

Peak Oil and Health

Mention global warming these days and most people will freely offer their views. Thus far, Peak Oil does not evoke the same response. In fact some government planners say that they have been told by their political masters that the term is not acceptable and is not to be used in their policy papers. Yet peak oil is a slow onset disaster that makes the volcanic eruption we are currently planning for, very small cheese.

So what is Peak Oil all about? Depending on which experts you talk to, the world's production of oil either has already started to decline or will do so sometime within the next few years. The point at which the decline begins - which is also the highest point production will ever reach - is known as "peak oil." Because the worldwide demand for oil continues to grow, the gap between demand and supply will drive up prices and shortages will occur. It's no wonder investment advisors have a "buy recommendation" on oil stocks. Not convinced? Remember the tales of woe when the price swept past \$50 a barrel? Now we are looking \$100 a barrel in the face.

According to Richard Heinberg we are already past the peak and on the ever slippery slope to depletion. Heinberg, the author of three books on peak oil, visited New Zealand this month and was the keynote speaker at a multi sector workshop for strategic planners looking for answers to survival in an oil depleted world.

Listening to Heinberg rattle off statistics about extraction rates and renewable energy sources, you are left in no doubt that that there are some drastic changes ahead for all of us. Even if we develop new sources of power, they are going to be far more expensive than what we have now. And not only do we have to find new sources of power, global warming and climate change mandates that they be more environmental friendly than those we have now.

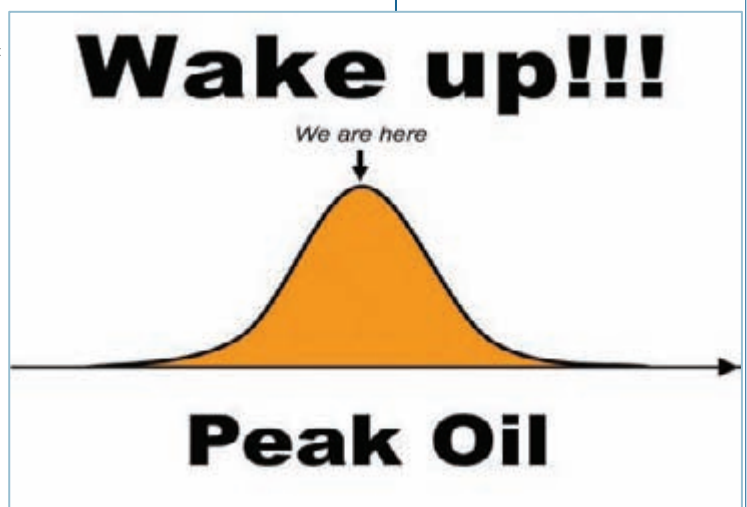
Heinberg goes further. He notes that the 20th century saw unprecedented growth in population, energy consumption and food production; and as the population shifted from rural to urban, the impact of humans on the environment increased dramatically. In contrast the 21st century will usher in an era of declines in a number of crucial areas:

- Global oil, natural gas and coal extraction
- Yearly grain harvests
- Climate stability
- Population
- Economic growth
- Fresh water
- Minerals and ores, such as copper and platinum

All of these have impacts on population health; so to adapt to this profoundly different world we must begin now to make radical changes to our attitudes, behaviours and expectations. Just the reduction in oil production alone has major implications for healthcare delivery and heralds a slow impact "disaster" that will force changes in the way we deliver health services within the next 10 to 15 years.

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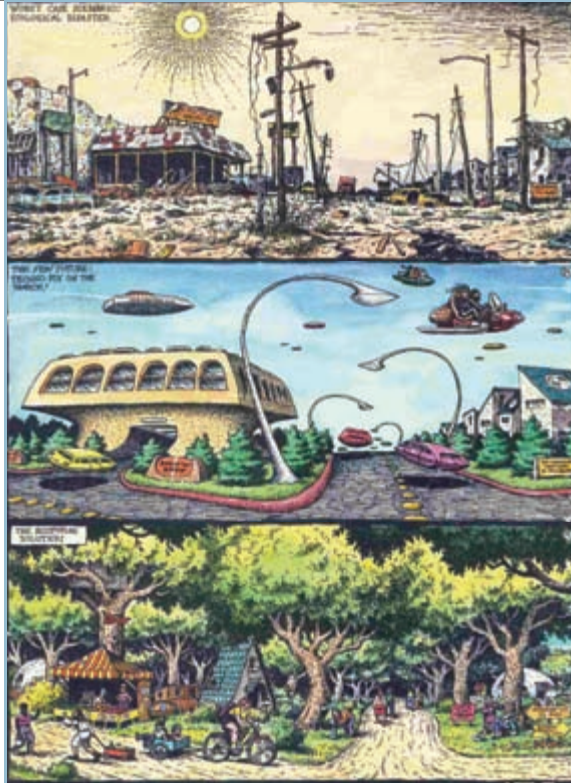
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Impact on Health

The consequences of peak oil on medicine will be progressive. From a base of "business as usual" there will be a gradual rise in the frequency and severity of problems stemming from increases in price and decreases in availability of fuel. Healthcare systems in all countries need a comprehensive oil vulnerability analysis as soon as possible to provide the information on which to develop new strategies. By identifying the areas of critical fuel and petrochemical dependence of our medical system we can begin the orderly planning for a rational response to the ensuing gradual depletion. We will need to plan to mitigate, as soon as we reasonably can, the impact of oil depletion and in the process establish a list of priority activities that will need continued access to fuel and petrochemicals regardless of price and availability.

From the time of the peaking of the world's oil supply there will be less energy and less oil based material every year, year after year, for ever. If the rate of depletion is 7% pa, which is conceivable, then the amount of oil which is produced will decrease by half every 10 years, for ever. And oil is an ubiquitous product embedded in all sorts of products. So, for example, addressing the issue of how much plastic we use and discard is not a contrived or frivolous point. The time when we will not have access to affordable disposable plastic is not far in the future. Given the total absence of any plan to find an alternative, which will take years to develop, it might as well be tomorrow.

Most of our modern medical system is oil-dependent, just like the rest of society. This impact is most obvious when one looks at the transport systems required to maintain a health service. Just as suburbia has been subsidised by the endowment of cheap and plentiful oil, modern medical care is predicated on the cheap movement of things and people from one place to another. Currently we are well into a strategy of hub super hospitals to which patients are moved for specialist attention.



Three views of what the future might hold

These hospitals represent one of the most centralised expressions of health care delivery and offer the best model of clinical care; yet they may become one of the first major casualties of peak oil.

The consequence of centralisation is that travel from outer suburbs to specialist facilities in city centres can involve long distances; unwell patients can not easily use public transport, they must drive or be driven and hospital staff, who are required around the clock, are likewise dependent on their cars. The situation is much worse in regional and rural areas where the downgrading of rural hospitals and the loss of services means that trips of hundreds of kilometres and long absences from home are the norm for seriously ill patients and pregnant women close to delivery.

Modern healthcare facilities are open



systems to which all inputs (be they patients, staff or supplies) are brought; and all outputs taken away. Many items used in modern medicine contain petrochemical derivatives. Some of the main categories are gloves (synthetic rubber), clinical disposables (like syringes), medications, sterile packaging (mainly plastic), high-tech equipment like CT and MRI scanners, and computers. While the staff may be petrochemical free, their clothing is unlikely to be.

Activities within hospitals like laundering (hot water) and equipment sterilisation (steam, plastic packaging, ethylene oxide) are commonly oil or gas dependent. And of course our present vehicle based emergency services using cars, trucks, planes and helicopters etc. require reliable access to fuel.

So what changes could peak oil bring to our health-care system?

Like the impacts on the rest of society, it will partly depend on the rapidity of oil scarcity and the amount of preparation. In the short term there will probably be decreased and unequal access to services, rationing, and a reduction in quality of life (we might be sicker, more mentally ill, and not live as long). As in all things, the rural low social demographic will be most disadvantaged. In the longer term, a successful transition will need to involve more personal responsibility for one's own health, as well as a more informal and dispersed health care system centred on the small community / village level. Think of a 1930/40 structure with 21st century technology.

This movement of treatment away from the centre will result from decreased patient mobility and the resultant need for GPs to do more in the way of definitive treatment. GPs in country hospitals will be doing some of what is currently done in secondary referral hospitals. When patient mobility is restricted and if regional/rural areas see their populations start to increase again as big cities become increasingly unattractive places to live, the role of the rural doctor (where they still exist) is going to have

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to change greatly.

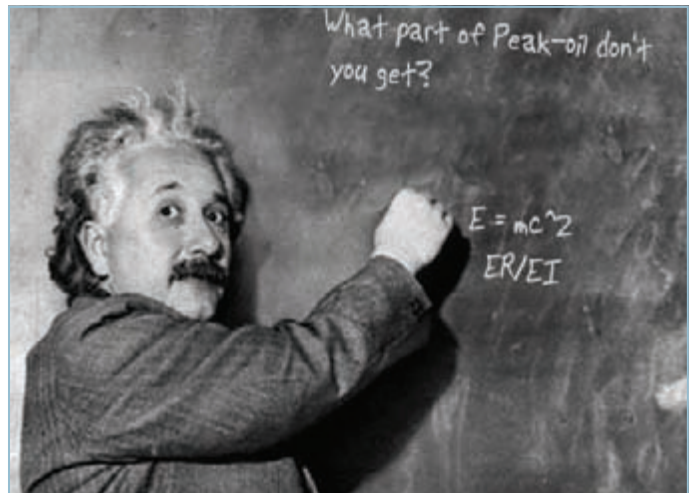
Drugs, which are overwhelmingly petroleum derived, represent an extreme case of value adding and will doubtless continue to be made; but in what volume and at what price? Of all the drugs and disposable and reusable equipment in New Zealand hospitals, only a tiny fraction is locally sourced. In terms of physical inputs our healthcare system is almost totally dependant on imports. The price of plastic is rising in line with the price of its progenitor, crude oil. As oil prices rise our balance of payments will dramatically worsen. So Peak Oil will not only increase the absolute cost of inputs to the health care system, it will dramatically impact our ability to pay for them. We will need to reassess which of the many variations on a pharmacological theme are really necessary and what drugs can be made in New Zealand.

The international logistical chain which supplies all of the physical inputs to the healthcare system will be challenged by the consequences of peak oil. No one knows what is going to happen to international trade in the post peak oil environment. The current model of just in time management of supplies may prove to be unreliable, much too unreliable for life saving equipment and drugs. Hospitals and District Health Boards may need to have reserve supplies of everything on hand.

The advent of Peak Oil will not bring about an overnight crisis in the health system. However, the analysis of what happened in Cuba when their oil supplies were cut off – or Zim-

babwe (a country that has been called the first casualty of peak oil) could be very instructive. It shows the dependence of our system on oil in clear relief and provides a time compressed view of the future we can expect if we don't respond with adequate planning.

We will adapt to the new environment. To adapt well we will need to utilise the collected and shared wisdom and experience of all those working in health care. If we start now we can lead our communities forward. But it won't be easy. In the words of Albert Einstein: .The significant problems we face cannot be solved at the same level of thinking we were at when we created them. #



Financial Flu Fighters

DOES this sound familiar? A crisis lasts for weeks, is driven by uncertainty over who is suffering and has people queuing to withdraw cash. For health emergency planners the word “pandemic” probably comes to mind. For the financial world, preoccupied with sub prime mortgages and the credit crunch, pandemic might not have been the first thought. Yet in the America the largest-ever exercise to simulate the impact of an influenza pandemic on the industry has been under way.

Over three weeks, 2,725 financial institutions were fed scenarios on the spread of a virtual outbreak as well as a weekly batch of letters of the alphabet. Banks had to assume that employees whose surnames start with those letters were unable to work, a simple but effective way of aping the indiscriminate nature of a pandemic.

The American simulation is closely modelled on a similar exercise carried

out by the Financial Services Authority (FSA), Britain's financial regulator, in late 2006. One outcome of the British experiment was to force institutions to think much more systematically about human-resource policies. Some had planned to hold stocks of flu medicines but had not designated which employees would be treated.

As absentee rates climbed, firms realised that they would need policies on everything from whether staff could take holidays to whether they could attend funerals of dead colleagues. The exercise was “a wake-up call to HR departments”, says Richard Maddison of the FSA.

Retail institutions came under greater strain than wholesale ones because their work is less automated, they have more customer contact and their employees are more likely to be affected by school closures. Since the exercise, British retail banks have been thrashing

out ways of co-ordinating branch and cash-machine closures so that bank services remain as widely available as possible. They have also been honing plans for training and redeploying staff from functions such as sales and product development to positions directly serving customers.

As for the risk of a “dash for cash”, Chris Keeling, a business-continuity specialist, reckons that there may be an initial spurt of withdrawals but that it will not last long. There will not be much to spend money on and no one will want to stand in queues. If fears of initial panic may be overdone, the FSA exercise also suggested that the after-effects of the pandemic would be more testing than anticipated. Markets will recover much more quickly than beleaved employees. #

California's Mobile Hospitals

With a population of over 36 million California is used to doing things on a bigger scale than others and as part of their disaster preparedness the state has commissioned three of what are billed as the "world's largest mobile civilian hospital."

"We are clearly the leaders in the nation when it comes to disaster preparedness." California spent \$18 million to purchase the three mobile field hospitals. "Our primary goal was to increase readiness within our state," said Dr. Cesar Aristeiguieta, director of the state's Emergency Medical Services Authority.

"In California, it's not a matter of if a disaster will strike, but when," he adds; "In our state, emergency preparedness is a key focus of the governor's administration, as well as the legislature. We're always very concerned about it because we face threats from earthquake and from fires and floods and from other natural and man-made disasters on a very regular basis.

The purchase was spurred by a disaster nearly 2,000 miles away from California. When Hurricane Katrina struck the Gulf Coast in 2005, all the federally sponsored disaster medical assistance teams based in California were deployed there. "It left us wondering what would happen if California had a disaster at the same time," says Aristeiguieta. "Our primary role for these hospitals will be to be ready and available for an emergency **within California.**"

The units are stored in secured strategic locations in southern, northern and central California where they can be delivered by ground, air or sea for deployment within 72 hours. They are designed to go into areas when local medical facilities are overwhelmed by a major disaster.

A single mobile field hospital can cover an entire football field. Each 23,000-square-foot hospital contains 200 beds



and can provide services ranging from emergency/triage to intensive care. The mobile hospital contains operating rooms, two 10-bed intensive care units and radiology, pharmacy and laboratory units. It can also house a staff of 150 people.

The hospitals are scalable in size up and down, allowing for different size configurations. In the event of a catastrophic event, multiple field hospitals can be assembled together to meet the need. Because they are modular, a 40-bed hospital, a 100-bed hospital or even a 600-bed hospital can be set up. Officials say that once set up, a field unit would likely remain operational for one to two months. It could, however,



A view inside a tent

be kept in service for up to 16 months. The units have climate control systems for heating and cooling.

The field hospitals would be staffed by California Medical Volunteers, who would be dispatched after a state of emergency was declared. The state currently has a database of 1,000 medical personnel it can call on to respond and recruitment efforts are under way to increase that number.

The volunteers could be supplemented by California Medical Assistance Teams, which Aristeiguieta describes as "the SWAT teams of disaster medical services." The three teams of 40 people each are designed as a rapid deployment force to immediately respond to a disaster scene and provide care. The teams would typically be on the scene within 12 hours and are equipped to be self-sufficient for 72 hours. They may utilize the mobile field hospitals as backup, Aristeiguieta says.

"Their role is to go in and try to stabilize the situation and see as many patients as possible," he explains, noting that even before they arrive, ambulance strike teams would be tending to people affected. Further assistance could come from the six federally-sponsored Disaster Medical Assistance Teams based in the state. Each of those teams, of about 120 people, are deployed and supported by the federal government. Another team, focusing on mental health issues, would also be available.

Before we look to putting in a call to borrow one of these hospitals, Aristeiguieta says there were no plans to make the mobile field hospitals available to other jurisdictions. While California has mutual assistance pacts with other states, it would require an order by the governor to send one of the units to another state. #

A collapsed bridge and troubled waters

Our Auckland media have been painting the safety of the Harbour Bridge with a real doomsday brush these past few days. First, the box girder "clip ons" were going to collapse from the weight of heavy vehicles and when that was discounted the wind was going to blow it over. Whatever the hubris, the bridge is fast approaching its 50th anniversary and will no doubt last a few years past that.

Not so fortunate was a new suspension bridge under construction in Vietnam which collapsed killing 53 workers and injuring 100 more. The event coincided with the minor eruption from Mt Ruapehu and that being a local event dominated our headlines.

The four-lane road bridge with an overall length of 2750 metres was being built over the Hau river in the southern city of Can Tho, around 105 miles south of Ho Chi Minh City. At least 200 people were working on the giant structure when a 100-metre section buckled around 8 a.m. local time.

Victims were taken to the Central Can Tho general hospital. Dang Van Tam, the hospital director said the hospital had never had that many patients and extra surgeons were drafted in from Ho Chi Minh City to help

The bridge, funded by a Japanese loan and constructed with help from Japanese companies, was designed to replace the current ferry link across the Hau River, a tributary of the Mekong, and had been scheduled to open next year.

While it will take months to determine the cause of the collapse, the Vietnam News Agency reports that the police agency of Vinh Long province has decided to press charges in connection to the bridge collapse.

Supporting the adage that disasters are a number of culminating events that overwhelm resources, rescue efforts at the bridge site were hampered by torrential rain from Typhoon Lekima that swept the region at the time. Five days of storms and flooding triggered landslides and some of the worst floods since the mid-1980s and killed at least 77 people

"People are telling us they have not seen flooding like this in a generation,"

said Joe Lowry of the International Federation of Red Cross and Red Crescent Societies after visiting Thanh Hoa and Nghe An about 150 km (93 miles) south of Hanoi. "Preparations were made for the storm, but they didn't take the flood warnings seriously enough," Lowry said.

Vietnam, with a



The road rule is that boats give way to pedestrians on this flooded road in Vietnam's central Thanh Hoa province

population of 85 million, faces up to 10 storms a year that cause millions of dollars in damage and kill hundreds of people. Preliminary reports said nearly 58,000 houses were damaged or destroyed in this disaster. Estimated damages were at least 2.1 trillion dong (NZ\$185 million).

According to the Vietnam Red Cross and government officials, two million people were affected in Thanh Hoa and Nghe An, home to more than six million people. In Thanh Hoa, wells supplying fresh water were submerged. Maintaining sanitary conditions and the threat of water-borne diseases were among the difficulties that people faced. Mudslides closed roads and thousands of electricity lines were felled, isolating villages in several mountainous areas. The IFRC said it was preparing an emergency appeal to buy 500 tonnes of rice, kitchen sets, water jars, mosquito nets and blankets for more than 12,000 families. #



The collapsed section of the bridge

Database lists pandemic-planning resources

Emergency Planners looking for ideas and tools to help them prepare for an influenza pandemic can find an online collection of peer-reviewed resources on the web at

www.pandemicpractices.org

The site describes and links to 130 "promising practices" from four countries (including New Zealand), 22 states, and 33 counties. It was developed by the University of Minnesota Center for Infectious Disease Research and Policy (CIDRAP) and the Pew Center on the States, part of the Pew Charitable Trusts.

Jim O'Hara, director of health policy at the Pew Charitable Trusts, said "communities across the country were facing the challenge of translating broad requirements into local action, often with limited resources." This database is an excellent tool to help health officials inform their own pandemic planning and may save valuable time and resources that would be spent crafting strategies from scratch."

According to O'Hara, the site describes approaches that communities have developed to address three key tasks: altering standards of clinical care, communicating effectively about pandemic flu, and delaying and reducing the impact of a pandemic. Specific topics cover a wide range, from triage of possible flu patients and reopening closed

hospitals to guidance for schools, mortuary planning and isolation and quarantine strategies.

The database provides a brief description of each resource along with comments from the reviewers and links to the resource. The reviews were done by a group of 27 experts, national reviewers from various disciplines, and an advisory committee.

The database can be searched by state or topic and by area of special interest, such as material translated into multiple languages, material for vulnerable populations, and tool kits for schools.

Here are a few examples of resources in the database:

- "North Carolina's Ethical Guidelines for an Influenza Pandemic." A task force of public health and medical experts, according to the description, carefully addressed three ethical issues: the responsibility of healthcare workers to provide care and to be protected, the balance of individual and community needs, and the "prioritization" of limited resources.
- "Reopening Shuttered Hospitals to Expand Surge Capacity." The materials, provided by the federal Agency for Health Care Research and Quality, describe the authors' experiences in reopening a closed hospital in Boston and offer an extensive tool kit to

address problems others may encounter in doing the same.

- "Pandemic Influenza Mortuary Planning Guidelines." The materials recount how a committee in Barron County, Wisconsin, assessed the county's capacity for processing human remains and established a Unified Mortuary Preparation Facility and a Family Assistance Center. The group developed a "strategy to increase remains processing capacity through resource sharing and utilization of a unified command structure."
- "Isolation and Quarantine in Alexandria, Virginia." The document details the city's strategy for invoking and enforcing isolation and quarantine for any contagious disease that poses a public health threat.
- "Stay at Home Toolkit for Influenza." The kit, from Montgomery County, Maryland, is "a user-friendly guide for family reference."

Items for the database were gathered through a combination of Web-based research, targeted surveys, interviews with key public health leaders, and collection of material at conferences. More than 200 practices were considered and with new submissions being regularly received and sent for review, more material will be added from time to time. #

Random Acts Of Reality

The number of healthcare blogs has literally exploded in recent years and there are blogs from all manner of healthcare professionals and managers. Healthcare100.com tracks the top 100 searched healthcare blog as recorded weekly by the major search engines.

Consistently topping the list is Random acts of Reality, the musings of a London Ambulance Service paramedic. Now this could be because ambulance officers sit around their stations surfing the net, or his blog has appeal to a wide range of "blogees" Have a look and make up your own mind.

And if you have a different reality, there are plenty of other blogs to pick from; whether it be surgery, nursing, general practice, pharmacy, and dare I mention it, one from the CEO of a Boston hospital.

Start off at www.edrugsearch.com/edsblog/healthcare100

Make Physios part of your response team

Commonly, physiotherapists are not an automatic choice for inclusion in health disaster response teams although they are included in military responses in the United States and United Kingdom, and in Disaster Medical Assistance Teams in the US. Despite this involvement, there have been almost no investigations into the roles of physiotherapists in emergency disaster responses. Rosalind Harrison questioned why and the results of her research are published in *Prehospital and Disaster Medicine* 2007; 22(5): 462—465.

Harrison's research was based on a literature research and a small qualitative study of 4 respondents who had been engaged in a disaster response. As such, it is limited but does provide enough evidence to give the question serious consideration.

Is there a role for physiotherapists in emergency disaster responses, and if so, what is this role? Harrison concludes that there is. At least in the response phase where they would be of benefit in treating and preventing rescue worker injury and treating musculoskeletal, critical, respiratory and burn patients.

Although non military physiotherapists have been involved in the response following several disasters in the United States, the lack of a clearly defined role meant that disaster response organizers and therapists did not know how to use their skills to provide maximum effect. On the other hand, physiotherapists employed by the armed forces in the UK and US are trained and prepared to support the military during disasters. In this context, they may play a primary role in triage, treating acute orthopaedic trauma, and wound care, as well as respiratory care in critical and ward settings. The rationale is that critical care in disasters should be provided by the same personnel using the same protocols routinely used in non-disaster situations. Therefore the same principle could be used to justify the

involvement of physiotherapists in the treatment of many types of casualties commonly seen in disaster response, including respiratory complaints, burns and critical cases, and orthopaedic and musculoskeletal injuries.

Empirically, the roles taken by physiotherapists could be grouped into two areas: patient care; and organization of physiotherapy and other services. In terms of patient treatment, the physiotherapists' role differed according to location. Triage was one area in which those surveyed said they were able to help:

The types of patients treated fell into two main groups: rescue workers, who sustained a variety of minor musculoskeletal injuries and respiratory problems, and those injured in the disaster. Medical conditions included a variety of musculoskeletal injuries, wounds, compression injuries, ballistic injuries, high velocity penetrating wounds, internal bleeding, and critically ill victims.

The preventative role physiotherapists could play is under utilised. Their involvement in planning could prevent musculoskeletal and respiratory problems among rescue workers.

So what are the barriers to involving physiotherapists in disaster response teams? One of the main barriers is organisational with reluctance being encountered from both physiotherapy and disaster response organisations. There is a general lack of knowledge of how physiotherapists could help.

As new roles open up in disaster response, physiotherapy as a profession has to be its own advocate. And this starts with individual awareness.

Besides being involved in all their normal areas of work after a disaster, physiotherapists have the organisational and managerial skills needed to be an effective part of the large amount of logistical and organizational work required in any disaster response.

Harrison's study shows the need for

organisations to seriously consider using skilled physiotherapists with the necessary experience to improve disaster response. And equally the need for physiotherapists themselves to raise awareness within their profession of disaster response and the consideration of new ways of working which are flexible and incorporate multiple areas of skill. #



Superwomen Captain Sally Orange is a Physiotherapist at the Reserves Training and Mobilisation Centre, Chetwynd Barracks, Nottingham

Surge Hospitals and the Standard of Care

Surge capacity has become part of the tool kit of solutions bandied about for dealing with an overwhelming influx of patients after a major event. What does surge capacity mean for us and how can we deliver it? Mobile hospitals, as established in California, offer one (costly) solution but they are far from being the only answer.

After Hurricanes Katrina and Rita slammed into the Gulf Coast in 2005 the health care community quickly mobilized to provide care to the thousands of people who were caught in the storms' paths. Because the hurricanes and subsequent flooding caused devastation to many local health care facilities the disaster forced many health care organizations to set up temporary facilities called "surge hospitals" in places such as shuttered retail stores, stadiums and veterinary hospitals.

These temporary facilities were established to serve as a stopgap measure to provide medical care until the area's health care organizations could reopen. Katrina and Rita have shown that health care organizations may be forced to provide care at surge hospitals for an extended period of time due to the damage sustained to their permanent facilities. This has caused the Joint Commission (on Accreditation of Healthcare Organizations) to consider implementing a minimum set of standards to ensure that care provided at

surge hospitals is safe and of high quality.

They have published a consultation document outlining the issues providers face in delivery care in a surge hospital environment. The paper also offers examples of how surge hospitals were established at the time of Katrina and Rita.

When planning for the potential use of a surge hospital, health providers need to consider their definition of *surge capacity* as more than just the number of available hospital beds. Instead, they need to think about their ability to handle a health emergency by examining two additional types of resources inside their institutions: staffing and equipment. Providers also need to identify alternative sources of pharmaceutical supplies so they can have a ready supply of needed medications that last until additional supplies arrive. In addition, communications systems and information technology should be in place so that the organization can communicate both internally staff and outside their agencies.

When considering the surge facility options available to a health care organization, it is important to start at the neighbourhood level and work outward. Can any closed wards be opened? Does the organization have a satellite outpatient facility that can be converted to inpatient use to increase hospital capacity? What are the closest available large-capacity venues, such as veterinary hospitals, exhibition halls, or schools that could be used to expand capacity? Mobile medical facilities and portable surgical units can also be attractive candidates to serve as surge facilities; however, a disadvantage of using these facilities is their considerable cost. Cash strapped hospitals and other health care organizations may find it difficult to dedicate huge sums of money for infrastructure changes that may rarely, if ever, be used.

The experience of the medical teams that set up the surge hospitals follow-

Few, if any, hospitals in America today could handle 100 patients suddenly demanding care. There is no metropolitan area, no geographically contiguous area, that could handle 1,000 people suddenly needing advanced medical care in this country right now."

Source: U.S. Congress. Senate. Committee on Government Affairs. FEMA's Role in Managing Bioterrorist Attacks and the Impact of Public Health Concerns on Bioterrorism Preparedness. 107th Cong., 1st sess., July 23, 2001. Testimony of Tara J. O'Toole, M.D., M.P.H., John Hopkins Center for Civilian Bio-defence Studies infection control practices.

ing the hurricanes was that they could not get delivery of needed medical goods for several days during emergencies. Therefore, they needed to look for other sources of supplies. And surge facility pharmaceutical procurement can be more problematic than that of disposable equipment and supplies because of the legal requirements surrounding the prescription, storage, and preparation of medications.

Sufficiency of care

Ideally, the goal of the surge facility is to maintain high standards of care. In practice, however, medical treatment in a surge hospital may reach only the level of sufficiency of care because of the challenging circumstances under which the facility must operate. (See figure over for an illustration of the difference between the standard of care and sufficiency of care.) In a sufficiency-of-care facility, the medical staff faces challenges such as limited privacy for patient assessments, crowded conditions, limited access to medical

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If only we could keep surge in a can

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records, and inadequate access to testing capabilities. The goal of any sufficiency-of-care facility is to treat each patient and then transfer him or her to a facility with full capability to treat patients at an ideal level of care.

Any plan for a surge hospital that is envisioned as a sufficiency-of-care site should be part of a community response network. This way, all invasive procedures, deliveries, or surgical needs can be transferred to a standard-of-care-based hospital unless emergent intervention is needed to save a life. To handle such emergent cases, advanced airway equipment, ventilator support, portable dialysis units, and monitoring capabilities should be available on site.

All surge facilities must ensure that the care they provide is safe. In addition, certain quality assurance processes must be followed in surge hospitals so that, for example, patients are identified and drug errors do not occur. The longer a facility remains operational, the more demands must be made on both its environment of care and the process of care delivery to make sure they are in line with high standards of care. These demands can ensure that, while expedient care may be given, substandard care is never allowed. The possibility of surge hospitals operating on a long-term basis adds a third dimension to the concept of the emergency event itself.

Health care organizations are used to thinking about emergency events on two levels of magnitude, each with its own response.

The first level of emergency can be called the major incident. Examples include a school bus accident with multiple casualties, or an industrial explosion producing numerous burn victims. The local hospital needs to respond by activating its emergency management plan in order to have enough staff available to manage the situation; however, this type of event is usually short-lived—lasting perhaps 24 hours—and the community and its hospital both remain intact.

The second type of emergency event can be characterized as the disaster. For example, Hurricane Katrina was a disaster because the health care infrastructure was damaged as was the infrastructure of the community. The disaster presents as a communitywide problem that can extend for many weeks or months and may need extensive state and federal resources to ameliorate the situation.

The third level of emergency, virtually unvisited by health care planners until recent events thrust it into view, can be described as the catastrophe: a series of disasters occurring to the same community in a short period of time. What

happened in New Orleans after the levees broke was a catastrophe. First, the hurricane hit, causing serious but manageable damage. Then the levees broke, flooding the city. As a consequence, the community's entire infrastructure broke down: sewer, water, and electrical power were all disabled. The ability of health care and emergency medical services to respond was totally disrupted.

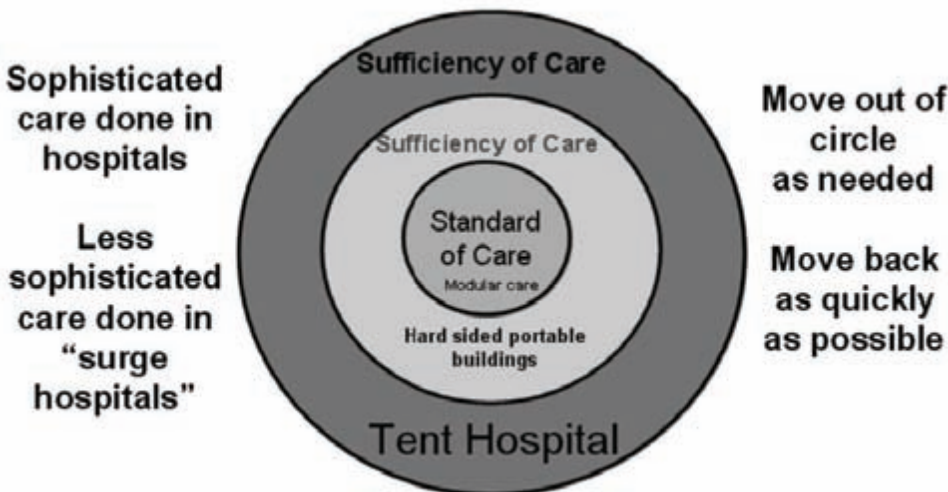
What happened in New Orleans has forced health care organizations to think about how surge hospitals can be used on a long-term basis to supply needed medical care. Most pointedly, Charity Hospital, which was significantly damaged in the disasters, has prompted the need for patients who would normally be treated at the hospital to instead seek care at surge hospitals in the area. The initial stage of the surge hospital that was set up after Charity Hospital was severely damaged was the tent hospital established on October 8, 2005, in the parking lot of the old Charity Hospital. This surge hospital remained in place eighteen months later.

Advance planning, coordination of resources, effective communication, and visible leadership are critical to ensuring that surge hospitals can be set up quickly and can provide care to patients during emergencies. Health care organizations must prepare for the possibility that their buildings could be too damaged to function during as well as after a disaster, necessitating the use of surge hospitals - some of which may need to operate for months or years until permanent health care organization facilities can be rebuilt.

Health care planners at all levels must familiarize themselves with the challenges associated with surge hospitals and must develop thorough plans for their use in emergencies. #

Standard of care vs. sufficiency of care

The concept of sufficiency of care (medical care that may not be of the same quality as that delivered under non emergency conditions, but is sufficient for need) is often the reality of surge hospitals because of the difficult circumstances in which care is provided.



HEMNZ Bulletin

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

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Check out our Web site at
www.hemnz.org.nz

Up coming Events

Leadership and Learning in Nursing and Midwifery Conference

25—26 October 2007

Mercure Hotel, Brisbane

Cost from \$650

More information from

www.matereducation.com.au/ssl/3/shopexd.asp?id=350

Understanding and Managing Landslide Hazards

7—9 November 2007

Wellington

Cost \$600 + GST

More information from

www.naturalhazards.net.nz/courses

Editor's soapbox



As we plan for Exercise Ruaumoko we tend to concentrate on the immediate effects of the eruption of a new volcano on Auckland's volcanic field. Evacuation, continuity of care and the relocation of services are the action points on which we need to deliver. Of less immediate concern, but of far greater long term effect is the economic factors. Early analysis suggests a drop of over 5% of national GDP. Doesn't sound much until you compare it with the "Great Depression" where the GDP dropped only an agonizing 1%. It is not just an Auckland issue. Our ability to fund modern healthcare will change dramatically across the whole country.

And in that context I make no apology for leading this edition with an article on peak oil. There will be no big bang in the night and our lives will go on normally. It is just that normality will change over time. Petrol is edging towards \$2 a litre, yet this is a cost we seem happy to absorb without changing our behaviour patterns. Will that hold true when it reaches \$5 a litre?

Will we have the vision to predict that new normality so we can modify our mitigation and response strategies to suit? How will we work? State of the art teleconferencing will stack up well against the ever increasing cost of travel. Living and working locally may be the only option for many. There is at least one part of New Zealand where an ability to ride a horse is still a pre requisite for community nursing.

On a final note, back to Ruaumoko. All hospitals have evacuation plans. Most stop in the car park. I am still looking for a hospital plan that sets out how all patients will be shipped out to another facility on a call for a forced evacuation.

Bruce Parkes

DRAWBACKS OF WORKING IN A CUBICLE

- Not being able to check E-mail attachments without first seeing who's behind you.
- The walls are too close together for the hammock to work right.
- Prison cells are not only bigger, they have beds.
- When you quit and walk out, there's no door to slam.
- Being told to "think outside the box" when you're in a freakin' box all day long.
- 23 power cords - 1 outlet.
- If you talk to yourself it causes all the surrounding cubicle inhabitants to pop their heads over the wall and say "What? I didn't hear you."
- You always have the feeling that someone is watching you, but by the time you turn to look they're gone.