Insights into the epidemiology of viral respiratory infections during the winter season 2018-2019: results from a primary care network in Genoa, Liguria, North-West Italy

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Introduction
Viral respiratory infections represent one of the main causes of morbidity and mortality throughout the world, and are characterized by several etiological agents, their ubiquity and contagiousness and high direct and indirect related costs.

During the winter season 2018-2019, we conducted an epidemiological surveillance and a comparative virological analysis of patients with influenza like illness (ILI) attending a network of 21 physicians (16 general practitioners and 5 pediatricians) coordinated by the Interuniversity Research Center on Influenza and Other Transmissible Infections (CIRI-IT), located in Genoa, capital city of Liguria region, North-West Italy.

Methods
We analysed 1120 oropharyngeal swabs collected from patients with ILI that were simultaneously tested for 13 virus groups by a multiplex real time PCR assay: influenza A and B virus (IAV, IAB), human rhinovirus (RV), human respiratory syncytial virus A and B (RSV-A and RSV-B), human coronavirus (CoV; aggregating 229E, NL63 and OC43 species), adenovirus (AdV), human metapneumovirus (MPV), human parainfluenza types 1-4 (PIV1-4) and human bocavirus (BoV).

Patients’ median age was 38 years (IQR 9-58 years) and 48.8% were male. At least one virus was detected in 65.3% (731/1120) of tested patients; these patients had a median age of 32 years (IQR 7-55 years) and 46.9% were male.

Results
The absolute difference in prevalences of confirmed viral infection was 81.5% (0-4 years), 73.4% (5-14 years), 59.6% (15-64 years) and 59.2% (>64 years). Overall virus-specific prevalences in the patient population were ranked as follows: IAV (33.4%, n = 374); RV (14.9%, n = 167); CoV (6.4%, n = 72); RSV-B (5.3%, n = 59); MPV (3.8%, n = 42); AdV (3.7%, n = 41); PIV-3 (2.6%, n = 29); RSV-A (2.2%, n = 25); BoV (1.3%, n = 15) and IBV (1.2%, n = 13). The weekly number of viruses other than influenza detected among the ligurian primary care network during the 2018-2019 winter season and the distribution of pathogens causing ILI stratified by sex and age group are reported in Figures.

Conclusion
The availability of virological surveillance systems, able to characterize respiratory pathogens that cause ILI, represents a key element to provide baseline measures and to reveal new insights into the epidemiology of these viruses.