

Impact of influenza strain and patient characteristics on the risk of admissions with influenza. Global Influenza Hospital Surveillance Network Results, 2014-2015 influenza season

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Introduction

The Global Influenza Hospital Surveillance Network (GIHSN) is a public-private partnership between various Public Health institutions and Sanofi Pasteur. The main goal of the GIHSN is to study influenza epidemiology. During the 2014-2015 influenza season, in 24 hospitals in Russia Federation, Czech Republic, Turkey, China and Spain (Figure 1), we screened consecutive admissions following a common protocol.

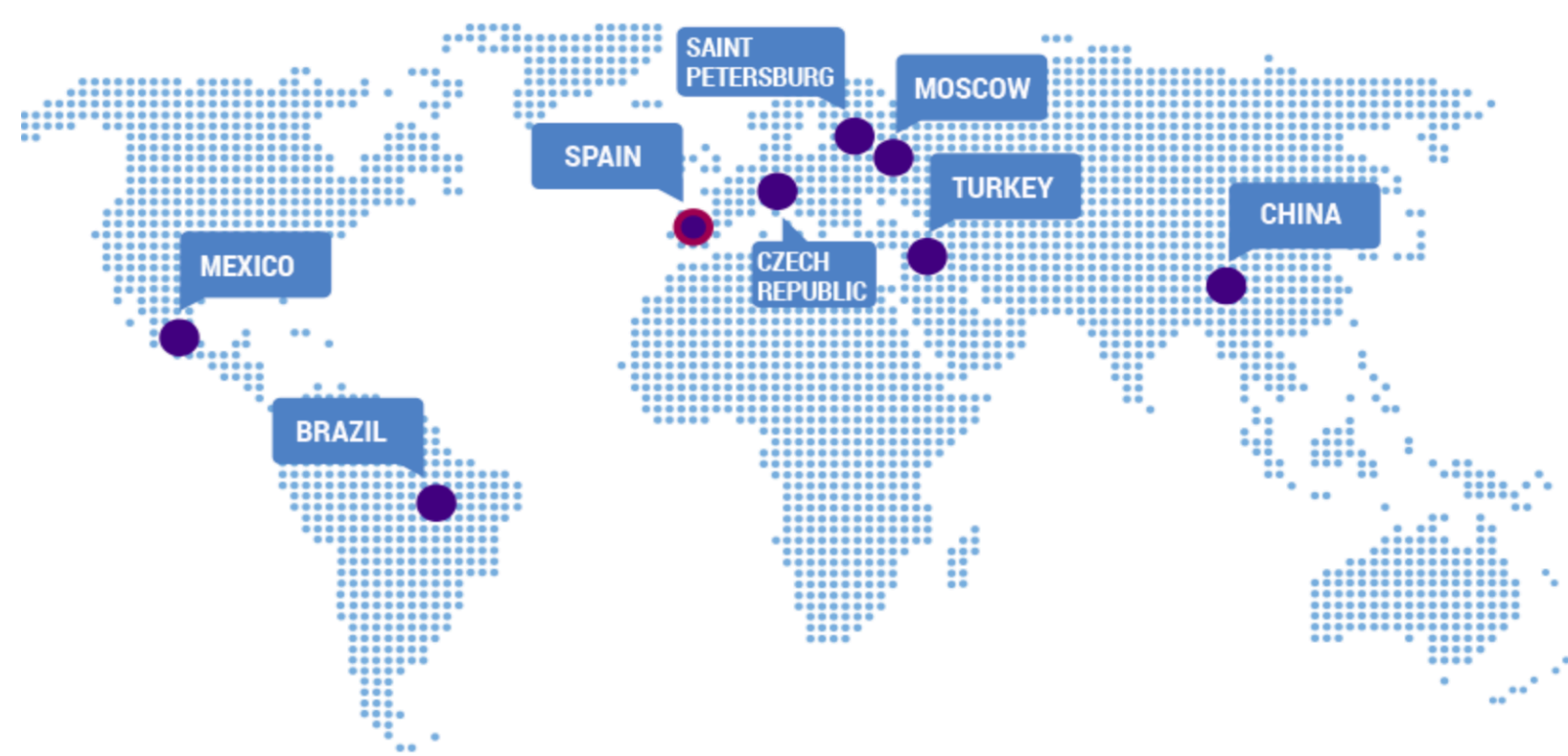


Figure 1. Global Influenza Hospital Surveillance Network (GIHSN)

Results

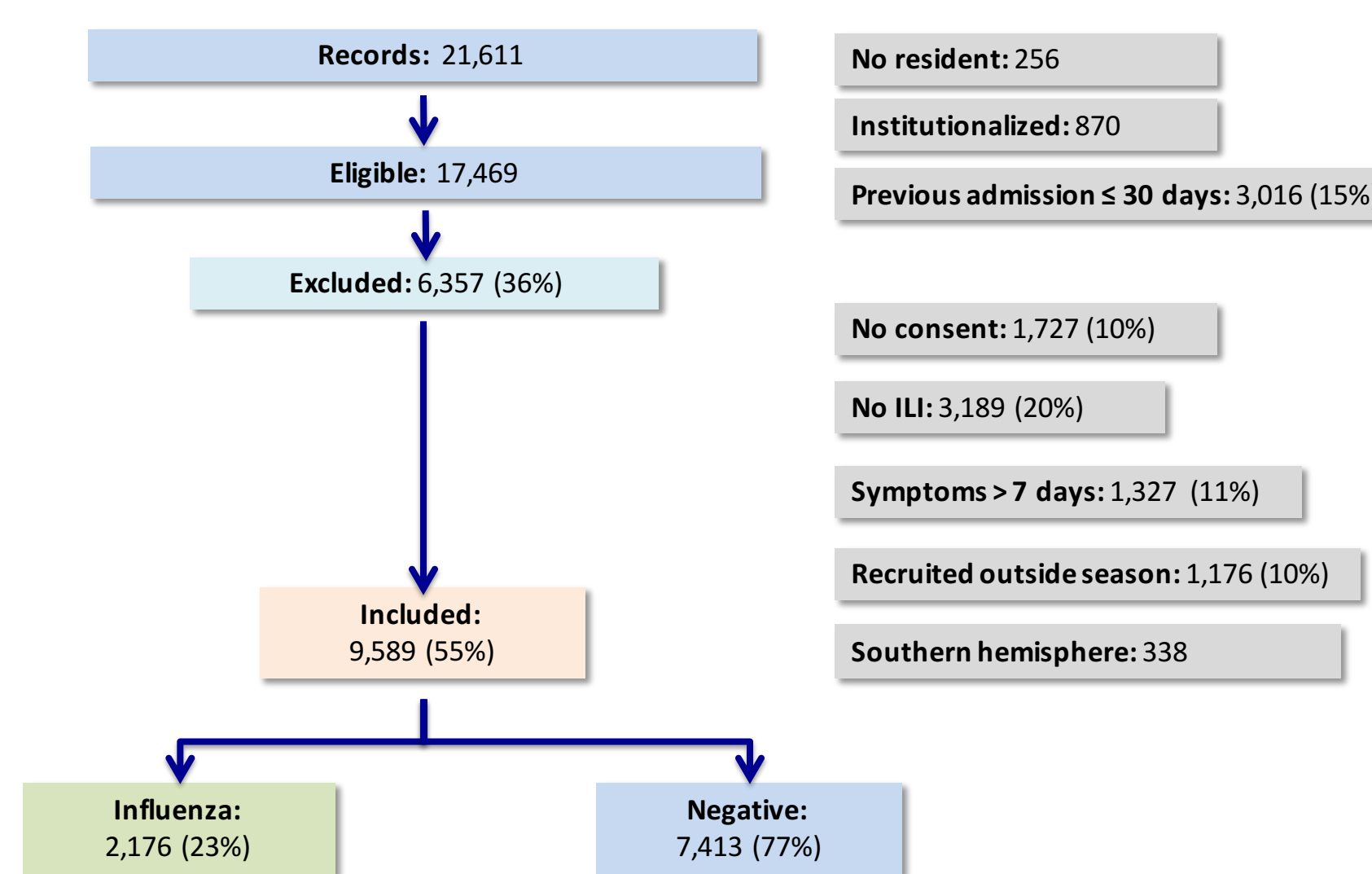


Figure 3. Flowchart of admissions GIHSN 2014-2015 influenza season

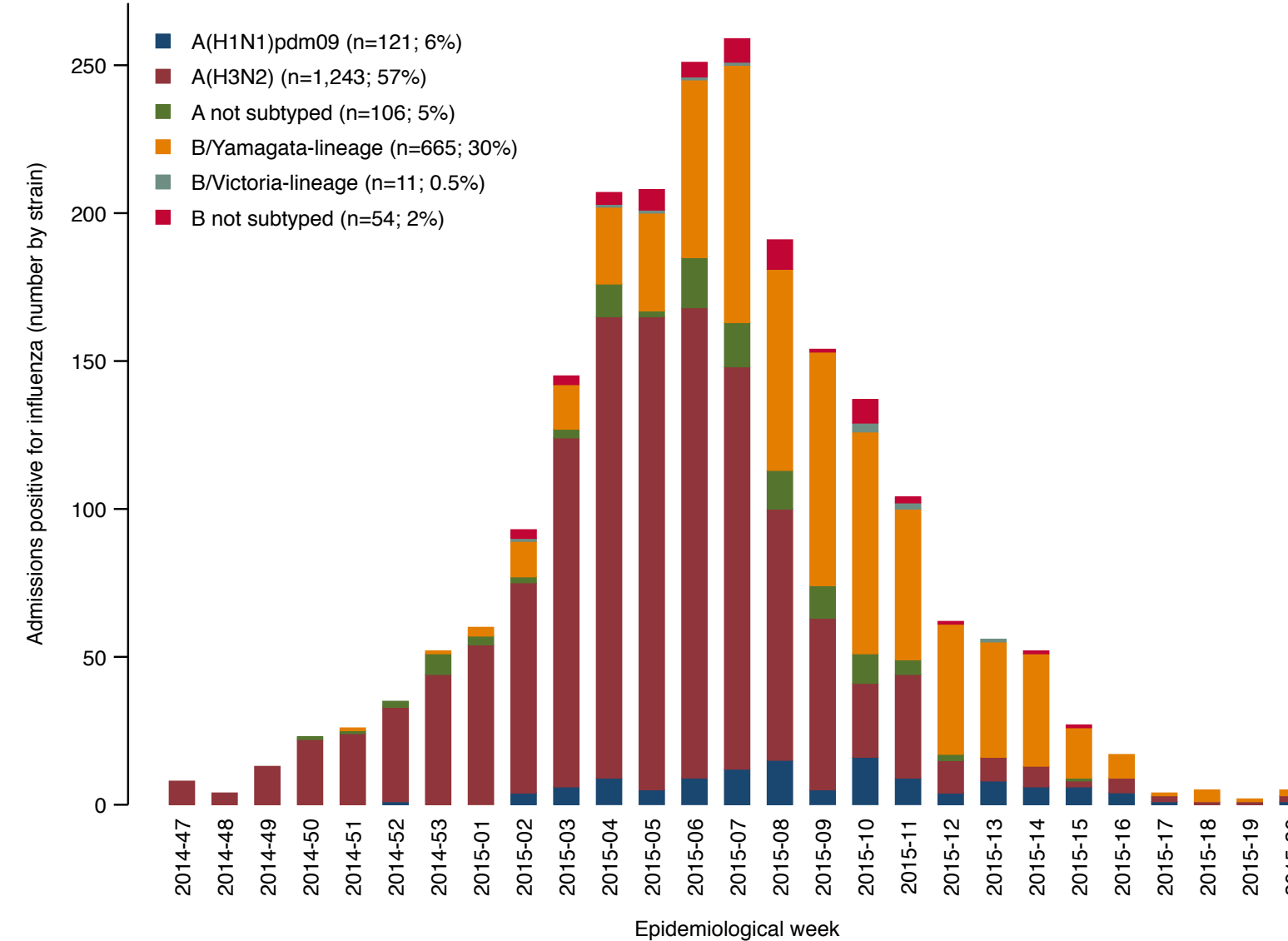


Figure 4. Number of admissions with influenza, by virus strain and week

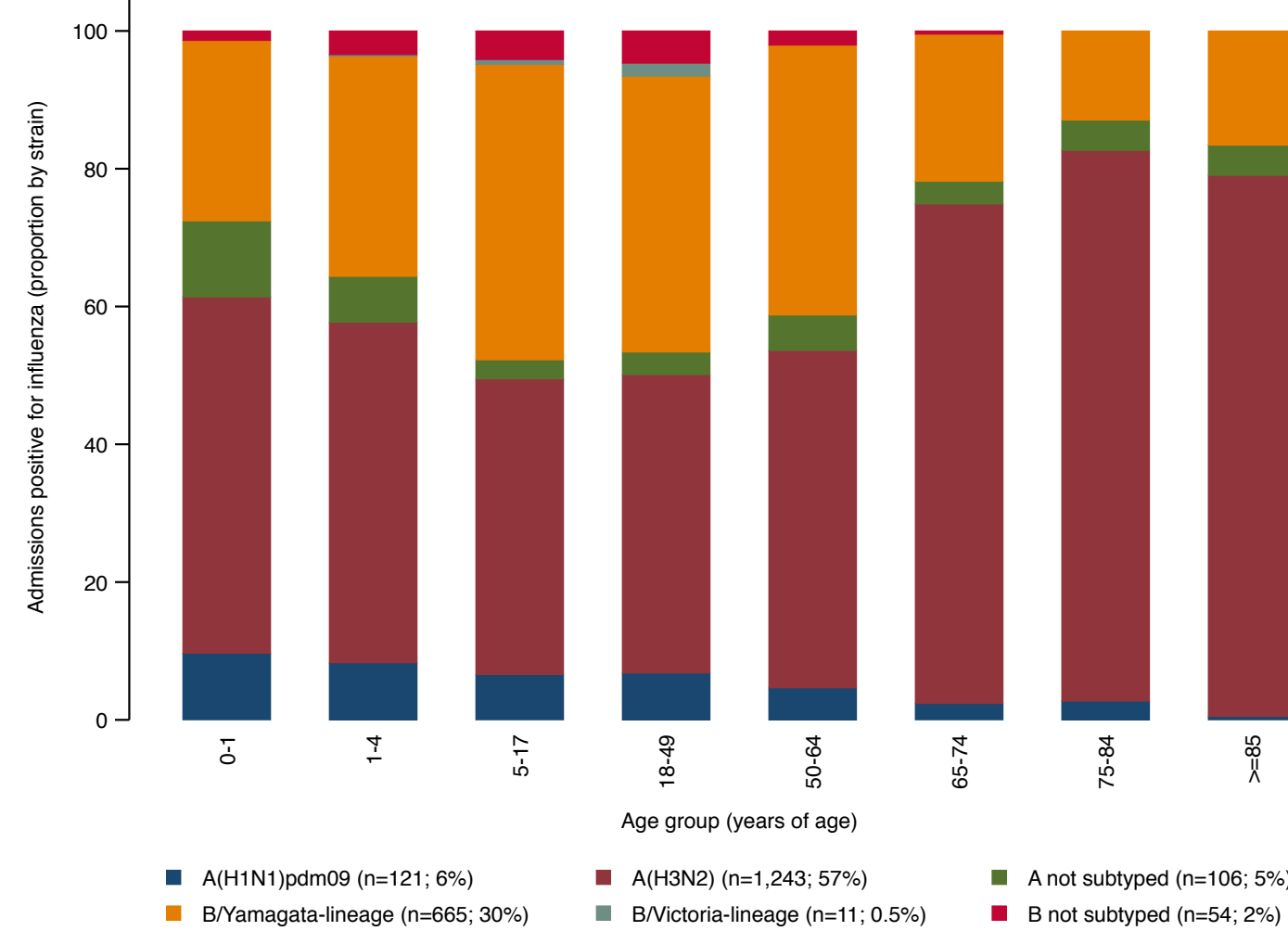


Figure 5. Proportion of admissions with influenza, by strain and age

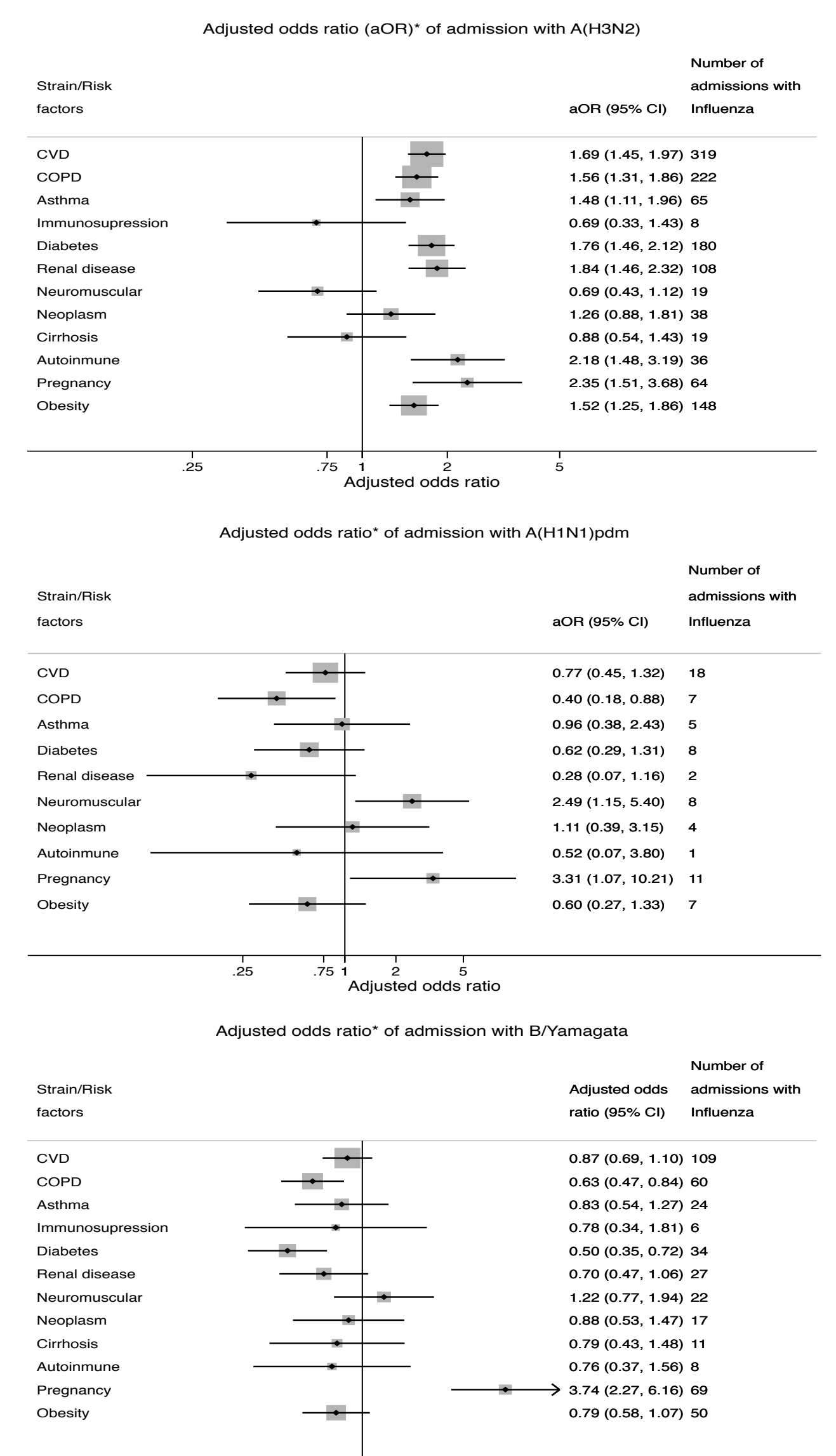


Figure 6. Adjusted risk of admission with influenza, by strain, related to underlying chronic conditions or risk factors.

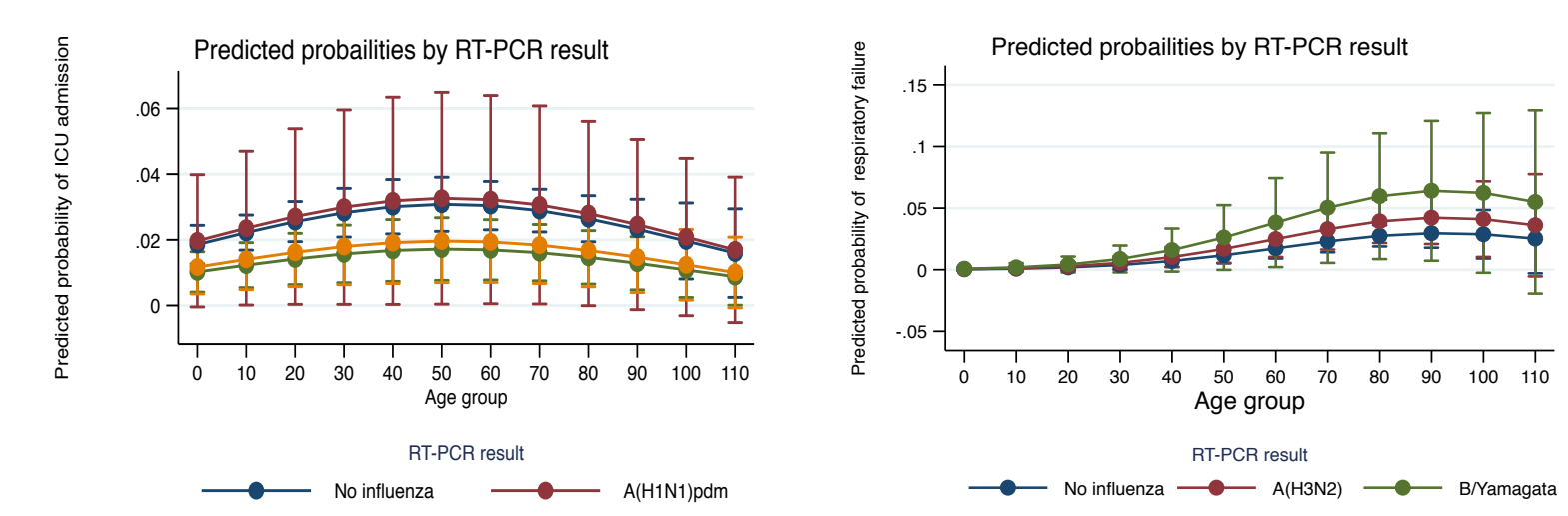


Figure 7. Predicted probability of severe outcomes (intensive care unit (ICU) admission and respiratory failure) by age and strain

Discussion

Influenza was a significant threat for all age groups. Comorbidity increased the risk of influenza and this was observed for all influenza strains. Pregnancy was a risk factor regardless of involved strain.

A(H1N1)pdm09 was associated with a greater risk of ICU admission and B/Yamagata-lineage with an increased risk of respiratory failure.

Methods

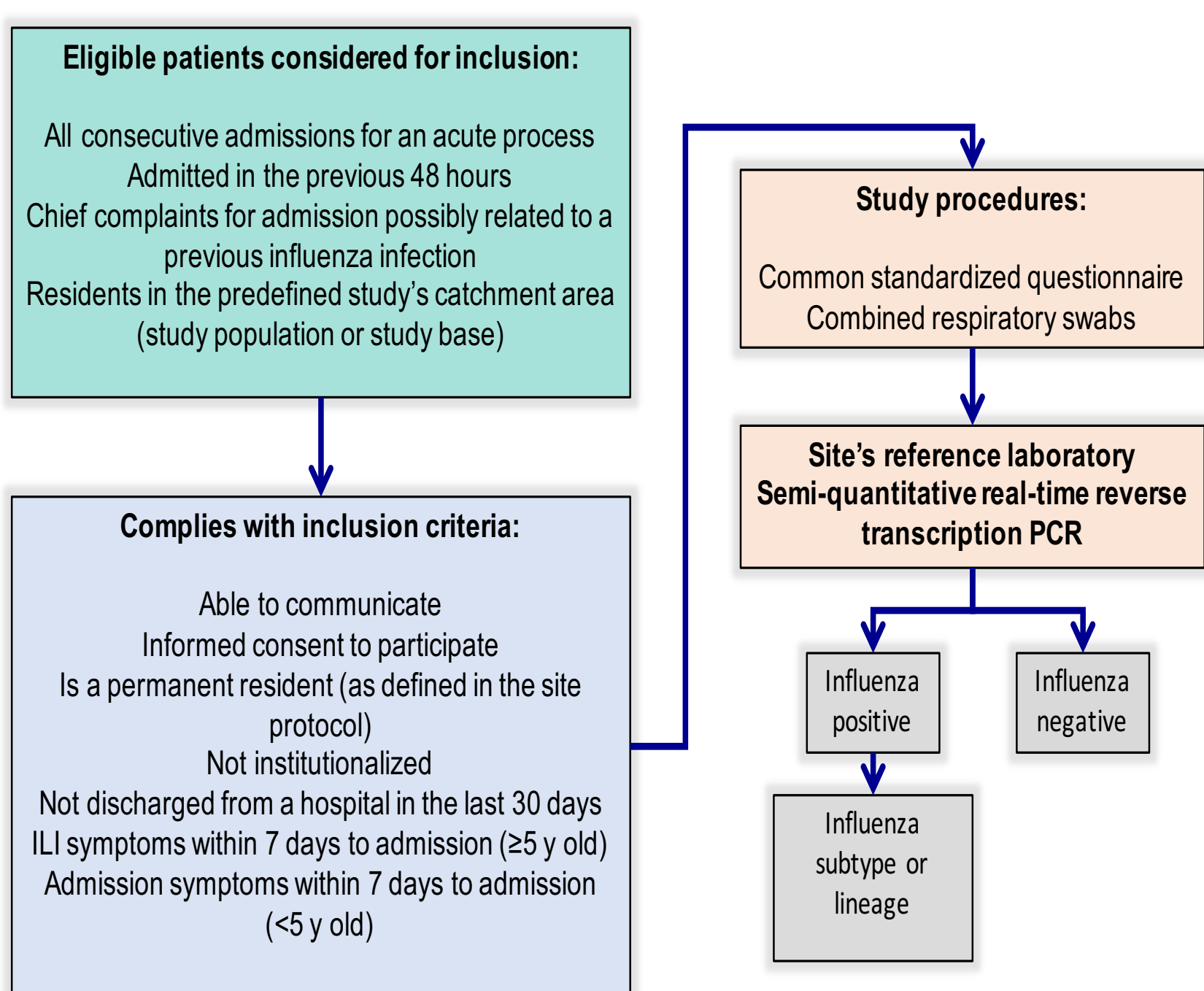


Figure 2. Study methods flowchart

The adjusted odds ratio (aOR) for admission with influenza was estimated by logistic regression using as comparison group influenza negative admissions without underlying conditions. All estimates were adjusted as by sex, site, number of admissions in previous twelve months, smoking habits, time to swab and calendar time.