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INFLUENZA

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Amidst the series of tragic events that was the first half of the twentieth century, the 1918 influenza pandemic stands out for its swift lethality. Over the course of about 18 months at the close of the First World War, an estimated 50 million people died from this viral infection.

Since the last flu pandemic in 2009, public health officials have started to stand guard against another catastrophe (page S11). Yet echoes of this outbreak have reverberated through the decades and the disease, in its various guises, kills at least a quarter of a million people each year worldwide. The virus is adept at adaptation, leaving scientists chasing a moving target. The virus's surface proteins mutate rapidly and can combine into dozens of variants (page S2); the antibodies we produce to fight one year's flu strain can't stop the others.

Influenza evades the effects of drugs developed against it. First-generation antivirals are now almost useless, and newer classes of drugs — the neuraminidase inhibitors oseltamivir (Tamiflu) and zanamivir (Relenza) — are beset by resistance (page S9). And, owing to a number of factors, including genetics, individual responses to the virus vary widely; researchers are starting to get a handle on why some people infected with influenza become very sick or die while others are unscathed (page S14).

Fears of widespread contagion have grown because the virus seems to be making a habit of jumping from its original bird hosts into domesticated mammals and birds (page S4). Perhaps the great hope lies in flu prevention. Researchers are reporting progress in developing a vaccine that could be effective against a broad range of flu strains (page S6), a feat that might mark a turning point against this killer.

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Herb Brody

Supplements Editor, Nature Outlook.

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