Sentinel surveillance of acute respiratory infections after Covid-19 pandemic. The experience of Castilla y León (Spain)

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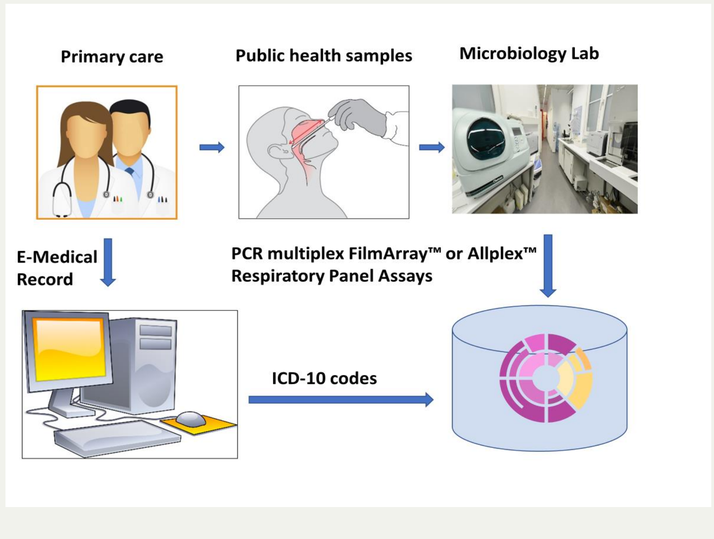
VIGIRA has shown the effect of non-pharmacological interventions on virus transmission, the high Covid-19 Omicron wave in 2022 (52% of the total rate) and the normalization of respiratory virus circulation in the last season.

Introduction

Seasonal influenza in Castilla y León, Spain, has been monitored since 1996 by the Health Sentinel Network (HSN). In March 2020, the onset of the Covid-19 pandemic collapsed the primary health care services, disrupting the sentinel surveillance and leaving the authorities without epidemiological indicators for decision making. In May 2020, the Regional Health Authorities launched the VIGIRA program, a complete surveillance system of acute respiratory infections (ARI). We described the methods, the implementation and the achievements of VIGIRA in the seasons 2020/21, 2021/22 and 2022/23.

VIGIRA Methods

- Principles of the sentinel model
- Comprehensive ARI surveillance
- Electronic reporting
- Integrated epi and virological surveillance



- Cases with ICD-10 codes (J00 to J22)
- Trained sentinel professionals
- Random swab samples from ARI patients

Principal respiratory pathogens in the VIGIRA PCR panel

- influenza A and subtypes
- influenza B and lineages
- SARS-CoV-2
- RSV and subtypes
- Adenovirus
- Rhinovirus
- Enterovirus
- Coronaviruses (229E, HKU1, NL63, OC43)
- MERS-CoV
- Bocavirus
- Metapneumovirus
- Parainfluenza virus (1, 2, 3, 4)

Results

In January 2023, VIGIRA consisted of 45 family doctors, 26 pediatricians, and 51 nurses who monitored around 64,000 people (2.6% of the population of Castilla y León).

ARI age-adjusted incidence rate was lower in 2020/21 and higher in 2021/22.

Influenza virus was undetectable in 2020/21, represented 15% in 2021/22, and 20% in 2022/23. SARS-CoV-2 positivity was 12%, 20%, and 11% respectively. On average, rhinovirus positivity was 26.4% and RSV 5.7%.

ARI age-adjusted incidence rates per 100,000 population and number of respiratory samples per season.

Season	Incidence rate	Number of samples
2020/21	21,887	1,347
2021/22	50,972	2,539
2022/23	37,454	2,847

Conclusions

Sentinel ARI surveillance integrates clinical, epidemiological and virological information useful for seasonal surveillance and pandemic alert, with accuracy, validity and sustainability.

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