TEXT 1

The Economist

How to fix the NHS

Money will help. But a radical shift in focus is more important

May 25th 2023

Britons are prouder of their health-care system than they are of the monarchy. But when the English National Health Service (NHS) turns 75 in July, the mood will not be celebratory. Hospital waiting lists in England spiral beyond 7m, forcing many to wait months or even years for treatment. Almost 300,000 adults are waiting for a social-care assessment. A record 2.5m Britons are out of work because they are sick. NHS staff are leaving the workforce in droves. On basic measures of health, Britain suffers by comparison with its rich-world peers. Its people barely live any longer than they did a decade ago, and have some of the worst survival rates for diseases such as cancer. During the pandemic the public clapped for the NHS. Now they are more likely to throw up their hands in frustration.

When something is broken, the boldest reforms can often seem the most tempting. Some want to overhaul the NHS's funding model, switching from a system funded by taxation to one based on social insurance, as in France or Germany. Others mull the case for much wider use of means-tested charges. But Britons will not easily ditch what Nigel Lawson, a former chancellor, once called their "national religion" of health care funded by taxes and free at the point of use. And the country's recent record of revolutionary change does not inspire confidence.

It is also unnecessary. The recipe for saving the NHS requires radicalism, but of a simpler sort: turning the NHS from what it has become—a sickness service—into what its name promises—a health service. That will mean spending more money. But to spend it productively requires a shift in focus: away from hospitals to the community, from treatment to prevention, from incentivising inputs to encouraging better outcomes.

Health already absorbs the biggest single chunk of government spending. Of every pound the state spends on public services, 38p goes on the NHS. But Britain spends less on health care than countries like France and Germany as a share of GDP. It especially skimps on capital spending: no OECD country invests less on a per-person basis. And the demands on the health service are only going to go up. In the next 25 years the number of Britons aged 85 and older is set to double. The NHS is the largest single employer in Europe; the phenomenon of "cost disease" means that the pay of nurses and doctors needs to keep rising to compete with wages elsewhere in the labour market.

The critical question is where the money is spent. At the moment, the answer to that question can be boiled down to one word: hospitals. Spending on public health (covid-19 prevention aside) and social care has fallen in real terms over the past decade. The share of total NHS spending allocated to primary and community care was falling even before the pandemic; the share doled

out to hospitals had risen to almost two-thirds. As a share of GDP spent by rich-world governments and compulsory insurance schemes, only America spends more on hospitals.

This makes no sense. A system focused on hospitals is one designed to treat people only after they have become really sick. That is the equivalent of buying more fire extinguishers while dismantling the smoke alarms. The majority of health and social-care spending now goes on treating long-term conditions like diabetes, high blood pressure and arthritis. Such conditions are managed best by patients themselves, in their own homes and with the support of networks of general practitioners and local specialists. The share of money going to primary care should be restored from 8% of the NHS budget to the 11% proportion it was two decades ago. Social care needs more money, too, and a proper long-term funding plan.

The corollary of moving care out of hospitals and into communities is to focus on prevention: keeping people healthy for as long as possible. That means widening the lens on health care. For all the headlines it grabs, medical care contributes comparatively little to the state of the nation's health: socio-economic factors, genetics and individual behaviour matter more. One obvious example is obesity. Britain is the third-fattest country in Europe; an obese patient costs the NHS twice as much to treat as one who is not. The government needs a more muscular strategy to tackle this problem before it turns up in waiting rooms and hospital beds, for example by making effective use of promising new anti-obesity drugs.

The way that the NHS measures and motivates performance also needs to change. At the moment the system is geared towards inputs. Politicians conventionally compete to make promises about the number of new hospitals or the ranks of new doctors. Top-down metrics based on "activity" encourage hospitals to spend billions on unnecessary and unwanted treatments towards the end of life. Funding should be relentlessly focused on health outcomes; to encourage innovation, money saved by making people healthier should be made available to regional bodies to reinvest.

Will any of these changes ever actually happen? The good news is that these ideas are neither new nor even particularly controversial: just this week Sir Keir Starmer, the leader of the Labour Party, laid out in a speech the need to shift focus from acute care to chronic care. The establishment in England of "integrated care systems", a set of 42 regional partnerships between NHS providers and local bodies, paves the way for a more decentralised approach to health provision. The covid-19 pandemic vividly demonstrated the power of data and technology to reach people quicker, from carefully targeted vaccination campaigns to online consultations.

Faith healing

But this refocusing of effort does require a radical shift in mindset, from politicians above all. Care workers and insulin pumps are less sexy during election campaigns than heart surgeons and new hospitals. No crisis is more urgent for a politician to fix than one involving desperately ill people waiting for ambulances to arrive—one reason why technology and capital budgets are raided to cope with each new winter crisis. The NHS can be saved. But only if the people who run it see their job as keeping Britons healthy at home rather than treating them on the wards. ■

TEXT 2

NBC NEWS

As bird flu concerns grow, scientists race to develop new vaccines

The Department of Health and Human Services on Friday awarded $590 million in funding to Moderna in part to fast-track the development of an mRNA bird flu vaccine.

Jan. 17, 2025

By Berkeley Lovelace Jr.

As fears grow of a possible bird flu pandemic in humans, the federal government is pouring more money into the development of new vaccines, including an mRNA shot.

On Friday, the Department of Health and Human Services announced it's providing about $590 million in funding to Moderna in part to fast-track the development of an mRNA vaccine that targets the strains of bird flu currently circulating in wild birds, poultry and dairy cows.

The money is in addition to the $176 million HHS awarded the drugmaker in July to develop a bird flu vaccine.

The federal government already has two bird flu vaccine candidates in limited quantities in the nation's stockpile. Those shots use traditional vaccine technology, but take far longer to produce — a hindrance during an emergency like a fast-moving pandemic.

Dawn O'Connell, assistant secretary for preparedness and response at HHS, said an mRNA-based bird flu vaccine is important because the technology is faster to develop and easier to update than more traditional vaccines.

"When I think about the advantages of this technology, I think about the vulnerability that the country has in the early stages of any emerging threat," O'Connell said. "Because it can be manufactured quickly, if we began to see something sweep across the country quickly, it would allow us to move fast, to give the first line of protection to the American people."

That's something that health officials have so far said is unnecessary. The Centers for Disease Control and Prevention maintains that the risk to the general public is low.

Bird flu viruses typically don't infect humans, aside from sporadic cases in people who have close contact with infected animals.

Scientists have grown increasingly alarmed, however, since the virus took hold in dairy cows last March. It's since spread to at least 928 herds across 16 states, according to the Agriculture Department. The majority of the herds are in California.

There have been 67 confirmed cases in humans in the U.S., according to the CDC. One patient, an older person in Louisiana, has died. Nearly all of the people had contact with either dairy cows or poultry.

An mRNA bird flu vaccine

The federal government began working with Moderna in 2023 to develop mRNA influenza vaccines.

In addition to the bird flu vaccine targeting the strain currently in the U.S., called H5N1, the drugmaker will also continue work on a vaccine that targets the strain H7N9 in a phase 3 clinical trial.

Robert Johnson, director of the medical countermeasures program at HHS' Biomedical Advanced Research and Development Authority, said the government doesn't have a definitive timeline for when it expects an mRNA vaccine to be ready, noting that it will depend on the science and data.

Johnson added the investment shows federal health officials' view on mRNA technology, including its versatility and its ability to be used in different ways.

"It's really important that we look at the mRNA platform not just against H5, but against other strains of influenza, as well," Johnson said.

More countermeasures

Since the bird flu outbreak began in dairy cows, the primary tool that public health officials have relied on hasn't been vaccines but antivirals such as Tamiflu. It's given to patients infected with the virus and prophylactically to people exposed to sick animals.

As the virus continues to spread among wild birds, poultry and dairy cows — giving it more chances to mutate in ways that could make it easier to spread among people — federal health officials say the U.S. will need more tools to protect the public, most notably vaccines.

The National Institutes of Health announced earlier this month that it's providing $11 million in funding for additional research into countermeasures.

"We always want to be prepared for if there becomes episodes or sustained human-to-human transmission," said Dr. Michael Ison, chief of the respiratory disease branch within the division of microbiology and infectious disease at the NIH. "Along those lines, the best approach to that is vaccination."

The two vaccine candidates in the stockpile are regularly tested against currently circulating strains of bird flu, he said. While that means scientists won't need to start from scratch like with Covid, he said, the current shots still may not provide the best protection possible and are unlikely to provide protection against multiple variants.

"Ideally, we would like vaccines that don't need to be updated and provide cross protection irrespective of which virus emerges," Ison said.

Preparing for possible human spread

Ison said the government is preparing for a possible scenario that bird flu does become more easily transmissible to humans.

The NIH funding announced this month will also be used to help develop new medications, such as antivirals and monoclonal antibodies, Ison said. However, he said, the majority of the funding will go toward developing or enhancing vaccines.

Matthew Frieman, a professor of viral pathogen research at the University of Maryland School of Medicine, said he is among the group of researchers receiving new funding from the NIH.

Along with researchers at the University of Maryland School of Dentistry, Frieman is developing an adjuvant — a substance used in some vaccines that can help generate a stronger immune response — that could be added to H5N1 shots.

The work to develop a bird flu adjuvant has been going on for about three years, Frieman said, and the team is currently testing the adjuvant in mice to see how well it works and comparing it to other adjuvants currently used in humans.

They hope, he said, to move from the preclinical stage to early-stage clinical trials in about a year.

“You don’t want to wait until it’s everywhere and then you decide to make a vaccine,” Frieman said. “Since we know this virus is kind of perched, ready and able to spread with probably only a handful of mutations before it could jump, there’s a dire need immediately for vaccines to be tested.”

A universal vaccine

Ted Ross, global director of vaccine development at Cleveland Clinic in Florida, is working on a universal flu vaccine that could protect against all forms of influenza, including seasonal flu and the current bird flu strain spreading in dairy cows.

A universal flu vaccine has been a long-time goal of scientists. In 2018, for example, the National Institute of Allergy and Infectious Diseases, part of the NIH, launched a strategic initiative focused on developing one.

Ross’ group began getting money from the NIH in 2018 and has received additional funds through the agency’s new announcement.

While a bird flu pandemic isn’t happening right now, Ross said the threat keeps growing, emphasizing the need to prepare now.

“The difference between what we’re doing and what maybe some other groups are doing is that our vaccine candidate is able to not only neutralize what circulates today, but it can circulate and neutralize what circulates next year and the year after,” he said.

The vaccine has already been tested against the circulating strain in dairy cows**,** which Ross said it “neutralized very well.”

Ross said the vaccine is scheduled to enter phase 1 clinical trials sometime in 2026, but the “urgency” of H5N1 may move the trial date to sometime this year.

“What’s disconcerting is that it seems to be now more efficiently moving into mammals, going from birds,” he said. “Chickens are a big problem. Turkey is a big problem. But now, it’s getting into cows and pigs and cats, and seems to be very lethal.”

A better and broader vaccine

Dr. Ofer Levy, director of the precision vaccines program at Boston Children's Hospital, is working on another adjuvant for bird flu vaccines, as well as other vaccines for viruses, particularly one that works well in the very old, who he said often have trouble generating a strong immune response from vaccines.

Levy said research in mice, with support from NIH, has shown that the adjuvant, called PVP-037, generates a strong immune response.

They're still a couple of months away from releasing data, he said, as they want to test the adjuvant against the most recent strains of bird flu.

"We're currently doing the work to try to build a better and broader bird flu vaccine," Levy said. "Every life is precious and we want to protect our most vulnerable."

The goal, he said, is that adjuvant can be added to any vaccine to enhance it.

"It could be that this doesn't turn into a huge epidemic or pandemic, but we can't sit on our hands because the consequences of that would be very bad," Levy said.

TEXT 3

The Guardian

Arctic zombie viruses in Siberia could spark terrifying new pandemic, scientists warn

Threat of outbreak from microbes trapped in permafrost for millennia raised by increased Siberian shipping activity

Robin McKie

Sun 21 Jan 2024

Humanity is facing a bizarre new pandemic threat, scientists have warned. Ancient viruses frozen in the Arctic permafrost could one day be released by Earth's warming climate and unleash a major disease outbreak, they say.

Strains of these Methuselah microbes – or zombie viruses as they are also known – have already been isolated by researchers who have raised fears that a new global medical emergency could be triggered – not by an illness new to science but by a disease from the distant past.

As a result, scientists have begun planning an Arctic monitoring network that would pinpoint early cases of a disease caused by ancient micro-organisms. Additionally, it would provide quarantine and expert medical treatment for infected people in a bid to contain an outbreak, and prevent infected people from leaving the region.

"At the moment, analyses of pandemic threats focus on diseases that might emerge in southern regions and then spread north," said geneticist Jean-Michel Claverie of Aix-Marseille University. "By contrast, little attention has been given to an outbreak that might emerge in the far north and then travel south – and that is an oversight, I believe. There are viruses up there that have the potential to infect humans and start a new disease outbreak."

This point was backed by virologist Marion Koopmans of the Erasmus Medical Center in Rotterdam. "We don't know what viruses are lying out there in the permafrost but I think there is a real risk that there might be one capable of triggering a disease outbreak – say of an ancient form of polio. We have to assume that something like this could happen."

In 2014, Claverie led a team of scientists who isolated live viruses in Siberia and showed they could still infect single-cell organisms – even though they had been buried in permafrost for thousands of years. Further research, published last year, revealed the existence of several different viral strains from seven different sites in Siberia and showed these could infect cultured cells. One virus sample was 48,500 years old.

"The viruses we isolated were only able to infect amoebae and posed no risk to humans," said Claverie. "However, that does not mean that other viruses – currently frozen in the permafrost – might not be able to trigger illnesses in humans. We have identified genomic traces of poxviruses and herpesviruses, which are well known human pathogens, for example."

Permafrost covers a fifth of the northern hemisphere and is made up of soil that has been kept at temperatures below zero for long periods. Some layers have remained frozen for hundreds of thousands of years, scientists have discovered.

“The crucial point about permafrost is that it is cold, dark and lacks oxygen, which is perfect for preserving biological material,” Claverie told the *Observer* last week. “You could put a yoghurt in permafrost and it might still be edible 50,000 years later.”

But the world’s permafrost is changing. The upper layers of the planet’s main reserves – in Canada, Siberia and Alaska – are melting as climate change affects the Arctic disproportionately. According to meteorologists, the region is heating up several times faster than the average rate of increase in global warming.

However, it is not melting permafrost directly that poses the most immediate risk, added Claverie. “The danger comes from another global warming impact: the disappearance of Arctic sea ice. That is allowing increases in shipping, traffic and industrial development in Siberia. Huge mining operations are being planned, and are going to drive vast holes into the deep permafrost to extract oil and ores.

“Those operations will release vast amounts of pathogens that still thrive there. Miners will walk in and breath the viruses. The effects could be calamitous.”

This point was stressed by Koopmans. “If you look at the history of epidemic outbreaks, one of the key drivers has been change in land use. Nipah virus was spread by fruit bats who were driven from their habitats by humans. Similarly, monkeypox has been linked to the spread of urbanisation in Africa. And that is what we are about to witness in the Arctic: a complete change in land use, and that could be dangerous, as we have seen elsewhere.”

Scientists believe that permafrost – at its deepest levels – may contain viruses that are up to a million years old and so will be far older than our own species, which is thought to have emerged about 300,000 years ago.

“Our immune systems may have never been in contact with some of those microbes, and that is another worry,” said Claverie. “The scenario of an unknown virus once infecting a Neanderthal coming back at us, although unlikely, has become a real possibility.”

For that reason, Claverie and others are working with UArctic, the University of the Arctic – an international educational network in the polar region – on plans to establish quarantine facilities and provide medical expertise that could pinpoint early cases and treat them locally to try to contain the infection.

“We now face a tangible threat and we need to be prepared to deal with it. It is as simple as that.”

TEXT 4

THE CONVERSATION

Why resilience won't solve the mental health crisis among young people

January 9th 2025

Dusana Dorjee

Around 20% of eight to 16 year olds in the UK had a probable mental health disorder in 2023, according to NHS statistics. This is up from 12.5% in 2017. At the same time, a 2024 report from the Children's Commissioner for England found that more than a quarter of a million children were not able to access the mental health support they need.

Some have questioned whether we are dealing with a "genuine" mental health crisis or a different problem – a lack of resilience in children and young people. Resilience is the ability to bounce back from adversity, and higher resilience is linked to lower rates of mental ill-health in young people.

But the evidence around exactly what role resilience plays in mental health paints a more complex picture. What we do know is there are skills and actions that children can be taught to improve their mental wellbeing. But there's also a good argument for not ignoring other root causes of children's health problems.

Resilience often comes up in mental health discussions as a response to possible over-pathologising – the tendency to interpret even mild signs of distress or sadness as symptoms of mental illness. This in turn could undermine young people's resilience because they are not able to differentiate between normal variation in human emotions and mental ill-health.

While the research evidence of over-pathologising in young people is limited, it has been suggested that it might be a side-effect of increased mental health awareness education and campaigns. While such efforts reduce stigma around mental health, they may have increased the perception that disclosing issues with mental health is socially desirable.

A more balanced approach to mental health in education and society should teach young people both about symptoms of mental ill health to reduce stigma and about the normal range of emotions. This could involve noticing emotions without reacting to them – the non-judgmental awareness of emotions – and emotion labelling, since naming emotions we experience decreases their intensity. This may in turn enhance resilience.

But resilience can be misinterpreted as the need to be more "tough". This could lead to excessive reliance on strategies such as emotion suppression – putting on a brave face – to manage emotions and this could undermine mental health.

Society and mental health

Robust research shows that social factors, particularly poverty and discrimination, lead to poor mental health. Indeed, in the 2023 NHS survey, rates of probable mental health disorders were

much higher in UK children whose parents didn't have enough funds to support their children's out-of-school activities.

Focusing on resilience as a solution to the mental health crisis risks shifting responsibility for mental health onto those affected, rather than calling out and changing policies and systems contributing to poor mental health.

The impact of global crises, including climate change, is another example of this. The NHS survey found that over half of young people aged 17-25 reported feeling worried about the climate crisis. Claiming that children and teenagers should just be more resilient can distract from the responsibility adults face to take climate action.

Similarly, problematic social media use may undermine young people's mental health. Social media content may celebrate the achievement of extrinsic goals, which rely on the approval of others: fame, wealth and beauty. Research has linked a focus on extrinsic goals to poor mental health.

Teenagers may be particularly vulnerable to the addiction-like effects of social media due to normal developmental changes in their brains. Clearly, the solution here needs to include more than enhancing resilience in young people. It requires action from social media companies, too.

Overlapping approaches

What's more, mental ill-health prevention involves much more than resilience. It's tempting to think that we have found the one approach, in this case resilience, that could shift the mental health crisis. But resilience closely overlaps with other mental health concepts and approaches. These include self-regulation – the ability to manage our thoughts, emotions and behaviour.

For example, resilience and self-regulation are often fostered by the same approaches – the development of social-emotional skills or mindfulness training. And if we look at the brain activity linked to resilience and self-regulation, we find close overlaps there too.

Instead of relying on a single concept or approach, we should focus on the key skills underpinning mental health and wellbeing shared across different approaches.

These skills include fostering emotional awareness, as well as the ability to manage rumination – repeated negative thoughts about past events – and reactivity to emotions. Building connections is important, as well as cultivating gratitude and awe.

Our wellbeing is also boosted by taking action that benefits others and finding wholesome meaning and purpose in life. All of these skills can protect mental health and wellbeing.

For effective prevention, we need to start thinking about mental health skills in the same way we are thinking about fostering maths and reading skills. Similarly, acquisition of mental health skills requires time, careful scaffolding, continuity, repetition and lots of practice.

This should be reflected in Ofsted assessments and much more comprehensive and clearer guidance on mental health curricula grounded in robust research.

Poor mental health can undermine young people's academic outcomes and their lifelong prospects. It is time to recognise that piecemeal approaches, such as a focus on resilience, are just pieces of the puzzle. They are not the much needed transformational solutions to the mental health crisis.

TEXT 5

Plastics and pesticides: Health impacts of synthetic chemicals in US products doubled in last 5 years, study finds

By Sandee LaMotte

Wed July 22, 2020

The proof is piling up: Many synthetic chemicals can harm your health and that of your children.

Evidence has doubled in the last five years about the negative impact on our health of endocrine-disrupting chemicals in plastics, pesticides, flame retardants and other merchandise, according to a new review of recent literature.

“It’s a global problem. These are chemicals used in consumer products all across the world,” said senior author Dr. Leonardo Trasande, chief of environmental pediatrics at NYU Langone.

The new review, published Tuesday in The Lancet Diabetes and Endocrinology journal, lists recent studies that have linked endocrine-disrupting chemicals with weight gain in women and polycystic ovary syndrome, a significant cause of infertility. These chemicals have also played a role in semen damage and prostate cancer in men, along with a host of other health concerns.

In January, Trasande and his colleagues compared early life exposures to lead to studies on the exposure of fetuses in the womb to pesticides, the methylmercury found in fish and flame retardants called polybrominated diphenyl ethers, or PBDE.

PBDE flame retardants, the study found, are the “greatest contributor to intellectual disability” in children, resulting in a total loss of “162 million IQ points and over 738,000 cases of intellectual disability.”

There’s also the health care costs of such exposure, Trasande said. The same study estimated the health costs of endocrine-disrupting chemicals in the United States at $340 billion a year. In Europe it was markedly less, some €163 billion (US $187 billion).

This “explosion of evidence” over the last five years proves current regulations in the US are inadequate to protect citizens from the dangers of endocrine-disrupting chemicals, said Trasande, a leading expert in childhood environmental exposures.

And while Europe leads the US in bans on pesticides and minimizing human exposure, there is still much to be done there and around the world, according to a second analysis also published Tuesday in The Lancet.

“This scientific issue has matured, accumulated substantial and consistent scientific evidence, and repeatedly shown that ‘chemicals of concern’ and their replacements have many if not the same effects on human health,” Trasande said.

“That’s why we are calling for an international agency to do research in endocrine disruption,” Trasande added, suggesting it could be modeled after the International Agency for Research on Cancer.

The American Chemistry Council, which represents US chemical, plastics and chlorine industries, said the term "endocrine disruptor" was "widely misused," and provided the following statement:

"To stay below ranges of exposure determined to be safe, consumers should read product labels closely and follow directions carefully. Some exposures will produce no response at all, while others may bring about temporary responses to which the body can naturally adjust and maintain its normal function. The primary focus should be on preventing over-exposures so that any potential health risks can be avoided."

A chemical revolution

"I want to say one word to you. Just one word," said party guest Mr. McGuire to Dustin Hoffman's character Benjamin Braddock in the 1967 movie classic "Mrs. Robinson."

"Plastics."

Today we can add a host of other chemical discoveries to the growing list of products that have made Western life easier, cleaner and supposedly safer.

But as our use of these products grew, science learned of a flip side: Many of these chemicals can leach into our air, water and soil, and ultimately into our bodies. There they can significantly disrupt how our endocrine system – our hormones – regulate mood, sex and tissue function, growth, metabolism and more.

Some five years ago, the World Health Organization and United Nations reported on 15 ways that chemicals used in plastics, pesticides and flame retardants could affect babies from the womb to adulthood, including:

- IQ loss and intellectual disability
- Autism and attention-deficit disorder
- Childhood and adult obesity
- Low testosterone, male infertility and testicular dysfunction
- Endometriosis and fibroids in women.

The new analysis published Tuesday now adds another 17 such health impacts to the list and broadens the number of known chemicals involved. The review found evidence is particularly strong for a link between perfluoroalkyl and polyfluoroalkyl substances, or PFAS. Among the conditions PFAS chemicals have been tied in recent research are:

- Impaired glucose tolerance
- Gestational diabetes and reduced birth weight in babies
- Reduced semen quality
- Child and adult obesity
- Polycystic ovarian syndrome and endometriosis
- Breast cancer

Other plastics and pesticides are linked to adult diabetes, prematurity, reduced anogenital distance in boys, reduced semen quality and prostate cancer. An even stronger connection between insecticides, plastics and flame retardants and cognitive deficits and attention-deficit disorder in children has been shown by newer studies.

PFAS do not degrade

One of the problems is that as soon as science identifies a potential chemical hazard and it is removed, industry creates another. If they are closely tied to the originals, the new chemicals can produce very similar health risks.

Take PFAS, for example, which are used to make nonstick cookware, stain-resistant clothes, infection-resistant surgical gowns and drapes, cell phones, semi-conductors, commercial aircraft and low-emissions vehicles.

PFAS are made up of a chain of linked carbon and fluorine atoms, which do not degrade in the environment.

“In fact, scientists are unable to estimate an environmental half-life for PFAS, which is the amount of time it takes 50% of the chemical to disappear,” the National Institute of Environmental Health Sciences wrote.

While two of the most ubiquitous PFAS – perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) – were removed from consumer products in the US in the early 2000s, the industry has spawned many more: More than 4,700 types of PFAS existed in 2018, a number that rises as industry invents more new forms.

PFAS have been detected in the blood of 97% of Americans, one 2015 report by the US Centers for Disease Control and Prevention found.

What to do?

“It’s not hopeless,” Trasande said. “There are safe and simple steps families can take in their daily lives to limit exposure.”

Many environmental advocacy groups have clear, simple suggestions on their websites for how to reduce you and your family’s exposure to endocrine-disrupting chemicals.

Take PFAS, for example. The newest category of chemicals for which the science is clocking human health effects are found in nonstick cookware, oil and water-resistant clothing, stain-resistant furniture, carpet, luggage and clothing, greasy or oily packaged fast foods and microwave popcorn, personal-care products made with Teflon™ and ingredients that include the words “fluoro” or “perfluoro.”

“Avoiding the purchasing and use of those products can potentially also reduce exposure,” Trasande said. “Use stainless steel or cast iron as an alternative to non-stick. Avoiding canned food will lower BPA exposure; choose glass and products packaged in glass instead. Avoid microwaving and machine dishwashing plastics of any kind.

“When it comes to flame retardants, recirculating the air and using a wet mop is an effective way to suck up that persistent dust that accumulated in homes from these products,” he said. “None of the steps I’ve described break the bank. They don’t require a PhD in chemistry. People can make an enormous impact on this problem, so one cannot lose hope.”

TEXT 6

The Guardian

‘A ticking time bomb’: healthcare under threat across western Europe

They’re supposed to be among the world’s best systems, but ageing populations, Covid and workforce issues are biting

Jon Henley, **Kate Connolly** *in Berlin,* **Sam Jones** *in Madrid and* **Angela Giuffrida** *in Rome*

Wed 14 Dec 2022

For decades, western Europe’s national healthcare systems have been widely touted as among the best in the world.

But an ageing population, more long-term illnesses, a continuing recruitment and retainment crisis plus post-Covid exhaustion have combined, this winter, to create a perfect healthcare storm that is likely to get worse before it gets better.

“All countries of the region face severe problems related to their health and care workforce,” the World Health Organization’s Europe region said in a report earlier this year, warning of potentially dire consequences without urgent government action.

In France, there are fewer doctors now than in 2012. More than 6 million people, including 600,000 with chronic illnesses, do not have a regular GP and 30% of the population does not have adequate access to health services.

In Germany, 35,000 care sector posts were vacant last year, 40% more than a decade ago, while a report this summer said that by 2035 more than a third of all health jobs could be unfilled. Facing unprecedented hospital overcrowding due to “a severe shortage of nurses”, even Finland will need 200,000 new workers in the health and social care sector by 2030.

In Spain, the health ministry announced in May that more than 700,000 people were waiting for surgery, and 5,000 frontline GPs and paediatricians in Madrid have been on strike for nearly a month in protest at years of underfunding and overwork.

Efforts to replace retiring workers were already “suboptimal”, the WHO Europe report said, but had to now be urgently extended to “improve retention and tackle an expected increase in younger people leaving the workforce due to burnout, ill health and general dissatisfaction”.

In a third of countries in the region, at least 40% of doctors were aged 55 or over, the report said. Even when younger practitioners stayed despite stress, long hours and often low pay, their reluctance to work in remote rural areas or deprived inner cities had created “medical deserts” that were proving almost impossible to fill.

“All of these threats represent a ticking time bomb … likely to lead to poor health outcomes, long waiting times, many preventable deaths and potentially even health system collapse,” warned Hans Kluge, the WHO regional director for Europe.

In some countries the worst shortages are among GPs, with France in particular paying the price for previous planning errors. Back in 1971, it capped the number of second-year medical students through a so-called *numerus clausus* aimed at cutting health spending and raising earnings.

The result was a collapse in annual student numbers – from 8,600 in the early 1970s, to 3,500 in 1993 – and while intakes have since climbed somewhat and the cap was lifted altogether two years ago, it will take years for the size of the workforce to recover.

Even though 10% of France's GPs now work past retirement age, older doctors leaving the profession outnumbered newcomers entering it last year, when numbers were still 6% down on what they were even a decade ago. It could be 2035 before the country reaches a satisfactory ratio of doctors to inhabitants nationally.

Local provision, however, is another matter: GP ratios range from 125 or more per 100,000 people in some wealthier neighbourhoods to less than half that in remote rural France or deprived suburbs such as Seine-Saint-Denis.

"In fact, about 87% of France could be called a medical desert," the junior health minister Agnès Firmin Le Bodo said last month, pledging a "complete rebuild" of GP services through more multi-function health centres and remote consultations – but no obligation, as yet, on doctors to set up in poorly provisioned areas.

This winter's flu epidemic, coming on top of Covid-19, had exposed the system's failings, creating "a crisis not just for France's hospital sector but for all of French healthcare", said Arnaud Robinet of the French Hospitals Federation, warning that the service was "no longer capable of responding systematically" to emergencies.

In Germany, which spends more on healthcare than almost any other country in the world, hospitals are a greater concern, with this winter's wave of respiratory syncytial virus (RSV) in young children triggering alarm across the country.

Amid reports of overcrowded casualty departments and parents forced to sleep in hospital corridors or travel hundreds of kilometres for a child's treatment, the Süddeutsche Zeitung said the country was witnessing "what it means when a system implodes … in scenes which for a long time might have seemed unimaginable".

In a petition to parliament titled: "Alert level red – hospitals in danger", the German Hospital Society (DKG) again highlighted a chronic lack of staff as the main problem, noting that many hospitals had had to temporarily close casualty departments due to a lack of doctors and nurses.

More than 23,000 posts remain unfilled in Germany's hospitals after several years of low recruitment and recent mass resignations, particularly in intensive care and operating theatres, by staff citing a workload so extreme that some were unable to take even a short break or go to the toilet.

The health minister, Karl Lauterbach, has announced a €300m (£260m) aid package for paediatric clinics and an as yet unspecified "revolution in hospital care" putting "medicine first rather than the economics", plus a plan to move nurses and doctors around to match demand that was dismissed as "absurd" by leading medics.

"The problem is we have no wards that could do without staff, because they're all already only able to offer the minimum level of care," said Christine Vogler of the German Council of Nursing (DPR). "This can only be called an act of desperation."

Christoph Spinner, a consultant in infectious diseases at Munich's University Clinic, said the country's health system was "without doubt facing enormous challenges", while a paediatrician, Nina Schoetzau, said the state of Britain's NHS was "a taste of things to come" for Germany.

In Spain, the winter has already prompted overstretched frontline staff to take strike action. The healthcare crisis, laid bare during the Covid pandemic, follows decades of under-investment, competition between regions for medical staff, and the lure of better pay and conditions abroad.

Much of the discontent has focused on the Madrid region, where in mid-November at least 200,000 people took to the streets to defend public healthcare against creeping privatisation and to express concern over the regional government's restructuring of the primary care system.

Ángela Hernández, a surgeon and general secretary of Madrid's AMYTS medical association, said the situation in paediatric services was "practically desperate", adding that it was also "about demand: no one is telling people that if resources are limited, services have to be used wisely".

Politicians had a responsibility to "explain the situation to people", Hernández said. "But because they do the exact opposite in Madrid and in Spain, they raise people's expectations."

The Metges de Catalunya (Doctors of Catalonia) union also plans a two-day strike next month to protest against "overload, disdain and precariousness". Xavier Lleonart, its general secretary, said the pandemic was "the icing on the cake" but the current situation was as foreseeable as it was depressing.

Some Spanish doctors were so burned out they were taking early retirement, despite the hit to their pensions, he said, adding that the chief imperative was to make the profession more attractive to stop the "haemorrhage" of professionals.

"People say the best capital a company has is its human capital," Lleonart said. "The problem is that in health the human capital has been systematically mistreated until it has said: enough's enough."

Italy's public health service, too, faces serious staff shortages, compounded by the pandemic, which triggered an exodus of staff from the profession, taking early retirement, or switching to roles in the private sector.

Regional governments have signed contracts with freelance medics to cover hospital shifts where needed, highlighting the low salaries of Italy's public health sector.

"There are holes that need to be filled everywhere, especially in emergency units," said Giovanni Leoni, vice-president of an Italian doctors' federation. "The issue is that freelances earn two to three times more – up to €1,200 for a 10-hour shift."

Many medics had left public sector roles "before their time", Leoni added. "They have found other types of jobs in the private sector – roles that mean they don't have to do night shifts, or weekends."

Italian medics are holding a demonstration of "the invisibles" later this week. "We're invisible for the government," said Leoni. "Salaries for Italian doctors need to be at the same level as those in Europe. Currently, they're among the lowest."