

## Why We Make the Decisions We Do

On your next flight consider this. In the cockpit of the plane there is a bewildering array of instruments and automatic guidance systems to make flying that plane safer and easier. Is it more important for the pilot of your plane to follow those instruments - no matter what - or would you rather they take action based on their instincts when they felt it was appropriate? Whichever approach they take they have made a critical decision and you have a very personal interest in that decision being the right one.

Enhanced technology and well crafted emergency plans should make the management of emergencies easier but we all understand that the key to the successful management of an emergency is people and the decisions they make at the time. And time and time again we see disasters compounded by poor decision making by those initially in charge.

The study of decision making, especially that of political and military figures, has been going on for centuries. In the past those studies have been dominated by economic models of rational behaviour. In recent years, however, the economic view of people as rational calculators has been replaced by new findings from psychology and neuroscience which provide some of the answers to the question of why people make the decisions they do.

### Lady Luck

Of course chance (luck) plays a part. Bad decision making can lead to good outcomes and good decision making can still lead to bad outcomes. Running red lights is a very bad decision, but people in Auckland can still go for surprisingly long periods before experiencing a crash. As an example of good decision making leading to a very bad outcome, take the case of the Air New Zealand DC-10 that crashed on the slopes of Mount Erebus in 1979. The crew's decisions were perfectly reasonable and in accordance with normal practice. What was not normal was that the aircraft's programmed track had been changed the night before by the Air New Zealand navigation department and instead of flying down the middle of McMurdo Sound the aircraft was programmed to fly directly towards Mount Erebus.

Less extreme versions of this can be found in many organisations where 'normal' working practices are at variance with organisationally prescribed procedures and practices. Who is the most valued worker in an organisation, the one who is a stickler for the rules and never deviates from prescribed practice or the one who gets things done? In any organisation, informal procedures and social norms govern work practice. A classic example can be found in naval aviation where strict rules govern the highly hazardous final approach and landing on a carrier. Pilots who 'bend' the rules and succeed in pulling off a landing from an unstable approach are highly esteemed by the other pilots. Some sort of reflected glory also seems to flow over to those who bend the rules and don't make it. They are the ones who receive posthumous medals.

### Three Decision Systems in the Brain:

When we first think of decision making we tend to think of a deliberate and conscious process of weighing up the pros and cons of several alternatives. This is how economists and psychologists thought of decision making for many years. However, recent evidence has

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shown that this is a poor account of what constitutes most decision making behaviour. Studies of pilots, military commanders, fire-fighters, nurses and so on have shown that they rarely weigh up the pros and cons of alternative actions. In fact, most working 'decisions' are made in less than a minute. Experienced practitioners concentrate on making sense of the situation they face (e.g., 'what kind of fire is it?') and either respond immediately or mentally appraise the most obvious course of action for flaws or weaknesses. Often, experienced practitioners report that decisions are made on 'gut feeling' or 'instinct'. Recent findings in psychology and neuroscience have helped us to understand that decision making can be guided by any of three distinct brain systems.

### The Three Decision Pathways

#### The cognitive, analytical system.

We can carefully reason through a problem, deciding on alternatives and weighing up the pros and cons of each alternative in order to arrive at a decision. Formal procedures (e.g. 'Decision Analysis') have been developed to assist this process and can be found in software systems for decision support. These kinds of processes utilise the frontal lobes of the brain - in evolutionary terms the more recent parts.

**The analogical system.** This is the process of drawing on previous experiences. Expert decision makers invariably relate the current situation to a previously encountered situation in memory. Formal procedures (e.g. 'Case-Based Reasoning') have been developed and many CBR software systems are available.

**The affective system.** Recent research has shown that feelings, emotional reactions and unconscious (implicit) associations play a significant role in decision making. Processing of affective information takes place in older, more primitive parts of the brain. However, these areas have direct connections to other brain areas including the frontal cortex.

### The neurology of morality

In wars, disasters and other large emergencies whatever decision is made comes at an unpleasant cost. How do you pick the lesser of two evils? In moral-philosophy classes the problem is sometimes posed as the runaway railway wagon paradox.

Given a choice between deliberately pushing someone in front of a wagon, in order to slow it down sufficiently for five people further down the line to escape, and allowing the five to die that the one may live, what should you do?

Given a choice between deliberately pushing someone in front of the runaway wagon, in order to slow it down sufficiently for five people further down the line to escape, or allowing the five to die that the one may live, what should you do? Conversely, given a choice of throwing a set of points so that the wagon will go down a line where it will kill only one person, as opposed to five down the other line, what should you do?

On the face of things, the outcomes are identical in both situations. Either one person dies or five do. But, whereas most people have no difficulty choosing which is better in the second case (to kill one rather than five), the first usually causes paroxysms of guilt. Moral philosophers have spent years discussing this paradox. Now a team of neuroscientists, led by Michael Koenigs of the University of Iowa and Liane Young of Harvard University, have come up with at least part of the real answer.

Basic emotions, such as fear, are regulated in part of the brain called the limbic system. These emotions—along with the limbic system—are shared by all mammals. Social emotions such as compassion, shame and guilt, however, are confined to a small number of species, and are most strongly expressed in man. They are associated with a particular part of the prefrontal cortex, an area of the brain that is much bigger in humans than in other mammal species. Dr Koenigs and his colleagues suspected that the seat of the runaway-railway-wagon paradox lies in that specific part of the prefrontal cortex, known as the ventromedial prefrontal

cortex (VMPC).

To test this idea, they looked at six people with damage to the VMPC on both sides of their brains. These people are known from other work to have poor social-emotional responses. The researchers compared the responses of these people to various moral dilemmas with those of a group whose brains were undamaged and a second group with equivalent damage in other parts of the cortex. All three groups were asked questions (including the runaway-railway-wagon paradox) that previous studies have shown fall either side of the divide between the obvious and the squirm-inducing. The researchers' hypothesis was that people with VMPC-damage would come to the utilitarian answer in difficult cases (push the person in front of the wagon) more often than either of the other two groups. And that was exactly what happened. In cases where the choice involved personally causing harm, even for good ends, destroying the centre of social emotion also destroyed what is regarded by most people as normal moral judgment.

Pinning down the location of this part of morality does not answer the more fundamental question of why it evolved the way it did. It does, however, assist the process of thinking about that question. In these cases it seems that the decision on how to act is not a single, rational calculation of the sort that moral philosophers have generally assumed is going on, but a conflict between two processes, with one (the emotional) sometimes able to override the other rational process.

### Risk, What Risk?

What shape is a risk? What does it look, sound or feel like? These questions are nonsensical as risk is an abstract concept. Although human beings have always avoided danger, the concept of risk only developed in the last few hundred years. Human beings are not hard-wired to process or understand risk because in evolutionary terms, it is a recently developed abstraction.

Run a risk ruler over so many of our common behaviours and they stack up as perverse. People smoke but worry about radiation from powerlines and pesticide residues on fruit. People buy

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lottery tickets, play roulette and slot machines, and purchase insurance. All are gambles on which we are bound to lose in the long term.

Decision making on risks can be understood much better in terms of the three decision systems described earlier and the same information will be available to all three systems. There is no guarantee that the cognitive analytical system will be engaged at all. This system requires attention and involves conscious thinking. In a difficult situation our attention may be diverted elsewhere. We are mostly creatures of habit and prefer to exercise the least effort and thinking analytically about risks is not easy or natural.

We are more likely to engage the analogical system and look for previous experiences and comparable situations that match the present one. Once we find a match we consider what was done on the previous occasion. This will provide us with an action for the present situation and the decision is taken. This does not necessarily lead to bad outcomes. It is easy for someone to find previous experiences that worked out positively. Pilots who end up caught in bad weather and crash have invariably made the same decisions before but got away with it.

At a relatively unconscious level we are also engaging the affective system. We may have an immediate emotional response or feeling about a situation. There are dispositional differences between people in how much they tend to worry or experience anxiety about situations. There are also differences determined by previous experiences. Any particular situation such as public speaking can generate feelings of anxiety or worry in some people and not perturb others in the slightest. Feelings about a situation can lead to observable signs (e.g., increased heart rate) that may be used as a cue in decision making. However, feelings or implicit associations can remain unobservable to the conscious mind but still affect our responses.

#### **When is Risk-Taking Attractive?**

In the past 25 years or so scientific studies have changed our understanding of how people respond to risks. There is solid scientific evidence for biases in risk perception. The most well-known is the 'It-Won't-Happen-

To-Me' bias where people assess the likelihood of personally experiencing negative events as generally lower than that of other comparable people. This bias is especially strong where the events are perceived as being subject to personal control (e.g., gambling addiction or alcoholism). We are also prone to making self-enhancing personal comparisons with others when appraising our own skills and abilities. For example, the majority of drivers see themselves as significantly better than the average driver. These tendencies mean that we tend to approach potentially risky situations with an overly optimistic sense of our own invulnerability.

Research has also shown that people respond strongly to the affective or emotional facets of risk rather than to the statistical realities of death or injury. Thus people are more fearful of nuclear power than of coal mining or cigarette smoking. Another key finding is that people appraise risks in terms of changes from a reference point rather than in terms of end states.

For example, when asked to choose between a certain gain of \$80 and a gamble (80% chance of winning \$100) with the same expected value, people are strongly risk-averse and prefer the certain gain. However, flip the choice around (a certain loss of \$80 versus an 80% chance of losing \$100) and people become strongly risk-seeking and will almost always choose the risky gamble. The notion of accepting a certain loss seems strongly aversive and people will generally prefer to risk a heavier loss as long as there is a possibility of emerging unscathed!

This psychological quirk may explain a good deal of risk-taking behaviour in other aspects of life. A pilot approaching increasingly threatening weather ahead is faced with turning the plane around, and accepting a certain loss of time and money already invested in the flight, or continuing the flight with the chance that the flight will end in disaster. As pointed out previously, even very risky situations do not invariably lead to catastrophe so the odds are still in the pilot's favour. Certain loss (turn back) or gamble (continue ahead)? The evidence shows that we are generally disinclined to accept a certain loss and so risk-taking becomes the more likely outcome. Gamblers

will take increasing risks as the possibility of a certain loss increases. The Barings Bank trader Nick Leeson's risk taking increased as he attempted to recoup the losses he had already incurred. His unwillingness to accept a certain loss ultimately led to the downfall of the entire banking company.

#### **Reframing the Message:**

Telling people to think carefully about risk is unlikely to have much effect on actual behaviour. It would be better to work with peoples' natural decision making tendencies than to try and overcome them. In familiar situations people tend to rely on implicit decision making pathways previous experiences and feelings rather than explicit analysis. One strong implicit tendency is the reluctance to accept a certain loss and to prefer to chance a better outcome. To counteract this, messages should address the desired behaviours in the context of gains where people prefer to hold on to a certain gain rather than risk a possibly better gain.

There is recent research evidence that framing messages appropriately can improve decision making.

#### **Immersive Training:**

The aviation industry has been able to achieve this naturally through the extensive use of flight simulation technology. Pilots can experience situations in almost complete realism and can see for themselves the actual consequences of their actions. Such training is memorable and thus provides the experiences that can be drawn on when needed. The fully immersive and engaging nature of these experiences also provides affective associations to these experiences. The combination of experience and affect generate the 'gut-feelings' or intuitive reactions that are the first response in most situations. For most of us, our exercise programme is less high tech but does provide an opportunity to experience situations and make decisions with which we can associate should a real event come along. #

# Influenza Vaccine Effectiveness among US Military Basic Trainees

At the start of our annual influenza vaccination season it is opportune to consider a report published in the April edition of *Emerging Infectious Diseases* on the experience in vaccinating US military basic trainees in the 2005–2006 influenza season. The authors Jennifer K. Strickler, Anthony W. Hawksworth, Christopher Myers, Marina Irvine, Margaret A.K. Ryan, and Kevin L. Russell are based at the Naval Health Research Centre, San Diego, California, USA.

They say that their analysis suggests that the 2005–06 influenza vaccine was highly effective in protecting US military basic trainees against laboratory-confirmed influenza.

## The Study

The Naval Health Research Centre (NHRC) began conducting tri-service surveillance for febrile respiratory illness at military training centres in 1996. By 1999, this surveillance network had expanded to include 8 of the largest military basic training centres in the United States. This surveillance includes the systematic collection of throat swab specimens and clinical data (including but not limited to gender, date of birth, symptoms, influenza vaccination status, type of vaccine received, and date of vaccination) from consenting US military trainees meeting the case definition for febrile respiratory illness (oral temperature  $\geq 100.5^{\circ}\text{F}$  [ $38.0^{\circ}\text{C}$ ] and a cough or sore throat). Samples are stored locally at each site at  $-70^{\circ}\text{C}$  until they are forwarded to the Naval Respiratory Disease Laboratory at NHRC for viral culture and molecular diagnostic processing. Research personnel at participating surveillance sites report the weekly number of trainees who sought care for febrile respiratory illness and total trainee populations for their respective sites, and rates for such illnesses are calculated.

During the 2003–04 influenza season, the authors recognized the opportunity of using data from this ongoing active surveillance to estimate influenza vaccine effectiveness in protecting

against both laboratory-confirmed influenza and febrile respiratory illness of any cause among US military basic trainees.

During the late fall and winter seasons, all active-duty military forces are required to receive the influenza vaccine, and this policy is strictly enforced in training camps. Upon arrival, all incoming trainees receive mandatory influenza vaccination, either the trivalent inactivated influenza vaccine by injection (FluZone, Sanofi Pasteur, Lyon, France) or intranasal cold-adapted, live, attenuated influenza vaccine (CA-LAIV) spray (FluMist, MedImmune, Gaithersburg, MD, USA).

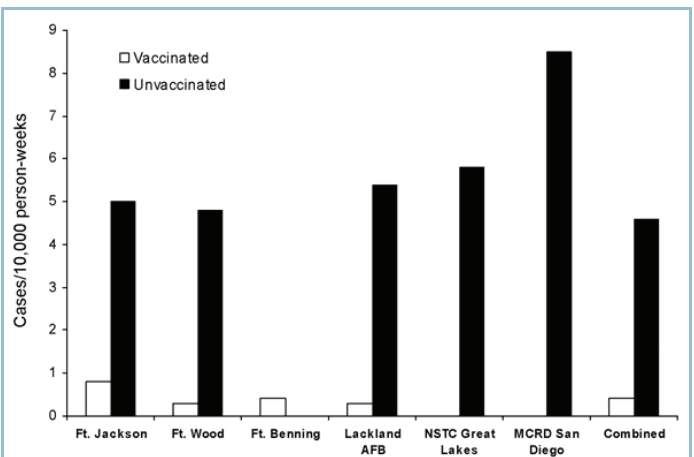
For this analysis, vaccine protection was assumed to begin 14 days post vaccination. Therefore, in an 8-week training program, 25% of trainees were considered "unvaccinated" at any given time, assuming immunity takes 14 days to develop. Likewise, 33% of trainees in a 6-week training program were considered unprotected by the vaccine at any time. These assumptions allow estimates of denominator data for "vaccinated" and "unvaccinated" person-weeks in calculations of vaccine effectiveness.

From January through March 2006 all new trainees arriving for basic training received the influenza vaccine; all recruits already present had been vaccinated. The observation period for this analysis included January 1–March 31, 2006. However, 2 sites, Naval Service Training Command, Great Lakes, and Marine Corps Recruit Depot, San Diego, had completed vaccination by December 2005. Therefore, December was included in the observation period for those sites as well. Total person-weeks in recruit training during

the observation period were obtained directly from the participating training centres. Vaccine effectiveness was calculated for both laboratory-confirmed influenza and any cause of febrile respiratory illness.

During the observation period, 6 of 8 surveillance sites had influenza activity and were included in this analysis. In 479,181 person-weeks of observation, 4,052 cases of febrile respiratory illness were reported from these 6 sites, and 722 patients were enrolled into the surveillance study (includes throat swab specimen, case data, and consent). Seventy (9.7%) specimens tested positive for influenza, by either culture or molecular techniques.

Rates of laboratory-confirmed influenza were higher among unvaccinated train-



**Figure.** Incidence of laboratory-confirmed influenza by vaccination status. .

ees at all sites except Fort Benning, Georgia, which had only 3 cases. Overall, influenza vaccine effectiveness among US military trainees was 92% during the 2005–06 season. Vaccine effectiveness against laboratory-confirmed influenza was high (range 86%–94%) in each of the past 3 seasons. Vaccine effectiveness against non-laboratory-confirmed febrile respiratory illness was lower, ranging from -10% in 2005–06 to 52% in 2004–05.

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## Conclusions

This analysis suggests that the 2005–06 influenza vaccine was highly effective in protecting US military basic trainees against laboratory-confirmed influenza. Furthermore, these data suggest that both the trivalent inactivated vaccine injection and the CA-LAIV intranasal spray were equally effective, because the Marine Corps Recruit Depot in San Diego vaccinated its trainees with CA-LAIV almost exclusively, and vaccine effectiveness at that site was 95% (vaccine effectiveness at all other sites combined = 90%).

These estimates of effectiveness were supported by results of additional analyses that would be expected to bias the outcome toward the null hypothesis. For example, a 7-day lag period before immune response was considered in an alternative analysis, and it yielded similar results: the calculated vaccine effectiveness changed only slightly, from 92% to 90%.

In contrast to the consistently high effectiveness of the vaccines against laboratory-confirmed influenza, the effectiveness against febrile respiratory illness of any cause was much lower and varied with each season (13.9% in 2003–04, 52.1% in 2004–05, and 10% in 2005–06). This lower effectiveness in 2005–06 is most likely due to the generally high proportion of adenovirus infection seen in this population, and the lesser effectiveness is further exacerbated by the tendency for adenoviral infections to occur beyond the second week of training. The lower vaccine effectiveness seen against febrile respiratory illness of any cause gives credence to the estimates of high vaccine effectiveness against laboratory-confirmed influenza. If a measurement bias existed, both estimates would be affected.

As a highly vaccinated population, military personnel, and basic trainees in particular, can provide critical information regarding the effectiveness of each year's influenza vaccine formulations. Because of the annual variations of both the vaccine formulations and the circulating strains, influenza vaccine effectiveness should be evaluated annually. With the ever-rising concerns of an imminent influenza pandemic, reliable and rigorous influenza surveillance is paramount. This surveillance network will allow the methods used in this analysis to be repeated each year, thus providing valuable estimates of influenza vaccine effectiveness to the public health community. #

## No Money in Bangladesh to Cull Chickens

The Bangladesh Daily Star reported on March 27 that following an earlier culling of around 40 000 chickens at poultry farms near Dhaka after bird flu was detected there, over 6000 chickens were culled at 3 poultry farms on March 26<sup>th</sup>. Meanwhile, 400 chickens died at another farm due to "unknown reasons".

Free-ranged chickens in a 1km radius of those farms were also to be culled, livestock department sources said. However, those sources said they could not cull any free-ranged chickens due to fund shortages as they have to buy those chickens to kill them. "Today, we do not have money to buy free-ranged chickens near the farms. Hopefully we will start again tomorrow," said a high-ranking official working with the livestock department requesting anonymity. On Sunday free-ranged chickens of different sizes, near the farm where bird flu was detected, were bought at Tk 80 [USD 1.18], Tk 60 [USD 0.88] and Tk 15 [USD 0.22] and killed.

A correspondent from Jamalpur reports that a team from Dhaka reached Sharishabari's bird flu infected farms -- Hasan Poultry Farm and Naz Poultry Farm -- in Kuranipara. Under the supervision of the team of experts from Dhaka, local officials and farm owners packed jute sacks with chicken and buried those in a large ditch at Kuranipara.

The correspondent also said the chickens of those farms became sick around a month and a half ago. Since then no less than 5000 chickens have died, the report quoting local sources said. There are about 112 farms with layer chickens in Sharishabari.

The Star's Narayanganj correspondent reports that the government issued instructions to kill all chickens at the Sonakanda Poultry Farm, although the authorities did not mention anything about bird flu in Narayanganj. Recently, more than 5000 chickens died at the farm within a very short period of time. The farm sources said they collected 10 000 chicks from another farm and most of those have already died.

The paper's correspondents in other areas also report similar incidents. Bangladesh is obviously trying to control its avian flu outbreaks. Whether it has the resources to do so is questionable.

Meanwhile, Egypt and Indonesia continue to be the only 2 countries still regularly reporting human cases of avian H5N1 influenza virus infection. None of the recent cases in Indonesia appear to be linked. One of the 2 latest cases reported from Egypt contracted infection in a central province as distinct from the earlier cases, which originated predominantly in the north and more recently in the south of the country.

2 Egyptian children have tested positive for the deadly H5N1 bird flu virus, bringing the total number of human cases of this disease in the most populous Arab country to 29, Egypt's Health Ministry announced on March 27.

"There are 2 new cases of bird flu," Amr Kandeel, Head of Communicable Disease Control at the Health Ministry, told Reuters. "It is from exposure to dead birds."

The Health Ministry reported that the 5- and 6-year old children had tested positive on Monday [26 Mar 2007] after being admitted to hospital suffering from high fevers. They were in stable condition, Kandeel said.

13 Egyptians have died from bird flu since it first surfaced in the country's poultry a year ago [2006]. Most of those who fell ill were reported to have had contact with sick or dead household birds, primarily in northern Egypt. Egypt has the largest number of confirmed human bird flu cases outside Asia.

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## Vaccination offers new “prisoners dilemma” scenario

Mathematicians like to play games that examine how people pick ways of behaving that will maximise their returns. One such mathematician is Nobel economics prize winner John Nash. He demonstrated that there are games (the most famous being known in the trade as “prisoner's dilemma”) where the players can arrive at a situation now known as a Nash equilibrium. This is the point at which no one has anything to gain by changing his strategy unilaterally. However, a Nash equilibrium is rarely the best possible outcome for anyone; it is merely the one that pertains if the players are unable or unwilling to co-operate. More a lose, lose rather than a win, win.

That insight has found wide application in both the social and the biological sciences. The latest example is a paper published in the *Proceedings of the National Academy of Sciences*, by Alison Galvani, of Yale University, and her colleagues. Dr Galvani looked at vaccination as a classic example of a case where the best choice for the individual may not lead to an optimal outcome for society.

Dr Galvani asked almost 600 university employees in America about their attitudes towards annual flu jabs for themselves and their families. Her survey found that people aged 65 and over were more likely to be vaccinated than other adults. From a Nash point of view, that makes perfect sense, as the elderly are at greatest risk of dying if they contract influenza. However, as the parents of any small child know, it is the young who bring pestilence into the home. Thereafter, adults spread coughs and sneezes in their work-

places. Vaccinating the young would reduce the spread of flu, thus saving lives. The researchers therefore asked whether any children living in the household had been vaccinated and found that immunisation rates for the young were lower than for adults. Again, that makes perfect Nash sense, since children rarely die of seasonal influenza.

Indeed, from a public-health point of view, the situation could be even worse. Mathematical theories such as Dr Nash's tend to assume a world populated by individuals who behave in fully rational ways, because they have perfect knowledge. Dr Galvani and her colleagues recognised that this was unlikely to be completely correct, even among people working in American universities. Their results confirmed their suspicions. People overestimated their chances of catching flu and the length of time for which the disease would be contagious, and underestimated the effectiveness and duration of the vaccine. The only aspect that most people were clued up on was the length of time for which they would suffer symptoms, which was between four and five days. Combining those findings with the other results of the survey, the researchers concluded that if their subjects were better informed, their incentives to act more selfishly would increase, and the pattern of immunisation would look even more like a Nash strategy.

With this hypothesis a cynic could even imagine a Machiavellian plot by health-care workers to avoid vaccination to ensure an endless stream of influenza patients requiring treatment.

The converse approach to vaccination, known as a utilitarian strategy, relies on the concept of “herd immunity”. The idea is that when a critical proportion of a group is immune to a disease, too few individuals are susceptible for that disease to be passed from one to another. A disease that cannot transmit itself rapidly dies out.

The researchers calculated that a population which followed a Nash strategy would contract 100 times more infections than one which followed a utilitarian strategy. Indeed, if 77% of young people were given jabs, seasonal flu could be all but eliminated. A utilitarian strategy, however, is a top-down affair because it relies on a community-wide programme, rather than on individuals' choices about whether to get vaccinated.

Persuading people to act in the interests of society rather than on their own behalf is likely to be harder than showing mathematically that this is the best thing to do. However, the researchers did identify a case where individual and societal interests were more closely aligned. This was for influenza pandemic, rather than seasonal, flu. When a pandemic takes hold, it may kill millions of people in many different countries.

In this situation, the utilitarian strategy is also the Nash strategy. Because the disease kills the young as well as the old, parents have good reason to get both themselves and their children vaccinated. Which is a small piece of good news for those charged with contemplating how to deal with an influenza pandemic. #

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A teenager and a 22-year-old woman have died from suspected bird flu in Indonesia, a Health Ministry official said on March 27. Both had tested positive for the H5N1 virus after an initial test, but officials were awaiting the result of a 2nd test.

If the tests are confirmed, the latest 2 deaths would take Indonesia's confirmed human death toll from the virus to 68. The 22-year-old woman had not had contact with fowl, but that there were at least 10 cats at her house. The UN Food and Agriculture Organization (FAO) has warned that cats should be kept away from areas affected by bird flu as they can pick up and spread the disease. #

# Eighteen Months After Katrina

The recovery – or lack of recovery of New Orleans continues to be a case study which emergency management practitioners will insert into their presentations for years to come.

Visitors to New Orleans can still stay in fine hotels and dine at great restaurants. There seems to be an endless conferences scheduled for New Orleans – with optional side trips to look at the devastation from the safety of a moving bus. No doubt the conference organisers are getting great rates. Locals call it "the Grand Canyon effect" - you know about it, you have seen it on TV, but when you see it in person it can take your breath away.

Bill Quigley, a human rights lawyer and law professor at Loyola University New Orleans, offers this view of the recovery in New Orleans. And it will also take your breath away.

Each morning, Debra South Jones drives 120 miles into New Orleans to cook and serve over 300 hot free meals to people in New Orleans East, where she lived until Katrina took her home. Ms. Jones and several volunteers also distribute groceries to 18,000 families a month through their group, Just the Right Attitude. Who comes for food? "Most of the people are working on their own houses because they can't afford contractors," Ms. Jones said. "They are living in their gutted-out houses with no electricity."

Why do thousands of people need food and why are people living in gutted-out houses with no electricity? Half the homes in New Orleans still do not have electricity and eighteen months after Katrina, a third of a million people in the New Orleans metro area have not returned.

FEMA has told Congress that 60,000 families in Louisiana still live in 240 square foot trailers - usually at least 3 to a trailer. The Louisiana Hurricane Task Force estimated in December 2006 that there was an "urgent need" for 30,000 affordable rental apartments in New Orleans alone - and another 15,000 around the rest of the state. Over 80 percent of the 5100 New Orleans occupied public housing apartments remained closed by order of the U.S. Department of Housing and Urban

Development (HUD) which has controlled the Housing Authority of New Orleans (HANO) since 2002.

Congress approved over \$100 billion to rebuild the Gulf Coast. Over \$50 billion of that money was allocated to temporary and long-term housing. Louisiana received \$10 billion to fix up housing and over 109,000 homeowners applied for federal funds to fix up their homes. Yet eighteen months later, less than 700 families have received this federal assistance with renters, who comprised a majority of New Orleans, getting nothing at all.



HUD is suing residents to prevent them from cleaning and reoccupying their apartments

Obstacles to public funding of affordable housing has come from within New Orleans and neighbouring parishes. Many in New Orleans do not want the poor who lived in public housing to return. St. Bernard Parish, a 93 percent white suburb adjoining New Orleans, enacted a post-Katrina ordinance which restricted home owners from renting out single-family homes "unless the renter is a blood relative" without securing a permit from the government. Jefferson Parish, another adjoining majority-white suburb, unanimously passed a resolution opposing all low-income tax credit multi-family housing in the areas closest to New Orleans - effectively stopping the construction of a 200 unit apartment building on vacant land for people over the age of 62 and any further assisted housing.

Across Lake Ponchartrain from New

Orleans, the chief law enforcement officer of St. Tammany Parish, Sheriff Jack Strain, complained openly about the post-Katrina presence of "thugs and trash" from "New Orleans public housing" and announced that people with dreadlocks or "chee wee hairstyles" could "expect to be getting a visit from a sheriff's deputy."

With rebuilding starting up and the previous work force still displaced, tens of thousands of migrant workers have gone to the Gulf Coast to work in the recovery. Many were recruited. Most workers tell of being promised good wages and working conditions and plenty of work. Some paid money up front for the chance to come to the area to work. Most of these promises were broken. A tour of the area reveals many Latino workers live in houses without electricity, other live out of cars. At various places in the city whole families are living in tents.

Many former residents of New Orleans are not welcome back. Race is certainly a factor. So is class. As New Orleans native and professor Adolph Reed notes: "With each passing day, a crucially significant political distinction in New Orleans gets clearer and clearer: Property owners are able to assert their interests in the polity, while non-owners are nearly as invisible in civic life now as in the early eighteenth century."

Healthcare is in crisis. The main public healthcare provider, Charity Hospital, which saw 350,000 patient visits a year, remains closed, as do half the hospitals in the city. It is not clear it will reopen. Plans are being debated which will shift indigent care and its state and federal compensation to private hospitals. Much of the uncompensated care provided by Charity has shifted to other LSU hospitals with people travelling as far as 85 miles to the Earl K. Long Hospital in Baton Rouge - which reports a 50 percent increase in uncompensated care. Waiting lines are long in emergency rooms for those who have insurance. When hundreds of thousands lost their jobs after Katrina, they lost healthcare as well. A recent free medical treatment fair opened their doors at

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6 am and stopped signing people up at 8 am because they had already filled the 700 available slots for the day.

Mental health is worse. A report by the World Health organization estimates that serious and mild to moderate mental illness doubled in the year after Hurricane Katrina among survivors. Despite a suicide rate triple what it was a year ago, the New York Times reported ten months after the storm New Orleans had still lost half of its psychiatrists, social workers, psychologists and other mental health care workers. In the months after Katrina, the 534 psychiatric beds that were in metro New Orleans shrank to less than 80. The Centers for Disease Control and Prevention surveyed the area and found 45 percent of residents were experiencing "significant stress or dysfunction" and another 25 percent were worse.

By default, the lack of mental health treatment facilities has forced more of these crises towards law enforcement. "The lack of mental health options forced the New Orleans Police Department to incarcerate mentally ill people who normally would have been taken to Charity," said James Arey, commander of the NOPD crisis negotiation team. "The only other option is to admit them into emergency rooms ill-equipped to handle psychotics who may have to wait days for care. This is past the point of being unsafe," Arey said. "It's just a matter of time before a mental patient goes berserk in one of the ERs and hurts some people."

There are still major problems with the drinking water system. According to the City of New Orleans, hundreds of miles of underground pipes were damaged by 480 billion pounds of water that sat in the city after Katrina. They were further damaged by the uprooting of tens of thousands of trees whose roots were wrapped around the pipes. The city of New Orleans now loses more water through faulty pipes and joints in the delivery system than it is uses. More than 135 million gallons are being pumped out daily but only 50 million gallons are being used, leaving 85 million gallons "unaccounted for and probably leaking out of the system." The daily cost of the water leaking away in thousands of leaks is about \$200,000 a day.

The second major water problem is that the leakage makes maintaining adequate water pressure extremely difficult and costly, particularly in tall office buildings. Water pressure in New Orleans is estimated at half that of other cities, creating significant problems in consumption, sanitation, air-conditioning, and fire prevention.

It is impossible to begin to understand the continued impact of Katrina without viewing through the lenses of race, gender and poverty. Katrina exposed the region's deep-rooted inequalities of gender, race, and class. Katrina did not create the inequalities; it provided a window to see them more clearly. But the aftermath of Katrina has aggravated these inequalities. In fact if you plot race, class and gender you can likely tell who has returned to New Orleans. The Institute of Women's Policy Research pointed out "The hurricanes uncovered America's longstanding structural inequalities based on race, gender, and class and laid bare the consequences of ignoring these underlying inequalities."

The pre-Katrina population of 454,000 people in the city of New Orleans dropped to 187,000. The African-American population of New Orleans shrank by 61 percent or 213,000 people, from a pre-Katrina number of 302,000 down to 89,000. New Orleans now has a much smaller, older, whiter and more affluent population.

Crime plagues parts of the city and every spoke of the criminal justice wheel is broken. The District Attorney and the police are openly feuding and pointing fingers at each other. The judges are fighting with the new public defender system. Victims and witnesses are still displaced. People accused of serious crime walk out of jail because of incompetence and the fear of witnesses to cooperate with police.

Though crime is issue one in most of the city, crime is not the cause of a city dying. Crime is a symptom of a city dying. Crime is the sound of a city dying.

The overall planning process for the rebuilding of New Orleans has been derailed by several competing planning operations. The Mayor initially created a Bring New Orleans Back Commission, which met for months. While the Bring Back New Orleans Commission

was underway, the Urban Land Institute, a D.C. based think tank, created and released a report of recommendations in January 2006. After several months of hearings, the Bring New Orleans Back Commission issued a report issued from the Mayor's Office, but it was never funded. In April 2006, the New Orleans City Council awarded a \$2.9 million grant, funded by federal grant money, to a Miami consultant to create a plan for the 49 neighbourhoods of New Orleans. A fourth planning process, the Unified New Orleans Plan, was launched in spring 2006 with funding from the Rockefeller Foundation to integrate all the planning processes. In September 2006, the City Council plan was released, while the UNOP process was just getting underway - that fourth plan is starting to wind up now.

These problems spread far beyond their most graphic illustrations in New Orleans throughout the Gulf Coast. As Oxfam documented, government neglect has plagued the rebuilding of smaller towns like Biloxi Mississippi, and rural parishes of Louisiana, leaving the entire region in distress. In Biloxi, the first to be aided after the hurricane were the casinos, which forced low-income people out of their homes and neighbourhoods. In rural Louisiana, contradictory signals by government agencies have slowed and in some cases reversed progress. Small independent family commercial fishing businesses have been imperilled by the lack of recovery funds. The federal assistance that has occurred has tended to favour the affluent and those with economic assets.

Our community continues to take hope from the resilience of our people. Despite lack of federal, state and local assistance, people are living their lives and repairing their homes.

As U.S. Congressman Emmanuel Cleaver of Kansas City observed in a recent public hearing, "When it is all said and done, there has been a lot more said than done." #

## Ambulance Service Hazardous Area Response Teams Launched

The first NHS specialist ambulance crew, trained to respond to major incidents, has been rolled out at the London Ambulance Service. Similar crews have been in place in major New Zealand cities for some time.

The Hazardous Area Response Team (HART) Project will see teams of highly trained emergency medical technicians and paramedics located across England to provide a better response to major incidents. The crews will be trained and equipped to work in highly hazardous areas, providing advanced life support, triage and treatment to those affected by a major incident, including those with chemical, biological, radioactive or nuclear risks. However, typical incidents to which HART crews are dispatched to are building collapses, serious road-traffic collisions, fires, and tube trains stuck between stations underground in which there can potentially be thousands of dehydrated patients.

The HART unit is equipped with three

large vehicles - a command & control vehicle, a reconnaissance & light equipment vehicle, and an equipment-only vehicle. Two other smaller vehicles are rapid-response cars which, when not being used to support incidents to which HART is deployed, are sent to normal Category A 999 calls.

NHS-branded Emergency Dressing Packs, designed for immediate first aid in incidents involving large numbers of casualties will also be stocked in stations around London. The packs contain enough dressings, gloves etc to allow station staff and members of the public to carry out emergency first aid until ambulance services arrive on the scene. They will be essential in the crucial first minutes after an incident, whether it is the result of an accident or deliberate attack. These packs are a result of lessons learned from the London bombings.

London Ambulance Service Head of Emergency Preparedness John Pooley said:

"These response units give the ambulance service much-needed capacity to deal with a wide range of large-scale incidents including those involving high numbers of casualties. Our staff are now equipped and trained to provide even more effective treatment to those patients who are ill or injured at the scenes of major incidents, from building collapses and tube trains stuck in tunnels to incidents involving hazardous materials."

The Department of Health commissioned a study into the ability of ambulances to respond not just to major incidents, but to deliver medical care right in the centre of an incident, for instance in a deep tube station. The London team is being launched first as part of a national roll-out of the initiative, and lessons learned through careful evaluation of the London pilot scheme will be used to further improve the HART Project. #

## Half of NHS Ambulance Trusts Missing Response Targets

Half of England's ambulance trusts are missing response targets despite a service shake-up designed to improve performance.

Last July, 31 ambulance trusts were merged into 12 in order to improve performance, but latest Ambulance Service Association (ASA) figures reveal that six of the 12 trusts are failing to answer emergency category-A calls within the benchmark eight minutes.

At the end of the last financial year, almost three-quarters of the 31 ambulance trusts hit the 75 per cent target, but the ASA says the restructuring, an increase in demand and inadequate primary care trust commissioning have all contributed to the fall in performance.

ASA chief executive Richard Diment said: 'People have needed time to adjust to reconfigurations, not only in ambulance trusts, but among the com-

missioning bodies.'

He criticised primary care trusts for prioritising finances and the 18-week maximum waiting target over ambulance performance.

'There are a number of trusts that are not being commissioned to sufficient levels - this is an area of extreme frustration,' he said.

The target was originally due to be toughened when the ambulance trusts were reconfigured last July, with the intention that the clock would start from the moment a call was made rather than when all a caller's details had been taken.

But this was delayed by a year until 2008, following pressure from ambulance trusts, which said it would have made the 75 per cent target impossible to hit.

North West, Great Western, South East Coast and London are among the

trusts currently missing the category-A target. Some say they hope to catch up by the end of the financial year.

Other trusts have recorded huge variations in the different patches they cover, suggesting that high-performing areas could be masking low achievement elsewhere.

For example, in South Western Ambulance Service, Dorset consistently hits the target, while Somerset and Cornwall have failed every month since last July.

Trust chief executive Ken Wenman said: 'It is historically more difficult to achieve these exacting performance targets in more rural areas. However, this has been recognised by our commissioners, and work is being undertaken to assess the financial implications of meeting them.' #

# HEMNZ Bulletin

The HEMNZ Bulletin is published monthly by the Risk Management Unit of St John Northern Region for all those interested in emergency management in health care settings

Articles and comment on emergency management issues are welcomed

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

## Up coming Events

30 April— 1 May 2007  
**5th Annual Enterprise Risk Management Conference**

Rydges Hotel, Auckland  
Cost: \$1895 + GST

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

10 - 11 May 2007  
**Improving the Delivery of Emergency Care: sharing the lessons learnt**

Carlton Crest Hotel, Brisbane  
Cost: A\$595 before 26 April

More information from  
[www.changechampions.com.au](http://www.changechampions.com.au)

13 - 16 May 2007  
**I5th World Congress on Disaster and Emergency Medicine**

Amsterdam, Netherlands  
Cost: EUR € 760.00

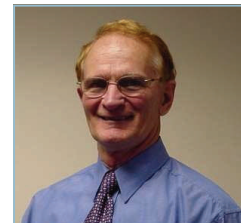
More information from [www.wcdem2007.org](http://www.wcdem2007.org)

19 - 22 June 2007  
**I3th International Congress on Infectious Diseases**

Kuala Lumpur, Malaysia  
More information from

[www.isid.org/I3th\\_icid/index.shtml](http://www.isid.org/I3th_icid/index.shtml)

## Editor's soapbox



April is upon us and all around the country organizations are going through a regular ritual of trying to persuade their personnel take an annual influenza vaccine shot.

Take up by health care workers of all disciplines is notoriously low. The evidence in favour of the jab seems to stack up. The report on page 4 on the survey of the protection offered US military recruits by the vaccine seems compelling. But, as mentioned elsewhere in this issue, we do not make decisions based on rational reasoning. Our emotional reactions take over.

It could be that clinical staff are acting rationally and know something hidden from the rest of us. If that is so they should share it. Or, are they just holding out to avoid the slight discomfort. If so, they are banking on the rest of us to have the jab to reduce their risk. When the inevitable influenza pandemic arrives will there be a similar reluctance to accept Tamiflu as a prophylactic if it is indicated and available?

In six weeks time we will be through the first day of the Exercise Cruikshank exercises. Perhaps you are a little uncomfortable about the stage you have got to in your planning. Isn't that always the case. We know an event is inevitable but it always turns out a little different to what we expect.

As I write this Northland is having a reluctant late summer swim. Flooding is the most common and expected emergency in Northland. But, as always, this event has been a little different from past events. Risk reduction measures have been overwhelmed and there has been losses and heartache for some. The test is how the community support each other and overcome their difficulties. We can but wish them well.

*Bruce Parkes*

## Pandemic Framework for Social Care Agencies

The Department of Health in England has produced a draft operational and strategic framework for planning for pandemic influenza in adult social care. The document notes that the disparate nature of social care services means that planning for an outbreak of pandemic influenza may be arguably more difficult in this sector than in many other sectors. Social care covers a wide range of services for a wide range of user groups, including care provided in the home, residential homes, and in day/drop in centres; as well as services such as meals on wheels, home help and personal assistance schemes.

The framework is comprehensive and covers the needs of the diverse range of providers that need to be factored into district contingency plans. While still in draft and designed specifically for the English environment it is never the less a useful starting point for any one in the social service sector in New Zealand.

The Framework can be downloaded from [www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_073174](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_073174)