



## Short Communication

## Institut Pasteur International Network's efforts to guide control measures against the coronavirus disease 2019 (COVID-19) epidemic among healthcare workers in Africa



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## ABSTRACT

During epidemic periods, HCW are vulnerable. In Africa, cohort studies implemented by the Institut Pasteur International Network in five countries showed after 3-month follow-up around 40% of the HCW have been infected by the SARS-CoV-2. So advocacy for HCW protection strategy need to be fostered and sustained by the health authorities all over the African continent.

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Worldwide, healthcare workers (HCWs) are the most valuable resource during epidemics, but they are also tremendously vulnerable as they work at the front-line (Anonymous, 2020; Chou et al., 2020). While the general population has been advised to stay at home to adhere to social distancing rules, HCWs go to work in hospitals, placing themselves and their family contacts at high risk from coronavirus disease 2019 (COVID-19).

In Africa (El-Sadr and Justman, 2020), the response capacity to COVID-19, especially in terms of human resources, technical platforms and protective equipment, is a major challenge. This crucial weakness could reduce the level of response in African countries (Chersich et al., 2020).

The World Health Organization (WHO) recommends the implementation of studies targeting HCWs assigned to care for patients with COVID-19, aiming to assess the risk of infection and transmission in this population in order to inform decision makers

about better control strategies for HCWs. As such, Institut Pasteur International Network in Africa has implemented a multi-centre prospective study entitled 'COVID-19 evaluation risk among the healthcare workers in Africa' ('COVER-HCW'), based on one of the WHO's master protocols.

Due to the rapid spread of COVID-19 in Africa and the time needed to mobilize funding, a HCW cohort study ( $n = 250$  per country) with follow-up at 3 and 6 months has been undertaken to estimate both the incidence rate and the risk of infection at different times in the epidemic, the frequency of asymptomatic infection through monthly serological surveys, and the efficient use of personal protective equipment (PPE). In addition, nasopharyngeal swabs have been taken in the event of symptoms linked to COVID-19. This study was carried out in five countries following ethical clearance: Madagascar, Niger, Cameroon, Burkina Faso and Central African Republic.

In terms of protection, due to international needs and the consequent shortage of PPE worldwide, the provision of PPE for HCWs in Africa remains a major bottleneck. Institut Pasteur has supported the provision of PPE in the health centres included in this study.

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Preliminary results at 3-month follow-up showed that approximately 40% of HCWs had evidence of infection with severe acute respiratory syndrome coronavirus-2, detected either by serology or reverse transcription polymerase chain reaction (RT-PCR), leading to further loss of capacity for hospitals to respond. In comparison, the prevalence of seroconversion among HCWs was approximately 18% in Italy (Felice et al., 2020), 17% in China (Chen et al., 2020) and 20% in England (Houlihan et al., 2020).

The results also highlight evidence of the risk of transmission from asymptomatic HCWs, who represented 55% of infected cases at 3-month follow-up. Obviously, the strategy to test symptomatic subjects alone makes it difficult to determine the pathways of transmission.

Exposure of HCWs is not representative of exposure of the general population. Thus, these results contrast sharply with the reported numbers of COVID-19 cases and deaths in Africa.

In the countries studied, broad screening was not offered to HCWs routinely. Infectious status was only checked in the event of symptoms, using the RT-PCR protocol shared by Hong Kong University (Chu et al., 2020). As such, monthly serological surveys were also undertaken using enzyme-linked immunosorbent assay (Beijing Wantai, Beijing, China) (Weidner et al., 2020).

In terms of protection, despite efforts to provide support for the supply of PPE, stocks remain limited and do not allow optimal application of the recommended protective measures (Chersich et al., 2020). Therefore, personal hygiene, particularly systematic handwashing, has to be promoted.

These preliminary observational data are of concern. The authors feel it is necessary to report their findings now, rather than waiting for the final results of the study, to call for an increase in international efforts to protect front-line HCWs fighting against COVID-19 in Africa.

The following recommendations are made: (i) increase the availability of PPE in Africa while ensuring sufficient quality; (ii) strengthen training and information about control measures for reducing transmission by HCWs; (iii) systematically trace contacts among the colleagues and family members of infected HCWs to identify transmission links at an early stage, and thus tackle transmission by containment measures; (iv) promote broad screening of HCWs (Rivett et al., 2020); and (v) promote serological testing for rapid identification of asymptomatic HCWs. In addition, HCWs should have priority access to future vaccines.

The situation is evolving rapidly, and continued analysis of data collected is crucial to enable decision makers to best tailor infection control strategies targeting HCWs that will protect both HCWs and patients from nosocomial or iatrogenic transmission during a potential second wave.

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## Ethical approval

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## Competing interest

None declared.

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