

# Influenza virus type/subtype and different infection profiles by age group during 2017/2018 season

## Portuguese Laboratory Network for the Diagnosis of Influenza Infection

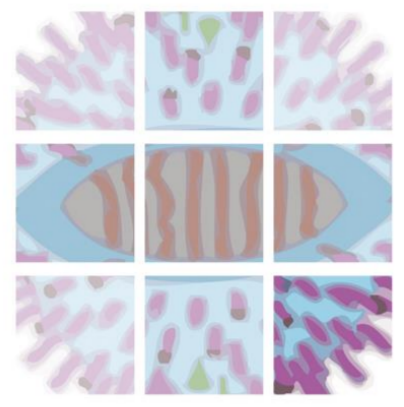
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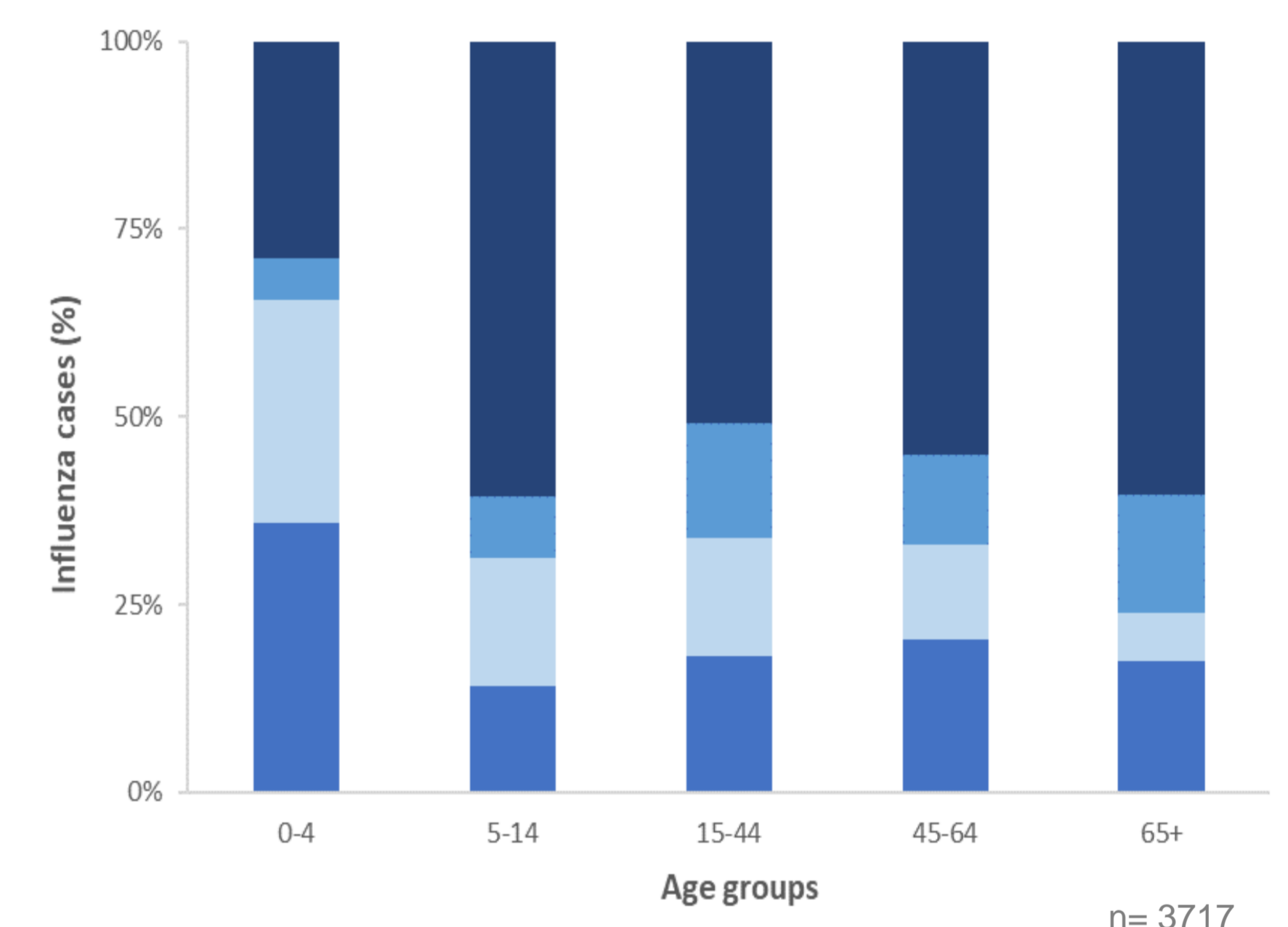
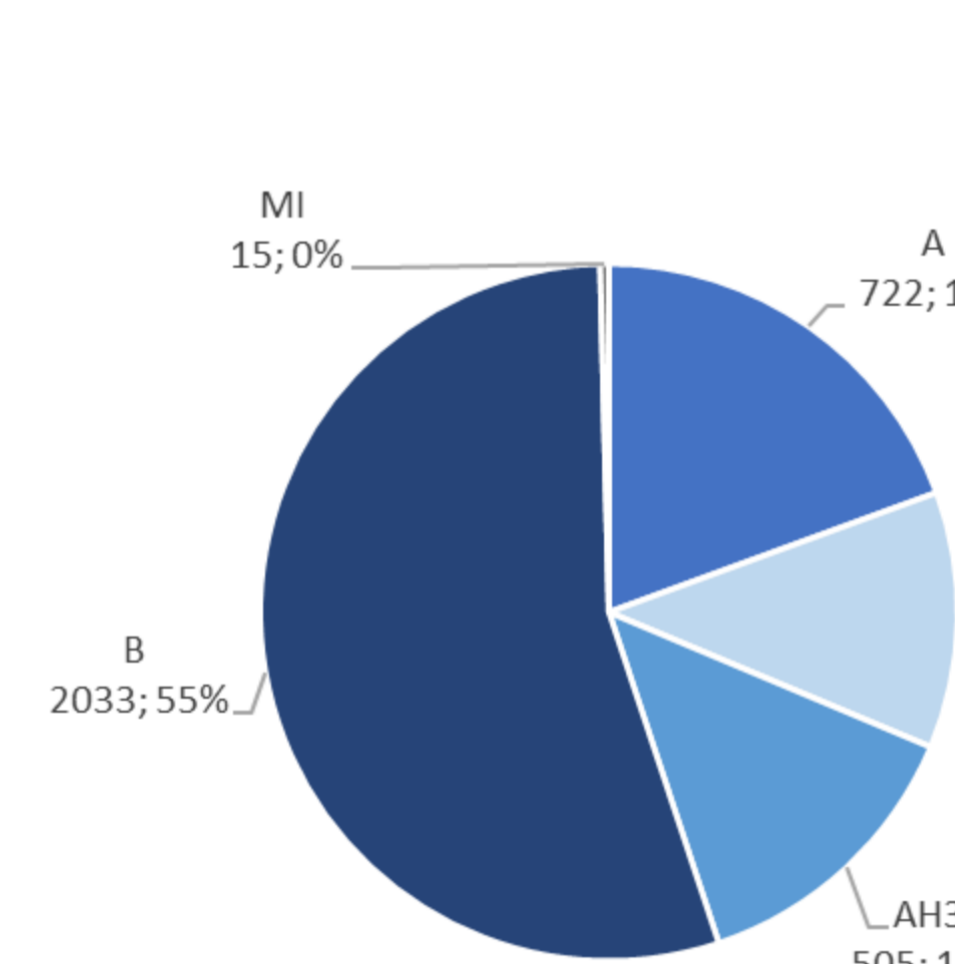
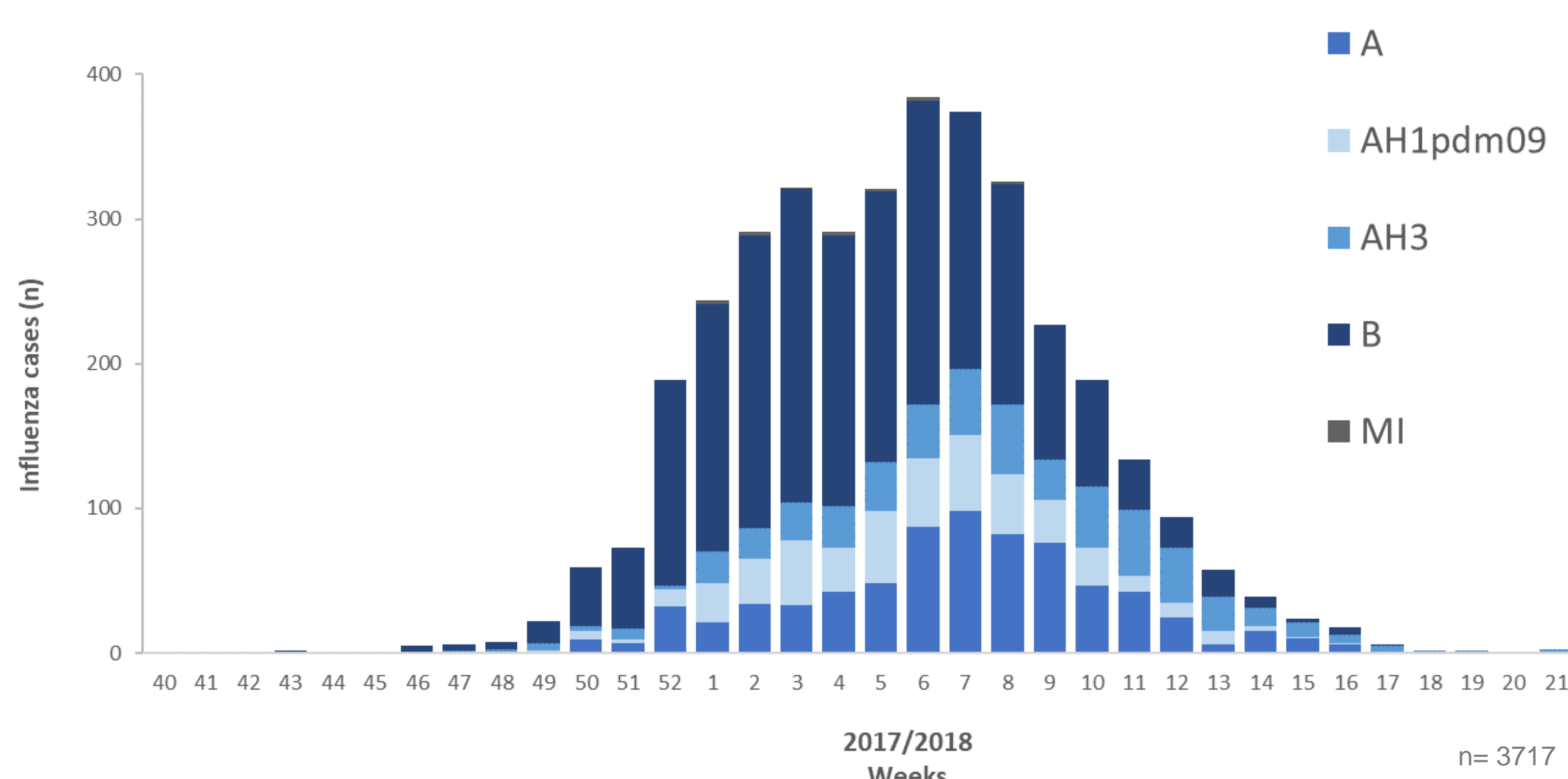
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### Background:

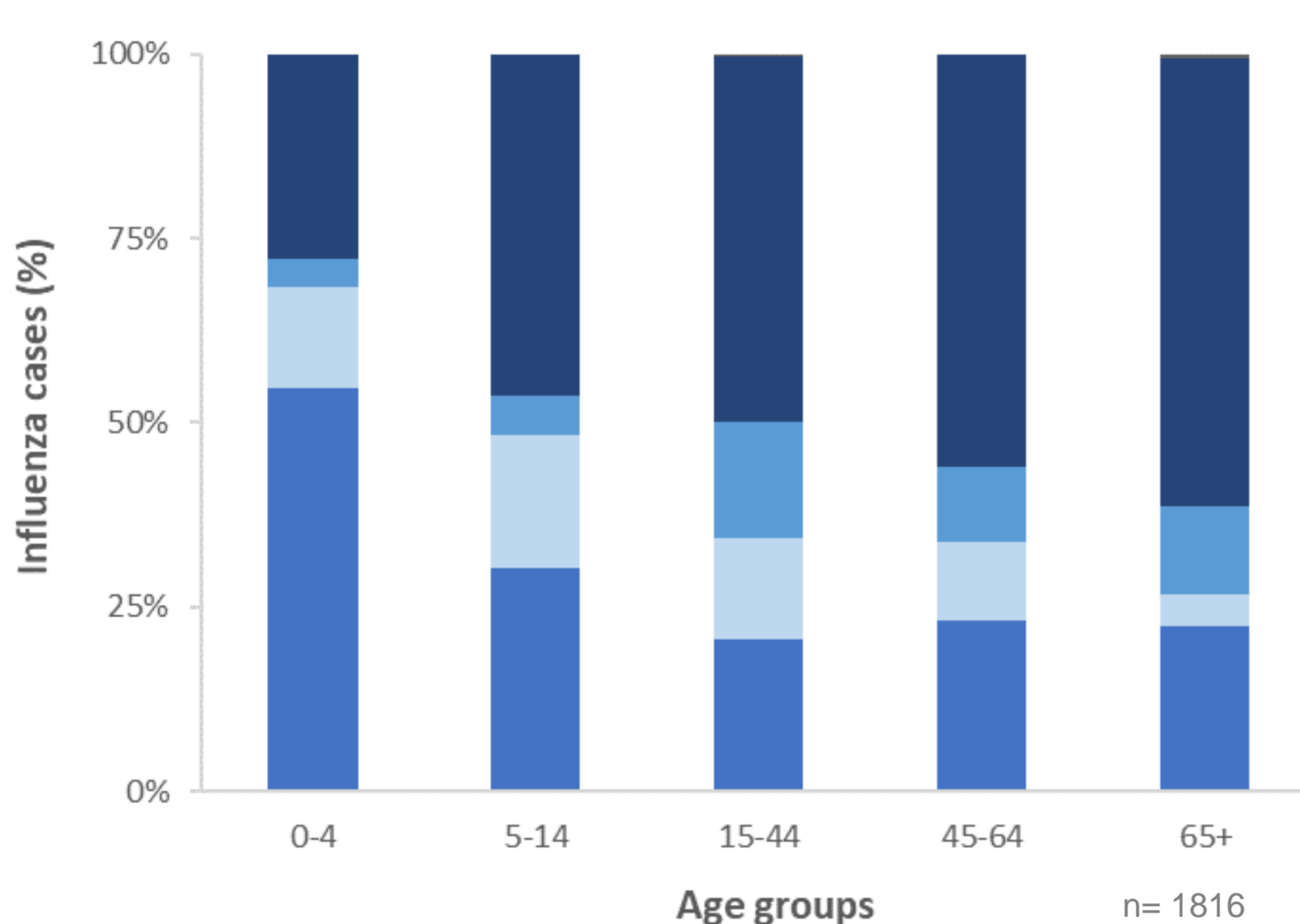
Influenza has a major impact on hospitalization during each influenza season. Since 2009, the Portuguese Laboratory Network for Influenza Diagnosis has integrated 19 Laboratories in Portugal mainland and Atlantic Islands of Azores and Madeira. This laboratory network added an important contribute to the National Influenza Surveillance Program regarding severe and hospitalized influenza cases. The study analysed the influenza type/subtype distribution by age group and medical care wards (ambulatory, hospital, intensive care unit) during 2017/2018 season in Portugal.

### Methods:

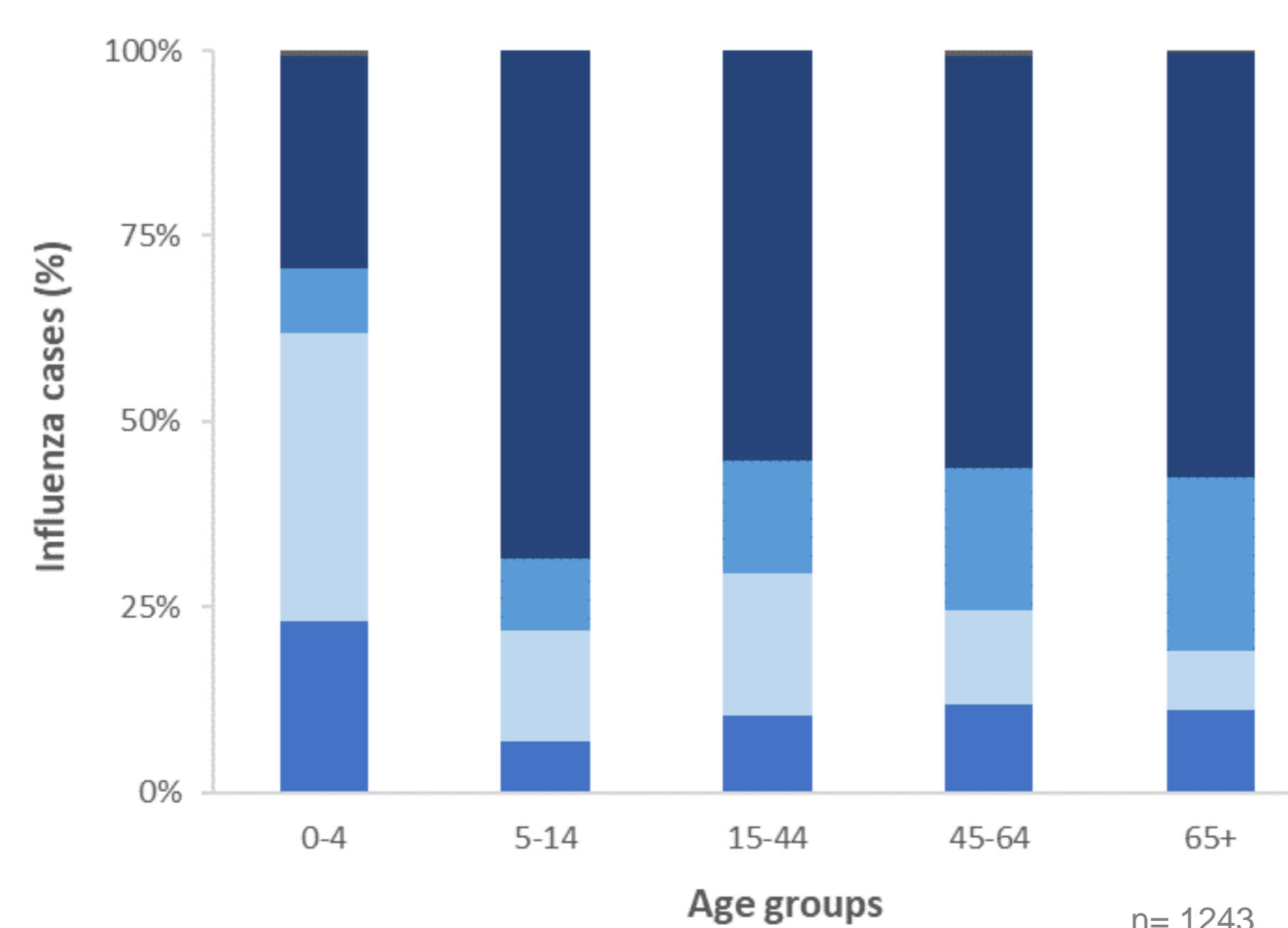
The laboratory network performs influenza virus diagnosis by biomolecular methods and sends a weekly case based report of influenza positive/negative confirmed cases to the National Influenza Reference Laboratory. During 2017/2018 season, 14 hospitals from Portugal mainland and Atlantic Island (Azores and Madeira) reported to the National Influenza Reference Laboratory 13747 cases of respiratory infection, all tested for influenza type and/or subtype. Epidemiological data: age, sample collection, hospital dwelling service and patient outcome were reported.



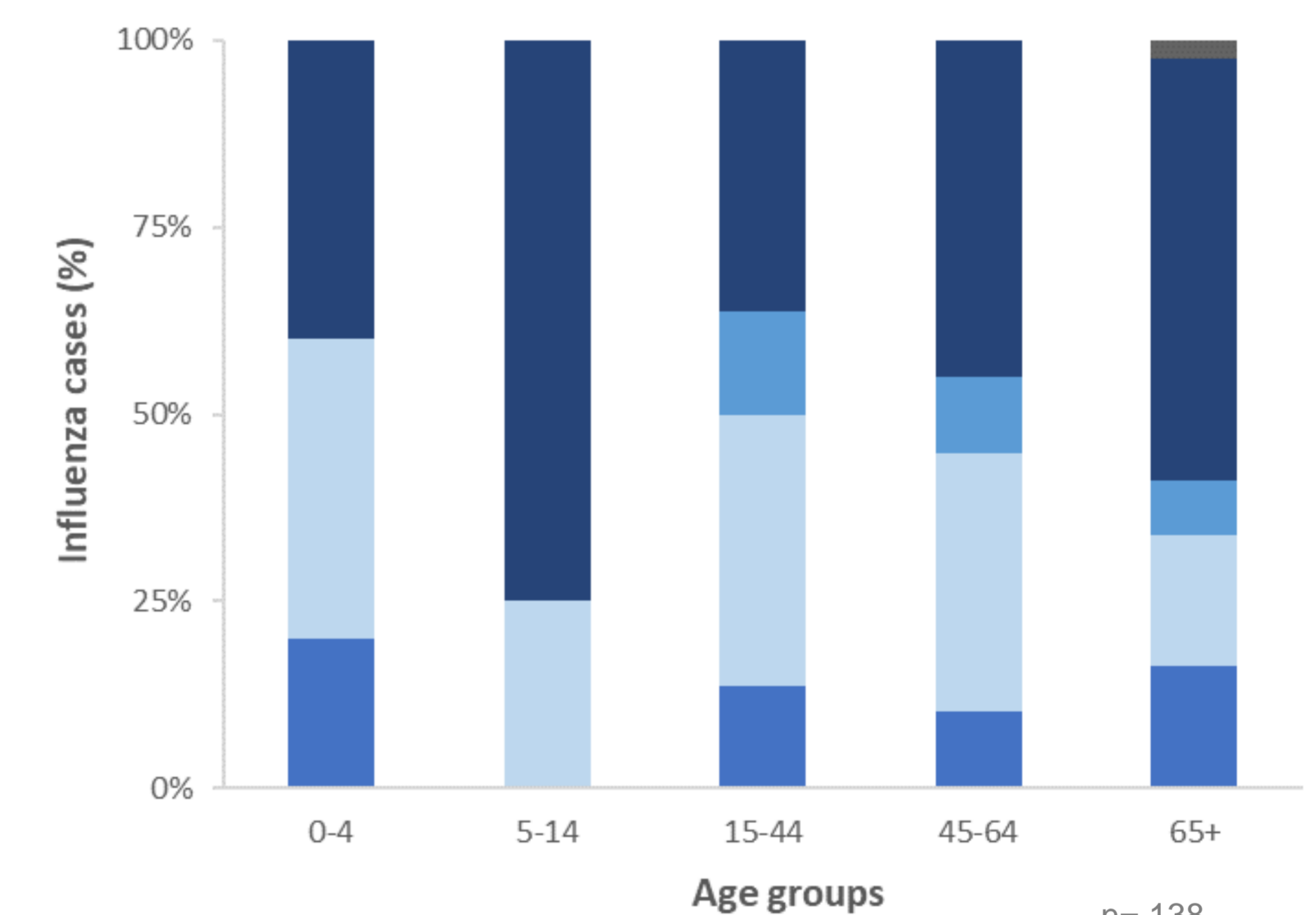
### Outpatient



### Hospitalized



### ICU



Influenza cases reported by week and age group. Outpatient, hospitalized and ICU influenza positive cases (type/subtype) during 2017/2018 season, reported by the Portuguese Laboratory Network for Influenza Diagnosis.

### Results:

During 2017/2018 season 13.747 cases were reported. 3.717 (27%) were influenza positive of which 2.033 (55%) were influenza B, 722 (19%) A unsubtype, 505 (14%) AH3, 442 (12%) AH1pdm09 and 15 (0,1%) mixed infections. Influenza was detected between weeks 43/2017 and 21/2018, influenza B/Yamagata was the predominant virus, 442 (12%) AH1pdm09 and 15 (0,1%) mixed infections. Influenza A was detected in 71% (204/288) of toddlers (<5 years) although in the remaining age groups influenza B was detected in more than 50% of the confirmed flu cases.

For 3.197 influenza confirmed records included data for age and medical care wards (1.816 ambulatory, 1.243 hospital, 138 intensive care unit). Influenza B was the predominant virus in hospitalized and ICU influenza cases between 5-14 years (69% and 75%, respectively) and played a major role in elderly (65+ years) hospitalized and ICU cases (57% and 67%, respectively).

AH1pdm09 virus was detected in 30% of the influenza confirmed ICU patients, 2.1 times more frequent than in hospitalized cases in other wards and 3.3 times higher than influenza AH1pdm09 cases detected in outpatients. Influenza mixed infection were detected sporadically, mainly in hospitalized and ICU patients. From 2.080 known outcomes, 40 (1.9%) patients deceased and influenza was confirmed in 11(28%) of these cases.

### Conclusions:

Cocirculation of different influenza virus type/subtype may indicate different infection profiles by age groups and should guide influenza preventive/treatment measures. Influenza B was a major concern for severe infections in children; A(H1)pdm09, although not the predominant influenza A virus in circulation, was detected frequently in adult severe infections. Antiviral treatment and influenza vaccine uptake should be encouraged in both groups, specially in high risk patients.