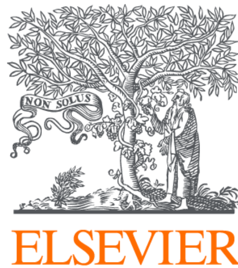

Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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For more on **COVID-19 prison statistics** see https://www.gov.uk/government/statistics/hmpps-covid-19-statistics-january-2021

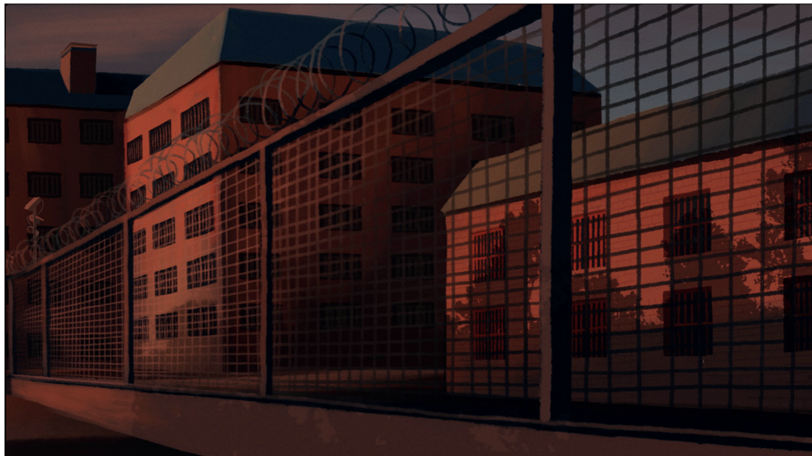
For more on the **health of jail and prison inmates in the USA** see *J Epidemiol Community Health* 2009; **63:** 912–19

For the **tweet from Prison Officers Association** see https://web.archive.org/web/20210303115005/https://twitter.com/POAnatchair/status/1352932598595661824

For the **survey on COVID-19 vaccines** see EP:IC. The COVID-19 vaccine - A summary of patient views (in press). 2021. https://epicconsultants.co.uk/our-work

considered low priority by default. Without a whole-prison approach, prisons will not achieve a good level of protection, or be able to safely restart family visits and vital educational and rehabilitation activities, until late in the rollout.

Whole-prison approaches can help build trust and increase uptake. Supporting this view, a peer support organisation recently surveyed 805 people in nine prisons in England about their attitudes to COVID-19 vaccines. 78% said they would accept a vaccine if offered. Concerns were similar to those reported in community settings, including side effects and the speed of vaccine development. Also similar to community surveys, younger participants and those from black and minority ethnic groups were less likely to say they wanted a vaccine. Some participants questioned why vaccines would be given to certain prisoners, or prisoners but not staff. The report concluded that simultaneous vaccination of whole prisons including staff could alleviate mistrust and expedite a return to a normal regime.



Still courtesy of Tjoff Koong Animation Studios, Passion Pictures Animation Studios, taken from Stories from the Inside— Hospital Care for People in Prison

There are also logistical arguments for vaccinating whole prisons at once. Vaccination of the small numbers of people in any specific risk group in a single prison is inefficient, often resulting in leftover doses. Logistical and security considerations also mean that leftover doses cannot be easily used in other community settings.

Prisons are struggling after repeated prison lockdowns and restricted regimes. Some prisoners have been awaiting trial in these conditions. The prolonged isolation and separation from families would, under normal circumstances, breach human rights. With vaccination now possible, these conditions can no longer be accepted. National policy decisions that delay vaccines in prisons could be opposed on human rights grounds, particularly given that the government has a duty of care to people in custody.

Large, explosive outbreaks in crowded institutional settings remain a major ongoing risk even as wider population incidence falls, affecting prisons' ability to function and risking seeding further infections outside of prisons through court visits, hospital admissions, and prison release. Early whole-institution vaccination can prevent outbreaks, ensure the basic rights of people in prisons, and protect staff and the wider community.

We declare no competing interests.

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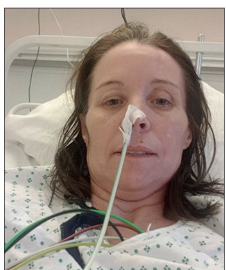
Patient perspectives
COVID-19 survivor experiencing long-term symptoms



Anne Cahill

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Anne Cahill of Dublin, Ireland, would describe herself as a relatively fit and healthy woman in her early 50s, married to husband Tony and with four adult children. She could not have known that the new coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was going to hit her like a hurricane, nearly taking her life and changing her outlook on life and health forever.

As panic regarding coronavirus gradually began to arrive in Ireland and the neighbouring UK in early March, 2020, like most of the public, Anne struggled to understand the deluge of information being thrown at her and how the virus might impact her and her family's life, or the risk that she might be infected. It was on March 15, while out walking with Tony, she began to feel ill. “It was a range of bad symptoms”, Anne explains. “Feeling hot and cold, headaches, throwing up—I was on the sofa barely able to move. Across the next few days, it got worse.”

Although her general practitioner (GP) had told her to tough it out, eventually Anne and Tony decided they would have to call an ambulance. “The paramedics told me that my temperature was not above 38°C so I couldn't be taken in for COVID”, she recalls. “But I just told them, you have to take me in, I'm dying here.” As new COVID-19 protocols had been brought in at the nearby St James' Hospital, Tony was not able to go with Anne to the accident and emergency (A&E) department, making her even more anxious. “It was like a ghost town in there—normally you

cannot move in the A&E waiting room as it is so crowded. It was the first time I understood how serious this pandemic was becoming. People were even scared to go to hospital for emergencies", Anne says. She was taken to a cubicle for treatment and had blood and swabs taken. 3 h later, she was told she had tested positive for SARS-CoV-2. In addition, she had a serious kidney infection that required immediate antibiotic treatment.

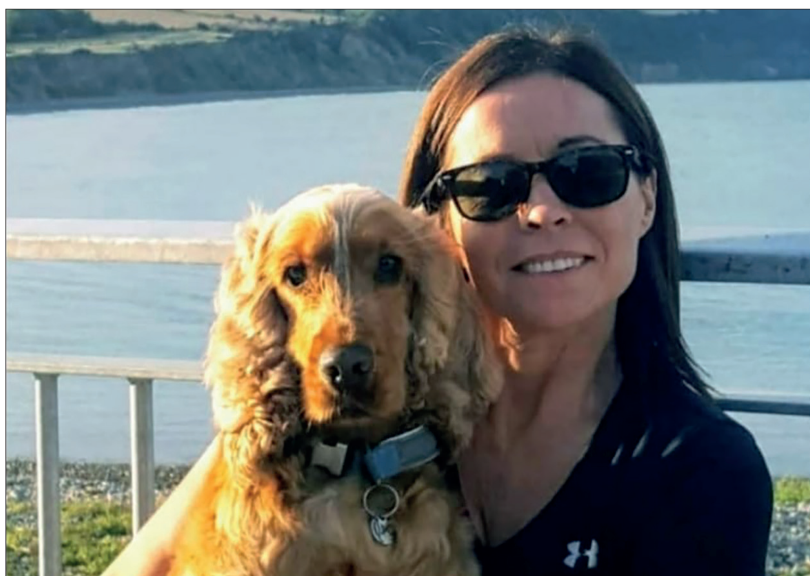
Anne was moved to a ward where there were three other patients with COVID-19: two elderly women who seemed to have got over the worst of their infection, and another man with cancer who was moved to intensive care. Anne still wonders what happened to him. It took doctors a few days to match up her kidney infection to the correct antibiotic. And while her kidney infection subsided, across her few days on the ward, Anne's breathing began to deteriorate, with a chesty, persistent cough developing. On March 24, the staff nurse on duty told her she was "getting worse not better", and summoned doctors from intensive care, and a team arrived to assess her.

"When they told me I'd have to go to intensive care, I didn't understand what it meant", Anne says. "I thought I would just be given other treatments—I didn't know I'd be put into an induced coma and put on a ventilator." Anne was given the chance to call Tony, but because she was not completely herself mentally or physically, she didn't appreciate it might have been their last ever phone call. "The nurse looked at me because I handed the phone back to her quite fast; she knew how serious this was, but it still wasn't quite hitting me."

Given a sedative to be intubated, consciousness slipped away from Anne, and she was kept in an induced coma for the next 9 days while a ventilator did her breathing for her. She suffered various hallucinations that are common for people in this position. "Some of it felt so real", she said. Many of these vivid dreams contained her family members, meaning that when, 9 days later, she was brought out of her coma, she could not tell what had actually happened and what she had imagined. "I felt very sick when I woke up; in terrible pain from the intubation and this head-banging nausea. I also felt like I was a bit yellow, and was asking the nurses if I'd had jaundice", Anne explains. "Those first 2 days after waking up, but still in intensive care, I'm not sure what actually happened. I thought one moment I saw my husband at the door and I was screaming for the nurses to let him in? Later, I was too nervous to ask the nurses if I'd actually done that."

The medical team continued to offer Anne morphine and anti-nausea drugs to help her recover and manage her pain. She was eventually moved to the high dependency ward, where there were two other patients. This was where her head started to clear, and she began to ask for her personal items back and also about what had been happening. From here, she was moved to a private room in the hospital. "You would think that the privacy would be nice, but when you've spent your life with your husband and four children, you are used to having lots of people around. This was the opposite. Even though I knew I was getting better, the silence in that room was horrible. And because of the fear of the disease, the staff that came in, such as nurses and cleaners, did not want to stay. They were in and out so fast. I understand it—they were scared." Anne is also slightly embarrassed as she recalls her many conversations with her post-intensive care doctor, whom she constantly demanded to discharge her from the hospital. "How he put up with me, I do not know. I know they kept me in for my own good, but all I ever did was demand he let me out of the hospital!"

Anne's final days in the hospital were over the Easter long weekend, 2020, and she had seen a physiotherapist just before that weekend, and had struggled to walk. She also knew she had to have a negative test for SARS-CoV-2 before being permitted to leave. On Easter Saturday, she told a little white lie to one of the nurses, namely that doctors had said she could take a test over the weekend, ready to be discharged after the weekend if she was well. The nurse gave her the test, which was negative. And when the physio returned on Tuesday morning (Monday had been the Easter Monday public holiday), Anne's strength had returned and she was told she could go home. She rang Tony immediately, and hurried into the lift without saying goodbye to any of the staff. "I wish I hadn't done that now", she says, "but I was just so afraid that having been there so long, they might find another reason for me to have to stay. I realise that's silly, but that's how I felt at that moment".



Anne Cahill

Like all the early cases of COVID-19, Anne had no idea what recovery from this new virus would look like. She soon realised it would be a long process. Continual exhaustion meant she spent most days on the sofa, or, in the good weather that Ireland enjoyed in the first wave of COVID-19, she was able to sit in the garden. Walking upstairs was a huge effort, leaving her gasping for breath at the top. Tony has been her rock throughout these months, helping out around the house so that Anne could rest whenever she needed to. He has also helped her with simple things she used to take for granted, like having a bath and washing her hair. “I don’t know how I could have managed without Tony”, Anne says. “I don’t know how people would manage after what I went through without a partner to help them.” Other family members have also helped Anne as much as they can. “My daughter had to help me blow dry my hair in the early period of my recovery. I honestly felt I was closer to 90 years old than 50 in those early days.”

She was also unable to resume her job in a retail outlet for 6 months. “Going to the shop, standing in queues, all of that was too much”, Anne explains. She also had to wean herself off the various medications including painkillers. One of the GPs at Anne’s GP surgery has also been instrumental in her recovery. Another GP from that same surgery had been knocked down by COVID-19 and was treated in intensive care at around the same time as Anne. “The doctor helped me manage the medications I needed as I got better, and supported me while I reduced the doses of these drugs down to nothing.”

Anne has also participated in a medical study for the first time. One of the doctors who treated her at St James’ Hospital invited her to take part in a study analysing long-term symptoms of COVID-19. The study, presented at a European congress on coronavirus in September, 2020, made news headlines around the world. It found that persistent fatigue occurs in more than half of patients recovered from COVID-19, regardless of the seriousness of their infection.

In September, 2020, Anne returned to work. She was not the same Anne that her colleagues remembered. Although she feels she is 70% back to her normal self, she is understandably very nervous around crowds, and becomes immediately anxious when she sees people not observing physical distancing or wearing a mask in her workplace. “One colleague recently removed her mask while trying to talk to me, and I nearly lost my temper with her”, Anne explains. “And over the Christmas period, when our shop filled up, there were too many people for me to cope with and I began to have a panic attack. My bosses were very understanding and let me go home and return when things were quieter again after the Christmas period.”

Day to day, she manages her energy use and does not try to do too much in any one day. “It’s shopping, or cleaning, not both!” she laughs. “Tony and I still love to go out on a walk with our dog, but after that, I’m done for the day!” Reflecting on her near-death experience, Anne says one thing she will never forget is the fear and confusion on the faces of the doctors and nurses being confronted with this new disease. “They were scared too. They’ve learned so much about how to treat COVID since I was in hospital and are learning more every day. I think I would have preferred to be a second wave patient”, Anne says. Her husband was told twice in a phone call with medical staff that Anne might not make it through the night. “He wasn’t going to get rid of me that easily”, she laughs. “It was very tough on my family though. On many families. Many people lost someone and I was one of the lucky ones.”

She is looking forward to receiving her vaccine and hoping that life can return to normal for everyone in the not too distant future. “Until then, I am like the COVID police”, she says. “I think I will be the very last person to take off my mask.”

Tony Kirby