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Editorial

Acute respiratory infections in the WHO Eastern Mediterranean Region: Time to get better data to guide better preparedness

Acute respiratory infections, specially those which are influenza-associated, remain a public health priority on account of its ability to cause substantial mortality and morbidity. Owing to threat of global pandemic, the influenza-associated respiratory diseases also warrant greater public health attention. The unpredictability nature of the timing and origin of novel influenza virus and its ability to cause global pandemics warrants continuous policy discourse. One of the things that characterize influenza virus is its ability to drift and shift antigenically. The other uncertainty is when a new and novel influenza virus will emerge following re-assortment with the ability to cause severe epidemics and pandemic. Although, it is unpredictable when and where the new pandemic virus will emerge, but past pandemics such as Asian flu in 1957, Hong Kong flu in 1968 and 1976 and 1976 swine flu scare in the USA highlighted that new strains of influenza could emerge from natural reservoirs.

Recent analysis of the burden of influenza-related respiratory diseases has shown that estimates of respiratory deaths attributed to seasonal influenza has been higher than what was previously thought of. The recent data [1] shows that influenza-related respiratory deaths could range between 290 000–650 000 per year (4.0–8.8 per 100 000 individuals). Though no mortality estimates are available for low-income and lower-middle-income countries from the Eastern Mediterranean Region except for Morocco, the paper of Iuliano et al. [1] estimated that the annual influenza-associated respiratory deaths in all ages of the WHO Eastern Mediterranean Region could be in the range of 2.1–13.4 (with 95% CrI) per 100 000 individuals. The paper also documented wide range of influenza-associated mortality rates in the countries of WHO Eastern Mediterranean Region which might be due to considerable temporal variability. The difference in circulation of virus strains and their severity from one year to another may likely be the cause of this variability.

Although, influenza-associated mortality and morbidity data from the Eastern Mediterranean Region of WHO, is limited but much progress has been seen over the past decade. The paper of Malik et al. [2] published in this special supplement shows significant progress in the Region in improving influenza surveillance, case detection, confirmation and using surveillance data to generate country specific estimates on influenza disease burden. Despite the progress considerable gaps exist which might limit the Region to be better prepared for the predictably unpredictable event of influenza pandemic in the future.

While better surveillance has improved our understandings on the seasonality and timing of circulation of influenza virus in different transmission zones in the Region, more information are needed on the timing and severity of the season as well as burden of influenza in high risk groups. The Paper by AbdElGawad et al published from Egypt [3] show progress in determining severity of influenza using surveillance data in some countries but more needs to be done in other countries in the region order to understand the pattern of severity in different transmission zone. The reliable national estimates of the full extent of influenza disease burden is also not available as the countries have used different methodology which are not consistent and as such the data are not comparable across the countries in the region.

There are also no economic studies from the region that can support influenza vaccine policy decisions. Such economic data are essential to aid strategic decisions. As Zaraket et al. [4], another paper published in this supplement show, more prospective multi-country epidemiological studies using consistent, comparable and representative data taking advantage of expansion in influenza surveillance and laboratory confirmation would be required to address these knowledge gaps. Such lack of information will limit the Region's ability to prioritize preventive strategies and interventions targeting specific risk groups and/or high-risk age groups/or plan appropriate medical counter measures during a seasonal influenza epidemic or pandemic.

Determining the burden of respiratory syncytial virus (RSV) in children is another unknown in the WHO Eastern Mediterranean Region. It is now established that the RSV is a leading cause of acute lower respiratory illness in infants and children living in all regions including in the countries of WHO Eastern Mediterranean Region [5]. The epidemiology and impact of many viral respiratory pathogens have been described in temperate climates but published data from the Eastern Mediterranean Region are limited. As the Region has shown remarkable achievements in improving surveillance capacity and detection of influenza using surveillance for severe acute respiratory infections (SARI), the same surveillance platform can offer an opportunity to improve surveillance for RSV and estimate its burden. Results from seven years of SARI surveillance at hospitals in five countries in the Eastern Mediterranean Region [6] provide important insight into the etiology, seasonality and severity of viral respiratory pathogens among hospitalized patients in this region. Additional data have also been published

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from RSV in Morocco [7], Iran [8] and Pakistan [9–11]. In this special issue, another paper published from Pakistan by Aamir et al. [12] also presents important information on molecular characterization of circulation RSV genotypes, more data, however, on age specific burden of RSV specially during the first year of life and what proportion of paediatric mortality is attributed to RSVs will be critical for planning future strategies for introduction of RSV vaccines for the infants in the region.

Moving forward, the countries in the Region will need better data to guide better preparedness for pandemic influenza as well as for introduction of other interventions that have proven public health benefits. The appearance of avian influenza A (H5N1) in Egypt, although currently not known to cause human infections, and continued circulation of MERS in the Middle East, another respiratory virus, warrant continuous vigilance, monitoring and policy discourse. The spike of avian influenza A (H5N1) infections in Egypt during 2014–2015 [13] served as a reminder of the threat and danger of an unprepared world for a pandemic. Both national and international efforts need to be geared up towards better pandemic preparedness and planning. It is not a question of how but when the next pandemic will happen.

In 2007, the Eastern Mediterranean Acute Respiratory Infection Surveillance (EMARIS) network was established and initiated sentinel-site surveillance for SARI through collaboration by Ministries of Health the U.S. Centers for Disease Control and Prevention (CDC), U.S. Naval Medical Research Unit No. 3 (NAMRU-3), and the World Health Organization (WHO). Since then the World Health Organization Eastern Mediterranean Regional Office has been hosting such meetings of the EMARIS network annually. The fourth EMARIS meeting [14,15] saw the concurrence hosting of first-ever scientific conference of acute respiratory infection where a lot of scientific papers have been published. Some of the abstracts have been published in this supplement which will undoubtedly contribute to more knowledge gains in unknown areas. While more good quality data are needed to guide better preparedness, the current momentum of strengthened influenza surveillance in the countries of WHO Eastern Mediterranean Region should continue to be supported.

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Stephen S. Morse
Mailman School of Public Health, Columbia University, USA

Huma Qureshi
Pakistan Health Research Council, Islamabad, Pakistan