

COVIDApp: A Health Application as an Innovative Strategy for the Management of the COVID-19 Pandemic in Long-Term Care Facilities

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Background

The COVID-19 pandemic has caused an unprecedented worldwide public health crisis that requires new approaches. COVIDApp is a mobile application for the management of institutionalized individuals in long-term care facilities (LTCF).

Methods

Study design, objectives, and population

We describe the use of a mobile application (COVIDApp) for the management of COVID-19 in Nursing Home and Institutions for people with physical and mental disabilities residents in LTCF.

The data reported were registered on the platform between 1st and 30th April, 2020.

Objectives:

- 1) To early detect COVID-19 cases and self-isolate of suspected cases.
- 2) Remotely manage of mild COVID-19 cases.
- 3) Monitor the progression of the infection and its consequence in real-time.

COVIDApp was implemented in 196 care centers in collaboration with 64 primary care teams.

The following parameters of COVID-19 were reported daily: signs/symptoms; diagnosis by polymerase chain reaction; absence of symptoms for ≥ 14 days; total deaths; and healthcare workers isolated with suspected COVID-19. The number of centers at risk was also described.

Results

- Data were recorded from $\geq 10,000$ institutionalized individuals and up to 4,000 healthcare workers between April 1st and 30th, 2020.
- A rapid increase in suspected cases was seen until day 6, decreased during the 2 last weeks (from 1,084 to 282 cases), **Figure 1**.
- Confirmed cases increased from 419 cases (day 6) to 1,293 cases (day 22), remaining stable during the last week.
- Around 50% remained asymptomatic ≥ 14 days, **Figure 2**.
- A total of 854 (8%) deaths were reported (383 in suspected/confirmed cases). Deaths show an increase in both the total number of deaths and deaths in suspected/confirmed cases during the first 2 weeks followed by a progressive decrease thereafter. This decrease was more marked from the third week onward. **Figure 3**.
- The number of isolated healthcare workers remained high over the 30 days; suspected cases decreased during the last 2 weeks, **Figure 4**.
- The number of high-risk LTCF decreased from 9.5% to 1.5%.

Results

Figure 1. Number of suspected/symptomatic cases and number of confirmed COVID-19 cases among residents reported by LTCF healthcare staff over 30 days

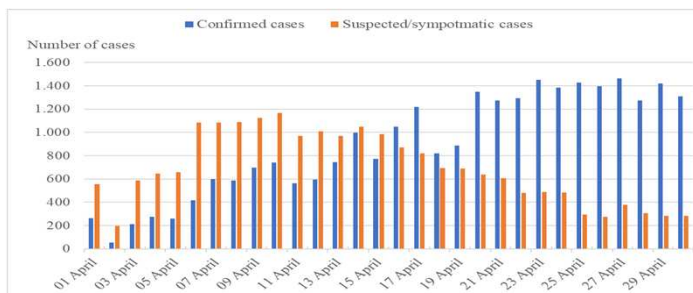


Figure 2. Number of residents who were asymptomatic for more than 14 days, as reported by LTCF healthcare staff over 30 days

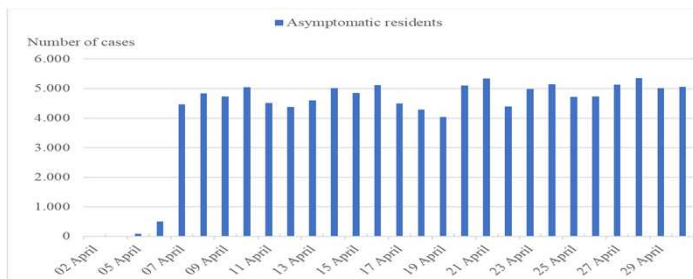


Figure 3. Total number of deaths and deaths in suspected/confirmed cases among residents, as reported by LTCF healthcare staff over 30 days

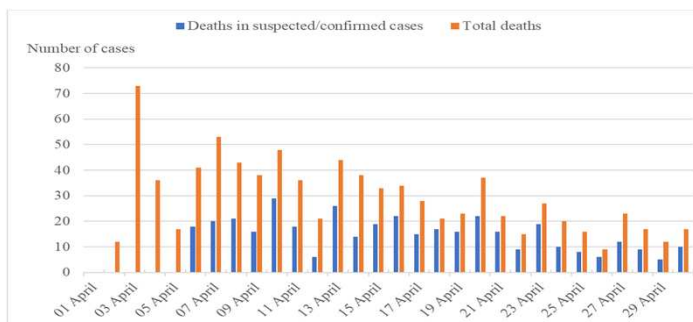
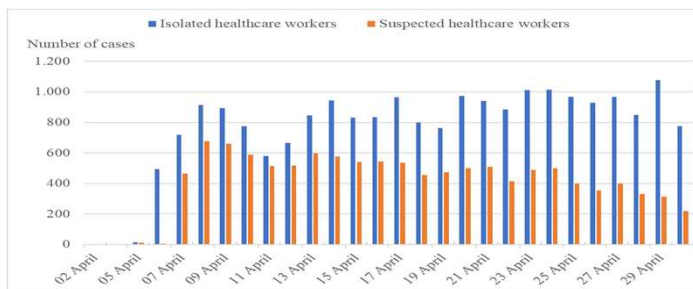


Figure 4. Number of suspected cases in healthcare workers and number of isolated healthcare workers, as reported by LTCF healthcare staff over 30 days.



Conclusions

COVIDApp is an innovative tool that could help clinicians to rapidly detect and remotely monitor suspected and confirmed cases of COVID-19 in institutionalized individuals, thus limiting the risk of spreading the virus. The platform shows the characteristics and progression of the situation in real time and can help us to design new strategies tailored to a specific setting.

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