Harnessing innovation in public health

Vaccines play a vital if not life-saving role in healthcare but take-up rates are far from ideal

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The second Raffles Dialogue, hosted last week by the National University of Singapore schools of medicine, public health and public policy along with the National University Health System (NUHS), focused on “The Critical Role of Innovation” in the context of the broader theme of “Human Well-being and Security” in 2030.

It was attended by more than 100 global health experts and international participants.

In his opening address looking forward to 2030, Professor John Wong, chief executive of NUHS, urged the audience to consider Charles Darwin’s theory of natural selection, published in the mid-1800s, which emphasised that neither intelligence nor physical strength was the critical factor for survival.

Instead, the key to survival is the ability to adapt to change. More than 300 years later, this need to adapt is more pressing than ever. The dialogue explored innovations in health, information and big data, financing and global governance. In the face of fast-paced change, how will all this innovation weave together? How can societies ensure that the innovations are harnessed for positive disruptions, and not negative ones? How can these innovations help to advance equity, rather than drive inequities, with some benefiting more than others?

One lens on the different paths which innovation can take is focused on vaccines. Vaccination often lauded as one of the great successes in public health – at least for those who have access to the vaccines and those who trust and accept them.

H1N1 influenza vaccine uptake rates during the 2009 pandemic, for instance, although higher in Singapore than some other countries, were far from ideal. Recent research has documented routine influenza vaccine rates in Singapore at only 15 per cent among older adults for whom the vaccine is specifically recommended. Other groups considered high risk, such as children under five years of age and healthcare workers, have also had sub-optimal uptakes.

In order to fully realise the potential of the influenza vaccine – a life-saving innovation, people need to be willing to take it. As a major travel hub, Singapore is vulnerable to emerging infectious diseases. Its rapid and exemplary response to diseases such as the 2003 SARS epidemic and the more recent Zika outbreak sets it apart as a model of efficiency in the region. The Republic has the potential to lead the way in its proactive approach by paying attention to vaccine confidence, hesitancy and uptake.

Vaccines have saved millions of lives over the past decades, with more vaccines and combinations of vaccines in the pipeline. As the science around vaccines continues to unfold, and there are continuing innovations in the administration and delivery of vaccines, innovations in modes of communication – especially social media – have been an asset and a hazard to their success.

On the one hand, digital media offers new modes of reminding parents when it is time to vaccinate their child, and encourages adolescents and adults to seek the growing number of vaccines available for different stages of life.

On the other hand, there have been highly organised social media campaigns that have spread misinformation about vaccines, creating public anxiety and distrust. The World Economic Forum’s 2013 Global Risk Report terms the use of innovative new digital media in these ways as creating “digital wildfires” rather than digital solutions.

All of these new innovations build on existing knowledge, beliefs, trust and distrust and can bring out positive change or amplify negative sentiments, risking or strengthening human well-being and security.

As we get close to 2018, and mark 100 years since the Spanish flu pandemic which killed more people than World War I, let us not let more people succumb to infectious diseases while hesitating to adopt available life-saving innovations.

It is, after all, the ability to adapt and adopt innovation – that is the key to survival and the future of well-being and human security.