

## Simultaneous hospital/primary care real time simulation during COVID-19 alert<sup>☆</sup>



### Formación multinivel (atención primaria - hospital) mediante simulación con conexión en tiempo real en tiempos de COVID-19. Una herramienta a considerar

To the editor:

The coronavirus disease 2019 (COVID-19) pandemic has given rise to new educational and training needs in health care professionals, severely limiting in-person options. With the population in confinement, digital systems are becoming increasingly important, with health care visits and trainings frequently taking place through video conferencing.

Digital platforms have a great potential and may be used for multiple purposes, including training with simulation, facilitating the participation of not only hospital-based staff, but also staff at the primary care (PC) level, which is particularly relevant in the current situation.

In this regard, we present our preliminary experience with the adaptation of the simulation programme used in our hospital during working hours to the new needs and circumstances, taking advantage of the features of a commercial video conferencing system to provide access to these simulations to the paediatricians in our health care district.

The goals of the training were:

- Teach the procedures that needed adaptation for the management of children with COVID-19 at either the emergency department or the paediatric intensive care unit (PICU), correct use of personal protection equipment, airway management, cardiopulmonary resuscitation, etc.
- Convey this information to PC paediatricians.
- Prepare the team (paediatricians, medical residents and nurses) to deliver paediatric emergency care in the current and future context of suspicion of infection by SARS-CoV-2019.

The technological elements used in the intervention were (Fig. 1):

- A commercial audiovisual conferencing platform (GoToMeeting) that can be used to share the view of the scenario and record and review its contents, and to hold a session to discuss the case, which in our programme took place the day after the simulation. The target audience were all the paediatricians of our health care district (45 hospital-based, 63 in PC and 23 residents in training), and the training was scheduled during working hours (between 8:15 and 9:00 AM).
- A mobile phone that served as a camera once it was linked to the software to stream and record the scenario.
- A portable, low-cost simulation system, with low-fidelity manikins (paediatric and infant), a free version of the SimBaby simulation programme (Laerdal®), a laptop computer and a screen used to simulate the vital signs monitor.

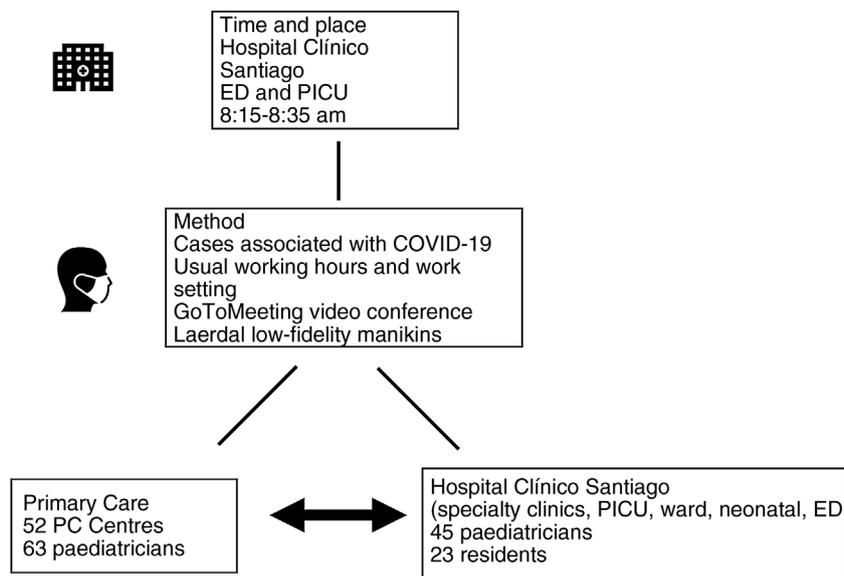


Figure 1 Diagram of the real-time multimedia simulation programme delivered through streaming.

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The sessions were streamed from one of the PICU rooms and from one of the rooms in the paediatric emergency department. They lasted 20–25 min, with participation of the team that was usually scheduled to be on staff at that time, usually 1 or 2 residents, 2 nurses, 1 assistant and 1 paediatrician. We planned weekly sessions alternating between the PICU and the emergency department. We simulated 4 scenarios over a 1-month period (April 15–May 15, 2020), 3 at the PICU (correct donning of PPE and use of precautions during procedures, airway management and ventilatory support, ventilation in the prone position and cardiopulmonary resuscitation) and 1 at the emergency department (prolonged febrile seizures). In the first 2 sessions, we tested the recording systems, the use of the setting and the schedule, and the last 2 sessions were already streamed, and we achieved 100% attendance among the hospital-based paediatricians and residents, and nearly 50% attendance among PC paediatricians.

Our experience, although only preliminary, was positive in terms of the reception by health care professionals and their engagement in the sessions. The simulation of realistic scenarios, focused on specific aspects and enacted in the actual setting where patients are managed and with the same resources available in the real world, was perceived as one of the strengths of the initiative. Another aspect that we consider a strength is that it facilitates the integration of the PC team and the hospital team of the health care district, offering an opportunity to standardise protocols across levels of care and answer questions regarding management and treatment. On the other hand, the limitations of the video conferencing and streaming system, which was not designed for this particular purpose, were among the weaknesses of the intervention, which may be resolved by investing additional funds. We also considered the absence of nursing staff and other health care profes-

sionals a weakness that needs addressing. It is worth noting that the simplicity of the manikins and the resulting low-fidelity of the simulation were not among the weaknesses pointed out by participants.

In conclusion, we consider that simulation in the workplace during working hours delivered through multimedia to a large group of paediatricians can be a dynamic, useful and flexible tool to update and adapt the care of urgent paediatric patients under the conditions imposed by COVID-19 at present and during the expected resurgence of cases in the autumn and/or winter.

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