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LETTERS

"Early" and "definitive" taking charge of subjects positive to SARS-CoV2: the experience of an Italian Local Health Authority

Presa in carico "provvisoria" e "definitiva" di soggetti positivi al SARS-CoV-2: l'esperienza di un'azienda sanitaria locale italiana

Key words: Covid-19, taking charge of the positive, Prevention Department, Resilience
Parole chiave:

Abstract

During the second covid-19 pandemic wave in November-December 2021 Prevention Departments had to face a hardly-sustainable workload of contact tracing and taking charge of the sars-cov2 positive case and of his or her close contacts. Also laboratories have been stressed in their ability to process timely the extraordinary load of swabs performed. In this context of hazardous delays, the Prevention Department of Belluno (Italy) tested its resilience: a simple and effective method of taking charge was implemented, by initially phoning to the positive case and imposing the isolation measure on him or her and later on proceeding with the conventional contact tracing.

Dear Editor,

Since September 2020, also in Italy there has been a progressive resurgence of the COVID-19 pandemic, with the peak of infections recorded between November and December (1).

Public health interventions, such as informing the SARS-Cov-2 positive case about the correct measures of self-isolation and contact tracing, should be effective in containing the contagion, but, whenever they happen to be late, they are at risk of thoroughly losing their usefulness (2).

For these reasons, since October 2020, the Prevention Department of the Local Health Authority "Aulss 1 Dolomiti" (in the alpine territory of the province of Belluno, 201,309 inhabitants, Veneto Region, Italy) (3), implemented a management model in the attempt of taking charge of the positive case to the new coronavirus as promptly as possible, and, immediately afterwards, of her/his close contacts.

In fact, the high volumes of daily positive cases (**Figure 1**) caused a critical situation: delays in processing and reporting molecular swabs, far beyond 48 hours from execution, and daily accumulation of SARS-Cov-2 positive subjects not taken charge of in the previous days by the Health Authority, with consequent delays in contact tracing and in issuing isolation and quarantine measures.

In order to contain these delays, our Prevention Department expanded the COVID-19 emergency team, dedicating a subgroup of 5 young doctors to the so-called "early taking charge" of the positive.

The procedure consisted of an initial phone call, within 24 hours since the reporting of the first positive molecular swab, lasting approximately 8 minutes (presentation, communication of positivity, health check, first behavioural recommendations, information and request of making a list of close contacts and of possibly pre-alerting them), plus 2-3 minutes of administrative practices (sending an informative e-mail and the isolation certificate). Few days later, a "definitive" take-over phone call followed, with a new health check, tracking close contacts and activating their quarantine.

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Figure 1 - Daily trend of new SARS-CoV-2 positive cases among residents and/or domiciled in the provincial territory pertaining to AULSS 1 "Dolomiti" since the beginning of the pandemic (9th March 2020) to 17th January 2021. The blue line refers to the performed tests, whereas the red line refers to the tests daily processed by the laboratory and with known outcome.

As for this "definitive" taking charge, since the very beginning of the pandemic, a team has always been active, variously composed of differtent healthcare operators (**Table1**). Their corollary tasks and staff numerosity have varied over the pandemic, depending on the amount of new COVID-19 cases recorded daily, on the recruitment of new operators and on the activity of other Services, which provided their staff during the months of forced inactivity: additional tasks (booking the appointments for swab tests to positive cases and to their close contacts, active surveillance and closure of the administrative-legal procedures relating to isolation or quarantine measures) were carried out by this team as long as the contact tracing activity has left some spare time, otherwise delegated to other branches of the COVID-19 emergency crewor to General Practitioners (GPs). Each new operator required a one-week training period.

It must be mentioned that, since November 2020, the Veneto Region has progressively strengthened the role of GPs in support of Prevention Departments in all the activities related to the COVID-19 emergency (4).

The "definitive" take-over team (14-39 operators, depending on the pandemic month) has always guaranteed a taking in charge of 130 positives/day, with an average duration of taking-over and contact tracing phone calls of 30 minutes (SARS-CoV-2 positive subjects residing in nursing homes were only reported with a short telephone or e-mail contact with the nursing home) and a median duration of 1-2 hours. Only when the number of SARS-CoV-2 positive cases began to exceed the plafond of 130/day, the taking in charge no longer took place within the same day of the swab report for a growing number of subjects.

The "early taking charge" team has always managed to phone-call all positive cases within 24 hours after the swab had been reported positive. The "definitive" taking charge followed generally within 48 hours, up to 4-5 days only in sporadic periods in December.

After the first week of January 2021, as soon as the contagion curve has began to drop, the reporting of the molecular swabs was always guaranteed within 24-48 hours of execution and the "definitive" taking charge with contact tracing was able again to take place within the same day of the laboratory reporting. The "early take-over" team was then dismissed and the 5 doctors reassigned to other tasks.

Our experience of pandemic management has gone through phases of great operational efficiency and others in which critical issues predominated.

The ability of the Prevention Department to adapt to the emergency, by expanding or reducing the dedicated staff and by training them quickly, has proved fundamental in facing moments of maximum load.

Resilience, an essential requirement of Healthcare Services (5), was also called into question in the collaboration between GPs and Public Health Professionals, thus expanding the network of healthcare stakeholders acting together for the containment of the pandemic within a homely-territorial setting. This confirms the promising results already obtained by the Trento Health Authority during the first pandemic wave (6).

Internationally, the Belluno experience is comparable with that of a Health Agency in Maryland, United States (7): the trend of infections has led to a similar expansion of personnel, with similar professional qualifications, similar management of phone contact with users and similar strengths and pitfalls, mainly related to the timeliness of taking charge and compliance of users to the recommendations.

Table 1 - Veneto AULSS 1 staff operating in taking charge of individuals tested positive to the SARS-CoV-2 and related contact tracing in the period March 2020-January 2021, divided by month. Below, monthly trend of the new daily laboratory diagnoses of COVID-19 cases in the province of Belluno. * Data refer to the period 1-18 January 2021.

Operators per month	03/20	04/20	05/20	06/20	07/20	08/20	09/20	10/20	11/20	12/20	01/21*
Medical doctors	2	0	0	0	0	0	0	0	4	5	1
Nurses	21	23	23	17	15	12	13	14	19	20	20
Health assistants	10	9	9	6	1	1	1	1	4	4	4
Professional educators	1	1	1	0	0	0	0	0	0	0	0
Midwife	1	1	1	1	0	0	0	0	0	0	0
Socio-health workers	0	0	0	0	0	1	2	1	1	1	1
Prevention technicians	0	0	0	0	0	0	0	0	1	1	0
Administrative staff	0	0	0	0	0	0	0	0	3	3	3
Students	0	0	0	0	0	0	0	0	5	5	5
Overall “definitive” taking charge	**35**	**34**	**34**	24	16	14	16	16	37	39	34
“Early” taking charge doctors	0	0	0	0	0	0	0	0	5	5	5
Overall taking charge team	35	34	34	24	16	14	16	16	42	44	39
SARS-CoV2 positive tests											
Mean new cases/day	15.7	21.5	1.8	0.9	0.2	1.8	5,6	65.4	175.2	200.0	99.7
Median new cases/day	11.0	16.0	1.0	0.5	0.0	0.0	4.0	58.0	161.5	206.0	84.0
Maximum new cases/day	61.0	90.0	11.0	4.0	2.0	7.0	34.0	174.0	302.0	390.0	270.0
Total new cases/month	486	646	55	26	31	57	167	2,027	5,257	6,201	1,794

Finally, the subdivision of taking charge into "early" and "definitive" proved to be, in its simplicity, a fruitful and easily reproducible operational model. The "early take-over" has maintined a bridge between Health Authority and patients followed at home, when it was at greatest risk of being interrupted: the first call to all the positive subjects within 24-48 hours from their swab report allowed to promptly intercept any problematic situations, such as errors in the user's contact details, difficult social situations, complaints, underestimation of the problem or the low health literacy that would have permitted these subjects, although aware of their positive outcome, to participate in social life as they had not yet been quarantined by the Health Authority. Furthermore, the "definitive" taking charge team was thus able to proceed more quickly with the heavy task of contact tracing.

A. De Polo[1,2], G. Facchin[1,2], M. Battistin[2], L. Pais Dei Mori[2], P. Nassiz[2], M. D'Alfonso[2], J. Rizzardini[2], M. Stevanato[2], F. Zanghi[2], E. Leone[2], S. Cinquetti[2]

[1] School of Specialization in Hygiene, Preventive Medicine and Public Health, University of Padua, Italy

[2] Prevention Department, Local Health Authority "AULSS 1 Dolomiti", Belluno, Italy

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Corresponding author: Anna De Polo, MD, School of Specialization in Hygiene, Preventive Medicine and Public Health, University of Padova, Via Loredan 18, 35131 Padova, Italy (present address: Prevention Department, Local Health Authority"AULSS 1 Dolomiti", VialeEuropa 22, 32100 Belluno, Italy)
E-mail: anna.depolo@studenti.unipd.it