America’s long wait for health care

• Economic Impetus for Modern Piracy
• Education Priorities for the U.S. Administration
• Environmental Incubator for China
• Exceptional Health Investments for Arkansas
Get the Big Picture

RAND Review covers the big issues with an eye for the important details.
Of Facts and Faces

Policy analysts pride themselves on amassing impartial data, reserving judgment, and sticking to the facts. Good thing, given how easily policy discourse can become divorced from evidence, especially in politically polarized times such as ours. People with a narrow political vision need to have good policy analysts around to remove the blinders.

At the same time, good policy analysts run the risk of transforming themselves into automatons, exquisitely efficient number-crunching machines. The most fair-minded analysts acknowledge that while empirical objectivity is important, humanity is even more important; that numbers mean little when subtracted from the lives behind the numbers; and that facts are frequently empty without faces.

One important datum that has lost much of its meaning in the absence of flesh-and-bone context is the number of Americans without health insurance coverage. To report the sad statistic that 46 million Americans lack coverage is merely to echo what has become the monotony of U.S. health policy. The number has lost its power; it’s now just a number.

That is why our cover photo is important. It was taken July 24, 2009, at the Wise County Fairgrounds in Wise, Virginia. The people are waiting for free health care from volunteer doctors at a Remote Area Medical clinic. The three-day clinic treated more than 3,000 patients, some driving as long as five hours and sleeping in their cars to secure a place in line. The annual clinic, in its tenth year in southwest Virginia, is based on a model designed for the Third World. Similar clinics are held in Tennessee, Kentucky, Utah, and California.

Three faces in the photo stand out: the woman in the wheelchair, whose forbearance seems to be matched by a determination not to be denied care once again; the teenage boy, whose hunched shoulders and weary expression suggest a mixture of boredom and disappointment; and the alert woman in glasses, whose critical eyes aimed directly at the camera demand an answer to the question, “How could we have come to this?”

These are the people behind the numbers being debated in the U.S. Congress with regard to the core components of health care reform: coverage, access, cost, quality, and prevention. These are the people whose faces inform the facts.

—John Godges
News

California Parolees Have High Need for Health Care but Poor Access to Services

To deal with its fiscal crisis, California, like other states, is releasing prisoners back into communities. But California communities will have a hard time providing parolees with access to health care services because of strained safety nets, according to a RAND study.

“The release of prisoners is coming at a time when the state and other funders are reducing support for the health care infrastructure, which serves both parolees and others,” said Lois Davis, the study’s lead author and a RAND senior policy researcher. “Parolees will be competing with others who have lost insurance coverage, and all of them will be trying to see providers who are being squeezed financially.”

The study examined the geographic distribution of parolees across California and found that certain counties and communities are disproportionately affected by reentry. Four representative counties were studied in depth—Los Angeles, San Diego, Alameda, and Kern—all of which have distinct clusters of parolees.

California inmates have high health care needs and even higher mental health and drug treatment needs relative to the general population, but many parolees reside in areas with the lowest access to facilities to meet such needs. Some of the most prominent gaps in access to health care for parolees appear in southern Los Angeles County (in particular, supervisorial district 2), where the number of parolees is high and access to hospitals and clinics is poor (see the figure).

The study also found that access varies by race and ethnicity. In Los Angeles County, more African-American parolees live in areas with lower accessibility to hospitals than do Latino or white parolees.

For policymakers, it could make sense to tailor strategies for services to those communities disproportionately affected by reentry. Mapping parolee concentrations and showing their accessibility to services also highlights the importance of community clinics in filling gaps in the health care safety nets.

“The approach of mapping and of measuring accessibility can help policymakers and practitioners understand the public health implications of reentry and best allocate resources and funding for this population,” said Davis.

Economic Costs of Major Oil Supply Disruptions Pose Key Security Risks

The United States imports nearly 60 percent of the oil it consumes, raising concerns that such dependence threatens national security through the economy, through risks of political coercion, and because of the costs of defending foreign oil fields and shipping lanes. According to a RAND study, the political risks of relying on imported oil (as shown in the table) are overblown. The two most serious risks related to oil dependency are economic: a large disruption in global oil supplies and the higher consumer costs associated with such a disruption.

“There is an integrated world oil market, and embargoes do not work. But a large extended drop in the global supply of oil would trigger a sharp rise in oil prices and harm the U.S. economy, no matter how much or how little oil the United States imports,” said Keith Crane, the study’s lead author and a RAND senior economist.

The study evaluates commonly suggested links between oil imports and U.S. national security and assesses the economic, political, and military costs and benefits of potential policies to address the suggested national security risks.

Moderate risks posed by a heavy dependence on imported oil include higher incomes for “rogue” oil exporters, such as Iran and Venezuela; costs to the U.S. military of protecting Persian Gulf oil supplies; and higher oil revenues being diverted to the Hamas and Hezbollah terrorist groups. In contrast, there are minimal risks to U.S. security from the use of oil exports by energy-exporting countries to manipulate other countries in ways inimical to U.S. interests, from competition for oil supplies among consuming nations, and from diversion of oil revenues to finance small terrorist groups.

Four policies would reduce the risks to U.S. national security of importing oil, according to the study. The United States should (1) support well-functioning oil markets and refrain from imposing price controls or rationing during times of severe supply disruptions; (2) initiate a high-level review of prohibitions on exploring and developing new oil fields in restricted areas so that policymakers have up-to-date and unbiased information on the economic benefits and environmental risks of relaxing those restrictions; (3) ensure that licensing and permitting procedures and environmental standards for developing and producing oil and oil substitutes are clear, transparent, efficient, and balanced in addressing costs and benefits; and (4) impose an oil excise tax to increase incentives to economize on fuel and thus soften growth in oil demand.


<table>
<thead>
<tr>
<th>Category</th>
<th>Potential Link Between Oil Dependence and U.S. National Security</th>
<th>Assessed Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Large disruption in global supplies of oil</td>
<td>Major</td>
</tr>
<tr>
<td></td>
<td>Increased payments by U.S. consumers because of reduced oil</td>
<td>Major</td>
</tr>
<tr>
<td></td>
<td>supplies</td>
<td></td>
</tr>
<tr>
<td>Political</td>
<td>Use of energy exports to coerce or influence other countries in</td>
<td>Minimal</td>
</tr>
<tr>
<td></td>
<td>ways detrimental to U.S. interests</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Competition for oil supplies among consuming nations</td>
<td>Minimal</td>
</tr>
<tr>
<td></td>
<td>Increased incomes for “rogue” oil exporters</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Oil-export revenues supporting small terrorist groups</td>
<td>Minimal</td>
</tr>
<tr>
<td></td>
<td>Oil-export revenues supporting Hamas and/or Hezbollah</td>
<td>Moderate</td>
</tr>
<tr>
<td>Military</td>
<td>Costs to U.S. military budgets of protecting oil from Persian Gulf</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

According to a RAND study, the deteriorating security situation in Mexico and the change in U.S. administration call for the United States to rethink its policy options with respect to Mexico.

U.S. aid to Mexico has typically focused on a narrow set of areas, such as improved technology, training, and equipment to prevent drug trafficking. But “the United States must engage Mexico in a way that not only combats narcotics trafficking but also helps to build and strengthen the nation’s security institutions,” said Agnes Gereben Schaefer, the study’s lead author and a RAND political scientist.

Almost all those interviewed for the study agreed that the primary security threat to the United States from Mexico is organized crime, because it has infiltrated all levels of Mexico’s government and police forces and is involved in many illegal activities that are on the rise, notably drug trafficking, human trafficking, and arms trafficking.

Other security concerns within Mexico include illegal migration, terrorism, and rebel insurgencies. The study found no evidence that the concern about terrorists crossing the border into the United States has been realized, although such a possibility must be guarded against, particularly if Mexican institutions continue to weaken.

The study identified the four U.S. priority areas shown in the table and assessed them against three U.S. policy options: a strategic partnership with Mexico that emphasizes reform and longer-term institution building; the status quo approach, which focuses on ad hoc, issue-specific cooperation but does not emphasize reform or longer-term institution building; and a retrenchment that focuses on U.S. domestic efforts to combat security threats emanating from Mexico and on disengaging from partnerships with Mexico.

The table shows that, from a U.S. perspective, a strategic partnership would likely have a high impact on all priority areas, whereas retrenchment would likely have a low impact. The current strategy—status quo—promises to have an impact much closer to that of retrenchment than to that of strategic partnership.

The study cautions that U.S. government officials should consider how the Mexican government may react to each of the policy options, given Mexico’s historical sensitivity to U.S. involvement in Mexican internal affairs. At the same time, it seems clear that Mexican President Felipe Calderón wants more than a status quo relationship with the United States and is interested in longer-term reform and institution building.

“The new U.S. administration should take advantage of this historic window of opportunity and further engage the Calderón government in a deeper and broader relationship that strives toward a long-term strategic partnership,” Schaefer said.

Illicit Drugs Are As Much a Problem Globally in 2007 As They Were in 1998

At the United Nations (UN) General Assembly Special Session in 1998, member states committed to achieving measurable results in reducing the illicit supply and demand for drugs by 2008. But there is little evidence that the global drug problem was reduced during this period, according to a joint study by RAND Europe, the RAND Drug Policy Research Center, and the Trimbos Institute.

“For some nations, the problem declined; but for others, it worsened; and for some of those, it worsened sharply and substantially,” said Peter Reuter, the study’s lead author and a RAND consultant. “The problem generally lessened in richer countries and worsened in a few large developing or transitional countries,” namely Russia, Ukraine, Iran, and Mexico.

The usage pattern of specific drugs also varied. For cannabis (marijuana, hashish), the total number of users might have fallen despite a substantial rise in those seeking treatment for cannabis addiction, suggesting that the number of heavy users and harms might have risen. The increased demand for such treatment held for every Western country for which data were available. For cocaine, a roughly stable consumption pattern was found in the United States and Western Europe, particularly Spain and Britain. In aggregate, the data indicate that the global drug problem became somewhat more severe.

The study also found that the total revenues from illicit drug sales were smaller than had been estimated by the UN Office on Drugs and Crime (UNODC). The study provides a range of estimates, with a “best estimate” for the total global cannabis retail market of €70 billion in 2005, which is about half of the UNODC estimate for 2002–2003.

Between 1998 and 2007, there was a convergence of national drug policies, with demand reduction being increasingly emphasized and harm reduction (such as providing clean needles) finding wider acceptance. Some countries for which tough enforcement had been central came to accept measures, such as methadone treatment, as an alternative way to reduce heroin-related problems. Policies toward sellers and traffickers, meanwhile, toughened over the time frame.

The study argues that the policies employed had no more than a marginally positive influence (as shown in the table). However, as the study points out, the enforcement of drug prohibitions did cause some substantial harms, such as providing a lucrative role for Colombian rebels in the drug trade, generating a wave of killings in Mexico, causing environmental damage, and depriving children of their parents for extended periods. Some of these effects were borne by nations other than the ones carrying out the enforcement.

On balance, national policies had both positive and negative consequences. “The challenge ahead will be to constructively build on lessons of such policies so policymakers can increase the positive benefits of policy interventions and avert the negative consequences,” Reuter noted.


As of press time (Web only): www.rand.org/pubs/technical_reports/TR704/

<table>
<thead>
<tr>
<th>Drug Policy</th>
<th>Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production control</td>
<td>Produced some local successes but has been unable to affect availability of drugs globally</td>
</tr>
<tr>
<td>Trafficking control</td>
<td>Closed down some paths that drugs can take from production points to final markets but cannot affect all routes</td>
</tr>
<tr>
<td>Enforcement in local markets</td>
<td>Failed in most nations to prevent continued drug availability</td>
</tr>
<tr>
<td>Treatment</td>
<td>Reduced harms both of dependent users and of society but has not reduced the prevalence of drug use</td>
</tr>
<tr>
<td>Prevention</td>
<td>Broadly used but is handicapped by a lack of programs of proven efficacy</td>
</tr>
<tr>
<td>Harm reduction</td>
<td>Helped an increasing number of countries but is focused on a narrow element of the drug problem</td>
</tr>
</tbody>
</table>

Heated Market
Crafting a Climate Change Policy That Works for Business and the Environment

AS LEGISLATION TO MITIGATE the consequences of climate change wends its way through the U.S. Congress, policy discussions have focused heavily on the potential for a “cap-and-trade” system to reduce greenhouse gas emissions. In such a system, Congress would impose an overall limit or “cap” on total U.S. greenhouse gas emissions. Major emitters would be given limits (allowances) on the amount of carbon emissions they can emit from burning fossil fuels; if they come in below their allowances, they could sell (trade) what remains of the allowances to other companies that are unable to meet their caps, or the emitters could buy allowances from other firms if that would cost them less than reducing their own emissions further.

But current legislative proposals are not limited to cap-and-trade. They also contain other provisions for reducing greenhouse gas emissions, from subsidies for new technology to regulatory constraints that promote energy efficiency and renewable energy.

To ensure that any policy can be implemented effectively, several issues need to be resolved, according to the participants in a recent RAND panel discussion held for congressional staff and the interested public. Moderated by RAND adjunct economist Michael Toman, the panel included Peter Molinaro, vice president of The Dow Chemical Company; David Hawkins of the Natural Resources Defense Council; and William Kovacs, vice president of the U.S. Chamber of Commerce.

Not Just a Domestic Challenge
All panelists were adamant in asserting that U.S. domestic policy alone will not solve the problem of global climate change. “Even if we eliminated the entire economic activity of the United States, carbon dioxide emissions would continue to rise because of emissions from the developing world,” noted Kovacs. “A ton of carbon going up in the air in China is just as important as a ton going up in the air in the United States.”

Kovacs and Molinaro also cited the problem of “leakage” — that if the United States imposes a domestic cap, it can make U.S. energy and manufacturing less competitive with countries that do not impose caps, resulting in higher production and emissions in those countries. Concerns about leakage could also motivate some U.S. policymakers to consider trade sanctions to level the playing field for products entering the country. “When you have to start tinkering with world trade,” Kovacs said, “you are looking at many unintended consequences.”

Cap-and-Trade Plus
The panelists also agreed that a cap-and-trade system alone will not suffice even for domestic policy. This view is reflected in a consensus document developed by the U.S. Climate Action Partnership, made up of 25
corporations and five nongovernmental organizations, including Dow Chemical and the Natural Resources Defense Council. The consensus is that instituting caps to reduce the amount of carbon emissions from domestic energy sources, such as coal-fired power generation, will increase America’s overall cost of energy, requiring a move toward other technologies and energy resources. The panelists favored subsidies and other incentives for investing in still-maturing technologies—such as carbon capture and sequestration, which would enable coal to remain an important energy source without adding to greenhouse gas emissions—as well as incentives for developing commercially viable renewable energy.

Hawkins suggested that nuclear power could be part of the low-carbon energy resource mix as well, especially given advances in the nuclear power industry, but he stressed that such investments should come from the private sector. “Fifty years of subsidies is enough. We should not be diverting resources to a mature nuclear industry and away from other less mature technologies.” He also argued that if the United States decides to embark on a nuclear power renaissance, “it needs to get the sequence of actions right up front, working to put in place first the global regimes needed to prevent the diversion of enriched uranium for weapons purposes.”

Molinaro, meanwhile, emphasized the importance of policies pushing for energy efficiency in office buildings. “Energy use in buildings accounts for 40 percent of greenhouse gases,” he said, “and you are not going to affect that problem with a cap-and-trade program in the near term.”

Kovacs acknowledged the potential impact of the U.S. economic stimulus package in investing in new technologies to promote alternative sources of energy, but he also argued that “we don’t just need government money; we need regulatory certainty that such new technologies will not go through 20 years of litigation.” He cited examples of promising new technology projects that were undermined by what he called “insidious factors” within the regulatory process.

Making Allowances

One goal of the cap-and-trade system, according to Hawkins, is to ensure that the price paid for greenhouse gas emissions is set high enough both to prevent wrong-headed, high-carbon investments and to provide incentives needed for low-carbon investments. But, he said, the price that is likely to result from legislation now being discussed is “lower than what is needed to stimulate the best mix of long-term investments.”

This concern goes to the heart of the implementation challenge. In proposed legislation, the emphasis has been on giving away most of the credits first and then making a transition to a full auction system later. Doing so could expose policymakers to the criticism that they are giving windfall profits to those receiving them. But Molinaro contended that giving away the credits up front is part of a “compromise that will allow us to have fairly robust targets early on and thus show progress.” Also, if the United States held auctions at the outset of a cap-and-trade regime, it might make coal use so expensive so as to lead to economic disruptions in some markets.

Another challenge at the outset of a cap-and-trade regime is to avoid creating undesirable substitution incentives that could drive some consumers away from coal toward natural gas because of its lower carbon content, rather than implementing needed technologies to reduce emission from all fossil fuels. Additional provisions in current legislative proposals are designed to target the allocation of emissions allowances in ways that hold down retail utility costs—so the benefits go to customers, not suppliers—and to support energy research and development.

Despite concerns about the details of domestic climate change policy, there was consensus across the panel that action must be taken now. “There is a conviction on the part of businesses and nongovernmental organizations that it is urgent to limit greenhouse gases, that it can be done at reasonable costs to the economy, and that waiting will increase the cost to the economy of climate change and commit us to more climate disruption,” Hawkins concluded.

Related Reading

Sunken Treasures
The Economic Impetus Behind Modern Piracy

By Peter Chalk

Peter Chalk is a RAND senior political scientist.

Piracy is, above all, an economically driven phenomenon, both for the profiteers who engage in the practice and for those who are its victims. The desire of ship owners to keep operating costs as low as possible has often outweighed the imperatives for more concerted onboard security. This core economic dimension sets piracy apart from maritime terrorism, which is primarily aimed at leveraging or otherwise undermining the oceanic environment to promote political, ideological, or religious beliefs.

Traditionally, the two main factors feeding piracy have been the enormous volume of commercial freight moving by sea and the necessity of ships to pass through congested maritime chokepoints. The emergence of modern-day piracy reflects the continued relevance of these drivers in addition to seven other contributing variables: a trend toward the use of skeleton crews, pressure to invest in land-based homeland security measures since 9/11, lax coastal and port security, corruption, the anarchic situation in Somalia, the willingness of ship owners to pay large ransoms, and the global proliferation of small arms.

The resultant dangers threaten human, economic, political, and environmental security, with the nightmare scenario being a mid-sea collision involving a heavily laden oil tanker. In response, the international community should boost the coastal monitoring and interdiction capabilities of states in the vicinity of the Horn of Africa, expand the efforts of public-private sponsorships to market communication and defensive technologies, give the maritime industry greater financial incentives to adhere to basic security protocols, and devote greater efforts to restoring a semblance of stability to Somalia.

From Panama to Malacca
The rash of pirate attacks off the Horn of Africa and Gulf of Aden in 2008 and 2009 has cast into sharp light an enduring problem that affects not only that region but also many other areas of the world. The Gulf of Aden and waters around the Horn of Africa and the Arabian Peninsula have stolen the majority of international headlines, accounting for about 38 percent of all piracy attacks in 2008. Other high-risk zones include the waters off Nigeria, Indonesia, Tanzania, Bangladesh, and India, which collectively accounted for 57 percent of incidents last year that were not related to the Horn of Africa (see the figure).

A total of 1,845 actual or attempted acts of piracy were registered around the world between 2003 and the end of 2008, which equates to an average annual rate of around 308. The true figure is undoubtedly greater because in many cases (possibly as many as 50 percent), ship owners are reluctant to report attacks against their vessels out of concern that this will merely trigger higher maritime insurance premiums and result in lengthy and costly investigations.

The scale and sophistication of piracy have jumped markedly in recent years, especially in the waters off East Africa. The Somali-based gangs that routinely hijack

While Somalia has been the focus over the past nine months, many of the same factors feeding piracy there have relevance elsewhere.
large ocean-going vessels in this region have exhibited a proven capacity to operate as far as 500 nautical miles from shore, with some attacks taking place closer to the Seychelles than to the Horn of Africa. There has also been a discernible spike in hostage-taking. In 2008, 889 crewmembers were abducted, the highest figure on record and a 207-percent increase above the 2007 total. This year, of course, Somali pirates held *Maersk Alabama* Captain Richard Phillips, of Vermont, hostage for five days before U.S. Navy Seals rescued him.

While Somalia has been the focus over the past nine months, many of the same factors feeding piracy there have relevance elsewhere. The enormous volume of commercial freight being funneled through congested and ambush-prone maritime bottlenecks around the world creates age-old opportunities for pirates in and around places such as the Panama Canal, Suez Canal, Strait of Hormuz, Strait of Bosphorus, Strait of Malacca, and Strait of Bab el-Mandab at the mouth of the Red Sea.

### Skeletons Adrift

The first additional contributory factor in today’s maritime economy is the growing reliance on skeleton crews, both as a cost-cutting measure and as a reflection of advanced navigation technology. Although this reduced manning is undoubtedly more efficient, the smaller number of sailors now on board many vessels has reduced the options for antipiracy watches and made the pirates’ task of seizing control of ships much easier.

Second, the usual difficulties associated with maritime surveillance have been intensified as a result of 9/11 and the concomitant pressure exerted on many governments to invest in expensive land-based homeland security initiatives. This diversion of funds...
has further reduced what in many cases were already limited resources for monitoring territorial waters, particularly in the Philippines, Indonesia, Turkey, Eritrea, and Kenya.

Third, lax coastal and port security has played an important role in enabling low-level pirate activity, especially harbor thefts against ships at anchor. Problems of this sort have been particularly evident in Brazil and East Africa, and across South and Southeast Asia. In many cases, either there is no functioning maritime police presence at all or the police units in place are devoid of adequate staff, boats, equipment, and training.

Fourth, corruption and easily compromised judicial systems have opened opportunities for complicity of government officials, bureaucrats, and security forces in high-level pirate rings. The nature of this involvement has been extensive, from giving pirates intelligence on ship movements and locations to helping pirates with the rapid discharge of stolen cargoes.

Fifth, the endemic anarchic situation in Somalia has directly contributed to the rampant scale of piracy that we are currently witnessing off the Horn of Africa. With no sovereign government in place, gangs have virtual free run of the area, enjoying widespread latitude to enforce “rules” that further and protect their own vested interests.

Sixth, the ready willingness of ship owners to pay increasingly large sums of money for the return of their vessels and cargoes has raised incentives to engage in maritime crime. Somali pirates netted at least $20 million in ransoms last year, with the negotiated release of the Saudi-registered *Sirius Star* allegedly running to an unprecedented $3 million. For many gangs, the prospect of windfall profits such as these far outweighs any attendant risk of being caught or confronted by naval and coast guard patrol boats.

Finally, the global proliferation of small arms has given pirates, among others, the means to operate on a more destructive and sophisticated level. Originating from a variety of sources in Africa, Asia, and Europe, these munitions include everything from pistols, machine guns, and automatic assault rifles to antiship mines, hand-held mortars, and rocket-propelled grenades. The availability of these weapons—most of which are readily transportable, easy to handle, cheap, and durable—is one of the main underlying causes of the growing level of violence that has come to typify piracy in recent years.

**Dangers: Beyond Blackbeard**

The dangers of contemporary piracy are complex and multifaceted. At the most basic level, pirate attacks constitute a direct threat to the lives and welfare of the citizens of a variety of maritime nations. Apart from the risk of death or injury, many who have been subjected to an attack suffer considerable mental trauma and may never go to sea again.

Economically, piracy has a direct impact in terms of fraud, stolen cargo, and delayed trips and could undermine a maritime state’s trading ability. Today, the overall annual cost of piracy to the maritime industry is estimated to be anywhere between $1 billion and $16 billion. The true figure could be far higher, especially when factoring in the expenses incurred from implementing mitigation efforts.

Politically, piracy can play a pivotal role in undermining and weakening governing legitimacy by breeding corruption among elected officials and bureaucrats. This has been a recurrent problem in Indonesia, which until 2008 was consistently designated as the most pirate-prone hot spot in the world.

Finally, piracy has the potential to trigger a major environmental catastrophe, especially if an attacked vessel is left to drift in a congested sea-lane. In the nightmare scenario of a mid-sea collision involving a loaded oil tanker, not only would the resulting discharge of petroleum irreparably damage offshore resources and marine life, it would also seriously degrade long stretches of fertile coastal lowlands if the oil were to drift ashore. This would pose significant difficulties to any state that relies on the oceans as a
primary source of food, either for domestic consumption or for regional or international export.

**Laws of the Seas?**

The rapid escalation of armed attacks off the Horn of Africa has prompted unprecedented counter-piracy action by the international community, mostly of a military nature. In January, the United States announced the formation of Combined Task Force 151, a flotilla of naval ships with planned assets from more than a dozen nations, to monitor and patrol maritime corridors in the Gulf of Aden. This force will supplement a yearlong European Union (EU) flotilla that was deployed late last year, with contributions from the United Kingdom, France, Spain, Germany, and Greece. Several other nations have also sent ships to the region, including India, China, Russia, Malaysia, Saudi Arabia, and South Korea. Expected to add to these forces later this year are Australia, the United Arab Emirates, and possibly Turkey. The United Nations Security Council has also authorized all these so-called “cooperating states” to do whatever necessary to counter pirate gangs operating in Somalia’s territorial and maritime space.

Although these initiatives have ensured the delivery of relief supplies to African Union peacekeepers in Somalia and thwarted several attempted hijackings, their overall utility is somewhat questionable. The area to be monitored—over a million square miles—is huge. Issues of national interest are bound to arise. It is not apparent how the EU flotilla will be funded and whether the potentially thorny issue of cost-sharing has even been broached. Questions of legal jurisdiction have yet to be settled, particularly in terms of prosecuting detained suspects, and appropriate rules of engagement have still to be fully fleshed out.

Employing force against pirate dens in Somalia also raises the specter of large-scale civilian damage and concomitant accusations that the West is intent on destroying innocent Muslim lives. Most fundamentally, the deployment of naval frigates will address piracy only at its end point, on the sea, rather than at its root, on the land.

To overcome these limitations, the international community should balance its hard-line initiatives with more innovative, nonmilitary strategies. To begin, it should focus more adroitly on boosting the coastal monitoring and interdiction capabilities of all the littoral states in the vicinity of the Horn of Africa and Arabian Peninsula. A good start would be to provide these states with surveillance assets, training, and technical support.

The international community should also expand public-private efforts to market and sell the requisite defensive technologies. Three of these show particular promise: ShipLoc (an inexpensive satellite tracking device that allows shipping companies to use a dedicated Web site to monitor the exact locations of their vessels anywhere in the world), Secure-Ship (a non-lethal electrical perimeter fence designed to prevent unauthorized boarding), and a suite of long-range acoustic devices that emit loud and disorienting blasts of sound upon intruder entry.

Meanwhile, the maritime industry must be given greater financial incentives to adhere to basic security protocols, such as avoiding dangerous routes, maintaining constant antipiracy watches, keeping in close contact with nearby vessels, and maneuvering at sufficient speed. Incentives could include the offer of lower insurance premiums or, if there is noncompliance with security protocols, the threat of higher ones.

Finally, and admittedly most vexing—because piracy off the Horn of Africa is essentially an extension of the land-based violence, corruption, and lawlessness that has plagued Somalia since the collapse of the Mohamed Siad Barre dictatorship in 1991—greater effort must be devoted to restoring a semblance of stability to this war-torn country. Until this void in governance is decisively filled, the waters off the Horn of Africa and Arabian Peninsula will remain a highly attractive theater for armed maritime crime, given the expanse, lack of regulation, and importance of these waters as a vital maritime corridor linking the Mediterranean Sea with the Indian Ocean.

---

**Related Reading**


Lessons Learned

Education Priorities for the Obama Administration

By Lynn A. Karoly, Gail L. Zellman, Brian M. Stecher, Georges Vernez, Laura S. Hamilton, Susan J. Bodilly, and Jennifer Li

Economist Lynn Karoly, psychologist Gail Zellman, social scientist Brian Stecher, and behavioral scientists Georges Vernez and Laura Hamilton are senior RAND researchers. Susan Bodilly is the director of RAND Education. Jennifer Li is a RAND communications analyst.

Education research offers guidelines for the Obama administration as it pursues key priorities, including high-quality preschool, accountability, pay for performance, and charter schools. Below, we outline the lessons learned from the pertinent research conducted at RAND and elsewhere:

• With respect to preschool, many states are pursuing initiatives to address the shortfalls in access and quality, but there is a potential role for federal policy to complement state efforts. Federal dollars could be used, for example, to increase the number of children served in Head Start, to earmark additional federal Title I funds for state preschool programs, to supplement the state programs directly, or to do a combination of these.

• As the U.S. Congress is expected to decide by December 2010 whether to amend and to extend the No Child Left Behind Act (NCLB), some observers have called for staying the course, some for major changes, and some for abandoning the accountability systems altogether. If accountability is going to be retained when the law is reauthorized, then policymakers should adopt a broader set of accountability measures, set consistent expectations for student performance, choose appropriate improvement targets, and redesign the system of consequences for struggling schools.

• As for the NCLB component of school choice, policymakers should recognize that its power to induce educational improvement is limited at this time. Improved parent notifications might help, but the focus should be on reforms that improve performance across all schools while still offering school choice.

• With regard to pay for performance for educators, knowledge about designing effective programs is limited, and so funding for further piloting and evaluation will be important. Pay for performance should also be combined with other reforms, such as assistance to educators to promote continuous improvement in educational practices.

• Although charter schools fall under the purview of state and local policymakers, federal leaders can help states improve their charter schools by identifying and disseminating best practices, providing guidelines for performance reviews, and examining the reasons behind the success of charter high schools in raising student attainment, as identified in research on Chicago and Florida charters.

High-Quality Preschool

Recent studies find that academic achievement gaps among students of different ethnic, racial, and socioeconomic backgrounds are rooted in readiness gaps that are present at the starting gate, when children first enter school. A rigorous body of research also shows that effective preschool programs can narrow readiness gaps and subsequent achievement gaps (measured by test scores) through at least third grade. Several decades-long evaluations of preschool programs serving at-risk
children document a lifetime of individual and societal benefits from such programs, including higher rates of high school graduation and employment, increased earnings, and reduced rates of crime and delinquency.

But access and quality vary. While federal and state programs are designed primarily to serve disadvantaged children, most programs do not receive enough money to serve all those who are eligible. As a result, disadvantaged children are less likely to attend preschool than their more advantaged peers. And for many who do attend subsidized preschool, program quality is below the level required to produce strong positive outcomes.

These findings point to several potential federal policy actions. Because Head Start lacks the funding to serve all eligible children, policymakers should explore options to combine federal Head Start funds with state funds for preschool programs. Increased Title I funding, which is set aside for schools and districts with high percentages of students from low-income families, could be earmarked for preschools. Federal matching funds could also directly supplement state efforts to serve more disadvantaged children in high-quality programs.

The federal Child Care and Development Block Grant (CCDBG) program should be leveraged to improve program quality. Currently, states are required to set aside 4 percent of their CCDBG funds for quality improvement in child care settings, whereas the National Association of Child Care Resource and Referral Agencies suggests a set-aside of 10 percent. Quality might be improved by increasing the size of the set-aside and requiring all paid providers caring for children on a regular basis to have a state license or permit and to meet rigorous training requirements.

States are experimenting with a number of initiatives to spur quality improvement, including quality rating and improvement systems, early learning standards that align with standards for kindergarten and beyond, and systems that link data from preschool to postsecondary levels. The federal government can contribute to these efforts by promoting the sharing of knowledge about best practices across the states.

The variation across states in early care and education policy provides a laboratory that can inform decisionmakers about effective ways to expand access and to raise quality. The federal government should promote rigorous evaluation of state initiatives and act as a clearinghouse for the growing base of knowledge about what does and does not promote high-quality preschool programs.

**Accountability**

Under NCLB, states must set standards for proficiency in reading and math, collect information about student
The accountability system should set improvement targets in terms of individual growth rather than by requiring each student to reach a single, absolute level of performance.

achievement in these subjects, and implement strong corrective actions for schools and districts that do not meet the goal of moving all students toward proficiency by 2014. Both critics and supporters agree, though, that NCLB accountability has not led to enough improvement in student achievement to reach this goal.

Under the current accountability system, educators have focused attention on reading and math, and state test scores have improved, with gaps between population subgroups narrowing in some states. However, the average test-score gains may not be all they seem because of (a) widespread “teaching to the test,” (b) a focus on students near the proficiency cutoff point at the expense of others, and (c) the fact that proficiency means different things in different states. Also, the reading and math tests have drawn attention away from other subjects. Yet almost eight years after NCLB was signed into law in December 2001, the proportion of schools slated for corrective action or restructuring is increasing, the existing interventions do not seem to be working to improve performance in the most needy schools, and teachers and administrators report frustration with NCLB.

These shortcomings suggest several policy improvements. First, if the accountability system is to be retained, it should rely not merely on multiple-choice tests but also on writing samples or other open-ended answer formats (including written responses to math questions) that provide richer assessments of content knowledge and application. Second, a new policy could hold schools accountable for history, social studies, science, music, art, health, and physical education as well as reading and math, not necessarily by testing in all subjects but possibly by using other methods, such as monitoring lessons or course enrollment.

Third, if proficiency standards continue to be used for reporting purposes, policymakers should consider a combination of voluntary and mandatory approaches to make proficiency standards more comparable across states. There is currently agreement that the variation across states is problematic but disagreement about how to make the standards more consistent. Fourth, the accountability system should set improvement targets in terms of individual growth rather than by requiring each student to reach a single, absolute level of performance.

Fifth, policymakers should redesign the system of consequences so that it addresses the most serious problems more effectively. Under the current system, rigid and seemingly mechanical rules govern the number of schools receiving interventions and the type of interventions. A better system would allow states to identify the schools most in need and to design consequences for the particular needs. A two-stage process might work best. In the first stage, states would gather information about local deficiencies; in the second, states would craft interventions tailored to the shortcomings.

School Choice

One of the main innovations of NCLB is to offer students in low-performing schools the opportunity to switch schools. However, in 2006–2007, the fifth year of implementation of NCLB, only about 1 percent of students in schools identified for improvement took the opportunity to transfer to better-performing schools. This low transfer rate is due to a combination of operational issues, parental lack of knowledge, and parental consideration of other factors, such as convenience and child preference.

Recent research found that, operationally, just one in five parents of students in schools identified for improvement knew the schools were so identified. Nearly half of all districts nationwide did not notify parents of their school choice options in time for parents to make an informed decision. Most states have difficulty compiling test results in time to notify districts of the status of their schools before July of each year, and fewer than half the districts were able to notify parents of their eligibility for school choice before the beginning of the school year.

The research further revealed that when districts did notify parents, the parents often did not receive the notification or remained unaware that they had been notified. Parents commonly reported that the notifications failed to convey key information, such as how and where to apply or whom to contact with questions. The majority of parents who did not transfer their children said they were satisfied with the quality of teaching at their current school, that transferring would be inconvenient, or that their children did not want to change schools.

These findings point to several policy actions. Test results from the previous year could be used to give
parents adequate time to make informed decisions. Schools, in addition to districts, could be required to inform parents of their school choice options, because parents are more likely to pay attention to notifications from their children’s schools than those from a district office. States could be required to develop a standardized letter for districts to use in notifying parents about school choice; the states could consult with parent advocate groups in helping to draft these notifications. Federal and state officials could also consider further ways to educate parents about their children’s schools.

However, many factors besides school performance influence parents’ decisions. These factors include school location, after-school activities, and student preferences to remain in the same school with friends. Policymakers must recognize the limited benefits of school choice and should focus efforts on reforms that improve performance in all schools.

**Pay for Performance**

One proposal to improve teacher effectiveness is a shift from a uniform salary schedule to a pay-for-performance system, which would attach teachers’ pay to student achievement on standardized tests, possibly in combination with other data, such as graduation rates or measures of educators’ practices. Pilot programs are under way, but evidence about their effectiveness is limited.

Studies in Israel, Kenya, and India have found that linking pay to performance has led to higher student test scores, but some of these studies have also found negative outcomes, from manipulation of test scores to “gaming” the system. There is insufficient evidence to support claims that pay for performance will raise achievement in U.S. schools.

Pay for performance raises many concerns. As noted in the section on accountability, educators tend to respond to high-stakes tests by focusing more on tested material and less on untested material. To estimate the added value of any teacher, consecutive-grade testing is necessary, which raises the costs of testing and may increase the risk of undesirable narrowing of curriculum and instruction. Even then, the contribution of a single teacher is difficult to measure accurately and fairly, because students interact with multiple teachers and other staff and because they are also influenced by factors outside school. There are questions about the role of principals, the effects of these programs on staff morale, whether to judge individual teachers or an entire school, and how to deal with English-language learners, students with disabilities, and others for whom existing tests may not provide valid information.

There are several ways to strengthen pay-for-performance programs. First, achievement measures should assess the full range of knowledge and skills that students are supposed to learn, and the measures must resist manipulation. Tests should be unpredictable from one year to the next, and, as suggested in the section on accountability, they should not rely exclusively on multiple-choice questions.

Second, test scores should be supplemented with other measures of student outcomes or instruction to reduce the likelihood that teachers or principals will focus narrowly on the content of tests. Other measures could include the percentage of students enrolled in (and possibly successfully completing) college-preparatory or Advanced Placement courses, perhaps along with assessments of teacher knowledge or practices.

Third, districts and schools using pay for performance should provide their principals and teachers with high-quality curriculum materials and professional development so that the educators can build on their strengths and address their weaknesses. Fourth, states or districts should implement data systems that link student outcomes

**Policymakers must recognize the limited benefits of school choice and should focus efforts on reforms that improve performance in all schools.**
to the responsible teachers and follow students over time, even as they transfer across schools or districts.

Fifth, the U.S. Department of Education should fund a variety of these programs and evaluate them to compare the options. A national evaluation should gather data across sites for dissemination to policymakers, practitioners, and researchers. Policymakers should also fund a long-term evaluation to understand how redesigned pay policies affect the ability of districts to recruit and to retain high-quality teachers and administrators.

Charter Schools

Since their controversial inception in 1992, charter schools have become a widely used alternative to traditional public schools. Operating independently but with public funding, charter schools represent a variety of educational approaches—from schools stressing only core subjects to Montessori schools to virtual schools that operate through telecommunication networks. Proponents predict that these schools will produce important benefits, such as expanded educational options for students, increased innovation by educators, improved student achievement, and healthy competitive pressure for traditional public schools. Opponents predict that charter schools will cause serious negative effects, such as increasing racial and ethnic stratification and drawing the highest-achieving students away from traditional public schools.

The vast majority of studies have shown that charter schools are generally on par with traditional public schools in terms of raising test scores, but studies from California and Ohio suggest that students in virtual charter schools tend to have lower test scores than students in other public schools. Charter schools in the first year of operation also often show a negative effect on test scores. In contrast, a recent study found an association between attending a charter high school and substantially higher probabilities of graduating from high school and attending college. This association was noted in Florida and Chicago, the only two sites where enough data were available.

Research on charter schools in Arizona, Boston, California, Chicago, Denver, Florida, Michigan, Milwaukee, New York, North Carolina, Ohio, Philadelphia, San Diego, and Texas shows that these schools do not skim the majority white students or the highest-achieving students from traditional public schools, as feared. Conversely, charter schools do not appear to produce positive competitive effects on achievement in traditional public schools, as hoped.

Federal policymakers can help state leaders understand how to improve their charter schools. To help new charter schools avoid the low test scores typically associated with the first year, federal policymakers could provide financial support for state efforts to gather lessons learned and best practices for charter school start-up operations. Likewise, federal policymakers could assist states in identifying which types of charter schools are more or less likely to be successful so that low-performing charter schools could be eliminated and the average performance of charter schools could be raised.

Federal policymakers should fund research to identify the charter school practices that lead to higher rates of high school graduation and college attendance. A better understanding of how and why charter schools outperform traditional public schools on these measures would help educators address the national concern over high school students at risk of failure. For example, there are some indications that higher graduation rates and college enrollment are especially evident in multigrade charter high schools (those that

Further research is needed to confirm whether a multigrade approach of incorporating middle grades and perhaps elementary grades onto the same campus could benefit all public high schools.
include middle-school grades), but further research is needed to confirm whether a multigrade approach of incorporating middle grades and perhaps elementary grades onto the same campus could benefit all public high schools, both charter and traditional.

Related Policy Briefs


Other Related Reading


Third Opinion
A Leading Health Researcher Looks Beyond the Reform Debate

By John Godges

John Godges, a RAND communications analyst, is editor-in-chief of RAND Review.

Nearly every sector of U.S. society will be affected directly, from the pocketbook to the pulse, by the passage or failure of legislation designed to reform the nation’s health care system. No wonder emotions are roiling. It can be hard to identify anyone in the health care debate whose focus extends beyond the immediate passions surrounding the matter.

Meet Elizabeth McGlynn. Associate director of RAND Health and one of the top 100 U.S. health care “innovators,” according to healthspottr.com, McGlynn is also codirector of the Comprehensive Assessment of Reform Efforts (COMPARE) initiative, which includes an online tool, developed at RAND, to help policymakers, the press, and others understand, evaluate, and design proposals for health care reform, not just for the current legislative session but also over the long term.

“Much of the information being provided in the health care debate comes from individuals or organizations that are advocates or opponents of particular ideas for fixing the health care system,” said McGlynn. In contrast, the COMPARE initiative offers “objective analysis from a neutral third party about the likely effects of policy choices on cost, quality, and access at the national level and for different stakeholders.”

She explained that the health care debate in Washington today revolves around two of the key pressing issues: expanding health insurance coverage and decreasing health care costs. “There is a philosophical debate about how best to fix the system,” said McGlynn. “Some people believe we should get everyone covered and that this will make it easier to control costs. Others believe that until we figure out how to reduce health care spending, we should not bring anyone new into the system.” McGlynn went on to observe that both issues, coverage and cost, would have to be addressed simultaneously.

Another key issue—health care quality—has received less attention in the current health reform discussion than have coverage and cost. Numerous RAND studies have shown that the United States faces a substantial gap between what is known to work in health care and what is actually provided. For example, McGlynn and colleagues have shown that American
adults receive just half of recommended care for the leading causes of death and disability and that American children receive less than half of necessary care.

**Expanding Coverage**

Currently, 46 million Americans lack health insurance coverage, amounting to 15 percent of the U.S. population. RAND analyses have estimated the number of Americans who would likely gain insurance coverage under alternative policy options.

Just one of those options, an individual mandate for Americans to obtain coverage or else risk a penalty, could add up to 34 million people to the ranks of the insured, covering almost 75 percent of those who are now uninsured. This estimate is based on designing the individual mandate with a combination of a “generous” subsidy to help individuals purchase their insurance and a “substantial” penalty for those who do not.

Bills in both the U.S. House of Representatives and U.S. Senate contain an individual mandate. In the RAND analysis, the “generous” subsidy would cover the full cost of insurance coverage for people with household earnings below 100 percent of the federal poverty level while offering subsidies on a sliding scale for people with household earnings up to 400 percent of that level. The “substantial” penalty for noncompliance would be 80 percent of the cost of the insurance premiums that an individual would otherwise pay in a national insurance exchange. In this national exchange, a variety of insurers would offer policies that meet a minimum standard of benefits and are offered under specific rules (regulated premiums, guarantees that everyone could obtain coverage).

In contrast to the individual mandate, an employer mandate that requires firms with five or more employees to provide them with health insurance could add up to 34 million people to the insurance rolls, just a tenth of those potentially added by an individual mandate. Tax credits, another option, could add up to 10 million net newly insured people. Expanded eligibility for Medicaid and the State Children’s Health Insurance Program could add up to 13.9 million net newly insured people; this level of expansion would also result in an additional 20 million people replacing their private insurance with this public insurance. (See the next story for further comparisons.)

All of the estimates above examine the effect of implementing a single change in coverage policy. However, most legislative proposals call for some combination of strategies. Forthcoming RAND analyses will estimate the comparable effects of combined options. Although McGlynn hesitated to indicate a strong preference for any single option or combination of options, she did reach a clear conclusion: “The analyses suggest that you cannot gain much traction in the absence of an individual mandate.”

One of the most controversial issues among the options for expanding coverage is the availability of a public plan. “Neither opponents nor supporters have provided much detail about how the public option would operate. The intensity of the debate is fascinating given the lack of specifics that have been offered by either side.”

“Neither opponents nor supporters have provided much detail about how the public option would operate. The intensity of the debate is fascinating given the lack of specifics that have been offered by either side.”
would operate,” said McGlynn. “The intensity of the debate is fascinating given the lack of specifics that have been offered by either side.”

Before anyone can draw conclusions about the cost implications of a public plan, she said, three key design choices need to be answered. First, who would be eligible to enroll in the public plan? Second, how would the public plan pay doctors and hospitals to care for their patients? And third, how generous would the benefits of the public plan be?

Regarding eligibility, the public plan could be open to anyone or just to those people who have no other source of health insurance. If Congress were to exclude people who are already eligible for Medicaid or who could already purchase insurance through their employers, for example, the plan would not be available to 44 percent of the uninsured and all those who currently have insurance. The more restrictive the criteria for eligibility, the lower the cost of the public plan.

Regarding payments, the public plan could pay providers the fees already established by Medicare or linked to Medicare rates (as in the current House Tri-Committee bill), or the plan managers could be required to negotiate contracts with doctors and hospitals. In the former case, the public plan would have lower costs than private plans, which has drawn charges of unfair competition. In the latter case, the outcome would be less clear, particularly in the early years when the plan might not have enough enrollees to negotiate favorable rates.

The benefit structure of the public plan will also determine the premiums that must be charged. If the benefit package is generous, the cost of subsidies to help people purchase the public insurance will also be larger. If the benefit package is less generous, the premiums will be lower and thus the total subsidy cost will be lower.

“Balancing these design elements will ultimately determine the cost to the government of operating a public plan and the relative attractiveness of this insurance option,” McGlynn explained. “The cost and attractiveness, in turn, will provide a sense of how much the public plan will compete with the private sector.”

Reducing Costs

A major challenge facing the bills under consideration in the House and Senate is finding ways to reduce spending in order to cover the increased cost of expanding coverage. The “pay-go” rules under which
the U.S. Congress operates require that legislation be budget neutral—increased government expenditures for new programs must be offset by reduced government spending on existing programs. "Finding the right mix of policies has proven difficult for a number of reasons, including considerable uncertainty around the potential savings from policies that have not been widely tested," said McGlynn.

To reduce spending, she continued, the government needs to reduce either the prices paid for services or the volume of services provided. For both of these approaches, there are regulatory and market-based strategies. Many of the regulatory strategies (such as setting rates for insurance reimbursements or requiring providers to obtain “certificates of need” before offering new or expanded services) have been tried in the past and in many cases provided short-run savings, but over time they lost their impact. By contrast, many of the market-based strategies are newer and have not been tested—that is, they are largely based on economic theory—or have been tested on only a very small scale.

Several RAND studies have shown the limitations of two market-based strategies: high-deductible health plans and greater cost sharing. Neither approach has resulted in lower costs for better care, as hoped. While high-deductible health plans have reduced costs, they have had mixed effects on quality of care, and even the lower costs could be the result of self-selection of healthier enrollees into these plans. Meanwhile, increased cost sharing has become associated with worse adherence to prescription drug regimens and an increased use of health services other than the prescriptions, offsetting any cost savings.

Some of the popular cost-reduction concepts in current legislation include prevention and wellness programs, disease management, medical homes, bundled payments, and accountable care organizations. “These initiatives are designed to keep people healthy with the hope that they will spend less money in the future, to improve the delivery of services so that patients get the right care and avoid duplicate services, and to provide different financial arrangements that encourage more coordination of care,” said McGlynn.

There is little evidence that prevention and wellness programs or disease management reduces spending, and accountable care organizations have not been clearly defined or studied. However, bundled payments—under which providers are paid a lump sum to deliver services over a set time period (one year for chronic disease) or for the length of an episode (such as care before, during, and after a surgery) rather than per patient visit—appear promising. RAND modeling and the results of some small pilot projects indicate that bundled payments can reduce spending, but they have been implemented only on a limited basis for procedures (bypass surgery, cataract surgery) that have predictable, finite trajectories.

The medical home model offers patients access to a primary care physician who is responsible for coordinating all of their care, who is accessible outside of regular business hours, and who uses other health professionals and technology to ensure high-quality care. This is a relatively new model that is currently being evaluated. “Because providers are generally paid more to serve in this role,” McGlynn noted, “the savings would have to come from reduced use of emergency departments or hospitalizations.”

Continuing to COMPARE
McGlynn pointed out that the health care system didn’t get into trouble overnight and that it will likely take more than one legislative session to address the challenges of access, cost, and quality. “Although it appears that some major changes will be undertaken this year, there will be an ongoing need for the tools and analyses that RAND has developed” to monitor the functioning of the health care system into the future.

“We see an ongoing role for COMPARE,” concluded McGlynn. “We look forward to continuing to work with policymakers and others to evaluate which policy options are most likely to achieve the goal of improving the health care system.”
The U.S. health care debate has focused on five basic issues: increasing health care coverage, expanding access to health care, decreasing health care spending, improving quality of care, and promoting prevention and wellness. The following summary provides key insights from RAND research about the tough choices that policymakers face on these issues. RAND’s insights will remain relevant to health care reform in the long term, regardless of the short-term outcome of the current legislative debate.

1. Increasing Health Care Coverage

About 46 million people in the United States—representing every income level, age group, employment status, gender, race, ethnicity, and geographic region—are uninsured. People with health insurance tend to receive more preventive care, are less likely to avoid or delay needed medical care because of cost, and may have better health outcomes than individuals without insurance. The most widely discussed options for expanding health care coverage are individual mandates, employer mandates, refundable tax credits, and expanded eligibility for Medicaid and the State Children’s Health Insurance Program (SCHIP).

RAND analysts have used simulation models to predict how each of these policy options would affect health care coverage and costs. Although it is likely that several of these policies would be implemented together, RAND estimated the effects of implementing each policy individually. The size of the effects depends strongly on the specific details of the policy when it is implemented.

**Individual Mandates**

An individual mandate for Americans to obtain coverage or else possibly risk a penalty would likely increase the number of people with health care coverage by 9 to 34 million. At the low end, RAND estimates that about 9 million people could be added if there were full subsidies for people with household incomes below the federal poverty level ($22,050 for a family of four), partial subsidies for people with household incomes up to 200 percent of that level, and no penalty for noncompliance. About 34 million people could be added if there were full subsidies for people with household incomes below the federal poverty level, partial subsidies for people with household incomes up to 400 percent of that level, and a noncompliance penalty of 80 percent of the cost of the insurance premium (see Figure 1).
An individual mandate is not likely to substantially increase total health spending; however, government spending would probably increase by about 1–6 percent. Both total spending and government spending depend on the size of the subsidies and the penalty for noncompliance.

**Employer Mandates**

RAND estimates that an employer mandate would likely increase the number of newly insured people by 1.8 to 3.4 million. About 1.8 million people would be added if firms with at least 25 employees were required to offer health insurance. Up to 3.4 million people would be added if firms with at least five employees were required to offer health insurance. Both of these cases presume that a penalty of 5 percent of payroll would be levied against firms that do not offer health insurance.

A stand-alone employer mandate would likely have no discernible effect on total health care spending because relatively few people would become newly insured under this policy. However, net government spending would probably increase by 0.5 to 6.3 percent (see the table) primarily because of forgone tax revenue. Consumer out-of-pocket spending would also increase slightly as previously uninsured consumers and those previously on Medicaid or SCHIP would begin to pay for deductibles and copayments.

**Medicaid/SCHIP Eligibility**

Both Medicaid and SCHIP are partnerships between the federal and state governments. The two health

<table>
<thead>
<tr>
<th>Category of Spending (per year)</th>
<th>Tax Credit Amount (individual/family)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of tax credit (billions of U.S. dollars)</td>
<td>$5.8</td>
</tr>
<tr>
<td>Change in Medicaid spending (billions, federal and state)</td>
<td>$(1.08)</td>
</tr>
<tr>
<td>Net government spending (billions)</td>
<td>$4.72</td>
</tr>
<tr>
<td>Percentage increase in U.S. government spending on health care</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

SOURCE: RAND COMPARE microsimulation modeling results, December 31, 2008. NOTES: Total U.S. government spending on health care is currently about $1 trillion a year. Numbers in parentheses are negative, showing a decrease in spending.
insurance programs are merged in some states while separate in others. Expanded eligibility for Medicaid/SCHIP would likely increase the total number of people newly enrolled in these programs by 6 to 35 million, depending on the income eligibility level. More than one-third of these new enrollees, however, could be individuals who would drop their prior coverage and switch to the lower-cost Medicaid/SCHIP program. That share would grow as eligibility expands to higher income levels. At a minimum, there would be 4.1 million net newly insured people if Medicaid/SCHIP eligibility were limited to people living below the federal poverty level. About 13.9 million net newly insured people would be added if eligibility were expanded to everyone living below 300 percent of that level.

Expanding Medicaid/SCHIP eligibility would probably have little effect on aggregate national health spending. However, there would be a net increase in government spending on health care of 6 to 28 percent and a small decrease in consumer out-of-pocket spending.

2. EXPANDING ACCESS TO HEALTH CARE

Adequate insurance coverage is only one important component of access to health care. Beyond financial access (whether someone has insurance), there are issues of potential access (whether someone has a regular provider of medical care) and realized access (whether someone actually receives care when it is needed). In short, access to health care refers to the ease with which an individual can obtain needed medical services.

One way that Congress seeks to expand access to care is by addressing socioeconomic disparities in access. RAND has examined the relationship between access and health for racial and ethnic minorities and for children, highlighting some policy priorities.

Racial and Ethnic Minorities

Racial and ethnic minorities are at greater risk of ill health than their nonminority, nonpoor, better educated peers. However, erasing disparities in health cannot be accomplished simply by achieving universal coverage. Policies that affect public health and the nonmedical determinants of health—from eliminating environmental toxins to promoting physical activity to renovating city parks—are also necessary.

Children

Children who face the greatest socioeconomic risks (based on race/ethnicity, household poverty status, parental education, insurance coverage, and primary language) also have the greatest difficulty obtaining access to a regular source of primary care (see Figure 2). However, low-income children whose access to care improved through SCHIP also experienced improved health-related quality of life over a two-year period. A survey of parents found that access to a regular source of care had an even greater effect on their children’s primary care than did having insurance.
3. Decreasing Health Spending

U.S. health care spending continues to rise at an alarming rate and accounts for a growing proportion of the national budget. By 2017, about 20 cents of every dollar spent in the United States will go to health care. Trends that have contributed to higher spending include higher prices for services; the aging of the population; the obesity epidemic; and the demand for more and better medical technology, services, and pharmaceuticals. In addition, when health care bills are paid for by insurance companies, by employers, and by government programs, patients may have little incentive to demand high-quality services at lower costs or to decline unnecessary care.

Congress has considered ways to make patients more prudent consumers, for example, by shifting more of the cost burden to them. The idea is to make patients more cost conscious about health care because they are paying more out of their own pockets. RAND analysts have assessed how two policies intended to promote cost consciousness—high-deductible health plans and increased cost sharing—affect costs and health.

High-Deductible Health Plans

A high-deductible health plan is a fee-for-service insurance plan with lower premiums and higher deductibles than a traditional health plan. The deductibles are usually $1,100 per year or more for single coverage, $2,200 or more for families. High-deductible health plans reduce both spending and the use of health care services; however, the spending could be lower because healthier individuals, who do not expect to need much medical care, enroll in these plans. The early evidence also suggests that these plans have mixed effects on quality of care: The use of preventive services appears to increase, but enrollees are less likely to receive other needed services.

Increased Cost Sharing

A classic RAND study, the Health Insurance Experiment conducted between 1971 and 1982, found that consumers respond to increased cost sharing by reducing the use of both highly effective and less-effective care in roughly equal proportions. At the time, cost sharing did not significantly affect the quality of care received by participants or the health of most participants.

More recently, RAND examined the effect of different benefit designs for prescription medications. Each 10-percent increase in copayments for these drugs decreases their use by 2 to 6 percent. This form of increased cost sharing is associated with worse adherence to drug regimens. For some conditions—such as congestive heart failure, lipid disorders, diabetes, and schizophrenia—increased cost sharing for prescription drugs is also associated with increased use of other health care services, offsetting the potential cost savings. As a result, increased cost sharing for some prescription drugs may actually increase health care use. Conversely, reducing drug copayments for sicker patients can sometimes save money by increasing their compliance with drug regimens, thus avoiding costly emergency and hospital care.
4. Improving Quality

Despite spending $2.5 trillion annually, the U.S. health care system is plagued with inefficiency and poor quality. Adults in the United States receive only about half the recommended care, and poor care probably contributes to thousands of preventable deaths each year. The need to improve the quality of care has not figured prominently in the current U.S. health care reform debate. RAND research has shed light on three proposed approaches to improving quality, which should also in theory cut the costs of care: widespread adoption of improved health information technology, pay for performance, and public reporting of performance information.

Health Information Technology
RAND’s mathematical modeling suggests that widespread adoption of health information technology could yield annual efficiency savings of $77 billion after 15 years, but only a small number of empirical studies have examined the likely savings and costs. Several small studies suggest that the use of health information technology should also improve the quality of care by reducing medical errors and adverse drug events, increasing the rates of recommended care, and decreasing the duplication of tests. However, it is not clear whether these studies can be generalized to the entire health care system. Substantial new investments in the technology infrastructure will be required to reap the projected benefits.

Pay for Performance
Pay for performance uses financial incentives for physicians and hospitals to stimulate improvements in quality of care and, in some cases, to reduce costs. A RAND analysis of the largest pay-for-performance experiment in the nation found no substantial gains in quality, although physician organizations involved in the program did report increased feedback to physicians about their performance and faster adoption of health information technology. A few studies have found that hospital pay-for-performance programs produce modest improvements in the reliability with which appropriate care is provided; however, studies of physician pay-for-performance programs show mixed results.

Public Reporting and Transparency
In theory, making information about the performance of hospitals, health plans, physicians, and other care providers widely available could motivate those who receive low ratings to improve their performance in order to protect their reputations and market shares. A RAND synthesis of the available evidence has concluded that publicly releasing hospital performance data stimulates quality improvement activity; however, how public reporting affects clinical outcomes (effectiveness, safety, and patient centeredness) remains uncertain. Providing performance information on physicians is not sufficient to change their behavior; rather, a combination of educational strategies might be more effective. Convincing consumers to use information about quality when making health care choices could also take time. Common barriers include limited education, limited reading skills, and age-related physical and cognitive deficits.

5. Promoting Prevention and Wellness
Combating the obesity epidemic and managing chronic disease have been topics of concern in the U.S. congressional health reform debate. RAND investigators have studied the effects of obesity and disease management programs on health and on health spending.

Obesity
Obesity is one of the leading causes of preventable illness in the United States. The biggest contributors
to the obesity epidemic are poor diet and reduced physical activity. Having steadily increased among the U.S. population over the past two decades, obesity is linked to higher rates of chronic disease than is smoking, drinking, or poverty. Obese individuals also incur higher total health care costs: The obese spend 36 percent more on health care services and 77 percent more on medications than do those of normal weight.

RAND simulation modeling projected the likely savings to Medicare from reducing obesity among 70-year-old beneficiaries. Reducing obesity was the only behavior change among this age group that resulted in Medicare savings: Although there was little difference in overall life expectancy, the elders who were not obese could anticipate nearly seven years of life free of disability (and thus were less costly to Medicare), while the obese could expect only four years of life free of disability. Starting at age 70, an obese person would cost Medicare about $144,000, while a person of similar age and normal weight would cost Medicare about $107,000 (see Figure 3). A strong link has not been established between lifetime health care costs and healthy behaviors, but RAND’s findings suggest that weight reduction among the obese should be an urgent public health priority.

Neighborhood characteristics can play an important role in stimulating exercise and combating obesity. Living within a mile of a public park significantly increases the likelihood that residents will exercise. In addition, residents of socioeconomically disadvantaged neighborhoods have less access to fresh fruits and vegetables than do their counterparts in more affluent areas.

Disease Management
Focused on people who already have chronic medical conditions, disease management programs are intended to reduce the long-term cost and burden of chronic disease through some combination of patient self-care, provider training, and individualized care plans. However, the evidence is mixed on disease management’s effect on spending, and some evaluations suggest that disease management actually increases spending. The effect on spending may differ depending on the disease management approach or the disease targeted. Research also suggests that disease management may increase the delivery of appropriate health care, although the health effects are uncertain. In short, disease management programs may improve health outcomes but may also increase costs.
Environmental Incubator
A Proposed Hub of Emerging Technologies for Sustainable Development in China

By Richard Silberglitt and Anny Wong

Richard Silberglitt is a RAND senior physical scientist. Anny Wong is a RAND political scientist.

Running along nearly 100 miles of Yellow Sea coastline in the sprawling municipality of Tianjin in northeast China, the Tianjin Binhai New Area (TBNA) has taken on a pivotal role in China’s national economic strategy. An arid and undeveloped area until the late 1970s, TBNA has since become home to 1.4 million people, northern China’s largest container port, and a broad base of modern industry and manufacturing.

In 2006, the State Council of the People’s Republic of China gave TBNA an ambitious mandate to become the country’s next regional engine for economic growth. Reporting directly to the central government and benefiting from a host of favorable policies and tax incentives designed to attract investment and to stimulate trade, TBNA has since become home to 1.4 million people, northern China’s largest container port, and a broad base of modern industry and manufacturing.

In 2006, the State Council of the People’s Republic of China gave TBNA an ambitious mandate to become the country’s next regional engine for economic growth. Reporting directly to the central government and benefiting from a host of favorable policies and tax incentives designed to attract investment and to stimulate trade, TBNA is expected to emerge as China’s next economic powerhouse, invigorating the economy of the northeastern Bohai Rim region in the same manner as Shanghai and Suzhou did in the Yangtze River delta area and Guangzhou and Shenzhen did in the Pearl River delta area.

Simultaneously, the state council wants TBNA to lead the way in addressing many of China’s most urgent national problems, among them steadily rising energy demands, a growing scarcity of usable water supplies, and gravely escalating urban pollution. The goal of TBNA is to present an alternative to the traditional industrial economy, offering China a model of sustainable development and eco-friendly industry. Innovation in science and technology lies at the core of this vision of economic and environmental development.

At the forefront of this effort will be the Tianjin Economic-Technological Development Area (TEDA), a geographic zone that predates and overlaps TBNA but has now become a core component of the larger TBNA mandate. TEDA already contains a bustling manufacturing base, with pillars in electronics, automobiles, automotive parts, food processing, and biopharmaceuticals. Many of the world’s Fortune 500 companies, top Chinese firms, and other multinationals—notably Motorola, Samsung, and Toyota—have strong presences in the area. RAND was asked by TEDA to suggest an investment strategy to help the area evolve from an industrial hub into a state-of-the-art science and engineering center for emerging technologies that meet international standards and position TBNA as a global technology leader.

To help the area’s managers develop their action plans, a RAND team considered the missions of TBNA and TEDA, China’s national needs, the drivers and barriers to technological innovation in China generally and TBNA specifically, and the capacity for innovation available to TBNA and TEDA. From this analysis, seven innovative technology applications emerged as particularly promising for TBNA to pursue as it endeavors to fulfill its mandate:
Clockwise from left:

An experimental array of 400 microneedles, which cause no pain when used to inject drugs into the body, is shown on the tip of a finger. Microneedles penetrate only the outermost layer of skin that contains no nerve endings.

Using green manufacturing, a Toyota Motor plant in Japan has solar panels, grass on the roof, ivy on the walls, and photocatalytic technology to cut discoloring from pollution.

A Hurricane Gustav evacuee shows his radio-frequency identification wristband. Sensors read the wristbands, and computers allow emergency workers to track evacuees.

A Nissan Nuvu electric concept car is on display in Shanghai, China, on April 20, 2009.

At a desalination project in Brownsville, Texas, Joe del Rio holds a section of pipe showing the membrane through which seawater is forced for removing impurities.

Visitors view a model of a solar power farm in Beijing, China, on January 7, 2009.

John Zhou, 17, an exchange student in Michigan, won the International BioGenius Challenge for having created a biosensor that can detect pathogens.

- **cheap solar energy**: solar-energy systems inexpensive enough to be widely available to developing and undeveloped countries and to disadvantaged populations
- **advanced mobile communications and radio-frequency identification (RFID)**: platforms for sensing, processing, storing, and communicating multiple types of data
- **rapid bioassays**: tests to quickly detect the presence or absence of specific biological substances
- **membranes, fabrics, and catalysts for water purification**: novel, highly reliable materials to desalinate, disinfect, decontaminate, and detect potentially harmful water
- **molecular-scale drug design, development, and delivery**: the abilities to design, develop, and deliver drug therapies at the nanoscale to enhance diagnostics and to attack specific tumors or pathogens without harming healthy tissues and cells
- **electric and hybrid vehicles**: automobiles, available to the mass market, with either purely electric power systems or hybrid power systems that combine internal combustion and other power sources
- **green manufacturing**: manufacturing processes that minimize waste and environmental pollution and optimize the use and reuse of resources.

These seven applications build on two highly influential global trends in technology and industry. The first is microscale and nanoscale technology; six of the proposed applications involve technologies in this domain. The second is green processes and technologies; four of the proposed applications focus on using energy, water, and other resources much more efficiently than ever before.

**Promising Applications**

Global companies are competing to make solar-energy systems less expensive and more efficient. There are
three generations of solar-electric technologies. The first, based primarily on polycrystalline silicon, now accounts for more than 90 percent of global sales. The emerging second- and third-generation systems are based on thin-film materials and nanoscale technologies, respectively. They have the potential to transform the industry, offering lower costs and greater efficiency. The growth of global market demand depends on them.

China already has a well-developed first-generation solar-electricity industry. Consequently, an outstanding opportunity for TBNA and TEDA may lie not in entering the first-generation market but rather in becoming a research, development, and manufacturing center for second- and third-generation systems. The initial focus should be the global export market and, in the longer term, the domestic Chinese market as it develops.

Second, advanced mobile-communication and RFID systems could streamline cargo logistics, reduce the cost of port operations, and increase shipping security—all pressing needs for TBNA. These systems are composed of many component technologies, such as screen displays, memory, batteries, power storage, sensors, and antennas. Each of these constitutes an industry in itself and will determine the future of wireless computing platforms. As global demand grows for the integrated systems, the market for the component technologies will strengthen in kind.

Already, TEDA produces about 10 percent of the mobile phones sold worldwide. Two groups at Tianjin University are doing leading-edge work on display technologies, and a TEDA firm manufactures the smallest hydrogen-power storage canister in the world (the size of an AA battery). TBNA could now develop state-of-the-art displays and power sources, focusing initially on the domestic Chinese market and then broadening to the global market as part of a larger effort to become a research, development, and manufacturing center for mobile-communication devices and RFID systems.

Third, global markets are emerging for better means of testing personal and public health and for monitoring the environment, and China has a particular need for state-of-the-art technology to meet public-health and environmental challenges. Biochips to detect and to analyze genes and proteins are enabling very fast tests for diseases and pathogens. These rapid bioassays could identify or eliminate public health threats, significantly improve patient outcomes, and detect pathogens in the environment and the food supply.

A long-term strategy might be for TBNA to become a leading player in the global marketplace for rapid bioassays. To pursue this goal, an initial focus could be on using licensing and partnership agreements to attract leading companies to TBNA and TEDA. During this period, TBNA could build capabilities as a reseller of bioassay disposables and equipment. Eventually, TBNA companies would manufacture the products themselves. The Chinese domestic market should be the first target, followed by the global market.

Fourth, ensuring affordable access to clean water is a major global challenge, an acute one for China, and an especially weighty one for the Tianjin region, where usable water supplies are scarce. Current purification systems can be improved and made less costly using an array of nanomaterials, such as thin-film nanocomposite membranes for desalination, biomimetic membranes that mimic the function of kidneys, filters with nanoscale porosity for removing pathogens from water, nanoscale catalysts for removing heavy metals and other toxins from water, and DNA-nanoparticle composites that use fluorescent sensors to detect trace contaminants.

Research institutes and private companies in Tianjin have a track record of manufacturing water-filtration membranes for industrial, personal, water-utility, and medical uses; of designing, fabricating, and testing nanoscale filters and catalysts; and of recognizing nanoscale water-purification filters as key candidates for commercialization. TBNA can become a world leader in these areas, but it is vital for TBNA to foster close relationships between research labs and private companies to expedite this commercialization.

Fifth, the demand is growing in China and globally for better medical treatments, with lower doses and fewer adverse side effects. The very promising field of nanomedicine—molecular-scale drug therapies and diagnostics derived from recent developments at the intersection of nanotechnology and biotechnology—could yield four vital applications: targeted carriers for capturing cancer images and delivering improved cancer treatments; controlled-release mechanisms for activating drugs at advantageous times and doses; new drug administration methods (such as microneedles, nasal delivery, and pulmonary delivery); and nanocrystals for increasing the solubility of drugs in the bloodstream.
TBNA could aim to become a center for developing drugs through bionanotechnology, focusing initially on attracting investment from foreign enterprises while aggressively building a homegrown research and development capacity. Eventually, TBNA could direct these activities toward commercializing novel medical treatments and techniques.

Sixth, global market trends, including concerns about the price of oil and global warming, suggest that vehicles using electric and hybrid technologies will draw increasing market shares. At the same time, China faces a severe problem with urban pollution, and among the national priorities are reducing automobile pollution and lowering demand for oil.

Hybrid vehicles are not currently manufactured in TBNA, but extensive capacity to make electric vehicles does exist there. TBNA could develop and expand the capacity to manufacture hybrid vehicles and the components for hybrid and electric vehicles, including advanced batteries, power electronics and electrical machines, power trains, internal combustion engines, and emission controls. TBNA might target the global market first and the Chinese market later.

Seventh, multinationals, consumers, and governments worldwide are embracing green manufacturing, aimed at reducing waste streams and the use of toxic materials or eliminating them altogether. China is no exception: Green manufacturing plants are appearing in the country, clean-technology venture capital has started to flow in, and the state council has mandated that TBNA establish a circular economy—one that uses energy, water, and raw materials in sustained cycles to minimize waste and pollution.

Several TBNA-based companies have experience with green manufacturing, and TEDA could become China's center for green manufacturing. If the initial focus were to be on attracting companies at the leading edge of green chemistry and engineering, then TBNA could conduct its own research on green manufacturing processes, especially those that offer cost savings, for implementation throughout TEDA and TBNA.

Related Reading


Lucky Strike?
Arkansas Gets Satisfaction from Rare State Investments in Smoking Prevention and Cessation

By John Engberg, Donna Farley, and Dana Schultz

John Engberg is a RAND senior economist with expertise in program and policy evaluation. Donna Farley is a RAND senior policy researcher with expertise in health policy analysis, program evaluation, and quality improvement theory and practice. Dana Schultz is a RAND policy analyst with expertise in social policy.

In November 2000, Arkansas voters passed the Tobacco Settlement Proceeds Act, a referendum to invest the state’s share of a massive multistate tobacco settlement in seven health-related programs. Together, these programs have been a force behind the state’s downward trend in smoking rates, especially for the most vulnerable populations.

Smoking rates among these populations—youth, young adults, and pregnant women of all ages—show conclusively that these groups are smoking less than would be expected absent the tobacco settlement programming. And in 2007, for the first time, smoking rates for all adults fell significantly below what they had been prior to the initiation of the programs.

Arkansas has been unique among the states by investing all its funds from the settlement in programs that focus on smoking prevention and cessation and other health-related endeavors. These programs deserve continued support and time to fulfill their missions.

True to the Intent
In November 1998, nearly every U.S. state signed the historic Tobacco Master Settlement Agreement, which ended years of legal battles between the states and the major tobacco companies. Under the terms of the agreement, the tobacco companies are now paying the participating states more than $206 billion over a period of 25 years. All states except Florida, Minnesota, Mississippi, and Texas are participants in the agreement, as are the District of Columbia and several U.S. territories. The agreement also constrains tobacco company business practices, particularly the marketing of tobacco products to youth.

Arkansas receives only 0.828 percent of all payments. But among the 46 participating states, Arkansas is unique in the commitment being made by both elected officials and the general public to invest the state’s share of the settlement in health-related programs. Just one of the state’s seven programs, the Tobacco Prevention and Cessation Program, is completely dedicated to smoking prevention and cessation; this program, however, receives about 30 percent of the state’s settlement funds. Four other state programs target the short-term health needs of disadvantaged Arkansas residents, while the remaining two are long-term investments in the public health and health research infrastructure.

The 2000 state referendum also created the Arkansas Tobacco Settlement Commission, giving it the responsibility for monitoring and evaluating the performance of the seven public health programs. The
commission contracted with RAND to evaluate both the progress made by the programs in fulfilling their missions and the effects of the programs on smoking and other health-related outcomes.

**Vantage Point**

From the beginning of the decade to 2007, the smoking rate among all Arkansas adults fell from 26 percent to 22 percent, a rate that is significantly below what it had been prior to the initiation of the state efforts in 2002. The decline in smoking rates is equivalent to 16 percent fewer adult smokers. Although we cannot rule out that this decline is a continuation of a preexisting trend, it nonetheless represents a major milestone for the health of Arkansans.

As shown in Figure 1, the adult smoking rates for 2005–2007 are lower than the estimates for any of the preceding years. Careful examination reveals that the upper confidence limit for 2007 is less than the lower confidence limit for several of the years up until 2002, suggesting a statistically significant decline in adult smoking.

The 2007 rate, however, is only slightly below what would have been expected based on a trend that started before 2002, and the rate has not fallen as much as in other states with comprehensive smoking control programs, suggesting that there is still work to be done. Figure 2 includes a hypothetical trend line that indicates how far the rates would fall if Arkansas’ antismoking programs and policies were as successful as those in California, which has one of the most successful statewide tobacco control programs in the United States. Although the Arkansas rates from 2005 to 2007 were slightly lower than the pre-program trend, they were significantly higher than what would have been observed if Arkansas had experienced decreases similar to those in California.

In Arkansas, there is better news for women than for men. Figures 3 and 4 show the difference. Women are smoking significantly less than would be predicted by their baseline trend, while men are not. This difference is due, in part, to a downward trend for men prior to program initiation, whereas smoking was previously level for women. The change in the trend for women, however, also suggests that tobacco control programming is more effective for women than for men.

Smoking prevalence among pregnant women in particular has been decreasing, albeit very slowly. Their smoking rate was slightly below the expected rates in the years from 2003 through 2007. The lowered rates of around 15 percent are slightly more than one percentage point below the trend and are statistically significant, but the drop from the expected rate has remained steady since 2003, suggesting that no additional gains have been made since shortly after the program initiation.

Several data sources confirm that young people in Arkansas are smoking less than would be expected based on trends prior to the tobacco settlement programs. In fact, substantial decreases in smoking have been found among all five of the following groups: middle school students, high school students, young adults (age 18 to 25), pregnant teenagers, and young...
pregnant women (age 20 to 29). In overseeing the implementation of legislation that requires states to have laws that prohibit the sale and distribution of tobacco products to minors, the federal government has also verified a dramatic improvement in Arkansas’ compliance with such laws.

Reductions in smoking among young people are particularly advantageous because the reductions will provide health dividends to the state for years to come. This conclusion is based on the assumption—which is supported by evidence in the research literature—that young people will not initiate or resume smoking when they are older.

As shown in the first two rows of the table, smoking rates for middle and high school students have dropped dramatically since 2000. Of note, though, the data for some youth groups did not exhibit further declines beyond 2005. These rates should be monitored to make sure that continued progress is made among these vulnerable populations.

The decreases reported in the table do not account for pre-program trends in smoking rates. For example, smoking was increasing for young adults before the initiation of tobacco settlement programming. If this trend had continued, the 2007 rate would have been higher than the 2000 rate. Therefore, the impact of the program is the difference between the estimated 2007 point on the trend line and the observed 2007 smoking rate, which is larger than the difference reported in the table. A similar story holds true for pregnant teenagers (see Figures 5 and 6).

The story differs for high school students. Smoking appears to have been on the decline for these youth since at least 1997. The observed youth smoking rates for 2005 and 2007 fell even lower than the ongoing trend would predict. But the prior downward trend makes the percentage decrease reported in the table an overestimate of the program effect.

Beyond smoking rates, there have been reduced hospitalization rates for a variety of diseases that are associated with smoking and secondhand smoke.

As shown in Figures 3 and 4, Arkansas women are smoking less than would be predicted by their baseline trend, while Arkansas men are not. Beyond smoking rates, there have been reduced hospitalization rates for a variety of diseases that are associated with smoking and secondhand smoke. The strongest evidence is of significantly fewer hospitalizations for strokes and heart attacks since the start of the tobacco settlement funding. While the hospitalization rate for strokes has remained stable nationwide, it has fallen in Arkansas since 2001, even though it had been previously on the rise in the state. Similar rates for heart attacks in Arkansas and the nation have made comparable declines. Hospitalization trends for pneumonia and asthma also show weak evidence of improvement in Arkansas.

Other measures of health will respond to decreases in smoking only after a long time. High rates of cancer and emphysema are the result of many years of high smoking rates and will show substantial declines only after smoking has been reduced for many years.
Merit Deserved

The seven Arkansas programs supported by the tobacco settlement funds have continued to expand their reach in improving the health of Arkansans. The Tobacco Prevention and Cessation Program includes community prevention programs, school education programs, enforcement of youth tobacco control laws, public awareness campaigns, minority initiatives, and other efforts, all of which follow the guidelines of the U.S. Centers for Disease Control and Prevention (CDC). The four state programs that target the short-term health-related needs of disadvantaged Arkansans are the Arkansas Aging Initiative, the Delta Area Health Education Center, the Minority Health Initiative, and Medicaid Expansion Programs. The two state programs that expand public health education and the state infrastructure for public health research are the Arkansas Biosciences Institute and the College of Public Health.

Despite the progress of these programs, there is still plenty of room for improvement. Although Arkansas has been a national leader in spending a considerable portion of its tobacco settlement money on smoking prevention, the state still spends only about half of the amount recommended by the CDC for prevention efforts. Increasing the funding to CDC-recommended levels would help Arkansas extend its gains in smoking reduction.

Another concern is that the work of the Tobacco Prevention and Cessation Program has been distributed unevenly throughout the state, with some areas receiving substantially more services than others. Our analysis provides weak evidence that coun-

### Many Vulnerable Populations in Arkansas Are Smoking Less Than Would Be Predicted by Their Prior Trends

<table>
<thead>
<tr>
<th>Population</th>
<th>2000 Rate (percentage)</th>
<th>2005 Rate (percentage)</th>
<th>2007 Rate (percentage)</th>
<th>Percentage Decrease Between 2000 and 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle school students a</td>
<td>15.8</td>
<td>9.3</td>
<td>9.5</td>
<td>39.9</td>
</tr>
<tr>
<td>High school students a</td>
<td>35.8</td>
<td>26.3</td>
<td>20.4</td>
<td>43.0</td>
</tr>
<tr>
<td>High school students b</td>
<td>34.7</td>
<td>25.9</td>
<td>20.7</td>
<td>40.3</td>
</tr>
<tr>
<td>Pregnant teenagers (14–19) c</td>
<td>21.5</td>
<td>16.1</td>
<td>16.1</td>
<td>25.1</td>
</tr>
<tr>
<td>Young adults (18–25) d</td>
<td>31.2</td>
<td>28.9</td>
<td>26.1</td>
<td>16.3</td>
</tr>
<tr>
<td>Young pregnant women (20–29)</td>
<td>15.9</td>
<td>15.2</td>
<td>15.3</td>
<td>3.8</td>
</tr>
</tbody>
</table>

**SOURCES:** a Arkansas Department of Health and Human Services. b Arkansas Youth Risk Behavior Survey. c RAND calculations based on birth certificates, adjusted for changes in population demographics. d RAND calculations based on the Behavioral Risk Factor Surveillance System, adjusted for changes in population demographics.

**NOTE:** The estimated decreases are significant at a 95-percent confidence level for all populations.
ties with greater prevention efforts have experienced larger decreases in smoking rates, yet the variation in program spending appears unrelated to the need for smoking programs. The state should investigate how grants and technical assistance are being awarded to the counties. The state should also help communities that have high smoking rates prepare high-quality grant applications for the prevention and cessation programs funded through the tobacco settlement.

Medicaid Expansion Programs should intensify their outreach efforts and increase enrollment.

The Medicaid Expansion Programs have not been fully spending their funds to extend health services to low-income populations. The unspent funds mean not only that the programs may be underutilized but also that federal funds that would otherwise be available for these services are not being tapped. Thus, the Medicaid Expansion Programs should intensify their outreach efforts and increase enrollment to meet their spending targets.

Most important, we encourage Arkansas policymakers to reaffirm their commitment to dedicate the tobacco settlement funds to health-related programming. To do justice to the services, education, and research that these programs are now delivering, they should be given the continued support and time necessary to fulfill their mission of improving the health of Arkansas residents. We believe that additional progress can be made toward reaching this goal.

Related Reading


Arkansas House Speaker Robbie Wills, D-Conway, left, is joined by Senator Tracy Steele, D-North Little Rock, center foreground, and others during a February 2, 2009, news conference called by the supporters of increased tobacco tax legislation to fund state health programs. The next day, four Republicans broke ranks to help supporters obtain the three-fourths majorities needed in both of the state’s legislative chambers to pass the tax increase. Two weeks later, the tobacco tax hike became law.

AP IMAGES/DANNY JOHNSTON
New Books from the RAND Corporation

THE GLOBAL SECURITY ENVIRONMENT

Occupying Iraq: A History of the Coalition Provisional Authority
James Dobbins, Seth G. Jones, Benjamin Runkle, Siddharth Mohandas
Focused on the activities of the Coalition Provisional Authority (CPA) from May 2003 to June 2004, this book is based on interviews with many of those responsible for setting and implementing occupation policy, on the memoirs of American and Iraqi officials who have since left office, on journalists’ accounts of the period, and on nearly 100,000 never-before-released CPA documents.
410 pp. • 2009 • $40 (paperback) • ISBN 978-0-8330-4665-9

Imported Oil and U.S. National Security
Keith Crane, Andreas Goldthau, Michael Toman, Thomas Light, Stuart E. Johnson, Alireza Nader, Angel Rabasa, Harun Dogo
In 2007, on a net basis, the United States imported 58 percent of the oil it consumed. This book critically evaluates commonly suggested links between these oil imports and U.S. national security. The authors state that the two most serious threats to U.S. economic security are a large disruption in global oil supplies and higher consumer costs associated with the disruption.
126 pp. • color charts • 2009 • $38.50 (paperback) • ISBN 978-0-8330-4700-7

Security in Mexico: Implications for U.S. Policy Options
Agnes Gereben Schaefer, Benjamin Bahney, K. Jack Riley
The United States has a significant stake in the success or failure of Mexico’s security reform measures due to problems related to drug and human trafficking, corruption, weapon smuggling, and gang violence spilling into the United States. To help inform the debate, this book examines a set of policy options for the United States.
106 pp. • 2009 • $29.50 (paperback) • ISBN 978-0-8330-4719-9

MITIGATING THE TERRORIST THREAT

The Evolving Terrorist Threat to Southeast Asia: A Net Assessment
Peter Chalk, Angel Rabasa, William Rosenau, Leanne Piggott
Building on prior RAND research, this book examines the historical roots of militancy in the Philippines, southern Thailand, and Indonesia in order to provide a context for the degree to which local agendas are being either subsumed or shaped by extremist movements. Moving beyond simple terrorism analysis, the researchers also examine government responses to militant movements in the region, including counterterrorist initiatives, military and policing strategies, hearts-and-minds campaigns, and funding and support from international organizations and governments (including the United States).
264 pp. • 2009 • $33.50 (paperback) • ISBN 978-0-8330-4658-1

Film Piracy, Organized Crime, and Terrorism
Gregory F. Treverton, Carl Matthies, Karla J. Cunningham, Jeremiah Goulka, Greg Ridgeway, Anny Wong
These research findings concern the involvement of organized crime and terrorist groups in counterfeiting products, ranging from watches to automobile parts and from pharmaceuticals to computer software. The authors present detailed case studies from around the globe in one area of counterfeiting, film piracy, to illustrate the broader problem of criminal—and perhaps terrorist—groups finding a new and little-discussed way of funding their activities.
180 pp. • 2009 • $29.50 (paperback) • ISBN 978-0-8330-4565-2
“I have been interested in end-of-life issues since my training as a medical social worker in the late 1950s. The medical and moral issues involved in care for the dying are even more complex now. My husband and I decided to fund a large-scale analysis, using scientists at RAND and UCLA, to identify the criteria for best end-of-life treatments. It is our hope that patients with terminal illnesses will be treated effectively, efficiently, and empathetically by teams of well-trained practitioners.”

—Mary Kay Farley is a member of the RAND Health Board of Advisors and an honorary member of the American Academy of Orthopedic Surgery. She has been a director of hospital foundations in Florida, New York, Michigan, and California. Her husband, James D. Farley, is chairman emeritus of the John A. Hartford Foundation, which funds grants in the science and practice of geriatric medicine.