RICERCA BIBLIOGRAFICA COVID 19

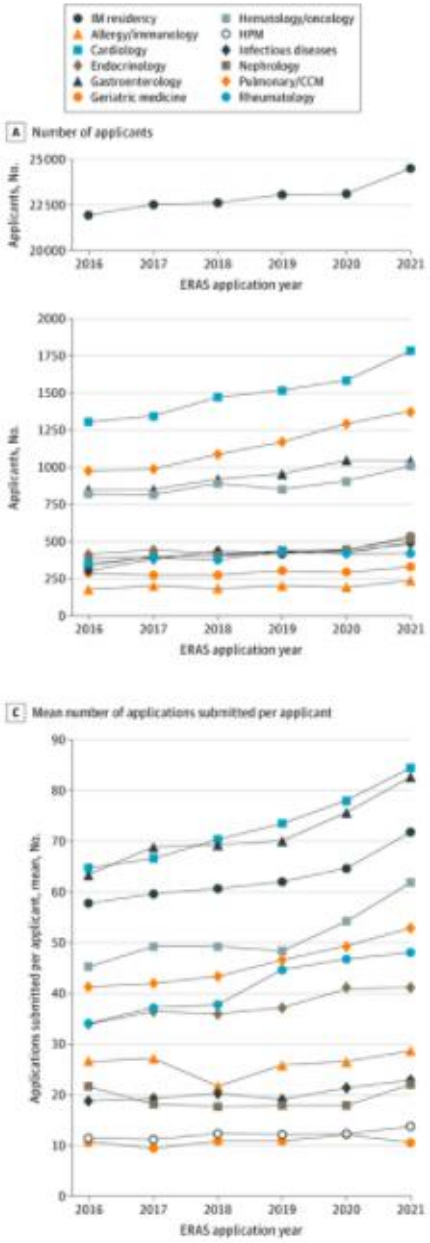
SETTIMANA 03.05– 09.05.2021

FONDAZIONE POLICLINICO UNIVERSITARIO A. GEMELLI IRCCS, UOC MALATTIE INFETTIVE

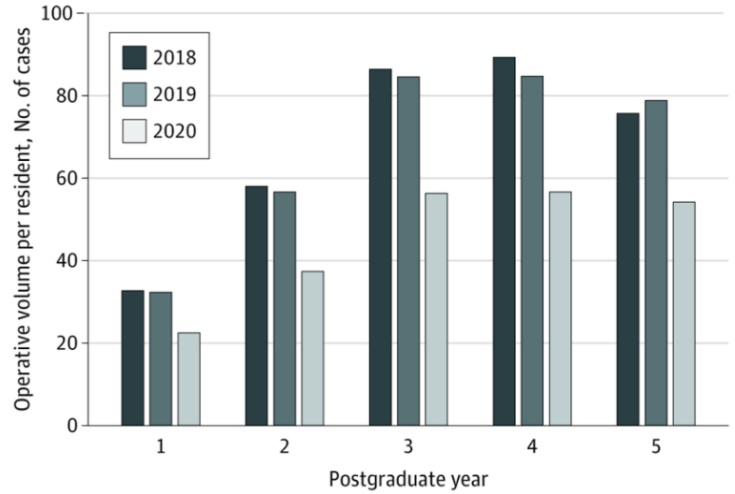
DOTT.SSA ELEONORA TADDEI

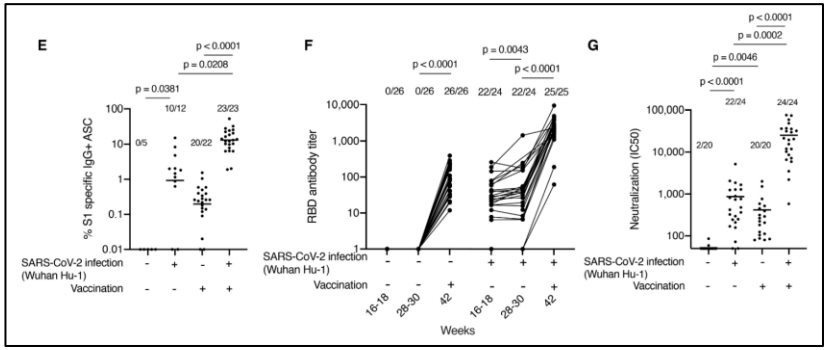
AUTORE/RIVISTA	TITOLO	OUTCOME PRINCIPALE	ABSTRACT
Ravindra NG et al Plos One https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3001143	Single-cell longitudinal analysis of SARS-CoV-2 infection in human airway epithelium identifies target cells, alterations in gene expression, and cell state changes	L'infezione da SARS-CoV-2 induce modificazioni del trascrittoma nelle cellule delle vie aeree, in vie metaboliche implicate nell'infiammazione ma anche nell'omeostasi del calcio e del ferro e nella motilità ciliare.	There are currently limited Food and Drug Administration (FDA)-approved drugs and vaccines for the treatment or prevention of Coronavirus Disease 2019 (COVID-19). Enhanced understanding of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection and pathogenesis is critical for the development of therapeutics. To provide insight into viral replication, cell tropism, and host–viral interactions of SARS-CoV-2, we performed single-cell (sc) RNA sequencing (RNA-seq) of experimentally infected human bronchial epithelial cells (HBECs) in air–liquid interface (ALI) cultures over a time course. This revealed novel polyadenylated viral transcripts and highlighted ciliated cells as a major target at the onset of infection, which we confirmed by electron and immunofluorescence microscopy. Over the course of infection, the cell tropism of SARS-CoV-2 expands to other epithelial cell types including basal and club cells. Infection induces cell-intrinsic expression of type I and type III interferons (IFNs) and interleukin

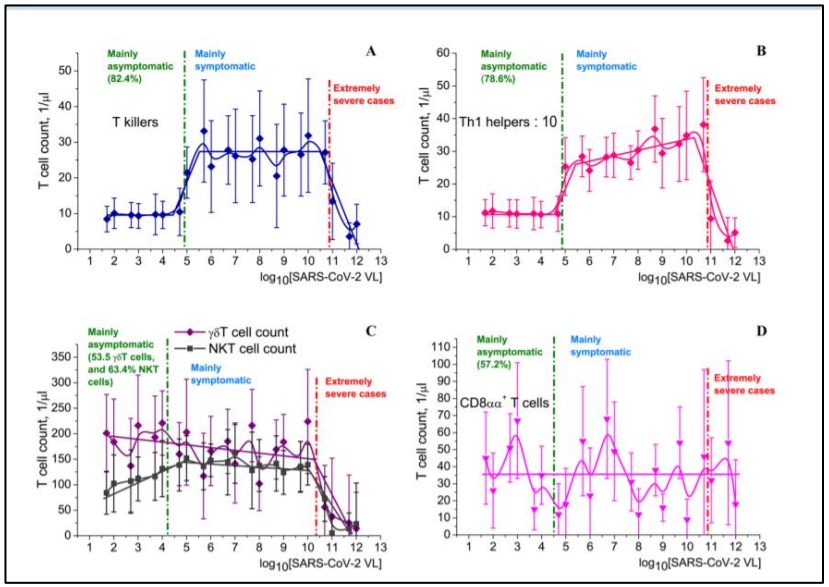
			(IL)-6 but not IL-1. This results in expression of interferon-stimulated genes (ISGs) in both infected and bystander cells. This provides a detailed characterization of genes, cell types, and cell state changes associated with SARS-CoV-2 infection in the human airway.
Babak D et al BMJ https://www.bmj.com/content/373/bmj.n1036	Should masks be worn outdoors?	Mascherine all'aperto sì o no ? Le opinioni di due gruppi di esperti con opinioni opposte.	Wearing face coverings outside should be normalised because it may reduce transmission of SARS-CoV-2 in some situations—and may encourage mask wearing indoors, where risks are greater—say Babak Javid, Dirk Bassler, and Manuel B Bryant. But Muge Cevik, Zeynep Tufekci, and Stefan Baral argue that outdoor transmission contributes very little to overall infection rates and that efforts should focus on reducing indoor transmission
Huppert LA et al JAMA https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2779252	Trends in US Internal Medicine Residency and Fellowship Applications During the COVID-19 Pandemic vs Previous Years	Alcune scuole di specializzazione negli USA hanno visto un incremento di domande di accesso per l'anno 2020-2021 rispetto agli anni precedenti, fra queste malattie infettive, pneumologia e anestesia/rianimazione : potrebbe trattarsi dell'effetto di interviste online maggiormente accessibili per i candidati oppure di previste maggiori opportunità di lavoro in questi settori a causa della pandemia di COVID-19.	The COVID-19 pandemic has significantly affected medical education, from disrupting trainee schedules to introducing virtual residency and fellowship interviews. The effect on application patterns to internal medicine (IM) residency and subspecialty fellowships is unknown. We evaluated the number of applicants and number of applications submitted per applicant to IM residency and subspecialty fellowships for 2021 vs the 5 prior application cycles.


IM residency
Allergy/immunology
Cardiology
Endocrinology
Gastroenterology
Geriatric medicine
Hematology/oncology
HPM
Infectious diseases
Nephrology
Pulmonary/CCM
Rheumatology
A Number of applicants
Applicants, No.
25000
22500
20000
2016
2017
2018
2019
2020
2021
ERAS application year
2000
1750
1500
1250
1000
750
500
250
0
C Mean number of applications submitted per applicant
Applications submitted per applicant, mean, No.
90
80
70
60
50
40
30
20
10

Purdy AC et al JAMA https://jamanetwork.com/journals/jamasurgery/fullarticle/2779387	Factors Associated With General Surgery Residents' Operative Experience During the COVID-19 Pandemic	Gli specializzandi di chirurgia di molte scuole negli USA hanno partecipato a meno interventi nei primi 4 mesi di pandemia di COVID-19, in relazione a una riduzione dell'attività di chirurgica.	Importance The suspension of elective operations in March 2020 to prepare for the COVID-19 surge posed significant challenges to resident education. To mitigate the potential negative effects of COVID-19 on surgical education, it is important to quantify how the pandemic influenced resident operative volume. Objective To examine the association of the pandemic with general surgical residents' operative experience by postgraduate year (PGY) and case type and to evaluate if certain institutional characteristics were associated with a greater decline in surgical volume. Design, Setting, and Participants This retrospective review included residents' operative logs from 3 consecutive academic years (2017-2018, 2018-2019, and 2019-2020) from 16 general surgery programs. Data collected included total major cases, case type, and PGY. Faculty completed a survey about program demographics and COVID-19 response. Data on race were not collected. Operative volumes from March to June 2020 were compared with the same period during 2018 and 2019. Data were analyzed using Kruskal-Wallis test adjusted for within-program correlations. Main Outcome and Measures Total major cases performed by each resident during the first 4 months of the pandemic. Results A total of 1368 case logs were analyzed. There was a 33.5% reduction in total major cases performed in March to June 2020 compared with 2018 and 2019 (45.0 [95% CI, 36.1-53.9] vs 67.7 [95% CI, 62.0-72.2]; P < .001), which significantly affected every PGY. All case types were significantly reduced in 2020 except liver, pancreas, small intestine, and trauma cases. There was a 10.2% reduction in operative volume during the 2019-2020 academic year compared with the 2 previous years (192.3 [95% CI, 178.5-206.1] vs 213.8 [95% CI, 203.6-223.9]; P < .001). Level 1 trauma centers (49.5

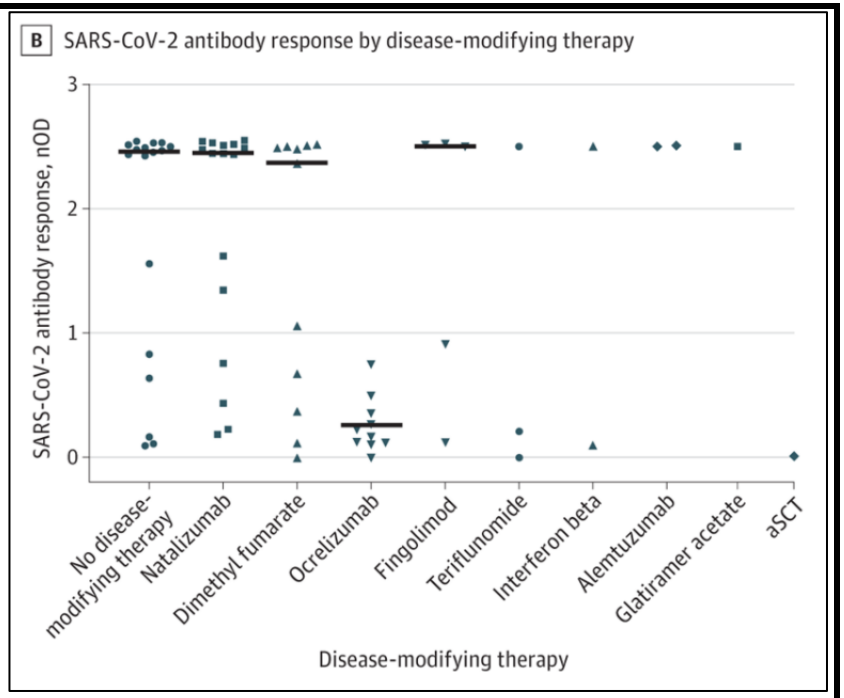
			vs 68.5; 27.7%) had a significantly lower reduction in case volume than non–level 1 trauma centers (33.9 vs 63.0; 46%) (P = .03). Conclusions and Relevance In this study of operative logs of general surgery residents in 16 US programs from 2017 to 2020, the first 4 months of the COVID-19 pandemic was associated with a significant reduction in operative experience, which affected every PGY and most case types. Level 1 trauma centers were less affected than non–level 1 centers. If this trend continues, the effect on surgical training may be even more detrimental. Figure. Operative Volume From March Through June by Postgraduate Year  Mean operative cases done per resident by postgraduate year from March 1 through June 30 in 2018, 2019, and 2020.
Reynolds CJ et al Science https://science.sciencemag.org/content/early/202	Prior SARS-CoV-2 infection rescues B and T cell responses to variants after first vaccine dose	Una dose di vaccino Pfizer contro SARS-CoV-2 in persone con storia di pregressa infezione determina valori di anticorpi anti-S comparabili alla doppia dose dei naive e inoltre un incremento di 4	SARS-CoV-2 vaccine rollout has coincided with the spread of variants of concern. We investigated if single dose vaccination, with or without prior infection, confers cross protective immunity to variants. We analyzed T and B cell responses after first dose vaccination with the Pfizer/BioNTech mRNA vaccine BNT162b2 in healthcare workers (HCW) followed longitudinally, with or without prior Wuhan-Hu-1 SARS-CoV-2 infection. After one dose, individuals

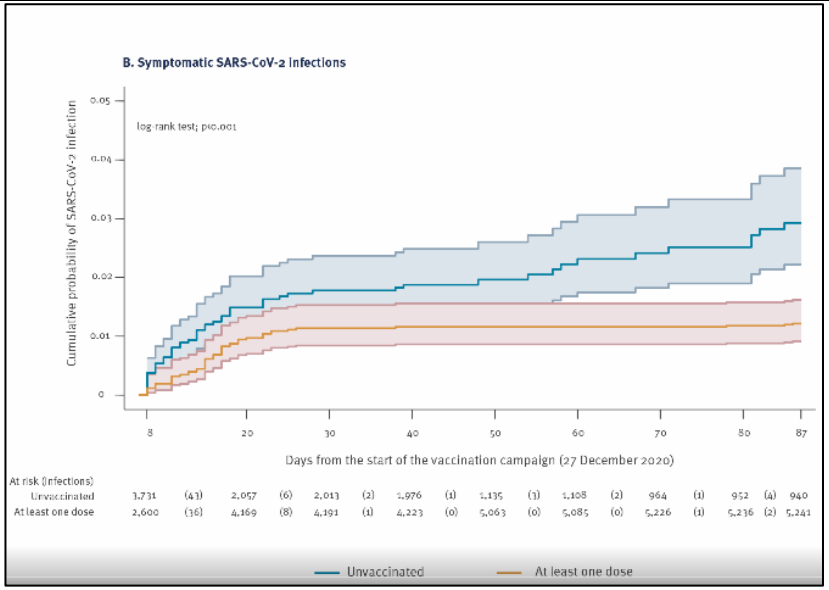
1/04/29/science.abh1282.long		volte della risposta dei linfociti T e B della memoria. Il titolo neutralizzante nei confronti del virus variante (inglese e sudafricano) è maggiore nei vaccinati dopo l'infezione che nei soggetti con infezione naturale.	with prior infection showed enhanced T cell immunity, antibody secreting memory B cell response to spike and neutralizing antibodies effective against B.1.1.7 and B.1.351. By comparison, HCW receiving one vaccine dose without prior infection showed reduced immunity against variants. B.1.1.7 and B.1.351 spike mutations resulted in increased, abrogated or unchanged T cell responses depending on human leukocyte antigen (HLA) polymorphisms. Single dose vaccination with BNT162b2 in the context of prior infection with a heterologous variant substantially enhances neutralizing antibody responses against variants. 
Sharov KS Scientific Reports https://www.nature.com/articles/s41598-021-88714-6.pdf	8806 Russian patients demonstrate T cell count as better marker of COVID-19 clinical course severity than SARS-CoV-2 viral load	La conta dei linfociti T predice l'andamento clinico in una coorte di oltre 8000 pazienti con COVID-19.	The article presents a comparative analysis of SARS-CoV-2 viral load (VL), T lymphocyte count and respiratory index PaO2:FiO2 ratio as prospective markers of COVID-19 course severity and prognosis. 8806 patients and asymptomatic carriers were investigated in time interval 15 March–19 December 2020. T cell count demonstrated better applicability as a marker of aggravating COVID-19 clinical course and unfavourable disease prognosis than SARS-CoV-2 VL or PaO2:FiO2 ratio taken alone. Using T cell count in clinical practice may provide an opportunity of early prediction of deteriorating a

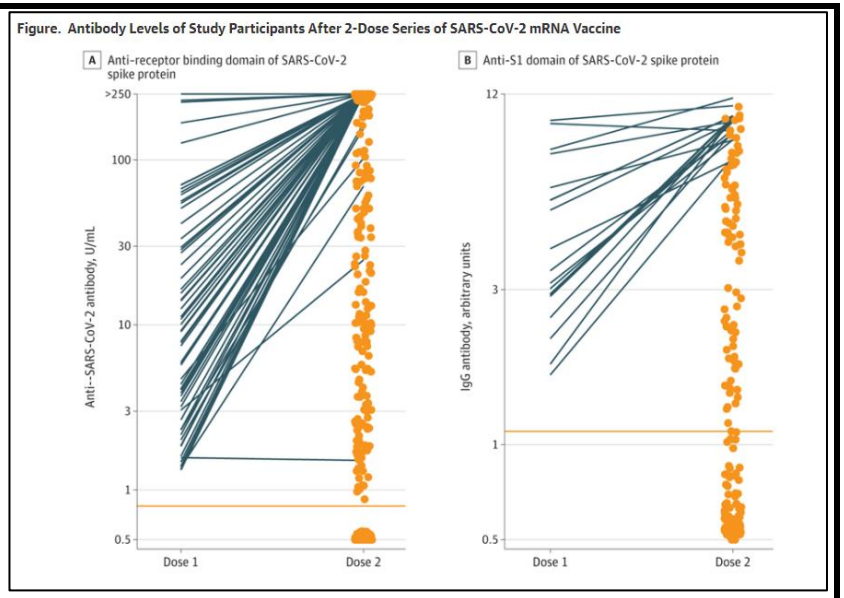
			patient's state. 
Roth G et al JAMA https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2779415?resultClick=1	Trends in Patient Characteristics and COVID-19 In-Hospital Mortality in the United States During the COVID-19 Pandemic	Studio di coorte su oltre 20000 pazienti ricoverati per COVID-19 negli USA : riduzione della mortalità, della durata di degenza e dei ricoveri in terapia intensiva nel corso del tempo tra marzo e novembre 2020, non completamente spiegati dalle caratteristiche demografiche del campione. Possibile effetto di una « curva di apprendimento » ?	Importance In-hospital mortality rates from COVID-19 are high but appear to be decreasing for selected locations in the United States. It is not known whether this is because of changes in the characteristics of patients being admitted. Objective To describe changing in-hospital mortality rates over time after accounting for individual patient characteristics. Design, Setting, and Participants This was a retrospective cohort study of 20 736 adults with a diagnosis of COVID-19 who were included in the US American Heart Association COVID-19 Cardiovascular Disease Registry and admitted to 107 acute care hospitals in 31 states from March through November 2020. A multiple mixed-effects logistic regression was then used to estimate the odds of in-hospital death adjusted for patient age, sex, body mass index, and medical history as well as vital signs, use of

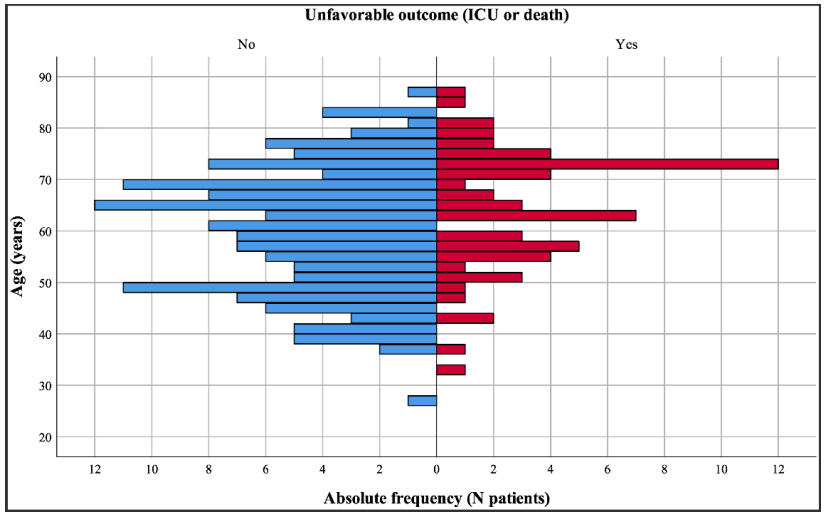
			supplemental oxygen, presence of pulmonary infiltrates at admission, and hospital site. Main Outcomes and Measures In-hospital death adjusted for exposures for 4 periods in 2020. Results The registry included 20 736 patients hospitalized with COVID-19 from March through November 2020 (9524 women [45.9%]; mean [SD] age, 61.2 [17.9] years); 3271 patients (15.8%) died in the hospital. Mortality rates were 19.1% in March and April, 11.9% in May and June, 11.0% in July and August, and 10.8% in September through November. Compared with March and April, the adjusted odds ratios for in-hospital death were significantly lower in May and June (odds ratio, 0.66; 95% CI, 0.58-0.76; P < .001), July and August (odds ratio, 0.58; 95% CI, 0.49-0.69; P < .001), and September through November (odds ratio, 0.59; 95% CI, 0.47-0.73). Conclusions and Relevance In this cohort study, high rates of in-hospital COVID-19 mortality among registry patients in March and April 2020 decreased by more than one-third by June and remained near that rate through November. This difference in mortality rates between the months of March and April and later months persisted even after adjusting for age, sex, medical history, and COVID-19 disease severity and did not appear to be associated with changes in the characteristics of patients being admitted.
Feder KA et al Morbidity and Mortality Weekly Report https://www.cdc.gov/mmwr/volumes/70/wr/mm7	Linked Clusters of SARS-CoV-2 Variant B.1.351 — Maryland, January–February 2021	Primo cluster di casi di infezione da SARS-CoV-2 variante « sudafricana » descritto negli USA senza collegamenti con viaggi internazionali.	What is already known about this topic? In January 2021, a SARS-CoV-2 specimen from a Maryland resident was determined to be the B.1.351 variant, first identified in South Africa. The SARS-CoV-2 B.1.351 variant might elicit a reduced neutralizing antibody response. What is added by this report?

017a5.htm?s_cid=mm7017a5_w#suggestedcitation			Investigation identified two linked clusters of SARS-CoV-2 infection, comprising 17 total patients (two were hospitalized and one died) who did not report recent travel. Four patients' specimens were sequenced; all were the B.1.351 variant. What are the implications for public health practice? These were the first identified clusters of B.1.351 in the United States with no link to travel. Completed contact investigations, expanded genetic sequencing, and universal prevention strategies, including vaccination, masking, and distance, might prevent the spread of SARS-CoV-2 variants of concern, including B.1.351.
Van Kemoen ZL et al JAMA https://jamanetwork.com/journals/jamaneurology/fullarticle/2779734?resultClick=1	SARS-CoV-2 Antibodies in Adult Patients With Multiple Sclerosis in the Amsterdam MS Cohort.	Studio su una coorte di 546 pazienti con sclerosi multipla (71% donne) di cui 64 con risposta anticorpale contro SARS-CoV-2 : i trattati con ocrelizumab (anti CD20) con riduzione della conta di linfociti B mostrano minore titolo anticorpale.	Various cohorts of patients with multiple sclerosis (MS) and COVID-19 have been described. So far, limited information is available regarding severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) antibodies in patients with MS. The objective of this study was to test for SARS-CoV-2 antibodies in a large MS cohort to evaluate asymptomatic infections and immunological responses to COVID-19.

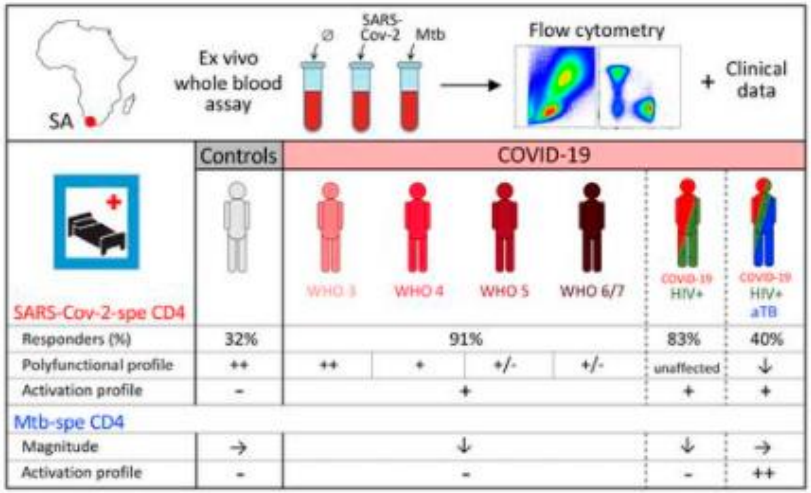
			
Fabiani M et al Eurosurveillance https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2021.26.17.2100420	Effectiveness of the Comirnaty (BNT162b2, BioNTech/Pfizer) vaccine in preventing SARS-CoV-2 infection among healthcare workers, Treviso province, Veneto region, Italy, 27 December 2020 to 24 March 2021 separator commenting unavailable	Studio condotto in Veneto su 6423 operatori sanitari in cui si osserva l'efficacia del vaccino Pfizer contro SARS-CoV-2 nel prevenire l'infezione sintomatica : 40% del periodo 1-14 giorni e 86% in quello 15-28 giorni dopo la prima dose.	Data on effectiveness of the BioNTech-/Pfizer COVID-19 vaccine in real-world settings are limited. In a study of 6,423 healthcare workers in Treviso Province, Italy, we estimated that, within the time intervals of 14–21 days from the first and at least 7 days from the second dose, vaccine effectiveness in preventing SARS-CoV-2 infection was 84% (95% confidence interval (CI): 40–96) and 95% (95% CI: 62–99), respectively. These results could support the ongoing vaccination campaigns by providing evidence for targeted communication.

			
Boyarski BJ et al JAMA https://jamanetwork.com/journals/jama/fullarticle/2779852	Antibody Response to 2-Dose SARS-CoV-2 mRNA Vaccine Series in Solid Organ Transplant Recipients	Studio su 658 pazienti sottoposto a trapianto di organo solido negli USA e vaccinati con vaccina Pfizer contro SARS-CoV-2: la maggioranza sviluppa un titolo anticorpale dopo due dosi, minore nei trattati con farmaci antimetaboliti ; i livelli sono molto inferiori a quelli osservati in pazienti non trapiantati.	In contrast to immunocompetent participants in vaccine trials, a low proportion (17%) of solid organ transplant recipients mounted a positive antibody response to the first dose of SARS-CoV-2 messenger RNA (mRNA) vaccines, with those receiving anti–metabolite maintenance immunosuppression less likely to respond.3 In this study, we assessed antibody response after the second dose.

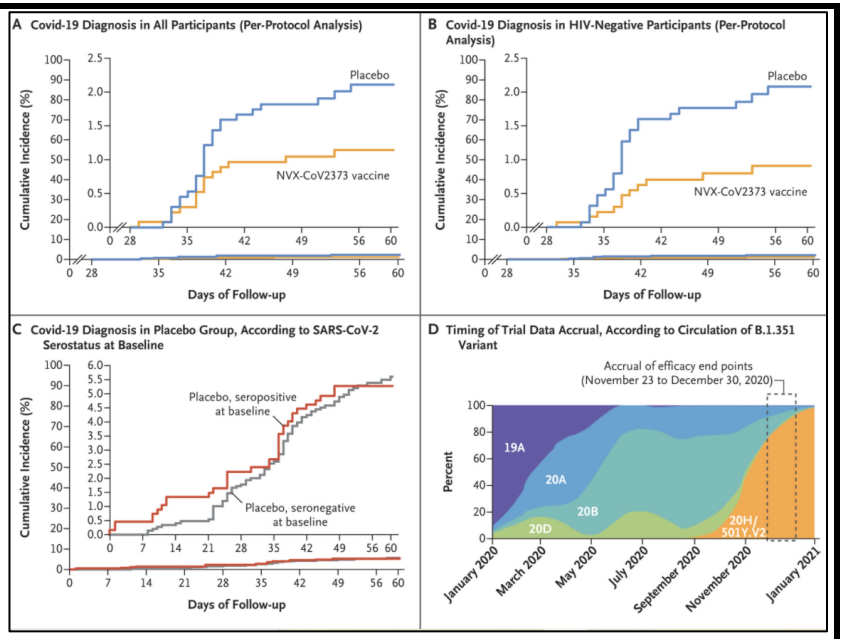
			
Salto-Alejandre S et al PloS One https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0250796	Risk factors for unfavorable outcome and impact of early post-transplant infection in solid organ recipients with COVID-19: A prospective multicenter cohort study	Studio osservazionale prospettico su 210 pazienti sottoposti a trapianto di organo solido e ricoverati per COVID-19 : sono fattori di rischio di ricovero in terapia intensiva la breve distanza fra trapianto e infezione, l'età più avanzata, la frequenza respiratoria, la linfopenia e i livelli di LDH.	The aim was to analyze the characteristics and predictors of unfavorable outcomes in solid organ transplant recipients (SOTRs) with COVID-19. We conducted a prospective observational cohort study of 210 consecutive SOTRs hospitalized with COVID-19 in 12 Spanish centers from 21 February to 6 May 2020. Data pertaining to demographics, chronic underlying diseases, transplantation features, clinical, therapeutics, and complications were collected. The primary endpoint was a composite of intensive care unit (ICU) admission and/or death. Logistic regression analyses were performed to identify the factors associated with these unfavorable outcomes. Males accounted for 148 (70.5%) patients, the median age was 63 years, and 189 (90.0%) patients had pneumonia. Common symptoms were fever, cough, gastrointestinal disturbances, and dyspnea. The most used antiviral or host-targeted therapies included hydroxychloroquine 193/200 (96.5%), lopinavir/ritonavir 91/200 (45.5%), and tocilizumab 49/200 (24.5%).

			Thirty-seven (17.6%) patients required ICU admission, 12 (5.7%) suffered graft dysfunction, and 45 (21.4%) died. A shorter interval between transplantation and COVID-19 diagnosis had a negative impact on clinical prognosis. Four baseline features were identified as independent predictors of intensive care need or death: advanced age, high respiratory rate, lymphopenia, and elevated level of lactate dehydrogenase. In summary, this study presents comprehensive information on characteristics and complications of COVID-19 in hospitalized SOTRs and provides indicators available upon hospital admission for the identification of SOTRs at risk of critical disease or death, underlining the need for stringent preventative measures in the early post-transplant period. 
Choe H et al Science	How SARS-CoV-2 first adapted in humans	Studi sull'adattamento di SARS-CoV-2 nella specie umana, attraverso le modificazioni della proteina spike.	Viruses need entry proteins to penetrate the cells where they will replicate. The severe acute respiratory syndrome coronavirus (SARS-CoV-2) version is called the spike or S protein. The S protein, also the target of the current vaccines, is quickly adapting to its new human hosts. It took its first major step in this direction early in 2020, when its amino acid 614 (of 1297) changed from an aspartic

https://science.sciencemag.org/content/372/6541/466			acid (D) to a glycine (G). Viruses bearing this D614G mutation transmit among humans more rapidly and now form the majority in circulation. On page 525 of this issue, Zhang et al. use careful structural analyses to reveal how D614G changed the S protein to accelerate the pandemic.
Barsky BA et al NEJM https://www.nejm.org/doi/full/10.1056/NEJMp2100609?query=featured_home	Vaccination plus Decarceration — Stopping Covid-19 in Jails and Prisons	La questione carceraria durante la pandemia di COVID-19.	To protect the safety of incarcerated people, guards, and the general public, health experts have long called for large-scale decarceration. Decarceration measures that were used relatively early in the pandemic, though implemented in far too few jurisdictions to maximize public health benefit, have been shown to be safe — it is mass incarceration itself that threatens public safety — and have not been associated with increases in rearrest rates. Now, with the rollout of vaccines, public debate has increasingly shifted toward vaccination of incarcerated people. But several factors suggest that vaccination alone will not be enough to stop carceral outbreaks.
Riou C et al The Journal of Clinical Investigation https://www.jci.org/articles/view/149125	Relationship of SARS-CoV-2-specific CD4 response to COVID-19 severity and impact of HIV-1 and Tuberculosis co-infection	Influenza della coinfezione da HIV o tubercolosi e COVID-19 sull'immunità T cellulare e dunque sulla risposta al virus.	T cells are involved in control of COVID-19, but limited knowledge is available on the relationship between antigen-specific T cell response and disease severity. Here, we assessed the magnitude, function and phenotype of SARS-CoV-2-specific CD4 T cells in 95 hospitalized COVID-19 patients (38 of them being HIV-1 and/or tuberculosis (TB) co-infected) and 38 non-COVID-19 patients, using flow cytometry. We showed that SARS-CoV-2-specific CD4 T cell attributes, rather than magnitude, associates with disease severity, with severe disease being characterized by poor polyfunctional potential, reduced proliferation capacity and enhanced HLA-DR expression. Moreover, HIV-1 and TB co-infection skewed the SARS-CoV-2 T cell response. HIV-1 mediated CD4 T cell depletion associated with suboptimal T cell and humoral immune responses to SARS-CoV-2; and a decrease in the polyfunctional capacity of

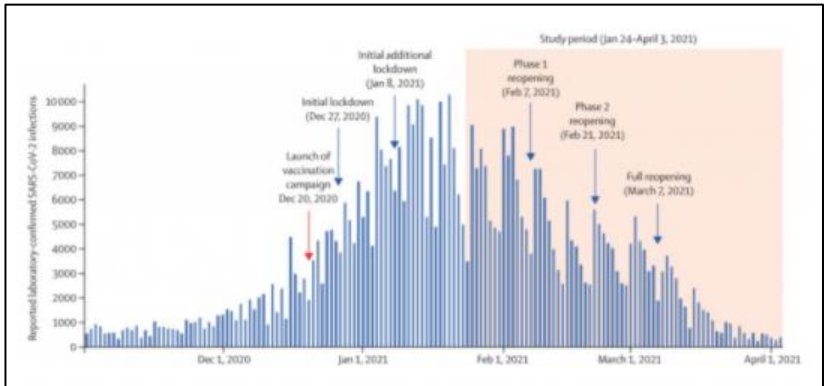
			SARS-CoV-2-specific CD4 T cells was observed in COVID-19 patients with active TB. Our results also revealed that COVID-19 patients displayed reduced frequency of Mtb-specific CD4 T cells, with possible implications for TB disease progression. There results corroborate the important role of SARS-CoV-2-specific T cells in COVID-19 pathogenesis and support the concept of altered T cell functions in patients with severe disease. 
Shinde V et al NEJM https://www.nejm.org/doi/full/10.1056/NEJMoa2103055?query=featured_home	Efficacy of NVX-CoV2373 Covid-19 Vaccine against the B.1.351 Variant	Efficacia e sicurezza del vaccino Novavax a nanoparticelle contro la « variante » sudafricana di SARS-CoV-2 in uno studio di fase II che include anche persone con HIV ben controllato.	BACKGROUND : The emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants threatens progress toward control of the coronavirus disease 2019 (Covid-19) pandemic. In a phase 1–2 trial involving healthy adults, the NVX-CoV2373 nanoparticle vaccine had an acceptable safety profile and was associated with strong neutralizing-antibody and antigen-specific polyfunctional CD4+ T-cell responses. Evaluation of vaccine efficacy was needed in a setting of ongoing SARS-CoV-2 transmission. METHODS : In this phase 2a–b trial in South Africa, we randomly assigned human immunodeficiency virus (HIV)–negative adults

			between the ages of 18 and 84 years or medically stable HIV-positive participants between the ages of 18 and 64 years in a 1:1 ratio to receive two doses of either the NVX-CoV2373 vaccine (5 µg of recombinant spike protein with 50 µg of Matrix-M1 adjuvant) or placebo. The primary end points were safety and vaccine efficacy against laboratory-confirmed symptomatic Covid-19 at 7 days or more after the second dose among participants without previous SARS-CoV-2 infection. RESULTS : Of 6324 participants who underwent screening, 4387 received at least one injection of vaccine or placebo. Approximately 30% of the participants were seropositive for SARS-CoV-2 at baseline. Among 2684 baseline seronegative participants (94% HIV-negative and 6% HIV-positive), predominantly mild-to-moderate Covid-19 developed in 15 participants in the vaccine group and in 29 in the placebo group (vaccine efficacy, 49.4%; 95% confidence interval [CI], 6.1 to 72.8). Vaccine efficacy among HIV-negative participants was 60.1% (95% CI, 19.9 to 80.1). Of 41 sequenced isolates, 38 (92.7%) were the B.1.351 variant. Post hoc vaccine efficacy against B.1.351 was 51.0% (95% CI, −0.6 to 76.2) among the HIV-negative participants. Preliminary local and systemic reactogenicity events were more common in the vaccine group; serious adverse events were rare in both groups. CONCLUSIONS : The NVX-CoV2373 vaccine was efficacious in preventing Covid-19, with higher vaccine efficacy observed among HIV-negative participants. Most infections were caused by the B.1.351 variant.

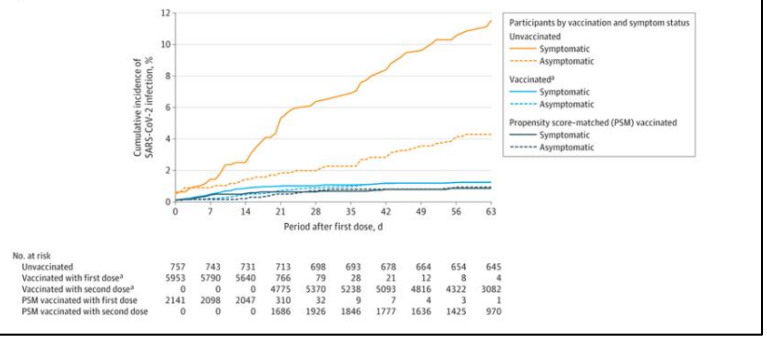
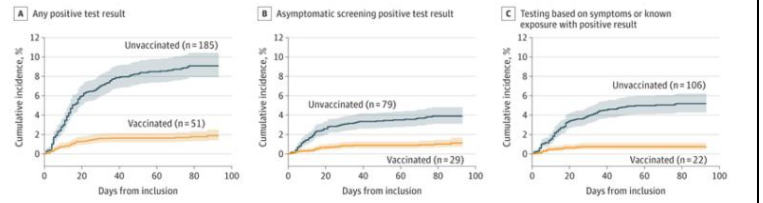
			
Butt AA et al NEJM https://www.nejm.org/doi/full/10.1056/NEJMc2104974?query=featured_home	Effectiveness of the BNT162b2 Covid-19 Vaccine against the B.1.1.7 and B.1.351 Variants	Efficacia del vaccino Pfizer in Qatar, Paese in cui sono diffuse le varianti « inglese » e « sudafricana » di SARS-CoV-2.	The estimated effectiveness of the vaccine against any documented infection with the B.1.1.7 variant was 89.5% (95% confidence interval [CI], 85.9 to 92.3) at 14 or more days after the second dose. The effectiveness against any documented infection with the B.1.351 variant was 75.0% (95% CI, 70.5 to 78.9). Vaccine effectiveness against severe, critical, or fatal disease due to infection with any SARS-CoV-2 (with the B.1.1.7 and B.1.351 variants being predominant within Qatar) was very high, at 97.4% (95% CI, 92.2 to 99.5). Sensitivity analyses confirmed these results.
Bhuyan A et al The Lancet https://www.thelancet.com/journals/lancet/article/	Experts criticise India's complacency over COVID-19	Commento sulla gestione della pandemia di COVID-19 in India.	Mass gatherings have been permitted as cases soar and patients die, while experts criticise a lack of planning and flexibility in the COVID-19 response. Anoo Bhuyan reports from New Delhi. India is battling a second wave of COVID-19, which has rapidly surpassed its first wave in 2020 in terms of the number of new cases and deaths per day. Currently, India has the second highest

PIIS0140-6736(21)00993-4/fulltext			number of COVID-19 cases in the world after the USA. “The country is working day and night for hospitals, ventilators, and medicines”, said India's Prime Minister in his monthly national broadcast on April 25, 2021.
Haas EJ et al The Lancet https://doi.org/10.1016/S0140-6736(21)00947-8	Impact and effectiveness of mRNA BNT162b2 vaccine against SARS-CoV-2 infections and COVID-19 cases, hospitalisations, and deaths following a nationwide vaccination campaign in Israel: an observational study using national surveillance data.	Elevata efficacia del vaccino Pfizer in Israele sulla prevenzione dell’infezione sintomatica, delle ospedalizzazioni e della malattia critica.	Background : Following the emergency use authorisation of the Pfizer–BioNTech mRNA COVID-19 vaccine BNT162b2 (international non-proprietary name tozinameran) in Israel, the Ministry of Health (MoH) launched a campaign to immunise the 6·5 million residents of Israel aged 16 years and older. We estimated the real-world effectiveness of two doses of BNT162b2 against a range of SARS-CoV-2 outcomes and to evaluate the nationwide public-health impact following the widespread introduction of the vaccine. Methods : We used national surveillance data from the first 4 months of the nationwide vaccination campaign to ascertain incident cases of laboratory-confirmed SARS-CoV-2 infections and outcomes, as well as vaccine uptake in residents of Israel aged 16 years and older. Vaccine effectiveness against SARS-CoV-2 outcomes (asymptomatic infection, symptomatic infection, and COVID-19-related hospitalisation, severe or critical hospitalisation, and death) was calculated on the basis of incidence rates in fully vaccinated individuals (defined as those for whom 7 days had passed since receiving the second dose of vaccine) compared with rates in unvaccinated individuals (who had not received any doses of the vaccine), with use of a negative binomial regression model adjusted for age group (16–24, 25–34, 35–44, 45–54, 55–64, 65–74, 75–84, and ≥85 years), sex, and calendar week. The proportion of spike gene target failures on PCR test among a nationwide convenience-sample of SARS-CoV-2-positive specimens was used to estimate the prevelance of the B.1.1.7 variant.

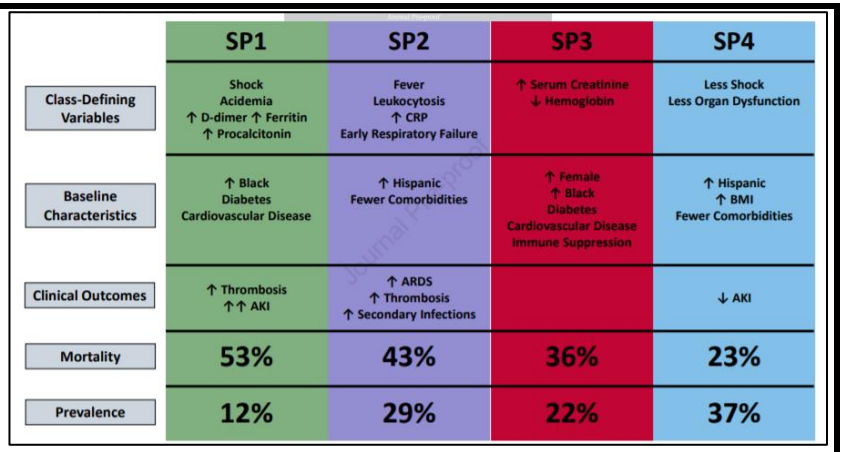
			Findings : During the analysis period (Jan 24 to April 3, 2021), there were 232 268 SARS-CoV-2 infections, 7694 COVID-19 hospitalisations, 4481 severe or critical COVID-19 hospitalisations, and 1113 COVID-19 deaths in people aged 16 years or older. By April 3, 2021, 4 714 932 (72·1%) of 6 538 911 people aged 16 years and older were fully vaccinated with two doses of BNT162b2. Adjusted estimates of vaccine effectiveness at 7 days or longer after the second dose were 95·3% (95% CI 94·9–95·7; incidence rate 91·5 per 100 000 person-days in unvaccinated vs 3·1 per 100 000 person-days in fully vaccinated individuals) against SARS-CoV-2 infection, 91·5% (90·7–92·2; 40·9 vs 1·8 per 100 000 person-days) against asymptomatic SARS-CoV-2 infection, 97·0% (96·7–97·2; 32·5 vs 0·8 per 100 000 person-days) against symptomatic COVID-19, 97·2% (96·8–97·5; 4·6 vs 0·3 per 100 000 person-days) against COVID-19-related hospitalisation, 97·5% (97·1–97·8; 2·7 vs 0·2 per 100 000 person-days) against severe or critical COVID-19-related hospitalisation, and 96·7% (96·0–97·3; 0·6 vs 0·1 per 100 000 person-days) against COVID-19-related death. In all age groups, as vaccine coverage increased, the incidence of SARS-CoV-2 outcomes declined. 8006 of 8472 samples tested showed a spike gene target failure, giving an estimated prevalence of the B.1.1.7 variant of 94·5% among SARS-CoV-2 infections. Interpretation : Two doses of BNT162b2 are highly effective across all age groups (≥16 years, including older adults aged ≥85 years) in preventing symptomatic and asymptomatic SARS-CoV-2 infections and COVID-19-related hospitalisations, severe disease, and death, including those caused by the B.1.1.7 SARS-CoV-2 variant. There were marked and sustained declines in SARS-CoV-2 incidence corresponding to increasing vaccine coverage. These findings

			suggest that COVID-19 vaccination can help to control the pandemic.  **Figure 1** Daily laboratory-confirmed SARS-CoV-2 infections in Israel (Nov 1, 2020, to April 3, 2021)
Angel Y et al JAMA https://jamanetwork.com/journals/jama/fullarticle/2779853	Association Between Vaccination With BNT162b2 and Incidence of Symptomatic and Asymptomatic SARS-CoV-2 Infections Among Health Care Workers	Significativa riduzione delle infezioni sintomatiche e asintomatiche da SARS-CoV-2 in una coorte di operatori sanitari vaccinati rispetto ai non vaccinati.	Importance Randomized clinical trials have provided estimates of the effectiveness of the BNT162b2 vaccine against symptomatic SARS-CoV-2 infection, but its effect on asymptomatic infections remains unclear. Objective To estimate the association of vaccination with the Pfizer-BioNTech BNT162b2 vaccine with symptomatic and asymptomatic SARS-CoV-2 infections among health care workers. Design, Setting, and Participants This was a single-center, retrospective cohort study conducted at a tertiary medical center in Tel Aviv, Israel. Data were collected on symptomatic and asymptomatic SARS-CoV-2 infections confirmed via polymerase chain reaction (PCR) tests in health care workers undergoing regular screening with nasopharyngeal swabs between December 20, 2020, and February 25, 2021. Logistic regression was used to calculate incidence rate ratios (IRRs) comparing the incidence of infection between fully vaccinated and unvaccinated participants, controlling for demographics and the number of PCR tests performed.

			Exposures Vaccination with the BNT162b2 vaccine vs unvaccinated status was ascertained from the employee health database. Full vaccination was defined as more than 7 days after receipt of the second vaccine dose. Main Outcomes and Measures The primary outcome was the regression-adjusted IRR for symptomatic and asymptomatic SARS-CoV-2 infection of fully vaccinated vs unvaccinated health care workers. The secondary outcomes included IRRs for partially vaccinated health care workers (days 7-28 after first dose) and for those considered as late fully vaccinated (>21 days after second dose). Results A total of 6710 health care workers (mean [SD] age, 44.3 [12.5] years; 4465 [66.5%] women) were followed up for a median period of 63 days; 5953 health care workers (88.7%) received at least 1 dose of the BNT162b2 vaccine, 5517 (82.2%) received 2 doses, and 757 (11.3%) were not vaccinated. Vaccination was associated with older age compared with those who were not vaccinated (mean age, 44.8 vs 40.7 years, respectively) and male sex (31.4% vs 17.7%). Symptomatic SARS-CoV-2 infection occurred in 8 fully vaccinated health care workers and 38 unvaccinated health care workers (incidence rate, 4.7 vs 149.8 per 100 000 person-days, respectively, adjusted IRR, 0.03 [95% CI, 0.01-0.06]). Asymptomatic SARS-CoV-2 infection occurred in 19 fully vaccinated health care workers and 17 unvaccinated health care workers (incidence rate, 11.3 vs 67.0 per 100 000 person-days, respectively, adjusted IRR, 0.14 [95% CI, 0.07-0.31]). The results were qualitatively unchanged by the propensity score sensitivity analysis. Conclusions and Relevance Among health care workers at a single center in Tel Aviv, Israel, receipt of the BNT162b2 vaccine compared with no vaccine was associated with a significantly lower incidence

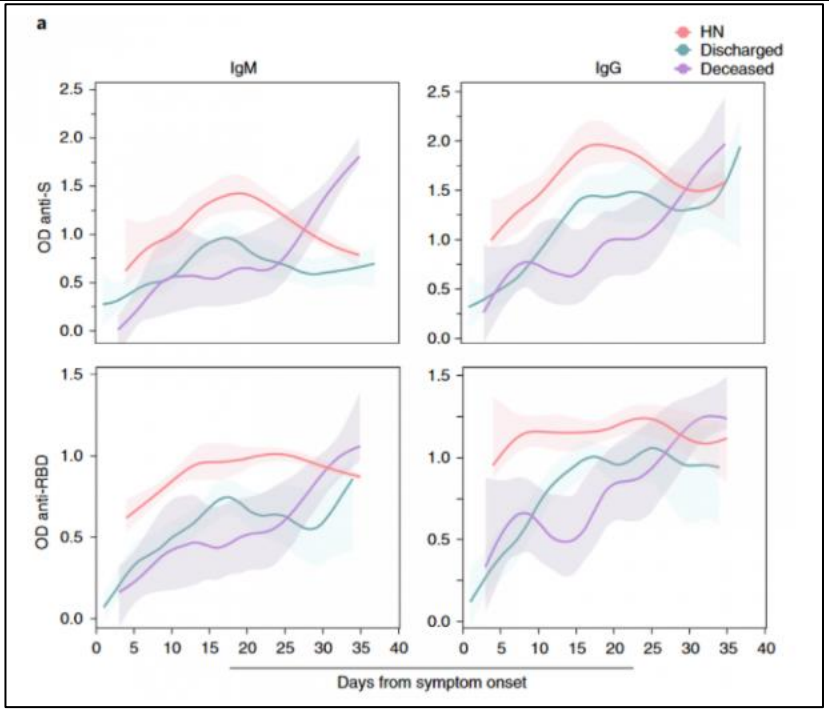
			of symptomatic and asymptomatic SARS-CoV-2 infection more than 7 days after the second dose. Findings are limited by the observational design. **Figure 3. Cumulative Incidence of SARS-CoV-2 Infection Among Vaccinated, Propensity Score–Matched Vaccinated, and Unvaccinated Participants Screened for SARS-CoV-2 Infection** 
Tang L et al JAMA https://jamanetwork.com/journals/jama/fullarticle/2779854	Asymptomatic and Symptomatic SARS-CoV-2 Infections After BNT162b2 Vaccination in a Routinely Screened Workforce	Conclusioni analoghe allo studio precedente sulla riduzione delle infezioni asintomatiche da SARS-CoV-2 negli operatori sanitari vaccinati rispetto ai non vaccinati.	A 2-dose regimen of the BNT162b2 vaccine (Pfizer-BioNTech) against SARS-CoV-2 was authorized in December 2020 based on reported 94.8% efficacy.1 Although an association between vaccination and a reduction in symptomatic disease has been well described, an association with asymptomatic infection remains unclear. **Figure. Cumulative Incidence of COVID-19 Against SARS-CoV-2 Infections After the First Dose** 
Vasquez CR et al Chest	Identification of distinct clinical subphenotypes in critically ill patients with COVID-19	Identificazione di fenotipi clinico/laboratoristici nei pazienti critici con COVID-19.	Background : Subphenotypes have been identified in patients with sepsis and acute respiratory distress syndrome (ARDS), and are associated with different outcomes and response to therapies. Research Question

https://journal.chestnet.org/article/S0012-3692(21)00874-6/fulltext			Can unique subphenotypes be identified among critically ill patients with coronavirus disease 2019 (COVID-19)? Study Design & Methods: Using data from a multicenter cohort study that enrolled critically ill patients with COVID-19 from 67 hospitals across the United States, we randomly divided centers into Discovery and Replication cohorts. We utilized latent class analysis independently in each cohort to identify subphenotypes based on clinical and laboratory variables. We then analyzed the associations of subphenotypes with 28-day mortality. Results : Latent class analysis identified four subphenotypes (SP) with consistent characteristics across Discovery (45 centers, n=2,188) and Replication (22 centers, n=1,112) cohorts. SP1 was characterized by shock, acidemia, and multi-organ dysfunction, including acute kidney injury treated with renal replacement therapy. SP2 was characterized by high C-reactive protein, early need for mechanical ventilation, and the highest rate of ARDS. SP3 had the highest burden of chronic diseases, while SP4 had limited chronic disease burden and mild physiologic abnormalities. 28-day mortality in the Discovery cohort ranged from 20.6% (SP4) to 52.9% (SP1). Mortality across subphenotypes remained different after adjustment for demographics, comorbidities, organ dysfunction and illness severity, regional and hospital factors: compared with SP4, SP1 relative risk (RR) 1.67 (95% CI 1.36-2.03); SP2 RR 1.39 (1.17-1.65); SP3 RR 1.39 (1.15-1.67). Findings were similar in the Replication cohort. Interpretation : We identified four subphenotypes of COVID-19 critical illness with distinct patterns of clinical and laboratory characteristics, comorbidity burden, and mortality.

			 SP1 / SP2 / SP3 / SP4 Class-Defining Variables: Shock, Acidemia, ↑ D-dimer ↑ Ferritin, ↑ Procalcitonin / Fever, Leukocytosis, ↑ CRP, Early Respiratory Failure / ↑ Serum Creatinine, ↓ Hemoglobin / Less Shock, Less Organ Dysfunction Baseline Characteristics: ↑ Black, Diabetes, Cardiovascular Disease / ↑ Hispanic, Fewer Comorbidities / ↑ Female, ↑ Black, Diabetes, Cardiovascular Disease, Immune Suppression / ↑ Hispanic, ↑ BMI, Fewer Comorbidities Clinical Outcomes: ↑ Thrombosis, ↑↑ AKI / ↑ ARDS, ↑ Thrombosis, ↑ Secondary Infections / ↓ AKI Mortality: 53% / 43% / 36% / 23% Prevalence: 12% / 29% / 22% / 37%
Pottegard A et al BMJ https://www.bmj.com/content/373/bmj.n1114	Arterial events, venous thromboembolism, thrombocytopenia, and bleeding after vaccination with Oxford-AstraZeneca ChAdOx1-S in Denmark and Norway: population based cohort study	Incidenza di eventi tromboembolici venosi e trombosi venosa cérébrale su quasi 300.000 vaccinati con AstraZeneca contro SARS-CoV-2.	Objective To assess rates of cardiovascular and haemostatic events in the first 28 days after vaccination with the Oxford-AstraZeneca vaccine ChAdOx1-S in Denmark and Norway and to compare them with rates observed in the general populations. Design Population based cohort study. Setting Nationwide healthcare registers in Denmark and Norway. Participants All people aged 18-65 years who received a first vaccination with ChAdOx1-S from 9 February 2021 to 11 March 2021. The general populations of Denmark (2016-18) and Norway (2018-19) served as comparator cohorts. Main outcome measures Observed 28 day rates of hospital contacts for incident arterial events, venous thromboembolism, thrombocytopenia/coagulation disorders, and bleeding among vaccinated people compared with expected rates, based on national age and sex specific background rates from the general populations of the two countries. Results The vaccinated cohorts comprised 148 792 people in Denmark (median age 45 years, 80% women) and 132 472 in Norway (median age 44 years, 78% women), who received their

			first dose of ChAdOx1-S. Among 281 264 people who received ChAdOx1-S, the standardised morbidity ratio for arterial events was 0.97 (95% confidence interval 0.77 to 1.20). 59 venous thromboembolic events were observed in the vaccinated cohort compared with 30 expected based on the incidence rates in the general population, corresponding to a standardised morbidity ratio of 1.97 (1.50 to 2.54) and 11 (5.6 to 17.0) excess events per 100 000 vaccinations. A higher than expected rate of cerebral venous thrombosis was observed: standardised morbidity ratio 20.25 (8.14 to 41.73); an excess of 2.5 (0.9 to 5.2) events per 100 000 vaccinations. The standardised morbidity ratio for any thrombocytopenia/coagulation disorders was 1.52 (0.97 to 2.25) and for any bleeding was 1.23 (0.97 to 1.55). 15 deaths were observed in the vaccine cohort compared with 44 expected. Conclusions Among recipients of ChAdOx1-S, increased rates of venous thromboembolic events, including cerebral venous thrombosis, were observed. For the remaining safety outcomes, results were largely reassuring, with slightly higher rates of thrombocytopenia/coagulation disorders and bleeding, which could be influenced by increased surveillance of vaccine recipients. The absolute risks of venous thromboembolic events were, however, small, and the findings should be interpreted in the light of the proven beneficial effects of the vaccine, the context of the given country, and the limitations to the generalisability of the study findings.
Lucas C et al Nature Medicine	Delayed production of neutralizing antibodies correlates with fatal COVID-19	Associazione fra mortalità per COVID-19 e ritardata produzione di anticorpi neutralizzanti nei primi 14 giorni di malattia.	Recent studies have provided insights into innate and adaptive immune dynamics in coronavirus disease 2019 (COVID-19). However, the exact features of antibody responses that govern COVID-19 disease outcomes remain unclear. In this study, we analyzed humoral immune responses in 229 patients with

https://www.nature.com/articles/s41591-021-01355-0			asymptomatic, mild, moderate and severe COVID-19 over time to probe the nature of antibody responses in disease severity and mortality. We observed a correlation between anti-spike (S) immunoglobulin G (IgG) levels, length of hospitalization and clinical parameters associated with worse clinical progression. Although high anti-S IgG levels correlated with worse disease severity, such correlation was time dependent. Deceased patients did not have higher overall humoral response than discharged patients. However, they mounted a robust, yet delayed, response, measured by anti-S, anti-receptor-binding domain IgG and neutralizing antibody (NAb) levels compared to survivors. Delayed seroconversion kinetics correlated with impaired viral control in deceased patients. Finally, although sera from 85% of patients displayed some neutralization capacity during their disease course, NAb generation before 14 d of disease onset emerged as a key factor for recovery. These data indicate that COVID-19 mortality does not correlate with the cross-sectional antiviral antibody levels per se but, rather, with the delayed kinetics of NAb production.

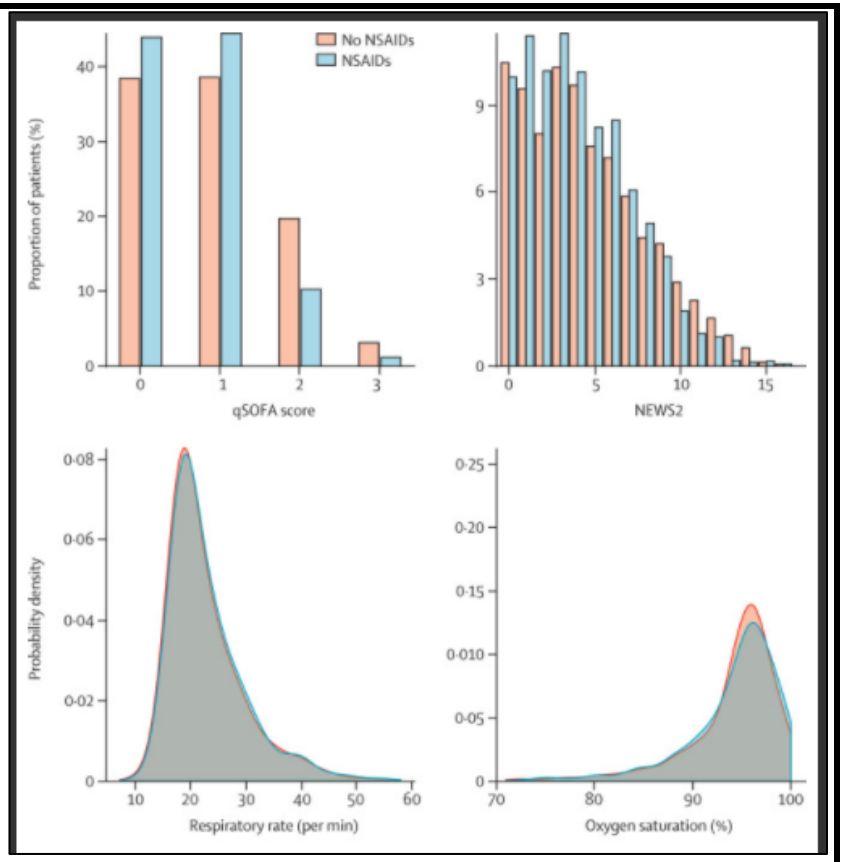
			
Nunes MC et al CID https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciab398/6265294	SARS-CoV-2 infection among healthcare workers in South Africa: a longitudinal cohort study	Incidenza delle infezioni da SARS-CoV-2 nel personale di un ospedale del Sudafrica.	From April to September 2020, we investigated SARS-CoV-2 infections in a cohort of 396 healthcare workers (HCWs) from five departments at Chris Hani Baragwanath Hospital, South Africa. Overall, 34.6% of HCWs had PCR-confirmed SARS-CoV-2 infection (132.1 [95%CI: 111.8, 156.2] per 1,000 person-months), an additional 27 infections were identified by serology. HCWs in the Internal Medicine department had the highest rate of infection (61.7%). Among PCR-confirmed cases, 10.4% remained asymptomatic, 30.4% were pre-symptomatic and 59.3% symptomatic.

Wu X et al The Lancet https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(21)00174-0/fulltext	3-month, 6-month, 9-month, and 12-month respiratory outcomes in patients following COVID-19-related hospitalisation: a prospective study	Follow up fino a 12 mesi di una coorte di 135 pazienti con storia di COVID-19, in cui le prove di funzionalità respiratoria rimangono alterate nel 12% dei casi e vi sono alterazioni TC nel 24%.	Background The consequences of COVID-19 in those who recover from acute infection requiring hospitalisation have yet to be clearly defined. We aimed to describe the temporal trends in respiratory outcomes over 12 months in patients hospitalised for severe COVID-19 and to investigate the associated risk factors. Methods In this prospective, longitudinal, cohort study, patients admitted to hospital for severe COVID-19 who did not require mechanical ventilation were prospectively followed up at 3 months, 6 months, 9 months, and 12 months after discharge from Renmin Hospital of Wuhan University, Wuhan, China. Patients with a history of hypertension; diabetes; cardiovascular disease; cancer; and chronic lung disease, including asthma or chronic obstructive pulmonary disease; or a history of smoking documented at time of hospital admission were excluded at time of electronic case-note review. Patients who required intubation and mechanical ventilation were excluded given the potential for the consequences of mechanical ventilation itself to influence the factors under investigation. During the follow-up visits, patients were interviewed and underwent physical examination, routine blood test, pulmonary function tests (ie, diffusing capacity of the lungs for carbon monoxide [DLCO]; forced expiratory flow between 25% and 75% of forced vital capacity [FVC]; functional residual capacity; FVC; FEV1; residual volume; total lung capacity; and vital capacity), chest high-resolution CT (HRCT), and 6-min walk distance test, as well as assessment using a modified Medical Research Council dyspnoea scale (mMRC). Findings

			Between Feb 1, and March 31, 2020, of 135 eligible patients, 83 (61%) patients participated in this study. The median age of participants was 60 years (IQR 52–66). Temporal improvement in pulmonary physiology and exercise capacity was observed in most patients; however, persistent physiological and radiographic abnormalities remained in some patients with COVID-19 at 12 months after discharge. We found a significant reduction in DLCO over the study period, with a median of 77% of predicted (IQR 67–87) at 3 months, 76% of predicted (68–90) at 6 months, and 88% of predicted (78–101) at 12 months after discharge. At 12 months after discharge, radiological changes persisted in 20 (24%) patients. Multivariate logistic regression showed increasing odds of impaired DLCO associated with female sex (odds ratio 8·61 [95% CI 2·83–26·2; p=0·0002) and radiological abnormalities were associated with peak HRCT pneumonia scores during hospitalisation (1·36 [1·13–1·62]; p=0·0009). Interpretation In most patients who recovered from severe COVID-19, dyspnoea scores and exercise capacity improved over time; however, in a subgroup of patients at 12 months we found evidence of persistent physiological and radiographic change. A unified pathway for the respiratory follow-up of patients with COVID-19 is required.
Voss W et al Science https://science.sciencemag.org/content/early/2021/05/03/science.abg5268	Prevalent, protective, and convergent IgG recognition of SARS-CoV-2 non-RBD spike epitopes	Caratterizzazione delle IgG dirette contro la proteina spike di SARS-CoV-2 in 4 soggetti guariti dall'infezione : si osserva che la gran parte delle immunoglobuline è affine a epitopi esterni alla porzione legante il recettore (RBD).	The molecular composition and binding epitopes of the immunoglobulin G (IgG) antibodies that circulate in blood plasma following SARS-CoV-2 infection are unknown. Proteomic deconvolution of the IgG repertoire to the spike glycoprotein in convalescent subjects revealed that the response is directed predominantly (>80%) against epitopes residing outside the receptor-binding domain (RBD). In one subject, just four IgG lineages accounted for 93.5% of the response, including an N-

			terminal domain (NTD)-directed antibody that was protective against lethal viral challenge. Genetic, structural, and functional characterization of a multi-donor class of “public” antibodies revealed an NTD epitope that is recurrently mutated among emerging SARS-CoV-2 variants of concern. These data show that “public” NTD-directed and other non-RBD plasma antibodies are prevalent and have implications for SARS-CoV-2 protection and antibody escape.
Drake TM et al The Lancet https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(21)00104-1/fulltext	Non-steroidal anti-inflammatory drug use and outcomes of COVID-19 in the ISARIC Clinical Characterisation Protocol UK cohort: a matched, prospective cohort study	L’utilizzo di antinfiammatori non steroidei non si associa a maggiore mortalità o gravità dell’infezione da SARS-CoV-2 in una ampia coorte di oltre 78.000 pazienti ospedalizzati per COVID-19 nel Regno Unito.	Background : Early in the pandemic it was suggested that pre-existing use of non-steroidal anti-inflammatory drugs (NSAIDs) could lead to increased disease severity in patients with COVID-19. NSAIDs are an important analgesic, particularly in those with rheumatological disease, and are widely available to the general public without prescription. Evidence from community studies, administrative data, and small studies of hospitalised patients suggest NSAIDs are not associated with poorer COVID-19 outcomes. We aimed to characterise the safety of NSAIDs and identify whether pre-existing NSAID use was associated with increased severity of COVID-19 disease. Methods : This prospective, multicentre cohort study included patients of any age admitted to hospital with a confirmed or highly suspected SARS-CoV-2 infection leading to COVID-19 between Jan 17 and Aug 10, 2020. The primary outcome was in-hospital mortality, and secondary outcomes were disease severity at presentation, admission to critical care, receipt of invasive ventilation, receipt of non-invasive ventilation, use of supplementary oxygen, and acute kidney injury. NSAID use was required to be within the 2 weeks before hospital admission. We used logistic regression to estimate the effects of NSAIDs and adjust for confounding variables. We used propensity score matching to

			further estimate effects of NSAIDS while accounting for covariate differences in populations. Results :Between Jan 17 and Aug 10, 2020, we enrolled 78 674 patients across 255 health-care facilities in England, Scotland, and Wales. 72 179 patients had death outcomes available for matching; 40 406 (56·2%) of 71 915 were men, 31 509 (43·8%) were women. In this cohort, 4211 (5·8%) patients were recorded as taking systemic NSAIDs before admission to hospital. Following propensity score matching, balanced groups of NSAIDs users and NSAIDs non-users were obtained (4205 patients in each group). At hospital admission, we observed no significant differences in severity between exposure groups. After adjusting for explanatory variables, NSAID use was not associated with worse in-hospital mortality (matched OR 0·95, 95% CI 0·84–1·07; p=0·35), critical care admission (1·01, 0·87–1·17; p=0·89), requirement for invasive ventilation (0·96, 0·80–1·17; p=0·69), requirement for non-invasive ventilation (1·12, 0·96–1·32; p=0·14), requirement for oxygen (1·00, 0·89–1·12; p=0·97), or occurrence of acute kidney injury (1·08, 0·92–1·26; p=0·33). Interpretation : NSAID use is not associated with higher mortality or increased severity of COVID-19. Policy makers should consider reviewing issued advice around NSAID prescribing and COVID-19 severity.

			
Lao X et al Scientific Reports https://doi.org/10.1038/s41598-021-88473-4	The epidemiological characteristics and effectiveness of countermeasures to contain coronavirus disease 2019 in Ningbo City, Zhejiang Province, China.	Modello di trasmissione dell'infezione da SARS-CoV-2 applicato per la gestione della diffusione in una città della Cina.	A novel coronavirus (SARS-CoV-2) has spread worldwide and led to high disease burden around the world. This study aimed to explore the key parameters of SARS-CoV-2 infection and to assess the effectiveness of interventions to control the coronavirus disease 2019 (COVID-19). A susceptible-exposed-infectious-asymptomatic-recovered (SEIAR) model was developed for the assessment. The information of each confirmed case and asymptomatic infection was collected from Ningbo Center for Disease Control and Prevention (CDC) to calculate the key parameters of the model in Ningbo City, China. A total of 157 confirmed COVID-19 cases

			(including 51 imported cases and 106 secondary cases) and 30 asymptomatic infections were reported in Ningbo City. The proportion of asymptomatic infections had an increasing trend. The proportion of elder people in the asymptomatic infections was lower than younger people, and the difference was statistically significant (Fisher's Exact Test, P = 0.034). There were 22 clusters associated with 167 SARS-CoV-2 infections, among which 29 cases were asymptomatic infections, accounting for 17.37%. We found that the secondary attack rate (SAR) of asymptomatic infections was almost the same as that of symptomatic cases, and no statistical significance was observed (chi(2) = 0.052, P = 0.819) by Kruskal-Wallis test. The effective reproduction number (Reff) was 1.43, which revealed that the transmissibility of SARS-CoV-2 was moderate. If the interventions had not been strengthened, the duration of the outbreak would have lasted about 16 months with a simulated attack rate of 44.15%. The total attack rate (TAR) and duration of the outbreak would increase along with the increasing delay of intervention. SARS-CoV-2 had moderate transmissibility in Ningbo City, China. The proportion of asymptomatic infections had an increase trend. Asymptomatic infections had the same transmissibility as symptomatic infections. The integrated interventions were implemented at different stages during the outbreak, which turned out to be exceedingly effective in China.
Cavalcante Pinto VJ et al International Journal of Infectious Diseases https://doi.org/10.1016/j.ijid.2021.04.086	Prevalence of COVID-19 in children, adolescents, and adults in remote education situation in the city of Fortaleza - Brazil.	Studio retrospettivo su sierologia e tampone nasofaringeo per SARS-CoV-2 in una città del Brasile nel periodo novembre-dicembre 2020, in cui le scuole erano chiuse : gli adolescenti di età 10-19	OBJECTIVES: A retrospective study was conducted on a database of the COVID-19 Tracking Program in schoolchildren to identify the prevalence of COVID-19 through serology and RT-PCR in children, adolescents, and adults. METHODS: The data was composed of sociodemographic and clinical variables, results of serological tests (IgM and IgG), and RT-PCR results of IgM-positive individuals. The statistical analysis was performed with a 5% significance level.

		anni avevano sierologia positiva significativamente più spesso degli adulti. Gli adulti avevano più spesso tampone positivo. I bambini sotto i nove anni erano più spesso asintomatici rispetto agli altri gruppi.	RESULTS: Among the 423 children, 107 (25.3%) exhibited seroprevalence, with IgG, IgM, or IgG/IgM. Among 854 adolescents, 250 (29.2%) had positive serology, and among 282 adults, 59 (20.9%) were positive. The frequency of positivity on RT-PCR for SARS-CoV-2 was 3.5%, 3.6%, and 6.0 respectively in children, adolescents, and adults. Children had a lower incidence of symptoms than adolescents (p = 0.001) or adults (p = 0.003); the most frequent were fever, ageusia, anosmia, headache, dry cough, sore throat, muscle pain, runny nose, dyspnea, and diarrhea. CONCLUSIONS: We concluded that the prevalence rate for all groups was 26.7% in serology and 4.04% in RT-PCR. Children had lower rates of IgM and fewer symptoms compared to adolescents and adults. The data suggests the potential for transmissibility in all age groups.
Benotmane I et al American Journal of Transplantation https://doi.org/10.1111/ajt.16636	Long-term shedding of viable SARS-CoV-2 in kidney transplant recipients with COVID-19.	Quattro pazienti su 16 trapiantati di rene con infezione sintomatica da SARS-CoV-2 e tampone persistentemente positivo presenta virus capace di replicare in coltura cellulare fino a oltre 3 settimane dall'esordio dei sintomi. Gli autori suggeriscono di mantenere in isolamento i soggetti trapiantati di rene fino a negatività del tampone nasofaringeo.	The exact duration of viable SARS-CoV-2 shedding in kidney transplant recipients (KTRs) remains unclear. Here, we retrospectively investigated this issue using cell cultures of SARS-CoV-2 RT-PCR-positive nasopharyngeal samples (n = 40) obtained from 16 KTRs with symptomatic COVID-19 up to 39 days from symptom onset. A length of viable SARS-CoV-2 shedding >3 weeks from the onset of symptoms was identified in four KTRs (25%). These results suggest that a significant proportion of KTRs can shed viable SARS-CoV-2 for at least three weeks, which may favor the emergence of new variants. Based on these data, we recommend prolonging the isolation of KTRs with COVID-19 until negative SARS-CoV-2 RT-PCR testing.

Martinez-Garcia L et al Eurosurveillance https://www.ncbi.nlm.nih.gov/research/coronavirus/publication/33960288	The silent epidemic of lymphogranuloma venereum inside the COVID-19 pandemic in Madrid, Spain, March 2020 to February 2021.	Nell'unico ospedale di Madrid che somministra la PREP, si è osservato un aumento dei casi di linfogranuloma venereo (C.trachomatis) durante la terza ondata di pandemia di COVID-19, preceduta da una riduzione durante il lockdown di marzo-aprile 2020 : gli autori ritengono che si tratti dell'effetto di un minor numero di diagnosi all'inizio dell'anno, con maggiore possibilità di progressione e trasmissione nei mesi successivi.	Despite social distancing measures implemented in Madrid to prevent the propagation of SARS-CoV-2, a significant increase (57.1%; 28.5 to 38.5 cases/month) in cases of lymphogranuloma venereum was detected during the COVID-19 pandemic. This unusual scenario might have accelerated a shift in Chlamydia trachomatis (CT) epidemiology towards a higher proportion of L genotypes compared with non-L genotypes in CT-positive samples. Our data underscore the importance of surveillance of sexually transmitted infections during the pandemic, in particular among vulnerable populations.