



BY KATHIE LYNAS

A Canadian study reveals new population groups not typically regarded as being prone to severe illness from influenza may in fact be at high risk. In a study sponsored by the World Health Organization, researchers at McMaster University in Hamilton identified 2 such groups as new mothers and people who are obese.

The researchers analyzed close to 240 studies conducted between 1918 and 2011. They also concluded that populations typically categorized as more prone to severe illness from the flu have not tended to suffer excessive implications. These include children under age 5, pregnant women and members of Aboriginal groups.

The McMaster study concludes that decisions on who should be prioritized for flu vaccination are based on a “poor quality of evidence.” The research was published online in the *British Medical Journal* on August 28, 2013.

The researchers reported that people categorized as obese—with a body-mass index of 30 or higher—were 3 times more likely to die from the flu than people who were not obese. And they found that new mothers less than 4 weeks postpartum were also at higher risk of serious complications.

Canada’s health minister has criticized her department’s approval of the prescribing of medicalized heroin. On September 21, 2013, shortly after Health Canada officials approved an application under the special access program to prescribe heroin for a small group of addicted patients, Rona Ambrose issued a statement that denounced the decision and stated that such approval must never happen again.

“This decision is in direct opposition to the government’s anti-drug policy and violates the spirit and intent of the special access program,” the statement said.

The special access program is designed to allow patients in exceptional circumstances to receive medications otherwise not permitted in Canada. Although Health Canada will not comment on the specific application, a group

of physicians in British Columbia have publicly revealed plans to apply for access to prescription heroin for patients who took part in a 3-year clinical study on opioid maintenance therapies.

The physicians and patient representatives have said that some of the 322 study participants have not responded to other treatments such as methadone and that they need to continue to receive treatment in a medical environment, now that the study has ended.

“I am taking immediate action to protect the integrity of the special access program and ensure this does not happen again, Ms. Ambrose stated. It was not clear from the statement whether the minister planned to override the decision of her departmental officials in this case.

Researchers at Duke University report they have created a blood test that can more easily determine whether a respiratory illness is caused by a virus or bacteria. In a study published in *Science Translational Medicine* on September 18, 2013, the scientists said that experiments to date show the test to be more than 90% accurate.

They also reported that the test can produce results within 12 hours, much more quickly than conventional testing methods, which can take several days and aren’t always accurate. The hope is to help reduce the use of unnecessary antibiotics and speed up the diagnosis of respiratory illnesses, the scientists say.

The Duke researchers developed the test after earlier studies they conducted into the “genetic signature” given off by patients’ immune systems when they were attacked by either a virus or a bacteria. They found about 30 genes that are affected by the immune response to a viral infection and that remain dormant when a bacteria is involved.

Building on these findings, they developed a blood test and tried it on 102 patients with fever symptoms who had arrived at their medical facility’s emergency room. The test was 89%

accurate in identifying viral infections and ruled out viruses in 94% of cases, the researchers reported.

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US health authorities say the growing number of antimicrobial-resistant bacterial infections is one of the country's most serious health threats.

In a report released September 16, 2013, the Centers for Disease Control and Prevention (CDC) said more than 2 million Americans develop serious infections from antibiotic-resistant bacteria every year and at least 23,000 die.

Officials with the Office of Microbial Resistance said this was the first time the CDC had done such a comprehensive analysis of the broad impacts of infections from antibiotic-resistant bacteria. The report assessed the threat level associated with various bacteria-related illnesses. Among those assessed as “urgent threats” because of their increasing resistance to existing antibiotics were carbapenem-resistant Enterobacteriaceae and *Clostridium difficile*, both of which commonly occur in hospitals and long-term health care facilities.

Medical procedures that have become more dangerous because of these bacteria include dialysis, chemotherapy, complex surgery and organ transplants, the report said. According to the report, overuse of antibiotics is the single most important factor leading to resistance, and in as many as 50% of cases, the prescribed antibiotics are either not necessary or not the best therapy for the patient.

The CDC report also said that widespread use of antibiotics in the meat and poultry industries might also be a factor in the growth in antimicrobial resistance.

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A team of British scientists reports a discovery that could lead to a universal flu vaccine.

In research published in *Nature Medicine*, on September 20, 2013, researchers from the London-based National Heart and Lung Institute say they have identified a common type of immune cell, called a CD8 T cell,

which appears to increase resistance to influenza viruses.

The research involved 342 volunteers who gave blood samples during the 2009 flu pandemic and reported on their health status over the next 2 flu seasons. Analysis showed that subjects who became seriously ill with the flu had fewer CD8 T cells. On the other hand, those who were infected with the virus but had no symptoms—or who did not get infected at all—had more of the T cells in their original blood samples.

The scientists say the 2009 pandemic provided a “unique natural experiment” to test whether T cells could recognize and protect people against symptomatic illness from new flu strains they hadn't encountered before.

The findings could pave the way, they say, to a new universal vaccine against all variations of the virus—eliminating the need to change vaccines each flu season to deal with new strains.

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The World Health Organization (WHO) reported 3 more deaths from the MERS-CoV virus on September 19, 2013.

The report brought the number of deaths from Middle East respiratory syndrome coronavirus to a total of 58, out of 130 laboratory-confirmed cases since the virus was first identified in 2012. The 3 fatalities were all in Saudi Arabia, which also reported 18 new cases of MERS-CoV infections in the first 11 days of September.

Most of the cases have been in the Middle East, although a small number have been confirmed in France, Germany, the UK and Tunisia, but only among patients who had travelled to the Middle East.

Despite concerns about the high death rate associated with the coronavirus, which is similar to the SARS virus, the WHO has said the numbers of cases do not yet meet the criteria of an emergency situation. While scientists in several nations have reported they are making progress towards a possible vaccine against MERS, experts say development of such a vaccine is likely 5 to 10 years away.