

# BOOKS & ARTS

## Preparing for pandemics

More deadly than the First World War, the global outbreak of influenza in 1918 terrified populations and tested governments. But would we fare any better today, asks **Michael Sargent**?

### Living with Enza: The Forgotten Story of Britain and the Great Flu Pandemic of 1918

by Mark Honigsbaum

Palgrave Macmillan: 2008. 256 pp.

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The great influenza pandemic of 1918 was perhaps the severest test faced by public-health administrations during their first 50 years of existence. With 50 million deaths worldwide, the loss of life caused by the pandemic exceeded that in the First World War by a factor of ten. The health authorities were powerless; drugs that could halt an infection were unavailable, and preventive immunization was still a dream. Influenza's arrival was dramatic and frightening — victims collapsed suddenly, overcome with lassitude, high fevers and excruciating headaches. Those who died turned purple, drowned by fluid in their lungs generated by a fierce reaction to the virus or a secondary infection. A third of some communities succumbed to influenza, sometimes with a 5% mortality rate that fell disproportionately on young adults.

Journalist Mark Honigsbaum's new book offers a vivid account of the pandemic. It reflects on what could have been done to avert the disaster and what should be done about future pandemics. In the United Kingdom, the greatest responsibility lay with the chief medical officer, Arthur Newsholme. At a poignant emergency summit at the Royal Society of Medicine in London two days after Armistice Day, when the second and deadliest wave of influenza was at its height, he admitted that he knew of "no measure that could resist the influenza". Most doctors would have agreed. The public wanted more of their reassuring presence, but this was impossible given that medics were still needed for the war in France. Face masks and restrictions on places of public entertainment were tried as measures for containing the spread of the disease, and were adopted by some local authorities in the United States, but had little effect. Restrictions on public mobility were scarcely practical when the armed forces began to demobilize.

Important lessons came out of the emergency. Victims of the first wave were sometimes infected again in the second, suggesting that the virus could evade the immune response. On remote Pacific islands, communities with no previous exposure to influenza faced annihilation if they were not protected by quarantine.



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Children from families stricken by influenza were fed by volunteers, whose masks offered little protection.

The biomedical establishment has acquired a profound knowledge of influenza. We now know that it is caused by a single-stranded RNA virus that is extraordinarily mutable and able to alter its surface coat proteins to evade any acquired immunity. In a remarkable piece of microbial archaeology, scientists have reconstructed most of the 1918 virus from pathology specimens stored during the pandemic, showing that it resembles strains found in east Asian ducks. This was not a complete surprise: the two other twentieth-century influenza pandemics in 1957 and 1968 had similar origins, as does the H5N1 'bird flu' strain that occasionally kills humans. This leap across the species barrier seems to occur readily in the rice paddies of east Asia, where wild ducks are never far from human habitation.

Reflecting on the possible consequences of a similar pandemic today, Honigsbaum wonders if Britain's contingency plans would enable it to manage any better than it did 90 years ago, given the demand for medical services. Large-scale absenteeism from work, he believes, would cause serious economic dislocation in a world that has become much more dependent on remote providers of power, food, transport and communications. Ignoring the global perspective with his British focus, he fails to emphasize that these problems will be shared by all nations and felt most acutely in the vast cities of the developing world in which civic

organization is precarious. He suspects that people today would respond to a pandemic with less grace and stoicism.

What have we gained since 1918? We have an unparalleled knowledge of the virus and an international microbial surveillance system that acquitted itself with panache during the 2003 epidemic of severe acute respiratory syndrome (SARS). We have antibiotics that will cure secondary bacterial infections. We also have two anti-flu drugs, Tamiflu (oseltamivir) and Relenza (zanamivir), that can reduce the intensity of the disease if taken early. Although governments are stockpiling these drugs, they are unlikely to have enough available to cover entire populations; this could perhaps be rectified in a short time if a pandemic seemed imminent.

The most important preparation is continued research — for drugs to control infection and severe reactions to influenza, and for the development of mass immunization procedures that protect against all strains of influenza virus.

The book's title is a reminder of how children of the 1920s extracted a little gaiety from unpromising circumstances with a skipping rhyme: I had a little bird / Its name was Enza / I opened the window / And in-flu-enza. ■

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