

Environmental samples: a valuable military help for COVID-19 lockdown exit strategy

Nicolas Cazes ,¹ A Lacoste,² P Augier³

The 'social damage' after severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) lockdown is likely to be worse than the number of people who died from SARS-CoV-2.¹ However, requesting people's return without guaranteeing their safety is impossible. It would be irresponsible to base our decisions on experimental studies confirming the virus's viability for only a few hours on various types of surfaces.²

The scientific community has suffered painful lessons during the epidemic concerning potential treatment, the virus's pathophysiology and compulsory mask-wearing. Society needs clear facts: we do not yet understand our enemy's environmental presence. To date, confirming hand-to-mouth contamination from a contaminated surface is inconclusive. Rather than speculating, we have been pragmatic. We focused on SARS-CoV-2 environmental contamination by testing surface and air samples in out-of-hospital COVID-19-affected areas (like in the French Charles-de-Gaulle aircraft carrier) and in theoretically COVID-19-free public places (Operation COMETE (COVID-19 Marseille Environment Testing Expertise)): shopping centres, metro stations,

fire, police, national crisis management centres, call dispatch centres and large company or military staff headquarters. These samples were taken without the knowledge of when an infected person made air or surface contact, thus replicating 'real-life'. The presence of SARS-CoV-2 was detected on environmental samples with a specific real-time quantitative reverse transcriptase PCR.

From 1 April to 20 April 2020, 15 military firefighters trained in technological risks drew 1000 surface samples of which 21 samples tested positive. Although some confidentiality prevents detailing the exact SARS-CoV-2 locations, the virus was present on any type of support (plastic, metal, wood, ceramic, paper) including in theoretically non-contaminated public areas. These results confirm the virus is a global environmental presence with unidentified infectious capabilities. Nevertheless, we know how to eliminate it: disinfection, heat or UV radiation.³ Therefore, we not only can identify the virus in our environment but also confirm its eradication after systematic and rigorous decontamination with a new environmental sample.

After more than 2 months of lockdown during which SARS-CoV-2 contagiousness and the importance of self-distancing have been stressed daily, lockdown exit measures must be proactive. It seems utopian to expect people to resume normal activity without ensuring them a safe environment. Therefore, we believe that addressing environmental factors concerning the return to work or school

must be among the weapons combating SARS-CoV-2.

Twitter Nicolas Cazes @nikokaz0330 and P Augier @patrick_augier

Contributors AL conceived the idea of carrying out environmental samplings. PA decided to make it possible. NC retrieved the results and drafted the manuscript. AL and PA revised the manuscript. All authors approved the final submitted version.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; internally peer reviewed.

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To cite Cazes N, Lacoste A, Augier P. *BMJ Mil Health* Epub ahead of print: [please include Day Month Year]. doi:10.1136/bmjilitary-2020-001566

Received 23 June 2020

Revised 29 June 2020

Accepted 1 July 2020

BMJ Mil Health 2020;0:1.

doi:10.1136/bmjilitary-2020-001566

ORCID iD

Nicolas Cazes <http://orcid.org/0000-0003-1125-9985>

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¹Emergency Medical Service, Bataillon de Marins-Pompiers de Marseille, Marseille, France

²CBRN Laboratory, Bataillon de Marins-Pompiers de Marseille, Marseille, France

³General staff, Bataillon de Marins-Pompiers de Marseille, Marseille, France

Correspondence to Nicolas Cazes, Emergency Medical Service, Bataillon de Marins-Pompiers de Marseille, Marseille, Provence-Alpes-Côte d'Azur, France; md.ncazes@gmail.com