Table 1. Patient characteristics

Variable	First wave	Second wave	Total cohort	Total cohort, survivors of first admission
	No. 1,137	No. 2,249	No. 3,386	No. 2,808
Age at baseline				
18 to 49 yr (%)	126 (11.1)	245 (10.9)	371 (11.0)	368 (13.1)
50 to 69 yr (%)	340 (29.9)	638 (28.4)	978 (28.9)	878 (31.3)
70 to 79 yr (%)	325 (28.6)	603 (26.8)	928 (27.4)	760 (27.1)
80 to 100 yr (%)	346 (30.4)	763 (33.9)	1,109 (32.8)	802 (28.6)
Male (%)	622 (54.7)	1,230 (54.7)	1,852 (54.7)	1,505 (53.6)
Coexisting conditions at baseline				
Cardiovascular disease (%)	378 (33.2)	859 (38.2)	1,237 (36.5)	950 (33.8)
Hypertension (%)	256 (22.5)	559 (24.9)	815 (24.1)	641 (22.8)
Diabetes (%)	186 (16.4)	381 (16.9)	567 (16.7)	438 (15.6)
Chronic Pulmonary Disease (%)	153 (13.5)	328 (14.6)	481 (14.2)	382 (13.6)
Renal Disease (%)	72 (6.3)	159 (7.1)	231 (6.8)	158 (5.6)
Malignancy (%)	136 (12.0)	307 (13.7)	443 (13.1)	343 (12.2)
Other Neurological Disease (%)	72 (6.3)	132 (5.9)	204 (6.0)	162 (5.8)
Moderate/Severe Liver Disease (%)	6 (0.5)	12 (0.5)	18 (0.5)	15 (0.5)
Days from admission to PCR test, median, (IQR)	0.4 (-1.5 - 0.6)	0.3 (-3.4 - 0.8)	0.3 (-2.9 - 0.7)	0.3 (-3.2 - 0.7)
Median admission length in days (IQR)	7.3 (4.2 - 13.2)	6.4 (4.0 - 10.7)	6.8 (4.1 - 11.7)	6.2 (4.0 - 10.7)
Died during first admission (%)	261 (23.0)	317 (14.1)	578 (17.1)	0 (0.0)
Maximum level of respiratory support during first 48 hours of admission				
< 5 L O_2/min (%)	830 (73.0)	1,746 (77.6)	2,576 (76.1)	2,265 (80.7)
5-15 L O_2/min (%)	155 (13.6)	244 (10.8)	193 (5.7)	108 (3.8)
> 15 L O_2/min (%)	73 (6.4)	120 (5.3)	399 (11.8)	281 (10.0)
ICU (%)	79 (6.9)	139 (6.2)	218 (6.4)	154 (5.5)
Maximum level of respiratory support during first 14 days of admission				
< 5 L O_2/min (%)	642 (56.5)	1,469 (65.3)	2,111 (62.3)	2,020 (71.9)
5-15 L O_2/min (%)	181 (15.9)	328 (14.6)	509 (15.0)	370 (13.2)
> 15 L O_2/min (%)	140 (12.3)	208 (9.2)	348 (10.3)	152 (5.4)
ICU (%)	174 (15.3)	244 (10.8)	418 (12.3)	266 (9.5)

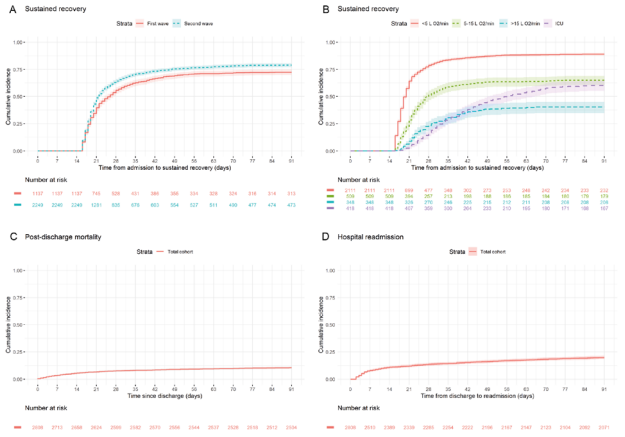

Figure 1. Sustained recovery among patients admitted to hospital with COVID-19. A) Cumulative incidence of sustained recovery after hospital admission, stratified by date of admission. B) Cumulative incidence of sustained recovery stratified by the maximum level of respiratory support in the first 14 days of the admission. C) Cumulative incidence of death after discharge. D) Cumulative incidence of hospital readmission after first hospital discharge.

A) before or after June 15th 2020, approximately when remdesivir and dexamethasone was introduced as standard of care
B) The level of respiratory support was categorized on an ordinal scale of: <5 L O2/min, 5-15 L O2/min, >15 L O2/min and ICU.
D) Death was handled as a competing risk for readmission

Table 2. Hazard ratios from cox proportional hazards model for sustained recovery in the first 91 days after admission.

Variable	HR[1]	95% CI[1]	p-value
Wave			
First wave	—	—	—
Second wave	1.3	1.20, 1.41	<0.001
Patient Age			
18 to 49 yr	—	—	—
50 to 69 yr	0.61	0.54, 0.69	<0.001
70 to 79 yr	0.45	0.39, 0.51	<0.001
80 to 100 yr	0.31	0.27, 0.35	<0.001
Sex			
Female	—	—	—
Male	0.82	0.76, 0.89	<0.001
Coexisting conditions			
Cardiovascular Disease	0.86	0.78, 0.94	<0.001
Hypertension	1.02	0.92, 1.12	0.7
Diabetes	0.9	0.80, 1.00	0.054
Chronic pulmonary disease	0.85	0.76, 0.95	0.005
Renal disease	0.66	0.55, 0.78	<0.001
Malignancy	0.84	0.75, 0.95	0.005
Other neurological disease	0.78	0.66, 0.93	0.006
Moderate/severe liver disease	0.61	0.35, 1.05	0.073

1 HR = Hazard Ratio, CI = Confidence Interval

Conclusion. A follow-up period of 28 days in clinical trials for COVID-19 treatments is too short, especially for patients with severe disease. Rates of adverse outcomes after hospital discharge are non-neglible. In-hospital mortality was reduced with improvements in treatment, but post discharge mortality and readmissions rates did not change significantly.

Disclosures. **Carsten Utoft Niemann, PhD MD**, **Abbvie** (Grant/Research Support, Advisor or Review Panel member)**Astra Zeneca** (Grant/Research Support, Advisor or Review Panel member, teaching)**CSL Behring** (Consultant)**Genmab** (Grant/Research Support)**Gilead** (Grant/Research Support)**Janssen** (Grant/Research Support, teaching)**Novo Nordisk Foundation** (Grant/Research Support)**Roche** (Grant/Research Support)**Sunesis** (Grant/Research Support)

30. SARS-CoV2 Reinfections in a University Teaching Hospital

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Background. The consequences of SARS-CoV2 reinfections for patients, healthcare workers and society are unclear. We reviewed the clinical, laboratory, and epidemiological characteristics of patients re-infected with genetically distinct strains of SARS-CoV2 identified by Whole Virus Genome Sequencing (WvGS).

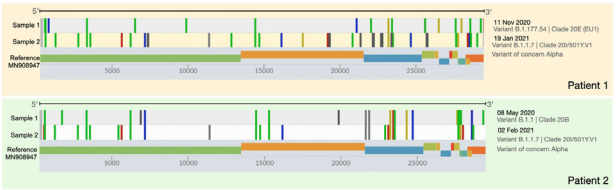
Methods. Cases were selected based on a positive SARS-CoV-2 Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) test, clinical resolution, a negative interim test and a subsequent positive nasopharyngeal swab. Positive samples were prepared for sequencing by cDNA synthesis, tiled-PCR following the ARTIC protocol and amplicon sequencing using Illumina MiSeq platform. Raw reads were mapped to the reference sequence using bowtie and Samtools was used for variants calling and to generate the consensus sequences. Comparative sequence analysis was conducted by phylogenetic inference maximum likelihood method with RAxML using the multiple sequence aligned by MAFFT. Clades and variants were assigned respectively using Nextstrain and Pangolin COVID-19 lineage assigner (Figure 1). The clinical, radiological and laboratory data were collected from patient medical notes and laboratory information system.

Results. Two cases of SARS-CoV-2 reinfection were detected by RT-PCR (patient 1 and 2). C_T values and strain variants are presented in Table 1. The time between detection of the first and second infection was 67 and 270 days respectively. WvGS confirmed that the second episodes were due to a genetically distinct strain of SARS CoV2. These reflected the dominant contemporaneous variants in circulation.

Both patients were immunocompromised from co-morbidities and medications. First and subsequent infections were minimally symptomatic. Both cases were associated with known hospital outbreaks. They passed away within 2 weeks of the second infection of unrelated causes.

Table 1

Patient	First Episode C_T Value	Second Episode C_T Value	1st Infection Pango lineage	2nd Infection Lineage Pango lineage
1	27.21	34.49	B.1.177.54	B.1.1.7 (variant Alpha)
2	20.9	21.11	B.1.1	B.1.1.7 (variant Alpha)



Conclusion. Two patients in this study were diagnosed with a SARS-CoV-2 reinfection confirmed by WvGS. A common factor in these cases was immunocompromise. Where a previously infected patient test shows a new positive or an unexpected reduction in C_T value is observed, we recommend individual risk assessment to determine the timing of discontinuation of isolation and infection control precautions.

Disclosures. **Jérôme Fennell, MB BCh BAO MSc PhD FRCPath FRCPI**, **Roche Diagnostics** (Advisor or Review Panel member)

31. Development a Novel Score (SAD-60) for Predicting Mortality in Hospitalised Patients with COVID-19 Pneumonia: A Multicenter Retrospective Study of 1013 Patients

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