

Admissions with influenza and influenza vaccine effectiveness, Global Influenza Hospital Surveillance Network. Results from Northern Hemisphere, 2016/2017 Influenza season

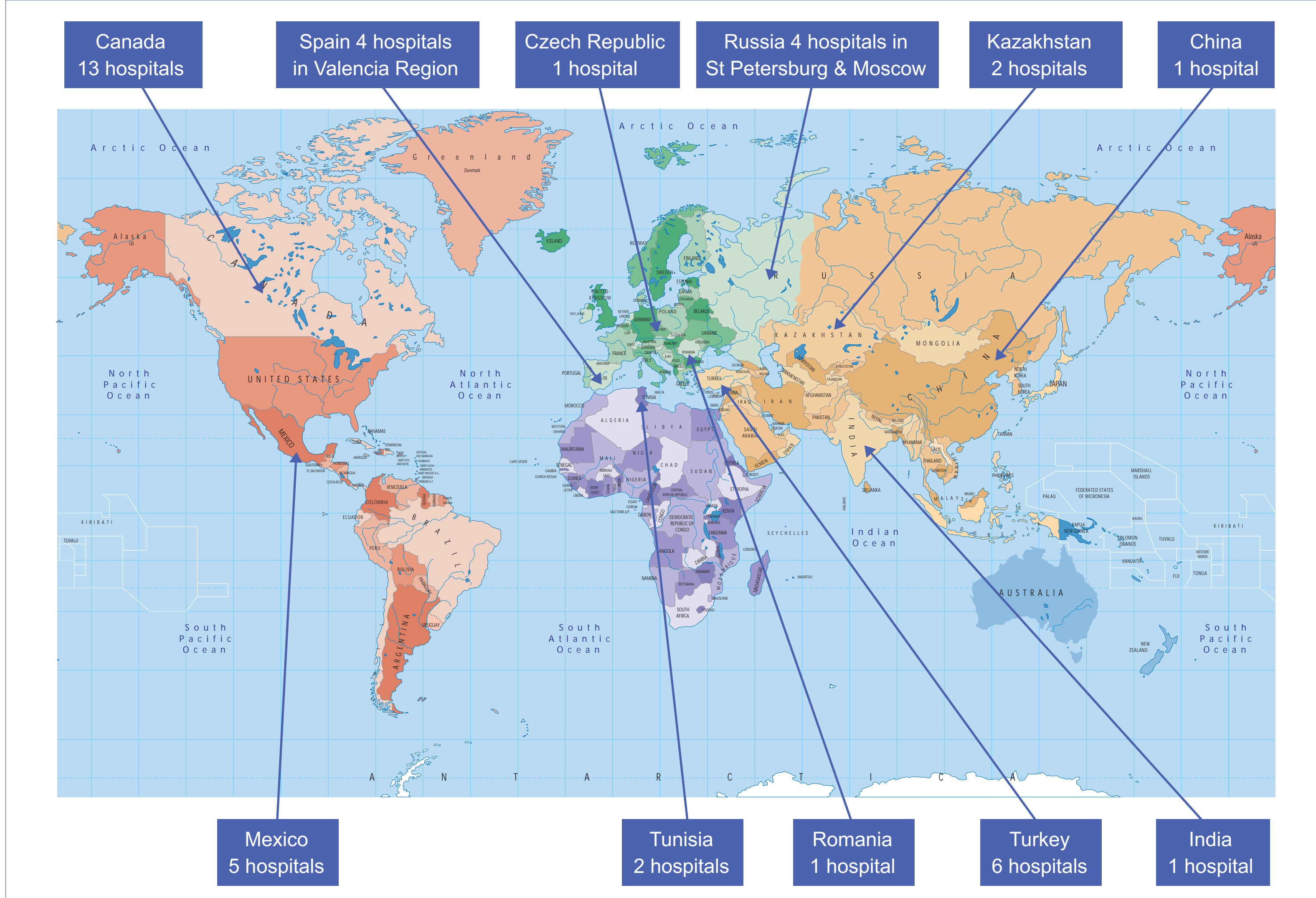
V Baselga-Moreno¹, J Díez-Domingo¹, S Trushakova², A Sominina³, S McNeil⁴, A Mira-Iglesias¹, A Draganescu⁵, GM Ruiz-Palacios⁶, P Koul⁷, S Unal⁸, J Kyncl⁹, T Zhang¹⁰, A Khatbayeva¹¹, A Ben-Salah^{12,13}, M Pisareva³, A Ambrose⁴, B Guglieri-López¹, D Pitigoi^{15,14}, ML Guerrero-Almeida⁶, N Bali⁷, M Durusu⁸, Z Mandakova⁹, W Shan¹⁰, J Ben Khilil¹⁵, FX López-Labrador^{1,16}, M Ben Jemaa¹⁷, K Stolyarov³, J Puig-Barberà¹, E Burtseva² for the Global Influenza Hospital Surveillance Network (GIHSN)

¹Fundación para el Fomento de la Investigación Sanitaria y Biomédica de la Comunidad Valenciana (FISABIO), Valencia, Spain; ²Ivanovsky Institute of Virology FSBI "N.F. Gamaleya FRCM" Ministry of Health, Moscow, Russian Federation; ³Research Institute of Influenza, WHO National Influenza Centre of Russia, Russian Federation; ⁴Canadian Center for Vaccinology, IWK Health Centre and Nova Scotia Health Authority, Halifax, Canada; ⁵National Institute of Infectious Diseases "Prof. Dr.MateiBals", Bucharest (INBI), Romania; ⁶National Institute of Medical Sciences and Nutrition Salvador Zubirán (INCMSZ), Mexico; ⁷Department of Internal and Pulmonary Medicine, Sher-i-Kashmir Institute of Medical Sciences (SKIMS), India; ⁸Turkish Society of Internal Medicine, Ankara, Turkey; ⁹National Institute of Public Health, Prague, Czech Republic; ¹⁰Fudan University, Shanghai, China; ¹¹Center for Sanitary-Epidemiological Expertise and Monitoring, Almaty, Kazakhstan; ¹²Pasteur Institute of Tunis, Tunisia; ¹³Arabian Gulf University, Bahrain; ¹⁴University of Medicine and Pharmacy Carol Davila, Bucharest, Romania; ¹⁵Abderrahmen Mami Hospital, Ariana, Tunisia; ¹⁶CIBERESP, Instituto de Salud Carlos III, Madrid, Spain; ¹⁷Hedi Chaker Hospital Sfax, Tunisia

INTRODUCTION

The Global Influenza Hospital Surveillance Network (GIHSN) aims to determine the burden of severe influenza disease and influenza vaccine effectiveness. Results for the 2016-2017 influenza season were obtained from 12 sites in 11 countries in the Northern Hemisphere, which have used a common protocol.

Figure 1. Map of the GIHSN contributing sites in 2016/17 season in the Northern Hemisphere



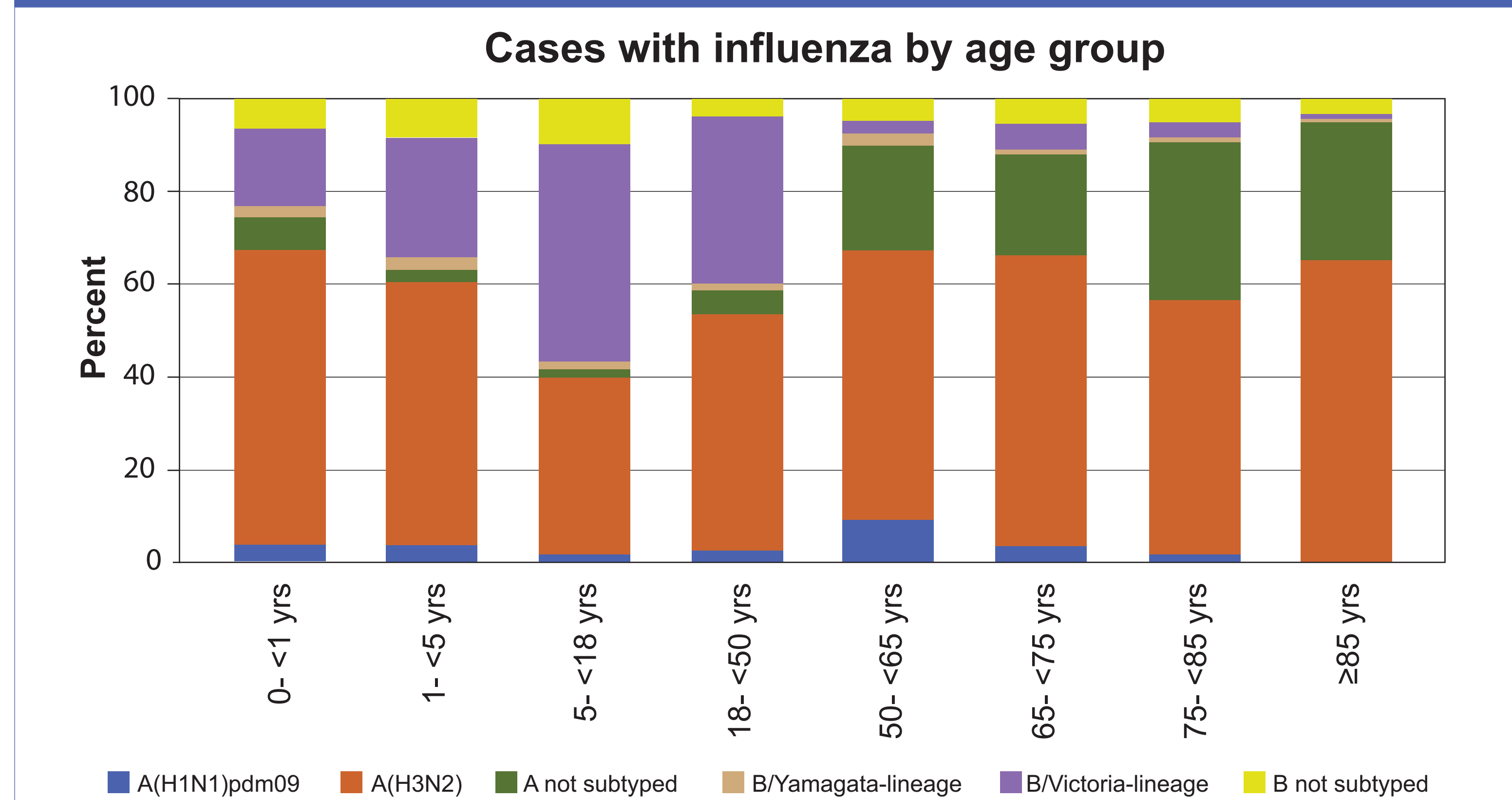
METHODS

Nasopharyngeal swabs were taken from the patients admitted to hospitals which participated in the surveillance network complying with requirements detailed in the GIHSN protocol, as being residents in a pre-defined hospital catchment area for 6 months at least, not institutionalised, not being discharged in the last 30 days from other episode, and presenting influenza like-illness (ILI) symptoms in 7 days or less before being hospitalised. Informed consent was also required for patients to include them in this study. Real-time reverse-transcription polymerase chain reaction (RT-PCR) was used to obtain laboratory results.

RESULTS

● Influenza A(H3N2) was the predominant strain in almost all age groups. Influenza B (mainly B/Victoria-lineage or not subtyped) was more prevalent in the age groups under 50 years old than in the elderly, and was more common in children 5 to 17 years of age.

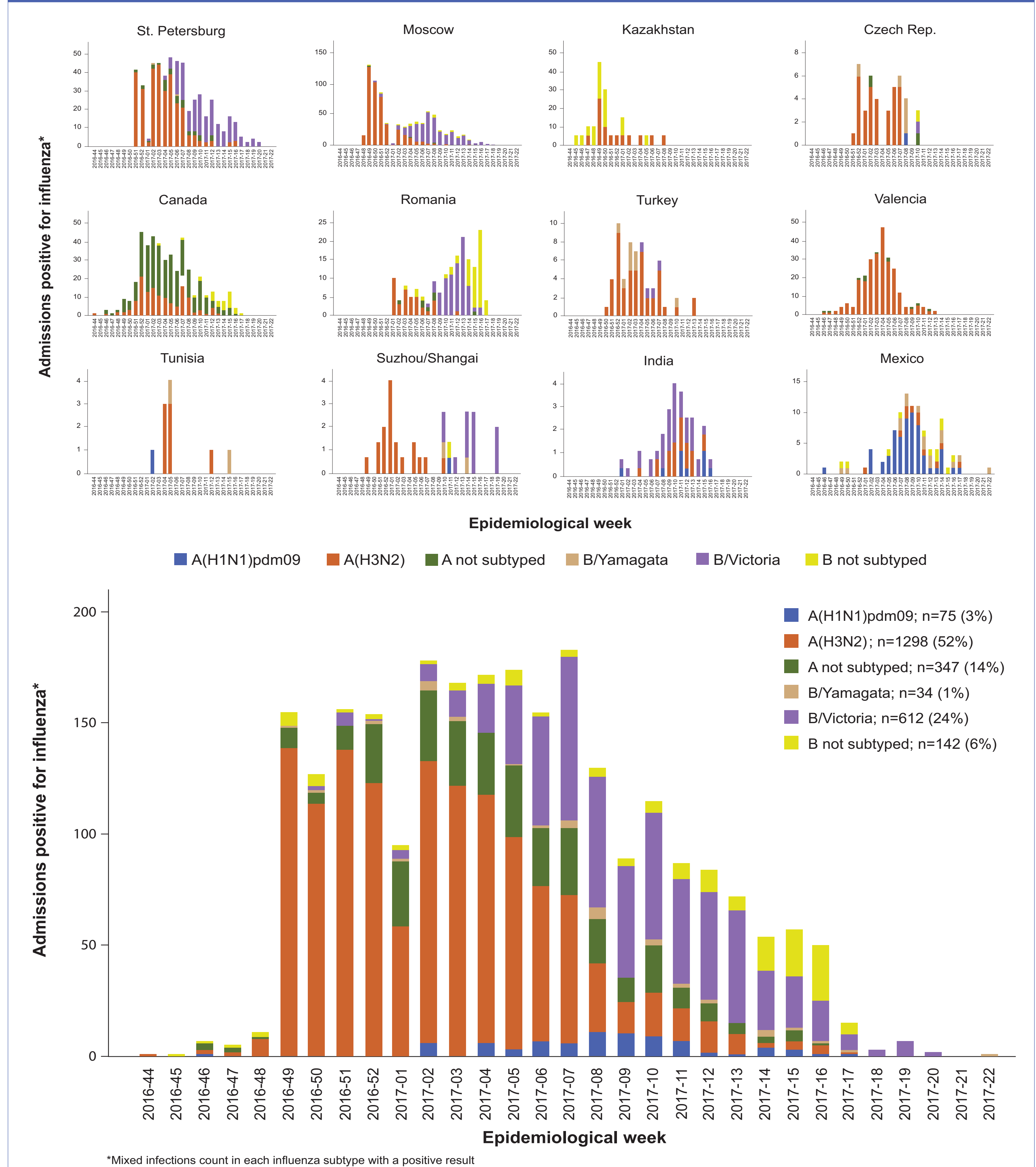
Figure 2. Incidence of influenza strains by age group. GIHSN Northern Hemisphere sites, 2016/2017 Influenza season



● Moscow, St. Petersburg, Canada and Valencia Region provided more than 79% of influenza positive samples. We detected 2502 positive cases in the Northern Hemisphere sites among 9026 patients with laboratory results, having a peak in the seventh week of 2017.

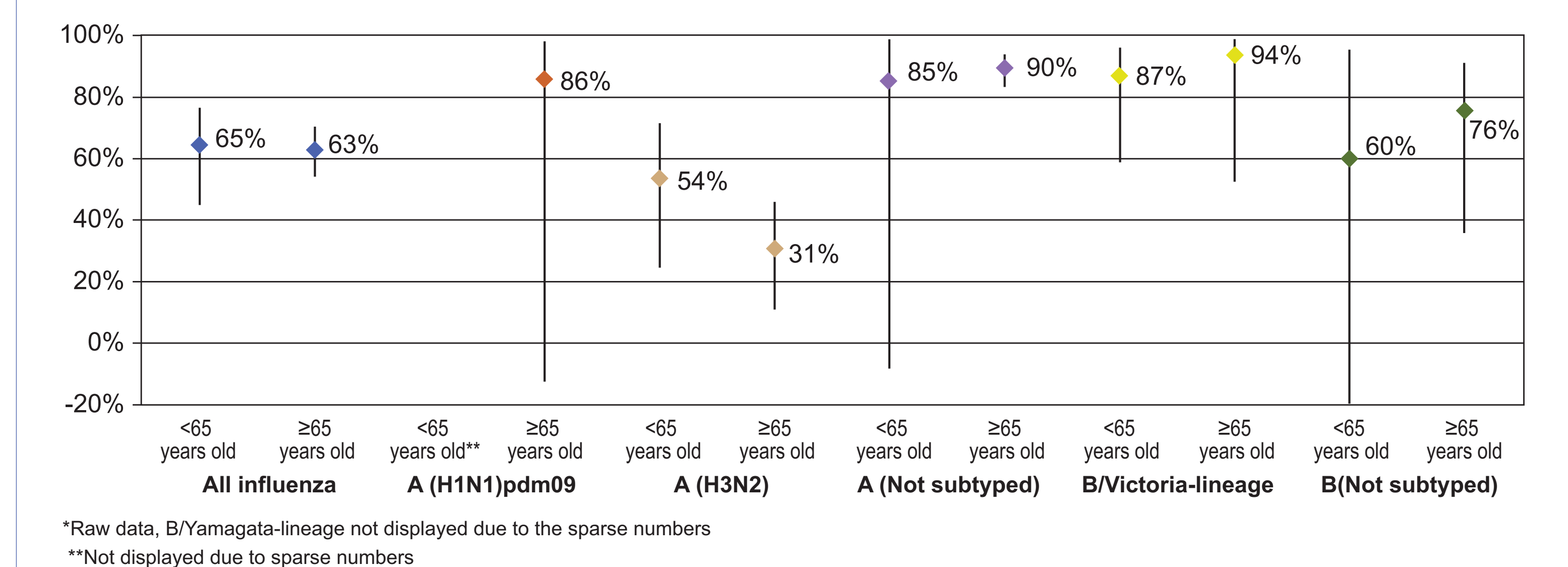
RESULTS (CONT.)

Figure 3. Number of admissions positive for influenza by strain, and epidemiological week, 2016-2017 influenza season



● Influenza vaccine effectiveness was over 60%. Effectiveness varied depending on the influenza strain and age group, so it was more effective for influenza B (90%, 95% confidence interval 80% to 95%), and for younger than 65 years old in influenza A (Figure 4).

Figure 4. Influenza vaccine effectiveness by age group in the GIHSN Northern Hemisphere sites, 2016/17 Influenza season*



CONCLUSIONS

Influenza A(H3N2) was the predominant strain this season. Influenza B/Victoria-lineage was detected at the 50th week of 2016, and it increased from the first week of 2017. Vaccination effectiveness was over 60 per cent, for a lower point estimate for influenza A (H3N2) subtype, especially for patients over 65 years old but it still has an effectiveness higher than 30 per cent.

Victor Baselga-Moreno
Fundación para el Fomento de la Investigación Biomédica y Sanitaria (FISABIO)
Valencia, Spain
Phone: +34 961 926 312
e-mail: baselga_vic@gva.es

The study received support from the Foundation for Influenza Epidemiology, which is partially funded by Sanofi Pasteur