A longitudinal analysis of trends in the number of positive cases and swabbing activities during the first eighteen months of the COVID-19 pandemic in Malta

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Abstract

Background

In March 2020, at the onset of the COVID-19 pandemic teams were set up to execute the processes needed to implement COVID-19 related activities. The Helpline team was responsible for the booking of appointments for swabbing, the first step in the process. The Helpline also received calls from the public for other reasons.

Methods

Longitudinal data over the eighteen-month period (March 2020 to September 2021) was collected for the total number of calls received and the number of requests for swabbing received at Helpline 111. Data for the number of new cases for the same time period was compared. The trends were presented for descriptive analysis and were then compared using IBM SPSS Statistics (Version 28.0) predictive analyses software. Spearman's rank correlation was computed to assess the relationship between the variables.

Results

The number of positive cases showed parallel trends (particularly at peaks) and positive statistical correlation with the number of total calls received ($r = 0.746$; $p<0.001$), the number of interviews handled by the Helpline ($r = 0.77$; $p=0.001$) and the number of PCR tests booked through the Helpline ($r = 0.82$; $p<0.001$).

There was a positive correlation between the total number of COVID-19 cases and the number of symptomatic individuals having a COVID interview for the purpose of swabbing ($r = 0.81$; $p<0.001$) but not with the number of non-symptomatic individuals.

The number of self-registrations positively correlated with the number of rapid-antigen tests done ($r = 0.77$; $p <0.001$) and with the number of asymptomatic individuals undergoing a COVID interview for swabbing ($r = 0.70$; $p=0.003$), but not with the number of PCRs done and with the number of symptomatic individuals. Self-registrations constituted 16% of swabbing applications and were mainly taken up by younger adults (34% in the 20-29 and 28% in the 30-39 age groups).

Discussion

The trends in calls and in swabbing coincided with the number of new cases and also with travel. During late July and August 2020, there was an increasing record of new cases, coinciding with the parties and mass events. The spike in October 2020 coincided with the period of re-opening of schools. The trends in swabbing from May to July 2021 were mainly related to travel outside Malta.

Conclusions

The main reasons for swabbing were positive cases and travel. Correlation in trends were very statistically significant. The helpline was essential to cross the digital literacy and readiness gap.

Message

A structured helpline and a customised digital health system are essential elements for pandemic response. Monitoring supports planning and prioritisation of resources along the whole COVID response chain.

Permission to publish

Yes