**Title**

Acute respiratory virus Emergency Department admissions in a tertiary care hospital in Central Italy and the relative impact on bed occupancy, January 2017-May 2022.

**Authors**

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**BACKGROUND & OBJECTIVE**

Acute Respiratory Infections (ARIs) have a relevant impact on public health in terms of prevalence and costs associated with the diseases. This concern highlighted the need to adopt accurate surveillance systems to respond to new emergencies and meet the demand for access to care. The objective of our work is to set up, at the Azienda Ospedaliero-Universitaria Pisana (AOUP), an automated syndromic surveillance for ARI.

**METHODS**

The trend of the AOUP Emergency Department (ED) accesses from January 2017 to May 2022 was analyzed, using ICD9-CM disease codes that define syndromes associated with ARI (except SARS-CoV-2 infection codes). The data obtained were analysed by week and by 6 age groups, as well as by outcome type, with a focus on inpatient ward admissions to define the impact on bed occupancy.

**RESULTS**

During the period, ARI admissions were 33,101 (annual average 5,520), resulting in 7,426 admissions (22.8%, annual average 1,163). A seasonal pattern is observed between week 42 of each year and the week 17 of the following year, that represent the winter season period. The reduction in ED accesses from week 10-2020 (from a weekly average of 144.3 to 78.2) is due to the and the public health measures implemented for the emergence of the COVID19 pandemic. Nevertheless, the average weekly admission rate was 30.8%, compared with 21.7% in 2017-2019. Analysis by age group showed a peak of accesses in the last weeks of 2021 for the <1 and 1-4 years old age group considered.

**CONCLUSIONS**

Data on ARI admissions provide useful information to direct health policies to identify indicators of next epidemic waves. By this way, we can act early in terms of emergency preparedness and response, preventing overloading of health facilities and ensuring the most appropriate and targeted access to care for the entire population.