Study: rapid diagnosis, treatment key to anthrax survival

When spores sent through the U.S. mail in September 2001 caused 11 people to contract anthrax — ultimately killing five of them — infectious disease specialists noted that the death rate among these patients was substantially lower than the 95 to 98 percent mortality rate historically observed from anthrax. Many assumed that access to modern intensive care units and more powerful antibiotics made the difference.

But after completing the most comprehensive review of anthrax cases ever conducted, researchers at CHP/PCOR and the VA Palo Alto Health Care System have found that what most likely saved lives from the 2001 anthrax attacks was not advanced hospital care: It was rapid diagnosis and initiation of antibiotic treatment within the first few days of symptoms.

The researchers found that once anthrax progresses to its advanced stage — typically four days after the first symptoms — patients are almost certain to die from it, even if they receive the best care modern medicine has to offer. They also found that drainage of fluid from around the lungs is a key procedure associated with anthrax patients’ survival.

The study findings, published in the Feb. 21 issue of the *Annals of Internal Medicine*, underscore the importance of detecting anthrax early, educating clinicians about its symptoms and treatment, and ensuring efficient distribution systems that can deliver antibiotics to patients within hours of a bioterrorist attack. The findings, which were covered by several news outlets, also indicate that bioterrorism response stockpiles should

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Miller studies cooking practices, infections in Bangladesh

In a research project that has taken him halfway around the world, CHP/PCOR core faculty member Grant Miller is collaborating with a non-profit agency in Bangladesh to examine whether villagers’ traditional cooking practices are contributing to life-threatening respiratory infections, and what kind of incentives or interventions would convince them to switch to cleaner cooking stoves and fuels.

Miller spent two and a half weeks in Bangladesh in December and January, working with his collaborators for the project, participating in focus groups with dozens of women to gain insight into their practices and perceptions around cooking stoves, and refining the project design based on what he’s learned.

During his trip to Bangladesh in January, Grant Miller (at right) observes the workings of a traditional open cooking stove in the kitchen of a Bangladeshi woman.

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The Agency for Healthcare Research and Quality (AHRQ) has released its first set of Pediatric Quality Indicators, developed by CHP/PCOR researchers along with investigators at UC-Davis and the Battelle Memorial Institute. The indicators, which were adapted from AHRQ’s other QI sets (developed by the same researchers as part of the Stanford-UCSF Evidence-based Practice Center), are the first quality measurement tools specifically tailored to hospitalized children.

The indicators are designed to help hospitals, public health agencies and other entities examine the quality of inpatient pediatric care as well as the quality of outpatient care that can be inferred from inpatient data, such as potentially preventable hospitalizations. They consist of 13 provider-level indicators, such as postoperative respiratory failure and accidental laceration, plus five geographic area indicators, including hospital admission rates for children with asthma and diabetes.

The AHRQ released the Pediatric QIs module, and its supporting software and documentation, in early March. The agency commissioned the indicators in 2004 in response to requests from hospitals that sought to monitor the quality of their inpatient pediatric care but had few reliable tools to count on.

“Until now, there were a few indicators for pediatrics, but most of them looked at well-child care and outpatient care, or common diseases like asthma,” said Sheryl Davies, CHP/PCOR project manager for the Quality Indicators project. “That left hospitals in a lurch” when it came to monitoring the quality of pediatric care. The existing AHRQ QI sets (Inpatient Quality Indicators, Prevention Quality Indicators and Patient Safety Indicators) include a few pediatric indicators, but hospitals said these didn’t always apply to their pediatric populations.

The release of the Pediatric QIs module represents the first phase of the project, in which indicators from the preexisting Quality Indicator sets were evaluated, reviewed and adapted for applicability to the pediatric population. In the second phase, now in progress, entirely new pediatric indicators are being developed.

The overall project is necessary because many of the diseases or outcomes measured aren’t common in, or progress differently in, children. Also, children differ from adults in key ways: They are generally healthier, are rarely hospitalized, and are continuously developing. Due to these differences, when adapting the QIs to children, the researchers made several modifications, such as examining a broader patient population for several of the outcomes, and stratifying several of the indicators for high, medium and low-risk patients.

An important element of the Pediatric QIs project is the role of clinical review panels — groups of medical experts nominated by national medical organizations to review, assess and provide feedback on each indicator. Because of the dearth of evidence on measuring inpatient pediatric care, the clinical panels have been important in making sure the final indicators are relevant and useful.

The software, documentation and technical report for the Pediatric Quality Indicators are available at http://www.qualityindicators.ahrq.gov. The work was conducted by CHP/PCOR investigators Kathryn McDonald, Sheryl Davies, Corinna Haberland, Amy Ku and former staff member Kavita Choudhry, along with Patrick Romano at UC-Davis and Jeffrey Geppert of the Battelle Memorial Institute.

New health services research fellowship, now taking applications

A new fellowship program at CHP/PCOR — the VA Physician Post-residency Fellowship in Health Services Research and Development — is accepting applications from internal medicine and family practice physicians who seek to become leaders in health services research, primary care research and clinical education.

The fellowship, offered by the VA Palo Alto Health Care System in conjunction with CHP/PCOR, consists of coursework, clinical responsibilities, teaching and research under the supervision of CHP/PCOR faculty mentors. The coursework and research components focus on cost-effectiveness analysis, clinical decision making, guideline development, medical informatics, practice management and related fields. Fellows also provide outpatient care and supervise medical residents at the VA Palo Alto.

Fellowship applicants must have completed an accredited residency in internal medicine, primary care medicine or family practice, and must be board-certified or board-eligible. For more information, see http://healthpolicy.stanford.edu/docs/fellowships or contact program director Douglas Owens at owens@stanford.edu.
Health savings accounts no cure-all, say center faculty members

Don’t count on the expansion of health savings accounts (HSAs) — tax-free accounts from which consumers can pay routine medical expenses — to cure the nation’s healthcare woes. So said two CHP/PCOR health policy experts in response to the healthcare proposals President Bush discussed in his Jan. 31 State of the Union address.

“These accounts are mostly just another tax shelter for high-income people,” said core faculty member Victor Fuchs. “I don’t see them solving the significant health problems of our time.”

CHP/PCOR fellow Laurence Baker agreed, noting, “My view is that these accounts won’t save us that much money.”

In his speech to Congress and the nation, Bush said he wanted to strengthen HSAs, proposing to expand the tax benefits for using them. “Keeping America competitive requires affordable health care,” the president said.

HSAs were created when Bush signed into law the Medicare Prescription Drug, Improvement and Modernization Act in 2003. The accounts were designed to shift financial responsibility for health care from the traditional insurer (typically the employer) to the individual and, in turn, help stem the country’s skyrocketing medical costs.

Proponents of HSAs contend that consumers use more health services than necessary because someone else (usually their employer) is footing the bill. If patients pay out-of-pocket for services, the argument goes, they will have an incentive to spend less money and may help keep overall medical costs down.

Fuchs agrees that if individuals spend their own money, they’ll spend somewhat less; that’s Economics 101, after all. But Fuchs said he isn’t confident that people would be wise about what they should and shouldn’t be doing for their health. “They may cut back on useful things, as well as not useful ones,” he explained.

If individuals forego certain care in an effort to save money — such as key follow-up visits — that could lead to more illness and further societal costs down the road.

Baker, an associate professor of health research and policy, added that there wouldn’t be opportunities for some individuals to scale back at all. “A lot of healthcare dollars are spent by people who are quite sick and have little discretion over the care they need,” he said.

The savings accounts work by creating a pool of money from which individuals can pay their medical bills. Individuals or their employers make a tax-free contribution to the account each year, and, as is the case with Individual Retirement Accounts, the funds grow through investment earnings. Any unused funds are the individual’s to keep — which makes the account an attractive long-term investment vehicle for those with good health and extra cash. “Some younger, healthier folks could make money on this,” said Baker.

Still, if an individual with an HSA has too many doctor’s visits and spends all the funds in his account, he must pay for any additional expenses out-of-pocket until his deductible is met. (Each account is paired with a high-deductible insurance policy for catastrophic expenses.) This is one element that troubles Fuchs and others who believe HSAs favor wealthier individuals. “The size of the deductible that a high-income person can afford is very different than what a low-income person can handle,” said Fuchs, the Henry J. Kaiser Jr. Professor, emeritus.

In fact, many experts agree that HSAs are skewed toward healthy, high-income individuals. A well-off 35-year-old who visits the doctor once or twice a year, for instance, stands to gain a nice-sized savings account from an HSA. The same can’t be said of a 59-year-old low-income individual with hypertension and emphysema.

Another concern about HSAs: They offer little help to the 45 million or so Americans who lack health insurance. Fuchs, who advocates a vouchers system to provide universal healthcare coverage in the United States, hopes the rhetoric over HSAs won’t drown out discussion about solutions to this problem.

“I worry HSAs may divert public attention and give the illusion of being something that might help,” said Fuchs. “I don’t want them to delay serious consideration of more comprehensive plans that might do more good.”

This article, produced by the School of Medicine’s Office of Public Affairs, presents the individual views of Baker and Fuchs. Their comments were featured in articles in the San Francisco Chronicle and Stanford Report.
At CHP/PCOR’s 7th annual retreat, held Jan. 17 in the Bechtel Conference Center, the centers’ faculty, staff, affiliates and guests gathered for a day of presentations and discussions about key center themes. The day’s panel sessions — which included guest speakers from the hospital, health insurance, employer and biotech sectors — focused on healthcare quality improvement; health services research in developing countries; and health systems comparisons across developed countries. For the keynote address, Coit D. Blacker, director of the Freeman Spogli Institute for International Studies, discussed the evolution and goals of Stanford’s International Initiative.

The retreat drew some 75 attendees from Stanford, the VA Palo Alto Health Care System, and other entities including Kaiser Permanente, the Pacific Business Group on Health, and Child Family Health International. Below are summaries of the day’s presentations.

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In the morning session, “The Path to Higher Quality Care: More Research or More Action?” panelists discussed obstacles to translating evidence-based guidelines into practice; the promise and pitfalls of pay-for-performance; and strategies to make healthcare delivery more efficient and effective.

Session moderator and CHP/PCOR core faculty member Mary Goldstein set the stage with a telling anecdote (from an AHRQ online Morbidity & Mortality case) of a man who came to a U.S. hospital with leg pain, and was diagnosed with a deep vein thrombosis, a potentially fatal condition. Following evidence-based protocols, clinicians gave the patient an injectable medication, and printed instructions for using it, but failed to take into account that he was blind — until he called back days later complaining that his pain had worsened. In this case, as in many others, Goldstein said, “the clear failure was a lack of common sense.”

Panelist Martha Marsh, president and CEO of Stanford Hospital, said a key problem in U.S. health care is the lack of consensus, among providers or patients, on how to define quality. While myriad groups are striving to measure and improve healthcare quality, she noted, all have different standards, making it difficult for hospitals to focus their efforts. Marsh also noted the importance of patient satisfaction. “People have to feel good about their experience, or they won’t think you provided quality care.” Stanford Hospital, she said, is taking this to heart by emphasizing excellent customer service along with high-quality advanced care.

Jed Weissberg, associate executive director for quality and performance improvement at The Permanente Federation, discussed the advantages that an integrated system like Kaiser has in improving quality. Often, he said, “There’s a pervasive mindset in health care that as soon as we see a plateau, we say, ‘This is as good as we’re going to get.’” In contrast, he described an effort whereby Kaiser’s Riverside Medical Center increased its breast cancer screening rate to 91 percent. The effort included phone-called reminders to patients and a strategy in which patients due for mammograms were visited by outreach nurses while awaiting other appointments.

Peter Lee, CEO of the Pacific Business Group on Health, emphasized the need for greater value in health care, lamenting that Americans receive uneven care for their hefty medical spending. He cited recent data showing that 75 percent of breast cancer patients receive recommended treatment — and this was the best performance among 25-plus conditions studied. He said healthcare purchasers must push for increased efficiency and quality, by (1) making available standardized performance information; (2) giving consumers better comparative information along with incentives to choose efficient providers, and (3) giving providers tools and fi-

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For patients with undiagnosed heart disease, taking statins and beta-blockers may mean the difference between suffering a heart attack as a first symptom versus experiencing mild chest pain, according to a widely publicized study co-authored by CHP/PCOR fellow Mark Hlatky and associate Stephen Fortmann.

The study, published in the Feb. 21 issue of the *Annals of Internal Medicine*, suggests that these drugs can steer patients away from having a heart attack toward the less serious symptom of angina (mild chest pain that occurs only with exercise), even if the drugs don’t stop the buildup of cholesterol in a patient’s arteries. The research was conducted with investigators at Kaiser Permanente’s Division of Research in Oakland and at UC-San Francisco.

“That’s the scary thing about heart disease,” said Hlatky, professor of health research and policy and of cardiovascular medicine, the study’s senior author. “You can be fine one minute and dead the next. You can put up with a little chest pain every once in a while if you know you’re not about to die from it.”

Researchers for the study wanted to know how doctors could help reduce a patient’s risk of having a heart attack as a first symptom even if medications for high blood pressure or high cholesterol were unsuccessful in stopping the onset of heart disease. Statins are typically prescribed to reduce cholesterol, one of the warning signs for heart disease. Beta-blockers are given to patients with high blood pressure, another warning sign for heart disease.

“While doctors try to prevent coronary disease by treating high blood pressure and high cholesterol, it’s not 100 percent effective,” Hlatky explained. “If there are warning symptoms like angina, there’s enough time to see a doctor and get started on treatments that reduce risk.”

Researchers evaluated 1,400 patients enrolled in Kaiser Permanente of Northern California between 2001 and 2003. Of those patients, only 20 percent who had suffered a heart attack were on a statin, compared with 40 percent of patients who presented with exertional angina.

The patients who had a heart attack “out of the blue” were much less likely than those who had only angina to be taking statins and beta-blockers. Taking statins reduced heart attack risk by more than half. The study also examined use of alpha-blockers, ACE inhibitors or angiotensin II receptor blockers and, in women, of hormone therapy. None of these similarly showed a correlation with a lower heart attack risk.

“The results were quite striking,” said Hlatky. “These drugs were quite effective in reducing risks of having a heart attack as the first symptom of coronary artery disease.”

This article was produced by the School of Medicine’s Office of Public Affairs. The study findings were covered by the Washington Post, Los Angeles Times, Reuters Health, the Desert Dispatch (Barstow, Calif.), MSNBC.com and Advocate.com, and in segments that aired on WFLA-TV (Tampa, Fla.) and WBBM-TV (Chicago).

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**Statins, beta-blockers reduce risk of heart attack, study finds**

**CHP/PCOR in the news, winter 2006 quarter**

- *Stanford Report* ran a feature article about CHP/PCOR core faculty member Paul Wise and his work providing medical care to the underserved residents of San Lucas Toliman, a Mayan community in the highlands of southwestern Guatemala. The article discussed how Wise has developed educational programs in which he takes medical students with him to Guatemala.

- Wise provided comment for two articles in the spring 2006 issue of *Stanford Medicine* magazine, a theme issue on children’s health care. In one article, Wise discussed the lack of policy attention being paid to children’s health needs. In the other, he discussed the advantages of regionalizing specialized pediatric care.

- CHP/PCOR core faculty member Mary Goldstein authored a case commentary for the AHRQ’s “Morbidity and Mortality Rounds on the Web.” In the case, a clinician’s failure to document a “Do Not Resuscitate” order causes a severely ill elderly man to be resuscitated against his wishes. Goldstein’s commentary proposed ways to ensure that patients’ wishes are carried out.

- CHP/PCOR director Alan Garber was quoted in a *Los Angeles Times* article on a Dartmouth study which found that expensive treatments for heart attack patients don’t translate into better survival rates. Garber said it’s uncertain whether the therapies Americans are spending the most money on are helping them live longer.

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Health economists largely agree that using Quality-Adjusted Life Years (QALYs) is the most practical way to evaluate and compare the cost-effectiveness of various medical technologies. But once armed with this information, how can health systems or governments decide what is the maximum cost-per-QALY they’re prepared to pay, to give their patient populations access to beneficial but often expensive medical treatments?

In a CHP/PCOR special seminar on Jan. 30, Martin Buxton, professor of health economics and director of the Health Economics Research Group at Brunel University (U.K.), tackled this question, drawing on his academic expertise and his years of experience serving on the appraisal committee of the U.K.’s National Institute for Health and Clinical Excellence, or NICE. The institute decides which medical interventions will be covered by the U.K.’s National Health Service, based largely on cost-effectiveness analyses usually expressed in terms of QALYs.

Buxton explained that while the methodology behind the construction of QALYs has been much debated within NICE, “it is curious to me that there has been little discussion on how much we’re willing to pay” per QALY gained from an intervention. He noted that many academic health economists have avoided the issue of the appropriate cost-per-QALY threshold to determine coverage decisions, and when asked for such a threshold, they reply that this is up to policymakers to decide. “But decision makers don’t have the luxury of avoiding this question,” Buxton noted. “They have to say, at some point, here’s where we draw the line.”

Buxton discussed two approaches for deciding on a cost-per QALY threshold: One (a more idealistic approach) depends on society’s judgments about the value of life, and the second (a more realistic approach) focuses on the maximum value per healthcare dollar and takes into account a health system’s finite budget. For the first approach, policymakers would seek information and consensus on how much value society places on an additional year of life in full health (effectively the value of a QALY). Policymakers would use this information to set their health budgets and coverage policies.

Buxton noted that such an approach could be problematic, however, if policymakers don’t share the values of most of the public, and more generally, because health systems won’t likely have enough resources to pay for all the medical services society’s valuation of health might imply should be funded. “We understand that you can’t have unlimited spending,” he said. “There comes a point when the expenditure of public resources can’t be justified by the [health] value to an individual because of all the competing desired uses of public and private resources.”

Given these realities, Buxton is more inclined toward the second approach, which first considers a health system’s total budget and then seeks to derive the maximum amount of health value from those limited dollars. While NICE does not use a simplistic threshold, its guidelines state that, generally speaking, interventions with a cost-per-QALY of less than £20,000 are likely to be covered; those greater than £20,000 require additional justification; and those above £30,000 require strong justification.

As one way to make coverage decisions using such thresholds, Buxton said, “If we knew the cost-effectiveness of each intervention, we could simply line them all up in order, and starting with the most cost-effective, provide the care until we’ve used up our budget.” But this, he noted, assumes that policymakers know the cost-effectiveness of all current interventions and could make coverage determinations from a clean slate.

In practice, to yield the greatest health value while staying within a country’s or health system’s budget, Buxton advocates the idea of “disinvestment” — withdrawing or shutting down some previously covered health services to make room for more cost-effective ones.

Buxton acknowledged that such a tactic would be difficult and unpopular. “Local officials know the best way to get negative stories in the press is to propose closing down a small hospital,” he said, recalling the public outcry over such cases in the U.K. Still, he said NICE should take the lead on this issue, by further refining its coverage criteria and identifying less cost-effective interventions that could potentially be withdrawn.

He emphasized that such a process must involve the public as well as economists and policymakers. “This is not an easy route, but that doesn’t mean we shouldn’t pursue it,” he said.
CHP/PCOR Profile: Hau Liu

Research interests: evaluating diagnostic and treatment strategies in the areas of endocrinology and aging

Where he’s from: born and raised in New York City

Education: received a BA in East Asian Studies from Harvard; an MD, MPH and MBA from Columbia University; completed an internal medicine residency at Stanford. In addition to pursuing the AHRQ Fellowship in Health Care Research and Policy at CHP/PCOR, he is a third-year clinical fellow in endocrinology at Stanford.

His work at CHP/PCOR: Liu has conducted a variety of research, focused largely on endocrinology and osteoporosis. His research on the cost-effectiveness of an emerging drug for osteoporosis (teriparatide), was recently accepted for publication, as was another paper (led by trainee Smita Nayak) on the accuracy of calcaneal ultrasound to identify patients with osteoporosis. He recently finished a meta-analysis on the use of human growth hormone as an anti-aging strategy for healthy elderly people. He previously conducted research on the use of a saliva test to screen male diabetic veterans for Cushing’s Syndrome, and on the regionalization of bioterrorism preparedness and response (led by Dena Bravata).

Career path: About his early career ambitions, Liu says, “I knew that one thing I didn’t want to be was a doctor!” Coming from a family of healthcare practitioners (his father and brother are physicians; his mother is a nurse), he had ruled out medicine early on as a career. While in college, however, his views changed after an episode in which he became ill, was taken to the hospital, and received excellent, compassionate care. “I started to see medicine as a noble profession,” he said.

After completing an MD/MPH at Columbia University, he became interested in hospital management, which led him to pursue an MBA and work as a management consultant for Booz-Allen and Hamilton in New York. Shortly thereafter he realized that he missed the rigors of clinical medicine and patient interaction, and he pursued an internal medicine residency at Stanford.

Study in China: As an undergrad, Liu spent the 1993-1994 academic year in China at the University of Nanjing, where he researched Christianity and other religions in China. It struck him that “although at the time most Chinese didn’t have much wealth, everybody had access to health care” — a realization that has influenced his views on U.S. health policy.

Hobbies: basketball; work with his church; volunteer efforts such as Habitat for Humanity

Little-known fact: Liu is a partner of Joyful Melodies, a music school in Cupertino that offers group and private music lessons.

CHP/PCOR grants submitted in the winter quarter

“Women’s Empowerment and Child Survival in the Historical United States”
National Institute of Child Health and Human Development
Principal investigator: Grant Miller
Project period: 12/1/06 - 11/30/08

“The Human Costs of Economic Volatility: Infant and Child Survival”
National Institute of Child Health and Human Development
Principal investigator: Grant Miller
Project period: 12/1/06 - 11/30/08

“External Costs of Obesity”
National Institutes of Health
Principal investigator: Jay Bhattacharya
Project period: 12/1/06 - 11/30/08
CHP/PCOR fellow Paul Heidenreich was promoted to associate professor of medicine. His research focuses on the cost-effectiveness of new cardiovascular technologies; interventions to improve quality of care for patients with heart disease; and the use of echocardiography to predict prognosis.

CHP/PCOR associate Keith Humphreys — an associate professor of psychiatry and behavioral sciences — was named by President Bush as a member of the Advisory Commission on Drug-Free Communities. The commission advises the president on matters related to the Drug-Free Communities Support Program, which aims to prevent and treat substance abuse particularly among young people.

Associate Richard Olshen — professor of health research and policy and, by courtesy, of statistics and of electrical engineering — was named a fellow of the Institute of Electrical and Electronics Engineers. The fellowship is awarded to IEEE members who have made outstanding contributions in electrical and information technologies. Olshen was chosen for his work on the theory and design of decision trees and tree-structured classifiers.

Associate Sylvia Plevritis was promoted to associate professor (research) of radiology. Her work involves the development of novel computational and informatics tools, relying on multi-modality, high-throughput data of molecular cancer signatures, in-vivo images and clinical outcomes.

Andrew Siroka joined the VA’s Health Economics Resource Center (with which CHP/PCOR has a collaborative relationship) as a research assistant. He recently earned a bachelor’s degree at the University of Michigan, with emphases in statistics, accounting and biology. At HERC he will collect cost data for a VA-NIH trial of dialysis treatment for acute renal failure.

CHP/PCOR said farewell last quarter to research staff member John Calcagni, who was working on the FLAIR project and is now project coordinator for the VISN (Veterans Integrated Service Network) collaborative project led by Mary Goldstein. Under the project, the ATHENA computer-based decision support system for hypertension care is being implemented and evaluated at five VA medical centers in New England.

Welcome to new affiliates:

In the winter quarter we welcomed the following new CHP/PCOR associates:

John Barton is a professor emeritus at the Stanford Law School. His research focuses on international scientific research and cooperation, and the transfer of vaccine technology to developing nations. In 2004-2005, he was a visiting scholar at the National Institutes of Health’s Department of Clinical Bioethics. He received a BA from Marquette University and a JD from Stanford.

John Finney is a consulting professor in the Department of Psychiatry and Behavioral Sciences, and director of the Center for Health Care Evaluation at the VA Palo Alto. His research focuses on process-outcome evaluations of treatment programs for substance use disorder. He received a BA in psychology from the University of Oklahoma and a PhD in social psychology/personality from the University of Colorado.

Brian Knutson is an assistant professor of psychology and neuroscience, and a seed grantee for both CADMA and CDEHA. His research focuses on the neural basis of emotional experience and expression, with CADMA projects on risk-taking and financial decision making in the elderly. He received a BA in experimental psychology and comparative religion from Trinity University, and a PhD in experimental psychology from Stanford.

Jun Ma is a research associate at the Stanford Prevention Research Center and a seed grantee for CDEHA. Her research focuses on modifying patterns of physician practice and patient behavior, and behavioral models of risk factor modification. She earned an MS in nutrition, an RD in dietetics, and a PhD in nutrition from the University of Nebraska. Before that, she received an MD from the West China University of Medical Sciences.
Publications from the winter quarter


Garber AM. “To use technology better.” Perspective article in Health Affairs (Web exclusive) 25, no. 2 (Feb. 7, 2006): w51-w53.


nancial incentives to improve quality. Despite nay-saying by some medical groups, he said, “the evidence is in on pay-for-performance, and the evidence says it works.”

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In the day’s keynote address, Coit D. Blacker, director of the Freeman Spogli Institute for International Studies, chronicled his affiliation with Stanford and discussed the International Initiative, which he is co-chairing with engineering professor Elisabeth Paté-Cornell. Blacker told of how he came to Stanford in fall 1977 to pursue postdoctoral study at the Arms Control and Disarmament Program. Though he’d planned to stay just a year, he later joined the research staff of the program, and saw his career grow along with it, as it evolved into the Center for International Security and Cooperation (CISAC), which later became part of the Institute for International Studies (now FSI). “From little acorns, giant oaks sometimes grow,” Blacker said.

He told of how he has left Stanford three times, including twice to serve in government: as legislative assistant to U.S. Senator Gary Hart; and then as special assistant to the president for National Security Affairs in the first Clinton administration. What has always drawn him back, he said, is Stanford’s strong emphasis on interdisciplinary collaboration and making connections between scholarship and policy. Blacker’s leadership role in the International Initiative began in spring 2004, when Provost John Etchemendy asked him to co-chair a 16-person multidisciplinary steering committee examining “What are the key problems of the world and how can Stanford respond to them?”

The resulting deliberations gave rise to the International Initiative, which aims to transcend disciplinary boundaries in the study of major world problems. “The world doesn’t come at us in the form of disciplines, it comes at us as challenges,” Blacker explained. The initiative’s key themes are peace and security, governance, and human well-being, examined in terms of processes such as globalization, technological change and cultural diversity. Blacker highlighted the kinds of projects that recently received funding through Stanford’s new Presidential Fund for Innovation in International Studies, including projects on “Feeding the World in the 21st Century,” “The Political Economy of Cultural Diversity,” and “Combating HIV/AIDS in Southern Africa.”

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In an afternoon session on “Paths to Improving Global Health in Developing Nations: Challenges and Opportunities,” panelist Robert Chess, executive chairman of Nektar Therapeutics, discussed his work as chairman of BIO Ventures for Global Health, an industry collaboration aimed at creating favorable market conditions for the development of drugs largely affecting poor countries, such as TB and malaria. “We believe we have a social responsibility to bring the benefits of the biotech revolution to people around the world,” he said. Drug companies have been reluctant to invest in this area, he said, because of a lack of financial incentives and a poor understanding of developing-country markets. To overcome the obstacles, BIO Ventures is working on innovative strategies including “advance market commitments,” and patent tradeoffs, in which a drug company is granted a patent extension for one of its commercial drugs, in return for developing, say, a malaria vaccine.

Core faculty member Douglas Owens spoke about his research on the role of injection drug use in Russia’s HIV/AIDS epidemic. While injection drug use accounts for up to 75 percent of new HIV cases in Russia, he noted, anti-retroviral treatments are scarce there, and HIV-positive drug users are rarely treated. Owens’ team developed decision models to evaluate the cost-effectiveness and population impact of various HIV treatment strategies. The results indicate that treating 80 percent of Russia’s HIV-positive injection drug users with anti-retrovirals would do far more to limit infection rates among the public than efforts targeting non-drug users.

CHP/PCOR core faculty member Grant Miller discussed the challenges of doing health services research in developing nations. While acknowledging that “the existing data in these countries isn’t great, and collecting your own is difficult and time-consuming,” he said that “it’s worth it, because the rewards can be enormous.” An effective strategy, he said, is to collaborate with local organizations in the target country. Miller is doing this for a project on cooking practices and indoor air pollution in Bangladesh, working with an NGO called the Bangladesh Rural Advancement Committee (see story, page 7).

CHP/PCOR associate Keith Humphreys, an associate professor of psychiatry, discussed his challenging, and sometimes dangerous, work helping to rebuild Iraq’s mental health infrastructure. The country was known for high-quality health care in the 1960s and 70s but is now torn by violence, lawlessness, opiate addiction and a lack of resources. While Iraq’s medical personnel are dedicated and intelligent, he said, their facilities and training are outdated. Humphreys said flexibility is key to working with developing countries, and he noted the importance of cultural factors such as religion: “The fatwah on cigarettes in Egypt did more than any public health official...
Presentations, winter ‘06 quarter

Mary Goldstein
“Hypertension automated decision support.” Joslin Clinic CDMP Winter Summit, Jan. 10, 2006 in Santa Cruz, Calif.


Keith Humphreys
“Mental health and the reconstruction of Iraq.” Moderator for panel talk at the National Press Club, Jan. 27, 2006 in Washington, D.C.

“New developments in addiction treatment.” Colloquium at the Department of Psychology, University College, Feb. 8, 2006 in London.


Kathryn McDonald
“Interpretation and use of the AHRQ Quality Indicators.” Presented with Jeffrey Geppert at the 10th Healthcare Cost and Utilization Project (HCUP) Partners Meeting, March 3, 2006 in Washington, D.C.

Rudolf Moos
“Factors outside of treatment that influence substance use outcomes.” Plenary address at the 11th International Conference on Treatment of Addictive Behaviors, February 2006 in Santa Fe, N.M.

“Treated and untreated individuals with alcohol use disorders: remission and relapse over 16 years.” 11th International Conference on Treatment of Addictive Behaviors, February 2006 in Santa Fe, N.M.

Ciaran Phibbs

Mark Smith

ANNUAL RETREAT, FROM PAGE 10

there ever could.”

The day’s final session, “Comparing Health Systems Across Borders,” focused on developed nations. CHP/PCOR director and session moderator Alan Garber discussed the healthcare challenges of wealthy nations: rising healthcare spending and demand; growing elderly populations; and a shrinking tax base relative to the population’s healthcare needs. He noted that annual per-capita healthcare spending in the United States is $4,900, more than double the average for all OECD countries.

CHP/PCOR core faculty member Jay Bhattacharya discussed his work on the link between obesity and disability among working-age populations in developed countries. While disability rates among the elderly have declined over the past two decades, he said, disability and obesity rates have been steadily rising for working-age populations in countries including the U.S., Norway and Canada. In the U.S., Bhattacharya said, reducing the obesity rate, and consequently the disability rate, will be crucial to ensuring the financial solvency of Medicare.

Stirling Bryan — a professor of health economics at the University of Birmingham (U.K.), who is doing a Harkess Fellowship project at CHP/PCOR on the use of cost-effectiveness analysis in the U.S. and U.K. — discussed the concept of “international transferability,” or the extent to which a cost-effectiveness analysis (CEA) conducted in one country could be used in another. The question is relevant given the increased interest in using CEA to shape U.S. coverage policy. While “a good CEA done in one country should be the basis for a good CEA in another country,” Bryan said, the work can’t automatically be transferred. He called for increased international collaboration on such analyses.

CHP/PCOR fellow Kate Bundorf discussed the prevalence of and different types of private health insurance in developed nations. While it is often assumed that the U.S. is unique in its heavy reliance on private health insurance, private coverage is quite common in other developed countries, including Canada, Switzerland, France and the Netherlands — all places where more than 60 percent of the population has some private coverage. Bundorf also discussed her research in progress on the impact of mandated community rating on the
include ample supplies of chest tubes used to perform fluid drainage — an intervention that has received little attention in bioterrorism planning.

“Even with modern ICU care, once you’ve reached the advanced stage of this disease, you’re probably going to die. That’s why it’s crucial to start antibiotics in the first few days,” said lead author Jon-Erik Holty, who did the research as a CHP/PCOR trainee with the VA Palo Alto’s Fellowship in Ambulatory Care Practice and Research.

Complicating matters, Holty noted, anthrax is difficult to diagnose. The disease’s early symptoms mimic the flu, and even in the later stages there is no quick, definitive test for it. For this reason, he said, “Doctors in the ER need to have a high degree of suspicion. They need to ask questions and notice patterns: Are a lot of patients getting flu symptoms in the summer? Is there a group of patients with these symptoms who were all in the same place?”

Anthrax is an acute infectious disease caused by the spore-forming bacterium Bacillus anthracis. “It’s one of the main agents we’re worried about for bioterrorism, because it’s available, it can be weaponized, and it can do a spectacular amount of damage in a short period of time,” said study senior author Douglas Owens, a CHP/PCOR core faculty member and a senior investigator at the VA Palo Alto.

A few grams of anthrax spores could kill thousands of people within a week, he noted.

Anthrax progresses in two phases: an initial phase lasting about four days (called the prodromal phase), which produces flu-like symptoms including cough, fever, and chills; and an advanced phase (the fulminant phase), which causes respiratory distress and shock.

While previous studies have examined up to 40 anthrax cases, the CHP/PCOR and VA researchers conducted a more comprehensive review, seeking all published reports of inhalational anthrax from 1900 to 2005 (anthrax could not be accurately diagnosed before 1900). The researchers sought to determine how patient characteristics, type of treatment given and the timing of treatment affect the course of the disease. They also aimed to compare the 2001 anthrax cases with all previous cases.

Investigators searched the medical journal database MEDLINE back to its earliest records in 1966, and then reviewed the paper copies of 14 prominent medical journals from around the world for the years 1900 to 1966. From this search, they obtained reports of 82 confirmed cases of inhalational anthrax from 15 countries, including Russia, Germany, Uganda, Iran, Croatia and Nairobi. All non-English reports were translated.

For each case, the researchers documented the year; the patient’s age, sex and nationality; the presenting symptoms and the stage at which anthrax was diagnosed; the type of treatment given and the timing of treatment; and whether the patient survived.

From their statistical analyses of all 82 cases, they found that the overall death rate was 85 percent, but for patients who progressed to the fulminant phase, the death rate was 97 percent, even among patients who received care in a hospital ICU.

Timely antibiotic treatment was the key to patients’ survival. When antibiotics were begun within two days of initial symptoms, about 20 percent of patients died. When treatment was begun at four days, mortality was about 58 percent, and at six days it was nearly 80 percent. Multi-drug regimens were found to be more effective than single-drug regimens. And among all the anthrax patients who survived, 80 percent had fluid drained from around their lungs (pleural fluid drainage).

Comparing the 2001 anthrax cases with all others previously reported, researchers found that the 2001 patients were more likely to have started antibiotics during the prodromal phase, to have used multi-drug treatments and to have received pleural fluid drainage. Likely as a result, these patients were less likely to have progressed to the fulminant phase and to have died. The authors caution that their findings may be due to patient characteristics and other factors their study did not assess.

The study findings can be used to refine existing diagnostic guidelines, physician training programs, and the development of biosurveillance systems. “If anthrax spores were sprayed right now in downtown Palo Alto and large numbers of patients showed up in the ER with flu symptoms, we could use this information to help figure out who should get antibiotics,” said study co-author Dena Bravata, a CHP/PCOR senior research scholar.

The study findings were covered in the New York Times, Forbes magazine, the Arkansas Democrat-Gazette, Stanford Report and the Web site Health24.com.
Despite the many challenges of the early-stage project — including limited funding, language barriers and cultural differences — Miller is excited about the opportunity to study health behaviors in a poor country where small changes can bring about big improvements in people’s health. “There’s no such thing as a completely safe, risk-free project, but a project like this carries an extra element of risk.” Still, he said, all the effort is worthwhile, because “the rewards and practical impact on people’s lives can be enormous.”

Acute respiratory infections are the leading cause of death worldwide for children under age 5. Researchers have long suspected, but have not proven, that a major contributor to such infections is the indoor air pollution generated by open cooking stoves that burn biomass fuel sources (such as brush, wood chips or dung) — the kind of stoves used by most people in Bangladesh and in many other developing countries.

Miller’s project examines whether these cooking practices contribute to respiratory infections, through a field experiment in which randomly selected households are offered financial and behavioral incentives to use cleaner, more fuel-efficient versions of traditional stoves. These groups and a control group would be tracked for two or more years to determine how many people in each group develop respiratory infections.

Aside from this health purpose, the project also explores human behavior and economic decision-making. “We want to understand why people make the choices they do,” Miller said. “Why don’t people in poor countries do simple things that could make them a whole lot healthier? What are the barriers? Are new technologies too expensive or not available, or are there other reasons people aren’t using them?” Miller noted that there is a long history of well-intended development projects that failed because researchers didn’t understand the behaviors and motivations of people they were trying to help.

Miller has received $30,000 in seed funding for the research from the Walter Shorenstein Asia-Pacific Research Center (part of Stanford’s Freeman Spogli Institute for International Studies). His collaborators include CHP/PCOR core faculty member Paul Wise; Lynn Hildemann, an associate professor of civil and environmental engineering at Stanford; and Mushfiq Mobarak, a Bangladeshi native who is an economist at the University of Colorado. Miller’s key collaborator for the project, however, is the Bangladesh Rural Advancement Committee, or BRAC. The well-respected non-governmental organization, founded in 1971, works to promote empowerment and social and economic development in Bangladesh through its network of 1,600 field offices and 97,000 fieldworkers.

Under the team’s direction, BRAC’s field researchers are doing the bulk of the data collection for the project. In the first phase, completed in March, they conducted focus groups with scores of women, asking open-ended questions aimed at understanding their practices, attitudes and preferences related to cooking and fuel sources. In the second phase, which has just begun, fieldworkers are conducting a door-to-door pilot survey on these same issues and are offering households new stoves under various conditions, with a target of signing up 500 participants.

In the third phase — for which Miller is now seeking additional funding — researchers will conduct a full-scale field experiment, offering incentives to some 3,000 households to use a modified, cleaner version of the traditional stove. Many different incentives will be offered, including paying part or all of the cost of the new stove; giving participants money with the option to buy a new stove; and simply providing information about the potential health benefits of cleaner cooking stoves and fuels.

Miller will make several more trips to Bangladesh for the project, and he and his U.S.-based colleagues will do much of the data analysis, but he emphasizes BRAC’s crucial role in the endeavor. “It’s only because of BRAC that we can do this project. They have the infrastructure, local contacts and manpower to carry it out. It’s a truly remarkable organization.”

Most important, Miller notes, is the credibility and trust BRAC has built up through its long-established relationships, which are essential to secure villagers’ participation in the surveys and experiments. “You can see that the fieldworkers take pride in what they do, that they’re well-respected by the local people,” he said.

While in Bangladesh, Miller traveled with BRAC fieldworkers to villages around the country to conduct...
focus groups. In the hour-long sessions, the participants — generally women in low-income households — answered questions about what kind of cooking stove and fuel they use, where they obtain the fuel, how they view alternate fuels (such as much cleaner-burning kerosene or propane) and whether they believe smoke from traditional stoves could be harmful.

“Women will tell you that when they cook their eyes burn and they cough, but they don’t think it’s harmful,” Miller said. “There’s not an obvious perception — or not one they’re willing to discuss — that it’s bad for their health.”

The traditional stoves used by most women are essentially open clay pits, raised one to two feet off the ground, into which biomass fuel sources — ranging from cow dung to wood chips to crop refuse — are placed directly inside. With no real ventilation mechanism, the stoves produce thick smoke that lingers inside the stand-alone kitchens. Modern gas-burning stoves fueled by propane or kerosene are more efficient and generate much less pollution, and Miller originally considered offering these as the alternative in his field experiment. But he also knew the alternative offered had to be practical and sustainable, or no one would use it for long.

Since gas stoves and fuels are not readily available and are too expensive for most Bangladeshis, Miller focused instead on a cleaner, more efficient version of the traditional stove. Designed by researchers in Bangladesh, the modified stove is made of the same clay material, so it is cheap and would be readily accepted, but it burns fuel more efficiently with a design that better traps heat, and it features a lightweight chimney that funnels smoke outside.

The modified stove is also more likely to be used than gas or kerosene stoves for another key reason, Miller learned: taste. Many focus-group participants said food cooked on a gas-burning stove doesn’t taste as good as that cooked on the traditional stoves. A few of the women said they had both kinds of stoves at home, but used the gas-burning ones (which cook food faster) only when they were pressed for time.

Miller visited the homes of some participants after the focus groups, allowing him to see firsthand their kitchens and cooking practices. “It’s amazing how much you learn when you step inside someone’s house,” he said. Through one visit, he learned that when women cook with non-solid biomass sources, such as brush or crop refuse, they have to be near the stove almost the entire time the food is cooking, to continually refuel the stove.

As some dishes take two to three hours to cook, this practice exposes women to an enormous amount of pollution. Part of Miller’s project will include incentives for participants to use solid biomass sources, such as dung or wood, which don’t require constant replenishing.

Miller’s project is part of his broader goal to build an ongoing collaboration with BRAC to do more research in Bangladesh. To that end, he’s encouraged by the positive response he received from fieldworkers and villagers on his trip. In the focus groups, “everyone wanted to participate and share their opinions with us. They were very excited about it.”

IN THE NEWS, FROM PAGE 5

- A UPI article on the debate over direct-to-consumer drug ads, referred to a “Viewpoint” piece co-authored by CHP/PCOR fellow Randall Stafford, which appeared in PLoS Medicine. In the piece, Stafford argues that DTC ads may have a beneficial placebo effect that could increase the effectiveness of the advertised drug by creating positive expectations among patients.

- An article on the importance of physical fitness for career success, in the North Jersey Herald & News, discussed a study by Jay Bhattacharya and Kate Bundorf which found that obese workers are paid less than normal-weight workers only when they have employer-sponsored health insurance.

- CHP/PCOR fellow Paul Heidenreich commented in a Washington Post article on a new recommendation that people who are at increased risk for heart disease should be monitoring their ejection fraction — the percentage of blood pumped out to the body by the left ventricle.

- CHP/PCOR associate Keith Humphreys was quoted in articles in the Washington Post and USA Today discussing the challenges of rebuilding Iraq’s mental healthcare system. Humphreys described “epidemic levels” of post-traumatic stress disorder in Iraq and lamented the continuing violence and instability there.

- In a San Jose Mercury News article, CHP/PCOR adjunct associate Jeffrey Rideout discussed the creation and goals of the new Silicon Valley Pay-for-Performance Consortium, an initiative spearheaded by Intel, Cisco and Oracle which aims to persuade local hospitals and medical groups to invest in electronic medical records systems and other healthcare technologies.
Research in Progress seminars and special events, winter ‘06

Jan. 11 RIP: Mark Hlatky, “Economic Analysis in Randomized Controlled Trials”

Jan. 17: CHP/PCOR 7th Annual Retreat


Jan. 30 special seminar: Martin Buxton, “How Much Should a Healthcare System be Prepared to Pay for a QALY?”

Feb. 1 RIP: John Barton, “Vaccine Technology in Developing Nations”

Feb. 8 special RIP: Michael Pratt, Larissa Roux and Candace Rutt, “Applying Research to Guide Public Policy for Physical Activity”

Feb. 9 special seminar: Barbara Herz, “Advising a South Asian Country: Health on $15 per Person per Year”

Feb. 15 RIP: Grant Miller, “The Human Costs of Economic Volatility: Evidence from Colombia’s Coffee-growing Regions”

Feb. 22 RIP: David Moher, “Epidemiology and Reporting of Systematic Reviews, Circa November 2004”


About CHP/PCOR

The Center for Health Policy (CHP) and the Center for Primary Care and Outcomes Research (PCOR) are sister centers at Stanford University that conduct innovative, multi-disciplinary research on critical issues of health policy and healthcare delivery. Operating under the Freeman Spogli Institute for International Studies and the Stanford School of Medicine, respectively, the centers are dedicated to providing public- and private-sector decision-makers with reliable information to guide health policy and clinical practice.

CHP and PCOR sponsor seminars, lectures and conferences to provide a forum for scholars, government officials, industry leaders and clinicians to explore solutions to complex healthcare problems. The centers build on a legacy of achievements in health services research, health economics and health policy at Stanford University. For more information, visit our Web site at http://healthpolicy.Stanford.edu