



COVID-19, Do We Need to Screen Systematically Asymptomatic HCW?

Pierre Moënné-Locoz¹, Beya Maamar¹, Marion Zahar¹, Chakib Alloui^{1,4}, Delphine Seytre¹, Segolène Brichler^{1,4}, Hugues CordeP, Jean-Ralph Zahar^{1,3} and Alexandra Lomont^{1,3*}

¹University of Paris, Sorbonne Paris Cité; Department of Clinical Microbiology, Infectious Risk Control and Prevention Unit, Groupe Hospitalier Paris Seine Saint-Denis, France

²Infectious and Tropical Diseases, Groupe Hospitalier Paris Seine Saint-Denis, France

³IAME, UMR 1137, University of Paris, Sorbonne Paris Cité, France

⁴INSERM, U942, F-75010, France

Abstract

The search and isolate policy is fundamental to control the risk of SARS-CoV-2 diffusion. Recent data suggest that the number of hospital acquisition has decreased significantly with universal masking and respect for physical distancing. At the beginning of the second wave, we wanted to prospectively assess the prevalence of COVID-19 infection among health care workers and the situations of intra-hospital transmission. Our results suggest that we need to focus on physical distancing during mealtimes and breaks.

Keywords: COVID-19; Health care workers; Transmission control

Introduction

During the first wave of COVID-19, several reports suggested that hospitals were an important setting for viral transmission [1,2]. Also, authors stressed the importance of screening Health Care Workers (HCWs), for minimal or no symptoms, as unknown clusters were incidentally discovered [3], claiming for a protecting approach for patients and hospital staff. Nevertheless, evidence supports effectiveness of simple interventions in reducing hospital transmission as universal masking, hand hygiene and physical distancing. Implementation of these recommendations was associated with a reduce rate of hospital acquisition [4] suggesting that overall hospital transmission of SARS-CoV-2 in the setting of universal masking is likely rare even during periods of high community prevalence [5]. Furthermore, despite that asymptomatic are source of infection a recent meta-analysis suggested a low secondary attack rate in health care settings estimated at 0.7% [6]. Since the end of July 2020, a large screening and isolation policy has been implemented in France where HCWs, if symptomatic and their contacts were systematically tested. Also, tests were performed for those returning from holidays and family or social gatherings, regardless their symptoms. This policy led to increasing screenings, and therefore, overwhelming laboratories capacities and thus increasing test delays which can be problematic, not only for symptomatic HCW but above all for us to control the epidemic situation.

Case Presentation

In this context, our goal was to compare the prevalence rate between respectively symptomatic and asymptomatic HCWs and clinical (CS) and Non-Clinical Staff (NCS). Also, we wanted to identify situations where transmission occurred. Therefore we investigated all HCW tested for COVID-19 infection by nasopharyngeal RT-PCR between August 1st and October 1st, 2020. Symptoms, if present, and test context were noted. In order to look for secondary cases, each positive RT-PCR case was the source of a detailed investigation, led by the same investigator (JRZ) to define the origin of the contamination, to evaluate the compliance with preventive measures and to identify contact cases requiring a follow-up. The source of the infection was defined as community acquired in case of: The absence of HCW cases confirmed in the previous 14 days and the absence of infected non isolated patients in the same ward or if index cases came back from holidays, family meeting in a closed space or had a contact with a confirmed community-acquired case in the previous 14 days. Otherwise, situations were considered as likely nosocomial. Also, all contact HCW were screened by nasopharyngeal RT-PCR between the 5th and 7th day of the last contact with

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*Correspondence:

Alexandra Lomont, University of Paris, Sorbonne Paris Cité; Department of Clinical Microbiology, Infectious Risk Control and Prevention Unit, Groupe Hospitalier Paris Seine Saint-Denis, AP-HP, Bobigny, France,
E-mail: alexandra.lomont@aphp.fr

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Table 1: Positive RT-PCR prevalence according to clinical status.

	All population (% Positive RT-PCR)	Symptomatic (% Positive RT-PCR)	Asymptomatic (% Positive RT-PCR)
Screened population	449 (10.02%)	195 (16.41%)	254 (5.12%)
Index cases	211 (14.69%)	180 (16.67%)	31 (3.22%)
Contact cases	238 (5.88%)	15 (13.33%)	223(5.38%)
Clinical staff	289 (10.38%)	119 (18.48%)	170 (4.7%)
Index cases	128 (16.41%)	107 (19.62%)	21 (0.00%)
Contact cases	161 (5.59%)	12 (8.33%)	149 (5.37%)
Non clinical staff	160 (9.37%)	76 (13.16%)	84 (5.95%)
Index cases	83 (12.05%)	73 (12.33%)	10 (10.00%)
Contact cases	77 (6.49%)	3 (33.33%)	74 (5.41%)

Table 2: Description of the 45 conducted investigations.

Variables	All population (45 HCW)	Clinical staff (33 HCW)	Non clinical staff (12HCW)
Clinical symptoms	38	30	8
Cough or sneezing	21	16	5
Median C _r (min-max)	19 (8-37)	20 (8-37)	18 (8-35)
Community acquired/Hospital acquired	35/10	24/9	1-Nov
Non compliance with mask-wearing	26	19	7
At the bedside	0	0	NR
During staff or break	26	19	7
Situation that generated contact cases	24	17	7
Mean contact cases generated (min-max)	3.4 (1-11)	3.2 (1-7)	3.7 (1-11)

HCW: Health Care Workers; NR: Non Relevant

the index case and were followed up for 14 days. During the study period, 449 HCW were tested and 45 (10%) were positive. In 195 (43%) situations, HCW were symptomatic and 16.67% among them were infected compared to 5.1% among the asymptomatic ($p < 0.001$). No difference was noted between CS and NCS irrespective of their symptomatic status (Table 1). Results of investigations are shown in Table 2. Among the 45 HCWs with a positive RT-PCR result 32 (71%) were symptomatic and 21 (47%) had at least a respiratory symptom (cough or sneezing). Thirty-five (78%) cases were classified as community-acquired infections. The interview highlighted that in contrary to the bedside situation, most breaks and bureaucratic activities were associated with a non-compliance with masking and social distancing. Finally, among the 45 investigations, 24 (53%) generated contact cases (Table 2). Four clusters were identified and breakdowns have occurred in small workrooms and during mealtime and breaks. Our work data suggest a significant difference regarding positive RT-PCR prevalence for symptomatic versus asymptomatic HCW and this, whatever was their index or contact case status. Also, rate prevalence in asymptomatic HCWs was similar in NCS and CS.

Discussion

Authorities highly advise carrying out systematic screenings for HCW, or better control the spread of COVID-19 into the hospital, irrespective of their symptoms but also when coming back from holidays or following family meetings. However, since wearing a surgical mask at the patient bedside is mandatory for all HCW, and regarding its efficacy and the risk for an asymptomatic HCW to transmit in various situations [7,8], one should ask if this control policy is efficient in the hospital. Our data suggest that this policy is responsible for a huge number of non-relevant tests. Indeed, recent publications highlighted the efficiency of the surgical mask [9] and the

low risk of transmission resulting from asymptomatic SARS-CoV-2 patients. Moreover, recent studies suggested a low viral transmission from HCW to patient or from patient to HCW, including in case of symptoms, with conditions that one of the 2 partners is masked [10]. Our work underlines the persistent HCW non-compliance regarding barrier measures and physical distancing during breaks, staff and lunchtime. Indeed, most of the situations that generated contact cases were linked to the non-bedside activities, and we didn't note any acquisition in our patient's population during the study. Our work presents several limits. In addition to a low number of events, the absence of RT-PCR and serology follow-up in the population of contact HCW can produce an under-evaluation of people secondarily infected, although a clinical follow-up was systematically set up till D+14.

Conclusion

We should focus our screening on symptomatic HCWs and strongly insist on universal masking and respecting physical distancing during other activities.

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