



MAKING CHOICES, PROTECTING HEALTH

STUDY AFTER STUDY HAS SHOWN THAT AMERICANS WANT MORE FROM OUR HEALTHCARE SYSTEM, BUT ARE NOT SURE HOW TO GET IT. WE WANT AFFORDABLE HEALTH COVERAGE FOR ALL, BUT RESIST COST CONSTRAINTS OR NEW TAXES TO PAY FOR IT. WE WANT PROTECTION FROM TOXIC SUBSTANCES, BUT NOT AT THE COST OF STIFLING SCIENTIFIC INNOVATION OR INDUSTRY. WE WANT TO HARVEST THE FRUITS OF THE GENETIC REVOLUTION, BUT FEAR THE UNINTENDED CONSEQUENCES THAT COULD RESULT. THE CHOICES BEFORE US ARE COMPLEX AND FREQUENTLY PAINFUL.

COVERING THE UNINSURED

Since the demise of President Clinton's 1993 Health Security Plan, new plans for incrementally expanding health insurance coverage have multiplied, using every possible financing and delivery mechanism. But will people enroll? That basic question, the question that determines the fate of any proposal, prompted Sherry Glied, chair of the Department of Health Policy and Management, to analyze the statistical tools available for evaluating choices. Surprisingly, she found them to be virtually nonexistent.

"Most models of health insurance expansion treat coverage like a light switch—either on or off—and ignore the actual

content of the coverage," says Dr. Glied, one of the nation's leading health coverage economists and a senior economist for the President's Council of Economic Advisors under Presidents George H.W. Bush and William Clinton.

Dr. Glied chose to model the major options for insurance coverage expansion using several large databases to calculate the value to prospective enrollees of 18 different benefit structures. High-deductible plans scored worst, suggesting that future health insurance expansions with high deductibles, no matter how otherwise attractive, will prove unpopular with the public. Some of Dr. Glied's methodological innovations may be incorporated in the

process used by the U.S. Congressional Budget Office to estimate the costs and consequences of future health insurance expansion proposals.

Michael Sparer and Larry Brown, both professors of health policy and management, have become leading analysts and champions of what they call "catalytic federalism": partnership between the federal government and the 50 state governments in achieving important health policy goals.

Architects of future health insurance expansions will have to grapple with the role of the states. Should states take the lead, as many advocate, because they are more innovative, more accountable, and more responsive to

local market conditions than the federal government? Or should the federal government take charge to help states work through complex programs, implement them cohesively, and include important constituencies in the process?

"What we found is that even during economically flush times, states depend on the federal government to catalyze health policy innovation," observes Dr. Sparer. "But the states have done a reasonably good job of implementing federal initiatives, and the back-and-forth bargaining produces better outcomes than either level of government acting on its own." Drs. Sparer and Brown recommend creative intergovernmental partnerships as the best path for future health coverage expansions.

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JOSHUA GRAFF ZIVIN
ASSISTANT PROFESSOR OF
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colleagues found that an up-front treatment strategy would prevent 9,000 - 10,000 future cases of active TB infection in the 2000 cohort and save \$30 - \$45 million over the six years subsequent to immigration. "The health benefits from treating immigrants with latent infection far outweigh any benefit from waiting until their TB becomes active, and in fact it would be cheaper to treat them without waiting," says Dr. Graff Zivin.

Lead in the environment has been a critical public health issue for decades. The ramifications for children, especially with regard to lead paint, are immense. David Rosner, professor of sociomedical sciences and director of the **Center for History and Ethics in Public Health**, and Gerald Markowitz, adjunct professor of sociomedical sciences, have been studying the lead and chemical industries for years. What they found was a deliberate industry campaign to sell lead as safe—to the extent of marketing lead products to children—and an industry that banded together to manipulate science to protect their bottom line.

Drs. Rosner and Markowitz describe their findings in *Deceit and Denial: The Deadly Politics of Industrial Pollution* (University of California Press, 2002). But the co-authors go well beyond chronicling unethical industry tactics. Noting that lead is only one of many toxic substances added to our environment without adequate testing, Drs. Rosner and Markowitz ask how a democratic society can protect its citizens without slamming the door to scientific progress. The answer, they argue, is in shifting the burden of

RESOLVING PUBLIC POLICY DILEMMAS

U.S. immigration authorities have struggled for years with a difficult public health question—whether to provide treatment for immigrants carrying a latent form of tuberculosis. Most new cases of tuberculosis (TB) diagnosed in the U.S. are found among the approximately 670,000 new immigrants who enter the U.S. each year. Under federal policy, each new immigrant is tested for TB, but treatment is provided only for immigrants with active infections, since the treatment regimen is expensive and time-consuming and only one in ten latent cases becomes active.

But Mailman School economist Joshua Graff Zivin, assistant professor of health policy and management, has found that treating immigrants for latent TB infections would be highly cost-effective. By analyzing optimal treatment strategies by country of origin for immigrants entering the U.S. in the year 2000, Dr. Graff Zivin and

“Much of the scientific work establishing the adverse effects of lead exposure were done at the Mailman School and Columbia by Dr. Joseph Graziano over a period of years, but while awaiting final scientific evidence, generations were probably needlessly put at risk.”

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evidence from those who question a substance’s safety to those who would introduce it into the environment, an approach referred to as the “precautionary principle.”

“You can’t just wait for damage to appear to ban or control a substance,” argues David Rosner. “Lead was a known toxin, an easy case. But with substances synthesized in the last few years, such as PVC plastic, science may be unable to determine their safety once they have entered the environment. So the best approach is to make industry responsible for demonstrating the safety of a substance before widely introducing it.”

The genetic revolution promises to unlock the secrets of the human body. Yet the most significant event in that revolution—the decoding of the human genome—only underscores the daunting challenges and choices still before us. There are over three billion base pairs in the human genome and, by mapping it, researchers have created a vast ocean of data, which they now need the tools to analyze.

David Greenberg, professor of clinical biostatistics and director of the **Division of Statistical Genetics**, and his fellow researchers are creating analytical tools by which genetic researchers can navigate that ocean of data. For example, Dr. Greenberg has devised computer simulations that enable researchers to hone their techniques for seeking the genes that cause inherited medical conditions. He also has pioneered the study of so-called “multi-locus” models, in which several genes acting together influence common diseases such as diabetes, cancer, or mental conditions such as schizophrenia. “People keep looking for single-gene solutions,” says Dr. Greenberg, “but there are no easy answers when it comes to understanding how the human genome works.”

HEALTH DISPARITIES

Americans with high income and education levels have better health outcomes and longer life expectancies than those who are low income and poorly educated. This health disparity, well known and documented for decades, is still not fully understood. Mailman School faculty members are committed to advancing the health of entire populations, and several programs are addressing the goal of equality.

Leslie Davidson, chair of the Heilbrunn Department of Population and Family Health, is continuing to work with the research coordinating team for the UK Millennium birth cohort, which is weighted for non-English speaking families of children born in 2000 and 2001. Says Dr. Davidson, “Individuals whose primary language is not English are often excluded from studies that research health status. Yet because of their rising numbers, it is vital to include them.” The study will revisit these children to benchmark their progress at the ages of three and five.

Bruce Link, professor of epidemiology and sociomedical sciences, and Jo Phelan, associate professor of socio-medical sciences, explore the issue of inequality in healthcare. Flexible resources like money, knowledge, social connections, and political power, they suggest, give certain people an advantage in any healthcare situation.

Recently, Drs. Phelan and Link examined causes of death for a random sample of 370,000 Americans who died during the 1980s. Dividing up causes of death into preventable conditions, such as coronary artery disease, and non-preventable diseases, such as pancreatic cancer,

“The genetic code provides us with information, and statistics is the science of using data to understand that information—replete with uncertainty, randomness, and error. Statistical genetics is both empowering for the truths it reveals and sobering, as it reminds us of the limitations of the genetics revolution.”

BRUCE LEVIN
CHAIR, DEPARTMENT OF BIostatISTICS



they found a significant health disparity in the preventable causes of death and very little among the non-preventable ones. Surprisingly, one-third of all highly preventable deaths to Americans between the ages of 25 and 44 were attributable to lower education, while the same was true of 28 percent of preventable deaths among 45- to 65-year-olds. Projecting to the general population, Drs. Link and Phelan estimate that 5.5 million Americans died during the nine-year span of their study from preventable causes that would not have occurred but for low income and education levels. Their research has profound implications. If upper-income and highly educated Americans disproportionately reap the benefits of medical innovation and discovery, then each new advance could widen health disparities. “These findings make it clear that the distribution of resources in our society is a matter of life and death,” Dr. Link concludes.

American policymakers who have the responsibility for making these choices must balance conflicting priorities and allocate scarce resources. They need hard facts, sophisticated analysis, and creative solutions. The Mailman School’s experts provide tools for policymakers who will shape the healthcare system of tomorrow.