Outcomes of COVID-19 patients admitted to Australian intensive care units during the early phase of the pandemic

To the end of June 2020, patients admitted to Australian ICUs with COVID-19 requiring invasive ventilation had lower mortality and a longer length of stay than has been reported globally. These findings highlight the importance of ensuring adequate local ICU capacity, particularly with the recent increase in COVID-19 infections in Australia. MJA 16 September 2020

Live-streamed ward rounds: a tool for clinical teaching during the COVID-19 pandemic

The live-streamed teaching strategy can be applied to all areas of medicine and many clinical scenarios, including ward rounds and clinical handover rounds. This strategy is one of the many that the University of Newcastle plans to use to provide ongoing clinical teaching during the COVID-19 pandemic. Being adaptable and flexible, cognisant of costs and driven by evidence are critical features of delivering medical education and contemporary medical practice. MJA 16 September 2020

COVID-19 and suicide in older adults

There has been recent important discourse about the adverse impact of coronavirus disease 2019 (COVID-19) on mental health, with modelling from the Brain and Mind Centre predicting increases in suicide in the wake of the pandemic. Links with the economic downturn have been emphasised, with financial stressors and loss of productivity among the youth and working adults playing a large part, leading to a call for proactive investment in mental health services. This is of undisputed, urgent importance. However, there has been relative silence about the effects of the pandemic on suicide risk in older adults, especially men aged 85 years or over, who have the highest rate of suicide of all age groups in Australia. MJA 16 September 2020

Interpreting the effect of social restrictions on cases of COVID-19 using mobility data

Social restrictions used in the Coronavirus (COVID-19) pandemic remain contentious. Coupling data for COVID-19 cases with mobility trends offers insight into the efficacy of restrictions in Australia, Sweden and South Korea. Restrictions have reduced spread, however the degree of restrictions as the pandemic progresses remains a key challenge. MJA 14 September 2020

The probability of the 6-week lockdown in Victoria (commencing 9 July 2020) achieving elimination of community transmission of SARS-CoV-2

Modelling suggests that elimination could have been achieved if Victoria had gone into full stage 4 lockdown immediately from 9 July. MJA 4 September 2020

Recovery from the pandemic: evidence-based public policy to safeguard health

Australia has, thus far, avoided the high COVID-19 case numbers and death rates seen in some other countries because of evidence-based decision making. It is essential that decisions about the stimulus for economic recovery are similarly grounded in evidence. The health and wellbeing of current and future generations of Australians depend on it. MJA 2 September 2020

Modelling the impact of reducing control measures on the COVID-19 pandemic in a low transmission setting

Policy changes leading to the gathering of large, unstructured groups with unknown individuals (e.g. bars opening, increased public transport use) posed the greatest risk of epidemic rebound, while policy changes leading to smaller, structured gatherings with known individuals (e.g. small social gatherings) posed least risk of epidemic rebound. In the model, epidemic rebound following some policy changes took more than two months to occur. Model outcomes support continuation of working from home policies to reduce public transport use, and risk mitigation strategies in the context of social venues opening. Care should be taken to avoid lifting sequential COVID-19 policy restrictions within short time periods, as it could take more than two months to detect the consequences of any changes. MJA 2 September 2020

COVID-19 and the Indo-Pacific: implications for resource-limited emergency departments

This article explores the impacts of the COVID-19 pandemic on resource-limited EDs across the Indo-Pacific. It considers the unique challenges for the region and describes opportunities for building system resilience at a time of unprecedented demand for emergency care. MJA 31 August 2020
Respirator fit-testing: busting the myths
Currently in Victoria, health care workers make up more than 15% of all new cases of COVID-19, a rate much higher than the general population and higher than was seen in Italy in March 2020 at the height of the first wave of the pandemic. The risk to health care workers in this pandemic is real; globally, over 3000 have died from the disease. Given that health care settings are high risk work environments for exposure and infection during an outbreak, ensuring that health care workers are reasonably protected must be a priority of governments and employers. MJA Insight 31 August 2020

It’s not just old people: obese young adults are ending up critically ill in hospital with Coronavirus
Early evidence from China suggested critical illness due to COVID-19 was more likely in the presence of common health conditions including hypertension, diabetes and cardiovascular disease. New evidence from the UK, China, France and USA suggest a possible link between obesity and more severe coronavirus disease. Weight appears to be an important risk factor for severe coronavirus disease, especially for young adults. MJA 26 August 2020

Alternative screening protocols may miss most cases of gestational diabetes mellitus during the COVID-19 pandemic
In regions without significant community spread of COVID-19, modifying sample collection procedures to ensure strict physical distancing and having dedicated collection centres for vulnerable populations may be better than using deficient diagnostic criteria. MJA 25 August 2020

The perspectives of infectious diseases physicians and clinical microbiologists currently engaged in the response to COVID-19
Infectious diseases (ID) physicians and microbiologists are pivotal in guiding the response to the COVID-19 pandemic, ranging from managing cases and coordinating local responses to establishing timely and accurate diagnostic testing. The authors conducted a survey of ID physicians and microbiologists in Australia and New Zealand in early March to assess the impact on workload and the perspectives of ID physicians in the pre-pandemic period. MJA 21 August 2020

Fit-testing of N95/P2-masks to protect health care workers
- In the context of COVID-19, well fitted respirators e.g. N95/P2-masks are recommended as part of personal protective equipment when performing aerosol generating procedures.
- Fit-checking is recommended prior to donning a respirator. However, fit-checking is unreliable in detecting proper fit.
- Fit-testing is recommended to ensure proper fit of respirators for individual health care worker and is required to comply with respirator standards. However, fit-testing is not performed in all health care settings.
- The small cost of performing fit-testing has to be compared to the welfare of the health care workers as well as potential cost of sick leave or legal costs.
MJA 12 August 2020

COVID-19, children, and schools: overlooked and at risk
It is widely thought that children are much less susceptible to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection than adults and do not play a substantial role in transmission. However, emerging research suggests this perception is unfounded. Seroprevalence and contact tracing studies show children are similarly vulnerable and transmit the virus to a meaningful degree. Research suggesting otherwise is hampered by substantial bias. Additionally, large clusters in school settings have been reported, with implications for the control of community transmission. Risk-reduction strategies must be implemented in schools as a matter of urgency. MJA 12 August 2020

Victoria’s response to a resurgence of COVID-19 has averted 9,000-37,000 cases in July 2020
The resurgence of COVID-19 in Victoria led to multiple control measures being introduced in early July; however, the ongoing high number of daily cases has led to concern about the impact of the measures on COVID-19 transmission. We analysed daily diagnosed COVID-19 cases in Victoria, examining the effectiveness of control measures to date. We estimate that control measures have
reduced the reproduction ratio from 1.75 to 1.16 and averted 9,000–37,000 infections between 2 and 30 July. Despite this reduction, there remains significant ongoing growth, with an estimated further 14% reduction in transmission required to control the epidemic. MJA 4 August 2020

Considerations for cancer immunotherapy during the COVID-19 pandemic
Immunotherapy is a major treatment modality for cancer, with specific considerations during the COVID-19 pandemic. Although immune checkpoint inhibitors (ICI) do not cause immunosuppression, they can cause immune-related adverse effects (irAEs) in a wide range of organ systems. Immune-mediated pneumonitis can complicate the diagnosis of and potentially aggravate COVID-19 pneumonia. Furthermore, severe irAEs require treatment with corticosteroids and sometimes additional immunosuppressive agents, which may predispose patients to opportunistic infections. The use of combination immune checkpoint blockade is associated with highest risk of irAEs, and possible vaccination-related complications, requiring careful patient selection. Clinicians should be aware of implications of ICI therapy complications during the COVID-19 outbreak, and follow updated guideline practices to minimise patient harm. MJA 4 August 2020

Prolonged PCR positivity in COVID-19 health care workers: Implications for practice guidelines
Current DoH guidelines specify that HCW with COVID-19 infection must be PCR negative on at least two consecutive specimens before return to work. Of eleven HCW, the median time from PCR positivity to the 2nd negative swab was 32.5 days (range 11-53 days). Revision of DoH guidelines may be warranted. MJA 30 July 2020

Tenecteplase (and common sense) in short supply during COVID-19 pandemic
The COVID-19 pandemic has compromised pharmaceutical supply chains across the world. During the pandemic, there has been unprecedented demand for Tenecteplase in Australia. This could lead to a period of Tenecteplase being unavailable in Australia. Concerningly, recent proposals (accelerated during the COVID-19 crisis) to adopt Tenecteplase as the recommended thrombolytic agent for stroke reperfusion will put at risk access of acute myocardial infarction (MI) patients to Tenecteplase, particularly in rural Australia. Tenecteplase has level I evidence as a thrombolytic for MI, but not yet for acute stroke, where the closely related agent Alteplase is the only licensed stroke thrombolytic. MJA 30 July 2020

Indigenous mental health research and COVID-19
Without a doubt, the impact of the COVID-19 pandemic on Indigenous research has been substantial. Ongoing challenges will continue to be faced and implications will continue to arise into the future. As an Indigenous-led and community-designed trial, the unique insights we have gained because of necessary protocol amendments have proven to be immensely valuable for future design and delivery of clinical trials involving Indigenous communities. MJA Insight 20 July 2020

COVID-19 and ethics: lessons from the Netherlands
The coronavirus disease 2019 (COVID-19) pandemic has caused and still is causing immense pressure on health care systems in many countries, due to the vast number of patients. The care required has threatened to overwhelm both community care and hospitals. In order to manage the number of patients requiring care concurrently, serious public health measures (eg, social distancing) were taken to “flatten the curve”. We can consider the first wave with some hindsight, notwithstanding the current situation in Victoria and New South Wales. Here we analyse the extent to which the principles of medical ethics have been compromised in times of the COVID-19 pandemic, and what could have been different for countries still in the first wave or when we face further waves. MJA Insight 20 July 2020

COVID-19: ethical principles for resource allocation
Who will be allocated a ventilator, and who will miss out? Who decides, and on what basis? Australian intensivists and emergency physicians have not had to answer grave questions like these during the coronavirus disease 2019 (COVID-19) pandemic, although we have all seen how they have occupied their peers in countries worse affected by the virus. We’ve thus far been spared the overwhelming
surge in demand for life-saving health care resources precipitated by the pandemic, although the current situation in Victoria is a reminder that the risk remains. MJA Insight 20 July 2020

COVID-19: How do we keep doctors’ mental health safe?
COVID-19 has affected the mental health of many Australians, including health care workers on the frontline. Australian doctors have watched their colleagues in America and Europe deal with overwhelming numbers of patients with COVID-19 and learnt of many doctors who have died or become seriously ill with infections they have contracted while working on the frontline. Although so far we have been, relatively speaking, spared the horrors seen overseas, many doctors have been highly stressed by the current situation. MJA Insight 20 July 2020

Maximizing the probability that the 6-week lock-down in Victoria delivers a COVID-19 free Australia
The authors argue that Melbourne and Victoria should not waste the opportunity this lock-down presents. By learning from the lessons on social and preventive measures to lower SARS-CoV-2 transmissibility,9,10,12,13 and specifically the lessons from NZ,4 Taiwan and six of the eight Australia States and Territories that have achieved elimination, Victoria can increase its chances of also eliminating community transmission. MJA 17 July 2020

COVID-19 in a Sydney nursing home: a case study and lessons learnt
The COVID-19 outbreak in the Dorothy Henderson Lodge nursing home, in Sydney, occurred early in the Australia’s outbreak, when understanding and experience of the disease were limited. Prompt, decisive action, by public health authorities and organisational management, probably limited the outbreak’s severity. Nevertheless, it was associated with understandable fear, uncertainty and suffering among residents, their relatives and staff. Among the most important lessons, was that optimal infection prevention and control (IPC) practice cannot be assumed, even among trained healthcare workers, in an outbreak setting. Ongoing training and advice, from experienced IPC professionals is needed. MJA 17 July 2020

Why proper understanding of confidence intervals and statistical significance is important: COVID-19 randomised trials as a case in point
Statistically non-significant findings are often misinterpreted as evidence that there is no difference in effectiveness between two interventions. Despite this fallacy being widely known and accepted, it unfortunately persists as a widespread phenomenon. MJA 16 July 2020

Consensus statement: Safe Airway Society principles of airway management and tracheal intubation specific to the COVID-19 adult patient group
Pre-pandemic guidelines for airway management in critically ill patients recommend mask ventilation during the apnoea period and apnoeic oxygenation, with nasal oxygen, during tracheal intubation. It is unclear which of these techniques is most beneficial in preventing hypoxaemia during airway management in COVID-19 patients with respiratory failure. Until further data are available, we favour the use of careful mask ventilation, (using a Vice (V-E) grip and a two-person technique) over apnoeic nasal oxygenation, as we believe it poses a lesser risk of aerosol generation. MJA 16 July 2020

Screening hospital patients for COVID-19 - should we be testing instead?
For patients, Covid-19 confers a morbidity and mortality risk. While it is understood that emergency surgery confers a mortality risk independent of underlying health status, data pooled from 24 countries has demonstrated a 16-19% 30-day mortality rate associated with Covid-19 infection among patients undergoing elective procedures. Several health services have pre-emptively begun testing all elective surgery patients for Covid-19. MJA 15 July 2020

Australia can use population-level mobility data to fight COVID-19
“Stay-at-home” orders are a keystone of the COVID-19 response, but are shrouded in controversy. Apple is publishing population-level mobility throughout the pandemic. We mapped the mobility data against public health interventions worldwide. On average populations decreased movement below baseline 13 days prior to “stay-at-home” orders, in Sydney it was 8 days, in Auckland 11 days. Even in cities with minimal governments restrictions, such as Stockholm and Rio de Janeiro this was true. Worldwide this decrease in movement coincided with Lombardy’s rising COVID-19 death toll, however Hong Kong and Singapore, pandemic-experienced cities behaved differently, with earlier
and ongoing decreased movement. When planning of the “second-wave” we need to be innovative and population-level mobility data can be part of the ongoing public health response. MJA 13 July 2020

**Crisis as opportunity: how COVID-19 will reshape the Australian health system**
Social determinants of health remain an issue to manage if we wish to ensure equitable distribution of health in our country. A linear approach to solving challenges in a Complex system such as healthcare will not suffice, so new ways of problem solving are required. Lastly, saving lives is all for nought if the mental health of both patients and providers is not given a high priority. MJA 7 July 2020

**COVID-19: planning for the aftermath to manage the aftershocks**
Australia has managed the crisis well so far but we should now also plan for future waves and the recovery phase MJA 6 July 2020

**Superspreaders, asymptomtics and COVID-19 elimination**
There is pessimism regarding the ability of a nation to eliminate COVID. It has been suggested that COVID might always be able to re-emerge because of the ongoing presence of unrecognised asymptomatic cases. However, calculations described here show that, despite asymptomatic cases, elimination may be easier than anticipated. MJA 3 July 2020

**The impact and reach of the MJA in a year of living dangerously**
Our journal remains a source of trusted information in a world awash with wild beliefs and untrustworthy advice. MJA 3 July 2020

**Public health crises and the need for accessible information**
The COVID-19 pandemic has thrown into sharp relief the need for accessible information for people with disability during public health crises. Accessible information – such as Easy Read, Auslan, large-print, Braille, and audio-visual formats – is a human right. MJA 2 July 2020

**An evaluation of the quality and impact of the global research response to the COVID-19 pandemic**
The authors provide a systematic evaluation of the early global research response to COVID-19 by characterizing the methodological quality of registered COVID-19 studies. They also compare the research response with previous respiratory viral epidemics- Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), and the Influenza H1N109 pandemic. MJA 30 June 2020

**Willingness to vaccinate against COVID-19 in Australia**
In Australia, attitudes towards a COVID-19 vaccine appear to be more positive than reported in France in late March, which might in part reflect greater confidence in the government. However, the data show efforts are needed to target vaccine education to those with lower education and health literacy. It remains to be seen whether Australia’s high intentions towards vaccine uptake will remain when restrictions are relaxed and the immediate perceived threat diminishes. The Lancet 30 June 2020

**COVID-19 Safety: aerosol generating procedures and cardiothoracic surgery and anaesthesia**
Healthcare workers are at risk of infection from aerosolisation of respiratory secretions, droplet and contact spread. There are a number of procedures that represent a high risk of aerosol generation (AG) during cardiothoracic surgery. It is important that adequate training, equipment and procedures are in place to reduce that risk. MJA 29 June 2020

**Melbourne’s COVID-19 second wave exposes multicultural “data hole”**
The rise in new COVID-19 cases in Melbourne last week shone a light on some of the cracks in our health system and our society more broadly. Centred around a number of suburbs in the city’s multicultural north, the disease hotspots are in areas with “very strong pockets of disadvantage”, according to Victorian Health Minister Jenny Mikakos, who herself lives in one of the affected suburbs. MJA Insight 29 June 2020
COVID-19: medical student, PhD candidate and researcher views
COVID-19 has caused a tsunami of collateral damage to nearly every aspect of life. Universities and colleges have not been spared at all and have been thrown into very uncertain waters (eg, forced to close face-to-face classes and to convert to online-only courses). This has significantly affected the lives of medical students, clinical researchers and teachers alike. MJA Insight 29 June 2020

COVID-19 acute respiratory distress syndrome (ARDS): clinical features and differences from typical pre-COVID-19 ARDS
COVID-19 ARDS is a predictable serious complication of COVID-19 that requires early recognition and comprehensive management. We are familiar with acute respiratory distress syndrome (ARDS); however, when it occurs as part of COVID-19, it has different features and there remain unanswered questions. So if someone has COVID-19 ARDS, how does it compare and contrast with ARDS from other causes? To answer this question the authors provide a summary of the published literature (based on a PubMed search using the terms “COVID-19” and “ARDS”, 17 April 2020) and current clinical experience from managing patients with COVID-19 ARDS in Singapore (SHP) and Wuhan (LQ). MJA 26 June 2020

Efficacy of an enclosure to reduce aerosol exposure during simulated intubation
Enclosures have been proposed as engineering controls to reduce droplet contamination during airway procedures. To investigate whether an enclosure would reduce aerosol exposure during laryngoscopy, we performed 90 simulated intubations on a resuscitation manikin. Saline was nebulised into the tracheostomy port of the manikin, and aerosol levels measured at the proceduralist’s respirator. Median (range) change in aerosol count measured during intubation was greatly reduced when the enclosure was used 23ml-1 (-81 - 231) compared to 125 (-53 - 24,020), p < 0.001. An enclosure may reduce the chance of high level aerosol exposure occurring during intubation. MJA 26 June 2020

Reconsidering the immediate release of prisoners during COVID-19 community restrictions
The current reduced capacity of post-release services may compound offender vulnerabilities, increasing their risk of harm to themselves and others. MJA 26 June 2020

COVID19 and suicide in older adults: the elephant in the room?
Adverse mental health effects of the COVID-19 pandemic on youth and adults have been predicted, with comparatively little discourse about older adults. Older adults have been highlighted as a group at risk of infection who should stay home, however isolation may be especially virulent in this group, exacerbating already high suicide rates. MJA 24 June 2020

Serological tests for COVID-19 – a primer
Diagnostic testing for COVID-19 plays a critical role in defining the epidemiology of the disease, informing case and contact management, and ultimately in reducing viral transmission. Recently there has been considerable media interest in the use of serological point of care tests (PoCT) as rapid tests to detect prior infection with SARS-CoV-2. To date however, there are limited data available on the performance of these tests, and their specific utility in the overall COVID-19 response is unclear. Here, we provide an update for clinicians on serological testing for COVID-19 and discuss the challenges and opportunities with serological PoCT assays for SARS-CoV-2. MJA 23 June 2020

Unemployment, suicide, and COVID-19: using the evidence to plan for prevention
In response to the COVID-19 pandemic, restrictions on movement and business operations have resulted in a sharp rise in unemployment. Global data consistently show that during times of economic hardship and rising unemployment, rates of suicide frequently rise. Certain measures have been found to be important in mitigating this increase. We present recommendations to lessen the potential impact of this crisis on suicide rates in Australia and ensure those who are affected are well-supported. These recommendations include aspects of welfare support, labour market programs, treatment, and prevention interventions, and coordinated care and reporting. MJA 22 June 2020

In this together? Time for doctors to strive for social justice
Globally, public health professionals were criticised for being hypocrites if they supported the Black Lives Matter movement while also promoting public health action on COVID-19. The media have presented the COVID-19 pandemic and the Black Lives Matters protests as competing issues, yet
individuals and organisations have been quick to quash these claims, recognising that racism is an underestimated health risk that we need to eradicate. MJA Insight 22 June 2020

**Obesity and COVID-19: golden opportunity for family health change**

Recent analyses of adults under the age of 60 years hospitalised with COVID-19 in the US, France and many other countries clearly indicate individuals with severe obesity with a BMI over 35kg/m2 have a significantly greater risk (over 7 times that of individuals with a BMI less than 25kg/m2) of needing mechanical ventilation, with almost 50% of hospitalised patients with COVID-19 having obesity. In a recent study in the US of patients with COVID-19 that required ICU admission, obesity was a significant clinical factor associated with severe COVID-19 in younger individuals (under 40 years of age). Moreover, it appears men are more susceptible to severe COVID-19 than women. Whether this gender difference is due to genetic, hormonal or behavioural factors remains unclear. MJA Insight 22 June 2020

**COVID-19 vaccines: who is leading the race?**

With more than 433 000 worldwide deaths to date, the race to beat coronavirus disease 2019 (COVID-19) is well underway, with over 100 vaccines currently in the pipeline – almost a dozen of which have already made it to human trials. Onlookers are perched on the sidelines, trying to predict which candidate will win first place. In this race, the stakes of backing a winner or loser are high. As seen in previous pandemics, governments that place early down payments on likely vaccines before they come to market may be able to guarantee sufficient supply for their populations. Conversely, those that wait for a vaccine to get regulatory approval before making their purchase may not get their fair share – or indeed any share at all. MJA Insight 22 June 2020

**COVID-19: a chance to embed kindness in our health care**

In recent years, we have written about the failings in our health system and the need for cultural change. Kindness has been suggested as a key ingredient to improving the landscape; kindness not just towards our patients, but towards each other, with a specific focus on interactions at medical handover. These suggestions have been well received on social media and by individual hospitals, but long-lasting change has still to take effect within the Australian health care system. The time for this change has arrived. MJA Insight 22 June 2020

**Can AI help in the fight against COVID-19?**

Artificial intelligence (AI) is playing several roles in healthcare responses to COVID-19. AI has helped map pandemic spread, forecast effects of different public health strategies, and trace contacts of confirmed cases. AI can facilitate earlier diagnosis by helping design rapid virus detection assays and analyse medical imaging data from suspected cases. It may identify patients at risk of clinical deterioration and poor outcomes, and pinpoint existing drugs for repurposing to treat the disease, propose new compounds for development, and suggest immunogenic viral proteins as targets for vaccines. Further research will likely accelerate emergence of effective AI-mediated responses to COVID-19. MJA 19 June 2020

**Tracking, tracing, trust: contemplating mitigating the impact of COVID-19 through technological interventions**

While many liberties have been curtailed during COVID-19, all modifications to existing rights are required, under law, to be legal, necessary and proportionate. These same standards apply to the use of technology. Legal protections need to be in place to ensure that rights are protected, including the right to privacy. Without sound legal protections and safeguards, tracing apps will not only fail but will embed values that may not be those that represent the society we wish to be. MJA 17 June 2020

**Recovery from the pandemic: Evidence-based public policy to safeguard Australian health**

In Australia, 2020 began with raging bushfires, and we now confront the SARS-CoV-2 pandemic. While health protection is currently at the top of the public policy agenda, can we rise from these huge ruptures and ‘build back better’? The full health costs of the bushfires, including the mental health toll, are yet to be quantified. No sooner had the bushfires abated then the battle against the pandemic began. The immediate public health response has been well managed in Australia. By international comparisons, the number of cases and deaths has remained low, with government leaders listening to health experts and acting on evidence, including the need for strict physical distancing in the absence of a vaccine. MJA 17 June 2020
Beyond COVID-19: a healthier, greener, fairer world is possible
The COVID-19 pandemic and the public health measures to control it have caused extraordinary disruption across the world — economic, social and cultural. While Australia has, to date, successfully flattened the epidemic curve and avoided overwhelming our hospitals and health care system more generally, other sectors have not fared so well. The pandemic arrived in Australia just as the unprecedented Black Summer bushfires were doused by rain. This climate change-fueled bushfire crisis claimed 34 lives directly, and the associated extreme air pollution event caused over 400 premature deaths and sent almost 4000 people to hospital. It also devastated communities and livelihoods across south-eastern Australia. Ultimately, a health-led economic recovery is a risk management strategy. The major goal for this recovery should be to future-proof our economy and society from further pandemics and the dangers of a warming climate. We can take action now to reduce these threats by responding to the climate crisis, investing in renewable energy and environmental protection, and investing in public health. MJA Insight 15 June 2020

COVID-19 and beyond: impact of air pollution
We have learned many lessons from this pandemic, and we will likely be better prepared for any future pandemics. Clearly, improved lifestyle choices such as avoiding smoking, reducing obesity, and increasing appropriate sun exposure to help address risk factors of infections are major key public health messages. Whether air pollution is or isn’t a significant modifiable contributor to mortality associated with COVID-19 deaths, the studies and the improvement of air quality during the pandemic do remind us why we should continue to urgently further research, tackle and tighten air pollution standards in Australia and the rest of the world. The pandemic gave us a welcoming glimpse of breathing clean air, making exercise outdoors safer. Many studies have demonstrated exposure to air pollution can lead to a number of adverse health effects, including susceptibility to infections, respiratory and cardiovascular disease, which may subsequently increase vulnerability to COVID-19. MJA Insight 15 June 2020

Mental health of people in Australia in the first month of COVID-19 restrictions: a national survey
Mental health problems were at least twice as prevalent as in non-pandemic circumstances. A public health response which includes universal as well as selective and indicated clinical interventions is needed. MJA 10 June 2020

Intubation and “aerosol generating procedures”: why language matters
The current outbreak of coronavirus disease 2019 (COVID-19) has resulted in the promulgation of a list of medical procedures, collectively referred to as “aerosol generating procedures” (AGPs). This list in turn drives the appropriate level of personal protective equipment donned by health care workers MJA Insight 8 June 2020

COVID-19: what are you optimistic about?
With the relaxation of lockdown comes the risk of a second wave of coronavirus disease 2019 (COVID-19), as well as a tsunami of non-COVID-19 diseases including mental health problems in patients who have deferred seeking medical attention in the last few months. To respond to this enormous community need, medical and other health practitioners must stay well. However, indirect or direct traumatisation of health professionals is so common it’s now regarded as a normal reaction to this state of emergency. MJA Insight 8 June 2020

COVID-19: Bridging the gap between common sense and nanny state
Australia has taken two key approaches to reducing transmission of coronavirus disease 2019 (COVID-19): “policy light”, in which a few, sometimes conflicting, guidelines were delivered around the idea that we use common sense; and the nanny state. We jumped from the Prime Minister urging us to use our own good judgement and behave rationally, to police patrols and spot-checks, heavy fines and threats of jail sentences (here and here). The imperative to get things under control had become urgent, and the move to legislate, enforce and penalise worked. We’re doing well at containing the spread of the virus and we’re moving back to some kind of normal. Could we have avoided the authoritarian situation we found ourselves in? MJA Insight 8 June 2020

“Keep SAFE”: a behavioural vaccine for COVID-19
Australia’s Chief Medical Officer Brendan Murphy has said “we don’t know if and when a [medical]
If it does not come, or if it takes the expected 12–18 months, we will have to utilise flexible methods to minimise and contain outbreaks and prevent a second wave. This suggests that, for the foreseeable future, we will need effective public health and hygiene procedures to protect us from new outbreaks. **MJA Insight** 8 June 2020

### Silver lining of COVID-19
While the trauma of this pandemic is undeniable, far-reaching and ongoing, there have been striking and positive developments that bear acknowledgement. This article will focus on the opportunities within the crisis. **MJA Insight** 8 June 2020

### Rapid publishing in the era of coronavirus disease 2019 (COVID-19)
The urgent nature of this situation means a number of preliminary studies and publications on COVID-19 are fast-tracked through the peer review process — or not at all — in the hope of rapidly publicising important findings, opinions and experiences. However, hastily penned observations may mislead and do more harm than good. A recent non-peer-reviewed publication on a preprint server likening SARS-CoV-2 structurally to the human immunodeficiency virus (HIV) was quickly retracted after the scientific community highlighted serious flaws in the study. Furthermore, a preliminary study supporting the use of hydroxychloroquine as a COVID-19 treatment prompted a flurry of off-label use and media attention. The study was later criticised as being too small and biased, and provided insufficient evidence to recommend its use. **MJA** 1 June 2020

### Telehealth in cancer during COVID-19 pandemic
This letter outlines the uptake of telehealth in cancer services across health institutions in Victoria and Tasmania during the COVID-19 pandemic from a survey of clinical directors and heads of units through the Victorian COVID-19 Cancer Network in early April 2020. The network was established in late March as a collaborative initiative between the Victorian Comprehensive Cancer Centre (VCCC) and Monash Partners Comprehensive Cancer Consortium (MPCCC). The author's aim to highlight the key challenges facing clinicians, patients and health services in the use of telehealth in Victoria and believe that this can help inform both government and health services to address these barriers as appropriate during and beyond the pandemic. **MJA** 1 June 2020

### COVID-19: The view from Wuhan
In my opinion, the COVID-19 outbreak was managed effectively in Wuhan for two main reasons. First, the community believed in and followed self-isolation and wore masks when they went out outdoors. Second, the central government worked closely with the local government to implement a management system that classified and managed all patients according to their severity level (eg, to have diagnostic tests or not, to have treatment or observation). This stratification of clinical severity and guidelines contributed to the efficient use of resources. Sharing some of my personal experiences on occupational protection and psychological counselling may be worthwhile and may help frontline doctors in other countries facing similar challenges. **MJA Insight** 1 June 2020

### Hydroxychloroquine for COVID-19: a cautionary tale
Hydroxychloroquine has never had more scrutiny than during the coronavirus disease 2019 (COVID-19) pandemic. As COVID-19 case numbers grew, the promise of a pharmacotherapeutic panacea to the world’s problems led to exponential growth in interest in a drug not used to attention. While enthusiasm has now been slightly curbed, the real negative impacts have raised questions as how to encourage appropriate prescribing. **MJA Insight** 1 June 2020

### Anti-vaccination brigade stalking social media for recruits
During the 2019 measles outbreak in the US, it was the anti-vaccine pages that saw the strongest growth in followers, these researchers show. Some grew by more than 300%, while no pro-vaccine page grew by more than 100% and most less than 50%. As increasing numbers of people rely on social media as their primary source of information, those who champion science and public health are going to need to be a whole lot more creative if they want to win those hearts and minds. **MJA Insight** 1 June 2020

### Risks, challenges to repurposing approved medicines for COVID-19
The discovery and development of a new medicine through to regulatory approval is one of...
humankind’s most challenging, expensive and risky enterprises. The full-scale development of a new medicine or vaccine to meet exacting regulatory standards is, with few exceptions, funded and led by the experienced, well-resourced and expert development capabilities of the pharmaceutical and biotechnology industries. Therefore, outside the regulatory agencies and these industries, the know-how and experience to develop new medicines and vaccines (at scale) is limited. This represents a major barrier to success, as revealed by the coronavirus disease 2019 (COVID-19) pandemic, and needs to be addressed to rapidly advance new treatments. MJA Insight 1 June 2020

COVID-19: Stepping up as a final year medical student
The case for final year medical students joining the surge workforce has been met with mixed feelings from the student body and faculty. Further disagreement over our role in this pandemic exists on the international stage. In Australia, medical schools are continuing to coordinate placements with health networks in a bid to support clinical learning. However, the Association of American Medical Colleges has instructed medical schools in the US to suspend all student placements, albeit due to dramatically varying circumstances. MJA Insight 1 June 2020

At the time of the pandemic cancer survivors are getting lost in transition
In 2006, the US Institute of Medicine published a seminal report entitled “From Cancer Patient to Cancer Survivor. Lost in Transition” [1] which articulated unique challenges faced by cancer survivors after completion of treatment. The report has since informed the delivery of survivorship care in many countries including Australia.[2] The emergence of the 2020 COVID19 pandemic has now presented cancer survivors with new challenges, but also new opportunities to improve their care. MJA 29 May 2020

The known:
- Rapid upscaling of laboratory testing for SARS-CoV-2 has led to an acute global shortage of nasal swabs.
- Innovative approaches to sustaining diagnostic testing capacity for COVID-19 are required.
- 3D-printed medical devices have been increasingly used over the past decade and may provide a scalable, on-shore manufacturing solution to this critical shortage.

The new:
- The authors describe the design and evaluation of 3D-printed swabs manufactured in Australia.
- 3D-printed swabs were non-inferior to two commercially available swabs when recovering SARS-CoV-2 in vitro.
- 3D-printed swabs were able to capture the same quantity of human cellular material in a clinical validation study.

The implications:
- The authors work provides evidence supporting the use of 3D-printed swabs for the diagnosis of SARS-CoV-2.

MJA 27 May 2020

Live streamed ward rounds – a tool for clinical teaching during the COVID-19 pandemic
‘Live streamed ward rounds’ have been utilised with great success at John Hunter Hospital. This teaching strategy can be applied to all areas of medicine and many clinical encounters, including ward rounds and clinical handover rounds in areas of acute medical care to facilitate student learning at a time when many clinical placements have been cancelled. MJA 25 May 2020

Coronavirus disease 2019 (COVID-19): angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers and cardiovascular disease
As the ACEIs and ARBs controversy has been wisely canvassed in the media, health professionals will need to have a conversation with patients about the benefits or otherwise of continuing their present therapies. It is important that people understand that no concerns have been raised about other medications they may be taking, such as statins, antithrombotic agents, or treatment for diabetes. In recommending continuation of ACEIs or ARBs, physicians can draw comfort that they are backed by almost every cardiovascular health authority in the world. Nevertheless, the clinical trial results of both administration or withdrawal of ACEIs or ARBs cannot come quickly enough, and in the best case, they will allow us to turn practice into the right theory. MJA 25 May 2020

Cancer survivorship care during COVID-19—perspectives and recommendations from the MASCC survivorship study group
This editorial draws on the authors' experiences and the results of a survey of cancer professionals to contextualize the major disruptions taking place globally in survivorship care as a result of the COVID-19 pandemic. Supportive care in cancer 25 May 2020

Early clinical response to a high consequence infectious disease outbreak: insights from COVID-19
While every Australian hospital has a mass casualty or disaster protocol, these are developed for all hazards and may not address problems specific to high consequence infectious diseases, including:

- the need to rapidly identify and isolate potentially infectious patients to prevent nosocomial transmission;
- the complexity of rapid triage and assessment on frequently evolving epidemiological and clinical grounds;
- the difficulty of differentiating high consequence infectious diseases from more common but clinically similar conditions;
- the absence of rapid diagnostic tests to aid clinical decision making; and
- the potential for a prolonged surge for weeks to months during which time the workforce may be affected by both infection and absenteeism.

Here the authors describe the strategic approach of the Royal Melbourne Hospital to triage and screen patients who have presented at risk (or concerned that they are at risk) during the early phases of COVID-19. Our resources may be of value to other organisations refining their triage and clinical algorithms. MJA 22 May 2020

New Zealand’s COVID-19 elimination strategy
New Zealand has implemented an elimination strategy to control the COVID-19 pandemic. Compared with the mitigation and suppression approaches used in most western countries, elimination can minimise direct health effects and offers an early return to social and economic activity free from the constraints of circulating Sars-CoV-2 virus. Elimination requires highly effective border controls, contact tracing and quarantine measures, high levels of testing and surveillance, and an initial period of intense physical distancing (lockdown) to extinguish virus transmission. As with all COVID-19 strategies, the ultimate exit path will depend on development of effective vaccines and/or therapeutics. MJA 19 May 2020

COVID-19: regulators flex to support Australia’s pandemic response
Agencies and individuals across the health sector have made significant changes to their operations, planning and policies. The whole health sector has prioritised its readiness to respond. We have seen an unwavering commitment to shared goals and new levels of collaboration and flexibility. As regulators, the Medical Board of Australia and the Australian Health Practitioner Regulation Agency (AHPRA) must balance public safety with the need to enable doctors, health services and governments to do what is needed to respond to COVID-19. MJA 18 May 2020

Online symptom checkers: still a long way to go
Online and mobile application symptom checkers get the diagnosis right first time in just a third of instances, but the only Australian-based checker included in a recent study, Healthdirect, did slightly better than the rest. In February, Healthdirect developed a COVID-19 app that has been accessed 2.5
million times and counting. The COVID-19 Symptom Checker had been updated 31 times so far to take account of changes in guidelines and testing criteria. MJA Insight 18 May 2020

COVID-19: insurance amnesty for health workers a must
An amnesty on insurance practices that decrease help-seeking behaviour is urgently needed for any consultations with psychologists, GPs and psychiatrists when related to issues arising from their work during COVID-19. Issues and consequences of hardship and illness that increase the need for mental health support should not have an impact on the cost of future income protection or other relevant insurance in the future. MJA Insight 18 May 2020

COVID-19: At home, not “in home”: protecting young eyes
Containment and flattening the curve may mean many more months spent at home and learning online. There is considerable evidence that not spending enough time outside increases the risk of developing myopia (near-sightedness). Thus, the COVID-19 restrictions may have unintended consequences for the eye health of students in the long term if simple preventive measures are not applied. MJA Insight 18 May 2020

COVID-19: 2 months on, what do we know now?
Edited highlights from a podcast between Professor Allen Cheng, Director of Infection Prevention and Healthcare Epidemiology at Alfred Health and Professor of Epidemiology and Preventive Health at Monash University and Professor Deb Williamson, Director of Clinical Microbiology at Royal Melbourne Hospital, and Deputy Director of the Microbiological Diagnostic Unit Public Health Laboratory at the Doherty Institute. MJA Insight 18 May 2020

Emerging viral mutants in Australia suggest RNA recombination event in the SARS-CoV-2 (COVID-19) genome
The 2019 novel coronavirus disease (COVID-19) outbreak has become a public health emergency globally.1,2 Until April 29 2020, there were 6,746 confirmed cases reported in Australia. However, SARS-CoV-2 specimens independently isolated in Australia (Sydney, Gold Coast, and Melbourne)3 exhibited very unusual mutations, which have not been identified in other countries. MJA 15 May 2020

When a system breaks: queueing theory model of intensive care bed needs during the COVID-19 pandemic
To determine how many ICU beds will be required in Australia, the authors propose a simple model of an uninterrupted pandemic process based on the local situation in late March 2020, and compare this model with recent data from the Lombardy. MJA 15 May 2020

Modelling the impact of COVID-19 on intensive care services in New South Wales
In this report, the authors extrapolate the findings of the Imperial College model of the pandemic to the New South Wales population. They also developed a simple SEIR (susceptible–exposed/incubating–infected–removed) model to explore the effect of varying the infection reproduction number (R), which can be reduced by effective social distancing measures, on the timing of the peak of the epidemic. MJA 15 May 2020

The National Disability Insurance Scheme and COVID-19: a collision course
The design of the National Disability Insurance Scheme is putting thousands at risk of COVID-19. MJA 14 May 2020

The impact of COVID-19 pandemic on medical education
Even prior to the COVID-19, like many other medical schools, we have been examining the ways in which we can adapt our medical program to utilise new technologies better, engage and enhance the student experience and really teach the skills that future doctors will require. These go well beyond a knowledge of basic science and include complex functional skills such as teamwork, reflective practice and adaptive problem solving. The COVID-19 pandemic required a massive and rapid change in the way we deliver medical education, particularly to the junior years of the medical program. Whilst ‘online’ learning has limitations, it is important that we springboard on the advances made during this period to continue to improve our medical programs. MJA 14 May 2020

COVID-19 and acute heart failure: screening the critically ill–A position statement of the Cardiac Society of Australia and New Zealand (CSANZ)
Up to one-third of COVID-19 patients admitted to intensive care develop an acute cardiomyopathy, which may represent myocarditis or stress cardiomyopathy. Further, while mortality in older patients with COVID-19 appears related to multi-organ failure complicating acute respiratory distress syndrome (ARDS), the cause of death in younger patients may be related to acute heart failure. Cardiac involvement needs to be considered early on in critically ill COVID-19 patients, and even after the acute respiratory phase is passing. This Statement presents a screening algorithm to better identify COVID-19 patients at risk for severe heart failure and circulatory collapse, while balancing the need to protect health care workers and preserve personal protective equipment (PPE). The significance of serum troponin levels and the role of telemetry and targeted transthoracic echocardiography (TTE) in patient investigation and management are addressed, as are fundamental considerations in the management of acute heart failure in COVID-19 patients. 

Practical considerations for treating cancer patients in the COVID-19 pandemic
Cancer has become a prevalent disease, affecting millions of new patients globally each year. The COVID-19 pandemic is having far-reaching impacts around the world, causing substantial disruption to health and health care systems that is likely to last for a prolonged period. Early data has suggested that having cancer is a significant risk factor for mortality from severe COVID-19. A diverse group of medical oncologists met to formulate detailed, practical advice on systemic anticancer treatments during this crisis. In the context of broad principles, issues including risks of treatment, principles of prioritising resources, treatment of elderly patients and psychosocial impact are discussed. Detailed treatment advice and options is given at a tumour stream level. We must maintain care for cancer patients as best we can, recognizing that COVID-19 poses a significant competing risk for death that changes conventional treatment paradigms.

Preparing ICUs for COVID-19: an Australian experience
In this article, the authors describe the response from our intensive care unit (ICU) within a large tertiary private metropolitan Australian hospital. We hope this information may be useful to other ICUs in Australia, for any second wave of coronavirus disease 2019 (COVID-19), and for any future pandemics.

Doctor–patient communication and relationship in telehealth
As part of measures to control the spread of coronavirus disease 2019 (COVID-19), telehealth has rapidly gained acceptance as a routine model for providing care at home, even for metropolitan patients. Professionals adopting this mode of communication include GPs, specialists and other health care providers. This model has proven useful for regular consultations and supervision of oral and intravenous therapies. Acknowledging some limitations, safe provision of care using telehealth is possible, but some elements still require face to face interaction.

COVID-19: what have we learned about rapid response?
The coronavirus disease 2019 (COVID-19) pandemic has demonstrated Australia’s capacity for rapid innovation and flexibility in public health and medical research, while exposing some vulnerabilities in our current health and medical research structures. Commonwealth and state governments have highlighted the need for unprecedented mobilisation of health systems to mitigate the impact of the outbreak. What can we learn from COVID-19 to ensure Australia can respond rapidly and effectively to similar threats to individual and population health in future?

How to help patients contemplating a pregnancy this year
Due to the recency of COVID-19, there is a dearth of information about how it affects both male and female fertility, pregnant women, fetuses, and babies.

COVID-19 racism is making kids sick
Racism and racial discrimination are everyday experiences for many Australian children and adolescents. A recent survey of over 4600 Australian school students aged 10–15 years found that around 40% of students from Asian Australian backgrounds reported experiences of racial discrimination from peers, 20% from teachers, and 40% from wider society outside of school. It is not only new migrants who face these discriminatory experiences: many of these children were Australian-born, with Australian-born parents.
Position statement on the management of cardiac electrophysiology and cardiac implantable electronic devices in Australia during the COVID-19 Pandemic: A living document

The COVID-19 pandemic poses a significant stress on health resources in Australia. The Heart Rhythm Council of the Cardiac Society of Australia and New Zealand aims to provide a framework for efficient resource utilisation balanced with competing risks when appropriately treating patients with cardiac arrhythmias. This document provides practical recommendations for the electrophysiology (EP) and cardiac implantable electronic devices (CIED) services in Australia. The document will be updated regularly as new evidence and knowledge is gained with time. Heart lung and circulation 11 May 2020

Re-considering the immediate release of prisoners during COVID-19 community restrictions

Custodial environments are susceptible to COVID-19 outbreaks given the confined conditions, potential for over-crowding and poor health profiles of the prison population. This had led to calls to immediately release vulnerable prisoners from custody in Australia. While intuitively reasonable, these proposals must balance the relative safety risks of remaining in custody - in Victorian prisons there are no confirmed cases of COVID-19 - with early release to a general community enduring stage three shutdown restrictions and compromised support services. The current reduced capacity of post-release services may compound offender vulnerabilities, increasing their risk of harm to themselves and others. MJA 8 May 2020

Suppressing the epidemic in New South Wales

Without high rates of population immunity, New South Wales remains susceptible to Covid-19. We might be winning the battle, but the social and economic costs are high. The question now is whether robust identification of new cases and contact tracing can limit transmission sufficiently to permit relaxation of some social measures before a vaccine is available. NEJM 8 May 2020

Employee presenteeism and occupational acquisition of COVID-19

Presenteeism, where SARS-CoV-2 infected workers attend work while symptomatic, contributes to occupational acquisition of COVID-19. This is documented to have occurred in the North West Regional Hospital Outbreak among Tasmanian Health Care workers. It is also likely to be present among a newly recognised Melbourne abattoir outbreak. Infection prevention practices must account for presenteeism. MJA 7 May 2020

Tracking, tracing, trust: contemplating mitigating the impact of COVID-19 through technological interventions

In the face of COVID-19 limiting free movement, experts are scrambling to mitigate the profound impact that the disease is having on our lives. For many countries, this approach involves increased testing, isolation, and education about hygiene practices until a vaccine is found. Increasingly, apps are being contemplated for tracking proximity of people to determine where transmission occurs. Much is being written about the different technological models, and whether they trace, track, comply with privacy and human rights frameworks, including whether this information can be anonymised. MJA 7 May 2020

Implications of COVID-19 in an ageing population

Summary

- Coronavirus disease 2019 (COVID-19) encompasses a broad spectrum of clinical presentation and disease severity. Globally, case fatality rates demonstrate a strong age-related gradient.
- Baseline medical comorbidities present in patients with severe disease and death include hypertension, cardiovascular disease, and diabetes. Importantly, causative association for individual comorbid conditions have not been established. There is inadequate evidence regarding either beneficial or harmful effects of angiotensin converting enzyme (ACE) inhibitors, angiotensin receptor blockers (ARBs), and non-steroidal anti-inflammatory drugs (NSAIDs).
- Non-COVID medical issues of concern in the elderly include a trend to delayed presentation and management of other acute medical issues, including acute coronary syndromes and stroke, and the sequel of elective surgery postponement.
Whilst residential aged-care facilities remain a particularly vulnerable setting for COVID-19 transmission, health policies of social distancing and visitor restriction aimed at limiting transmission also increase risk of symptoms of depression and anxiety in susceptible individuals. Adaptive models of care such as Telehealth consultations can facilitate ongoing management of regular comorbidities and maintain contact between patient, family, and clinicians when isolation is imposed.

SARS-CoV-2 vaccine may not translate into lasting immunity in an elderly population due to immunosenescence. The indiscriminate use of non-validated therapies to treat COVID-19, such as hydroxychloroquine and azithromycin, should be discouraged in the elderly outside a registered clinical trial due to increased risks of adverse effects common to most drugs when used in the elderly (e.g., QT-interval prolongation, ventricular tachyarrhythmia, and sudden cardiac death).

Asymptomatic transmission remains a constant threat to the elderly population and has implications for infection control measures; community surveillance must go beyond targeting only symptomatic individuals.

**Consensus statement: Safe Airway Society principles of airway management and tracheal intubation specific to the COVID-19 adult patient group**

**Introduction:** This statement was planned on 11 March 2020 to provide clinical guidance and aid staff preparation for the coronavirus disease 2019 (COVID-19) pandemic in Australia and New Zealand. It has been widely endorsed by relevant specialty colleges and societies.

**Main recommendations:**

- Generic guidelines exist for the intubation of different patient groups, as do resources to facilitate airway rescue and transition to the “can’t intubate, can’t oxygenate” scenario. They should be followed where they do not contradict our specific recommendations for the COVID-19 patient group.
- Consideration should be given to using a checklist that has been specifically modified for the COVID-19 patient group.
- Early intubation should be considered to prevent the additional risk to staff of emergency intubation and to avoid prolonged use of high flow nasal oxygen or non-invasive ventilation.
- Significant institutional preparation is required to optimise staff and patient safety in preparing for the airway management of the COVID-19 patient group.
- The principles for airway management should be the same for all patients with COVID-19 (asymptomatic, mild or critically unwell).
- Safe, simple, familiar, reliable and robust practices should be adopted for all episodes of airway management for patients with COVID-19.

**Changes in management as a result of this statement:** Airway clinicians in Australia and New Zealand should now already be involved in regular intensive training for the airway management of the COVID-19 patient group. This training should focus on the principles of early intervention, meticulous planning, vigilant infection control, efficient processes, clear communication and standardised practice. MJA 5 May 2020

**COVID-19: implementing sustainable low cost physical distancing and enhanced hygiene**

Even though the understanding of transmission dynamics is at an early stage, they do suggest that the stepwise introduction of stringent measures will be necessary to control this epidemic and highlight the importance of early community control. Australia and other countries have experienced a first wave of disease and managed to effect a decline in cases. MJA 5 May 2020

**Surge capacity of intensive care units in case of acute increase in demand caused by COVID-19 in Australia**

The directors of Australian ICUs report that intensive care bed capacity could be near tripled in response to the expected increase in demand caused by COVID-19. But maximal surge in bed
numbers could be hampered by a shortfall in invasive ventilators and would also require a large increase in clinician and nursing staff numbers. MJA 4 May 2020

**Public health, health systems and palliation planning for COVID-19 on an exponential timeline**

Exponential epidemic growth has been clearly demonstrated for coronavirus disease 2019 (COVID-19) in every country it has touched, with ascertained cases growing from 25 at the start of March in Australia to over 6000 cases 6 weeks later. For every ascertained case, there may be anywhere up to nine infections that are not detected. This silent component of spread is likely driven by asymptomatic or mild infection, especially in younger people. In countries which restrict testing to symptomatic high risk people only, there will be silent growth of undetected infection until the epidemic is large enough to be felt in the health system. MJA 4 May 2020

**COVID-19 triage: we have much to talk about**

Fortunately for us, Australia has so far avoided the catastrophic conditions and confronting clinical dilemmas seen elsewhere. But we’d be foolish to feel complacent. Residents of wealthy countries such as ours have tended to luxuriate in the belief major disease outbreaks belong elsewhere, in poorer places without our quality health systems. COVID-19 has shown us just how delusional that belief can be. The current crisis may be unprecedented in our lifetimes, but it may not be the last of its kind. As human populations grow, as we encroach ever more on wildlife habitats, the risk of disease transmission between species will only grow. MJA Insight 4 May 2020

**Preventing a COVID-19 firestorm in residential aged care**

Despite a welcome flattening of the curve, a pandemic firestorm remains a threat in Australian residential aged care homes, as has happened internationally, where up to half of all deaths from COVID-19 have occurred in nursing homes. MJA Insight 4 May 2020

**Economic recovery from COVID-19: we must not fall for austerity**

In Australia, the Prime Minister has spoken of the need to place the economy in hibernation, while the government and the Reserve Bank build a “bridge” to the far shore of the pandemic. This article seeks briefly to describe these economic impacts for a health care audience and to identify some of the challenges, risks and possible opportunities they may pose for the Australian health care system. MJA Insight 4 May 2020

**COVID fears drive patients to avoid doctors, hospitals**

Clinicians are bracing for a potential wave of severe non-coronavirus disease 2019 (COVID-19) illnesses as they fear patients with early symptoms of cardiovascular or other serious conditions may have avoided presenting to emergency departments during the COVID-19 crisis. MJA Insight 4 May 2020

**A strategic framework to ease community-wide Covid-19 suppression measures**

To date, physical distancing and societal closure has proven highly effective at reducing community transmission and deaths due to Covid-19. However, staying in 'lockdown' indefinitely is problematic due to the wider health, social and economic damage arising from the control measures. The challenge now is how to ease restrictions in the absence of a 'silver bullet' therapy or vaccine. We outline a strategy for a phased progression from 'suppress' to 'release' and 'restore' stages that focuses on optimising the application of our existing tools and strategies coupled with improved pathways for community engagement and multi-sectoral cooperation. MJA 30 April 2020

**COVID-19 and implications for thiopurine use**

COVID-19 is a novel coronavirus and there are no available data from previous coronavirus strains such as SARS-CoV or MERS-CoV to allow for estimation of risk in patients on thiopurines. Although intuitively immunosuppression with thiopurines may increase the risk from COVID-19, there are in vitro and in silico data to suggest that thiopurines constrain maturation of MERS-CoV via inhibition of a viral protease. Although this study has not been replicated for COVID-19 or progressed into animal models, it does raise the possibility that thiopurines use may not necessarily increase COVID-19 risk. MJA 30 April 2020

**First Nations people leading the way in COVID-19 pandemic planning, response and management**

Summary:
COVID-19 is a serious public health risk for Aboriginal and Torres Strait Islander people
Previous pandemic plans did not identify or include Aboriginal and Torres Strait Islander people as a priority population group
Research following the 2009 pandemic found that infectious disease control measures must be developed in collaboration with Aboriginal and Torres Strait Islander peoples where Aboriginal and Torres Strait Islander people are actively engaged in pandemic preparedness, response and management.
Aboriginal and Torres Strait Islander public health practitioners and researchers have been pivotal in identifying the issues, setting priorities and suggesting solutions for culturally informed strategies.

Clinical trials for the prevention and treatment of coronavirus disease 2019 (COVID-19): The current state of play
Summary

- In the 3 months since COVID-19 emerged from Wuhan, China and spread around the world, over 1100 clinical studies have been registered globally on clinical trials registries, including over 500 randomised controlled trials.
- Such rapid development and launch of clinical trials is impressive but presents challenges, including the potential for duplication and competition.
- There is currently no known effective treatment for COVID-19.
- In order to focus on those studies most likely to influence clinical practice, we summarise currently registered randomised trials with a target sample size of at least 1000 participants (n=31).
  - We have broken these trials into four categories: 1) prophylaxis; 2) treatment of outpatients with mild COVID-19; 3) treatment of hospitalised patients with moderate COVID-19; and 4) treatment of critically ill patients with COVID-19.
  - The most common therapeutic agent being trialled currently is hydroxychloroquine (24 trials with potential sample size of over 25,000 participants), followed by lopinavir/ritonavir (7 trials) and remdesivir (5 trials)
  - There are many current candidate drugs in pre-clinical and early phase development and these form a pipeline for future large clinical trials if current candidate therapies prove ineffective or unsafe.

COVID, ACE inhibitors/ARBs, and cardiovascular diseases
Angiotensin converting enzyme inhibitors (ACE-I) and angiotensin receptor blockers (ARBs) reduce morbidity, mortality and hospitalisations from hypertension and heart failure. There are no convincing clinical data to support adverse or beneficial effects in COVID-19 patients in the face of theoretical arguments in both directions. Most authoritative national and international bodies have released statements to the effect that the beneficial effects of ACE-I and ARBs are proven, the adverse effects in COVID-19 patients are not and have advised people to continue these drugs pending evidence to the contrary. MJA 27 April 2020

Online shared medical appointments in the COVID-19 age
The rise in chronic diseases in recent times has led to a lifestyle medicine approach to dealing with these, together with accompanying changes in processes in clinical practice. Shared medical appointments (SMAs), or group visits, are one such process. These are individual medical consultations carried out sequentially with a number of patients, administered by a trained facilitator, with others with similar concerns listening and contributing. MJA Insight 27 April 2020

FalterGood Samaritans: an ethical perspective during COVID-19
Many of us are familiar with the parable of the Good Samaritan. An injured, unwell traveller lies on the roadside. Many other travellers pass him by, perhaps worried about their own safety and wellbeing, perhaps driven by religious and cultural requirements – including in relation to cleanliness and purity.
However, one man stops to render aid. This is the essence of the parable: a story that has had a lasting impact on considerations of ethical medical practice. MJA Insight 27 April 2020

COVID-19: opportunity to improve, in the guise of a crisis
Times of great crisis have historically seen advances in health care systems and technology. "Necessity is the mother of invention", as they say. Wars have led to improvements as diverse as triage (sorting casualties by urgency) and surgical techniques. Previous respiratory virus pandemics have led to advances in testing, improvements in hand sanitation, greater use of personal protective equipment and reduction in activities that spread droplets, such as nebulisation of drugs. We are now in the midst of another such opportunity in the guise of a crisis. The way we act now, and the way we organise and deliver our services, may not only influence current events but may also shape the future. If necessity inspires us to streamline and target services to where they are most beneficial, why would we want to go backwards after the crisis is over? MJA – Insight 27 April 2020

Supporting obstetricians and midwives in COVID-19 times
Coronavirus disease 2019 (COVID-19) presents a unique challenge for midwifery and obstetric staff. On the surface, it may appear that we look after mostly healthy young women with no background illnesses. However, as obstetricians and midwives, we may not have the complete history of the woman when she presents. We may not be aware of background high risk factors, especially those that have developed recently. Questions of recent travel (personal or that of a family member), contact with either someone who is infected with, or is at high risk of being infected with the novel coronavirus are becoming part of the initial assessment of women presenting in labour. MJA – Insight 27 April 2020

Management of adult cardiac arrest in the COVID-19 era. Interim guidelines from the Australasian College for Emergency Medicine
The global pandemic of coronavirus disease 2019 (COVID-19) is creating significant and widespread disruptions in healthcare organisations and societies across the world. Resuscitation poses a risk to healthcare workers, and modifications to our traditional approach needs to change. These guidelines for adult cardiac arrest have been produced by the Australasian College for Emergency Medicine (ACEM), and align with national and international recommendations:

Main recommendations

- Important considerations include the need to balance the appropriateness of resuscitation against the risk of infection, use of personal protective equipment (PPE), recognition that in a setting of low community transmission most cardiac arrests are still not due to COVID-19, and that early defibrillation saves lives.
- Additionally, as COVID-19 increasingly affects hospital resource availability, the ethics of resource allocation must be considered.
- Early defibrillation saves lives and is not considered an aerosol generating procedure.
- All other resuscitative procedures are considered aerosol generating and require the use of airborne personal protective equipment (PPE)
- Methods to reduce nosocomial transmission of COVID-19 include a physical barrier such as a towel/mask over the patient’s mouth and nose, appropriate use of PPE, minimising the staff involved in resuscitation, and use of mechanical chest compression devices when available.

Changes in management
The changes outlined in this document require a significant adaptation for many doctors, nurses and paramedics. It is critically important that all healthcare workers have regular PPE and advanced life support training, are able to access in-situ simulation sessions, and receive extensive debriefing after actual resuscitations. This will ensure safe, timely and effective management of the arrested patient in the COVID-19 era. MJA 24 April 2020

Challenges of diabetes management during the COVID-19 pandemic
The COVID-19 pandemic has changed the way that chronic health care is delivered. The need for social distancing to minimise viral spread has necessitated the rapid uptake of telehealth modalities to
deliver health care. Individuals with diabetes may be more susceptible to COVID-19 or its more serious consequences. Glycaemic control and smoking status will likely modulate such risk. It is imperative that these individuals maintain regular contact with their health providers to facilitate tight glycaemic control and to enable education regarding sick day management in the event of illness. MJA 24 April 2020

COVID-19 ARDS: clinical features and differences to "usual" pre-COVID ARDS
Severe coronavirus disease 2019 (COVID-19) represents viral pneumonia from SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) infection leading to acute respiratory distress syndrome (ARDS). The pathological changes include diffuse alveolar damage due to viral infection and immunological injury, as well as multi-organ dysfunction and extensive microthrombus formation. Maintenance of oxygenation is the key treatment strategy. Recommendations for COVID-19 ARDS are to use oxygen to achieve SpO2>92%, to use high flow oxygen only in appropriate locations, to avoid NIV, to use prone ventilation, and consider ECMO for rescue. Research is needed to identify additional specific therapies for COVID-19 ARDS. MJA 24 April 2020

COVID-19 in Australian healthcare workers: Early experience of the Royal Melbourne Hospital emphasises the importance of community acquisition
A dedicated service for screening and supporting staff may not be feasible in all settings, it does provide access to rapid testing which gives valuable reassurance for staff. Importantly, monitoring the data helps to contextualise our local experience. The data indicates that COVID-19 is very uncommon in HCWs at present, and that the large majority of HCWs who have contracted COVID-19, have done so away from work. MJA 23 April 2020

Clinical placements for medical students in the time of COVID-19
Clinical placements for medical students are the central element in the teaching and learning of any medical program. Due to the challenges associated with the COVID-19 pandemic, we have worked to support clinical placements by writing and widely distributing clear guidelines and instigating refresher PPE training. Despite some disruption, students have benefited from witnessing the health systems approach to the challenge and have demonstrated their commitment to health care and their chosen career. On-going evaluation of the actual educational experience that students are receiving will assist us in the provision of additional learning if deficits arise. MJA 21 April 2020

COVID-19 consequence: telehealth will go mainstream
As of Sunday 19 April, Australia has 6606 confirmed cases of coronavirus disease 2019 (COVID-19) and 71 deaths as a result. People with chronic illness, in particular those with diabetes, and the elderly, may be at greater risk. Suppression strategies – the rapid adoption of public health measures, including testing and isolation of cases and wider social distancing measures (here and here), to suppress transmission – are currently favoured to flatten the demand curve for critical care resources. The introduction of new COVID-19 telehealth Medicare item numbers provides an opportunity to optimise these suppression strategies while maintaining access, continuity of care, and health protection. MJA InSight 20 April 2020

COVID-19: view from a rural bunker, part 2
When we look back on the coronavirus disease 2019 (COVID-19) pandemic, much shall be written on how hitherto common practices changed for good. One of the challenges for the medical profession is to defend the changes that are for the better while shelving those that have not helped us best care for our patients. MJA InSight 20 April 2020

COVID-19: Doctors on the frontline of a xenophobic pandemic
As the world battles an invisible, fatal and rapidly spreading enemy, a simultaneous outbreak of fear is not an unexpected consequence. Fear, in the setting of a pandemic, is often transmitted through misinformation and presents as xenophobia. The fight against coronavirus disease 2019 (COVID-19) requires unity among all human beings (at a safe 1.5-metre distance); however, those afflicted by fear are brandishing weapons of racism against their allies resulting in divides within their communities. MJA InSight 20 April 2020

COVID-19: Time to get serious about end-of-life discussions
In the absence of any formal measures, I find that one of the best litmus tests for how I am travelling
as a GP is how I treat my family, and in particular, how I treat my husband. Without going into detail, let’s just say that over the past 2 weeks I haven’t been an angel at home. So, my question for health practitioners is this: how are you going with the new reality of general practice with coronavirus disease 2019 (COVID 19)? Or should I ask how is your nearest and dearest coping? Every day, I’m swamped with a huge amount of information, news and updates about COVID-19. There are new ways of practising medicine, new ways to receive and exchange information and new ways to actually run the business of general practice. We then need to distil this changing landscape for our workplaces and patient community. Many patients are elderly and not IT-literate, and social media or email updates are not always the best way to get information to our community. MJA InSight 20 April 2020

Flu in the time of COVID-19? "All bets are off"
Experts are hopeful that the strict public health measures enacted to prevent the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes coronavirus disease 2019 (COVID-19), may also help to reduce the transmission of influenza this year and into the future. Professor Kanta Subbarao, Director of the World Health Organization Collaborating Centre for Reference and Research on Influenza, said the northern hemisphere experienced a moderate influenza season in 2019–2020, but with the COVID-19 pandemic "all bets were off" on predictions of the severity of the upcoming influenza season in Australia. MJA InSight 20April 2020

Isolation and rapid sharing of the 2019 novel coronavirus (SARS-CoV-2) from the first patient diagnosed with COVID-19 in Australia
The ability to rapidly identify, propagate, and internationally share our SARS-CoV-2 isolate is an important step in collaborative scientific efforts to deal effectively with this international public health emergency by developing better diagnostic procedures, vaccine candidates, and antiviral agents. MJA 13 April 2020

Corticosteroid treatment of patients with coronavirus disease 2019 (COVID-19)
Corticosteroids are widely used when treating patients with COVID-19, but we found no association between therapy and outcomes in patients without acute respiratory distress syndrome. An existing HBV infection may delay SARS-CoV-2 clearance, and this association should be further investigated. MJA 13 April 2020

COVID-19 precautions: easier said than done when patients are homeless
Implementation of advice to the public and general practitioners on minimising the risk of COVID-19 exposure and transmission is immensely difficult for people experiencing homelessness and for the health services working with them. Yet this is a population group more vulnerable to infection than most.1 The elevated risk factors for COVID-19 are substantial, as people experiencing homelessness have a much higher prevalence of comorbidity and chronic disease compared with people of the same age who are housed. MJA 13 April 2020

COVID-19: can we stop it being this generation’s Great Depression?
As Australian governments introduce measures to slow the transmission of coronavirus disease 2019 (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the negative social and economic impacts will be felt most among people who are socially disadvantaged. This has profound implications for long term health inequities. MJA Insight 13 April 2020

Got COVID-19 cabin fever? Learn from astronauts, Antarctic
Some of us are working extra hard during the 2019 coronavirus disease (COVID-19) pandemic, while others are in self-isolation or quarantine. And we all have patients who are in isolation. We’ve put together some advice for ourselves and our patients. MJA Insight 13 April 2020

COVID-19: how can we ensure the kids are all right?
Imagine being a child or teenager or parent at the moment. Your world has changed almost overnight. Everything you know has been turned upside down. It begs the question: how will we know whether our kids are, and will be all right? To address the challenges posed by this once-in-a-lifetime event, we need a once-in-a-lifetime evidence-based response. MJA Insight 13 April 2020
**COVID-19: view from a rural GP in a bunker**
Being ensconced in Coonabarabran, a small New South Wales town of about 3000 people, with an inability to travel and socialise, has presented me with time aplenty to think about all things coronavirus disease 2019 (COVID-19) and look at what is happening locally, around Australia and around the world. [MJA Insight 13 April 2020](#)

**Clinical presentation and management of COVID-19**

**Summary**

- The rapid spread severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has led to the declaration of a global pandemic barely three months after emerging.
- A majority of patients presenting with coronavirus disease 2019 (COVID-19) will experience a mild illness that can largely be managed in the community. Patients with moderate illness or with risk factors for progressive disease require careful monitoring and early referral to hospital for any signs of clinical deterioration.
- Increasing age and the presence of co-morbidities are associated with more severe disease and poor outcomes.
- Treatment for COVID-19 is currently supportive, with appropriate management of respiratory dysfunction the cornerstone of care.
- No good clinical evidence for any specific therapies (including antiviral and immune modulating agents) currently exists. Investigational therapies for COVID-19 should be used only in approved, randomized, controlled trials.
- Australian clinicians will need to be able to recognise, diagnose, manage, and appropriately refer patients affected by COVID-19, with many thousands of cases likely to present over the coming year.

[MJA 8 April 2020](#)

**From SARS to COVID-19: the Singapore journey**
Having experienced SARS in 2003, Singapore's healthcare system had drawn upon this experience to enhance its pandemic preparedness response. The emergence of COVID-19 has now put these preparations to the test. We describe the evolution of Singapore's outbreak response from the SARS crisis in 2003 to the current COVID-19 pandemic, focusing on public health measures as well as the clinical management and workflows at the National Center for Infectious Diseases, Singapore. [MJA April 6 2020](#)

**COVID-19 not immune from scam artists and fraudsters**
It is a truth universally acknowledged that a virus in possession of a good transmission rate must be in want of a fake cure … The COVID-19 virus is not the only thing that has been spreading wildly around the world in recent weeks. Predictably enough, the global pandemic has opened the door to an unsavoury rabble of fraudsters, phishers and conspiracy theorists seeking to take advantage of the crisis. Some impersonate health authorities – the World Health Organization is a favourite – in order to sell fake products or steal personal and financial details, while others just spout the usual antiscience babble to spruik treatments even less likely to be successful than a commando raid on your local supermarket in search of a jumbo pack of toilet paper.* [MJA Insight 6 April 2020](#)

**COVID-19 is opening up fault lines in the health care system**
As the health care system prepares for an unprecedented test of its resilience, it is useful to begin to reflect on some of the lessons that may be learned and that may influence future reform of the health care system. While many think we have one of the best health care systems in the world, others suggest that it is not a system at all and that it could be much more integrated. Although the fault lines are deep, they usually remain ignored or forgotten about, or just seem too hard to change, until there is a crisis that opens them up for all to see. Within the Australian health care system, there are two major fault lines that have emerged because of the coronavirus crisis which are receiving short term patches but actually require long term solutions. [MJA Insight 6 April 2020](#)

**COVID-19: Will "proof of health and immunity" be a new societal norm?**
If history teaches us anything, it is that following global disasters, low-cost long-term societal and
generational changes are required to avoid repeat catastrophes. Given the impact of the COVID-19 virus pandemic, will society now demand "proof of health and immunity" to protect population health in the modern world? MJA Insight 6 April 2020

COVID-19: projecting compassion through the barrier of PPE
Our health workers operating on the frontlines of the coronavirus response are going to experience huge workloads and immense strain. Many of them may fear for their own health and mortality, and that of their families and friends. "We are asking great things of them," writes humanitarian author Hugo Slim. We thank them, and we salute them. Donning PPE may be just as foreign and disconcerting to them as it is to those on the receiving end. So what will make for compassionate health care in such a time of crisis? MJA Insight 6 April 2020

COVID-19: Where do I refer my patients with acute surgical needs?
Within a few weeks, the Australian public and private health systems and our referral pathways have been disrupted. In the next few weeks, it has been predicted that many Australians may not be able to access ICU and other hospital beds if the current pandemic trajectory continues. In response, governments have moved quickly to contract private hospital intensive care and other beds. Public specialist outpatient clinics and all elective surgery (except for Category 1 and urgent Category 2 procedures) have been cancelled to appropriately divert clinicians and personal protective equipment (PPE). MJA Insight 6 April 2020

Cardiovascular disease and COVID-19: Australian/New Zealand consensus statement
Cardiovascular health services and cardiovascular healthcare providers need to recognise the increased risk of COVID-19 among CVD patients, upskill in the management of COVID-19 cardiac manifestations and reorganise and innovate in service delivery models to meet demands. This consensus statement, endorsed by the CSANZ, ANZSCTS, National Heart Foundation (NHF), and the High Blood Pressure Research Council of Australia (HBPRCA) summarises important issues and proposes practical approaches to cardiovascular healthcare delivery to patients with and without SARS-CoV-2 infection. MJA 3 April 2020

Emergency departments and the COVID-19 pandemic: making the most of limited resources
The coronavirus disease 2019 (COVID19) pandemic will stretch hospital resources all over the world. EDs in high-income countries are not immune, but those in low-income and middle-income countries (LMICs) are likely to be impacted more significantly. Emerging data speak to overwhelming demands for care and widespread disruption of hospital functioning. In order to support colleagues in resource-limited settings, the Australasian College from Emergency Medicine (ACEM) has developed a free guide for emergency care (EC) clinicians in LMICs preparing for a surge of patients with COVID-19. Emergency Medicine Journal 1 April 2020

Public health, health systems and palliation planning for COVID-19 on an exponential timeline
Exponential epidemic growth has been clearly demonstrated for COVID-19 in every country it has touched, with ascertained cases growing from 25 at the start of March in Australia to over 4000 cases four weeks later. For every ascertained case, there may be anywhere up to 9 infections that are not detected. This silent component of spread is likely driven by asymptomatic or mild infection, especially in younger people. In countries which restrict testing to symptomatic high-risk people only, there will be silent growth of undetected infection until the epidemic is large enough to be felt in the health system. MJA 1 April 2020

Modelling the impact of COVID-19 upon intensive care services in New South Wales
The burden upon intensive care services due to COVID-19 was forecast to be immense with both modelling approaches. Strategies to mitigate transmission must be accompanied by substantial increases in the capacity of critical care services in advance of peak demand. Modelling is an important tool to assist policymakers and the public to understand the impacts pandemic diseases. MJA 30 March 2020

Surge capacity of Australian intensive care units associated with COVID-19 admissions
Australian ICUs report substantial surge capacity in response to predicted increased demand associated with pandemic COVID-19, with variation between jurisdictions and greater capacity in tertiary ICUs. Associated workforce requirements are high. MJA 30 March 2020
Rethinking the role of senior medical students in the COVID-19 response

The current COVID-19 crisis, unprecedented in living memory, warrants decisive action to stifle rising infections and mortalities. This letter offers a medical student perspective as to our potential role, competencies, and risks to students associated with providing a contribution to the COVID-19 response. MJA 30 March 2020

Telehealth and COVID-19: a guide for GPs

From 30 March 2020, the federal government has expanded the eligibility criteria for all patients, with or without COVID-19, to receive funded access to a GP or medical specialist via a telehealth platform during the COVID-19 health emergency. The large scale access to online GP appointments will certainly reduce the risk and burden in clinics, hospitals and pharmacies and be critical in the fight against COVID-19. As clinicians on the frontline, we now have the responsibility to consider best practice in implementing these services quickly and effectively. Below are some thoughts for consideration. MJA Insight 30 March 2020

COVID-19: It is irrational to ostracise self-isolated people

Leper! For centuries, derogatory terms have been used for people with infections and their family members. For someone with leprosy, it was common for their whole family to be ostracised and considered unclean. I am glad that, in Australia, such stigmatisation of people with (or at risk of) infectious diseases is a thing of the past. Or is it? I am a public health physician. I have just returned from the US and am in home isolation. MJA Insight 30 March 2020

COVID-19: implications for medical students

COVID-19 represents a risk to all medical student safety and further represents a disproportionate risk to students who may have underlying conditions that predispose them for becoming extremely ill. Examples include students who may be immunocompromised or those with respiratory conditions. The lack of personal protective equipment (PPE) in certain clinical environments, such as GP clinics, also places students at higher risk of contracting COVID-19. From the perspective of patient safety, medical students, who are often in their 20s, are potential vectors for transmission. Rotations in places such as aged care residencies also represent a disproportionate risk to our vulnerable and elderly populations. MJA Insight 30 March 2020

For rural and regional pharmacists COVID-19 is "logistical nightmare"

A spokesperson for the Pharmacy Guild of Australia said limits were introduced last week on dispensing and sales of some prescription medicines and some medicines available without a prescription, such as Ventolin. "The Pharmacy Guild of Australia has welcomed the measures to curb stockpiling of essential medicines in the face of heightened demand caused by anxiety over the COVID-19 pandemic," they said. "This week some of those changes have been legislated, making it a legal requirement for pharmacists to comply with the new restrictions. It is important that patients understand that these measures are compulsory and designed to ensure continuity of supply for these medicines for patients who have a real need for them. MJA Insight 30 March 2020

SARS-CoV-2, the medical profession, ventilator beds and mortality predictions: personal reflections from an Australian clinician (Nicholas J Talley Editor-in-Chief of the MJA)

Today we publish a new model of mortality and COVID-19 admissions, validated against Italian data by Meares and Jones. The model is simple and grim; it proposes a hypothetical Australian hospital facing new positive COVID-19 admissions each and every day, where 1 in 20 community cases end up in ICU, an ICU admission is 10 days, and there is a 20% increase in SARS-CoV-2 community case load each day. By day 15 (presumably around the time ICU beds run out), the mortality steadily increases linearly, as has happened in Italy where this model was consistent with the data. Those who do outbreak modelling know how complex the models can be and how many unknown assumptions need to be imputed especially early in a new infectious outbreak; some use super computers to do their calculations and can take months or years to build the model. However, the predictive validity of complex models in an outbreak may also fail to hold up elsewhere because human behaviour is complex and changes. For this reason, simple models may be more robust at least early on when it matters. MJA 26 March 2020

When a system breaks: a queuing theory model for the number of intensive care beds needed during the COVID-19 pandemic
Due to some misconception over the number of intensive care beds that might be needed to care for COVID-19 patients we applied an exponential growth model to evaluate the preparedness of a typical urban intensive care unit to cope with possible demand for beds resulting from the COVID-19 pandemic. The model’s predictions are broadly supported by data from Italy and suggest that Australian hospitals do not currently have the capacity to accommodate possible demand and, as a result, the future mortality rate may be much higher than expected. MJA 26 March 2020

COVID-19: containment, poverty and population health
Despite the public health potential of containment, there are obviously dramatic, if not catastrophic, costs to the economy. The world economic downturn has been dramatic with a global recession now seeming inevitable. This is not, however, a result of COVID-19 or of death from virus, but it is seemingly due to the response and reaction to it. It is the containment, associated mass quarantining, closure of childcare and school facilities, closure of restaurants, curtailment of travel and resultant disruption of trade, supply lines and productivity that are primarily responsible for the economic downturn (with fear and investor panic perhaps aggravating this effect). What we seem not to be considering is the real impact of the economic downturn on global poverty rates and the impact of that on the poorest. MJA Insight 23 March 2020

What is COVID-19 doing to our mental health?
on optimal strategies for containment and cure, and we are hopeful of a breakthrough in either one, ideally both. However, the reality is that at the moment the immediate, short and medium-term future is uncertain. I will leave the containment strategies to the scientists, but critical is how we as individuals and as a society manage and deal with the emotional, psychological and social impacts of this uncertainty and crisis – from the issues surrounding self-isolation and managing the panic that manifests as fights over toilet paper and outbursts of racism. It has already been a difficult and tense summer for Australia with the devastating bushfires. MJA Insight 23 March 2020

COVID-19: fear and anxiety in frontline clinicians
Should the medical and nursing staff battling the surge in health care demands of a World Health Organization-declared pandemic be assured that each of us, on average 46 years old, will only experience minor illness should we contract COVID-19 from hourly and daily patient care and screening? Should colleagues over 65 years with comorbidities be occupationally released as they suffer the impost of greater than two in three risk of dying if they contract COVID-19 and require admission to the ICU? MJA Insight 23 March 2020

Managing haematology and oncology patients during the COVID-19 pandemic: interim consensus guidance
Pending further evidence, this interim consensus guidance summarises the clinical presentation and diagnosis of COVID-19 disease, provides factors to consider when managing patients with cancer, and discusses risk factors for severe COVID-19 disease. MJA 20 March 2020

Pre-emptive low cost social distancing and enhanced hygiene implemented before local COVID-19 transmission could decrease the number and severity of cases
China appears to have constrained transmission of COVID-19 outside of Hubei Provence through rapid and intensive containment and mitigation interventions. Most countries only attempt social distancing and hygiene interventions when widespread transmission is apparent. This gives the virus many weeks to spread with a higher basic reproduction number (R0) than if they were in place before transmission was detected or widespread. Pre-emptive, low cost, hygiene enhancement and social distancing in the context of imminent community transmission of novel coronavirus COVID-19 should be considered. Early interventions to reduce the average frequency and intensity of exposure to the virus might reduce infection risk, reduce the average viral infectious dose of those exposed, and result in less severe cases who are less infectious. MJA 18 March 2020

Consensus statement: Safe Airway Society principles of airway management and tracheal intubation specific to the COVID-19 adult patient group
From recent reported data in Wuhan and Northern Italy, at least 10% of reported positive COVID-19 cases require ICU involvement, many requiring urgent tracheal intubation for profound and sudden hypoxia. As the incidence of COVID-19 infection rises in the community, an increasing number of
patients who have mild or asymptomatic disease as an incidental comorbidity but are nonetheless infective, may still present for urgent surgery. **MJA** 16 March 2020

**Early clinical response to a high consequence infectious disease outbreak at the Royal Melbourne Hospital Emergency Department – insights from COVID-19**

Australian hospitals are currently preparing to manage patients with coronavirus 2019 (COVID-19), and a potential surge of patients. In this article, we describe the strategic approach of The Royal Melbourne Hospital to triage and screen patients who have presented at risk during the early phases of COVID19 importation into the country. Elements of this approach may be of value to other organisations producing their own triage and clinical algorithms for this outbreak. **MJA** 16 March 2020

**COVID-19 precautions – easier said than done when patients are homeless**

Implementation of advice to the public and general practitioners on minimising risk of COVID-19 exposure and transmission is immensely difficult for people experiencing homelessness and the health services working with them. Yet this is a population group more vulnerable to infection than most. The elevated risk factors for COVID are substantial, as people experiencing homelessness have a much higher prevalence of co-morbidity and chronic disease compared to people of the same age who are housed. To illustrate further, among the 4000 active patients seen by Homeless Healthcare (Australia's largest specialist Homelessness GP practice based in Perth), nearly all patients have co-morbidities, 13% have chronic respiratory conditions, 79% smoke (associated with poorer lung health and risk) and 8% have diabetes (associated with supressed immunity). **MJA** 16 March 2020

**COVID-19: we need health services researchers in hospitals now**

In comparison with seasonal influenza, which is estimated to affect between 5% and 20% of the population each year, COVID-19 is more highly transmissible. Experts have estimated that between 50% and 70% of the world's population may be infected by this virus, of which many will die – mainly, older or vulnerable people, or those with prior conditions. Applying these numbers to Australia, if we estimate that 50% of our population will be infected, and 10% of those people will attend an emergency department (ED), we will have (potentially) an additional 1.3 million patients presenting in Australian EDs over the period of infection. Across New South Wales alone, the Chief Medical Officer, Dr Kerry Chant, has estimated 1.5 million people will get sick in the first wave. **MJA** 16 March 2020

**An outbreak of COVID-19 caused by a new coronavirus: what we know so far**

Information on the new virus and its impact is being updated constantly. We know that SARS-CoV-2 can cause severe disease, although active surveillance of contacts is required to define the milder end of the disease spectrum and to estimate the true hospitalisation and case fatality ratio. The cases reported to date suggest that most are older adults; it is currently unclear whether comorbidities reflect the age group affected or whether they are risk factors for severe disease. Early studies using data before the institution of public health interventions in China suggest that SARS-CoV-2 is as transmissible as SARS coronavirus and probably more transmissible than influenza viruses. The timing of infectiousness relative to symptom onset is a particularly important parameter with implications for public health control. While reports suggest that asymptomatic infection and transmission may result from minimally symptomatic cases, the contribution of this to transmission is not yet known. **MJA** early view 9 March 2020

**Impact of corticosteroid treatment in patients with Coronavirus Disease 2019**

Corticosteroids are widely used in patients with COVID-19, and there was no demonstrable association with therapy provided in patients without ARDS. Coinfection with HBV might delay virus clearance, and this association merits further investigation. **MJA** early view 9 March 2020

**Isolation and rapid sharing of the 2019 novel coronavirus (SAR-CoV-2) from the first diagnosis of COVID-19 in Australia**

The ability to rapidly identify, propagate and share the SARS-CoV-2 isolate globally represents an important step in collaborative scientific efforts in response to this public health emergency. **MJA** early view 9 March 2020

**COVID-19: context is everything**

Trying to predict whether COVID-19 will behave in Australia as it has done in hot spots such as
China, South Korea, Italy and Iran is extremely difficult because context is everything, according to Professor Allen Cheng, Director of the Infection Prevention and Healthcare Epidemiology Unit at Alfred Health in Melbourne. MJA Insight 9 March 2020