of General Internal Medicine at the University of Pennsylvania School of Medicine. She is also Director of Value-Based Insurance Design Initiatives at the Leonard Davis Institute of Health Economics Center for Health Incentives. Her expertise is in the areas of pharmaceutical health services research, health economics, and health policy. Her research program examines prescription cost-sharing designs, formulary restrictions, and drug utilization management tools and their impact on access to prescription drugs, and the quality and cost of health care in vulnerable patient populations, including elderly, disabled, chronically ill, and low-income beneficiaries. In a related area, Dr. Doshi’s work has focused on the prevalence, causes, outcomes, and costs of suboptimal medication use in chronic diseases and the clinical and economic impact of innovative behavioral or policy interventions for improving medication adherence and management. She is also an expert on cost-effectiveness analysis and has co-authored a book on Economic Evaluation in Clinical Trials (Oxford University Press), the first book dedicated
entirely to this topic. She is now applying this methodological work to comparative clinical and
cost effectiveness evaluations of prescription drug alternatives using real world data for
Medicaid and Medicare beneficiaries. She is PI on numerous research grants from NIH, private
organizations, and research foundations and has published widely on these topics in leading
health policy and clinical journals. Dr. Doshi currently serves as co-chair of the Health
Technology Assessment (HTA) Good Research Practices for Reimbursement Decisions Working
Group of the Evidence-Based Reimbursement Special Interest Group of the International Society
for Pharmacoeconomics and Outcomes Research. She also serves on the leadership group of the
ISPOR Quality Improvement in Health Economic Evaluations Taskforce. In recognition of her
research, she has received several awards and honors including the New Investigator Award
from the American Geriatrics Society, the Young Investigator Award from the American Heart
Association (AHA) Scientific Forum on Quality of Care and Outcomes Research, and the AHA
Pharmaceutical Roundtable Award.

MATTHEW D. MITCHELL, PH.D.
Dr. Mitchell joined CEP in 2007 as a Research Analyst. His prior experience in health
technology assessment includes eleven years as a research analyst with ECRI, the nation’s
leading independent health technology assessment institute; and two years managing a research
consultancy, Diagnostic Research Design & Reporting (dr2). He was ECRI’s specialist in
evaluation of imaging and diagnostic technologies, serving as lead analyst for 25 full TA reports
and nearly 300 short-form reports. He is a member of Health Technology Assessment
International, the Association of University Radiologists, the Radiology Alliance for Health
Services Research, and the International Society for Pharmacoeconomics and Outcomes
Research. Dr. Mitchell has served as consultant on screening and diagnostic tests to the Institute
of Medicine, the Veterans’ Healthcare Administration, and the UK National Health Service. He
organized ECRI’s annual HTA methodology workshop and was a primary presenter and
facilitator at those conferences, and he has given HTA training programs for the International
Society for Technology Assessment in Health Care and the Centers for Medicare & Medicaid
Services. For non-clinicians, Dr. Mitchell taught a four-week layman’s course on medical
decision making and the health care system. His teaching experience also includes five years on
the Diagnostic Imaging faculty of Thomas Jefferson University. Dr. Mitchell’s research career
began in the laboratories of Nobel laureate Paul Lauterbur, and continued at the Pendergrass
Radiology Labs of the University of Pennsylvania. There he conducted the first quantitative
clinical trial of MRI for diagnosis of any condition, and developed methods for the technical
evaluation of MR systems. His doctorate, from the University of Pennsylvania School of
Medicine, is in biophysics. His dissertation research was in the use of deuterium MR to measure
tissue perfusion. His undergraduate education was at Haverford College. Dr. Mitchell’s current
research interests are in methods for systematic review of diagnostic tests, with summary ROC
meta-analysis a particular interest. He has also done research on the quality of published
diagnostic clinical studies, and compiled a concordance of study quality indicators used in
various quality checklists. He is the developer of the dr-ROC summary ROC software package.

RAJENDER AGARWAL, M.D., M.P.H.
Dr Agarwal joined CEP as a Research Analyst in December 2006. Dr Agarwal completed his
medical education from India and is a graduate of the MPH program from Johns Hopkins
Bloomberg School of Public Health. He did one year of clinical internship after finishing
medical school during which he instructed and supervised medical students. Prior to joining
CEP, he was a research fellow at the Johns Hopkins Department of Radiology where he interpreted high resolution MRI images for the Atherosclerosis Risk in Communities (ARIC) study. He also worked with staff from the Johns Hopkins Evidence-Based Practice Center on a systematic review to develop guidelines for chronic maintenance therapy of cystic fibrosis. While at CEP, Dr Agarwal has been the lead analyst on 6 clinical guidelines, 14 stand-alone evidence reviews and 4 clinical advisories on topics such as venous thromboembolism and hospital acquired infections. His work has been published in peer-reviewed journals and has been presented at major conferences. He is currently co-authoring two guidelines with the Centers for Disease Control and Prevention. He also works closely with residents participating in CEP’s EBM elective, and he designed an epidemiology primer to help them understand the key concepts of clinical research. Dr Agarwal’s areas of research interest include hospital acquired infections, contrast-induced nephropathy and respiratory failure. He is also interested in developing teaching modules for systematic reviews and meta-analysis.

DAVID R. GOLDMANN, M.D., F.A.C.P.
David R. Goldmann, MD, FACP, is an Associate Professor of Medicine at the Hospital of the University of Pennsylvania and a member of the Division of General Internal Medicine of the Department of Medicine. In addition to his clinical and teaching activities, he is a consultant to the Center for Evidence-Based Practice, which develops systematic reviews and guidelines used in quality initiatives within the University of Pennsylvania Health System. Dr. Goldmann has an extensive background in medical editing and publishing. At the American College of Physicians, he served as Editor-in-Chief of the Physicians’ Information and Education Resource (PIER), an electronic point-of-care medical decision support tool designed for integration into electronic medical records to provide health providers with rapid access to evidence-based answers to clinical questions. Dr. Goldmann has also in various editorial positions at Annals of Internal Medicine where he initiated the Medical Writings section of the journal and developed a format for structured book reviews. He also served as editorial consultant to the book program at the ACP and has edited several patient education books. Dr. Goldmann came to Philadelphia for his residency in internal medicine at the University of Pennsylvania in 1973. After residency and a fellowship in Endocrinology and Metabolic Disease, he joined the Department of Medicine. He has directed the medical consultation service and edited one of the first textbooks in consultative medicine. Dr. Goldmann received a Bachelor of Arts degree from Harvard University, his medical degree from Harvard Medical School and a Master of Arts degree from the University of Sussex in England. He is a Fellow of the American College of Physicians.

INGI LEE, M.D., M.S.C.E.
Dr. Lee is an Instructor of Medicine in the Division of Infectious Diseases at the University of Pennsylvania School of Medicine. Dr. Lee received her undergraduate and medical degrees from Yale University and completed her Masters of Science in Clinical Epidemiology from the Center for Clinical Epidemiology and Biostatistics at the University of Pennsylvania School of Medicine in August of 2008. She completed her Internal Medicine Residency and Infectious Diseases Fellowship training at the Hospital of the University of Pennsylvania. Her areas of clinical and research interest include solid organ transplant infectious diseases as well as healthcare associated infections.

GRETCHEN KUNTZ, M.S.W., M.S.L.I.S.
As the Clinical Liaison Librarian, Gretchen works with the clinical faculty, house staff, nurses, and others within the University of Pennsylvania Health System (UPHS). She is a participating member of UPHS's Center for Evidence-based Practice group. She provides instruction in the use of library resources and management of information, and assists with literature searches on evidence-based practice issues and consults regarding search strategies with staff conducting systematic reviews. Gretchen reviews all print and electronic clinical materials and point-of-care tools, and she serves as the primary library contact for many of these resources. Prior to joining Penn in 2002, she spent many years as Director of Social Work and Discharge Planning in a variety of health care settings, and, in her current position, she is delighted to be able to combine her health care knowledge with her library skills. Gretchen holds Bachelor's and Master's degrees in Social Work from Temple University and an MS in Library and Information Science from Florida State University.