

### International

#### Syria: Where's the humanitarian aid access? - MSF

The massive political mobilisation around chemical weapons in Syria, re-emphasised by the recent award of the Nobel Peace Prize to the Organisation for the Prohibition of Chemical Weapons (OPCW), must immediately be applied to humanitarian access, says Doctors Without Borders (MSF).

Many areas of Syria remain entirely under siege, sealed off from life-saving humanitarian assistance, either because access is blocked by the Damascus authorities or due to the intensity of fighting. For example, in the East and West Ghouta suburbs of Damascus – areas visited by chemical weapons inspectors – medics are reporting desperate shortages of drugs and cases of malnutrition due to lack of food, but aid has been unable to reach them.

'Syrian people are now presented with the absurd situation of chemical weapons inspectors freely driving through areas in desperate need, while the ambulances, food and drug supplies organised by humanitarian organisations are blocked,' said Christopher Stokes, MSF General Director. 'Influential countries gathered around a table, thrashed out an agreement on chemical weapons and put it into practice. They have shown it can be done, so where are the efforts to repeat this success with the burning question of access for humanitarian aid?'

The deployment of international staff, an issue which has been problematic for humanitarian organisations since the start of the conflict, has been relatively straightforward for the UN/OPCW team; in just a few weeks, 50 - 100 chemical weapons inspectors arrived in Syria. By comparison, after 2.5 years of war, the UN humanitarian office had to halve their 100 staff last March and has not yet been able to increase the number.

#### Neurodegeneration delay in mice a 'breakthrough'?

The discovery of the first chemical to prevent the death of brain tissue in a neurodegenerative disease has been

hailed as the 'turning point' in the fight against Alzheimer's disease. More work is needed to develop a drug that could be taken by patients. However, scientists say a resulting medicine could treat Alzheimer's, Parkinson's, Huntington's and other diseases. In tests on mice, it was shown that all brain cell death from prion disease could be prevented. Professor Roger Morris, from King's College London, said: 'This finding, I suspect, will be judged by history as a turning point in the search for medicines to control and prevent Alzheimer's disease.' He told the BBC that a cure for Alzheimer's was not imminent, but 'I'm very excited, it's the first proof in any living animal that you can delay neurodegeneration. The world won't change tomorrow, but this is a landmark study.'

The research team at the Medical Research Council Toxicology Unit, based at the University of Leicester, focused on the natural defence mechanisms built into brain cells. When a virus hijacks a brain cell it leads to a build-up of viral proteins. Cells respond by shutting down nearly all protein production in order to halt the virus's spread. However, many neurodegenerative diseases involve the production of faulty or 'misfolded' proteins. These activate the same defences, but with more severe consequences. The misfolded proteins linger and the brain cells shut down protein production for so long that they eventually starve themselves to death. This process, repeated in neurons throughout the brain, can destroy movement or memory or even kill, depending on the disease. It is thought to take place in many forms of neurodegeneration – safely disrupting it could treat a wide range of diseases. The researchers used a compound that prevented those defence mechanisms kicking in and in turn halted neurodegeneration.

It is rare to get cautious scientists keen to describe a study in mice as a turning point in treating Alzheimer's. It is early science, and much can go wrong between a drug for mice and a drug for humans and the only published data are for prion disease, not even Alzheimer's. So why the excitement? It is the first time that any form of neurodegeneration has been halted completely, so it is a significant landmark.

It shows that the process being targeted has serious potential. If this can be successfully developed, which is not guaranteed, the prize would be huge. In Parkinson's the alpha-synuclein protein goes wrong, in Alzheimer's it's amyloid and tau, in Huntington's it's the Huntington protein. But the errant protein is irrelevant here as the researchers are targeting the way a cell deals with any misfolded protein. It means one drug could cure many diseases – that really would be something to get excited about.

### Africa

About a million children 'living on the edge' in developing countries, particularly Africa, won't be vaccinated, while a million bed nets preventing malaria won't be distributed because of US Government budget cuts.

The USA is the world's largest provider of humanitarian aid, according to the London-based Overseas Development Institute, funding programmes for global health, refugee aid and more. This March, law writing the cuts into the USA budget slashed funding for these and many other programmes by about 5%. More than \$2.7 bn (£2.7 bn) will be taken from state department foreign operations and other programmes, according to the Congressional Research Service. Contributions to international peace-keeping, which helps to tamp down on violence in conflict-ridden countries such as Mali, will be reduced by \$20 m (£20 m). Funds for humanitarian programmes, which help families in the Horn of Africa and other places in crisis, will be cut by roughly \$200 m (£200 m), state department spokesperson Victoria Nuland confirmed. Efforts to fight disease in Africa will almost certainly be affected, since global health programmes will lose more than \$400 m (£400 m) in US funding.

'We work on programmes for the most needy people on the planet,' says Tom Hart, US executive director for ONE Campaign, the advocacy group founded by U2's Bono. Hart and other advocates fear the lives of many people overseas will become harder if aid programmes such as food security and agricultural projects are reduced.

Many humanitarian aid workers say their programmes are already thinly stretched.

### South Africa

#### Casualty better than our quarters – Tembisa doctors

Intern doctors at Tembisa Hospital in Ekurhuleni spent several nights without accommodation last month, squatting in friends' rooms, or sleeping in the hospital's casualty ward or in their cars. This follows an ongoing dispute between the interns and the hospital's management after the interns were locked out of their Midrand Village residence in Clayville when the lease expired.

The interns were moved out of the hospital's residence in September last year to make way for renovations at the C and D blocks. An inspection had revealed that the accommodation was not up to the Health Professions Council of South Africa (HPCSA)'s standards.

'Around January or February, we [intern doctors] received letters from Midrand Village to say rent hadn't been paid and we had to leave. But we stayed on. In April we were locked out by the complex's management, but the hospital's management sorted the issue out telephonically and we were let back in, Dr Jabulani Mbazima, the intern representative, told reporters. In June, the hospital management extended the lease contract for the eight interns at Midrand Village until 30 September.

'On the last day of the contract, we were called in by the complex's management and were told that a truck was waiting for us outside to relocate us back to this residence,' he said. They refused to move on the grounds that the renovated residences were not in a good enough state. Meanwhile, nursing students – who had moved to the intern doctors' residences because construction around the residences was too noisy – were 'forcefully removed' from the residences, according to nursing organisation DENOSA, to make way for the intern doctors. DENOSA provincial organiser Siphso Qankase said: 'Student nurses were given short notice to vacate their residence by the hospital management and to move to another block of flats. Students' pleas to have the management give them reasonable time to relocate once they

had finished with their year-end exams fell on deaf ears. They were forcefully relocated last week, making use of law enforcement agencies, who manhandled students in a bad way.' Toilets were not working at the renovated residences, washing machines were not connected, water pooled under the male urinals, there were no basins, and walls were damaged. The intern doctors have refused to move into them. The South African Medical Association (SAMA) called on the HPCSA to withdraw the student doctors at the hospital.

SAMA spokeswoman Phophi Ramathuba said: 'Depriving student doctors of proper living quarters is an insult not only to them but to the medical profession as a whole.' She demanded that the interns be relocated to another facility as soon as possible. Both Mbazima and Qankase said the doctors and nurses were not averse to moving into the residences, but it was the 'draconian' leadership style of management, particularly of hospital chief executive Dr Daisy Pekane, that they lamented as well as not being consulted properly in all management decisions. Gauteng Department of Health spokesman Simon Zwane said they had sent a labour relations team to assess the situation and assist the management and employees in debating the issues.

#### Doctors 'take to drink and drugs' – HPCSA

The HPCSA has 'noted an increase' in alcohol and drug abuse among doctors, dentists, psychologists and other medical professionals. Council spokesperson Bertha Peters-Scheepers said there was 'a continuing flow of reports of practitioners suspected of impairment relating to substance abuse, mental illness and physical conditions'.

As many as 311 medical practitioners were under the supervision of the Council's health committee – after being declared impaired – as at the end of the 2012/2013 period. This number had increased by 25 on the previous year. The number of professionals being managed by the committee in 2011/2012 was 98 lower than in the 2010/2011 period. Impairment, according to the Health Professions Act, refers to a condition that renders a practitioner incapable of practising their profession with reasonable skill and safety.

Most new cases in the latest period were using alcohol (15) or self-prescribed medication (13), including pethidine and benzodiazepines. Pethidine, an addictive drug used to ease severe pain, is associated with euphoria, difficulty concentrating and impaired conscious mental activity and performance. Long-term use of benzodiazepines can have adverse psychological and physical effects such as cognitive impairment and behavioural problems. One practitioner was being counselled for cocaine addiction. Other drugs abused include methylphenidate, propofol and buprenorphine. Peters-Scheepers said of concern was the notable increase in the number of young interns reported to suffer from alcoholism, substance abuse and depression.

An intern at a Gauteng hospital attested to the growing number of young doctors having difficulty coping with their work, saying there were numerous cases of their being admitted to academic hospitals. 'The drinking stems from medical school and gets worse in their internship years because of the exposure and mixture of prescribed medication and drugs with alcohol. That is the leading cause,' said a young doctor, who did not want to be named. 'Unfortunately, this is barely prevented and usually treated only once it is too late.' The intern said depression was a significant problem among his colleagues because they were 'over-worked and underpaid' in unfavourable conditions. The HPCSA said mental problems such as bipolar disorder (5), schizophrenia (3), depression (4), post-traumatic stress disorder (2) and other mental illnesses (5) had also been reported as impairing medical practitioners' ability to do their work. However, the Council was 'encouraged' by the increase in reporting by practitioners and students experiencing problems or suspecting that colleagues were in trouble. 'During our recent roadshows, we highlighted the non-punitive role of the health committee and its commitment to assist practitioners in the process of recovery and rehabilitation,' said Peters-Scheepers. The 'top seven stressors' for health practitioners identified by the Council were: wealth expectations from society and family; dysfunctional marriages and relationships; work-related fear of failure and low self-esteem due to inadequate

training; expensive lifestyles on a 'relatively poor' salary; pre-existing or new medical and mental problems; long working hours in toxic conditions with inadequate resources; and increasing debt due to loans to finance lifestyle.

SAMA expressed anger at the HPCSA's 'skewed and irresponsible' portrayal of doctors, emphasising that the numbers mentioned represented less than one per cent of registered doctors country-wide. Dr Phophi Ramathuba, SAMA's public sector chairperson, said she was only aware of one documented case of alcohol and drug abuse by a medical doctor. The HPCSA's report created the false

impression that all 311 cases were due to substance abuse. While it was no secret that doctors were underpaid, overworked and often depressed owing to the horrific conditions they had to work under, very few doctors abused these substances while on duty. 'SAMA has a dedicated ethics committee that is available for these types of issues,' Dr Ramathuba said. Patients needed to be able to trust their doctors and sensationalist reporting could only cause harm to the profession, she stressed.

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## SINGLE SUTURE

### *Mice get replacement glands, grown from scratch*

It'll make you cry, or salivate. Takashi Tsuji at Tokyo University of Science in Japan, and colleagues, have created tear and salivary glands from stem cells and successfully transplanted them into adult mice.

The technique could one day be used in humans to replace glands lost through age or illnesses such as autoimmune disease and head or neck cancer.

To create the glands, Tsuji's team extracted two types of stem cells from a mouse embryo and grew them in a mix of chemical growth factors. The cells began mimicking the interactions that occur in embryos, developing into primitive glands, which were then transplanted into adult mice that lacked salivary or tear glands.

A month later, the glands had connected with the nervous system and delivery ducts. When the researchers stimulated the digestive tracts of the mice with salt, the bio-engineered glands produced saliva. Similarly, cooling their eyes made the engineered glands produce tears, complete with the proteins and lipids usually found in teary secretions. The same team has previously grown rodent teeth and hair using a similar technique.

New Scientist, 1 October 2013

### *HIV infection figures tumbling around the world*

Happy days! Although HIV is still at large, it's on the back foot. Figures released this week by the United Nations AIDS agency show that the annual number of new HIV infections in children has more than halved since 2001, from 550 000 to 260 000.

New infections overall have tumbled by a third over the same period. Death rates are falling too, from a peak of 2.3 million in 2005 to 1.6 million last year.

'Many of the reductions are related to increases in the availability of antiretroviral therapy, says Peter Ghys, at UNAIDS. Of everyone eligible for treatment globally, 61 per cent are now receiving ART – almost 10 million people in total.

Ghys says other key factors include scaled-up programmes to prevent mothers with HIV passing the virus to their babies, and the increase of male circumcision programmes in Africa.

Recent changes to eligibility rules mean an additional 10 million can now receive ART, raising hopes of further success.

New Scientist, 26 September 2013

### *Fish oils don't boost brain power*

There's something fishy about fish oils. Omega-3s – the fatty acids found in fish and nuts, oft touted as brain boosters – don't appear to slow mental decline.

Eric Ammann at the University of Iowa in Iowa City and colleagues analysed omega-3 levels in blood samples taken from 2 000 women aged 60 - 80. Over six years, the women took tests that measured movement, speech and memory. No difference in cognition was found between women with high and low levels of omega-3 at the start of the study, nor in how quickly cognitive skills declined in people with consistently low or high omega-3 (*Neurology*, in press).

It may be that people who eat lots of fish and nuts are more affluent and health-conscious. Those factors could be the true force behind studies that seem to show omega-3s' protective effect on cognition, says Ammann.

New Scientist, 25 September 2013