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Monday, Feb. 28, 2011 ★ Section E

## Check Up

The Inquirer Health Blog  
Online at [www.philly.com/checkup](http://www.philly.com/checkup)

### A dire alternative to declining health coverage

Opponents of President Obama's health-care overhaul have focused on the requirement that most people buy insurance by 2014 or face penalties if they don't. They say Americans deserve freedom of choice, not government mandates.

Pair enough, says State Rep. Mark Longietti, a Democrat from Western Pennsylvania. But be consistent: Lift the mandate on hospital emergency rooms to screen and treat everyone who comes through the door in dire straits.

If someone who risked not buying insurance arrives on a stretcher, he asks, "should the response be: 'I'm sorry, you decided to take the risk ... you are going die'?" Longietti isn't seriously suggesting that uninsured patients be left to die in the ER. "I'm trying to find a way to bring the issue to debate," he said, responding to a Republican bill — the Freedom of Choice in Health Care Act — that would block the individual mandate in Pennsylvania.

The old ER mandate, part of a law enacted under President Ronald Reagan, results in unpaid hospital bills totaling billions of dollars a year — costs that are recouped, in part, through higher insurance premiums for everyone. The Obama mandate is intended to prevent that scenario on a far larger scale. By forcing everyone to buy insurance, costs are spread out and better coverage can be made more affordable.

Told of Longietti's ER salary, Republican State Rep. Matt Baker, Health Committee chair and sponsor of the freedom of choice act, said: "Well, he makes a good point. And there should be more personal accountability."

But two new mandates, he said, do not make a right. Of course, the health-care system and the overhaul are complex and subject to political spin. Writing in this blog two weeks ago, Robert L. Field, a Drexel University professor of law and public health, traced the Obama mandate back to a 1993 Republican bill in Congress. That bill was based on a 1990 recommendation by the conservative Heritage Foundation. — Don Saputnick

How to warn the sleepy: Scientists look to eyelids and voices to measure the alertness of vehicle operators.



ERIK LEHRSBACH | Staff Photographer  
Top, after staying up all night, subject Maired Stewart is about to begin a voice test administered by Robert A. Prosek, a speech scientist at Penn State. Above, Stewart is fitted with a net of electrodes to measure brain activity as part of the alertness testing.

## Fatigue kills

By Tom Avril  
INQUIRER STAFF WRITER  
There was nothing wrong with the twin-engine plane before it slammed into a wet Kansas field at 230 miles an hour, breaking apart in a fireball and killing the pilot and two passengers.

Nothing wrong with the pilot, either, as far as colleagues could tell. He had seemed active and alert before takeoff, eating snacks in the pilot lounge.

Yet he had been awake for nearly 21 hours and on duty for more than 14, leading federal investigators to con-

clude that fatigue was the probable cause of the 2004 crash. Could someone have sounded the alarm before it was too late? Fatigue is an epidemic in this country, and experts say it is both underrecognized and dangerous — accounting for more than 20 percent of transportation accidents, by some estimates. And while

See SLEEPY on E2

High levels of meat consumption have also been linked to cancers of the breast, bladder, stomach, and pancreas. Experts suspect that haem, the pigment that gives red meat its color, damages cells in the digestive system, leading to cancer. Cooking meat at high temperatures, as on a barbecue, may also create cancer-causing chemicals. — Associated Press

### Rising PSA level not accurate in predicting prostate cancer

A rising PSA level isn't such a good predictor of prostate cancer, after all, and can lead to many unnecessary biopsies, says a large new study. Most men over 50 get PSA blood tests, but they're hugely problematic. Too much PSA, or prostate-specific antigen, only sometimes signals that prostate cancer is brewing — it also can mean a benign enlarged prostate or an infection. And screening often detects small tumors that will prove too slow-growing to be deadly. Yet there's no sure way to tell in advance who needs aggressive therapy.

On the other hand, some men have cancer despite a "normal" PSA count of 4 or below. So for rising PSA still in the normal range, some guidelines urge doctors to consider a biopsy. Sloan-Kettering researchers studied whether considering PSA velocity adds value to the ho-hum-or-not decision in those otherwise low-risk men — and concluded it does. "This is a really important study," said Otis Brubaker of the American Cancer Society, who wasn't part of the research. "A lot of doctors are going to stop looking at a PSA rise of 1 and under without biopsies."

The research team tracked 5,519 men who had taken part in a huge prostate cancer prevention study and who had received a biopsy as part of the study's end regardless of their PSA level. Just having a rising PSA — if nothing else was considered — was linked to a slightly higher risk of having cancer, although not the most aggressive kind. But the PSA level alone, not its rise, was a much better predictor of a tumor. — Associated Press

**Speaking many tongues may benefit your brain**  
Speaking lots of languages may be good for your brain. A study released last week at the American Academy of Neurology annual meeting in Honolulu found that older people who spoke more than two languages were less likely to have cognitive impairment than those who spoke a mere two languages. The study by the Public Research Center for Health was conducted in Luxembourg where many people are multilingual. Among the 230 study participants, those who spoke four or more languages were five times less likely to have cognitive problems than those who spoke only two, and people who spoke three languages were three times less likely to develop problems.

Forty-four of the participants were classified as having cognitive impairment. Researchers concluded for age and education. — Stacy Burling

### Ignition locks might cut drunken-driving deaths

How to reduce drunken-driving deaths, which totaled nearly 11,000 in 2009? Simple, federal researchers reported last week: Install ignition interlocks after a first arrest. A review of 35 previous studies determined that rearrests for impaired driving dropped by a median of 67 percent after the devices were installed, compared with rearrests of drivers whose licenses were suspended. Ignition interlocks sample a driver's breath before starting the vehicle and periodically afterward, and prevent operation above a specified blood-alcohol concentration. They are typically used after a conviction for driving while intoxicated — either mandated by a judge or offered as an alternative to license suspension. Thirteen states require them for all repeat offenders. New Jersey does so for repeat offenders and those with particularly high blood-alcohol levels; Pennsylvania does for repeat offenders only. But overall, only a small proportion participate.

The locks allow offenders to drive to work and school, and also "effectively ensure that they do so more safely," said Randy Elder, lead author of the review in the March issue of the American Journal of Preventive Medicine. — Don Saputnick

### New British guidelines advise eating less red meat

Bringing home the bacon might not be such a great idea, according to stricter new diet advice from the British government issued last week. In the first new guidelines since 1998, Britain advised people to help prevent cancer by cutting down on steaks, hamburgers, sausages, and other red meat. Government officials recommended eat no more than 500 grams (1 pound) of red meat a week, or 70 grams (2.5 ounces) every day, far less than it previously recommended. That works out to about one small lamb chop a day. Scientists think people who eat a lot of meat such as lamb, roast beef, and ham have a higher risk of bowel cancer. In 2005, a large European study found people who ate about 160 grams (5.6 ounces) of red meat a day bumped up their bowel cancer risk by one-third compared with people who ate the least meat.

The danger starts well before the meat is eaten, and it goes beyond poor reaction time, said Cynthia M. LaJamba, a sleep researcher and psychologist at Penn State. Faced with a problem of determining when to sleep, she said, "they're flashing light on the dashboard — tired people start to make bad decisions."

Or they become unable to make decisions at all. "You keep thinking of the same solution over and over, and you lose the creativity to think of ... some alternative," LaJamba said. "This is the kind of thing that kills people, because they lose the ability to think their way out of dire situations."

No one will ever know just how they happened to Brandon Bow, the Kansas pilot whose "air ambulance" plane crashed near Dodge City after he delivered a patient to Wichita. But his voice is preserved in recordings of his conversations with air-traffic controllers — including one from 13 minutes before the accident and one from another flight.

LaJamba said Bow sounded "more fatigued" in the later recording, just before the crash. But she needs someone better than that — some mix of vocal characteristics that could be analyzed by computer.

Last year LaJamba and colleagues

**Fatigue kills: Studies on how to warn the sleepy**  
SLEEPY from E1 scientists can tell if a person is too tired to function well, there is no good way to evaluate anyone who can't stop what they're doing to take a test, such as pilots, truck drivers, surgeons, or astronauts. So researchers at Pennsylvania State University are looking for clues in a characteristic readily accessible from people who communicate by radio: the human voice. They have gotten a peek at the airborne communications during the fatal Kansas flight from the National Transportation Safety Board, and in the lab, they have analyzed the voices of people who have stayed up all night.

At Rutgers University, meanwhile, computer scientists are using cameras and computer software to monitor another physical trait in tired people: the speed at which they open and close their eyelids when blinking. Such techniques are desperately needed, said dashboard member Mark R. Rosekind, who is in charge of long-term sleep research.

"In most cases, we probably underestimate the role of fatigue," Rosekind said. "The reason for that is, we don't have a fatiguealyzer."

The evidence is nevertheless troubling. A study last year by the AAA Foundation for Traffic Safety estimated that one in six fatal crashes involves a driver fatigue. In a survey portion of the study, more than one in four motorists said that within the last month they had driven while being so sleepy that they had trouble keeping their eyes open.

"Though various estimates have dated fatigue to be a factor in more than 20 percent of vehicle accidents, it is usually not recognized as a cause," Rosekind said. And in a 1999 NASA survey, his sleep researcher, said that 80 percent of regional airline flight crew members acknowledged having "nodded off" during a flight at 99 and reaching eye for all sleep.

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Penn State scientists Cynthia M. LaJamba and her husband, Frederick Brown, monitor eye movements with a computer to monitor eyelid position and duration of eye closure, a Ph.D. candidate at Rutgers.



Dimitris N. Metaxas, a Rutgers computer science professor, is leading research in eyelid-based drowsiness detection systems. He said he had talked to manufacturers that were interested in installing such a system in cars.

leagues, including investigator Malcolm Brenner from the safety board, presented findings from an initial study seeking to answer that question. "Thirteen people were kept awake for 36 hours, then asked to complete two tasks: counting quickly from 90 to 99 and reading aloud a short passage about the science and myths of rainbows."

The researchers then compared these samples with recordings of the participants going through the same exercises the day before. "Eyelid closures just clobbered everything else," Dinges said. "They even were better than subjects' own ratings of their sleepiness."

But how to measure something like that in a real vehicle? Dinges and colleagues measure the reflection of infrared light off the retina, but it was cumbersome and subject to error if people turned their heads to either side. Metaxas, who worked with Dinges at Penn before moving to Rutgers, is now working on a computer vision. A simple webcam is combined with software that continuously tracks the eyelids, no matter the head's orientation, and measures how fast they close. At any given instant, it looks at the color of each pixel to determine if it's a white or dark eye.

When the system detects a person needs about a tenth of a second to close the eyelid, Metaxas said. For tired people, closure takes three times that

long. Metaxas said he had already talked to auto manufacturers to help in installing such a system in cars, which he estimates would cost less than \$40. The software keeps track of a variety of facial features, not just eyelids, and thus also can be used to identify emotions, or lack thereof. So Metaxas also is exploring how this approach could be used to diagnose autism and mental illness. And NASA has enlisted him and Dinges to test the system as a way to gauge astronaut sleep levels, or lack thereof.

whether by voice, eyelids, or some other measure, manufacturers and regulators would need to decide how to put such a device to use. A dashboard warning light or bulb could be used, but would vehicle operators take it seriously?

"Fatigue has been underestimated by our society the way we used to underestimate alcohol," said Brenner, the safety board investigator working with Penn State. For pilots, an alert could be sent to a control tower. Brandon Bow had no such warning.

"Clearing for the approach," he told an air-traffic controller at 2:44 a.m. on Feb. 27, 2004, the NTSB reported. "Have a good morning," the controller said.

"You too," Bow responded. Thirteen minutes later, several miles past its destination, the plane hit the ground and disintegrated.

Witnesses said the engines sounded as if they were at full throttle before impact.

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Video camera (right) records Nicholas Michael, a Rutgers Ph.D. candidate, demonstrating software that tracks eyelids and measures how fast they close, research under way at Rutgers.

## Team Symmetry: Good skates all, in perfect unison

The Philadelphia Symmetry is going to the nationals! That may not mean much to you, but to the 32 girls on the team, it is "awesome." The Symmetry is a synchronized skating team. Never heard of it?

It's just like synchronized swimming, but the water's frozen, quips Ashleigh Renard, one of the team's three coaches

and director of the synchronized skating program at the Wissahickon Skating Club in Chestnut Hill, where the team is based. Imagine all the intricate ice dance. Now imagine a dozen or more skaters performing the same moves in perfect unison, periodically parting and merging to form complex geometric patterns, such as the ro-

tating spokes of a wheel, creating a kaleidoscopic spectacle reminiscent of a musical by movie director Busby Berkeley.

All this coordination and choreography is being executed in split seconds on stepping, or as WELL BEING on

the ice. The research team tracked 5,519 men who had taken part in a huge prostate cancer prevention study and who had received a biopsy as part of the study's end regardless of their PSA level. Just having a rising PSA — if nothing else was considered — was linked to a slightly higher risk of having cancer, although not the most aggressive kind. But the PSA level alone, not its rise, was a much better predictor of a tumor. — Associated Press



LAURENCE KESTERSON | Staff Photographer  
Philadelphia Symmetry will compete in the national championships of synchronized skating in California this week. The sport's aim: Making the difficult look easy.

**You know everything about your fancy new phone.**  
**Can you say the same about your body?**

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