The Strategy Unit
At NHS Midlands and Lancashire Commissioning Support Unit

COVID-19 Evidence Alert – 7th August 2020

Welcome

COVID-19 Evidence alert is a weekly update highlighting emerging evidence on the following key topics identified as useful in supporting Covid recovery planning:

1. Residential settings
2. Impacts of lifting restrictions
3. Long term rehabilitation needs
4. Screening and testing
5. Broader impacts on health outcomes
6. Impact on non-Covid care

This update follows on from a series of rapid evidence scans on these key topics, with corresponding evidence trackers providing details of relevant papers.

The evidence scans and corresponding evidence trackers can be found here: https://www.strategyunitwm.nhs.uk/covid19-and-coronavirus (see 'Evidence - Helping you to keep up to date').

We are also working on other key areas of interest such as impacts on inequalities and marginalised groups, which will be added to the alert once completed.

Please note that this week's alert excludes summaries of emerging evidence and rapid reviews and will instead present abstracts from these sources, due to the breadth and volume of evidence covered.

Analytical Collaboration for COVID-19

As previously described the collaboration is supporting ad hoc immediate questions raised by national bodies but are also using their expertise to focus on questions that the NHS may lack the immediate resources to look at, which may be more medium-term, cut across sectors, or benefit from independent analysis.

Residential settings

Guidance

Coronavirus (COVID-19): admission and care of people in care homes. Department of Health and Social Care, Care Quality Commission, Public Health England & NHS England. (last updated 31/7/20).

Rapid reviews

Updated findings: Living systematic review of emerging evidence on COVID-19 related mortality and spread of disease in Long-Term Care (31 July 2020). **Salcher-Konrad M et al., LTCCovid.** "Since the last update, we have included 21 new studies, which were published up until the 26 June 2020. New included studies add to the body of evidence on spread of disease and mortality in long-term care facilities with outbreaks, showing that more than two thirds of residents

at badly affected care homes may contract COVID-19, and close to one fifth of all residents at care homes with outbreaks may die as a result. In addition to reports of individual outbreaks, studies focusing on wider populations of long-term care users and staff are beginning to emerge. While these studies vary in terms of their samples and strategies used to identify people who contracted COVID-19, they provide insights into the impact of the pandemic on a highly vulnerable population. For example, a survey by the English Office for National Statistics (ONS) found that 10.7% of all residents and 4.0% of staff at English care homes for people living with dementia and older people were reported to have contracted COVID-19. However, these figures largely relate to a time before systematic testing at care homes was implemented and may therefore underestimate the true proportion of infected people in care home populations.[2] Two other studies which were based on systematic testing found that 23.9% of residents at nursing homes in Barcelona (Spain)[3] and 40.8% of residents at nursing homes in Dublin and Eastern Ireland had contracted COVID-19,[4] although the Irish study only included nursing homes with active outbreaks. Yet other studies reported lower figures across long-term care populations in the Netherlands,[5] Ontario (Canada),[6] and the US,[7],[8] but were again not based on systematic testing. There is still only little evidence available on people receiving long-term care while living in the community (two studies from the US and one study with very limited information from Spain were included)."

Emerging evidence

Increased risk of SARS-CoV-2 infection in staff working across different care homes enhanced Covid-19 outbreak investigations in London care homes. Ladhani SN et al., Journal of infection. "Care homes have been disproportionately affected by the COVID-19 pandemic and continue to suffer large outbreaks even when community infection rates are declining, thus representing important pockets of transmission. We assessed occupational risk factors for SARS-CoV-2 infection among staff in six care homes experiencing a COVID-19 outbreak during the peak of the pandemic in London, England. Care home staff were tested for SARS-COV-2 infection by RT-PCR and asked to report any symptoms, their contact with residents and if they worked in different care homes. Whole genome sequencing (WGS) was performed on RT-PCR positive samples. In total, 51 (20%) of 250 staff were SARS-CoV-2 positive but only 11/51 (22%) were symptomatic. Among staff working in a single care home, SARS-CoV-2 positivity was 15% (2/13), 16% (7/45) and 17% (28/165) in those reporting no, occasional and regular contact with residents. In contrast, staff working across different care homes (14/27, 52%) had a 4.2-fold (95% CI, 2.1-8.4; P<0.001) higher risk of SARS-CoV-2 positivity than staff working in single care homes (37/223, 17%). WGS identified SARS-CoV-2 clusters involving staff only, including some that included staff working across different care homes. SARS-CoV-2 positivity was significantly higher among staff working across different care homes than those who were working in the same care home. We found local clusters of SARS-CoV-2 infection between staff only, including those with minimal resident contact. Infection control should be extended for all contact, including those between staff, whilst on care home premises."

Expanding frontiers of risk management: care safety in nursing home during COVID-19 pandemic. Scopetti M et al., Int J Quality Health Care. "Nursing homes provide long-term care and have residential-oriented hospitalizations characterized by medical, nursing, and social-care treatments for a typically geriatric population. In the current emergency phase, the problem of infections in residential structures for the elderly is taking on considerable importance in relation to the significant prevalence rates of COVID-19. Prevention and control measures for SARS-CoV-2 infection in nursing homes should be planned before a possible outbreak of COVID-19 occurs and

should be intensified during any exacerbation of the same. Each facility should identify a properly trained contact person—also external—for the prevention and control of infections, who can refer to a multidisciplinary support committee and who is in close contact with the local health authorities. The contact person should collaborate with professionals in order to prepare a prevention and intervention plan that considers national provisions and scientific evidence, the requirements for reporting patients with symptoms compatible with COVID-19, the indications for the management of suspected, probable or confirmed cases of COVID-19. Adequate risk management in residential structures implies the establishment of a coordination committee with dedicated staff, the implementation of a surveillance program for the rapid recognition of the outbreaks, the identification of suitable premises and equipment, the application of universal precautions, the adaptation of care plans to reduce the possibility of contagion among residents, the protection of operators and staff training initiatives."

COVID-19 Collaborative Model for an Academic Hospital and Long-Term Care Facilities.
Archbald-Pannone LR et al., Journal of Post-Acute and Long-Term Care Medicine. "The COVID-19 pandemic is devastating post-acute and long-term care (PA/LTC). As geriatricians practicing in PA/LTC and a regional academic medical center, we created this program for collaboration between academic medical centers and regional PA/LTC facilities. The mission of the Geriatric Engagement and Resource Integration in Post-Acute and Long-Term Care Facilities (GERI-PaL) program is to support optimal care of residents in PA/LTC facilities during the COVID-19 pandemic. There are 5 main components of our program: (1) Project ECHO; (2) nursing liaisons; (3) infection advisory consultation; (4) telemedicine consultation; and (5) resident social contact remote connections. Implementation of this program has had positive response from our local PA/LTC facilities. A key component of our program is our interprofessional team, which includes physicians and nursing, emergency response, and public health experts. With diverse professional backgrounds, our team members have created a new model for academic medical centers to collaborate with local PA/LTC facilities."

COVID-19 and Long-Term Care in the US State of Minnesota. Arling G & Arling P. LTC Policy Network. (last updated 27/7/20). "Minnesota's COVID-19 cases began in early March 2020; the daily average of new cases peaked at 840 in mid-May, while new deaths peaked at 39 in early June. However, by July cases were on the rise again. According to cumulative totals on May 30, 2020, older people in long-term care facilities accounted for over four-fifths of total COVID-19 deaths: 56% of total deaths were in nursing facilities, 22% were in assisted living facilities, 3% were in memory centers, and only 19% were in community settings. The distribution of COVID-19 cases and deaths in long-term care facilities was highly skewed: some facilities had large numbers, but most facilities had only a few cases and deaths. COVID-19 cases and deaths, both overall and in long-term care, were concentrated in Minnesota's major urban area (Twin Cities) containing the cities of Minneapolis and St. Paul. Racial and ethnic minorities in the Twin Cities had dramatically higher rates of COVID-19 cases overall than did whites. Yet, the prevalence of COVID-19 cases and deaths in Twin City nursing facilities did not differ by their percentage of minority group residents. The Minnesota Department of Health (MDH) has adopted a Five-Point Battle Plan for Prevention and Support of COVID-19 in Long-Term Care. The Plan's goals are to ensure long-term care facilities can safely accept and care for residents discharged from the hospital; reduce COVID-19 transmission among residents and staff; quickly identify facilities needing special support; and help facilities plan for and manage COVID-19 infections. An MDH case manager works with each facility that has a COVID-19 case to assist in

implementing infection control and managing care. The MDH has supplied facilities with a comprehensive COVID-19 Toolkit, with guidelines for contact tracing, risk assessment, protective equipment, testing, cohorting, and family visits. The state and Federal governments have provided expedited and advance payments to nursing and other long-term care facilities for emergency expenses incurred because of COVID-19. The state appropriated $150 million for health care response expenses in health and long-term care. Minnesota faces continued policy and programmatic challenges in long-term care, particularly if COVID-19 cases surge in the fall or winter. The challenges include: ensuring access to testing, PPE, and infection control support; addressing staff shortages; balancing social distancing policies with patient rights and family visitation; and returning to "normal" once the COVID-19 pandemic subsides. The state also faces fundamental structural challenges in long-term care including: chronic staffing shortages due to low wages, inadequate sick leave or health insurance, and unfavorable working conditions; racial disparities; problems in care transitions to and from hospitals; increasing resident acuity without accompanying increases in skilled nursing and medical care capacity; and financial instability from occupancy declines combined with strained Medicaid budgets."

Impacts of lifting restrictions

Emerging evidence

Determining the optimal strategy for reopening schools, the impact of test and trace interventions, and the risk of occurrence of a second COVID-19 epidemic wave in the UK: a modelling study. Panovska-Griffiths J et al., The Lancet Child & Adolescent Health. "As lockdown measures to slow the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection begin to ease in the UK, it is important to assess the impact of any changes in policy, including school reopening and broader relaxation of physical distancing measures. We aimed to use an individual-based model to predict the impact of two possible strategies for reopening schools to all students in the UK from September, 2020, in combination with different assumptions about relaxation of physical distancing measures and the scale-up of testing. In this modelling study, we used Covasim, a stochastic individual-based model for transmission of SARS-CoV-2, calibrated to the UK epidemic. The model describes individuals' contact networks stratified into household, school, workplace, and community layers, and uses demographic and epidemiological data from the UK. We simulated six different scenarios, representing the combination of two school reopening strategies (full time and a part-time rota system with 50% of students attending school on alternate weeks) and three testing scenarios (68% contact tracing with no scale-up in testing, 68% contact tracing with sufficient testing to avoid a second COVID-19 wave, and 40% contact tracing with sufficient testing to avoid a second COVID-19 wave). We estimated the number of new infections, cases, and deaths, as well as the effective reproduction number (R) under different strategies. In a sensitivity analysis to account for uncertainties within the stochastic simulation, we also simulated infectiousness of children and young adults aged younger than 20 years at 50% relative to older ages (20 years and older). To prevent a second COVID-19 wave, relaxation of physical distancing, including reopening of schools, in the UK must be accompanied by large-scale, population-wide testing of symptomatic individuals and effective tracing of their contacts, followed by isolation of diagnosed individuals."

Transient dynamics of SARS-CoV-2 as England exited national lockdown. Riley S et al., medRxiv (preprint). Control of the COVID-19 pandemic requires a detailed understanding of prevalence of SARS-CoV-2 virus in the population. Case-based surveillance is necessarily biased towards symptomatic individuals and sensitive to varying patterns of reporting in space and time. The real-time assessment of community transmission antigen study (REACT-1) is designed to overcome these limitations by obtaining prevalence data based on a nose and throat swab RT-PCR test among a representative community-based sample in England, including asymptomatic individuals. Here, we describe results comparing rounds 1 and 2 carried out during May and mid June / early July 2020 respectively across 315 lower tier local authority areas. In round 1 we found 159 positive samples from 120,620 tested swabs while round 2 there were 123 positive samples from 159,199 tested swabs, indicating a downwards trend in prevalence from 0.13% (95% CI, 0.11%, 0.15%) to 0.077% (0.065%, 0.092%), a halving time of 38 (28, 58) days, and an R of 0.89 (0.86, 0.93). The proportion of swab-positive participants who were asymptomatic at the time of sampling increased from 69% (61%, 76%) in round 1 to 81% (73%, 87%) in round 2. Although health care and care home workers were infected far more frequently than other workers in round 1, the odds were markedly reduced in round 2. Age patterns of infection changed between rounds, with a reduction by a factor of five in prevalence in 18 to 24 year olds. Our data were suggestive of increased risk of infection in Black and Asian (mainly South Asian) ethnicities. Using regional and detailed case location data, we detected increased infection intensity in and near London. Under multiple sensitivity analyses, our results were robust to the possibility of false positives. At the end of the initial lockdown in England, we found continued decline in prevalence and a shift in the pattern of infection by age and occupation. Community-based sampling, including asymptomatic individuals, is necessary to fully understand the nature of ongoing transmission.

The COVID-19 pandemic: diverse contexts; different epidemics—how and why? Van Damme W et al., BMJ Global Health. "It is very exceptional that a new disease becomes a true pandemic. Since its emergence in Wuhan, China, in late 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19, has spread to nearly all countries of the world in only a few months. However, in different countries, the COVID-19 epidemic takes variable shapes and forms in how it affects communities. Until now, the insights gained on COVID-19 have been largely dominated by the COVID-19 epidemics and the lockdowns in China, Europe and the USA. But this variety of global trajectories is little described, analysed or understood. In only a few months, an enormous amount of scientific evidence on SARS-CoV-2 and COVID-19 has been uncovered (knowns). But important knowledge gaps remain (unknowns). Learning from the variety of ways the COVID-19 epidemic is unfolding across the globe can potentially contribute to solving the COVID-19 puzzle. This paper tries to make sense of this variability—by exploring the important role that context plays in these different COVID-19 epidemics; by comparing COVID-19 epidemics with other respiratory diseases, including other coronaviruses that circulate continuously; and by highlighting the critical unknowns and uncertainties that remain. These unknowns and uncertainties require a deeper understanding of the variable trajectories of COVID-19. Unravelling them will be important for discerning potential future scenarios, such as the first wave in virgin territories still untouched by COVID-19 and for future waves elsewhere."

Locked down leisure in Britain. Roberts K. Leisure Studies. "This paper explains how the spread of Covid-19 in early-2020 led to containment measures throughout Europe, including a legally enforced lockdown in the UK from 23 March which closed most out-of-home leisure provisions. Time

use evidence is then used to show how lockdown led to an abrupt, unprecedented in scale, increase in residual 'leisure' time, and how this was distributed and used among males and females, in different age groups. The immediate lessons for leisure studies have been to endorse claims that leisure activities promote well-being, that loss of social connections at work and leisure weakens macro-solidarity, and that the importance of leisure provisions in modern economies. Experiences during the lockdown, and difficulties in existing, then clarify exactly which leisure matters most, for whom, and why."

Physical distancing worked to combat the spread of Covid-19 Using Google Mobility data. **O'Connor KJ. Economie Et Statistiques Working Papers Du Statec.** "Physical distancing was mandated in countries around the world to combat the spread of Covid-19, but not in every country, nor do individuals strictly comply. Mobility data from Google provide a direct measure of distancing behavior, and indicate a precipitous drop in visits to locations such as retail and transit stations soon after the arrival of Covid-19. The evidence indicates it worked too. In a sample of 95 countries, distancing one day later is associated with a peak in new cases of 0.58 days later. Earlier peaks are also lower. Physical – distinct from social – distancing works."

COVID-19 lockdowns cause global air pollution declines. **Venter ZS et al., PNAS**. "The lockdown response to coronavirus disease 2019 (COVID-19) has caused an unprecedented reduction in global economic and transport activity. We test the hypothesis that this has reduced tropospheric and ground-level air pollution concentrations, using satellite data and a network of >10,000 air quality stations. After accounting for the effects of meteorological variability, we find declines in the population-weighted concentration of ground-level nitrogen dioxide (NO2: 60% with 95% CI 48 to 72%), and fine particulate matter (PM2.5: 31%; 95% CI: 17 to 45%), with marginal increases in ozone (O3: 4%; 95% CI: −2 to 10%) in 34 countries during lockdown dates up until 15 May. Except for ozone, satellite measurements of the troposphere indicate much smaller reductions, highlighting the spatial variability of pollutant anomalies attributable to complex NOx chemistry and long-distance transport of fine particulate matter with a diameter less than 2.5 µm (PM2.5). By leveraging Google and Apple mobility data, we find empirical evidence for a link between global vehicle transportation declines and the reduction of ambient NO2 exposure. While the state of global lockdown is not sustainable, these findings allude to the potential for mitigating public health risk by reducing "business as usual" air pollutant emissions from economic activities"

The impact of COVID-19 on public space: an early review of the emerging questions – design, perceptions and inequities. **Honey-Rosés J et al., Cities & Health.** "Restrictions on the use of public space and physical distancing have been key policy measures to reduce the transmission of COVID-19 and protect public health. At the time of writing, one half of the world's population has been asked to stay home and avoid many public places. What will be the long term impacts of the COVID-19 pandemic on public space once the restrictions have been lifted? The depth and extent of transformation is unclear, especially as it relates to the future design, use and perceptions of public space. This article aims to highlight emerging questions at the interface of COVID-19 and city design. It is possible that the COVID-19 crisis may fundamentally change our relationship with public space. In the ensuing months and years, it will be critical to study and measure these changes in order to inform urban planning and design in a post-COVID world."

Lockdown urbanism: COVID-19 lifestyles and liveable futures opportunities in Wuhan and Manchester. **Jefferies T et al., Cities & Health.** "Based on the authors' personal experiences, this commentary discusses contrasting urban contexts and lockdown measures in twinned cities Wuhan, China and Manchester, UK, to examine spatial reach under COVID-19 restrictions in both places. Focusing on latency, the capacity of space to fit new occupation patterns and uses, the role of architecture and urban design is considered, to identify lessons applicable to physical and digital environment design, in scales and media that can absorb shock, supporting flexible, creative resilient approaches and patterns of future liveability. With massive externally induced change, what stays, what shifts, what disappears? This paper considers spatial adaptability, spatial resilience in two comparative, yet different contexts to identify design-based questions and propose thematic responses addressing resilient liveable future urbanism. This reflects on the similarities and differences between lockdown in China and the UK, the concept of mental as well as physical lockdown and how this has played out in these two countries."

The United Kingdom's Coronavirus Act, deprivations of liberty, and the right to liberty and security of the person. **Pugh J. Journal of Law and the Biosciences, 7(1).** "In response to the SARS-CoV-2 coronavirus pandemic the UK government has passed the Coronavirus Act 2020 (CA). Among other things, this act extends existing statutory powers to impose restrictions of liberty for public health purposes. The extension of such powers naturally raises concerns about whether their use will be compatible with human rights law. In particular, it is unclear whether their use will fall within the public heath exception to the Article 5 right to liberty and security of the person in the European Convention of Human Rights. In this paper, I outline key features of the CA, and briefly consider how the European Court of Human Rights has interpreted the public health exception to Article 5 rights. This analysis suggests two grounds on which restrictions of liberty enforced some under the CA might be vulnerable to claims of Article 5 rights violations. First, the absence of specified time limits on certain restrictions of liberty means that they may fail the requirement of legal certainty championed by the European Court in its interpretation of the public health exception. Second, the Coronavirus Act's extension of powers to individuals lacking public health expertise may undermine the extent to which the act will ensure that deprivations of liberty are necessary and proportionate."

Social distancing responses to COVID-19 emergency declarations strongly differentiated by income. **Weill JA et al., Economic Sciences.** "In the absence of a vaccine, social distancing measures are one of the primary tools to reduce the transmission of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus, which causes coronavirus disease 2019 (COVID-19). We show that social distancing following US state-level emergency declarations substantially varies by income. Using mobility measures derived from mobile device location pings, we find that wealthier areas decreased mobility significantly more than poorer areas, and this general pattern holds across income quantiles, data sources, and mobility measures. Using an event study design focusing on behavior subsequent to state emergency orders, we document a reversal in the ordering of social distancing by income: Wealthy areas went from most mobile before the pandemic to least mobile, while, for multiple measures, the poorest areas went from least mobile to most. Previous research has shown that lower income communities have higher levels of preexisting health conditions and lower access to healthcare. Combining this with our core finding—that lower income communities exhibit less social distancing—suggests a double burden of the COVID-19 pandemic with stark distributional implications."

How Parents and Their Children Used Social Media and Technology at the Beginning of the COVID-19 Pandemic and Associations with Anxiety. **Drouin M et al., Cyberpsychology, Behaviour, and Social Networking.** "In this study, we examined parents' (n = 260) perceptions of their own and their children's use of social media and other types of communication technologies in the beginning stages of coronavirus disease 2019 (COVID19) related sanctions (e.g., social distancing) in the United States. We also examined associations between social media and technology use and anxiety. On average, parents reported that both they and their children (especially teenagers aged 13–18) had increased technology and social media use since the beginning of social distancing. Moreover, even after controlling for demographic factors, structural equation models showed that parents and children with higher levels of anxiety (as reported by parents) were more likely to increase their technology use and use social media and phones to connect. Among parents, higher anxiety was related to using social media for both social support and information seeking. Based on these results, we advocate for the utilization of social media by public health officials for collecting, collating, and dispersing accurate crisisrelated information. As social media use is widespread, and there is potential for false rumors to cause erroneous behavioral action and/or undue stress and anxiety, we also suggest that social media campaigns be thoughtfully designed to account for individual differences in developmental stages and psychological vulnerabilities."

How communication technology helps mitigating the impact of COVID-19 pandemic on individual and social wellbeing: Preliminary support for a compensatory social interaction model. **Canale N et al., PsyArXiv. (pre-print).** "The present study preliminary tested the compensatory social interaction model for individuals experiencing the Covid-19 pandemic. This original model comprises two distinct processes: expression of online emotions leads to post-traumatic growth, which can favor positive mental health and prosocial behaviors; and receiving online social support leads to increases in positive mental health, which can also favor prosocial behaviors. Adults living in Italy (n=1412) completed an online survey during the lockdown period in March 2020. Results showed that being more involved in expression of online emotions was associated with higher post-traumatic growth that in turn was associated with prosocial behaviors. Moreover, participants who perceived higher online social support were more likely to report higher positive mental health that in turn was associated with prosocial behaviors. Collectively, these two social interaction processes suggest that communication technologies appear to be critical resources in helping individuals cope with difficulties raised by the Covid-19 pandemic."

Long term rehabilitation needs

Rapid reviews

Systematic review of changes and recovery in physical function and fitness following Severe Acute Respiratory Syndrome-related Coronavirus (SARS-CoV) infection: Implications for COVID-19 rehabilitation. **Rooney S et al., Physical Therapy, pzaa129. (Uncorrected Manuscript).** "Objectives: 1) Compare physical function and fitness outcomes in people infected with SARS-CoV to healthy controls; 2) quantify the recovery of physical function and fitness following SARS-CoV infection; 3) determine the effects of exercise following SARS-CoV infection. Methods: Four databases (CINAHL, MEDLINE, ProQuest, and Web of Science Core Collections) were searched in April 2020 using keywords relating to SARS-CoV, physical function,

fitness, and exercise. Observational studies or randomised controlled trials were included if they involved people following SARS-CoV infection and either assessed the change or recovery in physical function/fitness or evaluated the effects exercise post infection. Results: 10 articles were included in this review. Evidence from nine articles demonstrated that SARS-CoV patients had reduced levels of physical function and fitness post infection in comparison to healthy controls. Furthermore, patients demonstrated incomplete recovery of physical function, with some experiencing residual impairments 1 to 2 years post infection. Evidence from one randomised controlled trial found that a combined aerobic and resistance training intervention significantly improved physical function and fitness post infection in comparison to a control group. Conclusions: Physical function and fitness are impaired following SARS-CoV infection, and impairments may persist up to 1 to 2 years post infection. Researchers and clinicians can use these findings to understand the potential impairments and rehabilitation needs of people recovering from the current COVID-19 outbreak. While one study demonstrated that exercise can improve physical function and fitness post infection, further research is required to determine the effectiveness of exercise in people recovering from similar infections (eg, COVID19)".

Emerging evidence

Impacts of Covid-19 on the immune, neuromuscular, and musculoskeletal systems and rehabilitation. D'Andréa Greve JM et al., Rev Bras Med Esporte. "The new coronavirus, which causes the infectious disease named COVID-19 by the World Health Organization (WHO), was notified in 2020 in China. The main clinical manifestations in infected patients are fever, cough and dyspnoea. These patients are prone to developing cardiac changes, diffuse myopathy, decreased pulmonary function, decreased inspiratory muscle strength, and a deterioration in functional capacity. Thus, it is expected that patients affected by COVID-19 will suffer musculoskeletal consequences as a result of the inflammatory process and loss of muscle mass caused by immobility, generating motor incapacities that are not yet quantifiable. It is important to understand the clinical implications caused by COVID-19, in order to have better rehabilitation strategies for these patients. The aim of this study was to conduct a reflective analysis of the impact of COVID-19 on the immune, neuromuscular and musculoskeletal systems, and its rehabilitation process. This is a reflexive analysis, developed in the Laboratory for the Study of Movement of the Institute of Orthopaedics' and Traumatology, at the Universidade de São Paulo School of Medicine, SP, Brazil. In this analysis, we reflect on the following topics related to COVID-19: immunological mechanisms, impact on the neuromuscular and musculoskeletal systems, and the rehabilitation of patients."

Anxiety and depression in COVID-19 survivors: role of inflammatory and clinical predictors. Mazza MG et al., Brain, Behavior, and Immunity. "Infection-triggered perturbation of the immune system could induce psychopathology, and psychiatric sequelae were observed after previous coronavirus outbreaks. The spreading of the Severe Acute Respiratory Syndrome Coronavirus (COVID-19) pandemic could be associated with psychiatric implications. We investigated the psychopathological impact of COVID-19 in survivors, also considering the effect of clinical and inflammatory predictors. We screened for psychiatric symptoms 402 adults surviving COVID-19 (265 male,mean age58), at one month follow-up after hospital treatment. A clinical interview and a battery of self-report questionnaires were used to investigate post-traumatic stress disorder (PTSD), depression, anxiety, insomnia, and obsessive-compulsive (OC) symptomatology. We collected sociodemographic information, clinical data, baseline inflammatory markers and follow-up oxygen

saturation levels. A significant proportion of patients self-rated in the psychopathological range: 28% for PTSD, 31% for depression, 42% for anxiety, 20% for OC symptoms, and 40% for insomnia. Overall, 56% scored in the pathological range in at least one clinical dimension. Despite significantly lower levels of baseline inflammatory markers, females suffered more for both anxiety and depression. Patients with a positive previous psychiatric diagnosis showed increased scores on most psychopathological measures, with similar baseline inflammation. Baseline systemic immune-inflammation index (SII), which reflects the immune response and systemic inflammation based on peripheral lymphocyte, neutrophil and platelet counts, positively associated with scores of depression and anxiety at follow-up. PTSD, major depression, and anxiety, are all high-burden non-communicable conditions associated with years of life lived with disability. Considering the alarming impact of COVID-19 infection on mental health, the current insights on inflammation in psychiatry, and the present observation of worse inflammation leading to worse depression, we recommend to assess psychopathology of COVID-19 survivors and to deepen research on inflammatory biomarkers, in order to diagnose and treat emergent psychiatric conditions."

Post-discharge symptoms and rehabilitation needs in survivors of COVID-19 infection: a cross-sectional evaluation. Halpin SJ et al., Journal of Medical Virology. "There is currently very limited information on the nature and prevalence of post-COVID-19 symptoms after hospital discharge. A purposive sample of 100 survivors discharged from a large University hospital were assessed 4- 8 weeks after discharge by a multidisciplinary team of rehabilitation professionals using a specialist telephone screening tool designed to capture symptoms and impact on daily life. EQ-5D-5L telephone version was also completed. Participants were between 29 and 71 days (mean 48 days) post-discharge from hospital. Thirty-two participants required treatment in intensive care (ICU group) and 68 were managed in hospital wards without needing ICU care (ward group). New illness-related fatigue was the most common reported symptom by 72% participants in ICU group and 60.3% in ward group. The next most common symptoms were breathlessness (65.6% in ICU group; 42.6% in ward group) and psychological distress (46.9% in ICU group; 23.5% in ward group). There was a clinically significant drop in EQ5D in 68.8% in ICU group and in 45.6% in ward group. This is the first study from the United Kingdom (UK) reporting on post-discharge symptoms. We recommend planning rehabilitation services to manage these symptoms appropriately and maximise the functional return of COVID-19 survivors."

Symptom Duration and Risk Factors for Delayed Return to Usual Health Among Outpatients with COVID-19 in a Multistate Health Care Systems Network - United States, March-June 2020. Tenforde MW et al., MWWR Morbidity and Mortality Weekly Report. "Prolonged symptom duration and disability are common in adults hospitalized with severe coronavirus disease 2019 (COVID-19). Characterizing return to baseline health among outpatients with milder COVID-19 illness is important for understanding the full spectrum of COVID-19-associated illness and tailoring public health messaging, interventions, and policy. During April 15-June 25, 2020, telephone interviews were conducted with a random sample of adults aged ≥18 years who had a first positive reverse transcription-polymerase chain reaction (RT-PCR) test for SARS-CoV-2, the virus that causes COVID-19, at an outpatient visit at one of 14 U.S. academic health care systems in 13 states. Interviews were conducted 14-21 days after the test date. Respondents were asked about demographic characteristics, baseline chronic medical conditions, symptoms present at the time of testing, whether those symptoms had resolved by the interview date, and whether they had returned to their usual state of health at the time of interview. Among 292 respondents, 94%

(274) reported experiencing one or more symptoms at the time of testing; 35% of these symptomatic respondents reported not having returned to their usual state of health by the date of the interview (median = 16 days from testing date), including 26% among those aged 18-34 years, 32% among those aged 35-49 years, and 47% among those aged ≥50 years. Among respondents reporting cough, fatigue, or shortness of breath at the time of testing, 43%, 35%, and 29%, respectively, continued to experience these symptoms at the time of the interview. These findings indicate that COVID-19 can result in prolonged illness even among persons with milder outpatient illness, including young adults. Effective public health messaging targeting these groups is warranted. Preventative measures, including social distancing, frequent handwashing, and the consistent and correct use of face coverings in public, should be strongly encouraged to slow the spread of SARS-CoV-2."

Why Rehabilitation must have priority during and after the COVID-19-pandemic: A position statement of the Global Rehabilitation Alliance. Gutenbrunner C et al., J Rehabil Med. "COVID-19 has become a pandemic with strong influence on health systems. In many cases it leads to a disruption of rehabilitation service provision. On the other hand, rehabilitation must be an integral part of COVID-19 management. Rehabilitation for COVID-19 should start from acute and early post-acute care and needs to be continued in the post-acute and long-term rehabilitation phase. Of course, it should follow specific safety protocol. Additionally, rehabilitation must be kept available for all other people who are in need. From the perspective of health system, the Global Rehabilitation Alliance urges decision makers to ensure that rehabilitation services will be available for all patients with COVID-19 in the acute, post-acute and long-term phase. Additionally, it must be ensured that all other persons with rehabilitation need have access to rehabilitation services. Rehabilitation services must be equipped with personal protection equipment and follow strict hygiene measures. In particular, rehabilitation must be accessible for vulnerable populations. For that reason, rehabilitation must be kept a health priority during the COVID-19 pandemic and given adequate financial resources. Last but not least, scientific studies should be performed to clarify the impact of the pandemic on rehabilitation services as well as on the needs for rehabilitation of COVID-19 patients."

COVID-19 "Long Hauler" Symptoms Survey Report. Lambert NJ & Survivor Corps. Indiana University. (non-peer reviewed). "Many members of Survivor Corps report suffering from long-term symptoms of COVID-19 and have taken to calling themselves "Long Haulers." The forum founder, Diana Berrent, posted a survey on the Survivor Corps Facebook page asking members who identified as Long Haulers to respond by selecting all of the COVID-19-related symptoms they have experienced. The survey symptom list was based on initial COVID-19 research conducted by researchers affiliated with Survivor Corps, Dr. Natalie Lambert at Indiana University School of Medicine and Dr. Wendy Chung at Colombia University Irving Medical Center. The survey was made "open" so that survey participants could add symptoms to the list, and then future participants could also select the participant-added symptoms. Long Haulers' COVID-19 symptoms are far more numerous than what is currently listed on the CDC's website. While the impact of COVID-19 on the lungs and vascular system have received some media and medical attention, the results of this survey suggest that brain, whole body, eye, and skin symptoms are also frequent-occurring health problems for people recovering from COVID-19. Survivor Corp group members frequently report reaching out to primary care doctors for help managing such lesser-known and painful symptoms, but find that some physicians are unable or unwilling to help patients manage these due to lack of

research. A reported 26.5% of symptoms experienced by Long Haulers are described as painful by the group members."

COVID-19 Guide for the Rehabilitation Clinician. A Review of Nonpulmonary Manifestations and Complications. **Lopez M et al., Am J Phys Med Rehab.** "Severe acute respiratory syndrome coronavirus 2—also known as COVID-19—is primarily known for respiratory illness. Although it is clear that patients with moderate to severe cases of COVID-19 will require pulmonary rehabilitation, physiatrists will need to consider effective management plans for COVID-19 survivors with extrapulmonary involvement. This report will summarize key nonpulmonary considerations to guide rehabilitation clinicians who may be involved in the care of COVID-19 survivors with the best available early evidence."

Commentaries

From 'brain fog' to heart damage, COVID-19's lingering problems alarm scientists. Couzin-Frankel J. Science. (published online 31/7/20).

What exactly is mild covid-19? Alwan NA. BMJ Opinion. (published online 28/7/20).

Persistent self-reported changes in hearing and tinnitus in post-hospitalisation COVID-19 cases. Munro KJ et al., Int J Audiology. (published online 31/7/20).

Useful resources

Supporting your recovery after COVID-19. Singh S et al., YourCovidRecovery.NHS.UK.

Screening and testing

Guidance

Use of Chest Imaging in the Diagnosis and Management of COVID-19: a WHO Rapid Advice Guide. Akl EA et al., WHO.

Emerging evidence

Weekly COVID-19 testing with household quarantine and contact tracing is feasible and would probably end the epidemic. **Peto J et al., Royal Society Open Science.** "The COVID-19 epidemic can probably be ended and normal life restored, perhaps quite quickly, by weekly SARS-CoV-2 RNA testing together with household quarantine and systematic contact tracing. Isolated outbreaks could then be contained by contact tracing, supplemented if necessary by temporary local reintroduction of population testing or lockdown. Leading public health experts have recommended that this should be tried in a demonstration project in which a medium-sized city introduces weekly testing and lifts lockdown completely. The idea was not considered by the groups whose predictions have guided UK policy, so we have examined the statistical case for such a study. The combination of regular testing with strict household quarantine, which was not analysed in their models, has remarkable power to reduce transmission to the community from other household members as well as providing earlier diagnosis and facilitating rapid contact tracing"

Universal screening for SARS-CoV-2 in pregnant women at term admitted to an East London maternity unit. Abeysuriya S et al., European Journal of Obstetrics & Gynaecology and Reproductive Biology. "Newham University Hospital based in East London serving a population with the highest death rate secondary to SARS-CoV-2 in the UK, commenced universal screening of all admissions to the Maternity Unit from 22nd April to 5th May, 2020. A proforma was created to capture key patient demographics, indication for admission and presence of SARS-CoV-2 related symptoms at the point of presentation. A total of 180 women with a mean age of 29.9 (SD 7.4) years, at a median gestation of 39 (IQR 37 + 1–40 + 3) weeks underwent universal screening with nasopharyngeal PCR swabs during the two-week period of the study. BAME identity or parity was not associated with the likelihood of a positive result. Seven women (3.9 %, 1.6–7.8) were tested positive for SARS-CoV-2, of whom 6 (3.3 %, 1.2–7.1) were asymptomatic; 85.7 % (42.1–99.6) of the SARS-CoV-2 positive women were asymptomatic. The sensitivity of symptom-driven testing was 14.3 % (0.36–57.87) and specificity was 91.86 % (86.72–95.48) with a positive predictive value of 6.67 % (1.08–31.95) and a negative predictive value of 96.34 % (95.10–97.28). The prevalence of SARS-CoV-2 in the maternity population served by Newham University Hospital was 3.9 %, four weeks after lockdown. Of the women who were found to be SARS-CoV-2 positive, a high proportion (87.9 %) were asymptomatic. These findings support the need for universal testing to enable targeted isolation and robust infectious control measures to mitigate outbreaks of SARS-CoV-2 in maternity units."

Risk of COVID-19 among front-line health-care workers and the general community: a prospective cohort study. Nguyen LH et al., The Lancet Public Health. "Data for front-line health-care workers and risk of COVID-19 are limited. We sought to assess risk of COVID-19 among front-line health-care workers compared with the general community and the effect of personal protective equipment (PPE) on risk. We did a prospective, observational cohort study in the UK and the USA of the general community, including front-line health-care workers, using self-reported data from the COVID Symptom Study smartphone application (app) from March 24 (UK) and March 29 (USA) to April 23, 2020. Participants were voluntary users of the app and at first use provided information on demographic factors (including age, sex, race or ethnic background, height and weight, and occupation) and medical history, and subsequently reported any COVID-19 symptoms. We used Cox proportional hazards modelling to estimate multivariate-adjusted hazard ratios (HRs) of our primary outcome, which was a positive COVID-19 test. Among 2 035 395 community individuals and 99 795 front-line health-care workers, we recorded 5545 incident reports of a positive COVID-19 test over 34 435 272 person-days. Compared with the general community, front-line health-care workers were at increased risk for reporting a positive COVID-19 test (adjusted HR 11·61, 95% CI 10·93–12·33). To account for differences in testing frequency between front-line health-care workers and the general community and possible selection bias, an inverse probability-weighted model was used to adjust for the likelihood of receiving a COVID-19 test (adjusted HR 3·40, 95% CI 3·37–3·43). Secondary and post-hoc analyses suggested adequacy of PPE, clinical setting, and ethnic background were also important factors. In the UK and the USA, risk of reporting a positive test for COVID-19 was increased among front-line health-care workers. Health-care systems should ensure adequate availability of PPE and develop additional strategies to protect health-care workers from COVID-19, particularly those from Black, Asian, and minority ethnic backgrounds. Additional follow-up of these observational findings is needed."

Characteristics and transmission dynamics of COVID-19 in healthcare workers at a London teaching hospital. Zheng C et al., Journal of Hospital Infection. "Healthcare worker (HCW) associated COVID-19 is of global concern due to the potential for nosocomial spread and depletion of staff numbers. However, the literature on transmission routes and risk factors for COVID-19 in HCWs is limited. Staff records and virology testing results were combined to identify staff sickness and COVID-19 rates from March to April 2020. Comparisons were made with staff professional groups, department of work and ethnicity. Analysis was performed using Microsoft Excel™. COVID-19 rates in our HCWs largely rose and declined in parallel with the number of community cases. White and non-white ethnic groups among our HCWs had similar rates of infection. Clinical staff had a higher rate of laboratory-confirmed COVID-19 than non-clinical staff, but total sickness rates were similar. Doctors had the highest rate of infection, but took the fewest sickness days. Critical Care had lower rates than the Emergency Department (ED), but rates in the ED declined once all staff were advised to use Personal Protective Equipment (PPE). These findings show that sustained transmission of SARS-CoV-2 among our hospital staff did not occur, beyond the community outbreak, even in the absence of strict infection control measures in non-clinical areas. The results also suggest that current PPE is effective when used appropriately. In addition, our findings emphasise the importance of testing both clinical and non-clinical staff groups during a pandemic."

Olfactory and taste disorders in healthcare workers with COVID-19 infection. Villarreal IM et al., European Archives of Oto-Rhino-Laryngology. "Severe acute respiratory syndrome caused by COVID-19 has spread globally for the last few months. Healthcare workers (HCW) are overexposed and infection rates are higher than in the rest of the population. Strict clinical assessment is paramount to detect suspicious cases. In this context, olfactory or taste dysfunction (OTD) appears as an early and frequent symptom. Evaluating its presence in early stages plays an important role nowadays. We performed a descriptive observational single-center study among 256 HCW at Hospital Universitario de Fuenlabrada affected by COVID-19 and confirmed using RT-PCR. A telephonic interview was performed, after obtaining oral informed consent. OTD was present in up to 70% of the cases as an early symptom, including mild-to-severe cases. The extent of these sensory deficits lasted an average of 11 days. In 26% of the patients, these sensory alterations persisted for over a month. OTD is reported as an early symptom among HCW with SARS-CoV-2 infection. Its strong association with test positivity is useful in the management of the infection and should be enough to indicate preventive isolation. We consider that OTD needs to be included in clinical screening questionnaires in HCW."

Commentaries

COVID-19 or common coronavirus? A cautionary tale in advanced diagnostics. Howard-Anderson J et al., Diagnosis.

COVID cases in England aren't rising: here's why. Heneghan C. Oxford CEBM. (published online 2/8/20).

Covid-19: Sandwell Council in West Midlands sets up contact tracing, citing failures of national scheme. Limb M. BMJ, 370:m3065. (published online 31/7/20).

Broader impacts on health outcomes

Commentary from the collaboration

Emerging evidence of COVID-19's unequal mental health impacts on health and social care staff. Kwong E & Marshall L. The Health Foundation. (published online 31/7/20).

Emerging evidence on health inequalities and COVID-19: July 2020. Leavey C et al., The Health Foundation. (published online 4/8/20).

London Covid-19 Dialogue & Deliberation. Interim Report- early insights from a Dialogue with Londoners. Imperial College Health Partners and Ipsos MORI. (published online June 2020).

Guidance

Meeting the psychological needs of children in shielding families. British Psychological Society. (published July 2020).

Rapid reviews

Mental health- general public

Prevalence of posttraumatic and general psychological stress during COVID-19: A rapid review and meta-analysis. **Cooke JE et al., Psychiatry Research**. "Emerging evidence suggests rates of posttraumatic stress and psychological stress in the general population are elevated due to COVID-19. However, a meta-analysis is needed to attain more precise prevalence estimates due to between-study variability. Thus, we performed a rapid review and meta-analysis of posttraumatic stress and general psychological stress symptoms during COVID-19. Electronic searches were conducted up to May 26th, 2020 using key terms: mental illness and COVID-19. A total of k = 14 non-overlapping studies were identified for inclusion. Random effects meta-analyses indicated that the pooled prevalence of posttraumatic stress symptoms and psychological stress in the general population was 23.88% and 24.84%, respectively. In both meta-analyses, the prevalence of stress symptoms was higher in unpublished compared to peer-reviewed studies. Overall, nearly one-in-four adults experienced significant stress due to the COVID-19 pandemic. Psychological resources and services must be allocated to help address the mental health burden of COVID-19. High quality, longitudinal research on the long-term mental health effects of the pandemic is greatly needed."

Emerging evidence

Public health

Coronavirus and the social impacts on Great Britain: 31 July 2020. **Davies R. Office for National Statistics.** "This week, over 8 in 10 adults (84%) who have left their homes have worn a face covering to slow the spread of the coronavirus (COVID-19) – an increase from 71% last week and 61% the week before. Over half of adults (57%) said they strongly supported the mandatory wearing of face coverings in shops and supermarkets. More than 3 in 10 adults (34%) said they would feel comfortable or very comfortable eating indoors at a restaurant this week, a similar proportion to last week (33%). Just over 1 in 10 adults (12%) said they would feel comfortable or very comfortable to visit an indoor gym, and 13% reported they would feel comfortable or very comfortable visiting an

indoor swimming pool or water park. More than 7 in 10 adults (73%) met up with other people to socialise this week – a similar proportion to last week (71%). Over half of working adults (54%) reported they had travelled to work in the past seven days, a similar level to last week (53%). Just under half of adults (47%) reported that they are likely or very likely to use the NHS COVID-19 app when it becomes available."

Understanding grief in a time of COVID-19 - a hypothetical approach to challenges and support. Fang C & Comery A. Advance (pre-print). "This article develops preliminary understandings of loss and grief at both an individual and collective level following the COVID-19 outbreak. By examining relevant media and academic discourses, the authors analyse and envisage challenges and support for those experiencing loss during COVID-19. The discussion revisits and further relocates the ideas of good and bad deaths in the context of increased social constrains and inequalities. Further, two pairs of contrasting hypotheses are proposed to examine the impacts of COVID-19 on both bereaved individuals and society as a whole during and post the outbreak. The discussion captures a mixed picture of grief and bereavement, which highlights the importance of timely, holistic and continuous support. It is found that individual and collectives express diverse needs to respond to deaths and losses as a process of meaning-making. Further the significance of socio-cultural environments also become evident. These findings highlight community support during COVID-19 and further promote a grief literate culture as imperative to support individual and collective needs when confronted with loss and grief. This article provides timely and comprehensive accounts of possible challenges and support both for individual and collective experiences of loss and grief. These understandings could facilitate further research, informing better practice and policy decisions to support the bereaved in the context of COVID-19 and other disruptive world events."

Life on Hold. Children's Well-being and COVID-19. The Children's Society. (published online July 2020). "The report combines findings from The Children's Society's annual household survey conducted in April-June 2020 with over 2,000 young people aged 10-17, and a consultation with 150 children, seeking more in-depth information on the impact of Coronavirus and the associated lockdown on their lives. Key findings were: Parents report a wide range of impacts on their family, and on their children's happiness with friends and how much choice they have in life. Parents anticipate long term negative impacts on their children's education. Encouragingly, given the range of impacts reported, only around half expect a long term negative impact on the happiness of adults/ children in the household. Most children reported having coped to some degree with the changes made as a result of the pandemic. Those areas where they had coped less well were not being able to see their friends and family. The impact on friendships was also reiterated in children's responses to our consultation, which highlighted feelings of isolation. While most children are happy/satisfied, a greater proportion than usual scored below the midpoint on our preferred, and usually stable, multi-item measure of life satisfaction, which suggests that some children's cognitive well-being has been adversely affected. Parents felt that some children were happier with their time use than before lockdown and children responding to our consultation also highlighted advantages, such as being able to pursue hobbies, and appreciating more what they have in life. The self-care strategies described by children are reminiscent of the Five Ways to Wellbeing, with their main focus being on connecting with others followed by being active and creative."

Mental health- general public

Coping and Tolerance of Uncertainty: Predictors and Mediators of Mental Health During the COVID-19 Pandemic. Rettie H & Daniels J. American Psychologist. "The current pandemic wave of COVID-19 has resulted in significant uncertainty for the general public. Mental health and examining factors that may influence distress have been outlined as key research priorities to inform interventions. This research sought to examine whether intolerance of uncertainty and coping responses influence the degree of distress experienced by the U.K. general public during the COVID-19 pandemic. Using a cross-sectional online questionnaire design, participants were recruited (N=842) using snowball sampling over a 10-day period in the early "lockdown" phase of the pandemic. Around a quarter of participants demonstrated significantly elevated anxiety and depression, with14.8% reaching clinical cut off for health anxiety. A one-way multivariate analysis of variance indicated those in "vulnerable" groups were significantly more anxious ($p<.001$), and also more anxious in relation to their health ($p<.001$). Mediation modelling demonstrated maladaptive coping responses partially mediated the predictive relationship between intolerance of uncertainty and psychological distress. Mental health difficulties have become significantly raised during the first wave of the COVID-19 pandemic in the United Kingdom, particularly for the vulnerable. Findings support emerging research suggesting the general public is struggling with uncertainty, more so than normal. Vulnerable groups are more anxious about their health, but not more intolerant of uncertainty than the nonvulnerable. Finally, this study indicated two modifiable factors that could act as treatment targets when adapting interventions for mental health during the COVID-19 global health crisis."

Social capital and mental health during the COVID-19 pandemic. Rodela TT et al., SocArXiv. (pre-print). "COVID-19 pandemic is affecting mental health and wellbeing across populations. The continued burden of psychosocial stressors in different contexts necessitates multipronged interventions that address mental health problems and associated disparities. Global evidence suggests that social capital plays a critical role in determining mental health outcomes in communities, which can be leveraged for improving mental health in COVID-19. As communities with better social capital is likely to have a lower burden of mental disorders, it is necessary to assess potential measures to use social capital for mental health promotion in vulnerable populations. The existing forms of social capital may provide social support within and between communities that are critically affected by COVID-19. Alongside faster recovery from socioeconomic challenges, social capital interventions may strengthen the social determinants of mental health and empower communities to alleviate the psychosocial consequences of this pandemic."

Pre-existing conditions

Understanding the experiences of people who inject drugs during the COVID-19 pandemic: Interim report 3. Hines LA et al., University of Bristol. "Third interim report from telephone interviews with 30 people who inject drugs, to understand the challenges that people who inject drugs are facing during the COVID-19 pandemic. The study team are publishing interim reports of their findings, covering issues such as social distancing, drug supply, accessing needle and syringe programmes, accommodation and collecting prescriptions. This interim report has being created to keep key local and national stakeholders updated with interview findings before a more rigorous analysis takes place, to allow rapid responses in service development and inform further research."

How is COVID-19 Affecting the Mental Health of Children with Special Educational Needs and Disabilities and Their Families? **Asbury K et al., J Autism Dev Disord.** "Parents of children with Special Educational Needs and Disabilities in the UK (n = 241) were asked to describe the impact of COVID-19 on their own mental health and that of their child. An inductive content analysis of the data was undertaken. Both parents and children appear to be experiencing loss, worry and changes in mood and behaviour as a result of the rapid social changes that have occurred. Some parents reported feeling overwhelmed and described the impact of child understanding and awareness. Finally, a minority of parents reported that COVID-19 has had little impact on mental health in their family, or has even led to improvements. Implications for how to support these families in the immediate future are discussed."

Caregivers' Mental Health and Somatic Symptoms During Covid-19. **Park SS. The Journals of Gerontology**. "Objectives: This study examines differences in the mental and physical health of the U.S. population during the early stages of the COVID-19 pandemic among three groups: non-caregivers, short-term caregivers (one year or less), and long-term caregivers (greater than one year). Methods: Data from the Understanding America Study are used to describe group differences in reports of psychological distress and somatic symptoms. Logistic and negative binomial regression models are used to examine whether these differences persist after adjusting for demographic, socioeconomic, and pre-pandemic health conditions. To understand within-group differences in caregiving demands, the intensity of care provided by short-term and long-term caregivers, as well as selected patients' health conditions are summarized. Results: Adults' mental and physical health varied substantially by caregiver status. Caregivers continued to fare worse than non-caregivers in terms of mental health and fatigue, and long-term caregivers were more likely to report headache, body aches, and abdominal discomfort than both short-term caregivers and non-caregivers, net of controls. The nature of caregiving differed between short-term and long-term caregivers, with the latter more likely to provide greater hours of care, and to be looking after patients with permanent medical conditions. Discussion: Efforts to understand and mitigate the impact of the pandemic on population health should include caregivers, whose mental and physical health were already vulnerable before COVID19."

Commentaries

Public health

Behavioural, environmental, social, and systems interventions against covid-19. Michie S & West R. BMJ,370:m2982. (published online 28/7/20).

Infectious Disease Outbreak Related Stigma and Discrimination during the COVID-19 Pandemic: Drivers, Facilitators, Manifestations, and Outcomes across the World. Ransing R et al., Brain Behav Immun. (published online 27/7/20).

Mental health

Suicide Research, Prevention, and COVID-19. Towards a Global Response and the Establishment of an International Research Collaboration. Niederkrotenthaler T et al., Crisis. (published online 27/7/20)

COVID-19 and the Management of Chronic Mental Illnesses. Javed A & Afzal M. J Psychosoc Rehabil Ment Health. (published online July 2020).

COVID-19: The Hidden Impact on Mental Health and Drug Addiction. Chiappini S et al., Frontiers in Psychiatry. (published online 29/7/20).

Useful resources

Creating Wellness in a Pandemic: A Practical Framework for Health Systems Responding to Covid-19. Adibe B et al., NEJM Catal Innov Care Deliv.

Remotely Delivered Cognitive Behavior Therapy for Disturbed Grief During the COVID-19 Crisis: Challenges and Opportunities. Boelen PA et al., Journal of Loss and Trauma. (published online 31/7/20).

Impact on non-Covid care

Commentary from the collaboration

How might COVID-19 affect the number of GPs available to see patients in England? Fisher R & Asaria M. The Health Foundation. (published online 6/8/20).

Technology and innovation for long-term health conditions. Collins B. The King's Fund. (published online August 2020).

Guidance

Third phase of NHS response to COVID-19. NHS England. (published online 31/7/20).

Readying the NHS and social care for the COVID-19 peak. House of Commons Public Accounts Committee. (published online 20/7/20).

Restarting gastrointestinal endoscopy in the deceleration and early recovery phases of COVID-19 pandemic: Guidance from the British Society of Gastroenterology. Rees CJ et al., Clinical Medicine.

Psychological insights for cancer services recovery planning. British Psychological Society & Division of Clinical Psychology- Faculty for Oncology & Palliative Care. (published online July 2020).

Emerging evidence

Resilient Health and Care. Learning the lessons of COVID-19 in the English NHS. Thomas C. Institute for Public Policy Research. (published online July 2020). "Covid-19 is one of the biggest shocks in modern peacetime history. It has caused huge loss of life, and severely impacted both our society and our economy. It might be tempting to see the outbreak as a case of bad luck – a one-off event from which we should return to normal, as soon as possible. This would, however, be a mistake. The evidence is clear that global disease outbreaks are a growing threat (WEF 2019). We should, therefore, approach Covid-19 like a natural disaster. When flooding or earthquakes occur, it is always important to build back with flood defences and resilient construction. We need to do the same in the health and care system. Put another way, the next few months will not just be about

rebuilding our healthcare system to its previous state, but about building it back better. Of course, that does not mean preparing retroactively for an identical crisis. The next health shock, when it comes, is likely to look quite different. Instead, the onus is on the government to consider how the healthcare system could be if it were given the capacity, resources, and flexibility to adapt to shocks when they emerge. To begin this process, we need to explore why our system struggled this time. Through a rapid review of the international data, we identify three key macro themes: capacity, resourcing and population health (see annex 1 for a summary scorecard). Across these themes, we show that the UK system was in a poor position to resist a health shock, compared to the international standard. The fact that the UK's health and care system has struggled during the coronavirus pandemic can be traced back to decisions taken during austerity. Driven by a desire to cut the deficit after the 2008/09 financial crash, government challenged public services to deliver the same level of service, and the same outcomes but with steadily less resources. Their underlying logic was that quality could be protected, while waste would be cut. Covid-19 has shown the consequences of these cuts, and exposed their short-termism and inefficiency. Now, the UK government should take the opportunity to create a system where resilience is considered efficient, where long-term thinking is encouraged, and where resources are allocated to deliver on it. To this end, English health policy might borrow from economic policy's 'fiscal rules', and introduce six 'health and care resilience rules'. We recommend that these are as follows."

Data-informed recommendations for services providers working with vulnerable children and families during the COVID-19 pandemic. Wilke NG et al., Child Abuse & Neglect. "The goal of the present study was to better understand the impact of the pandemic and associated response measures on vulnerable children and families and provide data-informed recommendations for public and private service providers working with this population. Representatives from 87 non-government organizations (NGOs) providing a variety of direct services (i.e. residential care, family preservation, foster care, etc.) to 454,637 vulnerable children and families in 43 countries completed a brief online survey. Using a mixed methods design, results examined 1) ways in which children and families have been directly impacted by COVID-19, 2) the impact of the pandemic on services provided by NGOs, 3) government responses and gaps in services for this population during the pandemic, and 4) strategies that have been effective in filling these gaps. Data revealed that the pandemic and restrictive measures were associated with increased risk factors for vulnerable children and families, including not having access to vital services. The NGOs experienced government restrictions, decreased financial support, and inability to adequately provide services. Increased communication and supportive activities had a positive impact on both NGO staff and the families they serve. Based on the findings, ten recommendations were made for service providers working with vulnerable children and families during the COVID-19 pandemic."

Primary care

The impact of COVID-19 restrictions on needle and syringe programme provision and coverage in England. Whitfield M et al., Int J Drug Policy. "The restrictions introduced in response to COVID-19 present many challenges, particularly for vulnerable and marginalised populations. These include maintaining access to Needle and Syringe Programmes (NSPs) to reduce the harms associated with injecting drugs. NSPs effectiveness is coverage dependent, but lockdowns and social distancing limit NSP access and availability. The impact on NSP provision in England is explored using enhanced monitoring data. Data collected through an established comprehensive monitoring system from five four-week periods, centred on the implementation of restrictions in the UK in mid-March

2020, are examined. Weekly averages are compared to allow for public holidays and weekly variation in activity. The restrictions resulted in the number of NSP clients decreasing by 36%, visits by 36%, and needles distributed by 29%. NSP coverage for those injecting psychoactive drugs halved, declining from 14 needles per-week during the 4-weeks to 15th March 2020 to 7 needles per-week by mid-April, and coverage has remained at this level since then. Though it is currently unclear if there has been a decline in injecting, the decline in NSP coverage is so marked that it almost certainly reflects decreased utilisation among those in need, indicating increased equipment reuse and risk."

COVID-19 and reproductive justice in Great Britain and the United States: ensuring access to abortion care during a global pandemic. Romanis EC et al., Journal of Law and the Bioscience, 7(1). "In this paper we consider the impact that the COVID-19 pandemic is having on access to abortion care in Great Britain (GB) (England, Wales, and Scotland) and the United States (US). The pandemic has exacerbated problems in access to abortion services because social distancing or lockdown measures, increasing caring responsibilities, and the need to self-isolate are making clinics much more difficult to access, and this is when clinics are able to stay open which many are not. In response we argue there is a need to facilitate telemedical early medical abortion in order to ensure access to essential healthcare for people in need of terminations. There are substantial legal barriers to the establishment of telemedical abortion services in parts of GB and parts of the US. We argue that during a pandemic any restriction on telemedicine for basic healthcare is an unjustifiable human rights violation and, in the US, is unconstitutional."

Elective care

Is a "COVID-19-free" hospital the answer to resuming elective surgery during the current pandemic? Results from the first available prospective study. Gammeri E et al., Surgery. "Resumption of elective surgery during the current coronavirus disease 2019 pandemic crisis has been debated widely and largely discouraged. The aim of this prospective cohort study was to assess the feasibility of resuming elective operations during the current and possible future peaks of this coronavirus disease 2019 pandemic. We collected data during the peak of the current pandemic in the United Kingdom on adult patients who underwent elective surgery in a "COVID-19-free" hospital from April 8 to May 29, 2020. The study included patients from various surgical specialties. Nonelective and pediatric cases were excluded. The primary outcome was 30-day mortality postoperatively. Secondary outcomes were the rate of coronavirus disease 2019 infections, new onset of pulmonary symptoms after hospitalization, and requirement for admission to the intensive care unit. A total of 309 consecutive adult patients were included in this study. No patients died nor required intensive care unit admission. Operations graded "Intermediate" were the most performed procedure representing 91% of the total number. One patient was diagnosed with a coronavirus disease 2019 infection after being transferred to the nearest local emergency hospital for management of postoperative pain secondary to common bile duct stone and was successfully treated conservatively on the ward. No patient developed pulmonary complications. Three patients were admitted for greater than 23 hours. Twenty-seven patients (8.7%) developed complications. Complications graded as 2 and 3 according to the Clavien-Dindo classification occurred in 14 and 2 patients, respectively. This prospective study shows that, despite the severity and high transmissibility of novel coronavirus 2 disease, COVID-19-free hospitals can represent a safe setting to resume many types of elective surgery during the peak of a pandemic."

Safety evaluation of a strategy to restart elective orthopaedic surgery during the de-escalation phase of the COVID-19 pandemic. **Zahra W et al., Bone Joint Open.** "Aims: To evaluate safety outcomes and patient satisfaction of the re-introduction of elective orthopaedic surgery on 'green' (non-COVID-19) sites during the COVID-19 pandemic. Methods: A strategy consisting of phased relaxation of clinical comorbidity criteria was developed. Patients from the orthopaedic waiting list were selected according to these criteria and observed recommended preoperative isolation protocols. Surgery was performed at green sites (two local private hospitals) under the COVID-19 NHS contract. The first 100 consecutive patients that met the Phase 1 criteria and underwent surgery were included. In hospital and postoperative complications with specific enquiry as to development of COVID-19 symptoms or need and outcome for COVID-19 testing at 14 days and six weeks was recorded. Patient satisfaction was surveyed at 14 days postoperatively. Results: There were 54 females and 46 males (mean age 44 years, mean body mass index (BMI) 25.6 kg/m2). In all, 56 patients underwent major orthopaedic procedures. There were no exclusions. One patient had a postoperative positive SARS-CoV-2 RT-PCR test but had no typical symptoms of COVID-19 infection and no clinical sequelae. 99% of patients were satisfied with the process and 98% would recommend undergoing elective orthopaedic surgery in the study period. Conclusion: In an environment with appropriate infrastructure, patient selection, isolation, screening, and testing, elective orthopaedic surgery is safe during the COVID-19 pandemic, and associated with high patient satisfaction. Further follow-up is required to establish that safety is maintained as the clinical restrictions are eased with the phased approach described."

Secondary care

COVID-19 pandemic and admission rates for and management of acute coronary syndromes in England. **Mafham MF et al., The Lancet, 396 (10248), 381-9.** Hospital admissions for acute coronary syndrome declined from mid-February, 2020, falling from a 2019 baseline rate of 3017 admissions per week to 1813 per week by the end of March, 2020, a reduction of 40% (95% CI 37–43). This decline was partly reversed during April and May, 2020, such that by the last week of May, 2020, there were 2522 admissions, representing a 16% (95% CI 13–20) reduction from baseline. During the period of declining admissions, there were reductions in the numbers of admissions for all types of acute coronary syndrome, including both STEMI and NSTEMI, but relative and absolute reductions were larger for NSTEMI, with 1267 admissions per week in 2019 and 733 per week by the end of March, 2020, a percent reduction of 42% (95% CI 38–46). In parallel, reductions were recorded in the number of PCI procedures for patients with both STEMI (438 PCI procedures per week in 2019 vs 346 by the end of March, 2020; percent reduction 21%, 95% CI 12–29) and NSTEMI (383 PCI procedures per week in 2019 vs 240 by the end of March, 2020; percent reduction 37%, 29–45). The median length of stay among patients with acute coronary syndrome fell from 4 days (IQR 2–9) in 2019 to 3 days (1–5) by the end of March, 2020.

Compared with the weekly average in 2019, there was a substantial reduction in the weekly numbers of patients with acute coronary syndrome who were admitted to hospital in England by the end of March, 2020, which had been partly reversed by the end of May, 2020. The reduced number of admissions during this period is likely to have resulted in increases in out-of-hospital deaths and long-term complications of myocardial infarction and missed opportunities to offer secondary prevention treatment for patients with coronary heart disease. The full extent of the effect of COVID-19 on the management of patients with acute coronary syndrome will continue to be assessed by updating these analyses.

Impact of COVID-19 on diagnosis and management of paediatric inflammatory bowel disease during lockdown: a UK nationwide study. Ashton JJ et al., Arch Disease Childhood. "COVID-19 has impacted on healthcare provision. Anecdotally, investigations for children with inflammatory bowel disease (IBD) have been restricted, resulting in diagnosis with no histological confirmation and potential secondary morbidity. In this study, we detail practice across the UK to assess impact on services and document the impact of the pandemic. For the month of April 2020, 20 tertiary paediatric IBD centres were invited to contribute data detailing: (1) diagnosis/management of suspected new patients with IBD; (2) facilities available; (3) ongoing management of IBD; and (4) direct impact of COVID-19 on patients with IBD. All centres contributed. Two centres retained routine endoscopy, with three unable to perform even urgent IBD endoscopy. 122 patients were diagnosed with IBD, and 53.3% (n=65) were presumed diagnoses and had not undergone endoscopy with histological confirmation. The most common induction was exclusive enteral nutrition (44.6%). No patients with a presumed rather than confirmed diagnosis were started on anti-tumour necrosis factor (TNF) therapy. Most IBD follow-up appointments were able to occur using phone/webcam or face to face. No biologics/immunomodulators were stopped. All centres were able to continue IBD surgery if required, with 14 procedures occurring across seven centres. Diagnostic IBD practice has been hugely impacted by COVID-19, with >50% of new diagnoses not having endoscopy. To date, therapy and review of known paediatric patients with IBD has continued. Planning and resourcing for recovery is crucial to minimise continued secondary morbidity."

The impact of COVID-19 on the future of orthopaedic training in the UK. Dattani R et al., Acta Orthopaedica. "The COVID-19 pandemic has had a major impact on global healthcare systems, has drastically affected patient care, and has had widespread effects upon medical education. As plans are being devised to reinstate elective surgical services, it is important to consider the impact that the pandemic has had and will continue to have on surgical training. We describe the effect COVID-19 has had at all levels of training in the UK within trauma and orthopaedics and evaluate how training might change in the future. We found that the COVID-19 pandemic has significantly impacted trainees within trauma and orthopaedics at all levels of training. It had led to reduced operative exposure, cancellations of examinations and courses, and modifications to speciality recruitment and annual appraisals. This cohort of trainees is witnessing novel methods of delivering orthopaedic services, which will continue to develop and become part of routine practice even once the pandemic has resolved. It will be important to observe the extent to which the rapid changes currently being introduced will impact the personal health, safety, and career progression of current trainees. The COVID-19 pandemic has had a major impact on global healthcare systems, has drastically affected patient care, and has had widespread effects upon medical education. On the 23rd of March 2020, the UK government imposed a lockdown and introduced stringent social distancing measures in response to the rising number of COVID-19 infections. In the field of trauma and orthopaedics (T&O), COVID-19 led to an immediate restructuring of services, redeployment of doctors, and cancellation of elective operating. As plans are being devised to reinstate elective surgical services in the UK, it is important to consider the impact that the pandemic will have upon surgical training. This article describes the effect COVID-19 has had at all levels of training in the UK within T&O and evaluates how training might change in the future."

Tertiary care

Initial changes in neuropsychologists clinical practice during the COVID-19 pandemic: a survey study. Marra DE et al., The Clinical Neuropsychologist. "In light of the COVID-19 pandemic, a majority of clinicians have had to quickly and dramatically alter their clinical practices. Two surveys were administered on 3/26/2020 and 3/30/ 2020, respectively, to document immediate changes and challenges in clinical practice. : Two surveys were administered between 3/26/2020 and 3/30/2020, via SurveyMonkey and Google Forms, asking clinicians questions pertaining to practice issues during the early stages of the COVID-19 pandemic. Quantitative responses from the second survey were stratified by clinical setting (Medical Hospital vs. Private Practice) prior to analysis. Qualitative, free-response items were coded by the authors to better understand immediate changes in practice and other concerns. 266 neuropsychologists completed Survey 1 and 230 completed Survey 2. Results suggest that practices immediately moved towards remote service provision. A meaningful proportion of clinicians and their staff were immediately affected economically by the pandemic, with clinicians in private practice differentially affected. Furthermore, a small but significant minority of respondents faced ethical dilemmas related to service provision and expressed concerns with initial communication from their employment organizations. Respondents requested clear best-practice guidelines from neuropsychological practice organizations. It is clear that field of neuropsychology has drastically shifted clinical practices in response to COVID-19 and is likely to continue to evolve. While these responses were collected in the early stages of stay-at-home orders, policy changes continue to occur and it is paramount that practice organizations consider the initial challenges expressed by clinicians when formulating practice recommendations and evaluating the clinical utility of telehealth services."

Cancer care

Cancer Research UK Cancer Patient Experience Survey 2020. The impact of COVID-19 on cancer patients in the UK. Ide C et al., CRUK. "Overall for many cancer patients the COVID-19 pandemic appears to have had a significant impact on their testing and treatment, and most notably their care: 2 in 5 cancer patients surveyed reported that their testing had been impacted. 1 in 3 cancer patients surveyed reported that their treatment had been impacted. 2 in 3 cancer patients reported that their cancer care had been impacted. Ratings of overall cancer care as 'very good' decreased from 75% 'before lockdown started' to 37% 'after lockdown started'. Possible significant differences in experience were found by region in England for testing, treatment and care ($p < .01$). Possible significant [1] differences in experience for care was flagged for social economic status (SES), nation, region and cancer type ($p < .01$). 71% of cancer patients stated that they had been treated in the same hospital as usual, with no significant differences by SES, cancer type, nation or region. This has resulted in a negative impact on the emotional well-being of many cancer patients: • The most common emotions reported were 'anxious' and 'frustrated'. This was consistent for all patients surveyed, those who reported to have their testing and treatment impacted, and across breakdowns (SES, nation region and cancer type). 'Catching COVID-19' and 'becoming seriously ill from COVID-19' were the most selected concerns, and there was a lot of frustration reported in the open text comments regarding the feeling that COVID-19 patients are being prioritised over cancer patients."

Commentaries

Roadmap to strengthen global mental health systems to tackle the impact of the COVID-19 pandemic. Maulik PK et al., Int J Mental Health Systems. (published online 29/7/20).

U.K. Response to the COVID-19 Pandemic: Managing Plastic Surgery Patients Safely. Reissis D et al., Plastic and Reconstructive Surgery. (published online August 2020).

Useful resources

The impact of COVID-19 on community health services. NHS Confederation. (published online 4/8/20).

Five principles for the next phase of the Covid-19 response. National Voices. (published online June 2020).

Revisiting health information technology ethical, legal, and social issues and evaluation: telehealth/telemedicine and Covid-19. Kaplan B. In J Med Informatics.

Telemedicine for preoperative assessment during a COVID-19 pandemic: Recommendations for clinical care. Mihalj M et al., Best Pract Res Clin Anaesthisiol.

This update forms part of a national evidence update service, provided by the Strategy Unit, as part of a collaboration to provide analytical support to the health and care system to help in the response to COVID-19. For more information, visit: https://www.strategyunitwm.nhs.uk/covid19-and-coronavirus or contact our Covid Evidence team on: mlcsu.covidevidence@nhs.net