this week

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NEIL HALL/PA

Hospital deaths from covid-19 could reach 119 000 between September and next June according to worst case scenario modelling used by the Academy of Medical Sciences

"Prepare now or see covid deaths double"

The UK must prepare now for a potential second wave of covid-19 this winter or risk seeing double the number of hospital deaths that occurred during the first wave, the Academy of Medical Sciences has warned.

In a report the academy said the combination of covid-19, a backlog of patients needing assessment and treatment, and the possibility of a flu epidemic posed a "serious risk" to health. It called for "intense preparation" throughout the summer to reduce the risk of the NHS being overwhelmed and to save lives this winter.

Central to this should be minimising transmission of covid-19 in the community, and increasing capacity of the test, trace, and isolate programme to cope with the overlapping symptoms of covid-19, flu, and other winter infections, it said.

Health and care facilities should be reorganised to maintain covid-free zones, and there must be adequate personal protective equipment, testing, and infection control measures to minimise transmission, it said. There should also be a "concerted effort" to ensure people at risk and health and care workers get flu vaccinations.

Anne Johnson, the academy's vice president (international), said, "We need to minimise coronavirus and flu transmission everywhere. This can be done, but it must be done now."

The report acknowledges the high degree of uncertainty about how the epidemic will evolve in the UK but suggested that a "reasonable worst case scenario" to prepare for is the R value rising to 1.7 from September. Under this scenario, there would be a peak in hospital admissions and deaths in January and February similar to or worse than the first wave in spring 2020.

This modelling estimates that the number of hospital deaths related to covid-19 between September and June 2021 could be as high as 119 900 (95% confidence interval 24 500 to 251 000), over double the number that occurred during the first wave. The report notes the estimates do not account for action to cut transmission, or results from a trial to treat patients in intensive care with dexamethasone, which could cut mortality.

Stephen Holgate, a respiratory specialist from University Hospital Southampton, who chaired the review, said, "This is not a prediction but a possibility. With relatively low numbers of cases now, this is a critical window of opportunity to help us prepare for the worst that winter can throw at us."

Gareth Iacobucci, *The BMJ*

Cite this as: *BMJ* 2020;370:m2825

LATEST ONLINE

- A&E doctor who had sexual relations with two patients he traced through hospital records is struck off
- Government issues new guidance to patients on Do Not Attempt Resuscitation orders
- Government faces backlash after overseas care workers are excluded from fast track visa

SEVEN DAYS IN

Non-invasive ventilation deaths fell for first time in 2019, audit finds

ASTIER - CHRU LILLE/SPL

Mortality among inpatients receiving non-invasive ventilation (NIV) has fallen for the first time since 2010, from 34% in 2013 to 26% in 2019, show figures released by the British Thoracic Society.

The annual national adult non-invasive ventilation audit reported "substantial improvements in processes of care and patient outcomes." "Some improvement in overall mortality may be attributed to improved patient selection," it said. "Mortality outcomes were lower for each diagnostic category, and most notably for patients with COPD and obesity-related respiratory failure."

The audit included data collected in February and March 2019 from more than 150 hospitals, involving more than 3500 patient records, and it looked for adherence to quality standards. Previous audits had shown high death rates and significant variation across institutions. In response, some guidelines have attempted to improve the quality of care.

The latest audit noted several improvements, including better selection of patients, shown by an increase in the proportion who were treated with NIV having COPD and a decrease in patients who were treated despite having no clearly documented indication.

Elisabeth Mahase, *The BMJ* Cite this as: *BMJ* 2020;370:m2801

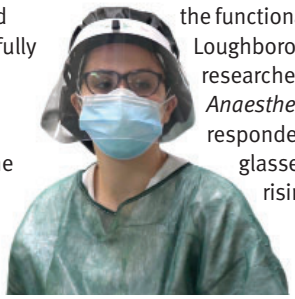
Covid-19

Masks to be mandatory in shops in England

The government announced it will be mandatory to wear a face covering when visiting shops and supermarkets in England from 24 July, bringing England into line with Scotland and many other European countries. People who don't adhere to the new rules could be fined up to £100. The Independent Scientific Advisory Group for Emergencies published a report on 14 July calling for masks to be used indoors where possible, alongside other protective measures such as ventilation, hand washing, and social distancing.

Adopt "zero tolerance" to avoid deaths, experts say

The government should take a "zero tolerance" approach to covid-19 to prevent an estimated 27 000 deaths in England by March 2021, warned experts, including iSAGE members. They called for replacing the "failing NHS Test and Trace system with a fully fledged and locally controlled system of find, test, trace, isolate, support." The easing of lockdown should be slowed down, travel into, out of, and within the UK restricted, and plans implemented to quickly contain and suppress local flare ups.



MPs demand detailed plans to stockpile protective kit

The government is failing to act with "sufficient urgency" to build up stocks of personal protective equipment in England ahead of a potential second wave of covid-19, MPs on the Public Accounts Committee concluded. They called on the government to produce clear plans within two months outlining when it expects to have a predictable supply of stock and ready access to PPE, including details of who will be responsible for procurement and distribution.

Women report more PPE problems than men

A survey of more than 405 clinicians (of which 292 were women) concluded that more research is needed to improve the functional design of PPE. Loughborough University researchers reported in *Anaesthesia* that a third of respondents said safety glasses were a poor fit, rising to 62% in people who wore glasses. A fifth said surgical masks were a poor fit, and half found communication and hearing a problem when they wore surgical masks and visors, all significantly worse for women.

Indian doctors criticise fast track vaccine trials

Researchers accused the Indian Council of Medical Research of buckling under political pressure after it instructed doctors to fast track clinical trials of a candidate vaccine against covid-19, proposing launch of the vaccine for "public health use" by 15 August, India's independence day. They said that it is impossible to expect a vaccine for which trials have not even started to launch in six weeks. The Progressive Medicos and Scientists Forum, a network of physicians and researchers in India, said the letter has "taken Indian medical research to uncharted depths of ignominy."

Paroxetine

GSK wins case over withdrawal effects

A group action in the High Court over withdrawal problems with the antidepressant paroxetine

was won by GlaxoSmithKline, 13 years after the case was first launched. A trial, due to start in 2011, was put on hold after legal aid was withdrawn and 369 claimants dropped their cases. In 2015 the litigation was revived by 124 claimants with commercial funding. They claimed paroxetine was defective because it caused worse withdrawal problems than other SSRIs, but two days before the hearing they agreed judgment should be entered for GSK. The company is expected to ask the courts for the litigation funder to pay its costs of nearly £9.33m.

Waiting times

Elective surgery must grow rapidly, say surgeons

The Royal College of Surgeons of England called for a "plan for recovery" as the number of patients in England who have waited more than 52 weeks has soared since the start of the pandemic—from 1613 in February to 26 029 in May. The proportion of patients seen within the statutory target of 18 weeks is down to 62.2%, the lowest since January 2008. New hospital referrals rose in May, up from 491 934 in April, but are still 64% lower than in April 2019.

MEDICINE

US news

Children have fewer traumatic brain injuries

Emergency department visits by children for sports related traumatic brain injuries fell by 32% in the US from 2012 to 2018, said the Centers for Disease Control and Prevention, reversing a trend that saw visits double in the first decade of the century. Since 2001 the CDC has tracked 3.8 million emergency visits. The recent drop is attributed to fewer children playing contact sports, especially American football, in which youth participation has fallen 24% since 2010.

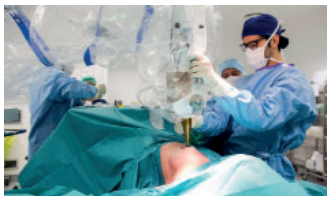
Fewer children playing American football has reduced the number of traumatic head injuries

Thousands of women lose contraception coverage

The US Supreme Court ruled that company health plans may deny employees contraception coverage if employers have religious or moral objections to the practice. The Trump administration wrote a rule allowing broad exemptions from the Affordable Care Act for employers who claimed moral objections, and that rule has now been upheld by a 7-2 majority of the Supreme Court. The administration estimated that up to 126 000 women would lose coverage over the coming year.

Breast cancer

Surgery still variable in older women



Surgery for older women with oestrogen positive breast cancer varied from under 50% in some trusts to over 80% in others, the National Audit of Breast Cancer in Older Patients has found. Instead many women received primary endocrine treatment. The audit looked at the care of 185 648 women, aged 50 years or over, who had breast cancer diagnosed int the four years to 31 December 2018 in England and Wales. Many are still not having the recommended triple diagnostic assessment at the first clinic visit, the audit found.

General practice

Most patients report good experience of care

The latest NHS England GP patient survey showed that 82% had a good overall experience, slightly down from 83% in 2019. Some 95% of respondents had trust and confidence in the last GP or health professional they saw (unchanged from 2019), while 94% reported that their needs were met at their last appointment (also unchanged).

Regulation

Doctor who misused travel card can practise again

A junior doctor who used her disabled sister's Freedom Pass to travel free on London Underground and continued to deny her dishonesty after she was convicted has been allowed to practise again after making a full admission and apology. Sharifa Scerif was suspended from the medical register for eight months last year. But a medical practitioners tribunal, reviewing her case, concluded her fitness to practise was no longer impaired and she could return to work.

Cite this as: *BMJ* 2020;370:m2826

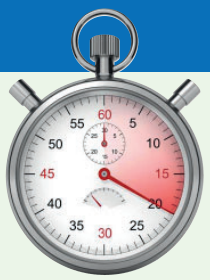
SMOKING

More than a million people in the UK have stopped smoking since the covid-19 pandemic hit the country. The highest quit rate is among 16 to 29 year olds,

400000

of whom have stopped smoking.

[ASH and UCL]



SIXTY SECONDS ON . . .

REORGANISING ENGLAND'S NHS

NOT THE DREADED LANSLEY REFORMS?
No, that was the last reorganisation. And, as it turned out so well, the government is apparently considering another one.

PLEASE, NO . . .
If reports in the *Guardian* are accurate, the prime minister, Boris Johnson, has set up a taskforce to draw up plans for how the government might regain some control over NHS England that was relinquished in 2012 under the then health secretary Andrew Lansley's Health and Social Care Act.

WHY?
For some time it has been suggested that ministers are frustrated with NHS England's operational independence—and, more specifically, the freedom that its chief executive, Simon Stevens (below), has. They are said to want to "clip his wings."

SO, THIS IS A POWER PLAY?
It seems so. The health secretary, Matt Hancock, is said to be particularly frustrated at the limits of his powers and that he must "ask rather than order [Stevens] to act."

MANNERS COST NOTHING, MATT
Maybe so. But the health secretary is feeling the heat over the handling of covid-19—and, perhaps influenced by his boss's chief adviser, may think pointing at people and telling them is the best way to keep his job.

WHAT DO THE EXPERTS THINK?
People have had enough of those, remember? But the general consensus is that it's a bad idea. Richard Murray, chief executive of the King's Fund, said that the 2012 act had created problems and that it also stands as "a warning against large scale change that tips the entire NHS into reorganising the deckchairs."

ISN'T THE NHS REORGANISING ITSELF?
Yes, and the irony is the taskforce is said to be considering whether to make integrated care systems, Stevens's brainchild, into legal regional entities with budget holding responsibilities.

GETTING A SENSE OF DEJA VU?
It's understandable—these legal entities sound a lot like strategic health authorities. Which were abolished by the 2012 act.

Gareth Iacobucci, *The BMJ*

Cite this as: BMJ 2020;370:m2818

Leicester mayor accuses government and PHE of withholding vital testing data

Leicester's mayor has accused the government and Public Health England (PHE) of withholding data that could help reduce the spread of covid-19 in the city.

In a detailed paper published on 7 July, Peter Soulsby also criticised what he termed "misleading claims from government sources about what data and information have been provided to us in Leicester and when."

The city was put back in lockdown on 29 June after the health secretary, Matt Hancock, said the number of its cases had reached 135 per 100 000 people, three times that in the city in England with the next highest rate.

Ministers claimed that Peter Soulsby and the local authority failed to control the local outbreak

DARREN STAPLES/GETTYIMAGES

The government claimed the mayor and local authority failed to control the local outbreak and suggested that employment practices at garment factories in the city could have caused the spike in cases, including among its large ethnic minority community. The lockdown status is due to be reviewed this week.

Soulsby said the city had been doing its best to map death rates and hospital admissions to try to understand what was happening at neighbourhood level. But he was critical of the government's response.

"What we have not had is any useful data from testing in the community," he wrote. "Since the launch of the test and trace system at the beginning of May our director of public health repeatedly asked PHE to allow us access to results data, preferably at postcode or lower-layer super-output area level, so that we could monitor our local picture. These data were not forthcoming to us or other councils.

"The reason given was that they weren't in a fit state to publish because they hadn't been cleaned. This was the data feed from the test and trace system that the prime minister had launched as 'world beating.'"

Pinpointing the virus's spread

While Soulsby acknowledged that Leicester was now receiving additional data, he said key information such as ethnicity, workplace, and postcodes, which were all vital to pinpointing the

LEICESTER was locked down again when cases were said to have reached 135 per 100 000 people, three times that in the city in England with the next highest rate

Experts criticise claim that remdesivir cuts covid death rates

Experts have criticised the drug firm Gilead Sciences after it released data indicating its antiviral drug remdesivir can reduce mortality in patients with covid-19. They said the research was intrinsically flawed and that the claimed benefits were overhyped and inappropriately promoted in press releases.

Crucially, the study compared remdesivir patients with a historical group of more than 800 patients on the "standard of care" of other drugs and oxygen. Experts were quick to dismiss the significance of the results.

Martin Landray, professor of medicine and epidemiology at Oxford University and the lead researcher of the RECOVERY trial that is comparing treatments for covid-19, said, "What has been reported is an association—the results of comparing two different groups of patients. It's impossible to draw any conclusions about the true effects of remdesivir on survival. For that we need robust evidence from large randomised controlled trials, and we simply don't have that yet."

Gilead's chief medical officer said in a statement, "We are working to broaden our understanding of the full utility of remdesivir. We are sharing data with the research community as quickly as possible with the goal of providing transparent and timely updates on new developments."

Within hours of media reports on 10 July Gilead's share price rose 3%. It has said it will charge developed countries around £1900 for a five day course.

There have been conflicting reports on the drug's effects, with a *New England Journal of Medicine* paper suggesting it shortened recovery time, while a *Lancet* paper said it showed no benefits in recovery time or mortality.

Stephen Evans, professor of pharmacoepidemiology at the London School of Hygiene and Tropical Medicine, said, "The randomised evidence does suggest that remdesivir will reduce mortality, but there is a danger of this being exaggerated, especially when the only information is in a press release."

Michael Day, London

Cite this as: *BMJ* 2020;370:m2839

Gilead Sciences said intravenous remdesivir reduced mortality by 62% when compared with standard treatment in the SIMPLE trial of 1132 mainly US patients. Its data showed that 7.6% of covid-19 patients treated with the drug and 12.5% of control patients died

spread of the virus, were missing.

Soulsby said, "The data give no clue as to whether the speculation about workplace, schools, or ethnicity have any part in the prevalence of the virus. It has been convenient to blame these factors, but the truth is that none of us—the government, PHE, or the council—know, because they haven't got the data."

He said household level contact tracing data were "essential" and called for access to negative test results to provide context for positive results. PHE should also "state definitively what level of results constitutes an acceptable level of infection," he wrote.

The Department of Health and Social Care said that PHE began continuously sharing detailed data and analysis with the local director of public health as soon as a spike in cases was identified and began providing postcode data on 24 June.

A department spokesperson said, "At no point did the department or PHE seek to downplay the situation in Leicester. In fact, our close monitoring of the outbreak allowed us to take early action, including through extra testing capacity and providing additional data analysis."

Gareth Iacobucci, *The BMJ*

Cite this as: *BMJ* 2020;370:m2814

The data give no clue as to whether the speculation about workplace, schools, or ethnicity have any part in the prevalence of the virus Peter Soulsby

Trump's WHO withdrawal sparks experts' protest

Some 750 experts in global public health, US constitutional law, and international law and relations have called for leaders in the US Congress to prevent the president from withdrawing from the World Health Organization.

On 9 July WHO's director general, Tedros Adhanom Ghebreyesus, pleaded with the international community for unity against the pandemic, amid a "lack of leadership and solidarity at the global level and national levels."

The experts, including several former heads of the Centers for Disease Control and Prevention and the Food and Drug Administration, as well as current deans of medical and nursing schools, said the president "lacks the legal authority to withdraw without congressional participation and approval."

"Exiting from the WHO is antithetical to US health and national security interests," they wrote.

The US provides about 15% of WHO's annual budget, about $450m (£356m). If the US continues its withdrawal it must pay its current and past dues of about $200m.

Janice Hopkins Tanne, New York

Cite this as: *BMJ* 2020;370:m2802

UK's £10bn spend on test and trace is "scandalous," say critics

The UK government has spent £10bn on its much derided covid-19 test and trace programme and £15bn on personal protective equipment for frontline staff, the Treasury disclosed this week.

It revealed the figures in a document summarising financial commitments in response to covid-19, published on 8 July as part of chancellor Rishi Sunak's plan for jobs. The Treasury also disclosed that, since mid-March, £1bn has been spent on NHS ventilators and £5.5bn on other needs, such as paying for capacity in private sector facilities.

Experts said they were astonished at the size of the sums, including the billions paid to private companies such as Serco to run test and trace services.

Private companies

Allyson Pollock, co-director of the Newcastle University Centre for Excellence in Regulatory Science and a member of the Independent Scientific Advisory Group for Emergencies, described the £10bn figure as "scandalous expenditure."

She added, "There are really serious questions to be asked about the way these contracts were set up and about their performance. Ten billion pounds spent, and we don't even have an effective test and trace strategy. Not all cases are being detected, half of cases are not giving contacts, and those which do are largely doing it through traditional public health teams, while the commercial call handlers have got little to do.

"This money should have been put into supporting the established system of public health services instead of going into new parallel centralised services run by private companies, where much of it is squandered and wasted."

Chris Ham, former chief executive of the King's Fund, said the numbers were "astonishing." He tweeted: "Would be good to understand exactly what money was spent on, especially on test and trace where expertise in NHS and local authorities has been overlooked as private sector used."

Ten billion pounds spent, and we don't even have an effective test and trace strategy Allyson Pollock

"Wasted opportunity"

Rachel Reeves, Labour's shadow cabinet office minister, called for a full published breakdown of the £10bn. She added, "Early in the crisis the government wasted the opportunity to build on existing expertise and experience within our public services for contact tracing, and instead ministers chose to hand lucrative contracts to a handful of outsourcing companies including some with a questionable record."

A Department of Health and Social Care spokesperson said, "NHS Test and Trace is a new, large scale service, designed to allow us to return to as near to normal as possible, so that we can rebuild the economy, control the virus, and save lives.

"Using this funding we have established one of the world's largest testing programmes from scratch, which has already delivered over 11 million tests across the whole UK, employed 27 000 contact tracers who have already contacted tens of thousands of people, and furthered our ongoing work to contain the virus—including setting up the Joint Biosecurity Centre."

Gareth Iacobucci, *The BMJ*

Cite this as: *BMJ* 2020;370:m2805

Many trusts have not done covid-19 risk assessments for ethnic minority staff

EXCLUSIVE Despite being ordered to take steps to protect their workers from the virus two months ago, some English NHS trusts have still not done so. **Gareth Iacobucci** asks why

Some NHS trusts in England are yet to complete covid-19 risk assessments for their staff from ethnic minority groups more than two months after the NHS first told them to do so, an investigation by *The BMJ* has found.

On 29 April NHS England's chief executive, Simon Stevens, wrote to all NHS leaders telling them to carry out risk assessments and make "appropriate arrangements" to protect ethnic minority staff, amid growing evidence that they were at greater risk of contracting and dying from covid-19.

This was followed by a mandate to all hospitals on 24 June to complete risk assessments within a month, after a review by Public Health England had reiterated the need to risk assess ethnic minority staff. Data show that almost two thirds of UK healthcare workers who have died from covid-19 were from ethnic minority groups, despite only a fifth of the NHS workforce being from such backgrounds.

The BMJ asked England's 140 acute care trusts for details of risk assessments they had carried out and what subsequent actions they had put in place. Seventy trusts responded (response rate 50%). Of these, 27 (39%) said that assessments were yet to be completed for all ethnic minority staff, and 43 (61%) indicated that assessments had been completed.

More needs to be done. There is obvious urgency here
Finn O'Dwyer-Cunliffe, NHS Providers

But the other 70 trusts were unable to provide a response within the 20 day deadline, citing "unprecedented challenges" posed by the covid-19 pandemic, so it is not known what stage they are at in risk assessing staff.

The findings come after a recent BMA survey of almost 7500 UK doctors in which more than a third (36%) of ethnic minority respondents said that they were not aware of any risk assessment in their place of work.

Commenting on *The BMJ*'s findings, Chaand Nagpaul, the BMA's chair of council, said, "Clearly, we know that a significant number of doctors have not been risk assessed. It is a shame that it has taken so long, because the risk assessments and mitigations would have been most useful and impactful during the peak of the virus."

Finn O'Dwyer-Cunliffe, policy adviser on workforce at NHS Providers, which represents trusts, said, "Progress is increasingly being made, but more needs to be done, and there is obvious urgency here as well."

A spokesperson for NHS England and NHS Improvement said, "We have been clear that trusts, as the legally responsible employers, should carry out risk assessments for their black and minority ethnic staff and other at-risk groups in line with publicly available protocols.

"They have been asked to ensure these are complete and to publish their progress in doing so, and if any member of staff believes they are being unfairly denied one they should raise this within their trust and be listened to."

Caught off guard

Nagpaul said he believed that the NHS had been "caught off guard" when data first began to emerge of the disproportionate effects of covid-19 on ethnic minority staff. "The NHS was not prepared for this. There was no readymade template on how to risk assess, and there was a delay before NHS providers were given explicit central directives and information on what they needed to do," he said.

O'Dwyer-Cunliffe added, "Trusts are used to undertaking risk assessments in partnership with their staff, but it's fair to say that more support and more detailed tools were needed across the board than many had at their disposal in March and early April."

Nagpaul wrote to NHS England on 28 April asking for a national risk profiling tool to help employers conduct risk assessments. At the end of May NHS Employers signposted trusts to several risk scoring tools.

While Nagpaul praised trusts such as Somerset NHS Foundation Trust (box, below left) and United Lincolnshire Hospitals NHS Trust, which developed their own risk assessment tools and responded proactively, he said that a " single national" tool for the whole country would have provided greater consistency.

"Even now that we have the tools, many have been unclear as to which tool to use, and that further delays matters," he said. "Different trusts are using different tools, and some give different results compared with others."

Ramesh Mehta, president of the British Association of Physicians of Indian Origin (BAPIO), said that feedback from members indicated

"STAFF FELT VERY SUPPORTED"

Somerset NHS Foundation Trust was praised by both the BMA and the British International Doctors' Association for being the first trust in the country to include all ethnic minority staff in the vulnerable and at-risk group for covid-19 and for writing to all relevant staff in April offering them opportunities to discuss their concerns. Sunny Sander-Jackson, black and minority ethnic network lead at the trust, said, "I have been receiving many more calls and emails from BAME colleagues since the letter from our executive team went out to them.

"They have told me that they have felt very supported during this difficult time and that the letter had a real impact in helping to lift their morale."

RICHARD GRAY/EMPICS /PA FOR IMPERIAL HEALTH CHARITY

A BMA survey recently found that more than a third (36%) of ethnic minority respondents said that they were not aware of any risk assessment in their place of work

that the process of organising risk assessments was "very slow" and varied considerably from trust to trust.

Communication

Some trusts have said they found it hard to communicate the availability of assessments to staff.

O'Dwyer-Cunliffe said that early on there were some delays in identifying which staff needed risk assessments, partly because ethnicity is self-reported in NHS trusts. He added that larger trusts that are spread across different sites, and those with a high proportion of ethnic minority staff, "have experienced greater delays in completing all assessments, in large part due to the practicality of getting around thousands of staff in particular places."

He added, "Trusts have really needed to listen to and respond to feedback from their staff so that they could offer reassurance in the face of fears of being redeployed away from the frontline unnecessarily, facing unfair barriers to development or progression because of this, preferences to remain in the same location or with the same colleagues, and in some cases fears about visa issues."

He said that trusts had put a "huge focus" on giving managers guidance and support on how to have potentially sensitive conversations with staff. "In some areas it has taken longer [than others] bringing those facets together," he said.

We know that a significant number of doctors have not been risk assessed
Chaand Nagpaul

Systemic race inequalities

Doctors' leaders have suggested that systemic race inequalities in the workplace may have exacerbated delays in risk assessing staff. Nagpaul said, "The BMA survey found that doctors from a BAME [black, Asian, and minority ethnic] background felt under more pressure to see patients without adequate protection. So it does beg the question of whether there's also been this added factor of BAME healthcare staff feeling unable to demand their right to being assessed and protected.

"This is something the NHS needs to tackle. This is an issue that predates covid. It's vital that we have an NHS where anyone is able to voice their concerns. No one should have to suffer or have fear in silence."

Mehta said there remained a "fear" among ethnic minority staff of raising concerns. "Saying and doing is different. Some trusts are not walking the talk," he said.

Mitigating measures

Nagpaul emphasised that risk assessments were not an "end in themselves" and that subsequent mitigating action to protect staff was crucial.

Trusts that responded to *The BMJ* described measures such as redeploying staff to lower risk areas in the hospital, allowing them to work from home, ensuring they were prioritised for the highest level of personal protective equipment, and adjusting their working hours so they could avoid public transport or travelling in rush hour (box, above).

MITIGATING MEASURES BEING OFFERED

- Redeployment to hospital areas with lower risk of infection
- Using technology such as video to deliver care to patients
- Removing staff from on-call rotas
- Allowing certain procedures to be delegated to other staff
- Shielding at home
- Working from home
- Adjusting working hours to avoid rush hour traffic or public transport
- Adjusting the work environment, such as creating separate offices and not using shared telephones
- Building new staff areas to make social distancing easier
- Offering wellbeing support and voluntary health checks
- Providing free vitamin D supplements
- Prioritising staff for covid-19 swab testing
- Providing additional PPE for staff and for patients during interactions with staff

But, because some trusts began to risk assess ethnic minority staff only in June, measures have taken time to emerge in some cases.

Mehta pointed to feedback from BAPIO members that, in some areas, a lack of high grade PPE had prevented some staff from being redeployed. "The majority of staff who have mild to moderate risk could work on the front line if they were given proper equipment," he said.

O'Dwyer-Cunliffe acknowledged that redeployment opportunities "aren't limitless," given workforce capacity constraints, but said there was an opportunity for neighbouring trusts to coordinate how staff could be redeployed across different organisations within their area.

"We have to make sure we're in a position where those next steps are beneficial for the staff themselves and for the service as a whole," he said.

Gareth Iacobucci, *The BMJ*

Cite this as: *BMJ* 2020;370:m2792

THE BIG PICTURE

Delhi prepares to hit 500 000 covid-19 cases

Hospital beds are made up at a popular New Delhi wedding venue, which last week was requisitioned for use for coronavirus patients.

R K Banquet hall will provide 160 extra beds for the city's Rajiv Gandhi Super Speciality Hospital in Kirti Nagar in West Delhi.

Government officials fear that the Delhi metropolitan area, home to 25 million people, could record more than half a million covid-19 cases by the end of the month. Hotels, spiritual centres, and even railway coaches have been modified to treat people with mild to moderate cases and to relieve pressure on hospitals.

India has been subject to one of the strictest lockdown regimes in the world. Schools, metro trains, cinemas, gyms, and swimming pools are still closed, and international flights remain grounded.

Despite these restrictions the country recorded 697 000 cases and almost 20 000 deaths last week, making it the third worst affected country behind the US and Brazil.

Alison Shepherd, *The BMJ*

Cite this as: *BMJ* 2020;370:m2817

SANCHIT KHANNA/HINDUSTAN TIMES/SHUTTERSTOCK

EDITORIAL

Vaccines and antibody therapies for covid-19

We have good reason to be cautious about these high profile options

The devastating pandemic caused by the SARS-CoV-2 coronavirus appears to be a prime candidate for traditional prevention (vaccines) and passive immunity approaches. Passive immunity, using convalescent plasma from recovered patients or monoclonal antibodies with high levels of neutralising antiviral activity, have potential for both therapy and prevention.

Understandably, there is great public expectation that these efforts will be successful, but caution is necessary with respect to both vaccines and passive immunity.

Immunological tools will at best complement public health vigilance, preparedness, and early control measures

Vaccines

Many candidate vaccines target the virus spike protein, a molecule essential for infection.[3] Studies of SARS-CoV-2 genomic sequences indicate that regions encoding the receptor binding domain of the spike protein are highly conserved, providing hope for a successful vaccine directed at a stable target. However, substantial mutations (albeit rare) in the spike protein close to the receptor binding domain are described along with other drift variants.[4 5] The effect of these mutations on protein expression and the antigenicity required to provoke an antibody response is unclear.

There are further reasons for caution over covid-19 vaccines. Over a decade, attempts to develop vaccines against SARS and MERS have been unsuccessful.[6] Attempts to produce vaccines against other RNA viruses, such as dengue, resulted in candidates that were not protective, and some exacerbated disease through antibody dependent enhancement.[7] Although there is no evidence that the SARS-CoV-2 vaccine candidates produce antibody dependent enhancement, it remains a possibility.

Furthermore, covid-19 disproportionately affects older age groups, where immune senescence leads to poorer quality immune responses.[8] Finally, infections with other coronaviruses and challenges with experimental vaccines have resulted in short term (1-2 years) protective immunity.[6] Durable protection may therefore require repeated vaccinations and the use of adjuvants to improve responses.

Immune plasma

Hyperimmune plasma and intravenous immunoglobulin infusions are safe and effective treatments for a wide range of human diseases. Convalescent blood was used in the 2014 Ebola epidemic in west Africa, when it improved survival compared with standard treatment.[9] However, widespread immune dysregulation is a major contributor to the severest and most lethal expression of covid-19,[10] including the cytokine storm syndrome—an overactive immune-inflammatory response to infection resulting in severe damage to tissues and organs.[10-12] The timing of treatment with passive immune plasma is likely to be critical. Given at the wrong time in a patient's covid-19 trajectory, immune plasma could be ineffective[2] or even enhance or induce a cytokine storm syndrome.

Early studies from Wuhan, China, suggested that high levels of antibodies were an independent risk factor for severe disease or death.[13 14] If so, treatment with immune plasma should probably occur early in the course of covid-19,[2] before significant expression of inflammation—a possible harbinger of a cytokine storm.

Monoclonal antibodies

An attractive alternative is use of neutralising human/humanised monoclonal antibodies. Monoclonal antibodies can be produced rapidly, safely, and in large volumes with current technologies. However, once again, caution is needed, as monoclonals developed to treat severe influenza and respiratory syncytial virus infections failed to change the course of those diseases in clinical studies.[15 16]

Monoclonal antibodies are precisely focused on the neutralising sites on the spike protein of SARS-CoV-2 in contrast to the wide range of antibodies in convalescent plasma. Some will be neutralising, but many others may have off-target effects, potentially contributing to tissue damage. These adverse effects are less likely with the use of single or combinations of monoclonal antibodies, which are currently in early clinical studies.[17 18]

Even if immunology yields excellent vaccines and antibody treatments to manage covid-19, by the time they are widely available the pandemic's human and economic cost will have been enormous. Therefore, immunological tools will at best complement public health vigilance, preparedness, and early control measures, which will remain vital for combating future potential pandemics.

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EDITORIAL

Meat plants—a new front line in the pandemic

These businesses failed in their duty to workers and the wider public health

Slaughterhouses and meat packing plants have been a major risk for covid-19 infection throughout the pandemic.[1 2] Now these outbreaks are centre stage.[3] They affect whole communities, have far reaching implications, and require intensive public health interventions.

In Germany, public health authorities have been grappling with a huge covid-19 outbreak centred on a meat plant in Gütersloh, North Rhine-Westphalia. More than 1500 of 7000 workers tested positive for covid-19, and 640 000 residents of two affected counties were returned to lockdown conditions.[4] At one of Portugal's biggest poultry slaughterhouses, at least 129 of the 300 workers contracted covid-19.[5] Outbreaks in England and Wales have been associated with meat processing in Anglesey, Merthyr Tydfil, Wrexham, and Kirklees.[6]

The meat plant at the centre of an outbreak that led to a local lockdown in Gütersloh, Germany

Contributory factors

Slaughterhouses and meat processing plants are favourable environments for SARS-CoV-2 transmission.[1 7] The virus thrives in lower temperatures and very high or very low relative humidity. Metallic surfaces retain live viruses for longer than other environments.[8 9] A dense production of aerosols combining dust, feathers, and faeces is produced in the plants, and intense water use carries materials extensively over surfaces. Workers must speak loudly or shout over the noise, releasing more droplets and spreading them further.[10] Workplaces are crowded, and social distancing is difficult.

Sociodemographic and workforce factors implicated in these outbreaks include a youthful workforce more likely to have asymptomatic infections; insecure poorly paid employment that discourages workers from disclosing symptoms for fear of penalty; long hours and coercive contracts; a reliance on migrant workers housed in inadequate overcrowded accommodation and transported on overcrowded buses; and limited or non-existent hygiene measures.[1 7]

Prevention

Companies across the meat processing sector should conduct urgent risk assessments and implement a hierarchy of measures to prevent further outbreaks.[1 7] These include staggering start, finish, and break times; reducing crowding by adding outdoor breakrooms; and installing barriers between workers, especially on production lines. All workers should be screened for symptoms, including fever, on arrival at work[1] and isolated quickly if required.

They should also consider operational measures such as reducing the processing rate for animals and carcasses, mandating face coverings, embedding good practice in donning and doffing protective equipment, installing touch-free time clocks, and introducing enhanced cleaning and disinfection regimes.[1 7] Health education materials for staff must be culturally appropriate and available in all languages relevant to the local workforce. Finally, employers should encourage workers not to attend if ill, declare their symptoms, and self-isolate. Adequate sick pay is essential during all work absence.[1-7]

Rapid and permanent improvements in working conditions and wages are needed, along with sound occupational health services for all

Control

Early recognition of outbreaks requires strong local surveillance systems. Local health authorities need to work alongside businesses, occupational health services, and health and safety inspection services where these exist.[3] They should have outbreak plans ready for rapid implementation, including efficient systems for testing, contact tracing, and isolation.[13] All businesses must recognise their responsibility to public health—in addition to the usual corporate self-interest—and cooperate fully with the authorities when closures are required.[14]

The pandemic shows up longstanding inequalities in health, with migrant and other ethnic minority workers again in the frontline facing a high risk of infection.[18] The Leicester outbreak, for example, has exposed the "open secret" of overcrowded working conditions and ultra low wages endured by some groups.[17] Rapid and permanent improvements in working conditions and wages are needed, along with sound occupational health services for all[19] and universal healthcare that includes migrant workers, to encourage help seeking when sick.

The meat industry is highly profitable, a potential trigger for a second pandemic wave, and a major driver of both antimicrobial resistance[20] and climate breakdown.[21] People may come to reflect on how they get their meat, what they are prepared to pay for it, and what conditions they expect the animals and the workers to endure so they can have it.

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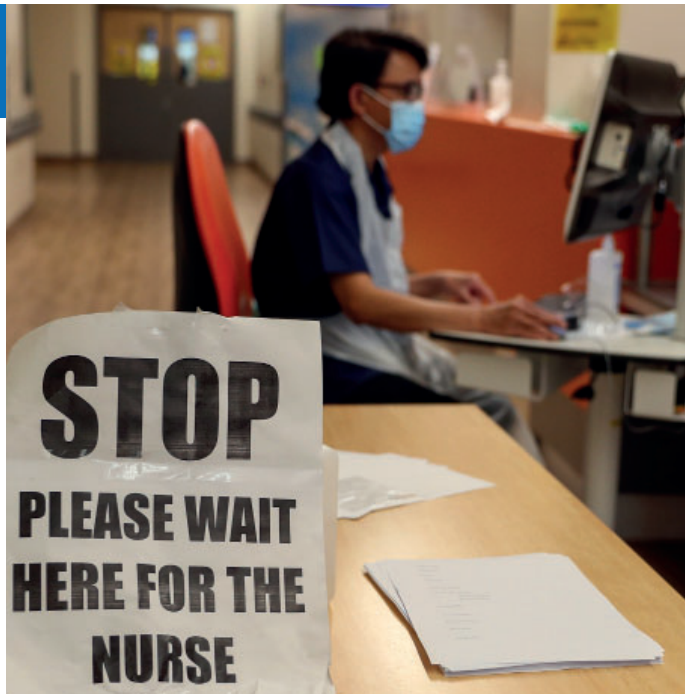
ONCOLOGY

How cancer services are fighting to counter covid-19's impact

Behind the headlines of delayed referral, diagnosis, and treatment, clinical teams have been continually adapting care settings and treatment to try to mitigate the negative affect on patients. They are now preparing for a surge in patients. **Emma Wilkinson** reports



For Kathryn Ward, covid-19 has meant not only months of shielding and a cancelled stem cell transplantation for her transformed lymphoma but also, because of the additional uncertainty around her treatment, leaving her job as head teacher of a primary school after a 30 year career.

"The delay has meant that I've had to give up my career. It was the final straw and the deciding factor," she tells *The BMJ*.

As health providers braced for a surge in covid-19 cases by redeploying staff and suspending services, Ward became one of many patients with cancer for whom the pandemic has meant cancelled operations and other treatments, sparking a great deal of anxiety while they wait—and in some cases are still waiting.

Huge levels of disruption were also seen in access to diagnostic tests and referrals for those with suspicious symptoms, and screening programmes were suspended. Cancer Research UK estimated that at the start of June there were 2.4 million people in the backlog for screening, tests, or treatment. Compared with usual activity, the charity estmates that, in the 10 weeks after lockdown began, 12 750 fewer patients had surgery, 6000 fewer had chemotherapy, and 2800 fewer underwent radiotherapy.

NHS England data from 11 June showed that the number of urgent GP referrals for cancer dropped by 60% in April compared with the same month last year. The number of people starting treatment following a GP urgent referral declined by 18% in the same period. Peter Johnson, NHS England national clinical director for cancer, said that at the lowest point cancer surgery was down to 30%.

And research carried out for BBC *Panorama* by DATA-CAN, the Health Care Research Hub for Cancer, suggests there could be at least 7000 additional deaths from these delays to diagnosis and treatment—35 000 in a worst case scenario.

Turning these numbers around is going to be no mean feat, but a huge amount of work has been done to get services up and running safely again.

Patient prioritisation

It wasn't possible to just stop cancer treatment, something they recognised right from the start, says Johnson. "We needed to adapt and make sure it was safe," he says. For surgical teams this meant the consolidation of surgery within 21 covid-19-free hubs—a combination of independent and NHS providers overseen by regional Cancer Alliances, partnerships that were given a leadership role in implementing local care under the NHS long term plan.

"It was very clear very quickly that surgical capacity was going to be constrained," says Johnson, partly because of infection control risk but also because many anaesthetists were redeployed. "Talking to colleagues and clinicians in Italy it was clear that the only way to do this was to plan for covid-19-protected environments where surgery could safely take place."

Cancer Research UK estimated that at the start of June there were 2.4 million people in the backlog for screening, tests, or treatment

The idea of covid-19-free—or, more realistically, "covid-19-light"—sites was initially led by a few specialist centres, including the Royal Marsden Hospital in London, before being rolled out across England at the start of May. Measures such as patients having to self-isolate for 14 days before surgery, as well as having a covid-19 test 48 hours before the operation, have kept sites safer. In Wales and some parts of England, independent private sector hospitals have been co-opted as "clean" sites for surgery.

For the first six weeks, as clinicians across the NHS adapted rapidly to remote working, cancer teams focused on how to prioritise those who could not wait. Nicholas Van As, medical director at the Royal Marsden NHS Foundation Trust, says surgical patients were categorised into three groups: the first requiring an operation in the next 24 to 48 hours; the second within the next month; and the third those whose surgery could wait longer. "We were only doing priority one and two at the start—now we are doing everyone," he says.

Even with cancer hubs providing a safe place to carry out surgery,

Jo Gardiner's anxiety about attending hospital for chemotherapy was eased by a telephone chat

Patient safety and reassurance measures have included different entry and exit sites with temperature screening

It was clear very quickly that surgical capacity would be constrained
Peter Johnson, NHS England

Surgical patients were categorised by priority — now we are doing everyone
Nicholas Van As, Royal Marsden

We decided who needed to continue treatment and who could defer
Corinne Faivre-Finn, Christie

operating while wearing personal protective equipment and infection control procedures mean that teams cannot schedule as many patients as they usually would, so matching demand and capacity is important, explains Johnson.

Radiotherapy departments at the Christie Hospital in Manchester also prioritised patients, initially stopping some treatment altogether. "We had priority lists and got together and decided who really needed to continue treatment and who could defer," says Corinne Faivre-Finn, professor of thoracic radiation oncology at the University of Manchester. That lasted six weeks and the Christie is now operating as normal, as are most departments around the country, she says.

Tim Somervaille, professor of haematological oncology at the Christie NHS Foundation Trust, says initially all but the most urgent chemotherapy treatments were put on hold as the hospital braced itself for a flood of covid-19 patients that never came. As soon as it became clear that they weren't going to be overwhelmed they opened urgent and priority treatments. "Bone marrow transplantation has begun again. Chemotherapy is back up and running, which is great news," he says.

Jo Gardiner was relieved that her chemotherapy for a third recurrence of splenic marginal zone lymphoma was able to continue at the Christie. "I was nervous that they'd stop the treatment," she tells *The BMJ*. "I'd have gone along with whatever decision was made but I really hoped they wouldn't cancel or delay."

Adapting treatment

For the procedures that had to go ahead, adaptation was necessary. To reduce the number of times they had to come to hospital, evidence based guidance on reduced fractionation was introduced for some patients undergoing radiotherapy. Other initiatives included a phlebotomy service that allows patients to wait in their car, and arrangements for medicines to be couriered to homes.

Other adaptation meant working out, on a case-by-case basis, where delayed or less immunosuppressive treatment regimens could be an option. Graham Collins, consultant haematologist at Oxford University Hospitals NHS Trust, says doctors have had to make difficult judgments around the risks of delaying therapy compared with the dangers of bringing shielded patients into hospital for immunosuppressive treatments.

Others who could not have their operation were sometimes referred

PATIENT PERSPECTIVE

"Having my ovarian cancer surgery postponed for four months was difficult but I understood the decision"

I was diagnosed with ovarian cancer in September and the plan was to have six cycles of chemotherapy split into three and three with an operation in Nottingham in the middle. The ultra-radical (extensive) operation had already been delayed because, after I had my first round of chemotherapy in November, I was hospitalised with an infection around my appendix and I had to be treated in Lincoln for a month before chemotherapy could be resumed.

The operation was booked for the end of March but then, because of coronavirus, the expert surgical team at Nottingham City Hospital had to cancel it. I understood that decision and I would not, in my view, have survived covid-19 because I was so vulnerable. It was difficult because I'd been preparing for it and because it's such a big operation you really have to want to do it and believe it's your best chance.

I've now had six cycles of chemotherapy and Lincoln have reorganised services locally so I went to Grantham for the final one. It's been worrying but everyone, both in Lincoln and Nottingham, has been understanding and provided ways to keep in touch.

After the delay I had to go through triage again

to make sure the operation was still appropriate, including having a laparoscopic investigation. My surgery is now booked for the end of July. I'd hoped it might be sooner but because the surgery is so complex and you need intensive care they need to make sure everything is in place. They've worked hard to get their services going again.

I have a peripherally inserted central catheter line and I have to go to the hospital every week to have it flushed out and even that little bit of contact and regular treatment has kept me going. I've had moments of being negative, but I've been able to think it through and rationalise it. I'm lucky that we have a good oncology team here and access to specialist surgery. I feel most sorry for those who haven't been to their GP because maybe they feel that they won't be able to get treatment.

Diana Scammell, Lincoln

Swansea team pioneers anaesthetic technique to continue sentinel node biopsies

A team of anaesthetists and plastic surgeons from Swansea's Morriston Hospital has developed a regional anaesthetic technique to enable them to continue carrying out sentinel node biopsies in the armpit for patients with melanoma during the pandemic. They believe it is the first time the technique has been used for this surgical indication.

The biopsies are usually carried out under general anaesthetic and therefore the procedure was suspended because of the additional risk to the patient during the pandemic. General anaesthetic is also an aerosol generating procedure and therefore high risk for clinicians.

Morriston's plastic surgeons "challenged" their anaesthetist colleagues to establish whether the operation could be done using regional nerve blocks, local anaesthesia not being suitable. They responded—trawling the literature and with consultant anaesthetist Christian Egeler even practising on himself—by developing a blocks combination of upper limb (brachial plexus) and chest wall (deep serratus plane plus PECS 1 or 2, depending on the patient's needs).

Until that point, consultant plastic surgeon Jonathan Cubitt explains, "the armpit has been a sort of no-go zone from a blocks point of view. We would have always done it under a general anaesthetic."

With around 20% of sentinel node biopsies returning a positive result that requires further treatment for the melanoma spread, Cubitt explains, being able to continue the procedure potentially reduces the risk that these patients will discover more serious disease later on, with a consequently worse prognosis. "It's made it possible for us to do the operation that we want to. We didn't want to give someone an operation that wasn't the gold standard that we would be doing under general anaesthetic. They're having the same operation, just under much safer conditions."

The team sees itself continuing with the regional block technique beyond covid-19, to avoid the usual risks, inconveniences, and recovery time of general anaesthetic. "I don't see a reason to routinely go back to doing general anaesthetics when we know this works," says Cubitt. "It must be better to avoid giving everyone a general anaesthetic."

The team members are therefore writing up their findings, with a view to spreading the technique. "The patients have been very complimentary," says consultant anaesthetist Ceri Beynon. "It's always good to be challenged as a medic to do something new."

"Covid-19 has made us think outside the box and provided us with a treatment that is great for these patients," agrees Cubbitt. "This is a great thing to come out of a bad situation and it will impact on our practice going forward."

Consultant anaesthetists Christian Egeler (L) and Ceri Beynon flank consultant plastic surgeon Jonathan Cubitt

to secondary treatments. This is what happened to Kathryn Ward, who says she was "disappointed" to be referred for radiotherapy, having seen her planned stem cell transplantation as "light at the end of the tunnel" after three years of almost continuous treatment. "It's likely that radiotherapy was the second best treatment, but it's still a bit of an unknown," she says, now awaiting a scan that will take place eight weeks after her three weeks of radiotherapy.

Ward lays no blame at the feet of her clinicians. "I did understand that it was beyond anyone's control," she says. "Within the constraints of the system, I did feel that my needs were considered. They gave me an alternative, they reassured me that should it come back very quickly they would do something, and I had a phone number to ring. I felt disappointed but there wasn't another option. I didn't think there was anything they could have done differently.

"I'm really grateful to them because I've not just fallen off the radar."

Patient reassurance

In the scramble to retool the system, it's patients that should be kept at the forefront of minds. The "stay at home" message caused a great deal of anxiety for patients requiring treatment for cancer. Gardiner, for instance, was nervous about how social distancing would work when she went into hospital.

As a result, a lot of work has gone into offering reassurance. "We've done our best to create confidence that it's safe to come to hospital," says Somervaille. "We have staff and patient entry and exit sites with health questionnaires and we've installed a temperature screening device. All staff wear face masks at all times on the premises."

Staff are regularly tested, not just patients. "All staff can get a covid-19 test up to once a week and now an antigen test," says Collins, "That gives us quite a lot of confidence."

For Gardiner a phone call before her appointments put her mind at ease. "It reassured me about what they were doing to limit risk, so I had a good idea of what it would be like when I went in," she says, "It was reassuring and well managed. On the whole I felt very safe."

Staff can get a test up to once a week. That gives us confidence
Graham Collins, Oxford

If missing patients appear at the same time as a second wave, that's going to be hard
Muireann Kelleher, St George's

All parts of the cancer pathway are still delayed
Azeem Majeed, GP

PATIENT PERSPECTIVE

"I didn't want to bother my GP in lockdown—but then I was diagnosed with stage 4 testicular cancer"

One week into lockdown, I was diagnosed with stage 4 testicular cancer. I found an abnormal growth but rather than bother the GP straight away I waited a few days. When I called they said because I didn't have any abdominal pain it could wait. Five days later I had horrendous pains in my stomach so called 111 and they told me to go straight to the emergency department.

I went to Kingston Hospital and they moved quickly to do an x ray and I moved from one doctor to the next and the last one was an oncologist. I was back for a scan the following morning and they immediately referred me to the Royal Marsden Hospital. I went from diagnosis to starting treatment in nine days. Looking back, it was stupid of me not to push to see the GP but, because of everything going on, I didn't want to bother them.

The consultant fully explained their plan which involved some minor tweaks to one of the chemotherapy drugs because of the pandemic. It was all very quick, including a trip to the sperm bank, and I can't fault them on anything. They explained that in normal circumstances they would remove the testicle first and then do chemotherapy but for me the safer option was to start chemotherapy as quickly as possible and have the surgery later.

I'll be having four cycles over 12 weeks and I go in for six days and have 18-19 hours of chemotherapy a day. After a two week break, I'm in for the next one.

I'm shielding, as is my girlfriend who I live with, and going into hospital was a bit scary in a pandemic but they have had very stringent rules. You have a covid-19 test before you go back in for a cycle of treatment and they've split the wards into zones.

They've done their absolute best in a horrible situation. You can't believe the care they take with each patient. I can only describe it as absolutely amazing.

Karl McBride, Surbiton, London

Delayed surge

Services are now grappling with the huge backlog that lack of access to screening, diagnostics, and referrals has generated.

Part of the problem is that patients haven't sought help for suspicious symptoms, thinking that services were closed or because they were afraid to go to hospital in the middle of a pandemic. Joanna Franks, a breast and oncoplastic surgeon at UCLH and a coordinator for the Pan London Breast Hub, says they were only seeing about 40% of their normal referral pattern. "We're up to about 60% now," she says, "But that's still 40% of people at home, not getting treated, and worrying."

Muireann Kelleher, clinical director for cancer at St George's Healthcare NHS Foundation Trust, says their modelling shows most units will be operating between 85% and 100% by July. The data suggest that referrals—after a drop in London of 70%—are starting to pick up again. "If missing patients appear at the same time as a second wave or new ripple of covid-19, that's going to be hard, but we have a plan to keep cancer services protected."

That plan includes not redeploying cancer staff to intensive care where possible and keeping in place covid-19-free pathways for diagnostics and treatment. At St George's they are also rolling out rapid diagnostic clinics, which will screen all referred patients virtually before inviting them to see the most appropriate clinician.

"The rapid diagnosis project was already planned from 2019-20 but it will truly become a covid-19 recovery pathway giving GPs a 'one stop shop' to refer patients to if they're worried about cancer," Kelleher adds.

Azeem Majeed, a GP and professor of primary care at Imperial College London, says work is ongoing to restart oncology services in his area. "At present, all parts of the pathway—referral, outpatient appointment, testing, and treatment—are still delayed compared with earlier in the year before the pandemic," he says.

Franks is concerned about less urgent treatment continuing to be squeezed. "Time critical things will get done. But there are other things that aren't necessarily so visible but are important to each patient's treatment," she says. "For breast cancer, for example, that would be things like doing further work to improve aesthetics or making sure that we've done the symmetrising surgery. In the recovery phase we need to work out how we're going to do all these things."

The Pan London Breast Hub says it was only seeing about 40% of its normal referral pattern

Cancer surgery across England has been consolidated into 21 covid-19-free hubs

Major cancer charities, including Cancer Research UK, Macmillan Cancer Support, Breast Cancer Now, and Bowel Cancer UK, have published a 12 point plan for the restoration, recovery, and transformation of cancer services and called for the government to support the NHS in setting out a clear plan.

In response to this call, a Department of Health and Social Care spokesperson said, "The NHS has adapted how it runs its cancer services to ensure the safety of both patients and staff. This includes establishing dedicated cancer hubs for urgent treatment and diagnosis which are separate from hospitals dealing with covid-19."

For Richard Johnson, consultant breast surgeon and Royal College of Surgeons director in Wales, the key will be finding a way to cope with the extra demand, given operating lists will have to be shorter. "The main message is even if you turned on all the capacity you had before you would not be able to treat the same number of patients. You need extra capacity to make up for that," he says.

And planning is not straightforward because it's hard to plan too far ahead. "Throughout the past three months, what I imagined would be the case two or three weeks later didn't turn out that way," says Somervaille. "We need to be as flexible as possible."

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CORONAVIRUS

What do we know about "long covid"?

As recognition grows that many patients have longlasting effects, **Elisabeth Mahase** examines the evidence and the response

What is it?

"Long covid" is a term being used to describe illness in people who have either recovered from covid-19 but are still reporting lasting effects of the infection or have had the usual symptoms for far longer than would be expected. Many people, including doctors who have been infected, have shared their anecdotal experiences on social media, in the traditional media, and through patients' groups.

Paul Garner, professor of infectious diseases at Liverpool School of Tropical Medicine, detailed his seven week experience with the virus for BMJ Opinion (bit.ly/2C8XTqF), describing it as "frightening and long." As with many of the accounts being shared, Garner was not admitted to hospital, but he reported a long list of symptoms lasting weeks and leaving him feeling unable to function.

The Royal College of General Practitioners says it expects GPs to see an influx of patients with "long covid" and has called for a rapid review of the requirements for returning GPs to see whether the streamlined approach introduced during the pandemic can be maintained. Its chair, Martin Marshall, says, "The pressures in general practice prior to the pandemic have been well documented by the college, but we are now gearing up for the wave of new pressures coming our way as a direct result of covid-19.

"There will be a significant influx of patients with lingering 'long covid' illness, both physical and emotional, and GPs must have the necessary resources and support to care for patients and help them come to terms with and readjust to the aftermath."

What does the evidence say?

Aside from anecdotal evidence, there is as yet little research on this issue. However, it is being actively discussed within the research community. Writing in *JAMA*, a team of researchers from Italy reported that nearly nine in 10 patients (87%) discharged from a Rome hospital after recovering from covid-19 were still experiencing at least one symptom 60 days after onset. They found that 13% of the 143 people were completely free of any symptoms, while 32% had one or two symptoms, and 55% had three or more. Although none of the patients had fever or any signs or symptoms of acute illness, many still reported fatigue (53%), dyspnoea (43%), joint pain (27%), and chest pain (22%). Two fifths of patients reported a worsened quality of life.

Meanwhile, the team behind the UK Covid-19 Symptom Study app, which collects symptom information from nearly four million users, says their data show that one in 10 people with covid-19 are sick for three weeks or more. The team said, "Most health sources suggest that people will recover within two weeks or so. But it's becoming increasingly clear that this isn't the case for everyone infected with coronavirus." The app was developed by the health science company ZOE, and the data are being analysed in collaboration with researchers at King's College London.

Are there any support services?

NHS England is set to launch an online portal later this month where people who are suffering long term effects of covid-19 (not just those patients who were admitted to hospital) can communicate with nurses, physiotherapists, and mental health specialists.

The service will give people access to a local clinical team that will respond to inquiries and to an online peer support community, exercise tutorials, and mental health support.

"Evidence shows that many of those survivors are likely to have significant ongoing health problems, including breathing difficulties, enduring tiredness, reduced muscle function, impaired ability to perform vital everyday tasks, and mental health problems such as post-traumatic stress disorder, anxiety, and depression," NHS England's announcement said.

Later in the summer, it said, the service will make personalised packages of support available, although access to these will require a face to face assessment. People without online access will be provided with printed materials, "depending on demand."

Patients' groups are also providing peer support, and one such group on Facebook called the "Long Covid Support Group" already has more than 7000 members. This group is calling for "proper rehab, research, and recognition."

The hashtag "longcovid" is being used on social media to share personal experiences.

What more is needed?

SARS-CoV-2 is a very novel virus, only reportedly appearing in the human population at the end of 2019, which means there is still much the medical and wider research community do not know. To solve this, long term research is needed.

A new study to assess the long term effects on hospital patients was announced on 5 July by the health secretary for England, Matt Hancock. The Post-hospitalisation COVID-19 Study (PHOSP-COVID) aims to recruit 10 000 patients across the UK, who will be followed for more than a year. The study is being run by the University Hospitals of Leicester NHS Trust and has been funded by the Medical Research Council, UK Research and Innovation, and the National Institute for Health Research. However, since it does not include milder cases that do not require hospital care, it will exclude many patients with stories similar to Garner's.

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