

Environmental monitoring for SARS-CoV-2 on surfaces and in the air in 2021 and 2022

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Background:

ASST Pavia annually carries out environmental monitoring within its hospitals, in order to track the progress of certain occupational risk factors. With regard to biological risk, monitoring has always been executed on surfaces and in the air to determine the microbial load in areas at greatest risk. Since 2021 have been programmed specific determinations of SARS-CoV-2 contamination on surfaces and in the air.

Intervention:

During the COVID-19 emergency, despite ASST's hospitals weren't adapted to structural and plant requirements for infectious patient management, it became necessary to handle large COVID-19 patients flows. Therefore specific areas within the hospitals were identified for COVID-19 patients and an attempt was made to adjust them for proper patient management, ensuring the operator safety. In 2021 and 2022, in ASST's hospitals identified as COVID-19 hub, have been carried out specific determinations of SARS-CoV-2 contamination on surfaces and in the air in units at high risk, like E.R., intensive care, medicine and surgery.

ASST PAVIA: Environmental monitoring for SARS-CoV-2

Hospital / COVID-19 HUB	Hospital ward/unit	Number of determinations carried out in 2021		RESULTS	Number of determinations carried out in 2022		RESULTS
		SARS-CoV-2 contamination on surfaces	SARS-CoV-2 contamination in the air		SARS-CoV-2 contamination on surfaces	SARS-CoV-2 contamination in the air	
Ospedale Civile di Vigevano	Intensive Care	1	1	not detected	4	4	not detected
	Emergency Room	1	1	not detected	4	4	not detected
	Cardiology	1	1	not detected	2	2	not detected
	Medicine	1	1	not detected	4	4	not detected
	Surgery	1	1	not detected	2	2	not detected
Ospedale Civile di Voghera	Intensive Care	1	1	not detected	2	2	not detected
	Emergency Room	1	1	not detected	2	2	not detected
	Cardiology	1	1	not detected	2	2	not detected
	Medicine	1	1	not detected	2	2	not detected
	Surgery	1	1	not detected	2	2	not detected
	Rehabilitation	1	1	not detected	-	-	-
	Operating Room	-	-	-	2	2	not detected
Ospedale di Varzi	Medicine	1	1	not detected	-	-	-
Ospedale di Stradella	Medicine	1	1	not detected	2	2	not detected
	Emergency Room	1	1	not detected	4	4	not detected
	Operating Room	1	1	not detected	2	2	not detected
TOTAL DETERMINATIONS		15	15	not detected	36	36	not detected

Results:

The data relating to the monitoring carried out in 2021 and 2022 return the following results: -All aerosols from the controlled environments were found to be free of traces of SARS-CoV-2. -All swabs performed were found to be free of traces of SARS-CoV-2.

Conclusions:

The determinations of SARS-CoV-2 contamination on surfaces and in the air in the COVID-19 Hubs, contributed significantly to the health and safety of operators and patients, allowing the continuation of activities after checking the effective efficacy of the environment sanitization processes. Therefore the same monitoring have been scheduled for 2023.