I like many others, in recent weeks I’ve stepped into various clinical roles to support the response to covid-19. A few weeks ago I started triaging calls from patients with suspected covid-19 who had contacted the NHS 111 telephone service. Now I find myself working in a primary care “hot service” developed by our GP federation, with the facilities to see and assess patients with suspected covid-19 face to face in a dedicated clinic or in their home. It’s been energising to be a part of this, but at times it’s also been unnerving.

Being immersed in the clinical work has brought many advantages: perhaps most notably, it’s helped me and my team (who usually spend part of our week on system improvement and population health) to identify immediate needs regarding covid-19 and to innovate in response to these.

When we started supporting NHS 111 we found a significant proportion of patients reporting breathlessness, and although we were measuring respiratory rates by video call, we felt uneasy about not doing pulse oximetry testing. Rather than asking patients to come in for this, it made sense to send an oxygen saturation probe out to them. We procured hundreds of probes, distributed them to our member practices, and then worked with local third sector organisations—which in the space of a week had organised themselves to support emergency delivery of probes to patients.

As I sat in the hot service and spoke to a patient reporting new onset breathlessness, I experienced at first hand the benefits of this arrangement. I got an oxygen saturation probe out to my patient in under an hour. My subsequent assessment confirmed significant desaturation on exertion, and the patient was blue lighted to hospital. We were able to get the patient the right care at the right time and in the right place.

For a GP federation, its member practices, a social enterprise, and a local charity to come together to achieve this sort of system change within a week was previously unthinkable.

To me this story illustrates the need for practising clinicians, rather than management consultants, to be at the fore of innovation in healthcare: we need to drive change because we understand the system more than anyone else, by virtue of working in it. But my eyes have also been opened to the wealth of talent in the third sector and how imperative it is that we continue to harness this, even after the pandemic.

Covid-19 will leave a lasting legacy: we’ll emerge from this crisis having witnessed what’s possible. The challenge, of course, is to capture and hold on to the good things happening now and make them part of our new “normal.”

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Practising clinicians, not management consultants, need to be at the fore of innovation in healthcare
Covid-19 and decarceration

Healthcare, particularly in the US, needs to lead the charge

The US carries the ignoble distinction of being the world leader in both incarceration and prevalence of covid-19. Worse still, around 12% of the 2.3 million people in state and federal prisons are over 55 years old. This makes the US especially prone to a large scale outbreak of covid-19 among vulnerable prisoners. Healthcare professionals are already leading efforts to manage covid-19, but there are other ways we can help. We must urgently organise to advocate for safe decarceration and collaborate broadly with others to advance that cause.

The US has less than 5% of the world’s population, yet it accounts for more than 20% of its prisoners. The causes include misguided drug laws, harsh sentencing, psychiatric deinstitutionalisation, centuries of structural racism, and an increasingly for-profit prison industry. This has especially devastated black communities and people with mental illness. Now the pandemic will disproportionately impact these same communities and further widen inequalities.

Overcrowding, poor ventilation, smoking, violence, psychological isolation, poor sanitary conditions, and other social determinants of health make prisoners especially susceptible to covid-19. Despite the clear health risks, healthcare organisations have not broadly organised to advance decarceration as a public safety measure in the same way that they have advocated for people in skilled nursing facilities.

A recent New Yorker article, headlined Why doctors should organise, highlights how healthcare organisations have avoided taking social and political positions, fearing a loss of objectivity and scientific credibility. So instead of mobilising around sensible strategies, like decarceration, to prevent the spread of covid-19, we remain preoccupied with treating patients after they are sick.

Inevitable harm

Keeping people in prison for low level offences, in overcrowded conditions lacking access to soap and hand sanitiser, will inevitably harm prisoners, prison officers, their families, and the surrounding community. Seriously ill prisoners will need to be transferred to hospitals, putting a further strain on health systems.

To limit the spread of infection in prisons through physical distancing, some governors have released prisoners without the need for judicial intervention. For example, the governor of Kentucky commuted the sentences of more than 900 prisoners jailed for non-violent, non-sexual crimes. In states throughout the country, attorneys have brought lawsuits asking courts to order a meaningful number of releases. For example a petition was filed asking Massachusetts’ highest court to take immediate action. That court’s decision ultimately afforded some relief for pre-trial detainees, and required the state Department of Correction and each sheriff to provide daily reports on the number of tests and positive results for all people in their custody, as well as for staff.

Healthcare professionals can play a vital role in these executive and judicial actions by explaining the science behind this pandemic to reporters, attorneys, lobbyists, politicians, and judges alike. They can publish editorials to educate the public about why decarceration will make them safer; send letters to legislators and governors describing specific actions they can take to promote medically safe release; and provide expert declarations or “friend of the court” briefs. In the Massachusetts action, 14 public health professionals filed an amicus brief in support of the petition, and four more

Public trust of leaders is vital in a pandemic

The public’s high adherence to restrictions during the seven weeks of lockdown is probably influenced by several factors, but one is trust that the government is acting in the nation’s best interests. In return, the government has often justified its actions on the basis of being “led by the science”. And who could argue with this approach? Science is built on systematic methods, objectivity, transparency, reproducibility, and critical review—all trustworthy characteristics.

The “led by the science” rhetoric has not been without criticism, however, including concern over a lack of transparency about who sits on the Scientific Advisory Group for Emergencies (SAGE). The membership of the group has since been revealed. But others have criticised what they see as narrow views from SAGE, with a lack of involvement from broader public health experts, as well as an over-dependence on modelling studies, which may not have been subject to critical review and have known limitations.

Trust in scientific evidence allows the public to make more balanced judgments about the treatments offered. Such thinking is imperative now, as the public is faced with significant public health interventions to tackle the pandemic. Building trust should be at the core of the government’s strategy. The public will need to trust that ministers are sensitive to their fears and anxieties, and have the right strategy to respond. In turn, the government will need to trust the public to implement the next phases of its plan.
ACUTE PERSPECTIVE David Oliver

Official communications and covid-19

I’m writing this nine weeks after the UK’s first reported coronavirus death. For me, the effectiveness of our response has been as much about the quality of government communications as about innovations in science or delivery.

Despite the multiplicity of healthcare providers we fundamentally have a national system run from central organisations, such as NHS England and Public Health England, reporting to the health secretary and the Department of Health and Social Care. They, in turn, participate in cabinet decision making led by No 10, which holds Civil Contingencies Committee meetings (popularly known as COBRA). One strength of this is the ability to generate guidance and data at speed. It enables a focus on proactive messaging and attempts to make this clear and consistent for the public and NHS staff. The politically accountable structure has allowed rapid allocation of funds and new permissions set out in the Coronavirus Act. But some communication efforts have seriously backfired.

Some heavy-handed, centralised news management has tried to ensure trusts remain on message, and reports have emerged of statements being vetted and of media access to hospitals being restricted. The Doctors’ Association UK reported a dossier of staff who were pressured not to speak to media unless that person has an academic or membership organisation provenance and so is liberated from the pressure and fear. In the era of social media such strategies will fail, and journalists will find stories from disgruntled medics, at the expense of some of the better news around local organisations’ responses.

The daily briefings have been an object lesson in how not to do government communications. The different line-up of ministers, advisers, and officials have often been on the back foot and reactive. NHS staff deaths were ducked, then acknowledged. Figures showing deaths from non-hospital covid-19 were initially ignored and then presented. Promises about testing were revised up and down, with the health secretary, Matt Hancock, staking his reputation on 100 000 tests a day by the end of April. This target was met on 1 May, amid much criticism about how the numbers were counted, and not often since. Lines on PPE were altered repeatedly, with justifications changing to suit the problems.

Frontline staff are not reassured by briefings, guidelines, or posters if they don’t feel safe and can’t access PPE or tests. They’ll talk about it on social media, off the record with journalists, or through unions and royal colleges—news management or not. The pandemic has shown how important skilled communications are, including when they go wrong. It’s also highlighted the key role of high quality, professional journalism in getting to the truth.

Greater access to information on government websites, daily briefings, and balanced ministerial media appearances are steps to building that trust. But higher levels of engagement, communication that is open to assessment, and high quality public health education—including the potential strengths and limitations of the “led by science” strategy—may be needed to strengthen the relationship. Despite the ethical and logistical challenges this may present, such efforts may not only enhance trust but also contribute to mutually beneficial outcomes and a stronger relationship in the future.

Kamal R Mahtani, co-director of the Centre for Evidence-Based Medicine, Nuffield Department of Primary Care Health Sciences, UK

Sean Heneghan, chartered organisational psychologist and senior tutor, University of Oxford

Staff are not reassured by briefings, guidelines, or posters if they don’t feel safe
once upon a time (two months ago), if I saw a patient with a notifiable infectious disease I’d make a clinical diagnosis, usually send a sample to the hospital laboratory, and email the public health department for relevant follow-up and contact tracing. This worked for food poisoning and for childhood infections, helping us to spot gaps in our immunisation programme. This system worked.

Now, in the middle of this pandemic, I’m struggling to make clinical diagnoses of this new disease. Some cases are clear—particularly the triad of fever, dry cough, and shortness of breath—but at other times, I honestly don’t know. How likely is diarrhoea and fatigue to be a presentation of covid-19? I spent time in consultations yesterday saying to anxious patients, “I’d really like to know whether this is coronavirus too, but unfortunately I have no access to testing.”

If I don’t feel able to safely assess patients remotely I send them to our “hot hub,” where GPs with PPE can examine them, but they can’t order a test either. When patients attend hospital with covid symptoms they may have blood tests, x rays, and even scans to exclude pulmonary emboli, but still no swab. The only people tested in this town are those sick enough to need admission, a few residents of nursing homes (although the number per home is limited), and key workers.

The test is imperfect and there are many false negatives, but doctors are practised at interpreting test data in the context of signs and symptoms, and to have timely information would help us to look after our patients and would benefit families hugely. Should they avoid all contact with their teenager with mild symptoms? Does this sore throat mean that I can’t shop for my neighbour? Isolation already has a negative impact on many patients’ mental health, and this avoidable uncertainty is exacerbating the anxiety.

We won’t overcome this pandemic until we can accurately test, trace, and isolate. So far, we’re failing on all fronts. It would have been so much better to strengthen the integrated systems we already had, rather than leaving primary care out in the cold and handing the testing contract to a consultancy with no experience in the field. It’s almost as if an ideological obsession with outsourcing got in the way of sensible planning for this pandemic.

Key workers with cars can apply online to attend a drive-through testing centre, which excludes many carers who don’t drive. To date, I have no information that any of my patients have been tested in this way. I understand that information about registered GPs and NHS numbers are not being collected, so it’s not clear how the results would reach me anyway.

The test is imperfect and there are many false negatives, but doctors are practised at interpreting test data in the context of signs and symptoms, and to have timely information would help us to look after our patients and would benefit families hugely. Should they avoid all contact with their teenager with mild symptoms? Does this sore throat mean that I can’t shop for my neighbour? Isolation already has a negative impact on many patients’ mental health, and this avoidable uncertainty is exacerbating the anxiety.

We won’t overcome this pandemic until we can accurately test, trace, and isolate. So far, we’re failing on all fronts. It would have been so much better to strengthen the integrated systems we already had, rather than leaving primary care out in the cold and handing the testing contract to a consultancy with no experience in the field. It’s almost as if an ideological obsession with outsourcing got in the way of sensible planning for this pandemic.

It would have been so much better to strengthen the systems we already had

Coping with covid

As we get to grips with the understanding that the current work situation for healthcare professionals is not going to change any time soon, how can we handle this adjustment? We speak to Caroline Walker, an NHS based psychiatrist and therapist, about her advice for looking after ourselves. Here she talks about the fatigue many any of us are likely to be feeling right now:

“Covid fatigue is a kind of exhaustion and slight feeling of flatness or demoralisation that we’re all feeling at this stage. We’re starting to feel ‘this is here to stay’ and we’re tired essentially. I want to normalise that this is something affecting a lot of doctors and other healthcare professionals out there at the moment.”

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Edited by Kelly Brendel, deputy digital content editor, The BMJ
Most people with covid-19 are cared for at home, increasing the likely exposure of household members. Although the evidence is limited, high infection rates among health workers have been attributed to more frequent contact with infected patients, and higher viral load—the size of the infecting dose of virus. This has led to demands for better personal protection equipment (PPE).

Less attention, however, has been given to family members and others caring for people with covid-19 in the community. Providing them with the same level of PPE as in hospitals is not practicable, but promotion of simple evidence-based interventions may lower the risk of infection transmission and help reduce morbidity and demand on hospitals.

As the measures have little risk of harm, the precautionary principle suggests we should promote them.

Transmission in home and community

The long incubation and high presymptomatic infectivity of covid-19 makes transmission between family members a particular risk. Modelling of viral shedding in 94 patients with covid-19 and 77 transmission pairs suggests that the highest viral load is at or just before symptom onset, with 44% of transmission occurring before symptoms.

Public health advice recommends isolation of symptomatic household members, but this can be difficult, particularly in small flats with shared facilities. Motivation to overcome these difficulties may not be high enough if members of the public are sceptical about reducing transmission in the home and unaware that the illness of other family members may be more severe if they do not reduce their level of exposure.

The medical community is commendably reluctant to make recommendations in the absence of evidence. An expert team that reviewed the evidence for viral load concluded that until the evidence is more conclusive: “As our grandfathers used to say, when you don’t know what is going on, do nothing.” However, given that measures to reduce the viral load from exposure to symptomatic household members have little risk of harm, the precautionary principle suggests that we should be promoting them.

It is difficult to get good dose-response data, but it seems prudent not to treat absence of direct evidence in the pandemic as evidence of absence, particularly given evidence from other viral infections from both animal and human models, and trial evidence for reducing the transmission among families in non-pandemic years. Greater awareness of the potential risk from viral load may help motivate family members to pay sufficient attention to protecting themselves despite their concern for sick family members.

KEY MESSAGES

- Government policy is aimed at reducing transmission of covid-19 between family units, but less attention has been given to transmission between family members.
- Evidence from controlled experiments in animal models, viral genome studies, and other epidemics suggests the infecting viral load may be important.
- A web-based intervention has been shown to reduce incidence, transmission, and severity of seasonal flu.
- Use of such behavioural interventions could support public health advice to improve infection control in families.
Evidence for viral load effect

It is intuitive that viral load should influence the incidence and severity of disease. The main problem is that measuring the viable infecting dose of the virus in people is extremely challenging; contemporary measures of viral density, viability, and viral contamination are all hard to obtain. Establishing the relation between infecting dose and the likelihood of developing disease is therefore difficult.

The challenge of establishing the infecting dose is complicated by environmental contamination. Experience with Middle East respiratory syndrome (MERS), caused by another coronavirus (MERS-CoV), suggests that environmental contamination with SARS-CoV-2 is likely to be high, and this is supported by recent case reports of extensive environmental contamination from patients with covid-19. Indirect evidence, including from animal models and epidemiological studies also provides support.

Animal models

Although the infecting dose from a combination of droplets and environmental contamination cannot be easily measured, high quality experiments under controlled conditions in animal models can provide indirect evidence. We are not aware of infecting dose experiments with animal models of covid-19, but animal models of other viral infections show that variation in the infecting dose determines how many animals get infected and how severe the illness is.

A model of African swine flu virus shows a clear dose-response relation between the infecting dose and disease in the animal. Likewise, a strong dose-response effect is found in the animal model for haemopoietic necrosis virus. A dose-response has also been shown in mouse models with several strains of SARS-CoV-1, which is closely related to the virus causing covid-19 (SARS-CoV-2). The infectivity varies between different strains of the virus, which modifies the shape of the dose-response curve, but nevertheless consistent dose-response relations are observed with the severity of the infection.

Defective viral genomes

One of the key factors in determining how severe an infection becomes is also the extent to which defective viral genomes are produced. These effectively reduce the infecting doses during the early part of an infection by competing with non-defective genomes. The greater the abundance of viruses with defective genomes within an infecting inoculum, the better the clinical outcome: genomic analysis of viruses isolated from previously healthy people requiring admission to the intensive care unit with influenza A infection, those not requiring intensive care, and those who died (who also had underlying medical conditions) showed that defective genomes were associated with fewer severe or fatal outcomes.

Germ Defence, trialled during the H1N1 pandemic and subsequent seasonal flu years, reduced the number of respiratory infections

Epidemiology of serious viral infections

The evidence from other similar serious viral infections also suggests the infecting viral load may be important. A retrospective study of survivors of Ebola from the Kerry Town treatment centre in Sierra Leone, investigated disease in more than 933 family members (those who had died, those surviving, and those not infected). The severity of infecting dose was graded according to the history of exposure. Although there was no clear relation with mortality, perhaps because of the mediating effect of treatment at the centre, the study found a very strong linear relation with the likelihood of infection developing, ranging from 80% likelihood of getting the disease with the highest infecting dose (direct contact with body of someone who had died) and 10% with the lowest dose (no contact).

During the 2003 SARS outbreak older age, comorbidities (adjusted hazard ratio (HR) 3.36, 95% confidence interval 1.44 to 7.82), and higher initial viral levels in nasopharyngeal specimens (adjusted HR 1.21 per log10 increase in number of RNA copies/mL, 95% CI 1.06 to 1.39) were associated with worse survival.

Viral level 10 days after the onset of symptoms was associated with a series of poor clinical markers (oxygen desaturation, mechanical ventilation) and death. Recent data from covid-19 have shown that those with severe infections had viral levels 60 times higher at presentation than those with mild disease. Although the levels of virus once the disease has started will be in part a function of the immune response of the patient, the size of the initial viral load is likely to be a contributing factor, allowing immune defences to be more easily over-run.

The difference in case fatality rates in the three waves of the Spanish flu pandemic of 1918-19 can be explained by the number of simultaneous contacts a susceptible person had with infected people (the more contact the higher the infectious doses). However, in a detailed study modelling influenza virus transmission within households in 2008-12, infectivity was proportional to viral load but viral load alone provided a poor fit to the models.

Clearly we need to better understand the relation between infecting dose and other prognostic factors in modifying the immune response and clinical outcome (age, comorbidity, etc).
Pragmatic evidence to help carers

We are aware of only one behavioural intervention that is proved to reduce virus transmission within households and is suitable for rapid dissemination in a pandemic. Two of us (PL and LY) were involved in a randomised trial of Germ Defence, a website that provides advice on infection control measures and helps users think about when and how to carry out key infection control behaviours such as handwashing and cleaning, avoiding sharing rooms and surfaces, managing incoming deliveries, and ventilating rooms.17 This could supplement public health advice on infection control in the home since it uses behaviour change techniques to help people implement this advice (box).

Germ Defence was trialled in 20 066 people during the H1N1 pandemic and subsequent seasonal flu years18 and reduced the number of respiratory infections (mean number of infections 0.84 v 1.09 in the control group, hazard ratio 0.75, 95% confidence intervals 0.72 to 0.79). Infection transmission among family members was lower in the intervention group (hazard ratio 0.79, 95% confidence interval 0.74 to 0.83), and there was a modest reduction in severity of infections (mean number of days of moderately bad illness 3.9 (median 2 days) in intervention versus 4.5 (3) days in the control group). Reductions were also observed in gastrointestinal infections, GP consultations, and antibiotic prescriptions.

The team has been funded by UK Research and Innovation to adapt this intervention for covid-19 and disseminate it nationally and internationally. It has already been translated into more than 20 languages for this purpose. Germ Defence may help limit transmission of covid-19 as well as the other viruses that are still causing the majority of respiratory illnesses in the current pandemic, even in secondary care settings.18

Other viruses may also be important given recent evidence that coinfection with other viruses occurs in more than 20% of cases.19

Conclusion

Care is needed when extrapolating evidence from other disease, but viral load is likely to be important for covid-19. The precautionary principle suggests that people caring for unwell household members should be encouraged to take measures to reduce infecting viral load to reduce the incidence and severity of infection. Promoting infection control measures in the community is a priority and will continue to be so as “stay at home” policies are lifted. Dissemination of evidence based behavioural interventions may help increase adoption of public health advice and reduce viral load.

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Robert C Read, professor
Lucy Yardley, professor, University of Southampton
Richard Amlôt, scientific programme leader
Cathy Rice, public contributor, Bristol
Jennifer Bostock, research adviser, University of Oxford

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LETTERS Selected from rapid responses on bmj.com

LETTER OF THE WEEK

Do chest compressions generate aerosol?

The central problem of doctors in West Midlands being told not to start chest compressions in patients in cardiac arrest who have suspected or diagnosed covid-19 is a lack of evidence on whether chest compressions are an aerosol generating procedure (AGP) that can spread coronavirus (This Week, 4 April).

The World Health Organization removed cardiopulmonary resuscitation (CPR) from its list of AGPs after a systematic review failed to show a statistically significant relation. But the evidence was clearly underpowered and of low quality. WHO’s scientific brief on covid-19 included CPR in the list of AGPs but did not specify which components generate aerosol. There are two mutually exclusive schools of thought on how to interpret this.

Public Health England and Health Protection Scotland recommend starting compression only CPR without FFP3 masks, stating there is no evidence that it is an AGP, whereas the Resuscitation Council (UK) and the US Centers for Disease Control and Prevention state that compression only CPR is an AGP and that the theoretical risk of increased transmission should be mitigated by wearing FFP3 masks.

Both schools have faults. The Resuscitation Council’s advice might lead to trust discouraging staff from starting CPR because of shortages of FFP3 masks. Public Health England’s advice might put staff at risk and is strongly opposed by the BMA. Intriguingly, Public Health England’s advice first included CPR as an AGP then removed reference to it before stating its current position, leading some to suggest that these changes were motivated by a desire to ration personal protective equipment.

Amid widespread local variation, staff with a dissenting opinion to their trust have been left in the lurch. Last month, the International Liaison Committee on Resuscitation’s pre-publication systematic review strongly supported the Resuscitation Council’s position. Will Public Health England take this new evidence into account?

Zack AS Hassan, foundation year 2 doctor, Edinburgh

Cite this as: BMJ 2020;369:m1825

AVOIDING CPR

A national system in disarray

The issue of CPR in covid-19 is the latest example of the state of confusion, denial, and unpreparedness in which national health authorities and politicians are facing the pandemic. The evidence provided by scientific advisers is either publicly challenged, not made available for scrutiny, or absent.

Is the revised policy in West Midlands (This Week, 4 April) so restrictive to protect NHS staff at the expense of patients? Or are patients, health workers, and the public knowingly being put at risk? Both scenarios are equally worrying.

The current situation shows a national system that is in disarray, unprepared, slow, confused, and impulsive to frontline NHS staff and volunteers, who are applauded for their dedication but are not equipped with the personal protective equipment they require. Our clinical staff need adequate means to provide the best level of care, under decisive guidance and in a safe environment.

Francesco P Cappuccio, professor of cardiovascular medicine and consultant physician, Coventry

Cite this as: BMJ 2020;369:m1805

CONTROLLING SPREAD OF COVID-19

Community contact tracers

We don’t understand why the government didn’t follow WHO guidelines regarding contact tracing in the early days of the pandemic (Editorial, 4 April). The government’s current plan to train 18 000 contact tracers risks the public being seen as passive disaster victims, but a network of community based responders could be a major resource.

Lay volunteers could be quickly trained to identify cases of covid-19, trace close contacts, give simple instructions regarding management, and advise on isolation and quarantine. The basics of where, how, and when to seek help from 111 or primary care can also be taught. These ideas are being piloted in Sheffield and will be reported on soon.

Communities throughout the UK are showing enormous goodwill, with thousands of volunteers ensuring that vulnerable people have food and social contact. As we come out of lockdown, a mass contact tracing programme will be essential to stop further flare ups.

Paul Redgrave, retired director of public health, Todmorden; Joan Miller, former consultant in public health; Jack Czauderna, former GP; Tom Heller, former GP; Mike Tomson, former GP and Médecins Sans Frontières volunteer; Bing Jones, artist and former haematology specialist; Jeremy Wight, former director of public health, Sheffield

Cite this as: BMJ 2020;369:m1821

Exit strategy

An early return to full economic activity is possible in many parts of the country if local public health departments take back communicable disease control (Editorial, 4 April).

After the surge of an epidemic is contained by physical distancing, the best public health option is to control the contact of new cases. In New Zealand, public health staff were rapidly deployed to trace contacts, test, and confirm new cases, with impressive results. Economies and education continue nearly as before.

The UK lockdown has started to achieve mitigation by reducing the number of cases requiring hospital care and elimination by breaking the chain of transmission. Both are needed, but elimination is the goal.

The epidemic is at different stages throughout the UK, so the numbers of people required to identify cases, test, and contact trace will vary and will fall as new cases fall. Testing and tracing will avoid reinstating lockdown.

Cam Bowie, retired director of public health, Axminster; Tony Hill, independent public health consultant and health strategist, Barnard Castle

Cite this as: BMJ 2020;369:m1851
Supporting the next generation

The physicians introduced into hospitals this spring and summer will have more asked of them than any newly graduated doctors in a generation, says Adeline Goss, a resident physician in neurology at the University of California San Francisco. Writing in this BMJ Opinion piece, she argues that we should make sure we are listening to these doctors and supporting them.

The future of eye services

Patients Annie Folkard and Elaine Manna, ophthalmologists Alastair Denniston, Dawn Sim, Peter Thomas, and Pearse Keane, and optometrist David Barker reflect in this BMJ Opinion piece on how covid-19 is accelerating a transformation in eye health. “We have an opportunity to reimagine how we deliver care,” they write. “We cannot go back to our pre-pandemic approach—it wasn’t working then and it definitely won’t work now.”

US ventilator crisis

Since the covid-19 crisis raised the prospect of ventilator shortages in the US, many rationing schemes, such as the Washington state guidelines, have been criticised. This feature looks at how the possibility of ventilator rationing has ignited widespread concerns and ramped up the debate in the US on how care should be rationed.

Vaccine prospects

At least six SARS-CoV-2 vaccine candidates have entered clinical trials, and more than 80 other candidates are reported to be in preclinical stages. Many different approaches are being moved forward at the same time, and only a handful of these candidates will become licensed vaccines, Sarah Caddy, Wellcome Trust clinical research career development fellow, explains in this editorial.

Ghanaians hit hard

The coronavirus pandemic has hit communities in Ghana hard. “People infected with covid-19 and their families face stigmatisation, isolation, rejection, and discrimination,” Alex Adusei, executive director of the Women’s Hope Foundation in Ghana, writes in this BMJ Opinion piece. “Societal norms coupled with misconceptions and misinformation about the pandemic and lack of resources has increased vulnerability.”

Regulatory agility during emergencies

Governments must empower regulatory authorities to engage in effective, agile regulation during a health emergency, according to Tippi K Mak, consultant at the Centre of Regulatory Excellence, Duke-NUS Medical School, Singapore, and colleagues. They write in this editorial that interactive, fast, flexible, and contextually rigorous approaches must be implemented now to ensure that reliable diagnostics and treatments are put in place.

Covid’s positive effects

As the pandemic continues its deadly path, dramatic changes in how people live are reducing some instances of other medical problems. Bryn Nelson writes in this editorial that, as doctors and researchers notice some curious and unexpectedly positive side effects of the abrupt shifts in human behaviour in response to the pandemic, there may be valuable public health lessons to be learnt.

Frontline support

Sometimes doctors feel they could be doing more, and feel uneasy or even guilty that they are not. Josie Cheetham, a junior doctor in Abergavenny, felt this, and did something about it. In this podcast, she talks about how she provided support boxes for her colleagues working at the frontline, and how that initiative inspired others across the UK.

Solitude, loneliness, and social connections

Covid-19 has shown us the difference between solitude and loneliness, according to Peter Brindley, professor of critical care medicine, medical ethics, and anaesthesiology at University of Alberta, Canada. “Covid-19 is teaching us that human connection is like oxygen,” he writes in this BMJ Opinion piece. “We now understand the difference between solitude (aka one week of blissful Netflix) and loneliness (aka one month of nothing but Netflix).”
OBITUARIES

Norah Campbell
Consultant radiologist
(b 1934; q Oxford 1959; MA, MRCOG, FRCR), died from respiratory failure, fibrotic lung disease, and dementia on 29 June 2019

Norah Campbell came from a class of 43 on a York council estate, and reached Lady Margaret Hall at the Oxford clinical school. She loved obstetrics, gained her membership of the Royal College of Obstetricians and Gynaecologists in Cardiff, married, and moved to London for research and she had three children. Later in Manchester she set up an ultrasound service at Trafford General Hospital. When radiology took over from ultrasound in obstetrics, she bravely retrained and finished her career as director of radiology. Sustained by her strong Christian faith, she coped with breast cancer and an aortic valve replacement. In retirement she enjoyed the Anglo French Medical Society and windsurfing in Aquitaine. She leaves Angus, her husband of 53 years; three children; and five grandchildren.

Angus Campbell
Cite this as: BMJ 2020;369:m1599

Michael Joseph Noronha
Consultant paediatric neurologist
Manchester Children’s Hospitals (b 1936; q Dublin 1958; FRCP Lond, FRCP Ed), died from dementia and bronchopneumonia on 6 December 2019

Michael Joseph Noronha was appointed consultant paediatric neurologist at Royal Manchester Children’s Hospital in 1974. He had an eminent career and established the north west regional service for children with neuromuscular disorders. As chairman of the medical staff committee he oversaw the hospital’s sesquicentenary celebrations in 1979. Away from medicine Michael was a family man. He was a great dancer and musician. He enjoyed driving, and France was the destination, caravan in tow, for many annual holidays. Throughout his life he had a strong and unshakeable Catholic faith. Michael leaves Enid, his wife of 56 years (a GP whom he met as a registrar in Bradford); four children; and five grandchildren.

Richard Newton
Cite this as: BMJ 2020;369:m1603

John V Dyer
District medical officer
of health for Lancaster and District (b 1930; q Middlesex Hospital, London, 1953; DPH, FFCA(SA)), died from a gastro-oesophageal tumour on 25 March 2020

John V Dyer did his first public health post in Lancaster (1957-59), followed by jobs in Corby new town and Bury in 1968 he returned to Lancaster, this time with his family. During his tenure the area was the first in the country to have a child development centre, domiciliary remedial therapists, attachment of nurses to general medical practices, and brucellosis free farms. He managed the legionnaires’ disease outbreak at Heysham Power Station in 1981 and helped establish St John’s Hospice. John was the secretary of the Lancaster branch of the BMA for 15 years. He volunteered for local charities, enjoyed many hobbies, and helped establish the medical museum in Lancaster. He leaves his son, Peter; four grandchildren; and four great grandchildren.

Peter V Dyer
Cite this as: BMJ 2020;369:m1600

Malcolm Keith Sykes
Nuffield professor of anaesthetics
University of Oxford (b 1925; q University College Hospital, London, 1949; MA (Cantab), MA (Oxon), FRCA, Hon FANZCA, Hon FCA(SA)), died from bronchopneumonia on 17 November 2019

Malcolm Keith Sykes, was elected Nuffield professor of anaesthetics at the University of Oxford in 1981. He continued and expanded his studies of the pulmonary circulation, and an international respiratory research group developed. For his contributions to clinical practice, including advances in the treatment of tetanus, research in anaesthesia, and his role as consultant adviser in anaesthetics to the chief medical officer at the Department of Health (1986–92), he received a knighthood in 1991, the year he retired. His eldest son and daughter died in 2013 and 2014, and his wife, Michelle, in 2016. He leaves his two remaining daughters and three grandchildren.

Michael Ward, Pierre Foëx
Cite this as: BMJ 2020;369:m1431

Colin McIntosh
Consultant physician
(b 1940; q Aberdeen 1964; MD, FRCP), died after a short period with cancer on 25 October 2019

Colin McIntosh was a consultant physician at the Chelsea and Westminster Hospital until he retired from the NHS in 2005. His principal medical interest was in the management of diabetes in adults. His numerous papers and membership of the NICE guideline committee bear testament to his expertise. Colin was trustee and founding member of the Federation of European Nurses in Diabetes (FEND) until 2019. In retirement he actively pursued his interest in the arts; he attended the Chelsea College of Art and became an amateur painter of distinction. He also wrote and published several short stories and a novel. Colin had a rare genetic neuromuscular disease that in his later life took its toll in restricting his physical activities. He leaves Barbara, his lifelong partner and wife; their two children; and three grandchildren.

Robert McIntosh
Cite this as: BMJ 2020;369:m1602

David William Young
Consultant physician
(b 1939; q Manchester 1963; MD, FRCP), died from colon cancer on 16 January 2020

David William Young was consultant physician at Dudley Road Hospital (now City Hospital) in Birmingham from 1974 to 2002. He was a pioneer in and enthusiast for the better use of medical information and for the application of computing to medicine. He held junior posts in Manchester, Sheffield, and Birmingham. As consultant, he initiated the first physician led clinic at Birmingham and Midland Eye Hospital. He made major contributions in the uses of medical information and computing and advised the NHS locally and nationally, including the NHS Executive, the Department of Health, and the Audit Commission. He will be remembered as a kind and conscientious doctor who was liked by everyone. He leaves his wife, Shirley; two sons; and grandchildren.

Brian Cooper
Cite this as: BMJ 2020;369:m1604
Charles George McEwen

Ophthalmologist who brought the operating microscope into the clinical mainstream

Charles George McEwen (b 1931; q Glasgow, 1953), died after developing pneumonia following a short period of physical decline on 1 February 2020

Operating microscopes have become as standard in ophthalmology as antibiotics in treating infection. But magnification in ophthalmology has a controversial history.

In the 1950s and ’60s many clinicians struggling with lengthy lists complained about how long it took to use the new cumbersome devices. Not knowing what they could not see, they swore by their old fashioned loupes or magnifiers.

Charles McEwen (“Charlie”) played a prominent part in the revolution that consigned the loupes to the museum and brought the operating microscope into the clinical mainstream. He was also part of a new generation driven by the dream of making the world a better place after the second world war and by the triumph of the NHS ideal—that people should be treated according to medical need rather than the ability to pay.

Bold and courageous

Embracing leading edge surgery for a wide spectrum of conditions, particularly for cataracts and diseases of the cornea, McEwen was described by a colleague as “a bold and courageous surgeon, but without the big ego that usually accompanies such a trait.”

A precocious talent, he became one of the youngest consultants in the country in his 20s.

The first in his family to go to university, he started at Glasgow University in 1948, the first year of the NHS. After completing house jobs at Stobhill General Hospital and the Victoria Infirmary, he joined the Lancashire Fusiliers for his national service and became a captain with the Royal Army Medical Corps, with which he retained links for the rest of his life.

His tireless energy, intellect, and skill made him popular with colleagues, trainees, and patients alike. Noted for his welcoming nature and enthusiasm for work, he inspired nurses and orthoptists, as well as successive generations of medical students and young doctors. Tributes from former colleagues talk about his being supportive, exceptional, indefatigable, dynamic, and respected, with a love of people.

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His daughter, Carrie, consultant ophthalmologist at Ninewells Hospital, Dundee, and a former president of the Royal College of Ophthalmologists, said, “One of his previous registrars summed him up by feeling ‘educated, supported, and encouraged’ when being trained by him—something we all aspire to.”

Early life

Born and brought up in Denniston, McEwen was dux (top pupil) in 1948 at Whitehill School, where he excelled in athletics and rugby. A member of local swimming and water polo teams, he was also a sergeant in the Boys’ Brigade.

McEwen was deacon of the Incorporation of Barbers of Glasgow in 1970, deacon of the Incorporation of Tailors of Rutherglen, and president of Rutherglen Rotary Club.

A life member of Royal Troon Golf Club and past captain of Cambuslang and the Glasgow Medical golf clubs, he also played golf on his beloved Isle of Arran at Whiting Bay, where the family have a holiday home and enjoy walking and boating. A devoted family man, McEwen ran clinics on the island to save the locals trips to the mainland.

McEwen died suddenly, but peacefully. He leaves his wife, Jan; a daughter; three sons; and eight grandchildren.

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Cite this as: BMJ 2020;368:m1142