RICERCA BIBLIOGRAFICA COVID 19

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FONDAZIONE POLICLINICO UNIVERSITARIO A. GEMELLI IRCCS, UOC MALATTIE INFETTIVE

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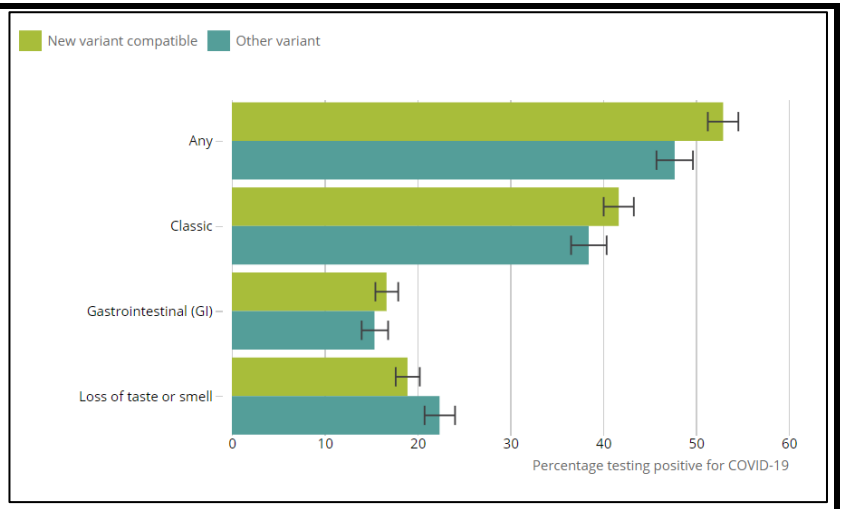
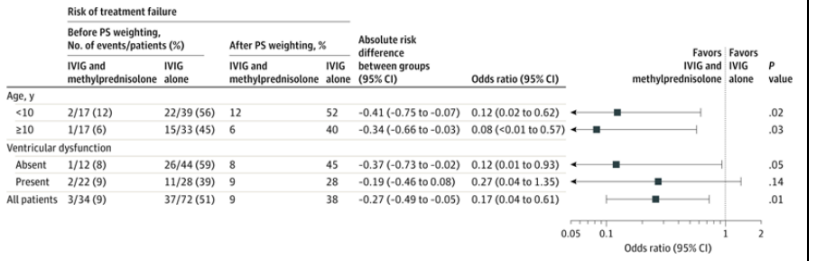
AUTORE/RIVISTA	TITOLO	OUTCOME PRINCIPALE	ABSTRACT
Steel K et al Office for National Statistics https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/coronaviruscovid19infectionsinthecommunityinengland/characteristicsofpeopletestingpositiveforcovid19inengland27january2021	Coronavirus (COVID-19) Infection Survey: characteristics of people testing positive for COVID-19 in England, 27 January 2021	Le persone con test positivo per SARS-CoV-2 compatibile con infezione da variante « inglese » (basso ciclo soglia della PCR e solo 2 geni su 3 positivi - perché il gene S mutato non viene amplificato; la diagnosi non è basata dunque sul sequenziamento) sembrano avere una clinica diversa dai wild-type secondo questa survey condotta nel Regno Unito : maggiore frequenza di sintomi in generale, minore frequenza di anosmia e ageusia.	In recent weeks, there is evidence that the percentage testing positive for the coronavirus (COVID-19) has decreased in non-patient facing job roles but increased amongst those in patient-facing roles in England. The largest differences in reported symptoms between the new variant compatible positives and those not compatible with the new UK variant were found in cough, sore throat, fatigue and myalgia. The number of socially distanced and physical contacts that adults and school age children had with people outside their household decreased in January 2021. Of those in school Year 12 to 24 years old, the highest percentage testing positive was among those who are employed.

			
Mahase E et al BMJ https://www.bmj.com/content/372/bmj.n288	Covid-19: Sore throat, fatigue, and myalgia are more common with new UK variant	Commento al dato dell'articolo precedente sulla clinica dei pazienti con sospetta infezione da SARS-CoV-2 variante « inglese ». Più sintomi potrebbero essere uno dei fattori alla base della maggiore contagiosità.	People infected with the new variant of covid-19 discovered in the South East of England (known as B.1.1.7 or VUI 202012/01) are more likely to have a cough, sore throat, fatigue, or myalgia than those infected with other variants, the Office for National Statistics has reported.
Ospedale Pediatrico Bambino Gesù http://www.ospedalebambinogesu.it/documents/10179/1917840/Comunicato+Stampa+-	COMUNICATO STAMPA del 28 gennaio 2021	Comunicato stampa dell'Ospedale Bambino Gesù di Roma in merito alla sorveglianza sierologica degli oltre 3000 Operatori vaccinati contro SARS-CoV-2.	A 21 giorni dalla somministrazione della prima dose del vaccino anti-SARS-CoV-2, il 99% dei vaccinati ha sviluppato anticorpi contro il virus. Sono i dati del primo monitoraggio realizzato tra gli operatori sanitari dell'Ospedale Pediatrico Bambino Gesù all'équipe della Medicina del Lavoro e della struttura complessa di Microbiologia, con il supporto dell'Immunologia clinica e il coordinamento della Direzione sanitaria.

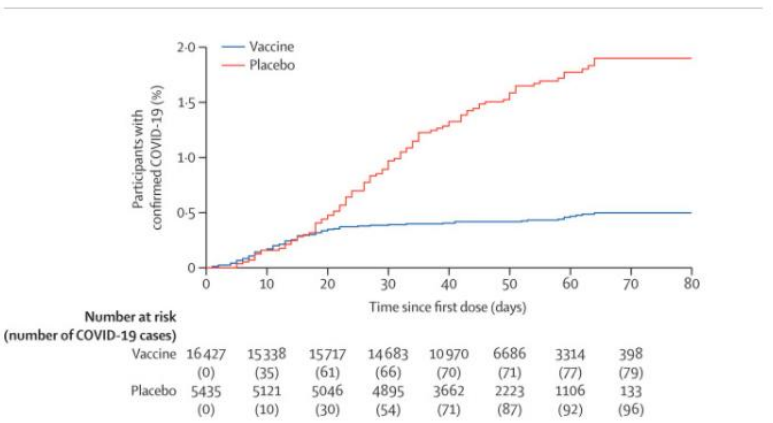
+A+21+GIORNI+DALLA+PRIMA+DOSE%2C%20ANTICORPI+CONTRO+IL+COVID+PER+IL+99+PER+CENTO+DEI+SANITARI+VACCINATI/dea4c580-e04b-43be-91b3-0aed33df69f5?version=1.0			
Ouldali N et al JAMA https://jamanetwork.com/journals/jama/fullarticle/2776054	Association of Intravenous Immunoglobulins Plus Methylprednisolone vs Immunoglobulins Alone With Course of Fever in Multisystem Inflammatory Syndrome in Children	Studio retrospettivo osservazionale su 111 bambini con MIS-C (sindrome infiammatoria multisistemica del bambino) da COVID-19 : il trattamento con anticorpi monoclonali più metilprednisolone è associato a minore tasso di fallimento rispetto ai soli monoclonali.	Importance Multisystem inflammatory syndrome in children (MIS-C) is the most severe pediatric disease associated with severe acute respiratory syndrome coronavirus 2 infection, potentially life-threatening, but the optimal therapeutic strategy remains unknown. Objective To compare intravenous immunoglobulins (IVIG) plus methylprednisolone vs IVIG alone as initial therapy in MIS-C. Design, Setting, and Participants Retrospective cohort study drawn from a national surveillance system with propensity score–matched analysis. All cases with suspected MIS-C were reported to the French National Public Health Agency. Confirmed MIS-C cases fulfilling the World Health Organization definition were included. The study started on April 1, 2020, and follow-up ended on January 6, 2021. Exposures IVIG and methylprednisolone vs IVIG alone. Main Outcomes and Measures The primary outcome was persistence of fever 2 days after the introduction of initial therapy or recrudescence of fever within 7 days, which defined treatment failure. Secondary outcomes included a second-line therapy, hemodynamic support, acute left ventricular dysfunction after first-line therapy, and length of stay in the pediatric intensive care unit.

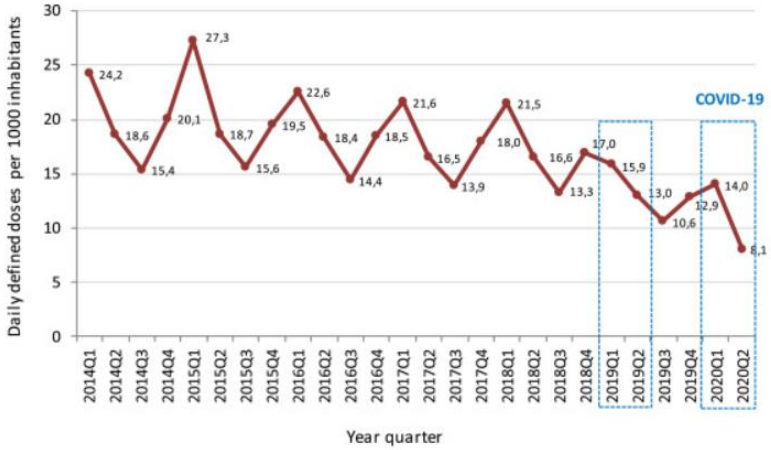
			The primary analysis involved propensity score matching with a minimum caliper of 0.1. Results Among 181 children with suspected MIS-C, 111 fulfilled the World Health Organization definition (58 females [52%]; median age, 8.6 years [interquartile range, 4.7 to 12.1]). Five children did not receive either treatment. Overall, 3 of 34 children (9%) in the IVIG and methylprednisolone group and 37 of 72 (51%) in the IVIG alone group did not respond to treatment. Treatment with IVIG and methylprednisolone vs IVIG alone was associated with lower risk of treatment failure (absolute risk difference, −0.28 [95% CI, −0.48 to −0.08]; odds ratio [OR], 0.25 [95% CI, 0.09 to 0.70]; P = .008). IVIG and methylprednisolone therapy vs IVIG alone was also significantly associated with lower risk of use of second-line therapy (absolute risk difference, −0.22 [95% CI, −0.40 to −0.04]; OR, 0.19 [95% CI, 0.06 to 0.61]; P = .004), hemodynamic support (absolute risk difference, −0.17 [95% CI, −0.34 to −0.004]; OR, 0.21 [95% CI, 0.06 to 0.76]), acute left ventricular dysfunction occurring after initial therapy (absolute risk difference, −0.18 [95% CI, −0.35 to −0.01]; OR, 0.20 [95% CI, 0.06 to 0.66]), and duration of stay in the pediatric intensive care unit (median, 4 vs 6 days; difference in days, −2.4 [95% CI, −4.0 to −0.7]). Conclusions and Relevance Among children with MIS-C, treatment with IVIG and methylprednisolone vs IVIG alone was associated with a more favorable fever course. Study interpretation is limited by the observational design.

			Figure 2. Association Between First-line Therapy Group and Treatment Failure Depending on Age and Acute Left Ventricular Dysfunction  Shown are subgroup-specific odds ratios for all patients and those older or younger than 10 years of age and with or without acute left ventricular dysfunction (defined by left ventricular ejection fraction <55%) at baseline. Odds ratios are plotted as squares; the horizontal lines represent 95% CIs. All analyses displayed involved using the propensity score analysis with the inverse probability of treatment weighting approach. Age was transformed into a binary variable using the receiver operating characteristic curve to define the optimized cut-off value. The interaction test *P* value for age≥or <10 years was *P* = .78 and for presence or absence of initial acute left ventricular dysfunction was *P* = .74. IVIG indicates intravenous immunoglobulins.
Ji L et al Science https://science.sciencemag.org/content/371/6528/474.1	Disinfection spreads antimicrobial resistance	Riflessione sui rischi connessi al massiccio utilizzo di disinfettanti nel corso della pandemia di COVID-19.	During the COVID-19 pandemic, the use of disinfectants, alcohol-based hand sanitizers, and antiseptic hand wash has surged. As a precaution, many authorities have also increased chlorine dosage in wastewater disinfection to achieve a free chlorine residual concentration greater than 6.5 mg/liter, despite evidence that a free chlorine residual of just above 0.5 mg/liter can completely inactivate human coronavirus. These chemicals can reach aquatic and terrestrial environments through direct discharge of wastewater into receiving waters. Disinfection protocols put in place to prevent COVID-19 should be limited to the minimum required to kill severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and weighed against their potential to increase antimicrobial resistance (AMR).
Lewis D	COVID-19 rarely spreads through surfaces. So why are we still deep cleaning?	La trasmissione di SARS-CoV-2 tramite oggetti appare irrilevante, ma difficile da studiare, e le	Part of the problem is that specialists can't rule out the possibility of fomite transmission, and the guidance from many health agencies about how to deal with surfaces has been unclear as the science has changed. In November, Chinese authorities introduced guidelines

Nature https://www.nature.com/articles/d41586-021-00251-4		indicazioni in merito da parte delle autorità sanitarie di tutto il mondo sono state contraddittorie.	requiring disinfection of imported frozen-food packages. And the CDC directs people to a comprehensive list of agents that kill SARS-C0V-2 and says: “Frequent disinfection of surfaces and objects touched by multiple people is important.”
Logunov DY et al The Lancet https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00234-8/fulltext	Safety and efficacy of an rAd26 and rAd5 vector-based heterologous prime-boost COVID-19 vaccine: an interim analysis of a randomised controlled phase 3 trial in Russia	Esito dell’analisi *ad interim* del trial clinico di fase III sul vaccino russo contro SARS-CoV-2 (Sputnik V) a vettore adenovirale : efficacia del 91.6% nel prevenire l’infezione in tutte le fasce d’età sopra i 18 anni.	Background : A heterologous recombinant adenovirus (rAd)-based vaccine, Gam-COVID-Vac (Sputnik V), showed a good safety profile and induced strong humoral and cellular immune responses in participants in phase 1/2 clinical trials. Here, we report preliminary results on the efficacy and safety of Gam-COVID-Vac from the interim analysis of this phase 3 trial. Methods : We did a randomised, double-blind, placebo-controlled, phase 3 trial at 25 hospitals and polyclinics in Moscow, Russia. We included participants aged at least 18 years, with negative SARS-CoV-2 PCR and IgG and IgM tests, no infectious diseases in the 14 days before enrolment, and no other vaccinations in the 30 days before enrolment. Participants were randomly assigned (3:1) to receive vaccine or placebo, with stratification by age group. Investigators, participants, and all study staff were masked to group assignment. The vaccine was administered (0·5 mL/dose) intramuscularly in a prime-boost regimen: a 21-day interval between the first dose (rAd26) and the second dose (rAd5), both vectors carrying the gene for the full-length SARS-CoV-2 glycoprotein S. The primary outcome was the proportion of participants with PCR-confirmed COVID-19 from day 21 after receiving the first dose. All analyses excluded participants with protocol violations: the primary outcome was assessed in participants who had received two doses of vaccine or placebo,

			serious adverse events were assessed in all participants who had received at least one dose at the time of database lock, and rare adverse events were assessed in all participants who had received two doses and for whom all available data were verified in the case report form at the time of database lock. The trial is registered at ClinicalTrials.gov (NCT04530396). Findings : Between Sept 7 and Nov 24, 2020, 21 977 adults were randomly assigned to the vaccine group (n=16 501) or the placebo group (n=5476). 19 866 received two doses of vaccine or placebo and were included in the primary outcome analysis. From 21 days after the first dose of vaccine (the day of dose 2), 16 (0·1%) of 14 964 participants in the vaccine group and 62 (1·3%) of 4902 in the placebo group were confirmed to have COVID-19; vaccine efficacy was 91·6% (95% CI 85·6–95·2). Most reported adverse events were grade 1 (7485 [94·0%] of 7966 total events). 45 (0·3%) of 16 427 participants in the vaccine group and 23 (0·4%) of 5435 participants in the placebo group had serious adverse events; none were considered associated with vaccination, with confirmation from the independent data monitoring committee. Four deaths were reported during the study (three [<0·1%] of 16 427 participants in the vaccine group and one [<0·1%] of 5435 participants in the placebo group), none of which were considered related to the vaccine. Interpretation : This interim analysis of the phase 3 trial of Gam-COVID-Vac showed 91·6% efficacy against COVID-19 and was well tolerated in a large cohort.

			 Figure 2 Kaplan-Meier cumulative incidence curves for the first symptomatic, PCR-positive COVID-19 after dose 1, in participants who received at least one dose of vaccine or placebo
Penalva G et al Clinical Microbiology and Infection https://www.clinicalmicrobiologyandinfection.com/article/S1198-743X(21)00048-3/fulltext	Effect of the COVID-19 pandemic on antibiotic use in primary care	In questo studio osservazionale effettuato in Andalusia, Spagna, il consumo di antibiotici sul territorio appare ridotto nel periodo pandemico rispetto all'anno precedente, salvo che per azitromicina.	We found that the overall use of antibiotics in the community decreased in the COVID period compared to the pre-COVID period. The mean reduction of total antibiotic consumption was -1.30 ± 1.18 DID between 2020Q1 and 2019Q1 (-7.6% pooled DID reduction; p<0.0001), whilst the mean reduction was -5.14 ± 1.31 DID between 2020Q2 and 2019Q2 (-36.8% pooled DID reduction; p<0.0001). The magnitude of this reduction was significantly greater between the second quarters than between the first quarters (mean difference = 3.84 ± 1.40 DID; p<0.0001). Larger reductions were also observed between the second quarters in most antibiotic groups: penicillins (-9.6% difference between 2020Q1 and 2019Q1 vs -41.3% difference between 2020Q2 and 2019Q2), cephalosporins (-3.8% vs -24.6%), macrolides (-6.9% vs -48.6%) and quinolones (-9.3% vs -30.5%). Except for azithromycin, which remained stable, consumption of strategic antibiotics decreased between the first quarters, ranging from -6.7% (p=0.001) for cefuroxime to -10.8% (p<0.0001) for amoxicillin. Larger reductions were found between the second quarters for all the individual antibiotics under study,

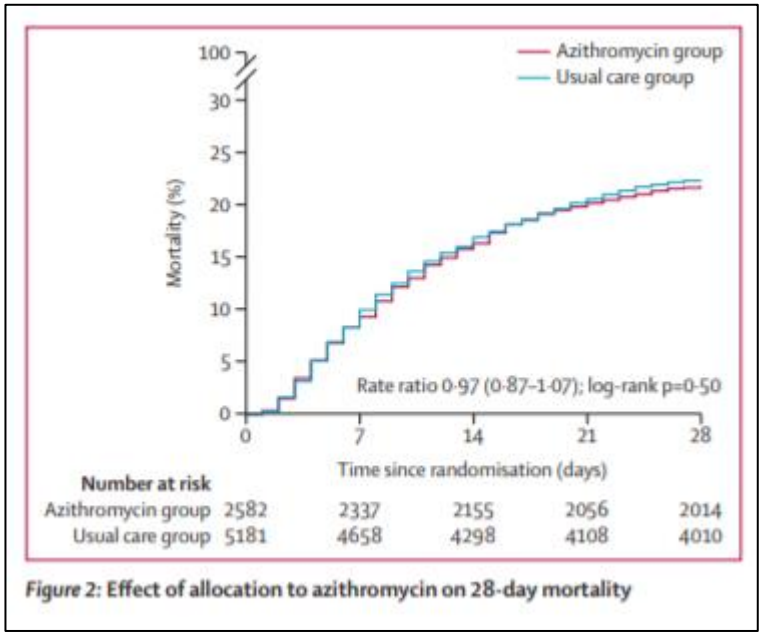
			azithromycin included, ranging from -27.0% (p<0.0001) for amoxicillin-clavulanate to -55.6% (p<0.0001) for amoxicillin. The quarterly time-series evolution of antimicrobial consumption since 2014, the starting year of the PIRASOA programme, shows a decreasing trend that is consolidated during the first two quarters of 2020 (Figure 1).  Total antimicrobial consumption values are presented as mean DDD of total systemic antibiotics (J01) and antifungals (J02) per 1000 inhabitants per year-quarter. From 2019Q1 onwards, consumption data were calculated following the WHO's ATC/DDD alterations 2019, available at: https://www.whocc.no/atc_ddd_index/updates_included_in_the_atc_ddd_index/
Zheng R et al BMC Experimental Hematology & Oncology https://ehoonline.biomedcentral.com/articles/10.1186/s40164-021-00202-9	COVID-19-associated coagulopathy: thromboembolism prophylaxis and poor prognosis in ICU	Studio retrospettivo su 180 pazienti ricoverati in terapia intensiva in Cina nella prima fase della pandemia di COVID-19 : la somministrazione di enoxaparina è associata a minore mortalità nel gruppo con D-dimero > 2 mg/l.	Background : Coronavirus disease 2019 (COVID-19) is associated with coagulation abnormalities which are indicators of higher mortality especially in severe cases. Methods : We studied patients with proven COVID-19 disease in the intensive care unit of Jinyintan Hospital, Wuhan, China from 30 to 2019 to 31 March 2020. Results : Of 180 patients, 89 (49.44 %) had died, 85 (47.22 %) had been discharged alive, and 6 (3.33 %) were still hospitalised by the

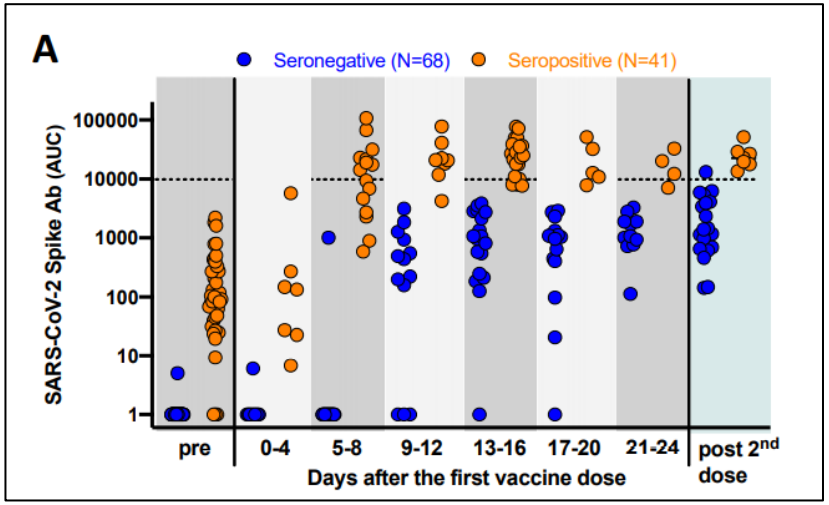
			end of data collection. A D-dimer concentration of > 0.5 mg/L on admission was significantly associated with 30 day mortality, and a D-dimer concentration of > 5 mg/L was found in a much higher proportion of non-survivors than survivors. Sepsis-induced coagulopathy (SIC) and disseminated intravascular coagulation (DIC) scoring systems were dichotomised as < 4 or ≥ 4 and < 5 or ≥ 5, respectively, and the mortality rate was significantly different between the two stratifications in both scoring systems. Enoxaparin was administered to 68 (37.78 %) patients for thromboembolic prophylaxis, and stratification by the D-dimer concentration and DIC score confirmed lower mortality in patients who received enoxaparin when the D-dimer concentration was > 2 than < 2 mg/L or DIC score was ≥ 5 than < 5. A low platelet count and low serum calcium concentration were also related to mortality. Conclusions : A D-dimer concentration of > 0.5 mg/L on admission is a risk factor for severe disease. A SIC score of > 4 and DIC score of > 5 may be used to predict mortality. Thromboembolic prophylaxis can reduce mortality only in patients with a D-dimer concentration of > 2 mg/L or DIC score of ≥ 5.
Guenezan J et al The Lancet https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30738-6/fulltext	Chlorhexidine plus alcohol versus povidone iodine plus alcohol, combined or not with innovative devices, for prevention of short-term peripheral venous catheter infection and failure (CLEAN 3 study): an investigator-initiated, open-label, single centre, randomised-	Le infezioni del torrente ematico sembrano complicare l'infezione da SARS-CoV-2 frequentemente ; in questo studio si dimostra che la disinfezione con clorexidina e alcool è superiore a quella con iodopovidone e alcool nella gestione dei cateteri venosi periferici.	Background : Two billion peripheral venous catheters are sold globally each year, but the optimal skin disinfection and types of devices are not well established. We aimed to show the superiority of disinfection with 2% chlorhexidine plus alcohol over 5% povidone iodine plus alcohol in preventing infectious complications, and of closed integrated catheters, positive displacement needleless-connectors, disinfecting caps, and single-use prefilled flush syringes used in combination (innovation group) over open catheters and three-way stopcocks for treatment administration (standard group) in preventing catheter failure.

	controlled, two-by-two factorial trial		Methods : We did an open-label, randomised-controlled trial with a two-by-two factorial design, for which we enrolled adults (age ≥18 years) visiting the emergency department at the Poitiers University Hospital, France, and requiring one peripheral venous catheter before admission to the medical wards. Before catheter insertion, patients were randomly assigned (1:1:1:1) using a secure web-based random-number generator to one of four treatment groups based on skin preparation and type of devices (innovative devices or standard devices; 2% chlorhexidine plus alcohol or 5% povidone iodine plus alcohol). Primary outcomes were the incidence of infectious complications (local infection, catheter colonisation, or bloodstream infections) and time between catheter insertion and catheter failure (occlusion, dislodgment, infiltration, phlebitis, or infection). This study is registered with ClinicalTrials.gov, NCT03757143. Findings : 1000 patients were recruited between Jan 7, and Sept 6, 2019, of whom 500 were assigned to the chlorhexidine plus alcohol group and 500 to the povidone iodine plus alcohol group (250 with innovative solutions and 250 with standard devices in each antiseptic group). No significant interaction was found between the two study interventions. Local infections occurred less frequently with chlorhexidine plus alcohol than with povidone iodine plus alcohol (0 [0%] of 496 patients vs six [1%] of 493 patients) and the same was observed for catheter colonisation (4/431 [1%] vs 70/415 [17%] catheters among the catheters cultured; adjusted subdistribution hazard ratio 0·08 [95% CI 0·02–0·18]). Median time between catheter insertion and catheter failure was longer in the innovation group compared with the standard group (50·4 [IQR 29·6–69·4] h vs 30·0 [16·6–52·6] h; p=0·0017). Minor skin reactions occurred in nine (2%) patients in the chlorhexidine plus alcohol

			group and seven (1%) patients in the povidone iodine plus alcohol group. Interpretation : For skin antisepsis, chlorhexidine plus alcohol provides greater protection of peripheral venous catheter-related infectious complications than does povidone iodine plus alcohol. Use of innovative devices extends the catheter complication-free dwell time.
Ren R et al JAMA https://jamanetwork.com/journals/jama/fullarticle/2775705	Asymptomatic SARS-CoV-2 Infections Among Persons Entering China From April 16 to October 12, 2020	Studio retrospettivo sulle caratteristiche dei viaggiatori internazionali entrati in Cina e sottoposti a tampone di screening per SARS-CoV-2 nel periodo aprile-ottobre 2020, con focus sugli infetti asintomatici, la cui proporzione rispetto alle diagnosi totali è aumentata nel corso del tempo : gli autori suggeriscono che questo indichi un aumento delle infezioni asintomatiche a livello globale.	The magnitude of asymptomatic severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection is a question of global concern. Individuals who test positive for SARS-CoV-2 infection via a polymerase chain reaction (PCR) test but lack coronavirus disease 2019 (COVID-19)–like symptoms must be followed up through the incubation period to distinguish individuals with asymptomatic infection from those with presymptomatic infection. China successfully controlled its initial COVID-19 epidemic in March 20202 and has since focused on preventing importation of SARS-CoV-2 infection. Beginning April 1, 2020, persons entering China via air, sea, or land have been mandatorily tested for SARS-CoV-2 infection by PCR test at border checkpoints. Individuals who have tested positive have been hospitalized in isolation and those who have tested negative have been quarantined for 14 days at centralized facilities and then retested on day 13. We assessed the proportion of international entrants to China with asymptomatic SARS-CoV-2 infection.
RECOVERY Collaborative group The Lancet	Azithromycin in patients admitted to hospital with COVID-19 (RECOVERY): a randomised, controlled, open-label, platform trial	Analisi *ad interim* dei dati del trial RECOVERY, braccio standard of care contro azitromicina più standard of care (steroidi, remdesivir, tocilizumab e plasma in	Background : Azithromycin has been proposed as a treatment for COVID-19 on the basis of its immunomodulatory actions. We aimed to evaluate the safety and efficacy of azithromycin in patients admitted to hospital with COVID-19. Methods : In this randomised, controlled, open-label, adaptive platform trial (Randomised Evaluation of COVID-19 Therapy

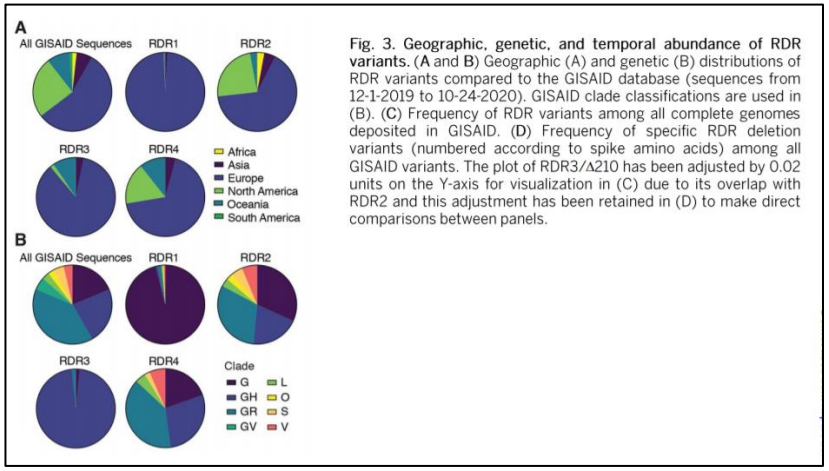
https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00149-5/fulltext		proporzioni comparabili fra i due gruppi) : in più di 7000 pazienti randomizzati 2 :1 non si dimostra una differenza di mortalità a 28 giorni, inizio di ventilazione meccanica, durata del ricovero o dimissione entro 28 giorni.	[RECOVERY]), several possible treatments were compared with usual care in patients admitted to hospital with COVID-19 in the UK. The trial is underway at 176 hospitals in the UK. Eligible and consenting patients were randomly allocated to either usual standard of care alone or usual standard of care plus azithromycin 500 mg once per day by mouth or intravenously for 10 days or until discharge (or allocation to one of the other RECOVERY treatment groups). Patients were assigned via web-based simple (unstratified) randomisation with allocation concealment and were twice as likely to be randomly assigned to usual care than to any of the active treatment groups. Participants and local study staff were not masked to the allocated treatment, but all others involved in the trial were masked to the outcome data during the trial. The primary outcome was 28-day all-cause mortality, assessed in the intention-to-treat population. The trial is registered with ISRCTN, 50189673, and ClinicalTrials.gov, NCT04381936. Findings : Between April 7 and Nov 27, 2020, of 16 442 patients enrolled in the RECOVERY trial, 9433 (57%) were eligible and 7763 were included in the assessment of azithromycin. The mean age of these study participants was 65·3 years (SD 15·7) and approximately a third were women (2944 [38%] of 7763). 2582 patients were randomly allocated to receive azithromycin and 5181 patients were randomly allocated to usual care alone. Overall, 561 (22%) patients allocated to azithromycin and 1162 (22%) patients allocated to usual care died within 28 days (rate ratio 0·97, 95% CI 0·87–1·07; p=0·50). No significant difference was seen in duration of hospital stay (median 10 days [IQR 5 to >28] vs 11 days [5 to >28]) or the proportion of patients discharged from hospital alive within 28 days (rate ratio 1·04, 95% CI 0·98–1·10; p=0·19). Among those not on invasive mechanical ventilation at baseline, no significant difference

			was seen in the proportion meeting the composite endpoint of invasive mechanical ventilation or death (risk ratio 0·95, 95% CI 0·87–1·03; p=0·24). Interpretation : In patients admitted to hospital with COVID-19, azithromycin did not improve survival or other prespecified clinical outcomes. Azithromycin use in patients admitted to hospital with COVID-19 should be restricted to patients in whom there is a clear antimicrobial indication.  *Figure 2:* **Effect of allocation to azithromycin on 28-day mortality**
Krammer F et al medRXiv – not peer reviewed	Robust spike antibody responses and increased reactogenicity in seropositive individuals after a single dose of SARS-CoV-2 mRNA vaccine	In 41 pazienti con sierologia già positiva per SARS-CoV-2, il titolo anticorpale ottenuto dopo una sola dose di vaccino a mRNA è pari o superiore al titolo ottenuto dopo due dosi in 68 soggetti	An important question is arising as COVID-19 vaccines are getting rolled out: Should individuals who already had a SARS-CoV-2 infection receive one or two shots of the currently authorized mRNA vaccines. In this short report, we show that the antibody response to the first vaccine dose in individuals with pre-existing immunity is equal to or even exceeds the titers found in naïve individuals after the second dose. We also show that the

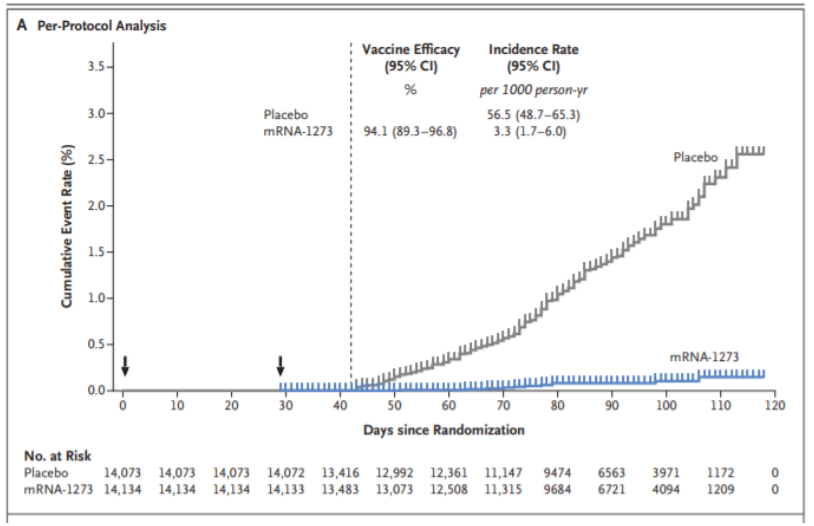
https://www.medrxiv.org/content/10.1101/2021.01.29.21250653v1		naive: gli autori propongono una revisione delle indicazioni vaccinali, prevedendo una sola dose per chi ha già avuto l'infezione. Rimane da valutare la durata nel tempo del titolo anticorpale.	reactogenicity is significantly higher in individuals who have been infected with SARS-CoV-2 in the past. Changing the policy to give these individuals only one dose of vaccine would not negatively impact on their antibody titers, spare them from unnecessary pain and free up many urgently needed vaccine doses. 
Neuroimmunology Brazilian Study Group Focused on COVID-19 and MS Multiple Sclerosis Journal https://journals.sagepub.com/doi/10.1177/1352458520978354	Incidence and clinical outcome of Coronavirus disease 2019 in a cohort of 11,560 Brazilian patients with multiple sclerosis	Studio osservazionale su una coorte brasiliana di 11560 persone affette da sclerosi multipla, in cui si sono registrati 94 casi di COVID-19, in linea con l'incidenza della popolazione generale e con caratteristiche di benignità.	Background: Little information is available regarding the incidence and clinical outcome of the SARS-CoV2 infection in patients with multiple sclerosis (pwMS). Objective: To determine the incidence, clinical outcome, and impact of COVID-19 on pwMS. Methods: This observational study was prospectively performed on a cohort of pwMS (N = 11,560) followed up by 47 out of 51 Brazilian MS referral centers that registered pwMS with COVID-19 at the REDONE platform from 13 March to 4 June 2020. Results: The incidence of COVID-19 for pwMS patients was 27.7/10,000 patients and for the general population was 29.2/10,000 inhabitants. A total of 94 (77 women) pwMS patients, aged 40 ± 10.25 years, presenting 9.9 ± 8.6 years of MS disease

			duration, developed the COVID-19, most of them (87%) exhibited the mild form of the disease. Eighty (96%) patients maintained the use of MS disease-modifying treatment (DMT) during COVID-19 pandemic and 14 patients were not in use of DMTs. Conclusion: Incidence of COVID-19 in Brazilian pwMS was not different from those observed for the general Brazilian population. Most pwMS exhibited mild COVID-19, despite the maintenance of the underlying MS treatment.
Mahase E et al BMJ https://www.bmj.com/content/372/bmj.n296 https://ir.novavax.com/news-releases/news-release-details/novavax-covid-19-vaccine-demonstrates-893-efficacy-uk-phase-3	Covid-19: Novavax vaccine efficacy is 86% against UK variant and 60% against South African variant	L'azienda Novavax ha diffuso tramite un comunicato stampa (secondo link) i risultati dell'analisi ad interim sull'efficacia del proprio vaccino contro SARS-CoV-2 a base di proteina S adiuvata: protezione del 95% contro infezione sintomatica da virus wild-type, 85.6% contro la variante « inglese » e 60% contro la « sudafricana ».	The SARS-CoV-2 vaccine produced by the US biotechnology company Novavax is 95.6% effective against the original variant of SARS-CoV-2 but also provides protection against the newer variants B.1.1.7 (85.6%) and B.1.351 (60%), preliminary data from clinical trials show. Interim results have been released from a phase III trial carried out in the UK with more than 15 000 participants aged between 18 and 84, including 27% over the age of 65. The trial tested two doses of the vaccine administered three weeks apart and reported 62 symptomatic cases of covid-19, of which 56 were in the placebo group (saline) and six in the vaccine group. Of the 62 cases, only one was severe (in the placebo group), and 32 were with the UK variant. A phase II trial of the Novavax vaccine is also ongoing in South Africa with 4400 volunteers, in which 29 cases have been seen in the placebo group (one severe) and 15 in the vaccine group. Preliminary sequencing data of 27 of these cases found that 93% (25) involved the South Africa variant.

			What technology do the leading SARS-CoV-2 vaccines use? **Viral vector vaccines** - Johnson & Johnson - Oxford-AstraZeneca - Gamaleya Research Institute **Protein based vaccines** - Novavax **mRNA vaccines** - Pfizer-BioNTech - Moderna **Inactivated vaccines** - Sinopharm - Sinovac - Sinopharm-Wuhan - Bharat Biotech
McCarthy KR et al Science https://science.sciencemag.org/content/early/2021/02/02/science.abf6950.full	Recurrent deletions in the SARS-CoV-2 spike glycoprotein drive antibody escape	La proteina spike di SARS-CoV-2 contiene delle regioni ove si verificano delezioni ricorrenti (RDR), non corrette dal meccanismo di proof-reading della polimerasi virale, diffuse in modo convergente nelle	Zoonotic pandemics, like that caused by SARS-CoV-2, can follow the spillover of animal viruses into highly susceptible human populations. Their descendants have adapted to the human host and evolved to evade immune pressure. Coronaviruses acquire substitutions more slowly than other RNA viruses, due to a proofreading polymerase. In the spike glycoprotein, we find recurrent deletions overcome this slow substitution rate. Deletion variants arise in diverse genetic and geographic backgrounds,

		sequenze genomiche disponibili del virus.	transmit efficiently, and are present in novel lineages, including those of current global concern. They frequently occupy recurrent deletion regions (RDRs), which map to defined antibody epitopes. Deletions in RDRs confer resistance to neutralizing antibodies. By altering stretches of amino acids, deletions appear to accelerate SARS-CoV-2 antigenic evolution and may, more generally, drive adaptive evolution.  **Fig. 3. Geographic, genetic, and temporal abundance of RDR variants.** (**A** and **B**) Geographic (A) and genetic (B) distributions of RDR variants compared to the GISAID database (sequences from 12-1-2019 to 10-24-2020). GISAID clade classifications are used in (B). (**C**) Frequency of RDR variants among all complete genomes deposited in GISAID. (**D**) Frequency of specific RDR deletion variants (numbered according to spike amino acids) among all GISAID variants. The plot of RDR3/Δ210 has been adjusted by 0.02 units on the Y-axis for visualization in (C) due to its overlap with RDR2 and this adjustment has been retained in (D) to make direct comparisons between panels.
Baden LR et al NEJM https://www.nejm.org/doi/full/10.1056/NEJMoa2035389?query=featured_home	Efficacy and Safety of the mRNA-1273 SARS-CoV-2 Vaccine	Risultati del trial clinico di fase 3 sul vaccino a mRNA-1273 (Moderna) contro SARS-CoV-2 : efficacia 94.1% nel prevenire la malattia sintomatica.	BACKGROUND : Vaccines are needed to prevent coronavirus disease 2019 (Covid-19) and to protect persons who are at high risk for complications. The mRNA-1273 vaccine is a lipid nanoparticle–encapsulated mRNA-based vaccine that encodes the prefusion stabilized full-length spike protein of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes Covid-19. METHODS : This phase 3 randomized, observer-blinded, placebo-controlled trial was conducted at 99 centers across the United States. Persons at high risk for SARS-CoV-2 infection or its complications were randomly assigned in a 1:1 ratio to receive two intramuscular injections of mRNA-1273 (100 µg) or placebo 28 days

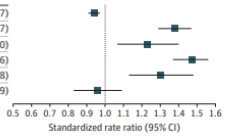
			apart. The primary end point was prevention of Covid-19 illness with onset at least 14 days after the second injection in participants who had not previously been infected with SARS-CoV-2. RESULTS : The trial enrolled 30,420 volunteers who were randomly assigned in a 1:1 ratio to receive either vaccine or placebo (15,210 participants in each group). More than 96% of participants received both injections, and 2.2% had evidence (serologic, virologic, or both) of SARS-CoV-2 infection at baseline. Symptomatic Covid-19 illness was confirmed in 185 participants in the placebo group (56.5 per 1000 person-years; 95% confidence interval [CI], 48.7 to 65.3) and in 11 participants in the mRNA-1273 group (3.3 per 1000 person-years; 95% CI, 1.7 to 6.0); vaccine efficacy was 94.1% (95% CI, 89.3 to 96.8%; P<0.001). Efficacy was similar across key secondary analyses, including assessment 14 days after the first dose, analyses that included participants who had evidence of SARS-CoV-2 infection at baseline, and analyses in participants 65 years of age or older. Severe Covid-19 occurred in 30 participants, with one fatality; all 30 were in the placebo group. Moderate, transient reactogenicity after vaccination occurred more frequently in the mRNA-1273 group. Serious adverse events were rare, and the incidence was similar in the two groups. CONCLUSIONS : The mRNA-1273 vaccine showed 94.1% efficacy at preventing Covid-19 illness, including severe disease. Aside from transient local and systemic reactions, no safety concerns were identified.

			
Mitjà O et al NEJM https://www.nejm.org/doi/full/10.1056/NEJMoa2021801?query=featured_home	A Cluster-Randomized Trial of Hydroxychloroquine for Prevention of Covid-19	Trial clinico randomizzato sull'utilizzo di idrossiclorochina per la profilassi post-esposizione dell'infezione da SARS-CoV-2 nei contatti: nessuna differenza rispetto ai controlli.	BACKGROUND : Current strategies for preventing severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection are limited to nonpharmacologic interventions. Hydroxychloroquine has been proposed as a postexposure therapy to prevent coronavirus disease 2019 (Covid-19), but definitive evidence is lacking. METHODS : We conducted an open-label, cluster-randomized trial involving asymptomatic contacts of patients with polymerase-chain-reaction (PCR)–confirmed Covid-19 in Catalonia, Spain. We randomly assigned clusters of contacts to the hydroxychloroquine group (which received the drug at a dose of 800 mg once, followed by 400 mg daily for 6 days) or to the usual-care group (which received no specific therapy). The primary outcome was PCR-confirmed, symptomatic Covid-19 within 14 days. The secondary outcome was SARS-CoV-2 infection, defined by symptoms compatible with Covid-19 or a positive PCR test regardless of symptoms. Adverse events were assessed for up to 28 days.

			RESULTS : The analysis included 2314 healthy contacts of 672 index case patients with Covid-19 who were identified between March 17 and April 28, 2020. A total of 1116 contacts were randomly assigned to receive hydroxychloroquine and 1198 to receive usual care. Results were similar in the hydroxychloroquine and usual-care groups with respect to the incidence of PCR-confirmed, symptomatic Covid-19 (5.7% and 6.2%, respectively; risk ratio, 0.86 [95% confidence interval, 0.52 to 1.42]). In addition, hydroxychloroquine was not associated with a lower incidence of SARS-CoV-2 transmission than usual care (18.7% and 17.8%, respectively). The incidence of adverse events was higher in the hydroxychloroquine group than in the usual-care group (56.1% vs. 5.9%), but no treatment-related serious adverse events were reported. CONCLUSIONS : Postexposure therapy with hydroxychloroquine did not prevent SARS-CoV-2 infection or symptomatic Covid-19 in healthy persons exposed to a PCR-positive case patient.

			Table 2. Primary and Secondary Outcomes.* **Outcome** / **Hydroxychloroquine Group** / **Usual-Care Group** / **Risk Ratio (95% CI)†** *no. of events/no. of contacts (%)* **Primary outcome: PCR-confirmed, symptomatic Covid-19** All patients‡ — 64/1116 (5.7) — 74/1198 (6.2) — 0.86 (0.52–1.42) Clinical and laboratory criteria — 49/1116 (4.4) — 60/1198 (5.0) Hospital or vital-records criteria — 15/1116 (1.3) — 14/1198 (1.2) PCR-negative at baseline — 29/958 (3.0) — 45/1042 (4.3) — 0.68 (0.34–1.34) Clinical and laboratory criteria — 24/958 (2.5) — 37/1042 (3.6) Hospital or vital-records criteria — 5/958 (0.5) — 8/1042 (0.8) PCR-positive at baseline — 35/158 (22.2) — 29/156 (18.6) — 1.02 (0.64–1.63) Clinical and laboratory criteria — 25/158 (15.8) — 23/156 (14.7) Hospital or vital-records criteria — 10/158 (6.3) — 6/156 (3.8) **Secondary outcomes§** Covid-19, either symptomatically compatible or PCR positivity regardless of symptoms — 179/958 (18.7) — 185/1042 (17.8) — 1.03 (0.77–1.38) Laboratory criteria¶ — 58/958 (6.1) — 67/1042 (6.4) Clinical criteria‖ — 144/958 (15.0) — 150/1042 (14.4) Hospital or vital-records criteria — 5/958 (0.5) — 8/1042 (0.8) Serologic positivity on day 14 — 137/958 (14.3) — 91/1042 (8.7) — 1.57 (0.94–2.62) IgM positivity — 100/958 (10.4) — 70/1042 (6.7) IgG positivity — 118/958 (12.3) — 82/1042 (7.9)
Tesoriero JM et al JAMA https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2775827	COVID-19 Outcomes Among Persons Living With or Without Diagnosed HIV Infection in New York State	La diagnosi di COVID-19, e l'ospedalizzazione per questo motivo sono più frequenti nella popolazione con infezione diagnosticata da HIV rispetto ai non-HIV in questo studio retrospettivo condotto a New York nel periodo Marzo-Giugno 2020.	Importance New York State has been an epicenter for both the US coronavirus disease 2019 (COVID-19) and HIV/AIDS epidemics. Persons living with diagnosed HIV may be more prone to COVID-19 infection and severe outcomes, yet few studies have assessed this possibility at a population level. Objective To evaluate the association between HIV diagnosis and COVID-19 diagnosis, hospitalization, and in-hospital death in New York State. Design, Setting, and Participants This cohort study, conducted in New York State, including New York City, between March 1 and June 15, 2020, matched data from HIV surveillance, COVID-19 laboratory-confirmed diagnoses, and hospitalization databases to provide a full population-level comparison of COVID-19 outcomes

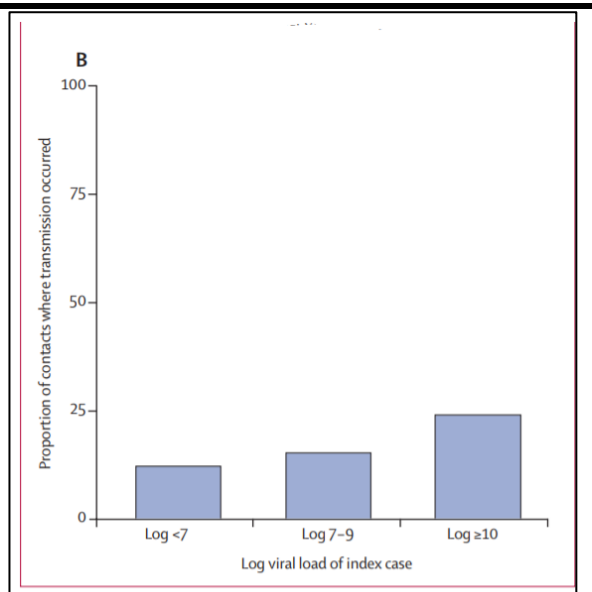
			between persons living with diagnosed HIV and persons living without diagnosed HIV. Exposures Diagnosis of HIV infection through December 31, 2019. Main Outcomes and Measures The main outcomes were COVID-19 diagnosis, hospitalization, and in-hospital death. COVID-19 diagnoses, hospitalizations, and in-hospital death rates comparing persons living with diagnosed HIV with persons living without dianosed HIV were computed, with unadjusted rate ratios and indirect standardized rate ratios (sRR), adjusting for sex, age, and region. Adjusted rate ratios (aRRs) for outcomes specific to persons living with diagnosed HIV were assessed by age, sex, region, race/ethnicity, transmission risk, and CD4+ T-cell count–defined HIV disease stage, using Poisson regression models. Results A total of 2988 persons living with diagnosed HIV (2109 men [70.6%]; 2409 living in New York City [80.6%]; mean [SD] age, 54.0 [13.3] years) received a diagnosis of COVID-19. Of these persons living with diagnosed HIV, 896 were hospitalized and 207 died in the hospital through June 15, 2020. After standardization, persons living with diagnosed HIV and persons living without diagnosed HIV had similar diagnosis rates (sRR, 0.94 [95% CI, 0.91-0.97]), but persons living with diagnosed HIV were hospitalized more than persons living without diagnosed HIV, per population (sRR, 1.38 [95% CI, 1.29-1.47]) and among those diagnosed (sRR, 1.47 [95% CI, 1.37-1.56]). Elevated mortality among persons living with diagnosed HIV was observed per population (sRR, 1.23 [95% CI, 1.07-1.40]) and among those diagnosed (sRR, 1.30 [95% CI, 1.13-1.48]) but not among those hospitalized (sRR, 0.96 [95% CI, 0.83-1.09]). Among persons living with diagnosed HIV, non-Hispanic Black individuals (aRR, 1.59 [95% CI, 1.40-1.81]) and Hispanic individuals (aRR, 2.08 [95% CI, 1.83-2.37]) were more likely to

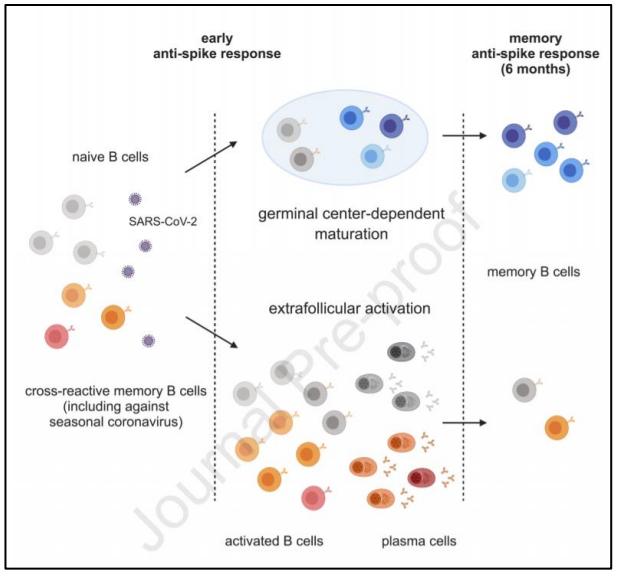
			receive a diagnosis of COVID-19 than White individuals, but they were not more likely to be hospitalized once they received a diagnosis or to die once hospitalized. Hospitalization risk increased with disease progression to HIV stage 2 (aRR, 1.29 [95% CI, 1.11-1.49]) and stage 3 (aRR, 1.69 [95% CI, 1.38-2.07]) relative to stage 1. Conclusions and Relevance In this cohort study, persons living with diagnosed HIV experienced poorer COVID-related outcomes relative to persons living without diagnosed HIV; Previous HIV diagnosis was associated with higher rates of severe disease requiring hospitalization, and hospitalization risk increased with progression of HIV disease stage. **Figure. Summary of Rates and Rate Ratios for Coronavirus Disease 2019 (COVID-19) Diagnosis, Hospitalization, and In-Hospital Death, Comparing Persons Living With or Without Diagnosed HIV Infection, by Region—New York State, March 1 to June 7, 2020[a]** Unadjusted PLWDH rate per 1000 | Non-PLWDH rate per 1000 | Rate ratio (95% CI) | Standardized rate ratio (95% CI) Diagnosed with COVID-19, per population: 27.7 | 19.4 | 1.43 (1.38-1.48) | 0.94 (0.91-0.97) Hospitalized with COVID-19, per population: 8.3 | 3.2 | 2.61 (2.45-2.79) | 1.38 (1.29-1.47) In-hospital death with COVID-19, per population: 1.9 | 0.8 | 2.55 (2.22-2.93) | 1.23 (1.07-1.40) Hospitalized with COVID-19, per diagnosis: 299.9 | 163.5 | 1.83 (1.72-1.96) | 1.47 (1.37-1.56) In-hospital death with COVID-19, per diagnosis: 69.3 | 38.7 | 1.79 (1.56-2.05) | 1.30 (1.13-1.48) In-hospital death with COVID-19, per hospitalization: 231.0 | 236.6 | 0.98 (0.85-1.12) | 0.96 (0.83-1.09)  Standardized rate ratios are adjusted for sex, age, and region. PLWDH indicates persons living with diagnosed HIV. [a] Persons with a diagnosis of COVID-19 through June 7, 2020, hospitalized through June 15, 2020. Standardized rate ratios adjusted for age, sex, and region.
Ceballos ME et al International Journal of STD & AIDS https://journals.sagepub.com/doi/10.1177/0956462420973106?url_ver=Z39.88-2003&rfr_id=ori:rid:cross	Clinical characteristics and outcomes of people living with HIV hospitalized with COVID-19: a nationwide experience.	Studio osservazionale prospettico condotto in Cile tra aprile e giugno 2020 confrontando 36 pazienti con HIV a una coorte di pazienti non-HIV, tutti ricoverati per COVID-19 : le persone con HIV hanno maggiore probabilità di essere ricoverati in rianimazione, ma non	In this prospective, multicentric, observational study, we describe the clinical characteristics and outcomes of people living with HIV (PLHIV) requiring hospitalization due to COVID-19 in Chile and compare them with Chilean general population admitted with SARS-CoV-2. Consecutive PLHIV admitted with COVID-19 in 23 hospitals, between 16 April and 23 June 2020, were included. Data of a temporally matched-hospitalized general population were used to compare demography, comorbidities, COVID-19 symptoms, and major outcomes. In total, 36 PLHIV subjects were enrolled; 92% were male and mean age was 44 years. Most patients (83%) were on antiretroviral therapy; mean CD4 count was 557 cells/mm3.

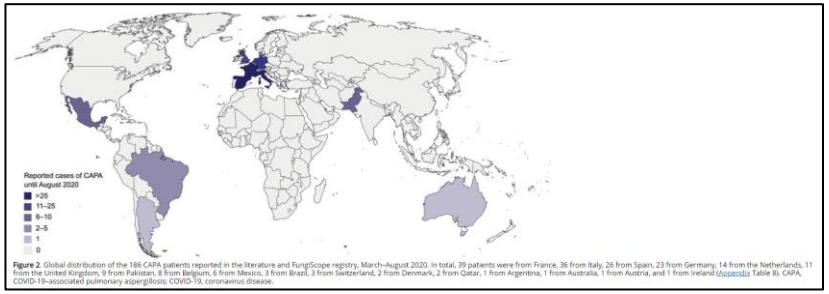
ref.org&rfr_dat=cr_pub%20%200pubmed		maggiore mortalità o necessità di ventilazione meccanica.	Suppressed HIV viremia was found in 68% and 56% had, at least, one comorbidity. Severe COVID-19 occurred in 44.4%, intensive care was required in 22.2%, and five patients died (13.9%). No differences were seen between recovered and deceased patients in CD4 count, HIV viral load, or time since HIV diagnosis. Hypertension and cardiovascular disease were associated with a higher risk of death (p = 0.02 and 0.006, respectively). Compared with general population, the HIV cohort had significantly more men (OR 0.15; IC 95% 0.07–0.31) and younger age (OR 8.68; IC 95% 2.66–28.31). In PLHIV, we found more intensive care unit admission (OR 2.31; IC 95% 1.05–5.07) but no differences in the need for mechanical ventilation or death. In this cohort of PLHIV hospitalized with COVID-19, hypertension and cardiovascular comorbidities, but not current HIV viro-immunologic status, were the most important risk factors for mortality. No differences were found between PLHIV and general population in the need for mechanical ventilation and death.
Marks M et al The Lancet https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30985-3/fulltext	Transmission of COVID-19 in 282 clusters in Catalonia, Spain: a cohort study	Studio di coorte in cui a partire da 282 pazienti con COVID-19 si analizzano i fattori di rischio di contagiare almeno un contatto e la probabilità di sviluppare sintomi in rapporto alla carica virale nel tampone naso faringeo : una maggiore carica nel tampone correla con la proporzione di contatti contagiati, con la probabilità	Background : Scarce data are available on what variables affect the risk of transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the development of symptomatic COVID-19, and, particularly, the relationship with viral load. We aimed to analyse data from linked index cases of COVID-19 and their contacts to explore factors associated with transmission of SARS-CoV-2. Methods : In this cohort study, patients were recruited as part of a randomised controlled trial done between March 17 and April 28, 2020, that aimed to assess if hydroxychloroquine reduced transmission of SARS-CoV-2. Patients with COVID-19 and their contacts were identified by use of the electronic registry of the

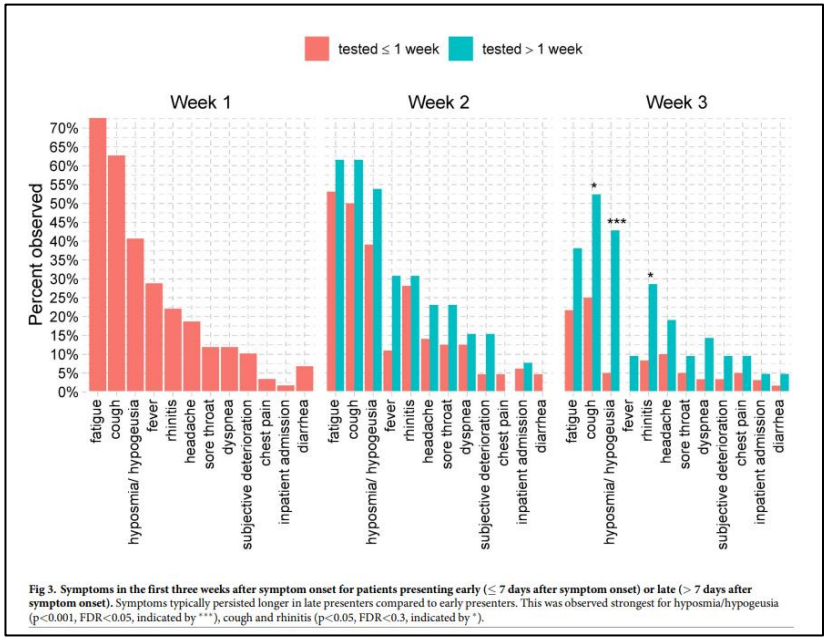
		di sviluppare sintomi e con la rapiditià con cui essi insorgono in chi è asintomatico al momento della diagnosi.	Epidemiological Surveillance Emergency Service of Catalonia (Spain). Patients with COVID-19 included in our analysis were aged 18 years or older, not hospitalised, had quantitative PCR results available at baseline, had mild symptom onset within 5 days before enrolment, and had no reported symptoms of SARS-CoV-2 infections in their accommodation or workplace within the 14 days before enrolment. Contacts included were adults with a recent history of exposure and absence of COVID-19-like symptoms within the 7 days preceding enrolment. Viral load of contacts, measured by quantitative PCR from a nasopharyngeal swab, was assessed at enrolment, at day 14, and whenever the participant reported COVID-19-like symptoms. We assessed risk of transmission and developing symptomatic disease and incubation dynamics using regression analysis. We assessed the relationship of viral load and characteristics of cases (age, sex, number of days from reported symptom onset, and presence or absence of fever, cough, dyspnoea, rhinitis, and anosmia) and associations between risk of transmission and characteristics of the index case and contacts. Findings : We identified 314 patients with COVID-19, with 282 (90%) having at least one contact (753 contacts in total), resulting in 282 clusters. 90 (32%) of 282 clusters had at least one transmission event. The secondary attack rate was 17% (125 of 753 contacts), with a variation from 12% when the index case had a viral load lower than 1 × 106 copies per mL to 24% when the index case had a viral load of 1 × 1010 copies per mL or higher (adjusted odds ratio per log10 increase in viral load 1·3, 95% CI 1·1–1·5). Increased risk of transmission was also associated with household contact (3·0, 1·59–5·65) and age of the contact (per year: 1·02, 1·01–1·04). 449 contacts had a positive PCR result at baseline. 28 (6%) of 449 contacts had symptoms at the first visit. Of 421 contacts who were

			asymptomatic at the first visit, 181 (43%) developed symptomatic COVID-19, with a variation from approximately 38% in contacts with an initial viral load lower than 1 × 107 copies per mL to greater than 66% for those with an initial viral load of 1 × 1010 copies per mL or higher (hazard ratio per log10 increase in viral load 1·12, 95% CI 1·05–1·20; p=0·0006). Time to onset of symptomatic disease decreased from a median of 7 days (IQR 5–10) for individuals with an initial viral load lower than 1 × 107 copies per mL to 6 days (4–8) for those with an initial viral load between 1 × 107 and 1 × 109 copies per mL, and 5 days (3–8) for those with an initial viral load higher than 1 × 109 copies per mL. Interpretation : In our study, the viral load of index cases was a leading driver of SARS-CoV-2 transmission. The risk of symptomatic COVID-19 was strongly associated with the viral load of contacts at baseline and shortened the incubation time of COVID-19 in a dose-dependent manner.

			 ***Figure 1:*** **Transmission in a cluster** (A) Number of secondary cases per cluster. (B) Relationship between viral load of the index case and the proportion of contacts developing COVID-19: 36 of 284 contacts in group $<1\times10^{7}$ copies per mL, 72 of 398 in group 1×10^{7} to $<1\times10^{10}$, and 17 of 71 in group $\geq1\times10^{10}$.
Sokal A et al Cell https://www.cell.com/cell/pdf/S0092-8674(21)00093-3.pdf?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0092867421000933%3Fshowall%3Dtrue	Maturation and persistence of the anti-SARS-CoV-2 memory B cell response	Studio delle cellule B di memoria sviluppate da due coorti di pazienti infetti da SARS-CoV-2 (gravi e meno gravi) : si dimostra la presenza di cellule sempre più affini nel tempo alla regione legante il recettore (RBD) della proteina spike, che persistono fino a 6 mesi dopo l'infezione e sarebbero la base per una risposta immunitaria durevole, in	Memory B cells play a fundamental role in host defenses against viruses, but to date, their role has been relatively unsettled in the context of SARS-CoV-2. We report here a longitudinal singlecell and repertoire profiling of the B cell response up to 6 months in mild and severe COVID19 patients. Distinct SARS-CoV-2 spike-specific activated B cell clones fueled an early antibody-secreting cell burst as well as a durable synchronous germinal center response. While highly mutated memory B cells, including pre-existing cross-reactive seasonal Betacoronavirus-specific clones, were recruited early in the response, neutralizing SARSCoV-2 RBD-specific clones accumulated with time and largely contributed to the late remarkably stable memory B-cell pool. Highlighting germinal center maturation, these cells displayed clear accumulation of somatic

		grado di essere riattivata al nuovo contatto con l'antigene.	mutations in their variable region genes over time. Overall, these findings demonstrate that an antigen-driven activation persisted and matured up to 6 months after SARS-CoV-2 infection and may provide long-term protection. 
Salmanton-García J et al Emerging Infectious Diseases https://wwwnc.cdc.gov/eid/article/27/4/20-4895_article	COVID-19–Associated Pulmonary Aspergillosis, March–August 2020	Analisi retrospettiva delle caratteristiche di 186 pazienti con aspergillosi polmonare associata a COVID-19 (CAPA) registrati in diversi Paesi del mondo nel periodo marzo-agosto 2020.	Pneumonia caused by severe acute respiratory syndrome coronavirus 2 emerged in China at the end of 2019. Because of the severe immunomodulation and lymphocyte depletion caused by this virus and the subsequent administration of drugs directed at the immune system, we anticipated that patients might experience fungal superinfection. We collected data from 186 patients who had coronavirus disease–associated pulmonary aspergillosis (CAPA) worldwide during March–August 2020. Overall, 182 patients were admitted to the intensive care unit (ICU), including 180 with acute respiratory distress syndrome and 175 who received mechanical ventilation. CAPA was diagnosed a median of 10 days after coronavirus disease diagnosis. Aspergillus fumigatus was identified

			in 80.3% of patient cultures, 4 of which were azole-resistant. Most (52.7%) patients received voriconazole. In total, 52.2% of patients died; of the deaths, 33.0% were attributed to CAPA. We found that the cumulative incidence of CAPA in the ICU ranged from 1.0% to 39.1%.  Figure 2. Global distribution of the 186 CAPA patients reported in the literature and FungiScope registry, March–August 2020. In total, 39 patients were from France, 36 from Italy, 26 from Spain, 23 from Germany, 14 from the Netherlands, 11 from the United Kingdom, 9 from Pakistan, 8 from Belgium, 6 from Mexico, 3 from Brazil, 3 from Switzerland, 2 from Denmark, 2 from Qatar, 1 from Argentina, 1 from Australia, 1 from Austria, and 1 from Ireland (Appendix Table 8). CAPA, COVID-19–associated pulmonary aspergillosis; COVID-19, coronavirus disease.
Schneider A et al PLoS One https://doi.org/10.1371/journal.pone.0246312	Covid-19 in outpatients-Is fever a useful indicator for SARS-CoV-2 infection?	Delle 1460 persone sottoposte a tampone nasofaringeo per fare diagnosi di infezione da SARS-CoV-2 nell'ambulatorio COVID-19 dell'Ospedale di Lipsia, 91 sono risultate positive : queste presentavano sintomi da una media di 5.9 giorni e la febbre era presente in meno di un terzo dei casi, a suggerire che essa non sia un sintomo cardine per sospettare l'infezione.	OBJECTIVE: Understanding mild to moderate symptoms of coronavirus disease 2019 (Covid-19) is important in order to identify active cases early and thus counteract transmission. METHODS: In March 2020, Leipzig University Hospital established an outpatient clinic for patients potentially infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Confirmed cases with mild to moderate symptoms self-isolated at home and were followed-up by daily telephone calls for at least 14 days. Symptoms and course of illness of these patients are reported here. RESULTS: From March 20 to April 17, 2020, 1460 individuals were tested for SARS-CoV-2 by naso- or oropharyngeal swab for real-time polymerase chain reaction (RT-PCR). Covid-19 was confirmed in 91 (6.2%) patients, of which 87 were included in the final analysis. Patients presented for testing after a mean of 5.9 days (IQR = 2.0-8.5). The median age was 37.0 years (IQR = 28.5-53), and 48 (55.2%) were female. Five (5.7%) patients required hospital admission during the course of illness. Most frequently reported symptoms were fatigue (n = 64, 74%), cough (n = 58, 67%), and hyposmia/hypogeusia (n = 44, 51%). In

			contrast to previous reports, fever occurred in less than a third of patients (n = 25, 29%). By day 14, more than half of the patients had recovered completely (n = 37/70, 52.9%). CONCLUSIONS: Fever seems to be less common in patients of relatively young age diagnosed with mild to moderate Covid-19. This suggests that body temperature alone may be an insufficient indicator of SARS-CoV-2 infection.  **Fig 3. Symptoms in the first three weeks after symptom onset for patients presenting early (≤ 7 days after symptom onset) or late (> 7 days after symptom onset).** Symptoms typically persisted longer in late presenters compared to early presenters. This was observed strongest for hyposmia/hypogeusia ($p<0.001$, FDR<0.05, indicated by ***), cough and rhinitis ($p<0.05$, FDR<0.3, indicated by *).
Tarek M et al medRXiv https://www.medrxiv.org/content/10.1101/2020.04.25.20079426v1	Custommune: a web tool to design personalized and population-targeted vaccine epitopes	Presentazione di un programma per il design di epitopi candidati per lo sviluppo di vaccini, testato su HIV e SARS-CoV-2.	Computational prediction of immunogenic epitopes is a promising platform for therapeutic and preventive vaccine design. A potential target for this strategy is human immunodeficiency virus (HIV-1), for which, despite decades of efforts, no vaccine is available. In particular, a therapeutic vaccine devised to eliminate infected cells would represent a key component of cure strategies. HIV peptides designed based on individual viro-immunological data from people living with HIV/AIDS have recently shown able to induce post-

			therapy viral set point abatement. However, the reproducibility and scalability of this method is curtailed by the errors and arbitrariness associated with manual peptide design as well as by the time-consuming process. We herein introduce Custommune, a user-friendly web tool to design personalized and population-targeted vaccines. When applied to HIV-1, Custommune predicted personalized epitopes using patient specific Human Leukocyte Antigen (HLA) alleles and viral sequences, as well as the expected HLA-peptide binding strength and potential immune escape mutations. Of note, Custommune predictions compared favorably with manually designed peptides administered in a recent phase II clinical trial (NCT02961829). Furthermore, we utilized Custommune to design preventive vaccines targeted for populations highly affected by COVID-19. The results allowed the identification of peptides tailored for each population and predicted to elicit both CD8+ T-cell immunity and neutralizing antibodies against structurally conserved epitopes of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Overall, our data describe a new tool for rapid development of personalized or population-based immunotherapy against chronic and acute viral infections.
Wu Z et al The Lancet https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30987-7/fulltext	Safety, tolerability, and immunogenicity of an inactivated SARS-CoV-2 vaccine (CoronaVac) in healthy adults aged 60 years and older: a randomised, double-blind, placebo-	Risultati del trial di fase I/II sul candidato vaccino contro SARS-CoV-2 CoronaVac, costituito da virus inattivato, in una popolazione di età superiore a 60 anni : si dimostrano efficacia superiore a 90% nell'indurre la sieroconversione con la	Background : A vaccine against COVID-19 is urgently needed for older adults, in whom morbidity and mortality due to the disease are increased. We aimed to assess the safety, tolerability, and immunogenicity of a candidate COVID-19 vaccine, CoronaVac, containing inactivated SARS-CoV-2, in adults aged 60 years and older. Methods : We did a randomised, double-blind, placebo-controlled, phase 1/2 clinical trial of CoronaVac in healthy adults aged 60 years

	controlled, phase 1/2 clinical trial	dose di 3 mcg ed elevata sicurezza.	and older in Renqiu (Hebei, China). Vaccine or placebo was given by intramuscular injection in two doses (days 0 and 28). Phase 1 comprised a dose-escalation study, in which participants were allocated to two blocks: block 1 (3 μg inactivated virus in 0·5 mL of aluminium hydroxide solution per injection) and block 2 (6 μg per injection). Within each block, participants were randomly assigned (2:1) using block randomisation to receive CoronaVac or placebo (aluminium hydroxide solution only). In phase 2, participants were randomly assigned (2:2:2:1) using block randomisation to receive either CoronaVac at 1·5 μg, 3 μg, or 6 μg per dose, or placebo. All participants, investigators, and laboratory staff were masked to treatment allocation. The primary safety endpoint was adverse reactions within 28 days after each injection in all participants who received at least one dose. The primary immunogenicity endpoint was seroconversion rate at 28 days after the second injection (which was assessed in all participants who had received the two doses of vaccine according to their random assignment, had antibody results available, and did not violate the trial protocol). Seroconversion was defined as a change from seronegative at baseline to seropositive for neutralising antibodies to live SARS-CoV-2 (positive cutoff titre 1/8), or a four-fold titre increase if the participant was seropositive at baseline. This study is ongoing and is registered with ClinicalTrials.gov (NCT04383574). Findings : Between May 22 and June 1, 2020, 72 participants (24 in each intervention group and 24 in the placebo group; mean age 65·8 years [SD 4·8]) were enrolled in phase 1, and between June 12 and June 15, 2020, 350 participants were enrolled in phase 2 (100 in each intervention group and 50 in the placebo group; mean age 66·6 years [SD 4·7] in 349 participants). In the safety populations from both phases, any adverse reaction within 28 days after

injection occurred in 20 (20%) of 100 participants in the 1·5 µg group, 25 (20%) of 125 in the 3 µg group, 27 (22%) of 123 in the 6 µg group, and 15 (21%) of 73 in the placebo group. All adverse reactions were mild or moderate in severity and injection site pain (39 [9%] of 421 participants) was the most frequently reported event. As of Aug 28, 2020, eight serious adverse events, considered unrelated to vaccination, have been reported by seven (2%) participants. In phase 1, seroconversion after the second dose was observed in 24 of 24 participants (100·0% [95% CI 85·8–100·0]) in the 3 µg group and 22 of 23 (95·7% [78·1–99·9]) in the 6 µg group. In phase 2, seroconversion was seen in 88 of 97 participants in the 1·5 µg group (90·7% [83·1–95·7]), 96 of 98 in the 3 µg group (98·0% [92·8–99·8]), and 97 of 98 (99·0% [94·5–100·0]) in the 6 µg group. There were no detectable antibody responses in the placebo groups.

Interpretation : CoronaVac is safe and well tolerated in older adults. Neutralising antibody titres induced by the 3 µg dose were similar to those of the 6 µg dose, and higher than those of the 1·5 µg dose, supporting the use of the 3 µg dose CoronaVac in phase 3 trials to assess protection against COVID-19.

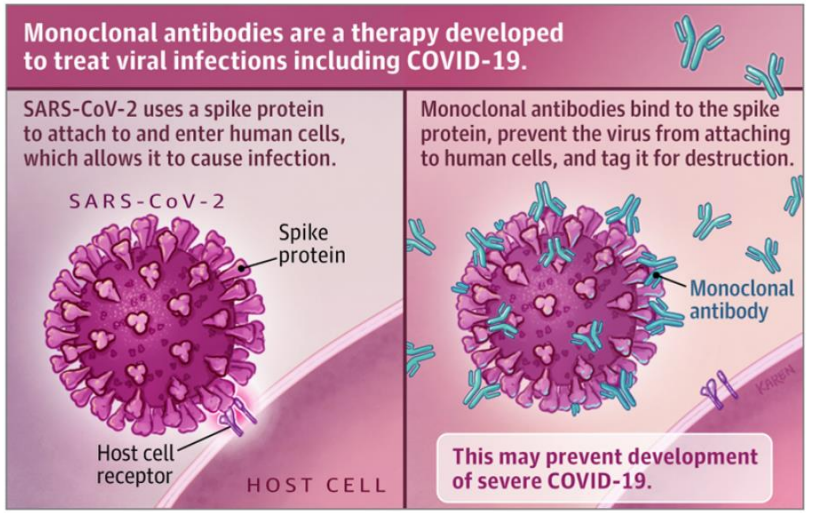
Table 4 Neutralising antibody responses to live SARS-CoV-2 28 days after the second dose in the phase 2 trial

	1·5 µg group	3 µg group	6 µg group	p value		
				1·5 µg *vs* 3 µg	1·5 µg *vs* 6 µg	3 µg *vs* 6 µg
Seroconversion rate						
Total	88/97 (90·7% [83·1–95·7])	96/98 (98·0% [92·8–99·8])	97/98 (99·0% [94·5–100·0])	0·029	0·010	1·000
60–64 years	34/36 (94·4% [81·3–99·3])	35/37 (94·6% [81·8–99·3])	38/38 (100·0% [90·8–100·0])	1·000	0·233	0·240
65–69 years	29/35 (82·9% [66·4–93·4])	33/33 (100·0% [89·4–100·0])	40/40 (100·0% [91·2–100·0])	0·025	0·0081	1·000
≥70 years	25/26 (96·2% [80·4–99·9])	28/28 (100·0% [87·7–100·0])	19/20 (95·0% [75·1–99·9])	0·482	1·000	0·417

Kemp SA et al Nature https://www.nature.com/articles/s41586-021-03291-y	SARS-CoV-2 evolution during treatment of chronic infection	Caso di un paziente immunodepresso con COVID-19, trattato con plasma iperimmune dopo 57 giorni di malattia. Il trattamento ha determinato una pressione selettiva sul virus favorendo la comparsa di mutazioni a carico della proteina spike, con prevalenza di una variante con escape dagli anticorpi neutralizzanti.	SARS-CoV-2 Spike protein is critical for virus infection via engagement of ACE21, and is a major antibody target. Here we report chronic SARS-CoV-2 with reduced sensitivity to neutralising antibodies in an immune suppressed individual treated with convalescent plasma, generating whole genome ultradeep sequences over 23 time points spanning 101 days. Little change was observed in the overall viral population structure following two courses of remdesivir over the first 57 days. However, following convalescent plasma therapy we observed large, dynamic virus population shifts, with the emergence of a dominant viral strain bearing D796H in S2 and ΔH69/ΔV70 in the S1 N-terminal domain NTD of the Spike protein. As passively transferred serum antibodies diminished, viruses with the escape genotype diminished in frequency, before returning during a final, unsuccessful course of convalescent plasma. In vitro, the Spike escape double mutant bearing ΔH69/ΔV70 and D796H conferred modestly decreased sensitivity to convalescent plasma, whilst maintaining infectivity similar to wild type. D796H appeared to be the main contributor to decreased susceptibility but incurred an infectivity defect. The ΔH69/ΔV70 single mutant had two-fold higher infectivity compared to wild type, possibly compensating for the reduced infectivity of D796H. These data reveal strong selection on SARS-CoV-2 during convalescent plasma therapy associated with emergence of viral variants with evidence of reduced susceptibility to neutralising antibodies.
Emary KRW et al The Lancet preprint	Efficacy of ChAdOx1 nCoV-19 (AZD1222) Vaccine Against SARS-CoV-2 VOC 202012/01 (B.1.1.7)	Il vaccino ChAdOx1 nCoV-19 (AstraZeneca) contro SARS-CoV-2 conferisce una protezione analoga dall'infezione sintomatica da virus wild-type e da variante	Background: A new variant of SARS-CoV-2, B.1.1.7, emerged as the dominant cause of COVID-19infection in the United Kingdom from November 2020 with a transmission advantage over the previous variants of the virus. Here we report efficacy of the adenoviral

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3779160		« inglese » secondo i dati di questo studio di fase II/III condotto nel Regno Unito, anche se il titolo di anticorpi neutralizzanti è di 9 volte inferiore nei confronti della variante.	vector vaccine, ChAdOx1 nCoV-19, against this variant in comparison with non-B.1.1.7 lineages. Methods: Volunteers enrolled in phase II/III vaccine efficacy studies in the United Kingdom and randomised 1:1 to receive ChAdOx1 nCoV-19 or a MenACWY control vaccine, providedupper airway swabs every week during the trial and also if they developed possible symptomatic COVID-19 infection. Swabs were tested by nucleic acid amplification test (NAAT) for SARS-CoV-2, and positive samples were sequenced through the COVID-19Genomics UK consortium (COG UK). NAAT data were used to assess the duration ofdetectable viral RNA in diagnostic specimens and the viral load. Anti-spike IgG wasmeasured by ELISA at baseline, 14 and 28 days after prime and 28 days after boostervaccination. Neutralising antibody responses were measured using a live virus neutralisation assay against the B.1.1.7 and Victoria lineages of the virus. The efficacy analysis included symptomatic COVID-19 in seronegative participants with a NAAT positive swab more than 14 days after a second dose of vaccine. Participants were analysed according to treatment received, with data cut-off on Jan 14, 2021. Vaccine efficacy was calculated as 1 − relative risk derived from a robust Poisson regression model. This study is ongoing and is registered with ClinicalTrials.gov NCT04400838 and ISRCTN 15281137.5 Findings: Between 1st October 2020 and 14th January 2021, 499 participants developed Covid-19infection. 1524 NAAT positive nose/throat swabs were collected from these participants during the trial. Of these, 323 swabs from 256 participants were successfully sequenced.ChAdOx1 nCoV-19 recipients had a significantly lower viral load as represented byminimum PCR Ct value ($p<0.0001$) and were NAAT positive for a shorter time ($p<0.0001$) than participants who received the control vaccine. Virus

			neutralisation activity by vaccineinduced antibodies was 9-fold lower against the B.1.1.7 variant than against a canonical non B.1.1.7 lineage. Vaccine efficacy against symptomatic NAAT positive infection was similar for B.1.1.7 and non-B1.1.7 lineages (74.6% [95%CI 41.6-88.9] and 84% [95% CI 70.7-91.4] respectively). There was no difference in anti-spike antibody titres between individuals who had received a prior ChAdOx1 vectored vaccine and those who were naïve to ChAdOx1. Interpretation: Efficacy of ChAdOx1 nCoV-19 against the B.1.1.7 variant of SARS-CoV-2 is similar to the efficacy of the vaccine against other lineages. Furthermore, vaccination with ChAdOx1 nCoV-19 results in a reduction in the duration of shedding and viral load, which may translate into a material impact on transmission of disease.
Lloyd EC et al JAMA https://jamanetwork.com/journals/jama/fullarticle/2776307	Monoclonal Antibodies for COVID-19	Il punto in breve sugli anticorpi monoclonali contro SARS-CoV-2 : attualmente appare indicato l'utilizzo su soggetti paucisintomatici non ospedalizzati ma a rischio di infezione grave ; rimane l'incognita dell'efficacia sulle varianti del virus.	Monoclonal antibodies, designed to mimic the body's natural immune response, are available as treatment for COVID-19 for patients at high risk of progression to severe disease. There are several approved treatments for coronavirus disease 2019 (COVID-19) in hospitalized patients but few for patients who are not sick enough to be hospitalized. Monoclonal antibodies are a new treatment for outpatients with COVID-19 who are at risk of progression to severe disease.

			
Guenezan J et al JAMA https://jamanetwork.com/journals/jamaotolaryngology/fullarticle/2775984	Povidone Iodine Mouthwash, Gargle, and Nasal Spray to Reduce Nasopharyngeal Viral Load in Patients With COVID-19: A Randomized Clinical Trial	Piccolo trial clinico condotto in Francia su 24 pazienti con infezione da SARS-CoV-2, non ricoverati, con carica virale nel tampone nasofaringeo (stimata con ciclo-soglia della PCR) molto elevata : 12 vengono trattati con una procedura quotidiana di pulizia di orofaringe e narici con iodopovidone, ottenendo una più rapida riduzione del titolo infettante dopo 1 giorno nella popolazione trattata. Studi di maggiore dimensione potrebbero approfondire questo	Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is primarily transmitted person-to-person through the aerosolization of droplets containing contaminated nasopharyngeal secretions.1 Povidone iodine (PI) solutions at concentrations as low as 0.5% rapidly inactivate SARS-CoV-2 in vitro with contact times as short as 15 seconds.2 We investigated whether nasopharyngeal application of PI could reduce the viral load of patients with nonsevere coronavirus disease 2019 (COVID-19) symptoms.

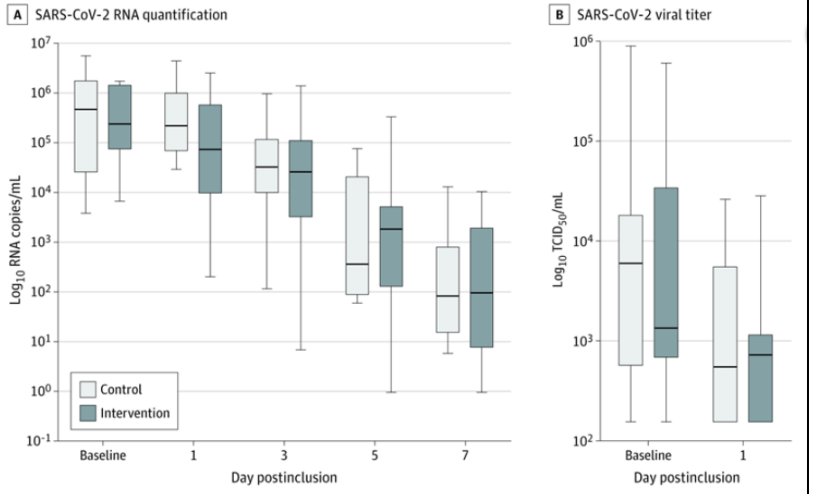
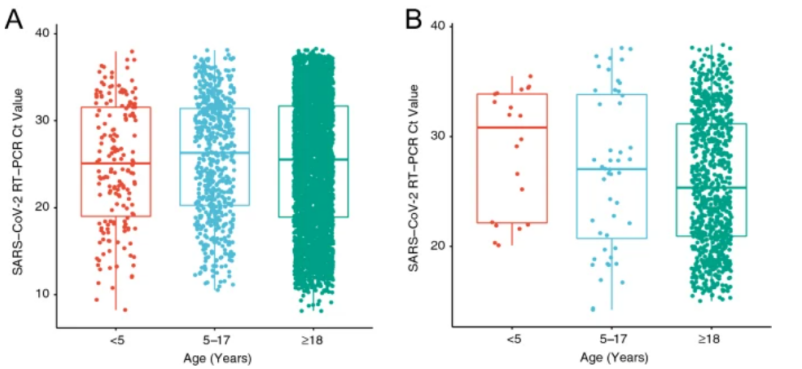
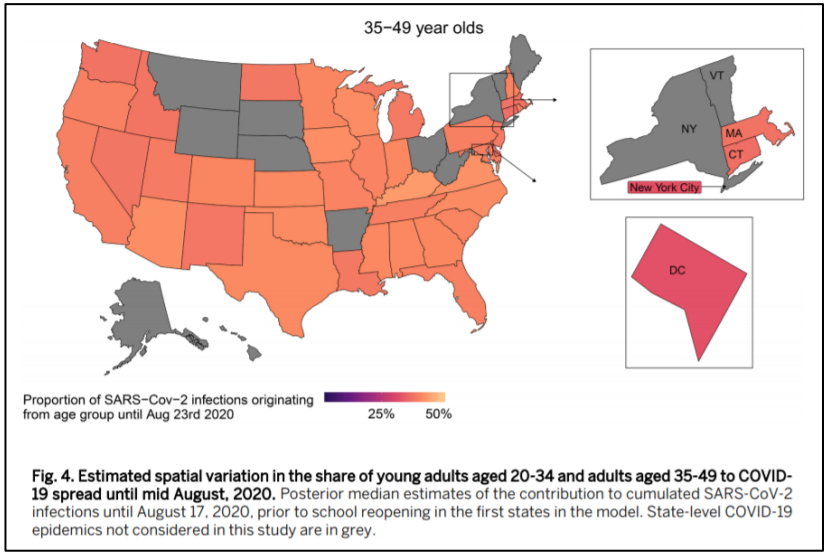
		metodo di decontaminazione.	**Figure. Box Plots Indicating Median, Interquartile Range, and 5th and 95th Percentiles, by Treatment Group**  RNA indicates ribonucleic acid; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; $TCID_{50}$, tissue culture infectious dose.
Madera S et al Scientific Reports https://www.nature.com/articles/s41598-021-81934-w	Nasopharyngeal SARS-CoV-2 viral loads in young children do not differ significantly from those in older children and adults	In questo studio su 5544 persone co infezione da SARS-CoV-2 si osserva che la carica virale nel tampone nasofaringeo (stimata tramite ciclo soglia della PCR) non differisce significativamente tra i bambini di età inferiore ai 5 anni, i ragazzi più grandi fino a 17 anni e gli adulti (i dati del laboratorio B sono troppo esigui per essere significativi).	The role of children in the spread of the SARS-CoV-2 coronavirus has become a matter of urgent debate as societies in the US and abroad consider how to safely reopen schools. Small studies have suggested higher viral loads in young children. Here we present a multicenter investigation on over five thousand SARS-CoV-2 cases confirmed by real-time reverse transcription (RT) PCR assay. Notably, we found no discernable difference in amount of viral nucleic acid among young children and adults.

			Figure 1  Age distributed nasopharyngeal SARS-CoV-2 viral nucleic acid content. SARS-CoV-2 viral nucleic acid detected by real-time RT-PCR in nasopharyngeal swabs from patients infected with SARS-CoV-2 as detected by (**A**) laboratory A (N = 4619, ANOVA p = 0.18) and (**B**) laboratory B (N = 925, ANOVA p = 0.073). Data are stratified by three age groups, ages < 5; 5–17; 18 and older.
Piccaluga PP et al Frontiers in Pediatrics https://www.frontiersin.org/articles/10.3389/fped.2020.595539/full	Cross-Immunization Against Respiratory Coronaviruses May Protect Children From SARS-CoV2: More Than a Simple Hypothesis?	La minore frequenza di infezione grave da SARS-CoV-2 nei bambini potrebbe essere in parte spiegata, secondo gli autori di questo studio, dalla protezione conferita dalle infezioni stagionali da comuni Coronavirus respiratori, che condividono con SARS-CoV-2 una porzione significativa del genoma.	In January 2020, a new coronavirus was identified as responsible for a pandemic acute respiratory syndrome. The virus demonstrated a high infectious capability and not-neglectable mortality in humans. However, similarly to previous SARS and MERS, the new disease COVID-19 caused by SARS-CoV-2 seemed to relatively spare children and younger adults. Some hypotheses have been proposed to explain the phenomenon, including lower ACE2 expression in children, cross-immunization from measles/rubella/mumps and BCG-vaccination, as well as the integrity of respiratory mucosa. Herein, we hypothesize that an additional mechanism might contribute to children's relative protection from SARS-CoV-2, the cross-immunization conferred by previous exposures to other common respiratory coronaviruses. To support our hypothesis, we show a statistically significant similarity in genomic and protein sequences, including epitopes for B- and T-cell immunity, of SARS-CoV-2 and the other beta coronaviruses. Since these coronaviruses

			are highly diffused across pediatric populations, cross-reactive immunity might reasonably induce an at least partial protection from SARS-CoV-2 in children.
Monod M et al Science https://science.sciencemag.org/content/early/2021/02/01/science.abe8372	Age groups that sustain resurging COVID-19 epidemics in the United States	Sulla base dei dati di mobilità personale all'interno della nazione, dello studio dei contatti e della mortalità per COVID-19, in questo studio si propone un modello che attribuisce la maggiore quota di contagi di SARS-CoV-2 negli USA da ottobre 2020 ad oggi alla fascia d'età 35-49 anni (e non ai bambini/ragazzi più giovani).	Following initial declines, in mid 2020 a resurgence in transmission of novel coronavirus disease (COVID-19) occurred in the US and Europe. As COVID19 disease control efforts are re-intensified, understanding the age demographics driving transmission and how these affect the loosening of interventions is crucial. We analyze aggregated, age-specific mobility trends from more than 10 million individuals in the US and link these mechanistically to age-specific COVID-19 mortality data. We estimate that as of October 2020, individuals aged 20-49 are the only age groups sustaining resurgent SARS-CoV-2 transmission with reproduction numbers well above one, and that at least 65 of 100 COVID-19 infections originate from individuals aged 20-49 in the US. Targeting interventions – including transmission-blocking vaccines – to adults aged 20-49 is an important consideration in halting resurgent epidemics and preventing COVID-19-attributable deaths.
Gasmi A et al Applied Microbiology and Biotechnology https://link.springer.com/article/10.1007/s00253-021-11094-4	Chloroquine and hydroxychloroquine in the treatment of COVID-19: the never-ending story	Sinossi degli studi sull'utilizzo di clorochina e idrossiclorochina nella terapia di COVID-19.	The anti-malarial drugs chloroquine (CQ) and hydroxychloroquine (HCQ) have been suggested as promising agents against the new coronavirus SARS-CoV-2 that induces COVID-19 and as a possible therapy for shortening the duration of the viral disease. The antiviral effects of CQ and HCQ have been demonstrated in vitro due to their ability to block viruses like coronavirus SARS in cell culture. CQ and HCQ have been proposed to reduce immune reactions to infectious agents, inhibit pneumonia exacerbation, and improve lung imaging investigations. CQ analogs have also revealed the anti-inflammatory and immunomodulatory effects in treating viral infections and related ailments. There was, moreover,

			convincing evidence from early trials in China about the efficacy of CQ and HCQ in the anti-COVID-19 procedure. Since then, research and studies have been massive to ascertain these drugs' efficacy and safety in treating the viral disease. In the present review, we construct a synopsis of the main properties and current data concerning the metabolism of CQ/HCQ, which were the basis of assessing their potential therapeutic roles against the new coronavirus infection. The effective role of QC and HCQ in the prophylaxis and therapy of COVID-19 infection is discussed in light of the latest international medical-scientific research results.  **Fig. 4. Estimated spatial variation in the share of young adults aged 20-34 and adults aged 35-49 to COVID-19 spread until mid August, 2020.** Posterior median estimates of the contribution to cumulated SARS-CoV-2 infections until August 17, 2020, prior to school reopening in the first states in the model. State-level COVID-19 epidemics not considered in this study are in grey.
Hope JL et al Science https://science.sciencemag.org/content/371/6528/464	Lessons in antiviral immunity	Un ripasso delle funzioni della risposta immunitaria acquisita nei confronti dei virus.	The adaptive branch of the immune system can kill virally infected cells and generate protective immune memory, which is the basis of vaccination strategies. Both T cell and B cell responses are important in controlling viruses and the development of immunity. However, the COVID-19 pandemic is revealing widely varying immune responses and diverse clinical outcomes with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, raising

			questions about how antiviral responses are orchestrated, factors that influence the longevity of immunological memory, and approaches that mediate robust protection from viral infections.