NEWS

AVIAN INFLUENZA — THE FACTS FROM THE WHO

Avian influenza is an infectious disease of birds caused by type A strains of the influenza virus. Infection causes a wide spectrum of symptoms in birds, ranging from mild illness to a highly contagious and rapidly fatal disease resulting in severe epidemics, with a bird mortality that can approach 100 per cent.

Migratory waterfowl are the natural reservoir of avian influenza viruses, and these birds are also the most resistant to infection. Domestic poultry, including chickens and turkeys, is particularly susceptible to epidemics of rapidly fatal influenza.

Avian influenza viruses are readily transmitted from farm to farm by mechanical means, such as by contaminated equipment, vehicles, feed, cages, or clothing. Highly pathogenic viruses can survive for long periods in the environment, especially when temperatures are low.

Uncorrected errors that occur during viral replication result in changes in the genetic composition of the viruses, with the existing strain being replaced with a new antigenic variant.

A second characteristic is one of great public health concern: influenza A viruses, including subtypes from different species, can swap or 'reassort' genetic materials and merge. This reassortment process, known as antigenic 'shift', results in a novel subtype different from both parent viruses. As populations have no immunity to the new subtype, and as no existing vaccines can confer protection, antigenic shift has historically resulted in highly lethal pandemics. For this to happen, the novel subtype needs to have genes from human influenza viruses that make it readily transmissible from person to person for a sustainable period.

Conditions favourable for the emergence of antigenic shift have long been thought to involve humans living in close proximity to domestic poultry and pigs which are susceptible to infection with both avian and mammalian viruses; they may serve as a 'mixing vessel' for the scrambling of genetic material from human and avian viruses, resulting in the emergence of a novel subtype. However, evidence is mounting that, for at least some of the 15 avian influenza virus subtypes circulating in bird populations, humans themselves can serve as the 'mixing vessel'.

Extensive investigation of the 1997 Hong Kong outbreak determined that close contact with live, infected poultry was the source of human infection with the H5N1 variant. Studies at the genetic level further determined that the virus had jumped directly from birds to humans. That was the first time that an avian influenza virus was transmitted directly to humans, causing severe illness with high mortality. Rapid destruction of Hong Kong's entire poultry population may have averted a pandemic.

Avian flu was suspected (January 2004) in 2 more patients in Vietnam, after 3 patients had died in December 2003 with laboratory confirmation of H5N1 avian flu. H5N1 is of particular concern because it mutates rapidly and has a documented propensity to acquire genes from viruses infecting other animal species. It also causes severe disease in humans. Birds that survive infection excrete virus for at least 10 days, orally and in faeces, thus facilitating further spread at live poultry markets and by migratory birds.

The epidemic caused by H5N1, which began in mid-December 2003 in Korea, is now being seen in other Asian countries. If more humans become infected over time, the likelihood also increases that humans could serve as the 'mixing vessel' for the emergence of a novel subtype with sufficient human genes to be easily transmitted from person to person. Such an event would mark the start of an influenza pandemic.

Despite current knowledge, while certain activities can reduce the likelihood that a pandemic strain will emerge, the question of whether another influenza pandemic can be averted cannot be answered with certainty.

Patients exhibit symptoms of fever, sore throat, cough and, in several of the fatal cases, severe respiratory distress secondary to viral pneumonia. Antiviral drugs, some of which can be used for both treatment and prevention, are clinically effective against influenza A virus strains in otherwise healthy adults and children, but have limitations regarding expense and inadequate supplies. At least 4 months would be needed to produce significant quantities of a new vaccine capable of conferring protection against a new virus subtype.

Investigations are currently centred on identifying the source of infection with a view to curtailing the outbreak. The possibility that pigs may have played a role in transmission to humans is being investigated.

UNLICENSED FLU VACCINE REPORTED IN USA

Amid reports of flu vaccine shortages as a direct consequence of the abnormally high incidence of the disease this winter, the US Food and Drug Administration (FDA) has received reports that unlicensed flu vaccine is being offered for sale in that country. Moreover, individuals who are not licensed health care professionals are reportedly administering questionable flu vaccine.

The FDA has responded by launching an investigation with the Centers for Disease Control and Prevention (CDC) and State health authorities into the source and quality of flu vaccine offered by unusual suppliers. Only three flu vaccines have been licensed by the FDA for use in the USA — namely Fluzone, Fluvirin and FluMist — and are available through licensed sources such as doctors, pharmacies and health care clinics.

Aiming to ensure that the flu vaccine used is safe and effective, the FDA has also issued recommendations regarding the subject. For example, health care professionals have been urged to purchase vaccine from reliable sources only, and to ensure that evidence is provided that the vaccine is licensed for distribution in the USA. Consumers, in turn, have been advised to obtain flu vaccine from licensed health care providers only. Any suspicious offers or practices are to be reported to the FDA or local health care authorities.

South African patients should be aware of this development, as the unlicensed products could easily turn up here.

'USELESS' MALARIA DRUG BEING BOUGHT BY GLOBAL FUND, SAY RESEARCHERS

BMJ News reports that malaria researchers believe that the Global Fund (GF) to fight TB, Malaria and HIV/AIDS is buying a 'useless drug'. The GF's limited resources are being wasted, they say. The controversy was sparked by the revelation that more is being spent on chloroquine, which is very cheap (about R0.70 per dose), but which is largely ineffective in Africa. The money should rather be spent, say the experts, on combination treatments based on artemesinin, which are highly effective but cost at least 10 times as much as chloroquine. The GF argues that the scientists do not understand how the fund works. Individual countries send proposals to the fund asking for finance for specific projects to control malaria. The World Health Organisation (WHO) advises countries on which drugs they should ask the fund to buy.

Dr Vinand Nantulya, a senior adviser in the GF, says, 'We would like artemesinin-based combination therapies to be made available to all countries. But we don't tell countries what to use. We leave it to the WHO to guide the process in terms of technical support.'

In some countries, chloroquine is being used in combination with a second antimalarial, usually sulfadoxine-pyrimethamine, which is more effective than chloroquine alone. But this is just combining two failing drugs, argues Professor Bob Snow, of the Kenya Medical Research Institute. He said that in the first round, Kenya had put in a request to the GF for $102 million for artemesinin-based therapy, which was turned down. In the second round, Kenya asked for $32 million to buy a cheaper alternative. The GF agreed to sulfadoxine-pyrimethamine, even though this treatment 'is on its last legs' in Kenya, according to Snow.

At the heart of the controversy, says Médecins Sans Frontières (MSF), is the widespread confusion about which drugs WHO is recommending to African countries. Nathan Ford, head of the MSF's medical unit, says that in 2001 WHO clearly recommended artemesinin-based combination treatments as the first-line treatment for malaria in Africa, but now, he says, WHO is back-pedalling. In a new WHO policy draft document, artemesinin-based combination therapies are seen as future possibilities, not to be used immediately. Ford describes this as 'catastrophic'. Even worse, says Ford, the draft document signals a shift to emphasise cheaper prevention efforts, such as bed nets, rather than treatment with effective but expensive drugs.

But Dr Allan Schapira, co-ordinator of operations and strategies of the WHO Roll Back Malaria campaign, says that it is appropriate that most countries are scaling up prevention efforts. If all countries asked for funding for artemesinin-based therapies, together with requests for funding for bed nets, and for control of HIV and TB, the fund would be in trouble.

Professor Nick White, director of the Wellcome Trust's South-East Asia Overseas Unit, says that in the end it all comes down to money. Donors are unwilling to pay for expensive treatments, and would rather see their money spent on cheaper bed nets.

(Yamey G. *BMJ* 2003; **327**: 1188.)

BLOOD-SPOT TEST FOR MONITORING HIV TREATMENT

A relatively simple test to monitor the effects of HIV treatment is showing early promise for use in less developed countries.

Preliminary findings published in the *Lancet* (2004; **363**(9403): 164-165) suggest that a simple enzyme-based procedure to measure CD4+ lymphocytes could be possible with the analysis of dried blood spots on filter paper.

Such an assessment method could become particularly useful as antiretroviral drugs become available in less developed countries, where monitoring by more complex laboratory-based measurement of the CD4 cell count is unlikely to be widely available.

CD4+ lymphocyte measurement is considered essential in guiding antiretroviral therapy for patients with HIV-1 infection. Low CD4+ counts indicate a need for intensive

therapy and the establishment of CD4+ counts above 200 cells/ml of blood with antiretroviral therapy indicates reasonable immune function.

Researchers from the University College London, working with colleagues at the University Teaching Hospital, Lusaka, Zambia, obtained blood from 42 HIV-1-infected Zambian patients. Blood spots were dried on filter paper and CD4+ lymphocyte counts were measured with a commercial enzyme immunoassay. The investigators compared these measurements with those obtained with standard flow cytometry, the laboratory gold standard for CD4+ assessment.

Results of the filter paper method compared well with flow cytometry CD4 counts greater than 200 cells/ml. The investigators conclude that dried whole blood stored on filter paper could be developed into a field-friendly alternative for CD4+ lymphocyte count measurements.

RIAN MALAN 'SPREADS CONFUSION ABOUT AIDS STATISTICS'

Nathan Geffen (TAC National Manager) has replied to articles by Rian Malan in *Noseweek* and *The Spectator* in which Malan argues that AIDS statistics are grossly exaggerated. Geffen says they have numerous technical errors. One which appeared in *Noseweek* and upon which most of his case with regard to the South African epidemic rests is so serious and obvious that it raises questions about Malan's basic competence as a research journalist or, more disturbingly, about his motives and integrity.

In the December 2003 issue of *Noseweek*, Rian Malan and the magazine's editor, Martin Welz, assert that the AIDS epidemic in South Africa is greatly exaggerated and that too much money is being spent on it. According to Geffen, Malan's `research', which contains hardly any verifiable references, is shoddy journalism. It is littered with serious errors, one of them highly misleading. Unattributed quotes, unnamed science journals, unnamed experts, misrepresentations, leaving out critical evidence and a plethora of incorrect facts have no place in a thesis that purports to be debunking the current orthodox scientific view.

There is overwhelming evidence that mortality due to HIV in South Africa is immense; it is *probably* the largest single cause of premature death in South Africa. Botswana, Zambia, Malawi, Zimbabwe and Tanzania — some of the countries referred to in another article by Malan published in the 13 - 20 December 2003 edition of *The Spectator* — are also experiencing very large HIV epidemics. The number of AIDS cases in South Africa is demonstrably growing but the situation is not hopeless: we can alleviate the epidemic by substantially increasing prevention and treatment efforts as government has recently committed itself to doing. This is not a message of doom as Malan and Welz would have their readers believe; it is a warning coupled with a practical plan of action — treat and prevent.

In a press release published in January 2004 Geffen provides full details of AIDS statistics for sub-Saharan Africa, and clinically takes Malan's articles apart, ending with a detailed examination of the two articles, and setting the reader straight with point-by-point discrediting of Malan's contentions.

Anyone wishing to read the full text of Geffen's press release can find it on the TAC website: **www.tac.org.za/** and by clicking on TAC Newsletter under the date 20 January 2004. (See Chris Bateman's article 'Stirring the statistical pot' on page 154 of this issue.)

IMPACT OF THE INCREASE IN MEDICAL INFORMATION ON THE INTERNET

Public use of the Internet for health information is increasing but its effect on health care is unclear. A group of investigators studied physicians' experience of patients looking for health information on the Internet and their perceptions of the impact of this information on the physician-patient relationship, health care, and workload.

The Health Section of Atlantic Information Services (AISHealth) reported the results of a survey of 1 050 physicians, published in the *Journal of Medical Internet Research* (2003; **5**(3): e17). Titled 'The impact of health information on the Internet on health care and the physician-patient relationship', the survey reveals that 85% of respondents had experienced a patient bringing Internet information to a visit.

The results showed that the quality of information was important: accurate, relevant information benefited, while inaccurate or irrelevant information harmed health care, health outcomes, and the physician-patient relationship.

Seventy-five per cent of respondents welcomed the increase in health information available online, while 35% of physicians believed that the growth in credible online medical information has improved their relationships with patients. The physician's feeling that the patient was challenging his/her authority was the most consistent predictor of a perceived deterioration in the physician-patient relationship, in the quality of health care, or in health outcomes. Thirty-eight per cent of physicians believed that the patient bringing information made the visit less time efficient, particularly if the patient wanted something inappropriate, or the physician felt challenged. The results from the study suggest that physicians and patients have become more receptive to using the Internet to obtain medical information.

View the original paper at: **www.jmir.org/2003/3/e17/**.

FOUR POPULAR DIETS ALL GOOD FOR WEIGHT LOSS BUT NOT EQUAL FOR REDUCING HEART DISEASE RISK

At the 2003 American Heart Association's Scientific Sessions, results of a randomised comparison study suggested that any one of four popular diets — Atkins, Ornish, Weight Watchers, or Zone — is an effective option for weight loss and reduction of cardiac risk factors, but only the Atkins, Weight Watchers, and Zone diets achieved statistically significant reductions in Framingham scores.

Michael L Dansinger, MD, Assistant Professor of Medicine, Tufts University, New England Medical Center, Boston, USA, said that losing 20 pounds (9 kg) corresponded to about a 30% reduction in heart risk score, although he explained that at this point 'it isn't clear if a 30% reduction in risk score is the same as a 30% reduction in heart attacks'.

The study involved 160 overweight men and women, most being 30 - 80 pounds (13.6 - 36.3 kg) overweight, and one-half of the volunteers being women. Patients were randomly assigned to the Atkins (low carbohydrates), Zone (moderate carbohydrates), Ornish (low-fat vegetarian), or Weight Watchers (moderate fat) diet. They were told to follow the diet to the best of their ability for 2 months and then to whatever extent they wanted to for 10 months.

The drop-out rate for each diet was 22% at 2 months; by 12 months, one-half of the volunteers assigned to the Atkins or Ornish diet had dropped out, as had 35% of those assigned to the Weight Watchers or Zone diet.

Reductions in weight and Framingham risk score were respectively 3.9% and 12.3% for Atkins (N = 21, 52% completion); 6.2% and 6.6% for Ornish (N = 20, 50% completion); 4.5% and 14.7% for Weight Watchers (N = 26, 65% completion); and 4.6% and 10.5% for Zone (N = 26, 65% completion). All diets resulted in significant ($p < 0.05$) weight loss from baseline, and all but the Ornish diet resulted in significant reductions in the Framingham risk score ($p = 0.013$).

According to Dr Dansinger this does not mean that the 'Ornish diet doesn't reduce heart disease risk, but it did not meet the statistical test in this study'. He continued, 'I have great faith in the Ornish diet.'

Dean Ornish, developer of the Ornish diet, was critical of the results. Dr Dansiger explained that heart disease risk score is based on the HDL/LDL ratio, and the 'Ornish diet does not increase HDL, while the other diets do achieve significant increases in HDL'. Dr Ornish said that this was not important as the LDL is markedly reduced, and one does not require as much HDL to clear the LDL from the blood. He said the people assigned to his diet 'lost more weight, had greater reductions in LDL, and were the only dieters to significantly lower insulin — even though the Atkins and Zone diets claim to be specifically designed to lower insulin'.

'The good news about this study is that we have demonstrated that all these diets work. That means that physicians can work with patients to select the diet that is best suited to the patient. For example, if you have a patient who likes meat, it is unlikely that he or she will comply with the Ornish diet,' said Dr Dansinger.

FNS

PRACTICE MANAGEMENT

BUSINESS PLANNING PART V

Key success factors

Key success factors (KSFs) can emerge from both the external or internal environmental analysis. Typically KSFs relate to paradigm shifts, i.e. radical changes in views or approaches that are needed to achieve the successful implementation of the business plan.

External KSFs are often identified by looking at what innovative approaches international leaders in the field are implementing. For example:

- using the Internet to do business (electronic commerce)
- establishing strategic alliances (provider networks in managed care).

Internal KSFs could include factors such as:

- investing in the training of staff
- viewing patients as customers
- epowering employees.

The value of listing KSFs are twofold, namely: It serves as an acknowledgement by management of what needs to be done or achieved in order to ensure the successful implementation of the business plan. If the plan is used to recruit external funding, it shows the potential funder that the authors of the plan grasped the essentials of ensuring success. It helps to prioritise actions for the next period.

Competitive advantage

The planning process to date should have helped you redefine your products and services and help you identify areas for growth and repositioning.