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TB bill gets snagged midflight

It only took one person to halt the passage of a bill that would have infused millions of dollars in federal aid to TB programs. Details for passage by unanimous consent had been worked out, and a happy ending seemed assured when the bill was placed on hold. The American Lung Association is rallying a campaign to bring a change of heart . . . . . cover

Northern Africa meets southern Maine

When 1,100 Somalis immigrated to Lewiston, ME, over the course of the last year, many of Lewiston's 36,000 inhabitants responded by pitching in to make the newcomers feel at home. Half the Somalis have found jobs in the depressed local economy, but the town's welfare budget has doubled, and some citizens' patience is at an end. Meanwhile, TB controllers are trying to figure out how to do targeted testing and treatment of a group of nationals who've posed plenty of challenges to other TB programs 123

Does tobacco use exacerbate TB?

It seems like a no-brainer to say you shouldn't smoke if you have TB. But research to prove that smoking makes TB worse must contend with a tangle of confounding factors. Now a spate of new reports released at an Indian conference claims to have found more data to support linkage between the two. 125

TB as a union bargaining chip

Last month it was widely reported that there were 18 active cases in a New York State prison. Not so, officials say, due to the usual confusion of active cases with tuberculin skin-test conversions suggesting latent infection. That doesn't change the way the 24,000-member correctional officers' union in the state feels. Now that a contract is about to expire, New Yorkers can expect to hear about the dangers of TB, HIV, and hepatitis C, and why they should all add up to a pay raise 126

Looking out for workers in MDR-TB hot spots

WHO/CDC/IUATLD guidelines on TB infection control for health care workers in resource-poor settings are being revised and

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Federal TB bill hits late snag in dispute over funding

Time to make some noise, ALA urges

For a few glorious days last month, a bill that would have transfused millions of badly needed federal dollars into state and local TB control programs seemed assured of a smooth and speedy passage through the Senate. Introduced by Sens. Ted Kennedy (D-MA) and Ted Stevens (R-AL), the Comprehensive TB Elimination Act (S. 1115) had deftly cleared committee and was poised for passage by unanimous consent, a procedure often used to pry loose bills with strong bipartisan support that get stuck in last-minute legislative logjams.

But before the bill could be introduced onto the floor, Sen. Jon Kyl (R-AZ) placed a hold on it, saying it simply would cost taxpayers too much money. (And no, the dollar amount named in the bill wasn't negotiable, he told lobbyists later that week.) The bill would have added $235 million to the federal TB budget, which has been essentially flat for eight years in a row, and stood this year at an anemic $126.5 million.

As the clock ticked off the handful of days remaining until midterm elections, the American Lung Association scrambled to alert local chapters, and was urging other Republican sponsors of the bill in the Senate (including Stevens) to persuade Kyl to relinquish his hold on the bill.

After the November elections, a lame-duck Senate conceivably could still approve the bill through the regular channels. But even if that happened, it's unlikely it would leave enough time for the bill to win passage in the House. That would mean starting the whole torturous process over again from scratch in a new Congress next year.

That came as bad news to TB control programs and other public health advocates. "This is a terribly, terribly short-sighted move," says **Lee B. Reichman**, MD, MPH, executive director of the TB Model center at the New Jersey Medical School in Newark. "This would

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tailored more specifically to the needs of various regions. Meanwhile, researchers are looking at how infection control measures are practiced — or not practiced, as the case may be — and worrying about how to close the gap between what ought to be and what is. In both cases, the driving force is the high stakes faced by health care workers exposed to strains of disease that are extremely hard to cure 127

How to scale up a pilot project fast

The challenge for Partners in Health is to figure out how to quickly disseminate its package of community-based treatment for MDR-TB patients in a resource-poor setting. To do that, the nonprofit has teamed with an innovative Boston firm that applies concepts gleaned from industry to health care systems. A technique called Breakthrough Theory uses quality circle-type groups of experts to conduct many small tests of change at the front lines — as opposed to imposing a single, often-unwieldy package of changes dictated by someone at the top 128

New trial sites selected

Three new sites were announced last month by the Tuberculosis Trials Consortium of the Division of Tuberculosis Elimination of the Centers for Disease Control and Prevention 129

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have provided money that's urgently needed to protect Americans not just from TB but also from the scourge of multidrug-resistant TB."

TB experts in Kyl's home state say they certainly could have used the extra money. "I think all states are suffering from the economic downturn, and we're no exception," says **Cheryl McRill**, MD, state TB controller. Though TB rates have fallen, case totals in Arizona have held steady, in part because of the state's booming population, which has grown by half over the past decade.

The biggest challenge, McRill adds, is making sure there's continuity of treatment for deportees. That means keeping in touch with all the links in the correctional services chain, from local jails to prisons to immigration detention facilities, so they tell TB controllers when prisoners still in treatment are about to be deported. Recently, in a collaboration between Arizona TB controllers and TB

experts across the border in Sonora, Mexico, free housing was established, providing a place where patients can stay while they finish treatment.

But across the country, budgets continue to tighten for public health programs such as those. According to a recent report from the Kaiser Commission on Medicaid and the Uninsured, state revenues fell an average of 10% last quarter, marking the fourth consecutive quarter of declines. Forty-one states are in the process of cutting back patients from Medicaid rolls, and state TB controllers across the country report they are working with budgets that have been pared to the bone. **(See *TB Monitor*, October 2002, p. 109)**.

Along with the money the bill would have provided to federal domestic TB control, it would have increased the budget for TB vaccine research at the National Institutes of Health to $240 million.

Sherrod Brown (D-OH) and Connie Morella (R-NJ) originally introduced the bill in the House on World TB Day in 2001. At the same time, Brown also introduced the Stop TB Now Act, the international version of the Comprehensive TB Elimination Act. That bill, which aims to boost funding for international TB control from $60 million to $200 million, has been tucked into a larger bill that addresses HIV/AIDS funding abroad. The international bill still is active and stands a good chance of passing, congressional observers say. ■

Small town staggers under Somali influx

TB issues loom large for 1,100 migrants

A placid town by a river in south-central Maine is suddenly grappling with a big case of culture shock. Since spring of last year, 1,110 Somali refugees have streamed into Lewiston, a village of 36,000 people, many descended from French-Canadians who arrived in the 19th century to work in the red-brick textile mills that still dot the shores of the Androscoggin River.

Flocking from refugee settlements across the country, the Somalis have been drawn by reports that Lewiston is a safe and affordable place to live — and, some add, by reports of Maine's generous welfare benefits. Most Lewiston residents have been working hard to make the newcomers feel welcome; but the social services in the town are stretched thin, and state TB experts are struggling to see how an already tight budget can be stretched even further to cope with the new arrivals.

"We were already having a tough time dealing with 300 refugees a year," says **Kathleen Gensheimer**, MD, MPH, state epidemiologist and head of the TB control program. "This seems almost overwhelming."

The Lewiston newcomers aren't the first of their kind in the state, which has another enclave of Somalis in Portland, to the south; but the speed with which the immigration has taken place has caught townspeople by surprise. "Typically, a city starts out with a small refugee resettlement program, and then other family members and friends join them over a long period of time," says **Phil Nadeau**, Lewiston's assistant city manager. "Here, it's happened almost overnight."

Nadeau says a majority of the immigrants came from metro Atlanta, where they'd reportedly became fed up with steep rents and high crime rates. Several years ago, the Atlanta Somali community dispatched several "scouts" to scour the country for something better. Their favorable reports from Maine triggered an exodus from Atlanta; and soon the word spread to Somali communities in Minnesota, Ohio, and as far away as Canada.

By the start of last summer, almost a thousand Somalis had settled in, and another thousand were rumored to be on the way. The town decided it was time to put on the brakes and asked the newcomers to tell their friends and kin to stop coming, or at least wait. Last month, the mayor published a letter making the request formal; reaction to that letter has been decidedly mixed among both Somalis and Maine residents. But overall, the go-slow strategy seems to be working: instead of the expected 1,000, only 200 more Somalis arrived over the summer.

Scattered across the countryside

Gensheimer says she's still in the planning stages as she tries to decide how to approach the newcomers. "Among primary refugee populations who have come to Maine in the past, we know that rates of latent TB infection are 50%-60%," she notes. "Translate that to a thousand people, and you can see there's the potential for a substantial impact. We don't want to sit back and just let these cases develop."

But before screening and treatment can even begin, there are questions to answer. Have the

Somalis have already been screened during their original resettlement process, and if so, what were the results? Have they been treated for latent TB infection, and if so, have any completed treatment? Finding the answers hasn't been easy, since the immigrants have come from many different parts of the country, frequently with neither records nor clear recollections about past treatment.

Once the community's screening needs have been determined, finding a way to get access to everyone won't be easy, Gensheimer says. Most of the Somalis have settled in the downtown area, in tenements vacated after mill closings several years ago. There they have established a mosque and even a small *halal* market, Nadeau says.

But entry-level jobs suitable for those with no English or with minimal job skills are scarce. About half the adults have found some sort of work, but they are toiling in egg factories or seafood processing plants flung far across the Maine countryside, not in a single worksite where targeted testing, for example, could readily be carried out.

Doing school-based TB screening might offer another approach, but Gensheimer worries about stigmatizing kids whose race and culture already set them apart. Doing nothing, of course, is hardly an option, she adds. "If active cases do develop, that would not only be terrible from a public health standpoint, it would also run the risk of provoking an anti-immigrant backlash," she says.

Reports from other cities

Meanwhile, Nadeau and others have been working to establish job training programs, English language classes, and adult education courses. The town is forging partnerships with sister cities where entry level jobs are available, and Nadeau is trying to convince a job training program to send staff to work on-site in Lewiston. Classes also are being held for potential employers who have never worked with someone of another culture, Nadeau adds.

It helps that the small town is home to two major hospitals. "Clearly, that enhances our abilities to respond to this group's problems," says Nadeau. No one suggests there will be a shortage of health problems, he adds.

TB experts who have worked with Somalis say it hasn't been easy. In Seattle, it's been "challenging," says **Charles Nolan**, MD, director of the TB control program at Harbor View Medical Center. "Even among all the other refugee groups we've seen, their background and culture are very different," he says. "Probably in part due to the terrible events they're endured, this group has been as overwhelmed by the resettlement process as any we've seen. Because of their cultural understanding of TB as a disease, it's a difficult diagnosis for them to accept, and it's especially hard when you're trying to get a program going for targeted testing."

In Columbus, OH, home of the nation's second-largest community of Somalis (after Minneapolis, with the biggest), TB controllers echo such comments. "In Somalia, TB is a disease that causes a lot of shame, much like HIV here," says **Debbie Coleman**, RN, director of the Infectious Disease Division of the Columbus Health Department. "They don't want to talk about it, and they don't want anyone else to know they have it." Having lived with scarcity for so long in refugee camps, the Somalis tend to hoard medications, she adds. "In their culture, it's hard to get medications, so you stockpile them until you feel sick," she notes. "But that makes it hard to know if you're getting medication into people for prevention," an issue that's of special importance with children.

A different sense of time

Getting patients to show up at the clinic on time has also been tough, given the Somali concept of time. "You tell someone to come to the clinic at 2 o'clock tomorrow, and they might take that to mean 'sometime tomorrow,'" Coleman explains. "They show up after everyone has gone home, and they can't understand why the clinic isn't still open."

Strange as it sounds, telling one patient from another is much harder than you'd think, she adds. That's partly because most Somalis typically don't keep track of birthdays (many claim Jan. 1 as their birthday), or even their birth years; but also because many share just a handful of names, Coleman says. Thus, clinic nurses may be confronted with two patients with the exact same name, both of whom also claim to have been born on Jan. 1. (Sometimes the clinic resorts to taking photographs to keep patients straight.)

Columbus TB controllers have responded by holding many hours of educational sessions to make sure all employees are up to speed on the culture. They've also printed Somali-language versions of all the pertinent brochures (even though, as Coleman notes, "the language looks so strange and unfamiliar to us that we find we have to label stuff. It's not at all like Spanish, where you can pretty

much tell what something is by looking at it").

Most important, TB controllers in Columbus say they finally hit on the strategy of hiring two ethnic Somalis, both with backgrounds in health care, to work hand-in-hand with the outreach nurses. Getting the Somalis on the payroll was tough, Coleman adds, since both fled their homeland hurriedly, with no time to take work records or any evidence of having completed educational classes.

Hiring insiders did the trick

But the effort to get the two certified and hired has really paid off, she adds. "They can relate to the patients in a way that we cannot," she says. "They can build a relationship with the family." They also are less expensive than interpreters, since with their medical backgrounds, they also can do skin tests, bring patients in for chest X-rays, and help get them registered when they walk into the clinic.

That's not to say that Columbus' experience now is trouble-free. There's considerable friction between the Somalis and the town's African-American community, so much that sometimes community mediators must be called in to defuse trouble. Some native-born residents also resent the sheer volume of services the Somalis require, from TB care, to immunizations, to extensive dental care for teeth unaccustomed to a high-sugar Western diet.

The male-dominated Somali culture also forbids women from being examined alone, often prevents them from speaking for themselves, and generally makes it hard for clinicians to communicate effectively with their female Somali patients, notes Coleman.

Despite the hurdles ahead, many Lewiston citizens seem determined to make the Somalis feel welcome and help them find their place in this small town. "They'll have to do their share, too," warns Nadeau. "It's definitely a two-way street."

Perhaps because Lewiston's citizens, including Nadeau, trace their roots to French-Canadians who faced considerable prejudice when they settled in the area back in the 1800s, most townspeople seem determined to react positively to the changes in their lives.

"I don't look at this as a problem, but as an event which will someday be regarded as a success," Nadeau says. "The way I see it, we really have no other choice if we want to come through this intact as a community." ■

Tobacco and TB linked, Indian research suggests

Reports: Smoking drives up cases, deaths

In India, clinicians have long observed a relationship between TB and smoking, but evidence to support or dispute a cause-effect linkage between the two tends to be weak. New data from India and other countries, though still preliminary, show a strong cause-and-effect relationship between tobacco used and TB disease and death, an Indian researcher says.

"Until recently the topic got little attention, partly because there is little TB in countries where the effects of smoking and tobacco have been extensively researched," says **Prakash Gupta**, PhD, a senior research scientist at the Tata Institute of Fundamental Research in Mombai. "In India, of course, there are still many deaths from TB. So if smoking is causing an increase in those deaths, that is certainly a matter of interest and concern."

U.S. TB experts familiar with previous studies on the subject agree there may be a connection, though data from previous published studies suggest it may be only modest. "When you look at countries like India, China, and Vietnam, all places where there's a lot of tobacco use, it seems as if it's a potentially important risk factor," says **Michael Iademarco**, MD, associate director for science at the Center for Disease Control and Prevention's Division of TB Elimination. "There are many confounding factors at work, so it's hard to tease this one out. But certainly, the connection is one we're looking at."

Gupta conducted a cohort study of about 100,000 people in Bombay by going house-to-house in working-class and poor neighborhoods. The original purpose was not to focus on possible links between TB and tobacco use, but rather to estimate tobacco-attributable mortality of every kind, he adds.

Study shows twice the risk

The cohort included approximately 60,000 women and 40,000 men, all ages 35 or older; after five years, researchers did a follow-up, again going house-to-house. Clinical records were not examined, but subjects reported on their own disease status, if any; and deaths that had occurred in the interim were matched according to cause by

referring to records of the Bombay Municipal Corp. The analysis showed there were at least twice as many cases of active TB, as well as more deaths from TB, among smokers than nonsmokers, says Gupta. Other unpublished studies that have been recently completed, another of which also comes out of India, suggest TB risks are elevated by tobacco use as much as fivefold, he adds.

In Gupta's study, increased risks for death and disease due to TB applied to subjects who used all three kinds of tobacco consumed in India — that is, cigarettes, *bidis* (an Indian "smoking stick"), and smokeless tobacco — although risks were highest among those who used cigarettes and *bidis*. Why smokeless tobacco should also drive up risks "is not yet totally understood," adds Gupta, "but we're seeing the risk there at lower level, and we don't see it as a causal relationship."

With cigarettes and *bidis,* evidence for causality is much stronger, he adds. For one thing, data show a positive relationship between response and the dose and duration of smoking. In addition, Gupta notes, a causal link is biologically plausible. "Cigarette smoking affects the lungs in many ways, reducing the immune response and affecting the function of the cilia," he says.

Data from Gupta's study, along with that data from other recent and earlier studies, were presented at a conference held in November last year in India. The Tata Institute hosted the conference, with additional sponsorship from the Centers for Disease Control and Prevention and the World Health Organization. Three reports on TB and tobacco presented at the conference — two from India, and another from South Africa — have been submitted as a group for publication. ■

TB bargaining chip in union struggle?

Officers say risks merits more pay

An incorrect report of an extensive outbreak of TB at a New York state prison last month points to the role TB and other infectious diseases are playing in a simmering dispute over wages and working conditions for correctional officers.

In fact, rates of TB, hepatitis C, and HIV have all been falling inside state prisons for the past several years, says **Lester Wright**, MD, chief medical officer of the New York Department of Corrections.

At the same time, the threat of the three diseases has become an important talking-point in arguments union officials are using to try to win more sympathy as they prepare to renegotiate contracts next year. In conversations with correctional officers, it seems clear that many who make their living guarding the state's prisoners are genuinely fearful of contracting TB, HIV, and hepatitis C.

"You've got 70 inmates and one officer in a dorm, and you're sitting there just breathing all that stuff," says **Richard Harcrowe**, the newly elected president of the 24,000-member New York State Correction Officers and Police Benevolent Association. Harcrowe adds he worries that getting skin-tested for TB once a year may not be enough. "When I took my kid to the doctor the other day, she told me I should be wearing one of those moon suits to go to work," he says.

The New York state correctional officer who contracted the multidrug-resistant TB and infected his young son seems to have been incorporated into a sort of institutional memory, and several union officials referred to the 10-year-old episode as if it happened only a few weeks ago.

Mandatory prophylaxis — well, almost

Union officials also say inmates with hepatitis C or HIV use their own bodily fluids as assault weapons. "It's not just a question of getting attacked or stabbed or pushed down the stairs anymore," says **Tom Butler**, a media spokesman for the union. "Inmates throw their urine and feces at officers. They'll bite down on their lip until it bleeds, and then spit a spray of blood into an officer's mouth or eyes."

Others in the union cite the case of the officer who contracted hepatitis C on the job, and is currently on a waiting list for a liver transplant. "He's 46 years old, with three kids," reports **Anthony Farda**, the union's central region vice president. Many officers' biggest fear, he adds, is "the worry that after you leave the work environment, you could go home and infect the ones you love."

Ironically, rates of TB and other infectious disease have dropped dramatically inside the system. TB is down from 225/100,000 10 years ago to 24/100,000 last year, Wright says. Less than half of last year's case rate reflects cases diagnosed inside the system; considering only that smaller number, the case rate last year was only 11-12/100,000. "Our new case rate was lower than that of the

borough of Manhattan, which is where I live," Wright adds.

One important tool in the fight against TB has been the state's aggressive approach to prophylaxis, Wright says. "Our inmates come into the system with a skin-test positivity rate of about 25%," he points out. "In my system, it isn't mandatory that they all get prophylaxis — but it's pretty darn close to it." That means either isoniazid or short-course treatment, which often translates to rifampin alone, instead of the sometimes-troublesome combination of rifampin plus pyrazinamide, he adds.

Just two cases, not 18

Last month's incorrect report — that there were eighteen active TB cases at Marcy Correctional System — may reflect some of the evident disconnect at the union between perception and reality. Although results of several cultures still are pending, there are only two cases at Marcy so far, both pan-sensitive — one index case, and one secondary case, says Wright. (Cultures still were pending for several more subjects.)

The investigation has also uncovered 50 tuberculin skin-test (TST) conversions, including 47 in inmates and three in staff members. The index case was hospitalized within two weeks after first complaining of symptoms; hence, the large number of conversions simply reflects that "this was a 'hot' case," adds Wright. "Why some cases are more infectious than others, we have no way of knowing."

Because there were so many conversions, Wright says he decided to err on the side of caution, collecting sputum samples from anyone with impaired immunity or a TST conversion; and from anyone in the circle of contacts with any symptoms, regardless of skin-test status.

HIV seroprevalence rates inside the prisons have also been falling, at the rate of about 1% a year for the past dozen years. There still are about 5,000-5,500 prisoners in the system who are HIV-positive, he adds; that amounts to a prevalence of 5% to 6% among males, and about 14% among females. All HIV-infected inmates are treated with "everything in the books," he adds. "Since the advent of [Highly Active Antiretroviral Therapy], our death rate has fallen over 90%."

Hepatitis C rates are higher — about 14% in males, and about twice that in females. Those infected with the virus, which tends to establish a chronic infection the sequellae of which include cirrhosis and liver cancer, all are treated with combination therapy, a costly step not many state systems have taken.

Part of the union's argument clearly has to do with money, not just infectious disease. Officers working for the state start in "the low $20,000s," and must work for 20 years before they're making $50,000. By comparison, a New York City correctional officer typically makes $50,000 within five years, Farda adds. The low salary makes it especially hard on officers stationed in the southern part of the state, where costs of living are higher, Butler adds. "Try living anywhere but your Mom's basement on $20,000 a year in the New York City area," he says. Farda says that to make ends meet, some officers must resort to food stamps; and that those stationed far from their families make do by cramming in eight or more to an apartment during their work week.

"I'm no medical expert," Farda says. "But working in those places isn't pretty. And to fear that I've infected someone in my family with a terrible disease — that's as bad as it gets." That, he and others in the union say, ought at least to be worth some more money. ■

Workers often at risk in MDR-TB hot spots

Congregate segregation simple but effective

With tuberculosis cases on the rise internationally, experts are looking more closely than ever at the principles and practice of TB infection-measures aimed at protecting health care workers in resource-poor settings. Refining those principles, and making sure they're applied correctly, is especially important in the 22 countries with a high burden of multidrug-resistant TB (MDR-TB).

"With MDR-TB, the stakes are much higher," notes **Edward Nardell**, MD, chief of pulmonary medicine at the Cambridge Hospital and director of TB research for the Harvard-affiliated nonprofit, Partners in Health. Unfortunately, experience shows that in resource-poor settings there's frequently a gap between what ought to be done, and what really happens, Nardell adds.

For example, when investigators at a hospital in Lima, Peru, recently evaluated every admission for TB, they found plenty of trouble — including

TB cases that were smear-positive, multidrug-resistant, or complicated by coinfection with HIV. That means that on a [typical] ward of this hospital, you might find a patient with undetected TB right next to a patient with undetected HIV," Nardell points out.

But even if the index of suspicion were cranked high enough to find more such cases, what would the Lima hospital do with them? Putting each suspect or confirmed case into respiratory isolation is not a luxury available to facilities in most resource-poor settings, Nardell points out. The next best thing is to practice "congregate separation," he continues. That means one ward for TB cases; another for HIV or coinfected cases (preferably with single rooms for each patient); and a third for suspect or confirmed cases of MDR-TB. That way, health care workers can be forewarned, and take steps to protect themselves, from opening a window to donning a particulate respirator.

Looking at ventilation in Russia

When the setting shifts to a chillier climate — Russia, for example — there are different challenges, says **Peter Cegelski**, MD, MPH, senior medical epidemiologist at the Centers for Disease Control and Prevention's (CDC) Division for TB Elimination. There, opening the window may not be an option for most of the year. That means paying more attention to modifications to ventilation systems, he notes — for example, moving heated air into and directly back out of a room; or if air is to be recirculated, cleaning it with ultraviolet germicidal radiation or high-efficiency particulate filters. That's the sort of refinement he and others at the CDC are adding to current guidelines that will be tailored to the needs of settings such as the former Soviet Union, he adds.

Where Nardell and Cegelski diverge is on the issue of what to do when the worst happens, and a health care worker appears to have been infected with MDR-TB. TB experts headed to Partners in Health's DOTS-Plus project in Lima are told to consider getting a BCG vaccine, says Nardell, who adds he's thinking of doing so as well.

"We say that knowing it's controversial, and that you'll lose the efficacy of the TB skin test," he adds. But meta-analysis of BCG's efficacy indicate the vaccine gives some protection, which is certainly better than none, he points out; as for the loss of the TST, perhaps Quantiferon, the new diagnostic test which measures serum levels of gamma interferon, will prove its worth as a feasible substitute.

Cegelski disagrees. "I'd advocate against BCG's use for someone going overseas to work in high-risk setting, since there's no evidence it protects adults," he says.

Both men agree there are no data to say whether prophylactic regimens advised for those infected with MDR-TB — generally, a fluoroquinolone, plus pyrazinamide (PZA) or ethambutol — are worth the troublesome side effects they generally cause. "The experience with PZA and quinolones has been terrible," says Nardell. "People simply can't take it for six months."

Maybe one of the newer and more potent fluoroquinolones could work solo, he concedes, but studies are lacking on that point as well. Cegelski says he'd probably take his chances and forego prophylaxis altogether, since the lifetime risk of developing TB from infection — even the often incurable variety of the multidrug-resistant kind — is, after all, only 10%. ■

Industry showing the way for health system change

Biz guru helps pilot scale up fast

You might think fast-food purveyor McDonald's has little to offer to TB patients in Peru with multidrug-resistant TB (MDR-TB). But when it came time to scale up a model for treating MDR-TB in resource-poor settings, the Harvard-affiliated nonprofit Partners in Health called on **Donald Berwick**, MD, the CEO and founder of the Boston-based Institute for Healthcare Improvement (IHI). When Berwick sees customers lining up for French fries and cheeseburgers, he doesn't think about trans fats, but about queuing theory. That's because Berwick (who also teaches pediatrics at Harvard University) is in the business of making systems — health care systems in particular — run better. For the past 12 years, he's been adapting the same methods that helped Toyota revolutionize the auto industry 40 years ago and putting them to work in health care.

Those methods, pioneered by American industrial gurus such as Edwards Deming and Joseph Juran, discarded a system of quality assurance based on "gotcha"-style inspections and replaced it with worker empowerment, and analytical tools

aimed at finding and weeding out a system's built-in flaws.

Queuing theory, it turns out, is how McDonald's figures out how many cash registers should be open at what time of day. Berwick used that concept to help some doctors' offices serve their patients more efficiently — so that instead of fidgeting in the waiting room for an hour, the patients can now call any day of the week and book a same-day appointment. Even better, a doctor reportedly sees these lucky health care consumers as soon they walk in.

"It's a matter of analyzing patient demand, and then matching capacity to fit that," says **Jonathan Small**, communications director at IHI. In the same way, Berwick analyzed how big hotel chains get room service to guests in a timely fashion each morning, and used the same techniques to streamline medication delivery at hospitals.

Change in small, fast packages

When Berwick teamed up with Partners in Health (PIH), the challenge wasn't to make PIH's model more efficient, but instead to scale it up quickly, by getting the best-practices package adopted all across Peru as fast as possible.

"We think the same methods that worked for Toyota's production line are going to help us scale up very quickly in a resource-poor setting," says **Jim Yong Kim**, MD, executive director and co-founder of PIH.

To do that, IHI will use what's called the Breakthrough Theory. The idea grew out of Berwick's frustration with more traditional methods of bringing about change, says Small.

"We used to simply teach lots of courses, bringing people together and giving them these new concepts," he says. "But we found that when they got back to their workplace, they didn't necessarily know how to get things done."

What worked much better, it turned out, was to assemble a group, teach everyone new approaches to a problem, and then send them all back home to try out a specific change or two. A few months later, the same group would reconvene to talk about how things had worked out, and to pick up a new assignment.

The result, Small says, was a revolution by increments — the accumulation of many small changes, which eventually equaled sweeping, systemwide alterations. "It's basically a model for spreading new ideas very rapidly," he adds.

Even when proposed changes don't work out, the strategy provides feedback loops that allow for corrections. That means it's far more cost-effective than the usual way of bringing about systematic change, notes Small. "What's really expensive are huge improvement models that are run from the top down," he points out. "What we're doing amounts to thousands of little tests run at the front lines."

That's the idea in Peru, where dozens of teams from health care centers are now meeting and working to spread the PIH model. There, the learning process is more a two-way street than usual, Small adds that since TB experts are having to show the business wonks a thing or two about life in the developing world. "We're not accustomed to working in Spanish, for one thing," notes Small. "More to the point, we're used to having substantial communication linkages among our clients, with teleconferencing and e-mail and so on. They're having to show us how to operate effectively without all that."

Someday, Kim says hopes the Berwick model will be used to tackle other challenges, such as the AIDS pandemic. Again, the problem isn't figuring out what to do — after all, rich countries have already devised effective treatments for their own AIDS patients — but how to deliver those treatments on a grand scale to the millions of poor people who urgently need them. ■

TBTC sites added, Brazil among them

Four sites also get extra funds

Three new sites were announced last month by the Tuberculosis Trials Consortium (TBTC) of the Division of Tuberculosis Elimination (DTBE) of the Centers for Disease Control and Prevention (CDC):

- Emory University in Atlanta, where the principal investigator (PI) will be Susan Ray, MD, assistant professor of medicine in the division of infectious diseases.
- University of Southern California in San Diego, where the PI will be Antonino Catanzaro, MD, professor of medicine, the division of pulmonary and critical care medicine.
- Municipal Health Secretariat of Rio de Janeiro, Brazil, where the PI will be Afranio Kritsky, MD, an epidemiologist with the Federal University of Rio de Janeiro known internationally for his work

in TB and TB/HIV research.

Additional funding has also been awarded to four current sites, including:

• University of North Texas in Fort Worth (where the PI is Stephen Weis, DO, professor of medicine, department of medicine, heath sciences center);

• Columbia University (where the PI is Neil Schluger, MD, assistant professor of medicine and clinical chief of the division of pulmonary and critical care medicine);

• University of Southern California/Los Angeles County (where the PI is Brenda Jones, MD, associate professor, department of internal medicine, division of infectious diseases);

• Audie L. Murphy Memorial Veterans Hospital in San Antonio (where the PI is Mark Weiner, MD, assistant professor, division of infectious diseases, department of medicine).

A grant was also awarded by the TBTC to the South African Research Council for starting a TBTC-like consortium of its own, says Rick O'Brien, MD, chief of the research and evaluation branch of the DTBE at the CDC. The South African entity, though it will function autonomously, will work closely in conjunction with the TBTC's goals, O'Brien notes.

In other TBTC news, protocol was approved for Study 27. In addition, the 1,000th patient was enrolled in a TBTC study that looks at rifapentine for treatment of latent TB infection, putting enrollment for that massive trial at one-eighth of the way to completion. ■

10 strategies for trimming Medicaid budget deficits

A new report from the Washington, DC-based American Legislative Exchange Council (ALEC) offers 10 strategies states should follow to cut their budget deficits, including a radical restructuring of benefits programs such as Medicaid.

In *Show Me the Money: Budget-Cutting Strategies for Cash-Strapped States*, Manhattan Institute senior fellow **William Eggers**, author of the report, says, "States are facing their worst fiscal crisis in a decade or more. As hard as it is to fathom, budget problems in fiscal year 2003 might be even worse than they were in 2002."

ALEC was formed more than 25 years ago by state legislators and conservative policy advocates as a membership organization committed to the notion that "the government closest to the people [is] fundamentally more effective, more just, and a better guarantor of freedom than the distant, bloated federal government in Washington, DC."

In his report, Eggers say the causes of deficits estimated at $40 billion are clear — the recession, Sept. 11, spiraling Medicaid costs, and high spending in the mid- and late 1990s. "Add them all up," he says, "and you have the budgetary equivalent of a perfect storm."

Eggers says one of his most important recommendations is to modernize government by reforming entitlement programs, especially Medicaid. He says that states simply have no chance to solve their long-term budget problems if they don't get a handle on the rising cost of entitlements.

With 10-year projections from the Centers for Medicare & Medicaid Services calling for double-digit cost increases well into the future, states are experimenting with a variety of approaches to reducing Medicaid costs, including cutting mental health care; tightening eligibility requirements; reducing payments to providers; lowering drug costs through use of generic drugs and drug rebates; and reducing coverage for acupuncture, podiatry, dental care, home health care, and chiropractic care.

"Some of these proposals make sense," Eggers says. "Some will even save money. But none of them are likely to have more than a marginal impact on the long-term problem of rising Medicaid costs."

He says the real problem lies in Medicaid's defined benefits structure, which fixes benefits and eligibility and makes costs variable — a recipe for skyrocketing costs. The most promising reform plans from Eggers' viewpoint allow consumers to choose among multiple providers; customize benefits according to patients' needs and circumstances; target benefits to the truly needy; and recognize that the Medicaid population consists primarily of three distinct groups — older people, blind and disabled, and low-income families — each of which needs to be treated differently.

Eggers' recommendations for entitlement program reform include:

• Adopt market-based, consumer-choice Medicaid reform under which consumers are given vouchers or refundable tax credits to purchase personal insurance through independent brokers from a variety of state-approved plans, including medical savings accounts, fee-for-service plans, and managed care plans. This approach would require a change in federal

law to turn Medicaid over to the states. Absent such a change, some of it could be accomplished through Medicaid consumer-choice waivers.

• If comprehensive Medicaid reform is not possible, reduce costs through more targeted approaches such as implementing home- and community-based alternatives to institutional long-term care; instituting private pharmacy contracts to manage drug consumption; imposing copayments; contracting for specialized services; eliminating coverage of optional services; using buying pools; and changing the service utilization of existing populations. Eggers says use of disease management programs has been one of the most successful Medicaid reforms.

• Use technology to reduce fraud, abuse, and overpayments. Currently, Eggers says, billions of dollars worth of welfare and Medicaid benefits go to people who are ineligible for the programs. Data brokers and on-line eligibility systems can help fix the problem by instantly verifying the income and assets of Temporary Assistance for Needy Families and Medicaid applicants.

Other strategies for cutting state costs and reforming government proposed in the ALEC paper are to:

• Reduce work force costs since state employee salaries and benefits account for a large portion of state costs. "Most states," Eggers says, "will find it almost impossible to balance their budgets without impacting their employees."

• Impose broad-based spending cuts, even though they are not the best approach because they don't provide any guidance about what services government should deliver or how services should be delivered.

• Sell or lease government assets or enterprises to private entities, turning dormant physical capital into financial capital that can be used for more pressing needs such as rebuilding decaying infrastructure, reducing debt, or cutting taxes.

• Introduce competition into service delivery because private vendors often are able to produce savings through innovation, advanced technology, and a commitment to customer service.

• Reduce or eliminate programs that perform poorly.

• Reward employees for saving money. Eggers says that while most public employees are smart, industrious people, traditional state compensation systems treat all workers the same, giving them little incentive to increase efficiency and perhaps even rewarding inefficiency.

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17. In Lewiston, ME, where health officials are scrambling to deal with a rapid influx of Somalis, the rate of latent TB infection among primary refugee populations in the past has been:
A. 30%-40%.
B. 40%-50%.
C. 50%-60%.
D. 60%-70%.

18. A study in Bombay, India, showed that:
A. There were at least twice as many cases of active TB, as well as more deaths from TB, among smokers than nonsmokers.
B. There was no real difference of TB incidence between smokers and nonsmokers.
C. Smokers were 25% more likely to develop TB.
D. Smokers were 50% more likely to develop TB.

19. Congregate separation is one solution to safeguard the health of care workers in poor countries who work with MDR-TB patients.
A. True
B. False

20. The Partners in Health model for improving health care efficiency currently is incorporating those principles in:
A. Brazil.
B. Peru.
C. Argentina.
D. Somalia.

duplication and overlap costing billions of dollars, the first steps should be to implement performance-based budgeting, coordinate information technology purchases, and consolidate state data centers and small state agencies.

• Use technology to slash overhead. The private sector has started to realize cost savings and productivity increases from information technology investments not yet seen in states, Eggers says.

• Create cost-cutting brigades, powerful independent agencies that conduct periodic top-to-bottom reviews of state programs, agencies, and departments and make recommendations to maintain, eliminate, redesign, or restructure them.

You can find additional information and download the full report from www.alec.org or by contacting Eggers at (202) 223-5450. ■

CE objectives

After reading each issue of *TB Monitor*, health care professionals will be able to:

• Identify clinical, ethical, legal, and social issues related to the care of TB patients.

• Summarize new information about TB prevention, control, and treatment.

• Explain developments in the regulatory arena and how they apply to TB control measures.

• Share acquired knowledge of new clinical and technological developments and advances with staff. ■