

The WHO research agenda for influenza: two years later

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In November 2009, the Global Influenza Programme of the World Health Organization (WHO) hosted a consultation among investigators, funding agencies, health policy-makers and other public-health officials from 35 countries to evaluate ongoing influenza research and its impact on public health and recommend high-priority research. Five research areas or “streams” were identified and background documents were commissioned and published on WHO’s web site.¹ The streams identified were given short, convenient titles: reducing risk; limiting spread; minimizing impact; optimizing treatment and promoting tools. In each stream, numerous “substreams” covered the existing and proposed landscape of influenza research efforts. A summary research agenda with recommendations was published in early 2010.²

Two years after the 2009 A(H1N1) pandemic, a review of published works and their relevance to the research agenda was warranted. Furthermore, a report presented to the Sixty-fourth World Health Assembly in May 2011 specifically recommended that WHO “pursue a comprehensive influenza research and evaluation programme”.³ In response, WHO commissioned over 20 literature reviews covering the high-priority research recommendations in the original agenda. An expert group met informally in November 2011 to present the findings of the reviews and prepare a full progress report. It found more than 4000 relevant publications from 2010 and 2011.

The reviews revealed important progress in each of the 16 research substreams of WHO’s original agenda,² evidence that the agenda accurately reflected the global landscape of ongoing and needed influenza research. The progress report, still in preparation, will summarize the major findings, but the important topics discussed under each stream are outlined below:

Reducing risk. Research in this area seeks to mitigate the risk that novel influenza strains will affect humans and cause a pandemic. Discussions centred

on the need to increase surveillance activities and biosecurity wherever food animals such as poultry and swine are in contact with humans. Studies directed at understanding the molecular changes that promote zoonotic transmission of influenza viruses were also evaluated.

Limiting spread. Once a new human influenza virus emerges, research questions revolve around transmission dynamics and prevention. Current research centres on the physical factors facilitating viral spread in humans, although molecular markers within viral transmissibility genes are also under study. Research has advanced knowledge on the survival of viruses in the environment and the role of close contact and aerosol in transmission. New data from the 2009 pandemic cast new light on other factors affecting transmission.

Minimizing impact. Studies on limiting spread were discussed under this research stream since limiting the spread of the influenza virus would reduce a pandemic’s overall impact. Because vaccination is the cornerstone of efforts to minimize impact, research on new influenza vaccines, vaccination approaches and vaccination policies was discussed. The development of “universal”, recombinant and advanced cell-based vaccines, the use of adjuvants for dose sparing and enhanced protection, and the transfer of new and existing technologies to low-resource countries are novel approaches. However, gaps exist in our capacity to effectively deliver these vaccines.

Optimizing treatment. The wide range of clinical presentations, coupled with the influence of patient age and immune status, the variable use of diagnostics, and resistance to antiviral drugs, complicate the treatment of influenza. In addition, health system capacity varies across countries and regions. Scores of studies have been published on the clinical features of the 2009 A(H1N1) pandemic and more than 60 on the comparative validity of different point-of-care diagnostic tests. Hundreds of studies have dealt with the development of new anti-

virals, drug resistance and pharmacokinetics. However, gaps remain in our capacity to readily recognize and treat influenza.

Promoting tools. Expanded use of modern tools and the development of new tools could greatly improve early outbreak detection and influenza control. The original research agenda recommended studies on advanced case surveillance and reporting, disease and transmission modelling, and novel strategic communications. Many modelling studies have been published, primarily on disease transmission and how vaccination or previous infection modifies it. Other studies have focused on risk communication by the media and by public health officials during public health crises.

WHO’s 2011 research agenda consultation provided an informed discussion forum to examine the huge amount of research conducted since November 2009 and assess accomplishments and future directions. Several of the reviews commissioned will soon be published and the progress report will appear on WHO’s website. It is hoped that this ongoing research review process will help researchers and funding agencies to effectively apply resources for influenza research. ■

References

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