

## Buda's Wagon: Birth of the Poor Man's Air Force

Products like iPods, brands like Coca-Cola and "celebrities" like Paris Hilton aren't the only currency of globalization. As Mike Davis points out in his new book, *Buda's Wagon: A brief history of the car bomb*, weapons are too.

"Like an implacable virus," he writes, "once vehicle bombs have entered the DNA of a host society and its contradictions, their use tends to reproduce indefinitely. Between 1992 and 1999, 25 major vehicle attacks in 22 different cities killed 1,337 people and wounded nearly 12,000."

It would seem the last three years in Iraq have matched this total. But Baghdad wasn't ground zero of these infernal machines, as Davis takes to calling them. The car bomb's history started in the good ole U.S. of A.

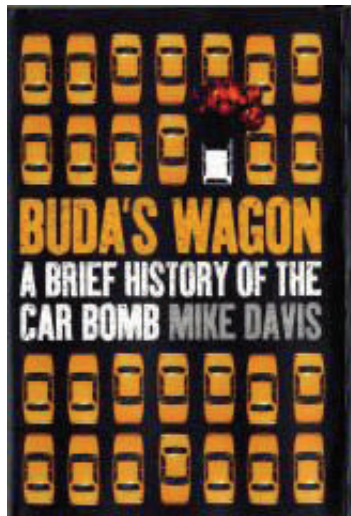
On a warm September day in 1920, a few months after the arrest of his comrades Sacco and Vanzetti, a vengeful Italian anarchist named Mario Buda parked his horse-drawn wagon near the corner of Wall and Broad Streets, directly across from J. P. Morgan Company. He nonchalantly climbed down and disappeared, unnoticed, into the lunchtime crowd. A few blocks away, a startled postal worker found strange leaflets warning: "Free the Political Prisoners or it will be Sure Death for All of You!" They were signed: "American Anarchist Fighters." The bells of nearby Trinity Church began to toll at noon. When they stopped, the wagon -- packed with dynamite and iron slugs -- exploded in a fireball of shrapnel.

The horse and wagon were blown to bits. Glass showered down from office windows, and awnings twelve stories above the street burst into flames. People fled in terror as a great cloud of dust enveloped the area. In Morgan's offices, Thomas Joyce of the securities department fell dead on his desk amid a rubble of plaster and walls. Outside scores of bodies littered the streets."

Buda was undoubtedly disappointed when he learned that J.P. Morgan himself was not among the 40 dead and more than 200 wounded - the great robber baron was away in Scotland at his hunting lodge. Nonetheless, a poor immigrant with some stolen dynamite, a pile of scrap metal, and an old horse had managed to bring unprecedented terror to the inner sanctum of American capitalism.

His Wall Street bomb was the culmination of a half-century of anarchist fantasies about avenging angels made of dynamite; but it was also an invention, like Charles Babbage's Difference Engine, far ahead of the imagination of its time. Only after the barbarism of strategic bombing had become commonplace, and when air forces routinely pursued insurgents into the labyrinths of poor cities, would the truly radical potential of Buda's "infernal machine" be fully realized.

Buda's wagon was, in essence, the prototype car bomb: the first use of an inconspicuous  
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vehicle, anonymous in almost any urban setting, to transport large quantities of high explosive into precise range of a high-value target.

Less well known is Andrew Kehoe, a Michigan farmer and school board official, who in 1927 detonated 445kg of dynamite he had wired up inside Bath Consolidated School. As carnage and chaos reigned, Kehoe set off his truck filled with more TNT, tools and metal scrap. The assassin himself was torn in two but he had become the worst mass murderer of children in US history (38 plus 7 adults and scores injured).

It would be another 27 years before the car bomb reappeared in urban warfare, but the spark had caught. Car bombs are stealthy, loud, cheap, anonymous and bound to create "collateral damage." Here was a weapon to empower marginal actors — "the poor man's air force," as Davis calls it.

Davis follows the weapon on its destructive path through the past six decades of war and resistance, from the War of Independence in Israel to the first Indo-China War to Algeria and Corsica, then back to Vietnam, Ireland, England, Beirut, Argentina, Chechnya, Oklahoma City and Iraq.

#### A cycle of invention

Cleverly, Davis' mirrors the feedback loop of technological invention. The bomb is deployed, refined, deployed again and refined again across borders, boundaries and time.

This cycle of invention leads to historical ironies. For instance, Davis notes that the first car bombs in the Middle East in 1947 when the Stern Gang drove a truckload of explosives into a British police station in Haifa, Palestine, killing 4 and injuring 140. The Stern Gang (a pro-fascist splinter group led by Avraham Stern that broke away from the right-wing Zionist paramilitary Irgun) would soon use truck and car bombs to kill Palestinians as well: a creative atrocity immediately reciprocated by British deserters fighting on the side of Palestinian nationalists.

Vehicle bombs thereafter were used sporadically - producing notable massacres in Saigon (1952), Algiers (1962), and Palermo (1963)

One of the biggest technological leaps came in 1970 at the hands of radical students at the University of Wisconsin. Using a mixture of ammonium nitrate and fuel oil, a recipe gleaned from *Pothole Blasting for Wildlife*, a brochure put out by the Wisconsin Fish and Game Department, they created a bomb that was equivalent to 3,400 sticks of dynamite.

Detonated, it created havoc on the campus but missed the Army research laboratory against which it was aimed. It killed a physics student working late in his lab and provided a recipe for years of killing in the future.

But the gates of hell were only truly opened in 1972 when the Provisional Irish Republican Army (IRA) accidentally, so the legend goes, improvised the first ammonium nitrate-fuel oil (ANFO) car bomb. These new-generation bombs, using only ordinary industrial ingredients and synthetic fertilizer, were

cheap to fabricate and astonishingly powerful: they elevated urban terrorism from the artisanal to the industrial level, and made possible sustained blitzes against entire city centres as well as the complete destruction of ferro-concrete skyscrapers and residential blocks.

The car bomb, in other words, suddenly became a semi-strategic weapon that, under certain circumstances, was comparable to airpower in its ability to knock out critical urban nodes and headquarters as well as terrorize the populations of entire cities. Indeed, the suicide truck bombs that devastated the U.S. embassy and Marine barracks in Beirut in 1983 prevailed - at least in a geopolitical

sense - over the combined firepower of the fighter-bombers and battleships of the U.S. Sixth Fleet and forced the Reagan administration to retreat from Lebanon.

Hezbollah's ruthless and brilliant use of car bombs in Lebanon in the 1980s to counter the advanced military technology of the United States, France, and Israel soon emboldened a dozen other groups to bring their insurgencies and *jihads* home to the metropolis. Some of the new-generation car bombers were graduates of terrorism schools set up by the CIA and Pakistani intelligence (the ISI), with Saudi financing, in the mid-1980s to train *mujahedin* to terrorize the Russians then occupying Kabul. Between 1992 and 1998, 16 major vehicle bomb attacks in 13 different cities killed



The remains of a bus targeted by a suicide bomber in Kabul on June 17th. Thirty five policemen were killed

1,050 people and wounded nearly 12,000. More importantly from a geopolitical standpoint, the IRA and Gama'a al-Islamiyya inflicted billions of dollars of damage on the two leading control-centres of the world economy - the City of London (1992, 1993, and 1996) and lower Manhattan (1993) - and forced a reorganization of the global reinsurance industry.

In the new millennium, 85 years after that first massacre on Wall Street, car bombs have become generically global, cratering the streets of cities from Bogota to Bali. Suicide truck bombs, once

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the distinctive signature of Hezbollah, have been franchised to Sri Lanka, Chechnya/Russia, Turkey, Egypt, Kuwait, and Indonesia. On any graph of urban terrorism, the curve representing car bombs is rising steeply, almost exponentially. U.S.-occupied Iraq, of course, is a relentless inferno with more than 9,000 casualties - mainly civilian - attributed to vehicle bombs in the two-year period between July 2003 and June 2005. Since then, the frequency of car-bomb attacks has dramatically increased: 140 per month in the fall of 2005, 13 in Baghdad on New Year's Day 2006 alone. If roadside bombs or IEDs are the most effective device against American armoured vehicles, car bombs are the weapon of choice for slaughtering Shiite civilians in front of mosques and markets and instigating an apocalyptic sectarian war.

Under siege from weapons indistinguishable from ordinary traffic, the apparatuses of administration and finance are retreating inside "rings of steel" and "green zones," but the larger challenge of the car bomb seems intractable. Stolen nukes, Sarin gas, and anthrax may be the "sum of our fears," but the car bomb is the quotidian workhorse of urban terrorism. There are five characteristics that make "Buda's wagon" such a formidable and undoubtedly permanent source of urban insecurity.

**First**, vehicle bombs are stealth weapons of surprising power and destructive efficiency. Trucks, vans, or even SUVs can easily transport the equivalent of several conventional 1,000-pound bombs to the doorstep of a prime target. Moreover, their destructive power is still evolving, thanks to the constant tinkering of ingenious bomb-makers. We have yet to face the full horror of semi-trailer-sized explosions with a lethal

blast range of 200 yards or of dirty bombs sheathed in enough nuclear waste to render a city centre radioactive for generations.

**Second**, they are extraordinarily cheap: 40 or 50 people can be massacred with a stolen car and maybe \$400 of fertilizer and bootlegged electronics. Ramzi Yousef, the mastermind of the 1993 attack on the World Trade Center, bragged that his most expensive outlay was in long-distance phone calls. The explosive itself (one half ton of urea) cost \$3,615 plus the \$59 per day rental for a ten-foot-long Ryder van. In contrast, the cruise missiles that have become the classic American riposte to overseas terrorist attacks cost \$1.1 million each.

**Third**, car bombings are operationally simple to organize. Although some still refuse to believe that Timothy McVeigh and Terry Nichols didn't have secret assistance from a government or dark entity, two men in the proverbial phone booth - a security-guard and a farmer - successfully planned and executed the horrendous Oklahoma City bombing with instructional books and information acquired from the gun-show circuit.

**Fourth**, like even the 'smartest' of aerial bombs, car bombs are inherently indiscriminate: "Collateral damage" is virtually inevitable. If the logic of an attack is to slaughter innocents and sow panic in the widest circle, to operate a "strategy of tension," or just demoralize a society, car bombs are ideal. But they are equally effective at destroying the moral credibility of a cause and alienat-

ing its mass base of support, as both the IRA and the ETA in Spain have independently discovered. The car bomb is an inherently fascist weapon.

**Fifth**, car bombs are highly anonymous and leave minimal forensic evidence. Buda quietly went home to Italy, leaving



This was in Iraq but could have been anywhere

William Burns, J. Edgar Hoover, and the Bureau of Investigation (later, to be renamed the FBI) to make fools of themselves as they chased one false lead after another for a decade. Most of Buda's descendants have also escaped identification and arrest. Anonymity, in addition, greatly recommends car bombs to those who like to disguise their handiwork, including the CIA, the Israeli Mossad, the Syrian GSD, the Iranian Pasdaran, and the Pakistani ISI -- all of whom have caused unspeakable carnage with such devices.

Today, SUVs stolen from Texas wind up in Iraq as car bomb vehicles — with their big bulky exteriors and blacked out windows they resemble the vehicles driven by American contractors and thus draw less suspicion.

Davis predicts the car bomb will continue toward a "brilliant future," its parts becoming ever harder to trace and easier to obtain. In the language of globalization, its market potential is huge. #

## Pandemic Flu Leadership Blog

Michael Leavitt, secretary of the U.S. Department of Health and Human Services, is organizing a leadership forum on the topic of a possible influenza pandemic. As part of this forum, a Pandemic Flu Leadership blog has been launched to give leaders a page to talk about their own ideas related to what leaders should be doing to prepare for an outbreak of this kind.

Recent topics include "the need to prepare," "my role as a leader," and "getting the job done." Take a look at the blog at

<http://blog.pandemicflu.gov/>.

# Self Help Syndromic Surveillance: faulty alarm system or useful tool?

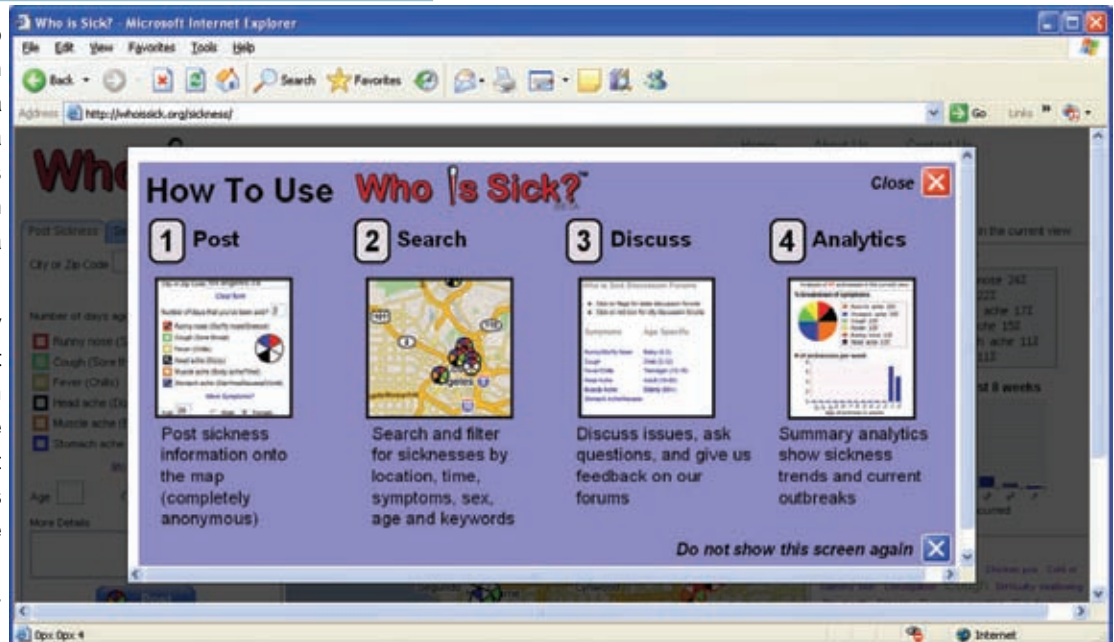
At first glance, the Web page looks like an overhead shot of a fantastic game board: a map (identifiably Los Angeles) sprinkled with faceted roundels in a half-dozen colours.

But the data graphically displayed at [WhoisSick.org](http://WhoisSick.org) are from the real world. The roundels represent reports of symptoms volunteered by site users: runny nose, cough, fever, headache, muscle aches, and digestive trouble.

The site's founder, a California tech entrepreneur named PT Lee, drew on the new Web technology of Google Maps and the Web trend toward user participation to create a 21st-century epidemiologist would recognize: geographic surveillance of illness trends.

WhoisSick, which went live 3 months ago after a year of planning, grew out of Lee's frustration over his wife's holiday bout with a gastrointestinal bug. "We sat in the emergency room for 4 hours, just to find 5 minutes into seeing the doctor that there was a horrible stomach flu going around," Lee said. "Afterward, I thought: How does someone find out if something is going around? Traditionally they ask their friends, or maybe their doctor, but that's inefficient. Maybe the Web could provide a way to tap the wisdom of crowds."

The site has registered about 200,000 visitors so far. Its roughly 20,000 illness reports have come from the United States, Canada, the United Kingdom, Germany, and Australia. On May 11, there were 846 illnesses reported in



San Francisco, 155 in Atlanta, 154 in Minneapolis, and 657 in New York City. Parents love the site because it alerts them their kids might bring something home, Lee said, though some observers have called it "a hypochondriac's dream."

Like other user-generated Web sites such as Wikipedia and the FluWiki, WhoisSick takes data from anyone who is interested and has an Internet connection that can handle its data-rich pages. But whether the data it gathers prove useful or merely amusing, the site confirms something that long predates the Internet: the intuitive appeal of symptom information collected from many people, otherwise known as syndromic surveillance, as a tool for monitoring public health.

## Enthusiasm wanes

WhoisSick's citizen-generated syndromic surveillance has emerged just as official syndromic surveillance, conducted by a variety of health authorities, is facing significant re-examination and challenge.

Small-scale syndromic surveillance - pencil-and-paper monitoring of school

absenteeism or cruise-ship stomach bugs - has a long history. But the practice received a huge boost after the 2001 anthrax letter attacks. Electronic syndromic surveillance seemed to offer the best hope for providing an early warning of the next bio-terrorist attack. The rapid monitoring and analysis of symptom clusters, emergency department complaints, over-the-counter drug sales, and other data sources could alert authorities to health anomalies faster than traditional paper-based reports of diagnoses.

The spike in interest was followed by a vast increase in funding. The US Congress has given \$230 million to the largest syndromic surveillance program, the Centers for Disease Control and Prevention's BioSense, intended to connect the CDC to hospitals nationwide. About 30 syndromic surveillance programs, some of them predating BioSense, now operate around the United States; potentially thousands could be created if every public health jurisdiction constructed one. But 5 years after the initial burst of enthusiasm, syndromic surveillance is losing adherents. Last De-

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ember, a number of speakers at a 2-day meeting convened by the Institute of Medicine (IOM) expressed scepticism over how well syndromic surveillance is working.

"The expectations for syndromic surveillance were unrealistic, initially; there was the expectation it would magically give us, immediately, all kinds of advantages," said Stephen S. Morse, director of the Centre for Public Health Preparedness at Columbia University. "We still don't know how to use it most effectively, what kinds of systems work best and what the limitations are. Syndromic surveillance is very promising, but obviously it is still a work in progress."

The re-examination of syndromic surveillance comes as both US and global public health agencies turn increasingly toward it. The US Department of Health and Human Services is required to use information technology to create a national surveillance network. And the World Health Organization's new International Health Regulations, which take effect Jun 15, require countries to monitor not just specific diseases, but any apparent outbreak that could constitute a "public health emergency of international concern."

The experience in England, where syndromic surveillance is systematic across the country and linked to NHS Direct, is far more encouraging. The problems in the US may be linked to a lack of a common approach.

#### **Too many false alarms**

The new scepticism over syndromic surveillance is directed at its claimed usefulness for early detection of a bioterrorist attack. That claim is hard to test, since there has been no bioterrorism to warn of. But those concerned with syndromic surveillance's failings point not to the systems' failure to warn, but to how often they warn of outbreaks that do not exist.

The New York City Department of Health and Mental Hygiene has more experience with syndromic surveillance than any other public health jurisdiction:

It created its first system in 1994 and in the ensuing decade tested, and often rejected, a number of means of monitoring health data. It now runs six separate detection systems that electronically monitor patient complaints in emergency departments, dispatch codes for 911 calls, prescription and over-the-counter drug sales, reports from school nurses, and some outpatient information. Much of its early experience involved checking out false alarms.

"We were spending a lot of time investigating things that we quickly came to realize were not of public health significance," said Assistant Commissioner Dr. Marci Layton. Every false positive, she said, required a decision whether to mobilize health department resources to track down a possible victim, take a history, and obtain specimens for testing.

Because bio-terrorist events are so rare, the probability of any alarm being false is high, according to Michael Stoto, PhD, and colleagues at Georgetown University. Many health departments that receive a syndromic surveillance alarm will wait 1 or 2 days and look for corresponding blips in other types of data before launching an investigation, said Stoto, a professor of health systems administration and population health at Georgetown

#### **Harvesting data on natural outbreaks**

But while syndromic surveillance is being questioned as an early-warning system for new outbreaks, it is gaining backers for a different use: to deliver richer information on existing, naturally occurring outbreaks. New York City, for example, has used the same surveillance systems that returned unsatisfying early-warning data to gather very detailed information about outbreaks of norovirus and the start and progress of influenza season. The automated system that analyses patients' chief complaints in emergency departments delivers sensitive and specific reports of flu-like illness.

"This is not something we could do with

previous systems in anything close to the same level of detail," said Rick Hefernan, director of the data unit in the city's Bureau of Communicable Disease. "In a severe year, we would be able to document whether severity and the ages affected were atypical. In a pandemic there would be a lot of interest in as much data as possible, so there is a real value and role there."

The Clark County Health District in Las Vegas gathered enough data from its syndromic surveillance system to detect the start of flu season 2 weeks earlier than usual, according to a presentation published by the National Association of City and County Health Officials. The extra time let local health officials push test kits out to sentinel physicians, allowing for early identification of the circulating strain; it also gave them enough lead time to communicate with the local media to encourage flu vaccination before the local epidemic.

And the city government of Lubbock, Tex., and the Texas Department of State Health Services reported at last year's National Syndromic Surveillance Conference that a private-label system called SYRIS (not part of the BioSense program) allowed officials to assess illnesses among Hurricane Katrina refugees evacuated to the area and determine that the outbreaks were limited and would not spread.

In each case, syndromic surveillance systems did not deliver warnings within hours of the presence of unusual pathogens. Instead, they returned detailed information within several days about outbreaks of common organisms. Information that local jurisdictions used to make decisions about alerting residents and deploying resources.

"Syndromic surveillance is potentially a very valuable technique," Stoto said, "but we have been concentrating on one potential use that is probably not the most promising one." #

## Will Healthcare Workers Go To Work During Disasters?

There has been lots of conjecture and some staff polling but we have no real idea of how many staff will turn up for work when an emergency strikes. In two studies presented at the 2007 Society for Academic Emergency Medicine (SAEM) Annual Meeting, researchers examined the factors that might affect whether healthcare workers and support staff would report to work during a disaster.

Linda Kruus of Temple University Medical School's Department of Emergency Medicine, in collaboration with the Temple University Centre for Preparedness Research, Education and Practice and the Temple University Health System Emergency Response & Preparedness Institute, surveyed 306 healthcare workers including physicians, nurses, support staff and administrative personnel from five urban hospitals regarding their ability and willingness to work during a public riot, an infectious disease outbreak and a regional power outage.

Workers were more willing to work when they felt that their role in a disaster was

important, and that they could be effective in that role. They were also more likely to work when they felt safe traveling to work and in the workplace, believed contracting an illness would be unlikely, were less worried about exposing family members to an illness, and felt supported by their family in their decision to work. Since support staff and administrators provide essential services during disasters, freeing doctors and nurses for medical needs, this survey was important in uncovering the factors that might keep many types of key healthcare workers at home. According to Kruus, "Workers want to know that the role they play will be meaningful. And, if they put themselves out there for the benefit of others, that their institution will, in turn, be taking care of them and their families."

Charlene Irvin of the St. John Hospital and Medical Centre, Wayne State University School of Medicine, surveyed almost 200 nurses, doctors and other hospital workers regarding a hypothetical outbreak of avian flu. Only 50% of the workers said "Yes," they would re-

port to work, with 42% responding "Maybe" and another 8% responding "No, even if I would lose my job." The author believes that this may still represent an overestimation of the number of people responding to work as many workers may feel obligated on a survey to respond "Yes." However, in a real pandemic with neighbours dying, they may feel compelled to stay home with their families. Workers must believe they will be protected and they must be given accurate information on steps in place to keep them from becoming infected.

Media hype has increased the fear factor concerning influenza pandemics with reports of almost 50% mortality rate, but the real mortality rate may be closer to the pandemic of 1918 at less than 5%. And this lack of accurate information is likely to cause many more workers to stay home. "If fear and uncertainty are allowed to take over, many more workers will stay away, and pandemic staffing will turn out to be inadequate, complicating the disaster even more," says Dr. Irvin. #

## Swiss told to stock up on bird flu masks

On the eve of the 60<sup>th</sup> World Health Assembly the Swiss Federal Health Office issued a list of personal hygiene guidelines for the Swiss population in the event of a bird flu pandemic among humans. The main recommendation is for members of the public to stock up on 50 protective masks each, which are available in shops for a few francs.

The Swiss government says that the responsibility for being prepared for an outbreak was shared between the public and the authorities. It said the authorities were responsible for vaccinations, other medicines and the general monitoring of the disease; the public were called on to follow measures that could limit the risk of infection and slow down the spread of a pandemic.

No order to wear masks would be given until after an actual outbreak, according to the Federal Health Office. Additional personal hygiene recommendations in the event of a pandemic: include the regular washing of hands with soap, using a tissue when coughing or sneezing and avoiding handshakes are also being promulgated.

### Biggest global threat

Human bird flu pandemic is still the biggest global health threat, according to a senior Swiss official. "We still have an epidemic in birds, we still have regular transmission from birds to humans and that means the threat is still there," Gaudenz Silberschmidt, head of international affairs at the Federal Health Office, told swissinfo. But while bird flu

may have fallen off the public's radar in Switzerland and other European countries, Silberschmidt insists the threat has not gone away and was set to top the bill at the ten day Health Assembly.

Delegates also addressed issues such as the application of the International Health Regulations, the destruction of smallpox virus stocks, malaria and tuberculosis control, plus the eradication of polio.

Switzerland is due to start taking delivery from GlaxoSmithKline of eight million doses of a pre-pandemic vaccine, enough for its whole population. #

# A Walking Tuberculosis Bomb

Setting out for a cross Atlantic flight you might feel comfortable to have this American attorney plonk down in the seat next to you. But appearances can be deceptive. Andrew Speaker has extreme drug resistant (XDR) TB. Speaker caused an international uproar last month when he disregarded doctors' advice and travelled abroad to get married, potentially exposing his fellow passengers to his strain of the disease, which is often fatal.

From this distance, it seems Speaker was determined to go ahead with his wedding plans with complete disregard for the potential consequences to others.

"The Speaker case underscored the need to spread the word to all people with multiple drug-resistant TB and a positive culture test - meaning they may be infectious - that they should not fly commercially, said Dr. Kenneth Castro, director of the tuberculosis control division at the Centers for Disease Control and Prevention.

At present, no one with multiple drug-resistant TB has been placed on a no-fly list, said Castro, who added that he has no reason to believe there is any need to take such precautions.

The case, which has sparked investigations in the United States, Canada, Italy and Greece, to probe how the couple managed to elude local, state and federal health authorities, bypass a no-fly order and drive across the U.S.-Canadian border even after their passports set off an alarm alerting the border guard to detain them.

Fulton County Health Director Steven Katkowsky said Speaker changed his flight plans after health officials advised him not to travel during a May 10 family care conference. Speaker's change in flight plans contributed to Fulton County health officials being unable to serve him with a medical directive - an official written advisory not to travel. Under Georgia law, health officials have said they can't obtain a court order restricting a patient's movements until there is a violation of a written directive.



Andrew Speaker

Andrew Speaker claims he was never told during that meeting he had to cancel his long-planned wedding in Greece and honeymoon travelling around Europe. What was said at the meeting, which included Fulton County health officials, Speaker's fiancée, Sarah, and his father, Ted, is a major point of controversy. Speaker claims that his father, who is also an attorney, recorded the meeting with a device that was in his pocket. Thus far, the family has not released the recording.

The day after the meeting, May 11, Fulton County health authorities wrote up a synopsis of the previous day's meeting in the form of a medical directive that again advised Speaker against travelling. On May 12, the investigator learned that Speaker had already left the country, even though he had told county officials his flight was scheduled for May 14.

Speaker called Air France on May 12 and asked to be put on a flight earlier than his scheduled May 14 departure. The airline changed his ticket so he could leave that same day.

On May 17, Katkowsky said, health officials learned that Speaker's TB wasn't just multidrug-resistant - the serious diagnosis that was known before he left the United States. The tests had found his TB to be the rare and most difficult-to-treat form of TB, called extensively drug-resistant TB, or XDR TB.

While local, state and federal health

officials in Atlanta grappled with this new diagnosis, Speaker and his bride tied the knot May 18 in Santorini, a picturesque Greek island perched high over the Aegean Sea. Known around the world for its gorgeous sunsets and bleached-white buildings, it is a popular wedding destination. It's a place where tourists tool around town on motorcycles, taking in panoramic views of cliffs and volcanoes.

Both sets of parents attended the Speakers' wedding, said a person who attended but did not want to be named. Wedding sites on the island are difficult to wrangle, and planners say couples often have to book at least a year in advance.

The couple headed off on their honeymoon and were in Rome on May 23 when they got a message that the CDC was looking for them. In a strange coincidence, bride Sarah Speaker's father - Robert Cooksey - is a Ph.D. microbiologist who works in CDC's tuberculosis labs.

Speaker said he planned to have cutting-edge drug therapy and surgery at National Jewish Medical and Research Centre in Denver following the honeymoon. He had been told he has just one shot at getting the right treatment. Andrew Speaker is an excellent candidate for surgery," said Dr. Charles Daley, who is head of the Infectious Disease Division at the Denver hospital and Speaker's physician. "The infected area of his lung, about the size of a tennis ball, is in the right upper lobe of the lungs and relatively well contained.

The cost for treating a single XDR case averages \$500,000 and can exceed \$2 million - enough to wipe out the budgets of many state health departments. The problem is worse outside U.S. borders, where budgets are often meagre. According to the World Health Organization, XDR TB has been reported in 37 countries. A study reported last year in KwaZulu-Natal province in South Africa focused on an outbreak of XDR TB that killed 52 of 53 patients - 98 percent mortality.

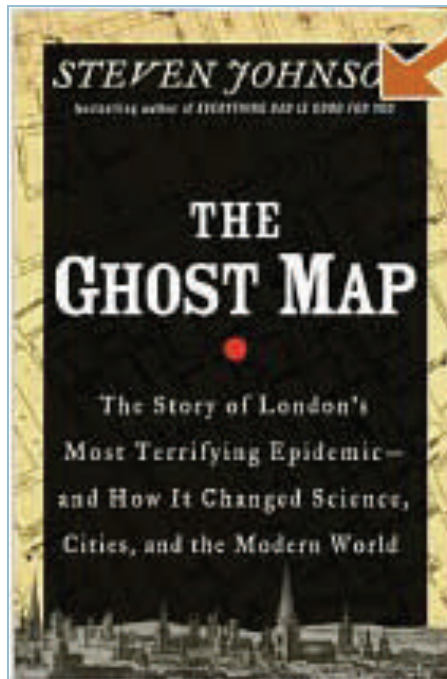
# The Bond Street Pump Outbreak Revisited

Although the 1854 cholera outbreak in London is mentioned in many public health and epidemiology texts, the focus is usually on data gathering and presentation, and the actions taken to address the outbreak. What is not often conveyed is the social environment of the times or the role of Reverend Henry Whitehead in dealing with this fearsome outbreak. Steven Johnson addresses these omissions in his new book ***The Ghost Map*** and brings forth aspects of John Snow's life in an insightful, riveting manner.

Widely viewed as the "father of contemporary epidemiology," Dr. John Snow is among the most famous of public health figures. His "grand experiment" in 1854 (comparing cholera deaths in South London households that had consumed contaminated water with those that had not consumed contaminated water) is often considered a classic, but the Broad Street pump outbreak is perhaps the more famous historical account and is the subject of Johnson's book.

Dr. Snow wrote: "The most terrible outbreak of cholera which ever occurred in this kingdom, is probably that which took place in Broad Street, Golden Square, and the adjoining streets, a few weeks ago. Within two hundred and fifty yards of the spot where Cambridge Street joins Broad Street, there were upwards of five hundred fatal attacks of

cholera in ten days. The mortality in this limited area probably equals any that was ever caused in this country, even by the plague; and it was much more sudden, as the greater number of cases terminated in a few hours"



Johnson's opening sentences provide a sense of what is to come: "It is August 1854, and London is a city of scavengers. Just the names alone read now like some kind of exotic zoological catalogue: bone pickers, rag-gatherers, pure-finders, dredgermen, mud-larks, sewerhunters, dustmen, night-soil men,

bunters, toshers and shoremen." He goes on to describe their roles in Victorian London and provides the reader with an intimate feel for local life, notably the travails of getting water and disposing of sewage. Along the way, the reader meets a local clergyman, Henry Whitehead, whose affable nature is in contrast to that of the more stoic John Snow. Yet, these two men of varied backgrounds become entwined by the Broad Street outbreak, using their complementary skills to help solve an epidemiologic mystery.

The Ghost Map scarcely mentions the contributions of William Farr and other notables of the times. Instead, being a novel rather than a treatise, the book attempts to breathe life into a few seminal characters. Johnson is an excellent writer. His words evoke strong images that revolve in the mind. He uses London and Snow's classic map of the 1854 outbreak as the focal points of his story, along with the removal of the Broad Street pump handle and the discovery of the probable index case. This is a good read, highly recommended for those open to the contributions of our forbearers in public health and the link of 19th-century London to modern day urban life.

New and second hand copies of this book are available from Amazon and other booksellers. #

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having a very simple water filter that you could use in disaster scenarios after hurricanes and things like that just to filter water on a small scale and purify it," he said.

While systems exist for large-scale water filtration, "what would be different about a bioactive paper filter is that it would give you some indication that the water it was producing was safe to drink." Such filters could be easily airlifted into disaster zones to help individuals immediately, whereas larger systems can take many days to arrive, he said.

Pelton predicted that simple products like bacteria-flagging paper towels could

be on the market within five years, but he conceded that others - including disease-detecting masks, gowns and gloves - require much more research and would take at least a decade to develop.

Complicating marketing forecasts is the feasibility factor: each product would have to be pathogen-specific, meaning that detection chemicals would have to be identified for each health-threatening bacteria and virus before they could be incorporated into any product.

Dr. Andrew Simor, an infectious disease specialist at Sunnybrook Health Sciences Centre in Toronto, called the bioactive paper idea intriguing but ambitious.

"The SARS one is more complicated, whereas a dip stick for looking for growth of E. coli or salmonella from water is much more straightforward," he said. "If you're talking about field-testing masks that are impregnated with chemicals, you need to know not only do they work and under what circumstances . . . but also are they safe?" Such testing would take a long time, said Simor, noting that the team of scientists assembled across the country is impressive but may need expanding to test and validate certain products - but if you don't dream you can't start to address the problems." #

# HEMNZ Bulletin

The HEMNZ Bulletin is published monthly by the St John Emergency Management Unit for all those interested in emergency management in health care settings. Articles and comment on emergency management issues are welcomed.

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## Editor's soapbox

It was great to luxuriate in the positive attitudes swirling around the Cruikshank debrief sessions. It was a time to step back and recognize that we did travel a long way in a relatively short time. Congratulations to those who worked so hard to pull the exercise series together.

There is a lot that still needs to be fixed but we have shone a torch into some of the dark "too hard" corners that often get overlooked.

After Y<sub>2</sub>K too many of us parked all the excellent work we had done and went back to "normal business" (now there's an oxymoron). This time, let's incorporate the improvements we have made into all our business. Then we will be ready for what ever comes along.

One issue we still need to resolve is whether we are to continue with a regional structure in the face of strong opposition from some DHBs. The desire to have a direct link to the Ministry is understandable.

What I am looking for is an example of where a span of control of 21 works. Please tell me so I can make my fortune writing and promoting the next management fad.

*Bruce Parkes*



## Up coming Events

2 - 3 July 2007

### **Australasian Natural Hazards Management Conference 2007**

Brisbane

Cost \$440 + GST

More information from

[www.hazards-education.org/ahm07/conf\\_details.php](http://www.hazards-education.org/ahm07/conf_details.php)

18 - 19 July 2007

### **Business Continuity Management: From Concept to invocation to Restoration**

Mercure Hotel, Auckland

Duxton Hotel, Wellington 24—25 July

Cost: \$1890 + GST

More information from [www.brightstar.co.nz](http://www.brightstar.co.nz)

### **Critical Incident Stress Management Course**

27—28 August 2007 Wellington

30—31 August 2007 Christchurch

Cost \$680

More information from

[www.langmontadvantage.com](http://www.langmontadvantage.com)

20 - 21 September 2007

### **The NZ Health Sector: Performance, Productivity and Evolution;**

NZIHM and RACMA Conference

Rydges Hotel, Rotorua

Cost \$750 incl GST

More information from

[www.nzihm.org.nz](http://www.nzihm.org.nz)

## Bioactive paper sheets and masks

Imagine masks and gowns for hospital workers that could detect and destroy various infectious diseases, or a paper towel that would change colour when it comes in contact with a surface contaminated with potentially deadly bacteria like E. coli.

The concept may seem futuristic, but a Canadian research and industry consortium is already working on developing such "bioactive paper" products that would home in on dangerous bacteria and viruses, then repel or deactivate them.

The Sentinel Bioactive Paper Network is comprised of researchers at 10 universities across Canada, government agencies and nine business partners that include pulp-and-paper companies. Working with a five-year, \$12-million grant from government and industry, the group hopes to develop a variety of products to decrease the threat from communicable diseases, food-borne illnesses and water contamination, while boosting Canada's forest-products industry.

The paper would be "printed" or embedded with chemicals that would recognize specific pathogens, and possibly other chemicals that would kill them, said Robert Pelton, a professor of chemical engineering at McMaster University in Hamilton and scientific director of Sentinel. Pelton, one of four Canadian scientists who came up with the bioactive paper idea, said the concept was born out of the SARS epidemic.

"One could imagine health-care workers wearing disposable gowns and face masks, and it would have been better for them if perhaps these gowns and face masks were able to tell the person when they became contaminated," Pelton said after a news conference to announce Sentinel's plans.

"So if you had a face mask that changed colour or gave off a smell when it came into contact with the virus, it would alert the worker that they had a problem." Other conceptual products include food packaging that would warn grocers and consumers of salmonella or E. coli lurking in meat or produce and "dip sticks" to test for bacteria in drinking water.

"A simple application that intrigued us right from the beginning is the idea of

(Continued on page 8)