

Introduction

Since SARS-CoV-2 emergence, virus tracing in public space has emerged as a major concern to prevent virus spread. Therefore, in order to lead studies to monitor and help breaking contamination chains, ABL diagnostics company sought out to develop a surface collection kit combined with very sensitive Ultragene® qPCR kits to detect traces amount of viral genome.

Methods

- The collection of viral particles was performed by swiping 25 cm² of surfaces following World Health Organisation recommendations. Swab was then dipped in an ABL solution featuring viral inactivation and genome preservation.
- Samples were conserved at room temperature for 48h prior nucleic acid extraction and analysis using Ultragene® qPCR kits of ABL Diagnostics company.

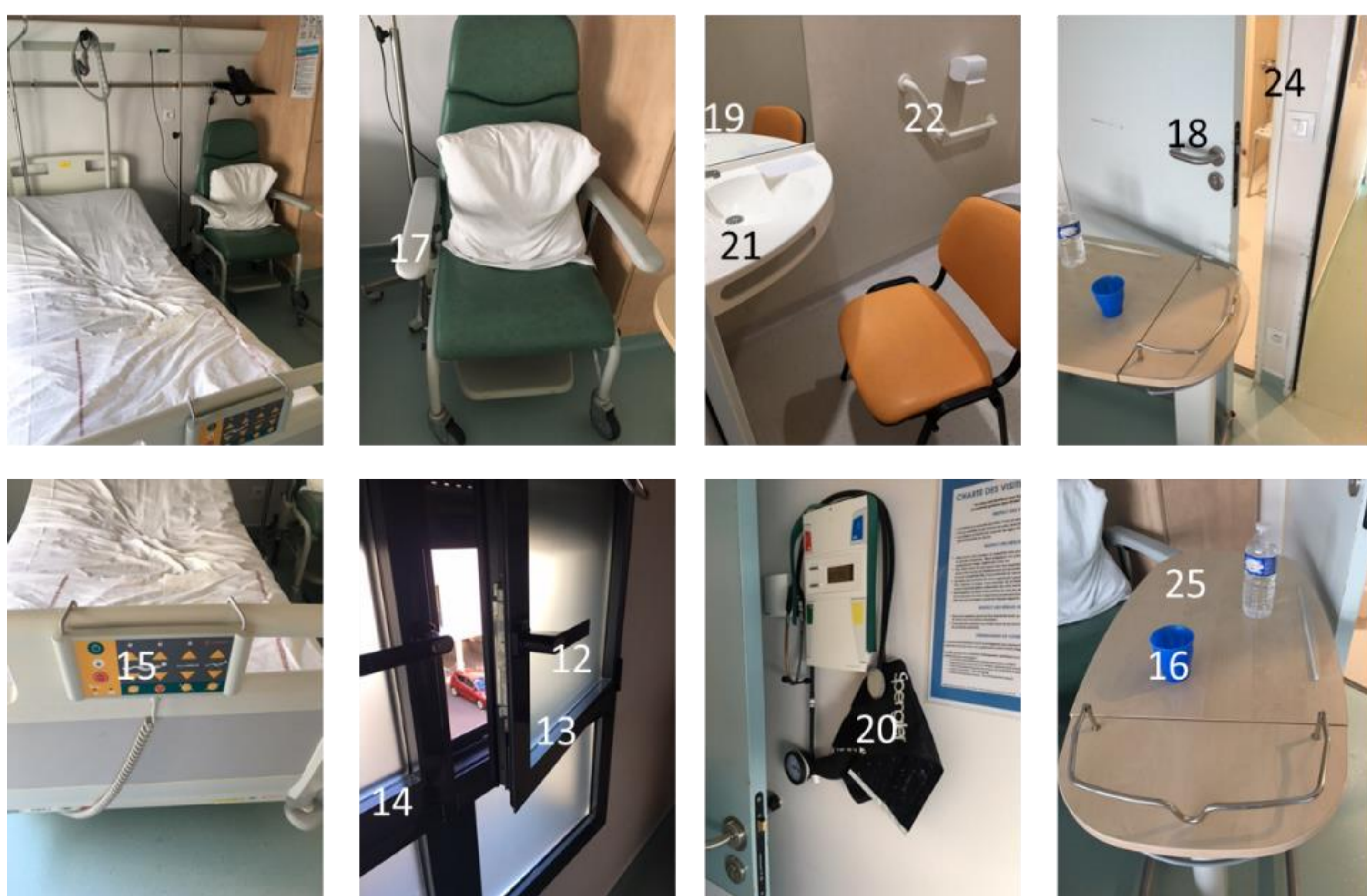


Figure 1: Hospital bedroom which hosted a patient infected by SARS-CoV-2. The surfaces labelled with numbers were monitored for viral contamination.

Results

- Rnase P was detected in most surfaces of the room at the hospital.
- SARS-CoV-2 was detected on several locations of the bedroom of the patient covid positive.

Table 1: Summary RT-qPCR analysis for SARS-CoV-2 using Universalis kit of ABL Diagnostics.

Surface ID	Surface description	SARS-CoV-2	Rnase P
12	Window handle	-	+/-
13	Edge window 1	-	+
14	Edge window 2	-	++
15	Rising patient tablet	-	+/-
16	Plastic drinking glass	+++	+++
17	Armrest of armchair	-	++
18	Door knob bathroom	+++	++
19	Bathroom tap	-	+++
20	Stethoscope	-	+
21	Edge sink bathroom	+/-	++
22	bathroom helping handle	+/-	+
23	Bed Side table	++	+
24	Wall separation bathroom	-	+
25	Eating table	++	++

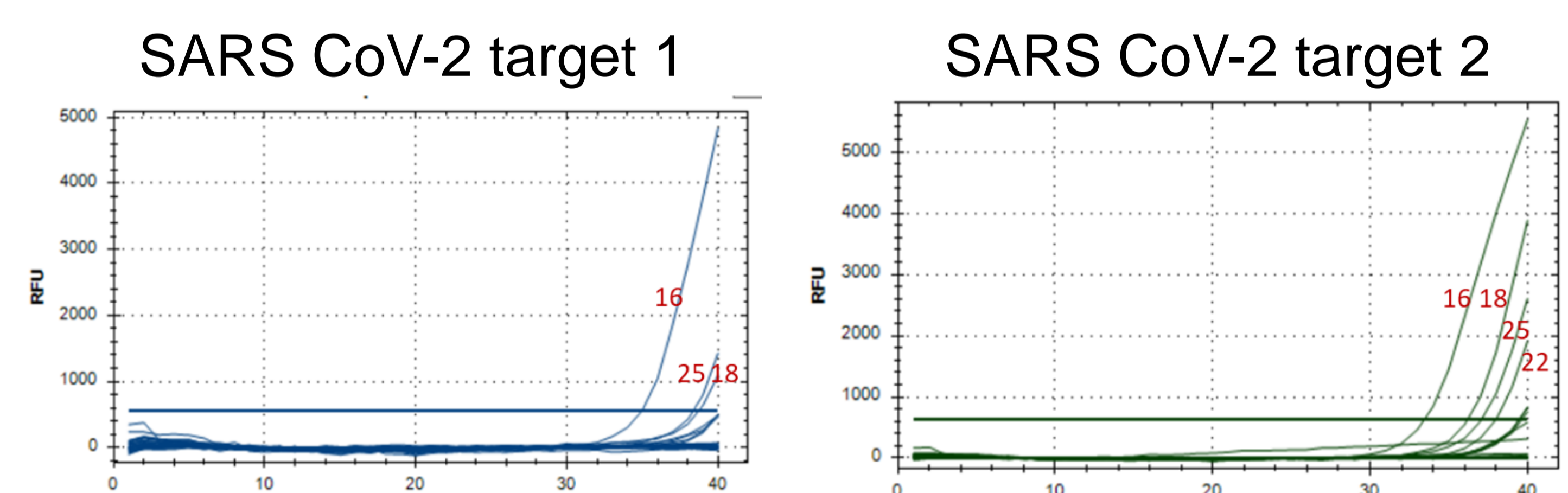


Figure 2: RT-qPCR analysis for SARS-CoV-2 using Universalis kit of ABL Diagnostics.

Discussion

- This new ABL diagnostic collection kit combined with Ultragene® qPCR kits could help developing disinfection protocols adapted for eliminating viral contamination and the associated risks in public spaces -hospitals-retirements facilities-.
- This kits could also be valuable for tracing other viruses, bacteria and fungi