| RICERCA BIBLIOGRAFICA COVID 19<br>SETTIMANA 28.12.2020 – 3.01.2021<br>FONDAZIONE POLICLINICO UNIVERSITARIO A. GEMELLI IRCCS, UOC MALATTIE INFETTIVE<br>DOTT.SSA ELEONORA TADDEI | | | |
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| **AUTORE/RIVISTA** | **TITOLO** | **OUTCOME PRINCIPALE** | **ABSTRACT** |
| Martin CA et al<br><br>Journal of Public Health<br><br>https://academic.oup.com/jpubhealth/advance-article/doi/10.1093/pubmed/fdaa237/6047809 | No cases of asymptomatic SARS-CoV-2 infection among healthcare staff in a city under lockdown restrictions: lessons to inform 'Operation Moonshot' | Gli operatori sanitari asintomatici dell'Università di Leicester sono stati invitati a sottoporsi a un test molecolare per SARS-CoV-2 tra luglio e agosto 2020 : circa 8% del totale ha partecipato e nessuna infezione è stata diagnosticata, a confronto con una prevalenza del 2.6% nella città di Leicester. A quanto pare il test volontario degli asintomatici non riscuote interesse e non è efficace. | Background : Leicester was the first city in the UK to have 'local lockdown' measures imposed in response to high community rates of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) transmission. As part of this response, a directive was issued by NHS England to offer testing of asymptomatic healthcare workers (HCWs) at University Hospitals of Leicester NHS Trust (UHL) for SARS-CoV-2 infection.<br>Methods : Between 20 July and 14 August 2020, we invited all HCWs at UHL to attend for SARS-CoV-2 testing by nucleic acid amplification (NAAT). We combined the result of this assay with demographic information from the electronic staff record.<br>Results : A total of 1150 staff (~8% of the workforce) volunteered. The median age was 46 years (IQR 34–55), 972 (84.5%) were female; 234 (20.4%) were of South Asian and 58 (5.0%) of Black ethnicity; 564 (49.0%) were nurses/healthcare assistants. We found |

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| | | | no cases of asymptomatic infection. In comparison, average community test positivity rate in Leicester city was 2.6%. Conclusions : Within the context of local lockdowns due to high community transmission rates, voluntary testing of asymptomatic staff has low uptake and low yield and thus its premise and cost-effectiveness should be re-considered. |
| Hampshire A et al<br><br>MedRXiv<br><br>https://www.medrxiv.org/content/10.1101/2020.10.20.20215863v1 | Cognitive deficits in people who have recovered from COVID-19 relative to controls: An N=84,285 online study | Nei pazienti con storia di COVID-19 (dato autoriportato) rispetto a persone mai affette sono stati rilevati deficit cognitivi tramite un questionario online cui hanno partecipato 84285 persone nel Regno Unito. | Case studies have revealed neurological problems in severely affected COVID-19 patients. However, there is little information regarding the nature and broader prevalence of cognitive problems post-infection or across the full spread of severity. We analysed cognitive test data from 84,285 Great British Intelligence Test participants who completed a questionnaire regarding suspected and biologically confirmed COVID-19 infection. People who had recovered, including those no longer reporting symptoms, exhibited significant cognitive deficits when controlling for age, gender, education level, income, racial-ethnic group and pre-existing medical disorders. They were of substantial effect size for people who had been hospitalised, but also for mild but biologically confirmed cases who reported no breathing difficulty. Finer grained analyses of performance support the hypothesis that COVID-19 has a multi-system impact on human cognition. |
| McGurnaghan SJ et al<br><br>The Lancet<br><br>https://www.thelancet.com/journals/landia/article/ | Risks of and risk factors for COVID-19 disease in people with diabetes: a cohort study of the total population of Scotland | Studio condotto sull'intera popolazione scozzese nel periodo marzo – luglio 2020, includendo tutte le persone con diabete mellito (319349) : i diabetici hanno maggior rischio rispetto alla popolazione generale di COVID-19 critico o fatale. | Background : We aimed to ascertain the cumulative risk of fatal or critical care unit-treated COVID-19 in people with diabetes and compare it with that of people without diabetes, and to investigate risk factors for and build a cross-validated predictive model of fatal or critical care unit-treated COVID-19 among people with diabetes. Methods : In this cohort study, we captured the data encompassing the first wave of the pandemic in Scotland, from March 1, 2020, when the first case was identified, to July 31, 2020, when infection |

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| PIIS2213-8587(20)30405-8/fulltext | | | rates had dropped sufficiently that shielding measures were officially terminated. The participants were the total population of Scotland, including all people with diabetes who were alive 3 weeks before the start of the pandemic in Scotland (estimated Feb 7, 2020). We ascertained how many people developed fatal or critical care unit-treated COVID-19 in this period from the Electronic Communication of Surveillance in Scotland database (on virology), the RAPID database of daily hospitalisations, the Scottish Morbidity Records-01 of hospital discharges, the National Records of Scotland death registrations data, and the Scottish Intensive Care Society and Audit Group database (on critical care). Among people with fatal or critical care unit-treated COVID-19, diabetes status was ascertained by linkage to the national diabetes register, Scottish Care Information Diabetes. We compared the cumulative incidence of fatal or critical care unit-treated COVID-19 in people with and without diabetes using logistic regression. For people with diabetes, we obtained data on potential risk factors for fatal or critical care unit-treated COVID-19 from the national diabetes register and other linked health administrative databases. We tested the association of these factors with fatal or critical care unit-treated COVID-19 in people with diabetes, and constructed a prediction model using stepwise regression and 20-fold cross-validation.<br>Findings : Of the total Scottish population on March 1, 2020 (n=5 463 300), the population with diabetes was 319 349 (5·8%), 1082 (0·3%) of whom developed fatal or critical care unit-treated COVID-19 by July 31, 2020, of whom 972 (89·8%) were aged 60 years or older. In the population without diabetes, 4081 (0·1%) of 5 143 951 people developed fatal or critical care unit-treated COVID-19. As of July 31, the overall odds ratio (OR) for diabetes, adjusted for age and sex, was 1·395 (95% CI 1·304–1·494; p<0·0001, |

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| | | | compared with the risk in those without diabetes. The OR was 2·396 (1·815–3·163; p<0·0001) in type 1 diabetes and 1·369 (1·276–1·468; p<0·0001) in type 2 diabetes. Among people with diabetes, adjusted for age, sex, and diabetes duration and type, those who developed fatal or critical care unit-treated COVID-19 were more likely to be male, live in residential care or a more deprived area, have a COVID-19 risk condition, retinopathy, reduced renal function, or worse glycaemic control, have had a diabetic ketoacidosis or hypoglycaemia hospitalisation in the past 5 years, be on more anti-diabetic and other medication (all p<0·0001), and have been a smoker (p=0·0011). The cross-validated predictive model of fatal or critical care unit-treated COVID-19 in people with diabetes had a C-statistic of 0·85 (0·83–0·86).<br>Interpretation : Overall risks of fatal or critical care unit-treated COVID-19 were substantially elevated in those with type 1 and type 2 diabetes compared with the background population. The risk of fatal or critical care unit-treated COVID-19, and therefore the need for special protective measures, varies widely among those with diabetes but can be predicted reasonably well using previous clinical history. |

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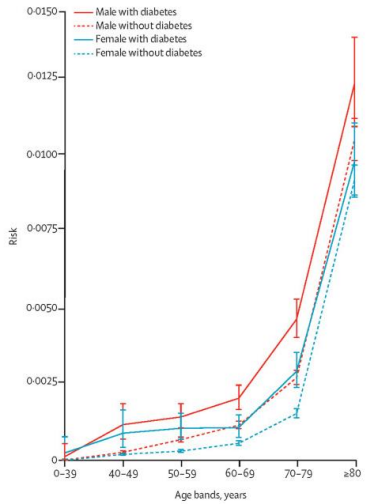
| | | |  <br>Figure 1 Risk of fatal or critical care unit-treated COVID-19 in the national population of Scotland with and without diabetes by age band and sex by July 31, 2020 |
| Jorge A et al<br><br>The Lancet<br><br>https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(20)30422-7/fulltext | Temporal trends in severe COVID-19 outcomes in patients with rheumatic disease: a cohort study | Andamento dell'esito dell'infezione da SARS-CoV-2 in due coorti di pazienti con artrite reumatoide e malattie muscoloscheletriche diagnosticati rispettivamente nei primi 90 giorni di pandemia o nei successivi 90 giorni, per complessivi 8540 pazienti : tutti gli outcome avversi sono meno frequenti nella coorte tardiva. | Background : As the COVID-19 pandemic continues worldwide, severe COVID-19 outcomes remain a major concern for patients with rheumatic and musculoskeletal diseases. We aimed to investigate temporal trends in COVID-19 outcomes in patients with rheumatic and musculoskeletal diseases over the course of the pandemic.<br>Methods : Using a large, multicentre, electronic health record network (TriNetX), we did a comparative cohort study of patients with rheumatic and musculoskeletal diseases who were diagnosed with COVID-19 (by International Classification of Diseases, Tenth Revision code or positive PCR test) during the first 90 days of the pandemic (early cohort) compared with the second 90 days of the pandemic (late cohort), matched (1:1) for demographics, comorbidities, laboratory results, glucocorticoid use, and previous hospitalisations using an exposure score method. Outcomes were assessed within 30 days of COVID-19 diagnosis, including |

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| | | | hospitalisation, intensive care unit admission, invasive mechanical ventilation, renal failure, and death. We did a subgroup analysis among patients with rheumatic and musculoskeletal diseases who were hospitalised with COVID-19.<br>Findings : We identified 8540 patients with rheumatic and musculoskeletal diseases who were diagnosed with COVID-19 during the 6-month study period, including 2811 in the early cohort and 5729 in the late cohort. In the exposure score matched analysis, the risk of hospitalisation was lower in the late cohort than in the early cohort (874 [32·4%] of 2701 patients vs 1227 [45·4%] of 2701 patients; relative risk [RR] 0·71, 95% CI 0·67–0·76). The risks of intensive care unit admission (214 [7·9%] vs 385 [14·3%]; RR 0·56, 95% CI 0·47–0·65), mechanical ventilation (96 [3·6%] vs 247 [9·1%]; 0·39, 0·31–0·49), acute kidney injury (372 [13·8%] vs 560 [20·7%]; 0·66, 0·59–0·75), renal replacement therapy (17 [0·6%] vs 32 [1·2%]; 0·53, 0·30–0·96), and death (122 [4·5%] vs 252 [9·3%]; 0·48, 0·39–0·60) were lower in the late cohort compared with the early cohort. Among the hospitalised subgroup, the risk of the composite outcome of intensive care unit admission, mechanical ventilation, and death was lower in the late cohort than in the early cohort (334 [30·7%] of 1089 patients vs 450 [41·3%] of 1089 patients; RR 0·74, 95% CI 0·67–0·83).<br>Interpretation : The risks of severe COVID-19 outcomes have improved over time in patients with rheumatic and musculoskeletal disease but remain substantial. These findings might reflect ascertainment of milder cases in the later cohort and improvements in treatment and supportive care. |

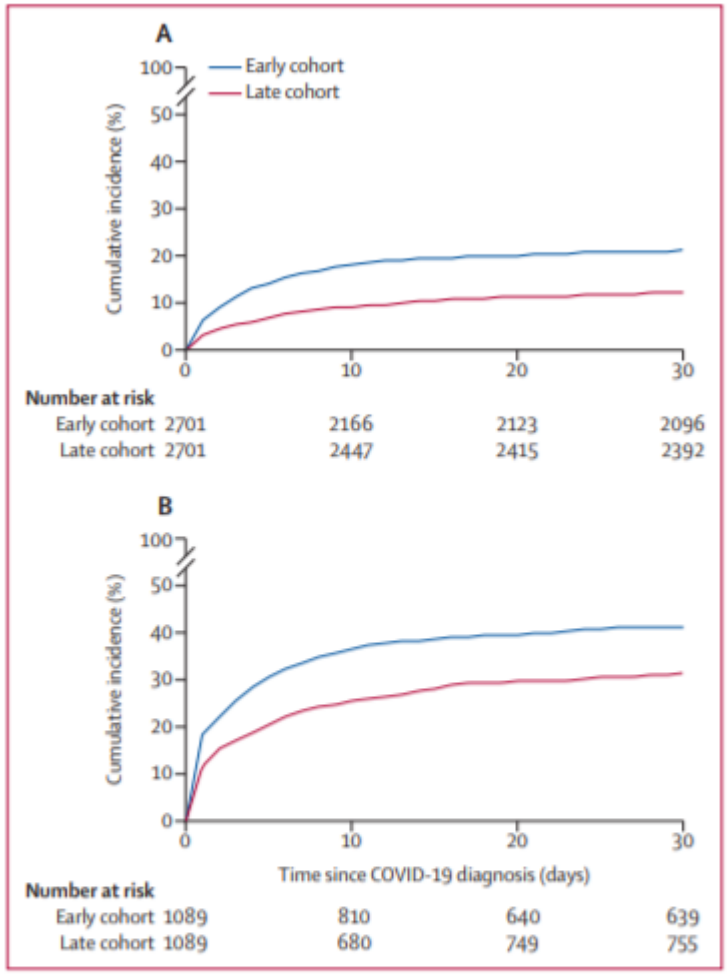


***Figure 2*: Cumulative incidence of intensive care unit admission, mechanical ventilation, or death after COVID-19 diagnosis in patients with rheumatic and musculoskeletal diseases**

(A) Overall exposure score matched analysis in early and late cohorts.
(B) Hospitalised subgroup exposure score matched analysis in early and late cohorts.

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| Cohen J et al<br><br>Science<br><br>https://science.sciencemag.org/content/370/6523/1392 | Shots of hope | La prospettiva del vaccino per un ritorno alla normalità dopo un anno dominato dalle restrizioni dovute alla pandemia. | In March, when cases of COVID-19 began to overwhelm hospitals in the United States, I told my 90-year-old mother that she had to shelter in place. She lives alone in Los Angeles, and to keep her company, I FaceTimed her every night. In the role reversal that happens with time, I became the forever-worried, nagging parent, and she was the ever-doubting, defiant child.<br>Over my increasingly loud objections, she'd gone to the mall with her sister, had her nails done, and lost 56 cents playing mahjong with "the girls." The world she knew was dying, and after a few weeks of denial, bargaining, and anger, she finally entered the grief stages of depression and acceptance and quarantined herself. |
| Avanzato VA et al<br><br>Cell<br><br>https://www.cell.com/cell/fulltext/S0092-8674(20)31456-2 | Case Study: Prolonged Infectious SARS-CoV-2 Shedding from an Asymptomatic Immunocompromised Individual with Cancer | Caso clinico di una paziente affetta da leucamia linfatica cronica e ipogammaglobulinemia acquisita con infezione da SARS-CoV-2 e shedding virale fino a 70 giorni dalla diagnosi. | Long-term severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) shedding was observed from the upper respiratory tract of a female immunocompromised individual with chronic lymphocytic leukemia and acquired hypogammaglobulinemia. Shedding of infectious SARS-CoV-2 was observed up to 70 days, and of genomic and subgenomic RNA up to 105 days, after initial diagnosis. The infection was not cleared after the first treatment with convalescent plasma, suggesting a limited effect on SARS-CoV-2 in the upper respiratory tract of this individual. Several weeks after a second convalescent plasma transfusion, SARS-CoV-2 RNA was no longer detected. We observed marked within-host genomic evolution of SARS-CoV-2 with continuous turnover of dominant viral variants. However, replication kinetics in Vero E6 cells and primary human alveolar epithelial tissues were not affected. Our data indicate that certain immunocompromised individuals may shed infectious virus longer than previously recognized. Detection of subgenomic RNA is recommended in persistently SARS-CoV-2-positive individuals as a proxy for shedding of infectious virus. |

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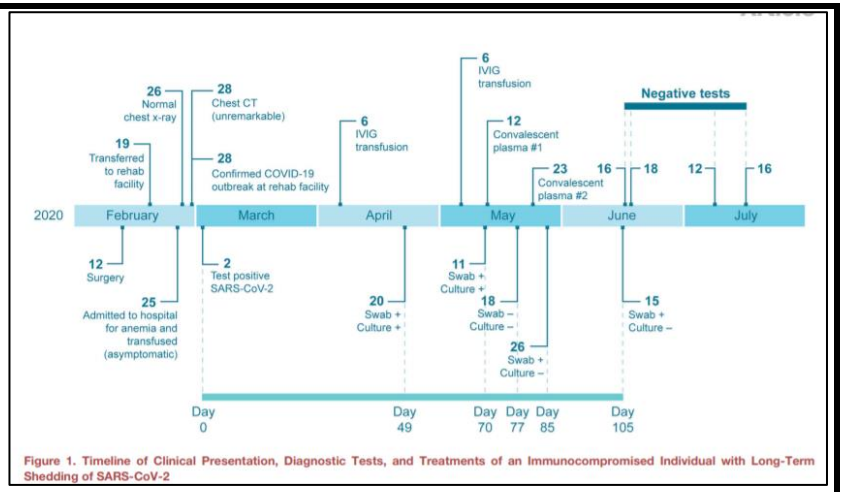
| | | |  <br>Figure 1. Timeline of Clinical Presentation, Diagnostic Tests, and Treatments of an Immunocompromised Individual with Long-Term Shedding of SARS-CoV-2 |
| Gergen AK et al<br><br>Annals of Thoracic Surgery<br><br>https://pubmed.ncbi.nlm.nih.gov/33347850/ | Coronavirus Disease 2019 in Lung Transplant Recipients | Esito dell'infezione da SARS-CoV-2 in due pazienti trapiantati di polmone, di cui uno deceduto e uno sopravvissuto dopo essere stato sottoposto a ventilazione meccanica e tracheostomia. | We report risk factors, clinical manifestations, and treatment course of two lung transplant recipients diagnosed with Coronavirus Disease 2019 (COVID-19) pneumonia. Both patients underwent an initial hospitalization and discharged home, followed by readmission several days later with significant worsening of respiratory status and infectious symptoms. The first patient underwent prolonged hospitalization requiring tracheostomy and feeding tube placement. The second patient declined intubation and expired. The early documented experiences of COVID-19 pneumonia in lung transplant recipients suggest that although recovery is achievable, the high rate of comorbid conditions and immunocompromised state may place these patients at higher risk for poor outcomes. |
| Ramos – Rincon JM et al<br><br>The Journal of Gerontology | Clinical Characteristics and Risk Factors for Mortality in Very Old Patients Hospitalized With COVID-19 in Spain | Studio retrospettivo multicentrico su 2772 pazienti ultra-ottantenni ricoverati per COVID-19 in Spagna : sono predittori di mortalità il sesso maschile, | Background : Advanced age is a well-known risk factor for poor prognosis in COVID-19. However, few studies have specifically focused on very old inpatients with COVID-19. This study aims to describe the clinical characteristics of very old inpatients with |

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| https://academic.oup.com/biomedgerontology/advance-article/doi/10.1093/gerona/glaa243/5939952?searchresult=1 | | un livello moderato-grave di non autosufficienza, e una serie di parametri che indicano gravità all'ingresso in ospedale ; le comorbidità non sono associate al decesso. | COVID-19 and identify risk factors for in-hospital mortality at admission.<br>Methods : We conducted a nationwide, multicenter, retrospective, observational study in patients ≥ 80 years hospitalized with COVID-19 in 150 Spanish hospitals (SEMI-COVID-19) Registry (March 1–May 29, 2020). The primary outcome was in-hospital mortality. A uni- and multivariate logistic regression was performed to assess predictors of mortality at admission.<br>Results : A total of 2772 consecutive patients (49.4% men, median age 86.3 years) were analyzed. Rates of atherosclerotic cardiovascular disease, diabetes mellitus, dementia, and Barthel Index < 60 were 30.8%, 25.6%, 30.5%, and 21.0%, respectively. The overall case-fatality rate was 46.9% (n: 1301) and increased with age (80–84 years: 41.6%; 85–90 years: 47.3%; 90–94 years: 52.7%; ≥95 years: 54.2%). After analysis, male sex and moderate-to-severe dependence were independently associated with in-hospital mortality; comorbidities were not predictive. At admission, independent risk factors for death were: oxygen saturation < 90%; temperature ≥ 37.8°C; quick sequential organ failure assessment (qSOFA) score ≥ 2; and unilateral–bilateral infiltrates on chest x-rays. Some analytical findings were independent risk factors for death, including estimated glomerular filtration rate < 45 mL/min/1.73 m2; lactate dehydrogenase ≥ 500 U/L; C-reactive protein ≥ 80 mg/L; neutrophils ≥ 7.5 × 103/μL; lymphocytes < 0.8 × 103/μL; and monocytes < 0.5 × 103/μL.<br>Conclusions : This first large, multicenter cohort of very old inpatients with COVID-19 shows that age, male sex, and poor preadmission functional status—not comorbidities—are independently associated with in-hospital mortality. Severe COVID-19 at admission is related to poor prognosis. |

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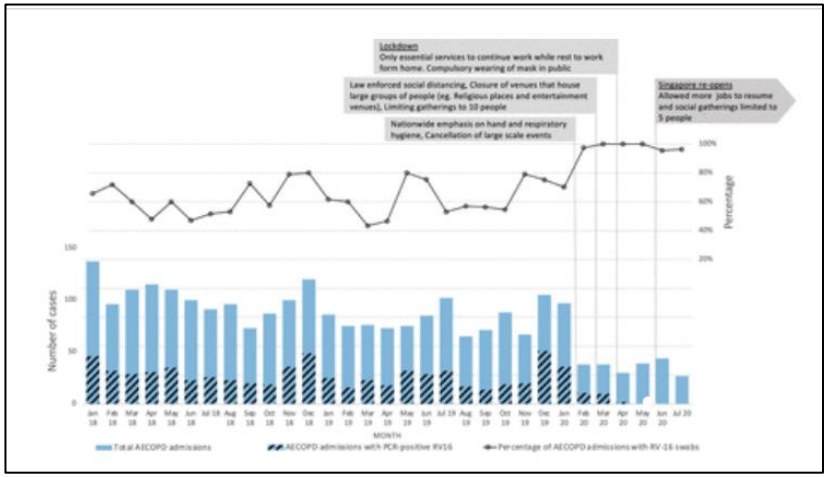
| Tan JY et al<br><br>Thorax<br><br>https://thorax.bmj.com/content/early/2020/12/02/thoraxjnl-2020-216083 | COVID-19 public health measures: a reduction in hospital admissions for COPD exacerbations | Il numero di ospedalizzazioni per esacerbazione di BPCO si è ridotto significativamente durante il periodo febbraio-luglio 2020 della pandemia di COVID-19 : le misure di distanziamento sono proficue ; lo sforzo per un vaccino per le infezioni respiratorie più comuni sarebbe auspicabile. | Hospitalisations for acute exacerbations of COPD (AECOPD) carry significant morbidity and mortality. Respiratory viral infections (RVIs) are the most common cause of AECOPD and are associated with worse clinical outcomes. During the COVID-19 pandemic, public health measures, such as social distancing and universal masking, were originally implemented to reduce transmission of SARS-CoV-2; these public health measures were subsequently also observed to reduce transmission of other common circulating RVIs. In this study, we report a significant and sustained decrease in hospital admissions for all AECOPD as well as RVI-associated AECOPD, which coincided with the introduction of public health measures during the COVID-19 pandemic.<br>  <br> |
| Tyreell CSB et al<br><br>Thorax | Managing intensive care admissions when there are not enough beds during the COVID-19 pandemic: a systematic review | Revisione sistematica delle linee guida disponibili sull'ammissione in terapia intensiva di pazienti con infezione da SARS-CoV-2. | The surge in cases of severe COVID-19 has resulted in clinicians triaging intensive care unit (ICU) admissions in places where demand has exceeded capacity. In order to assist difficult triage decisions, clinicians require clear guidelines on how to prioritise patients. Existing guidelines show significant variability in their development, interpretation, implementation and an urgent need for a robust synthesis of published guidance. To understand how to |

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| https://thorax.bmj.com/content/early/2020/12/16/thoraxjnl-2020-215518 | | | manage which patients are admitted to ICU, and receive mechanical ventilatory support, during periods of high demand during the COVID-19 pandemic, a systematic review was performed. Databases of indexed literature (Medline, Embase, Web of Science, and Global Health) and grey literature (Google.com and MedRxiv), published from 1 January until 2 April 2020, were searched. Search terms included synonyms of COVID-19, ICU, ventilation, and triage. Only formal written guidelines were included. There were no exclusion criteria based on geographical location or publication language. Quality appraisal of the guidelines was performed using the Appraisal of Guidelines for Research and Evaluation Instrument II (AGREE II) and the Appraisal of Guidelines for Research and Evaluation Instrument Recommendation EXcellence (AGREE REX) appraisal tools, and key themes related to triage were extracted using narrative synthesis. Of 1902 unique records identified, nine relevant guidelines were included. Six guidelines were national or transnational level guidance (UK, Switzerland, Belgium, Australia and New Zealand, Italy, and Sri Lanka), with one state level (Kansas, USA), one international (Extracorporeal Life Support Organization) and one specific to military hospitals (Department of Defense, USA). The guidelines covered several broad themes: use of ethical frameworks, criteria for ICU admission and discharge, adaptation of criteria as demand changes, equality across health conditions and healthcare systems, decision-making processes, communication of decisions, and guideline development processes. We have synthesised the current guidelines and identified the different approaches taken globally to manage the triage of intensive care resources during the COVID-19 pandemic. There is limited consensus on how to allocate the finite resource of ICU beds and ventilators, and a lack of high-quality evidence and guidelines on |

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| | | | resource allocation during the pandemic. We have developed a set of factors to consider when developing guidelines for managing intensive care admissions, and outlined implications for clinical leads and local implementation. |
| Aziz M et al<br><br>The American Journal of Medical Sciences<br><br>https://www.amjmedsci.org/article/S0002-9629(20)30427-4/fulltext | The Association of "Loss of Smell" to COVID-19: A Systematic Review and Meta-Analysis | Revisione sistematica e metanalisi di 51 studi sull'anosmia nel COVID-19 : la presenza di tale sintomo è associata a un decorso più lieve della malattia. | Background : The presence of olfactory dysfunction or "loss of smell" has been reported as an atypical symptom in patients with coronavirus disease 2019 (COVID-19). We performed a systematic review and meta-analysis of the available literature to evaluate the prevalence of "loss of smell" in COVID-19 as well as its utility for prognosticating the disease severity.<br>Methods : An exhaustive search of the PubMed/Medline, Embase, Web of Science, Cochrane Library, LitCovid NIH, and WHO COVID-19 database was conducted through August 6th, 2020. All studies reporting the prevalence of "loss of smell" (anosmia and/or hyposmia/microsmia) in laboratory-confirmed COVID-19 patients were included. Pooled prevalence for cases (positive COVID-19 through reverse transcriptase (RT-PCR) and/or serology IgG/IgM) and controls (negative RT-PCR and/or serology) was compared, and the odds ratio (OR), 95% confidence interval (CI) and the p-value were calculated. A p-value of <0.05 was considered statistically significant.<br>Results : A total of 51 studies with 11074 confirmed COVID-19 patients were included. Of these, 21 studies used a control group with 3425 patients. The symptom of "loss of smell" (OR: 14.7, CI: 8.9–24.3) was significantly higher in the COVID-19 group when compared to the control group. Seven studies comparing severe COVID-19 patients with- and without "loss of smell" demonstrated favorable prognosis for patients with "loss of smell" (OR: 0.36, CI 0.27–0.48). |

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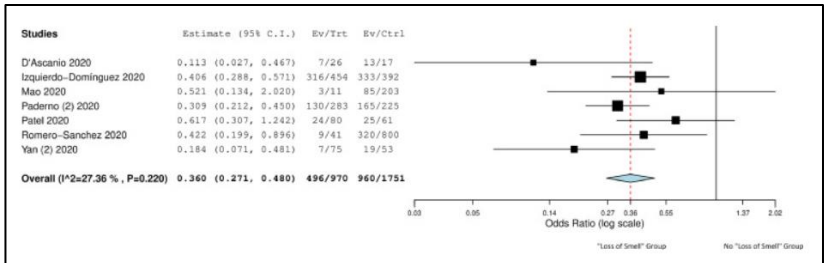
| | | | Conclusions : Olfactory dysfunction or “loss of smell” is a prevalent symptom in COVID-19 patients. Moreover, COVID-19 patients with “loss of smell” appear to have a milder course of the disease.<br><br>  <br><br>Figure 4 Forest plot comparing severe cases in COVID-19 group presenting with “loss of smell” to patients without “loss of smell”. |
| Khullar R et al<br><br>Journal of Clinical Medicine<br><br>https://www.ncbi.nlm.nih.gov/research/coronavirus/publication/33371426 | Effects of Prone Ventilation on Oxygenation, Inflammation, and Lung Infiltrates in COVID-19 Related Acute Respiratory Distress Syndrome: A Retrospective Cohort Study. | Studio di coorte retrospettivo su 23 pazienti sottoposti a ventilazione meccanica in posizione prona : in chi sopravvive si osserva un miglioramento della RX torace a 48 ore. | Patients receiving mechanical ventilation for coronavirus disease 2019 (COVID-19) related, moderate-to-severe acute respiratory distress syndrome (CARDS) have mortality rates between 76-98%. The objective of this retrospective cohort study was to identify differences in prone ventilation effects on oxygenation, pulmonary infiltrates (as observed on chest X-ray (CXR)), and systemic inflammation in CARDS patients by survivorship and to identify baseline characteristics associated with survival after prone ventilation. The study cohort included 23 patients with moderate-to-severe CARDS who received prone ventilation for >/=16 h/day and was segmented by living status: living (n = 6) and deceased (n = 17). Immediately after prone ventilation, PaO2/FiO2 improved by 108% ($p < 0.03$) for the living and 150% ($p < 3 \times 10(-4)$) for the deceased. However, the 48 h change in lung infiltrate severity in gravity-dependent lung zones was significantly better for the living than for the deceased ($p < 0.02$). In CXRs of the lower lungs before prone ventilation, we observed 5 patients with confluent infiltrates bilaterally, 12 patients with ground-glass opacities (GGOs) |

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| | | | bilaterally, and 6 patients with mixed infiltrate patterns; 80% of patients with confluent infiltrates were alive vs. 8% of patients with GGOs. In conclusion, our small study indicates that CXRs may offer clinical utility in selecting patients with moderate-to-severe CARDS who will benefit from prone ventilation. Additionally, our study suggests that lung infiltrate severity may be a better indicator of patient disposition after prone ventilation than PaO2/FiO2. |
| Di Micco P et al<br><br>Journal of Clinical Medicine<br><br>https://doi.org/10.3390/jcm9124134 | Prognostic Value of Fibrinogen among COVID-19 Patients Admitted to an Emergency Department: An Italian Cohort Study | Elevazione dei livelli di fibrinogeno all'ingresso in pronto soccorso nei pazienti ricoverati con COVID-19 che sviluppano ARDS. | INTRODUCTION: A highly pathogenic human coronavirus able to induce severe acute respiratory syndrome (SARS) has been recently recognized as the cause of the coronavirus disease 2019 (COVID-19); the disease became pandemic after a few months. Little is still known about the laboratory prognostic markers in COVID-19 patients. The aim of our study was to describe the prognostic value of clotting parameters for the prediction of severe form of COVID-19 characterized by acute respiratory distress syndrome (ARDS) at hospital admission. MATERIAL AND METHODS: From a large cohort of 152 patients consecutively admitted from February to March 2020 for fever and dyspnea to the emergency departments (ED) of three Italian hospitals, we evaluated 85 patients with confirmed diagnosis of COVID-19 and 67 patients with acute illness. All patients underwent medical history checks, physical examination, and laboratory evaluation. Prothrombin time (PT), activated thromboplastin time (aPTT), fibrinogen and D-dimer tests were performed and compared, first, between COVID-19 and control groups, and then between COVID-19 patients with or without ARDS. RESULTS: COVID-19 patients were more likely to show abnormal baseline levels of PT, aPTT, D-dimer, and fibrinogen at admission compared to the control group. COVID-19 patients with ARDS showed a statistically significant increase in levels of fibrinogen compared to those without ARDS (720 (621-833) vs. 490 (397.5- |

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| | | | 601.5); p= 1.8653 x 10(-9) (0.0765). A cut-off value of 617 mg/dL had a sensitivity of 76% and a specificity of 79% in identifying COVID-19 patients with ARDS. CONCLUSION: A serum level of fibrinogen of 617 mg/dL in COVID-19 patients admitted to emergency department may help to identify early those with ARDS. |
| Celardo I et al<br><br>Biology Direct<br><br>https://biologydirect.biomedcentral.com/articles/10.1186/s13062-020-00283-2 | The immune system view of the coronavirus SARS-CoV-2. | Come il nostro sistema immunitario vede e combatte SARS-CoV-2- | Knowing the "point of view" of the immune system is essential to understand the characteristic of a pandemic, such as that generated by the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV)-2, responsible for the Coronavirus Disease (COVID)-19. In this review, we will discuss the general host/pathogen interactions dictating protective immune response or immunopathology, addressing the role of immunity or immunopathology in influencing the clinical infection outcome, and debate the potential immunoprophylactic and immunotherapy strategies required to fight the virus infection. |

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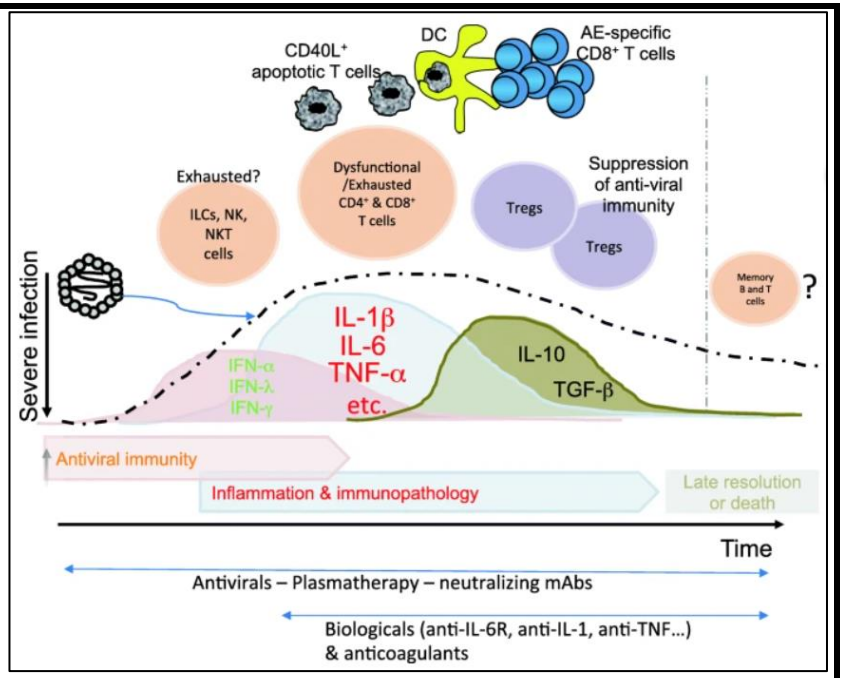
| | | |  |
| Wibbens PD et al<br><br>PLoS One<br><br>https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0244177 | Which COVID policies are most effective? A Bayesian analysis of COVID-19 by jurisdiction. | Analisi dell'efficacia delle più comuni misure di contenimento di SARS-CoV-2 messe in atto da diversi Paesi. | This paper reports the results of a Bayesian analysis on large-scale empirical data to assess the effectiveness of eleven types of COVID-control policies that have been implemented at various levels of intensity in 40 countries and U.S. states since the onset of the pandemic. The analysis estimates the marginal impact of each type and level of policy as implemented in concert with other policies. The purpose is to provide policymakers and the general public with an estimate of the relative effectiveness of various COVID-control strategies. We find that a set of widely implemented core policies reduces the spread of virus but not by enough to contain the pandemic except in a few highly compliant jurisdictions. The core policies include the cancellation of public events, restriction of gatherings to fewer than 100 people, recommendation to stay at home, recommended restrictions on internal movement, |

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| | | | implementation of a partial international travel ban, and coordination of information campaigns. For the median jurisdiction, these policies reduce growth rate in new infections from an estimated 270% per week to approximately 49% per week, but this impact is insufficient to prevent eventual transmission throughout the population because containment occurs only when a jurisdiction reduces growth in COVID infection to below zero. Most jurisdictions must also implement additional policies, each of which has the potential to reduce weekly COVID growth rate by 10 percentage points or more. The slate of these additional high-impact policies includes targeted or full workplace closings for all but essential workers, stay-at-home requirements, and targeted school closures. |
| Eunsun J et al<br><br>International Journal of Environmental Research<br><br>https://www.mdpi.com/1660-4601/17/24/9571 | Understanding South Korea's Response to the COVID-19 Outbreak: A Real-Time Analysis. | La ricerca proattiva degli affetti, il tracciamento e le misure di isolamento sono stati i punti di forza della gestione dell'epidemia di COVID-19 in Corea del Sud. | This case study focuses on the epidemiological situation of the COVID-19 outbreak, its impacts and the measures South Korea undertook during the first wave of the COVID-19 pandemic. Since the first case was confirmed on 20 January 2020, South Korea has been actively experiencing the COVID-19 outbreak. In the early stage of the pandemic, South Korea was one of the most-affected countries because of a large outbreak related to meetings of a religious movement, namely the Shincheonji Church of Jesus, in a city called Daegu and North Gyeongsang province. However, South Korea was held as a model for many other countries as it appeared to slow the spread of the outbreak with distinctive approaches and interventions. First of all, with drastic and early intervention strategies it conducted massive tracing and testing in a combination of case isolation. These measures were underpinned by transparent risk communication, civil society mobilization, improvement of accessibility and affordability of the treatment and test, the consistent public message on the potential benefit of wearing a mask, and innovation. Innovative measures include the mobile case- |

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| | | | tracing application, mobile self-quarantine safety protection application, mobile self-diagnosis application, and drive-thru screening centres. Meanwhile, the epidemic has brought enormous impacts on society economically and socially. Given its relationship with China, where the outbreak originated, the economic impact in South Korea was predicted to be intense and it was already observed since February due to a decline in exports. The pandemic and measures undertaken by the government also have resulted in social conflicts and debates, human-right concerns, and political tension. Moreover, it was believed that the outbreak of COVID-19 and the governmental responses towards it has brought a huge impact on the general election in April. Despite of the large outbreak in late February, the Korean government has flattened the COVID-19 curve successfully and the downward trend in the number of new cases remained continuously as of 30 April. The most distinctive feature of South Korea's responses is that South Korea conducted proactive case finding, contacts tracing, and isolations of cases instead of taking traditional measures of the containment of the epidemic such as boarder closures and lockdowns. |

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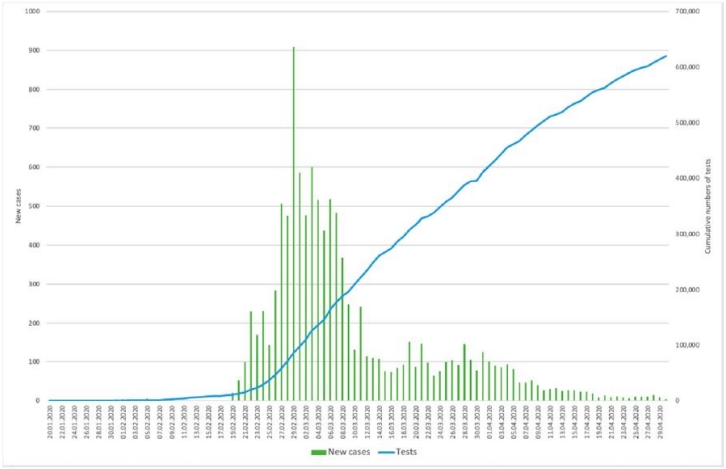
| | | |  <br>**Figure 2.** The trend in the number of confirmed cases of COVID-19 and cumulative tests conducted. Based on data from Korean Ministry of Health and Welfare and the Statistic Korea under the Ministry of Strategy and Finance [26,27]. |
| Baden LR et al<br><br>NEJM<br><br>https://www.nejm.org/doi/full/10.1056/NEJMoa2035389?query=featured_home | Efficacy and Safety of the mRNA-1273 SARS-CoV-2 Vaccine | Trial clinico randomizzato di fase 3 sull'efficacia del vaccino a mRNA-1273 di Moderna contro SARS-CoV-2 : 94.1% nella prevenzione dell'infezione, anche grave, senza effetti collaterali degni di nota su oltre 30.000 partecipanti. | 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.<br>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. |

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| | | | 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.<br>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. (Funded by the Biomedical Advanced Research and Development Authority and the National Institute of Allergy and Infectious Diseases; COVE ClinicalTrials.gov number, NCT04470427. opens in new tab.) |

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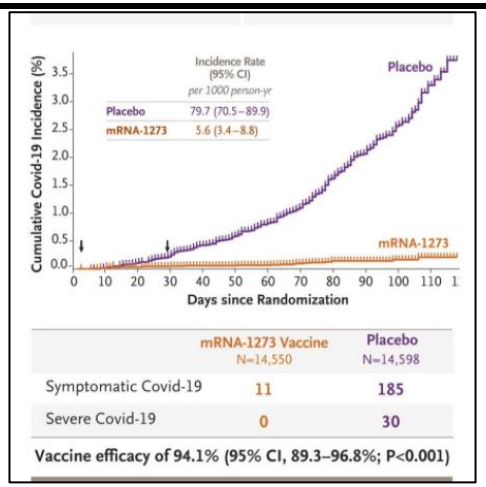
| | | |  |
| Castels MC et al<br><br>NEJM<br><br>https://www.nejm.org/doi/full/10.1056/NEJMra2035343?query=featured_home | Maintaining Safety with SARS-CoV-2 Vaccines | Riflessioni sulla gestione delle reazioni avverse da vaccini ontro SARS-CoV-2. | To date, the development of mRNA vaccines for the prevention of infection with the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been a success story, with no serious concerns identified in the ongoing phase 3 clinical trials.1 Minor local side effects such as pain, redness, and swelling have been observed more frequently with the vaccines than with placebo. Systemic symptoms such as fever, fatigue, headache, and muscle and joint pain have also been somewhat more common with the vaccines than with placebo, and most have occurred during the first 24 to 48 hours after vaccination.1 In the phase 1–3 clinical trials of the Pfizer–BioNTech and Moderna mRNA vaccines, potential participants with a history of an allergic reaction to any component of the vaccine were excluded. The Pfizer–BioNTech studies also excluded participants with a history of severe allergy associated with any vaccine (see the protocols of the two trials, available with the full text of the articles at NEJM.org, for full exclusion criteria).1,2 Hypersensitivity adverse events were equally represented in the placebo (normal saline) and vaccine groups in both trials. |

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| Public Health England<br><br>https://www.gov.uk/government/publications/investigation-of-novel-sars-cov-2-variant-variant-of-concern-20201201 | Investigation of novel SARS-COV-2 variant: Variant of Concern 202012/01. | Indagine sulla « variante inglese » di SARS-CoV-2, di cui si conferma la maggiore trasmissibilità rispetto a quelle precedentemente isolate. | SARS-CoV-2 variants if considered to have concerning epidemiological, immunological or pathogenic properties are raised for formal investigation. At this point they are designated Variant Under Investigation (VUI) with a year, month, and number. Following risk assessment with the relevant expert committee, they may be designated Variant of Concern (VOC). This variant was designated VUI 202012/01 on detection and on review re-designated as VOC 202012/01 on 18/12/2020. |
| Rattka M et al<br><br>Heart<br><br>https://doi.org/10.1136/heartjnl-2020-318360 | Effect of the COVID-19 pandemic on mortality of patients with STEMI: a systematic review and meta-analysis | Metanalisi che mostra una mancata differenza di mortalità fra i pazienti ricoverati per STEMI durante la pandemia da COVID-19. Tuttavia è nota una riduzione degli accessi ospedalieri per lo stesso motivo. | Aims Since the beginning of the SARS-CoV-2 outbreak, hospitals reported declining numbers of patients admitted with ST-segment elevation myocardial infarction (STEMI), indicating that the pandemic might keep patients from seeking urgent medical treatment. However, data on outcomes and mortality rates are inconsistent between studies.<br>Methods A literature search and meta-analysis were performed on studies reporting the mortality of patients with STEMI admitted before and during the COVID-19 pandemic using PubMed, Embase and Web of Science. Additionally, prehospital and intrahospital delay times were evaluated.<br>Results Outcomes of a total of 50 123 patients from 10 studies were assessed. Our study revealed that, despite a significant reduction in overall admission rates of patients with STEMI during the COVID-19 pandemic (incidence rate ratio=0.789, 95% CI 0.730 to 0.852, I2=77%, p<0.01), there was no significant difference in hospital mortality (OR=1.178, 95% CI 0.926 to 1.498, I2=57%, p=0.01) compared with patients with STEMI admitted before the outbreak. Time from the onset of symptoms to first medical contact was similar (mean difference (MD)=33.4 min, 95% CI −10.2 to 77.1, I2=88%, p<0.01) while door-to-balloon time was significantly |

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| | | | prolonged in those presenting during the pandemic (MD=7.3 min, 95% CI 3.0 to 11.7, I2=95%, p<0.01).<br>Conclusion The significant reduction in admission of patients with STEMI was not associated with a significant increase of hospital mortality rates. The causes for reduced incidence rates remain speculative. However, the analysed data indicate that acute and timely medical care of these patients has been maintained during the pandemic in most countries. Long-term data on mortality have yet to be determined. |
| Govind N et al<br><br>NEJM<br><br>https://www.nejm.org/doi/full/10.1056/NEJMc2033369?query=featured_home | Microvascular Injury in the Brains of Patients with Covid-19 | La risonanza magnetica dell'encefalo seguita da microscopia a risonanza magnetica ed esami istologici di sezioni encefaliche di 13 persone decedute per COVID-19 mostrano segni di danno microvascolare diffuso. | We conducted postmortem high-resolution magnetic resonance imaging (magnetic resonance microscopy) of the brains of patients with coronavirus disease 2019 (Covid-19) (median age, 50 years) and histopathological examination that focused on microvascular changes in the olfactory bulb and brain stem. Images were obtained from the brains of 13 patients with the use of an 11.7-Tesla scanner at a resolution of 25 µm for the olfactory bulb and at a resolution of 100 µm for the brain. Abnormalities were seen in the brains of 10 patients. |

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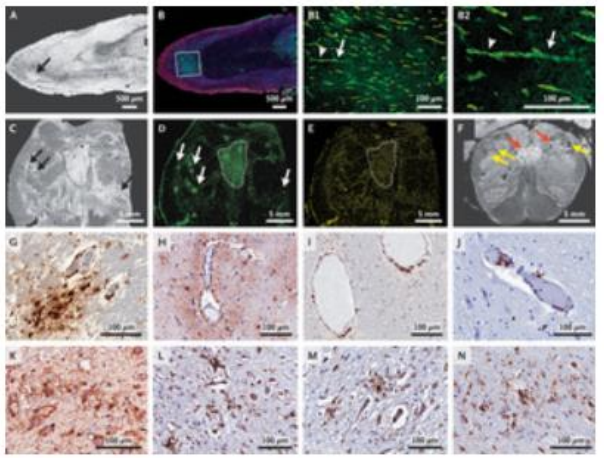
| | | | Figure 1.<br>  <br>Pathological Studies of Microvascular Injury in the Brains of Patients Who Died from Covid-19. |
| Szilagyi PG et al<br><br>JAMA<br><br>https://jamanetwork.com/journals/jama/fullarticle/2774711 | National Trends in the US Public's Likelihood of Getting a COVID-19 Vaccine—April 1 to December 8, 2020 | Sondaggio su oltre 8100 adulti partecipanti negli USA in merito alla propensione a farsi vaccinare contro SARS-CoV-2 quando possibile. | The coronavirus disease 2019 (COVID-19) pandemic is causing enormous morbidity and mortality across the US and is disproportionately affecting racial/ethnic minority populations and elderly persons. High acceptance of COVID-19 vaccines will be instrumental to ending the pandemic.<br>Four cross-sectional internet surveys (3 using convenience samples) from April and May 2020 found that 58% to 69% of adults intended to get vaccinated against COVID-19, with higher percentages reported in April than in May. These studies did not track the same individuals over time, making it difficult to assess whether intent to get vaccinated has truly declined.<br>We analyzed biweekly survey data from a nationally representative longitudinal study to describe changes over time in the public's |

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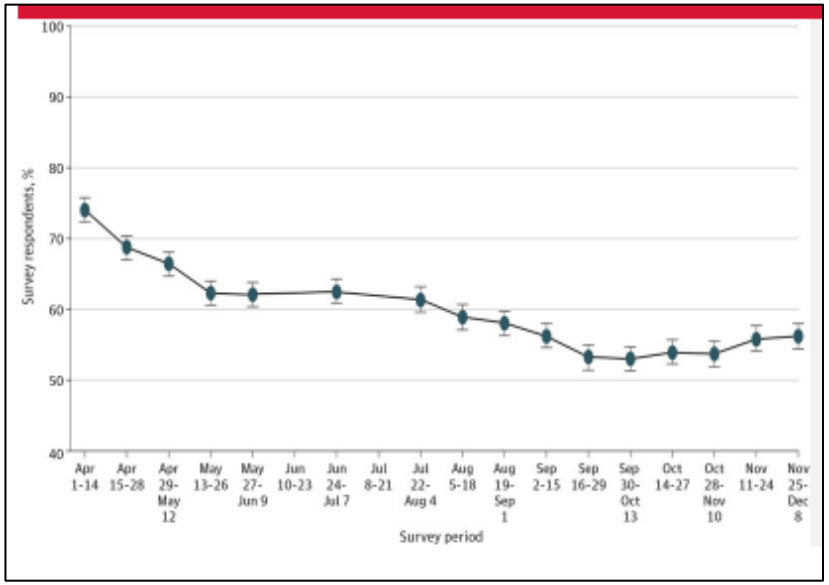
| | | | likelihood of getting a COVID-19 vaccine and across demographic subgroups.<br>  <br> |
| Gostin LO et al<br><br>JAMA<br><br>https://jamanetwork.com/journals/jama/fullarticle/2774712 | Mandating COVID-19 Vaccines | Opportunità di rendere obbligatorio un vaccino contro SARS-CoV-2, accettabile secondo gli Autori per alcuni gruppi a rischio. | Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) vaccines hold promise to control the pandemic and help restore normal social and economic life. The US Food and Drug Administration (FDA) has granted Emergency Use Authorization (EUA) for 2 messenger RNA vaccines and will likely issue full biologics licenses in the coming months. Anticipating vaccine scarcity, the Advisory Committee on Immunization Practice (ACIP) published guidance on vaccine priorities. |
| Palacios CP et al<br><br>NEJM<br><br>https://www.nejm.org/doi/full/10.1056/NEJMpv20 | Vaccinating Detained Migrants against SARS-CoV-2 — Preventing Another Tragedy | Riflessione sulla destinazione di vaccini contro SARS-CoV-2 alla popolazine migrante detenuta negli USA. | Covid-19 has devastated refugees and asylum seekers in U.S. federal detention centers, but there has been recent cause for optimism. The Pfizer and Moderna SARS-CoV-2 vaccines have greater than 90% efficacy in preventing illness, and a federal task force has recommended prioritizing detainees for immunization. The Trump administration, however, has devised a workaround for |

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| 35416?query=featured_home | | | vaccine distribution that jeopardizes the prospect of immunizing detainees, further endangering this vulnerable population. |
| Zhang L et al<br><br>MedRXiv<br><br>https://www.biorxiv.org/content/10.1101/2020.12.12.422516v1.full.pdf | SARS-CoV-2 RNA reverse-transcribed and integrated into the human genome | Articolo in corso di revisione e attualmente disponibile come pre-print che propone la possibilità che nelle cellule umane avvenga la retrotrascrizione di sequenze di RNA di SARS-CoV-2 con integrazione nel genoma. In breve, le sequenze chimeriche virali-umane portate come prova della retrotrascrizione potrebbero essere un prodotto della stessa metodica di biologia molecolare (RNA sequencing) utilizzata per evidenziarle. | Prolonged SARS-CoV-2 RNA shedding and recurrence of PCR-positive tests have been widely reported in patients after recovery, yet these patients most commonly are non-infectious . Here we investigated the possibility that SARS-CoV-2 RNAs can be reverse-transcribed and integrated into the human genome and that transcription of the integrated sequences might account for PCR-positive tests. In support of this hypothesis, we found chimeric transcripts consisting of viral fused to cellular sequences in published data sets of SARS-CoV-2 infected cultured cells and primary cells of patients, consistent with the transcription of viral sequences integrated into the genome. To experimentally corroborate the possibility of viral retrointegration, we describe evidence that SARS-CoV-2 RNAs can be reverse transcribed in human cells by reverse transcriptase (RT) from LINE-1 elements or by HIV-1 RT, and that these DNA sequences can be integrated into the cell genome and subsequently be transcribed. Human endogenous LINE-1 expression was induced upon SARS-CoV-2 infection or by cytokine exposure in cultured cells, suggesting a molecular mechanism for SARS-CoV-2 retro-integration in patients. This novel feature of SARS-CoV-2 infection may explain why patients can continue to produce viral RNA after recovery and suggests a new aspect of RNA virus replication. |
| Huston NC et al<br><br>Cell | Comprehensive in-vivo secondary structure of the SARS-CoV-2 genome reveals | Studio della struttura del genoma di SARS-CoV-2. | SARS-CoV-2 is the positive-sense RNA virus that causes COVID-19 disease. The genome of SARS-CoV-2 is unique among viral RNAs in its vast potential to form RNA structures and yet, as much as 97% of its 30 kilobases have not been structurally explored. Here, we apply |

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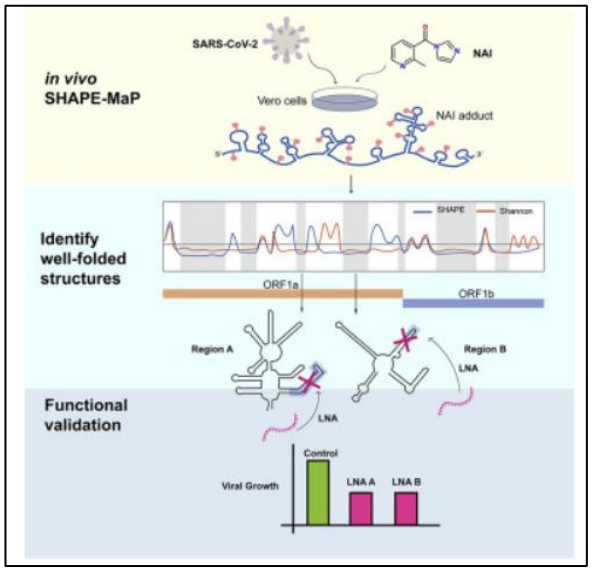
| https://www.cell.com/molecular-cell/fulltext/S1097-2765(20)30962-X | novel regulatory motifs and mechanisms | | a novel long amplicon strategy to determine for the first time the secondary structure of the SARS-CoV-2 RNA genome at single-nucleotide resolution in infected cells. Our in-depth structural analysis reveals networks of well-folded RNA structures throughout Orf1ab, and reveals aspects of SARS-CoV-2 genome architecture that distinguish it from other RNA viruses. Evolutionary analysis shows that several features of the SARS-CoV-2 genomic structure are conserved across beta coronaviruses and we pinpoint regions of well-folded RNA structure that merit downstream functional analysis. The native, secondary structure of SARS-CoV-2 presented here is a roadmap that will facilitate focused studies on the viral life cycle, facilitate primer design, and guide the identification of RNA drug targets against COVID-19.   |

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| Olivier SE et al<br><br>Morbidity and Mortality Weekly Report<br><br>https://www.cdc.gov/mmwr/volumes/69/wr/mm695152e1.htm?s_cid=mm695152e1_w | The Advisory Committee on Immunization Practices' Interim Recommendation for Use of Moderna COVID-19 Vaccine — United States, December 2020 | Caratteristiche del vaccino Moderna anti SARS-CoV-2 approvato dalla FDA americana. | What is already known about this topic?<br>On December 18, 2020, the Food and Drug Administration issued an Emergency Use Authorization (EUA) for the Moderna COVID-19 vaccine.<br>What is added by this report?<br>On December 19, 2020, after a transparent, evidence-based review of available data, the Advisory Committee on Immunization Practices (ACIP) issued an interim recommendation for use of the Moderna COVID-19 vaccine in persons aged ≥18 years for the prevention of COVID-19.<br>What are the implications for public health practice?<br>Use of all COVID-19 vaccines authorized under an EUA, including the Moderna COVID-19 vaccine, should be implemented in conjunction with ACIP's interim recommendations for allocating initial supplies of COVID-19 vaccines. |
| Ovadya D et al<br><br>Israel Medical Association Journal<br><br>https://www.ima.org.il/MedicineIMAJ/viewarticle.aspx?year=2020&month=12&page=733 | Weaning of Severe COVID-19 Mechanically Ventilated Patients: Experience within a Dedicated Unit in Israel | Studio di coorte retrospettivo su 18 pazineti sottoposti a ventilazione meccanica per COVID-19 e ricoverati in una unità di « svezzamento » dalla ventilazione per valutare la funzionalità di tali strutture. | BACKGROUND: Patients diagnosed with coronavirus disease-19 (COVID-19) who deteriorate to respiratory failure and require mechanical ventilation may later need to be weaned from the ventilator and undergo a rehabilitation process. The rate of weaning COVID-19 patients from mechanical ventilation is unknown. OBJECTIVES: To present our experience with ventilator weaning of COVID-19 patients in a dedicated facility. METHODS: A retrospective cohort study was conducted of 18 patients hospitalized in a COVID-19 dedicated ventilator weaning unit. RESULTS: Eighteen patients were hospitalized in the dedicated unit between 6 April and 19 May 2020. Of these, 88% (16/18) were weaned and underwent decannulation, while two patients deteriorated and were re-admitted to the intensive care unit. The average number of days spent in our department was 12. There was no statistically significant correlation between patient characteristics and time to |

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| | | | weaning from ventilation or with the time to decannulation. CONCLUSIONS: Despite the high mortality of COVID-19 patients who require mechanical ventilation, most of the patients in our cohort were weaned in a relatively short period of time. Further large-scale studies are necessary to assess the cost effectiveness of dedicated COVID-19 departments for ventilator weaning.<br>**Table 2.** Patients' course<br>\| Parameter \| Mean ± SD \| Median \| IQR \| Range \|<br>\| --- \| --- \| --- \| --- \| --- \|<br>\| Days hospitalized preceding hospitalization in our department* \| 27.2 ± 8.9 \| 26 \| 8.5 \| 12–52 \|<br>\| Days hospitalized in our department \| 12.1 ± 5.3 \| 12 \| 5.2 \| 3–27 \|<br>\| Patients weaned and decannulated (% total) \| 16/18 (88%) \| | | |<br>\| Days since admission until weaning \| 4.75 ± 3.6 \| 4.5 \| 3.25 \| 0–12 \|<br>\| Days since admission until decannulation \| 10.0 ± 6.0 \| 10 \| 7.5 \| 1–26 \|<br>\| Total days of mechanical ventilation \| 28.2 ± 6.8 \| 28.5 \| 9.5 \| 16–41 \|<br>\| Total days of tracheostomy \| 25 ± 10 \| 24 \| 17.7 \| 12–42 \|<br>*Counted since first positive PCR for COVID-19<br>IQR = interquartile range, PCR = polymerase chain reaction |
| Rubin D et al<br><br>NEJM<br><br>https://www.nejm.org/doi/full/10.1056/NEJMp2032369?query=featured_home | FDA Approval of Remdesivir — A Step in the Right Direction | Rilevanza dell'approvazione di remdesivir nella storia della lotta contro SARS-CoV-2. | In January 31, 2020, the U.S. secretary of health and human services declared a public health emergency in response to Covid-19. This disease, caused by the SARS-CoV-2 virus, can have severe manifestations, including pneumonia, respiratory failure, multiorgan failure, and death. Although there is now an extensive global search for therapies, there remains an unmet need for safe and effective treatment options for patients. |
| Chevrier S et al<br><br>Cell<br><br>https://www.cell.com/cell-reports- | A distinct innate immune signature marks progression from mild to severe COVID-19 | Marcatori immunologici di gravità dell'infezione da SARS-CoV-2. | Coronavirus disease 2019 (COVID-19) manifests with a range of severities, but immune signatures of mild and severe disease are still not fully understood. We use mass cytometry and targeted proteomics to profile the innate immune response of patients with mild or severe COVID-19 and of healthy individuals. Sampling at different stages allows us to reconstruct a pseudo-temporal trajectory of the innate response. A surge of CD169+ monocytes |

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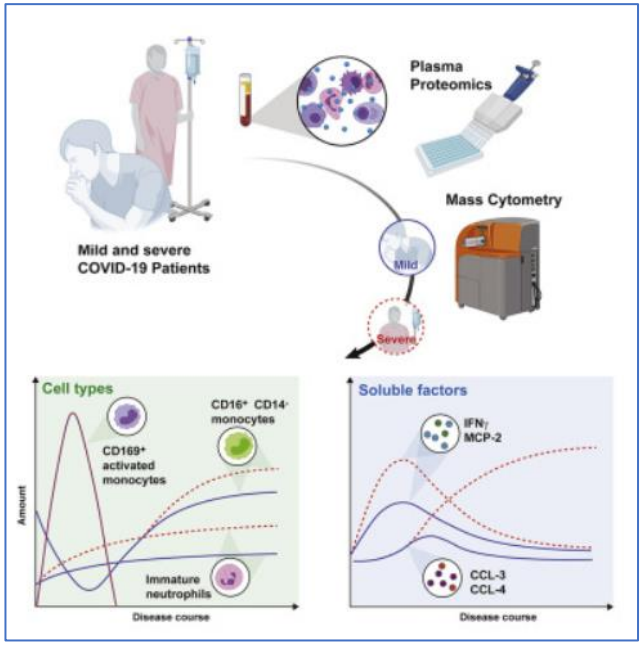
| medicine/fulltext/S2666-3791(20)30213-5 | | | associated with an IFNγ+MCP-2+ signature rapidly follows symptom onset. At later stages, we observe a persistent inflammatory phenotype in patients with severe disease, dominated by high CCL3 and CCL4 abundance correlating with the re-appearance of CD16+ monocytes, whereas the response of mild COVID-19 patients normalizes. Our data provide insights into the dynamic nature of inflammatory responses in COVID-19 patients and identify sustained innate immune responses as a likely mechanism in severe patients, thus supporting investigation of targeted interventions in severe COVID-19.<br>  |
| Madas BG et al<br><br>Scientific Reports | Deposition distribution of the new coronavirus (SARS-CoV-2) in the human airways upon exposure to cough- | Secondo questo modello di deposizione di droplet nelle vie aeree, si dimostra che le basse vie non vengono raggiunte direttamente da | The new coronavirus disease 2019 (COVID-19) has been emerged as a rapidly spreading pandemic. The disease is thought to spread mainly from person-to-person through respiratory droplets produced when an infected person coughs, sneezes, or talks. The pathogen of COVID-19 is the severe acute respiratory syndrome |

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| https://www.nature.com/articles/s41598-020-79985-6 | generated droplets and aerosol particles | SARS-CoV-2 ma questo si deposita prevalentemente nelle alte vie ove si replica. | coronavirus 2 (SARS-CoV-2). It infects the cells binding to the angiotensin-converting enzyme 2 receptor (ACE2) which is expressed by cells throughout the airways as targets for cellular entry. Although the majority of persons infected with SARS-CoV-2 experience symptoms of mild upper respiratory tract infection, in some people infections of the acinar airways result in severe, potentially fatal pneumonia. However, the induction of COVID-19 pneumonia requires that SARS-CoV-2 reaches the acinar airways. While huge efforts have been made to understand the spread of the disease as well as the pathogenesis following cellular entry, much less attention is paid to how SARS-CoV-2 from the environment reach the receptors of the target cells. The aim of the present study is to characterize the deposition distribution of SARS-CoV-2 in the airways upon exposure to cough-generated droplets and aerosol particles. For this purpose, the Stochastic Lung Deposition Model has been applied. Particle size distribution, breathing parameters supposing normal breathing through the nose, and viral loads were taken from the literature. We found that the probability of direct infection of the acinar airways due to inhalation of particles emitted by a bystander cough is very low. As the number of viruses deposited in the extrathoracic airways is about 7 times higher than in the acinar airways, we concluded that in most cases COVID-19 pneumonia must be preceded by SARS-CoV-2 infection of the upper airways. Our results suggest that without the enhancement of viral load in the upper airways, COVID-19 would be much less dangerous. The period between the onset of initial symptoms and the potential clinical deterioration could provide an opportunity for prevention of pneumonia by blocking or significantly reducing the transport of viruses towards the acinar airways. Therefore, even non-specific treatment forms like disinfection of the throat and nasal and oral |

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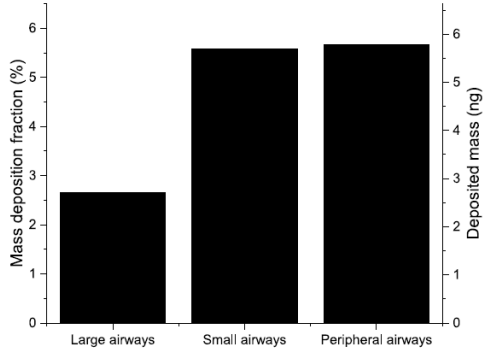
| | | | mucosa may effectively keep the viral load of the upper airways low enough to avoid or prolong the progression of the disease. In addition, using a tissue or cloth in order to absorb droplets and aerosol particles emitted by own coughs of infected patients before re-inhalation is highly recommended even if they are alone in quarantine.<br>  <br><br>**Figure 3.** Mass deposition fraction of inhaled particles (left axis) and deposited mass from a single inhalation (right axis) in the large, small, and peripheral airways upon exposure to cough-generated droplets and aerosol particles. See also the insert in Fig. 2 for the definitions of large, small, and peripheral airways. |
| Mmaximous S et al<br><br>American Journal of Tropical Medicine and Hygiene<br><br>http://www.ajtmh.org/docserver/fulltext/10.4269/ajtmh.20-1105/tpmd201105.pdf?expires=1609687768&id=id&accname=guest&check | Pragmatic Recommendations for the Management of COVID-19 Patients with Shock in Low- and Middle-Income Countries | Gestione dello shock in pazienti con COVID-19 in contesti a basse risorse. | As some patients infected with the novel coronavirus progress to critical illness, a subset will eventually develop shock. High-quality data on management of these patients are scarce, and further investigation will provide valuable information in the context of the pandemic. A group of experts identify a set of pragmatic recommendations for the care of patients with SARS-CoV-2 and shock in resource-limited environments. We define shock as life-threatening circulatory failure that results in inadequate tissue perfusion and cellular dysoxia/hypoxia, and suggest that it can be operationalized via clinical observations. We suggest a thorough evaluation for other potential causes of shock and suggest against indiscriminate testing for coinfections. We suggest the use of the |

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| sum=113EF95B1EC8E4E045158519C56FEF58 | | | quick Sequential Organ Failure Assessment (qSOFA) as a simple bedside prognostic score for COVID-19 patients and point-of-care ultrasound (POCUS) to evaluate the etiology of shock. Regarding fluid therapy for the treatment of COVID-19 patients with shock in lowmiddle–income countries, we favor balanced crystalloids and recommend using a conservative fluid strategy for resuscitation. Where available and not prohibited by cost, we recommend using norepinephrine, given its safety profile. We favor avoiding the routine use of central venous or arterial catheters, where availability and costs are strong considerations. We also recommend using low-dose corticosteroids in patients with refractory shock. In addressing targets of resuscitation, we recommend the use of simple bedside parameters such as capillary refill time and suggest that POCUS be used to assess the need for further fluid resuscitation, if available. |
| Kosten TR et al<br><br>JAMA<br><br>https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2774516 | The Hidden Epidemic of Opioid Overdoses During the Coronavirus Disease 2019 Pandemic | L'abuso di oppioidi è aumentato nel corso della pandemia di COVID-19. La mortalità per overdose, in particolare di fentanyl, potrebbe essere contrastata anch'essa con un vaccino anti-farmaco, che tarda ad arrivare. | An unexpected tragedy of the coronavirus disease 2019 (COVID-19) pandemic is increased opioid and fentanyl overdoses, since many factors could have reduced opioid use disorder (OUD) and overdoses during this pandemic. Another tragedy is that both epidemics depend on vaccine development, but antifentanyl vaccine support includes no pharmaceutical and only 3 government investments, while industry and government support more than 120 COVID-19 vaccines. This discrepancy in support reflects stigma against those with OUD and failure of approved treatments to decrease overdoses. |
| Abbasi J et al<br><br>JAMA | COVID-19 Conspiracies and Beyond: How Physicians Can Deal With Patients' Misinformation | Riflessioni sulla corretta informazione e sulla discussione coi pazienti in tema di salute con il Prof. | Early in 2020, communication science expert Brian Southwell, PhD, launched a training workshop at the Duke University School of Medicine to address a major clinical problem: What physicians should do when patients are misinformed about their health. It's one of only a few such programs in the nation. This year, Southwell, |

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| https://jamanetwork.com/journals/jama/fullarticle/2774709 | | Southwell della Duke University, Durham. | a scholar with the medical school's Social Science Research Institute, and his collaborator Jamie Wood, PhD, plan to make it available as a live virtual offering for clinician practices and health care systems. |