asmr Australian Society for Medical Research newsletter

Public, Political, Scientific Advocacy

MAY 2020

President's report

I feel extremely privileged and honoured to have the opportunity to lead the ASMR and represent the health and medical research sector as the 2020 ASMR President. I would like to thank the immediate past president, Dr Roger Yazbek, for his outstanding service to the society over many years, including three terms as president.

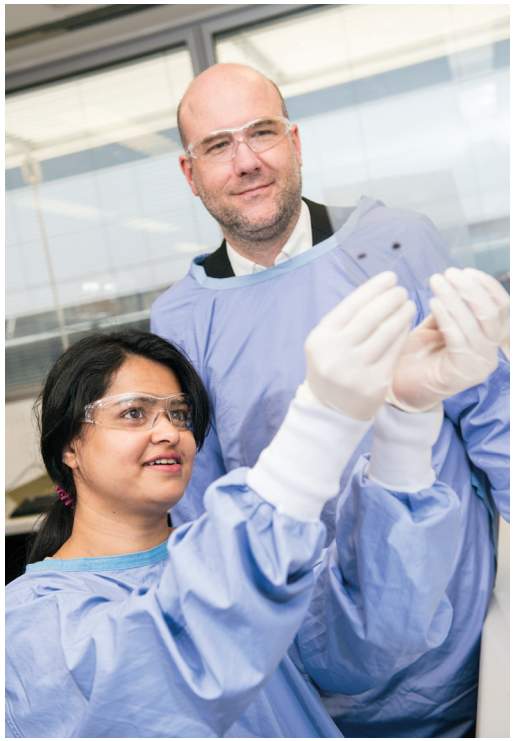
I am very proud to be leading the oldest peak body representing health and medical research across Australia, which has continued to provide evidence to support its advocacy since 1961. I will work hard to represent the society's membership and strongly advocate for increased and more stable funding for the sector that is distributed in an equitable and transparent way.

When the ASMR board discussed the first newsletter for 2020, Australia was in the middle of a horrendous bushfire season and we decided to make the effects of the fires the central theme securing articles on disaster impact, recovery and resilience. Little did we know that when the newsletter would go to print, we would find ourselves in the middle of a coronavirus pandemic that is changing significant aspects of our life and work which will have a profound impact for years to come. Our thoughts are with those who are affected worldwide and our health and medical colleagues working tirelessly on the front-line.

To complete this newsletter, we were fortunate to also secure COVID-19 related articles highlighting the need for a strong health and medical research sector. Our world-class workforce will be critically important in the recovery phase of this pandemic, not only by creating new knowledge, but also through their tireless contribution to an industry with one of the highest returns on investment.

In direct response to COVID-19 we have issued an urgent call to all federal politicians to support an immediate one-off injection into the NHMRC MREA of $400 million to enable the NHMRC to provide funded grant extensions for projects and people impacted by the current events. Provision of this funding will help to retain the current workforce and provide sufficient opportunity for the very best research (as determined previously by peer review) to deliver the intended optimal outcomes for the nation.

Since the start of the year, I have approached key politicians across the entire spectrum requesting the opportunity to meet and discuss the challenges and opportunities of the sector. The current pandemic led to the cancellation of many scheduled meetings, so those will be re-scheduled to later in the year.



Associate Professor Christoph Hagemeyer with his lab manager Shweta Jagdale

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NHMRC

The NHMRC has been the principle funding agency for health and medical research for many decades. It has delivered significant health and economic returns through the distribution of research funding based on open, transparent expert review and clearly defined management processes. However, investment into the NHMRC Medical Research Endowment Account (MREA) has declined in real terms, placing significant strain on the health and medical research workforce. This has resulted in extremely low success rates for both Investigator and Ideas Grant applications in the inaugural rounds which is of great concern for the sector and therefore for the ASMR. Our pre-budget document that has been submitted in late 2019 put a request to Government to immediately boost investment to the NHMRC MREA so that fundamental research is adequately supported in Australia.

At the beginning of the year, I had a productive meeting with the NHMRC CEO, Professor Anne Kelso, and her team. We discussed the challenges to increase the historically low funding rates, especially for mid-career researchers in the Investigator Grant Scheme. It is particularly concerning that many applicants that missed out scored very high (Category 6). These researchers are clearly at the top of their game and will have plenty of opportunities to move overseas and pursue their career dreams. Without immediate strengthening of the Investigator and Ideas Grant schemes through additional funding the current "brain drain" will dramatically accelerate. Professor Kelso made it clear that without extra money, the remaining options to address those challenges are very limited and not easy to justify (shifting more funds from the senior investigators, reducing the level of funding per grant or redirecting funds from other schemes).

The ASMR is also working with the NHMRC to improve the remaining issues of the new grant system. Based on an idea initiated by ASMR Director Associate Professor Tony Kenna, I discussed with Professor Kelso how to blind the peer review of the Ideas Grants. This approach would work by releasing sections of the grant (summary, names, sections of the proposal) in a staggered manner allowing completely nonbiased scoring. Despite being easy to implement in theory, the new NHMRC grant management system Sapphire will not allow such changes in the near future. However, Professor Kelso was open to continue the discussion around ASMR's suggestions on reducing bias in the peer review system. We will also continue our dialogue with the NHMRC especially around the peer review processes to ensure expert reviewers are appointed for assessments / panels and constructive feedback to applicants is provided.

MRFF

The MRFF has been a tremendous initiative and is becoming an important part of the health and medical research landscape. ASMR views the MRFF in the context of the whole funding landscape. The MRFF has been designed for translation and bringing health products to market. Therefore, it can't thrive without strong and well-funded curiosity driven research in Australia feeding into the translational pipeline. However, with this fundamental discovery research in decline, many clinical researchers are voicing their concerns that the MRFF is mainly supporting the evaluation and translation of discoveries and new drugs from overseas. If ASMR's calls for further investment into the NHMRC MREA continue to be ignored by government, the investment into the MRFF will be devalued because the economic benefits of the clinical translation will also be exported overseas and not based on home grown inventions and discoveries. We need to ensure that the intellectual medical research capital built by the NHMRC MREA over many decades will become the main economic pillar for the successes of the MRFF in the future.

Whilst the government is to be commended on such a bold investment as the MRFF the ASMR is highly concerned about the disbursement processes, especially the lack of transparency and peer review. While some schemes are administered via the NHMRC, a good proportion of funds (as high as 25 per cent) are allocated without clearly defined, open or transparent expert peer review. In addition, some funding calls have extremely short turnaround times (as short as two weeks). While this might be justified in some cases (e.g. bushfire research, support for coronavirus research), this shouldn't be the norm as it will favour individual researchers or groups of scientists with personal contacts and insider knowledge. The best science and subsequently, the best health outcomes, are underpinned by independent, transparent expert review rather than politically motivated disbursements.

The ASMR has been and will continue advocating for clear guidelines of competitive review for the MRFF, with a proven model already defined within the NHMRC. Some of the concerns mentioned above have been put to the health minster by Rebekha Sharkie, the member for Mayo. We are currently working through the minister's responses and are considering further action around this topic.

We strongly believe that medical research funding should not be left to professional lobbyists and their well-funded organisations launching glossy marketing campaigns to attract tax payer dollars to hot topic research areas. The ASMR will continue to advocate for a sustainable funding model that supports all health and medical research, from the fundamental research supported by the NHMRC to the translational work to be supported by the MRFF.

ASMR Research Awards

The awards support a postgraduate student member of the ASMR nearing completion of their studies, or a recently graduated (three years maximum) postdoctoral member to undertake a short period of research in a laboratory outside of Australia ($5,000) or in a distal laboratory ($2,000) within Australia. Applicants for these awards must have maintained ASMR membership for more than 12 months prior to applying.

For more information, see: ***https://asmr.org.au/research-awards/***

Workforce survey

In 2019, ASMR conducted a new Workforce Survey. The key outcomes were:

- Of the researchers who indicated they were on a fixed term contract, 46% of them indicated they had less than 1 year remaining on their contract
- 21% of respondents indicated they did not have job security for 2020
- 55% of respondents did not believe the MRFF would benefit their future research aspirations
- 91% of respondents did not believe that there was adequate transparency associated with disbursement of all MRFF associated funding
- 42% of respondents have considered leaving active research for another career option
- 75% of respondents believe the prospects for someone about to enter the field of health and medical research in Australia are negative with a weak and uncertain future
- 79% of respondents are unlikely to recommend a career in health and medical research or would do so, only with a degree of caution

These numbers reflect the general mood in the sector and are worrying indicators for the future of health and medical research in Australia when it comes to retaining a highly qualified workforce and training the next generation of leading researchers, both essential elements to stem the health care challenges we are currently facing and new ones that we will increasingly be exposed to in the future.

ASMR MRW® and Medallist Tour

ASMR Medical Research Week® and the ASMR Medallist Tour are flagship events of the society, representing an opportunity for the public to acknowledge the work of our hard-working researchers. These events provide unique opportunities for researchers to present their work, engage with members of the public, with key government stakeholders and foster networking and collaboration. Due to the current pandemic, ASMR Medical Research Week® has been moved to November 2020 and will be a virtual event this year. Full details will be available later this year on the ASMR website.

The low success rate and issues with the new NHMRC grant system along with the lack of transparency in the way the MRFF is operating, generates an unprecedented risk for our sector. Therefore, I would like to ask all ASMR members to continue raising the profile of health and medical research to government by communicating examples of how medical research makes a difference. Together we can have a positive influence on the sector and continue improving health outcomes for Australians.

Furthermore, please ask your colleagues at every level to join the ASMR. Our voice is only as powerful as our membership base, and I encourage you all to communicate back to your colleagues and networks about the value of becoming an ASMR member. Australia needs a well-supported world-class health and medical sector now more than ever.

I look forward to representing the ASMR and its members with pride, diligence and integrity.

NSC

In November 2019, the ASMR National Scientific Conference (NSC) was held for the first time in Western Australia, at the beautiful Maritime Museum in Fremantle. Under the theme "Ebbs and Flows — From Discovery to Practice" researchers from all states and our international guests delivered a stellar program including the Edwards Orator Professor Christobel Saunders from the Royal Perth Hospital and the Firkin Orator Professor Daniel Drucker from the Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital, Toronto. Other program highlights included the Synapse award, the Peter Doherty Leading Light Award and a highly inspiring "Inside the Scientists Studio" session with Professor Minoti Apte.

This year's NSC will be held in Melbourne with the theme "2020 vision: the future of medical research". Later in the year we will make the final announcement if the NSC will be a face-to-face or virtual event depending on the COVID restrictions in November. We are delighted to have secured the 2020 Australian of the Year Dr James Muecke to deliver the prestigious Edwards Oration so please save the date for the 18–19 of November and join this year's ASMR NSC.

Associate Professor Christoph Hagemeyer,
President, Australian Society for Medical Research; NHMRC Senior Research Fellow;
Head, NanoBiotechnology Laboratory,
Australian Centre for Blood Diseases,
Monash University.

Vital role of the Australian HMR Sector Response to the COVID-19

Professor Gilda Tachedjian

We are experiencing an unprecedented one in a hundred-year pandemic as a result of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that causes coronavirus disease 2019 (COVID-19). SARS-CoV-2 belongs to a family of viruses that includes relatively innocuous members that elicit mild upper respiratory infections as well as SARS-CoV-1 and Middle East respiratory syndrome — coronavirus (MERS-CoV) that are highly pathogenic with case fatality rates of 9.6 per cent and 34.4 per cent, respectively. The epicentre of SARS-CoV-2 was Wuhan, the capital city of Hubei province, China, and with the advent of plane travel SARS-CoV-2 has spread efficiently and relentlessly throughout the world causing considerable health, economic and social impacts.

As of the 27th of April 2020 there were almost 3 million confirmed cases of SARS-CoV-2 and 206,549 deaths globally in more than 180 countries. In Australia, actions taken by our federal and state governments through the National Cabinet, and informed by advice from the Expert medical panel, as well the vital efforts of our public health laboratories, has mitigated the higher morbidity and mortality observed in other countries with 6,714 confirmed cases and 83 deaths, and evidence that we are now 'flattening the curve'.

SARS-CoV-2 has wreaked substantial economic and social disruption in Australia and globally. A shining light is the mobilisation of the health and medical research (HMR) sector in an unprecedented global effort to generate epidemiological data, and develop diagnostic tests, vaccines and antivirals to combat this virus. The research effort has been propelled at warp speed through the immediate availability and sharing of the genetic sequence of SARS-CoV-2 on 11 Jan 2020 enabling development of critical diagnostic tests to identify infected individuals. In addition, the availability of unpublished data on preprint servers, open access of published studies in peer-reviewed journals, normally hidden behind paywalls and the rapid dissemination of these data (whether robust or not) via social media and other outlets have also contributed to accelerated research on SARS-CoV-2.

Around 70 per cent of emerging infectious diseases in humans are zoonotic in origin with rodents and bats being major reservoirs. Over the past 20 years we have experienced SARS (2002–2003) and MERS (2012–2019) epidemics signalling that spillover of coronaviruses from animal reservoirs poses a potential pandemic risk and threat to human health. During the SARS-CoV-1 outbreak, advances were made in developing vaccines; however, the money dried up when SARS-CoV-1 cases subsided and interest for further progression of vaccines diminished. While this work forms the foundation for renewed efforts on a SARS-CoV-2 vaccine, proactive rather than reactive responses are needed for preparedness and development of countermeasures against emerging pathogens of global concern. With humans encroaching on animal habitats through urbanisation and deforestation, increasing population density and human mobility, and the consequences of climate change, the emergence of other viral pandemics is inevitable.

While there are more than 1,000 potential pathogens, the World Health Organisation (WHO) has prioritised several diseases for research and development due to their pandemic potential and/or if there are no or insufficient countermeasures for these pathogens. These include COVID-19, Ebola virus disease, Lassa fever, Nipah and Henipavirus diseases, Zika and Disease X, where the latter acknowledges the emergence of a serious pandemic due to an unknown human pathogen.

An example of a proactive approach is The Coalition for Epidemic Preparedness and Innovations (CEPI), an innovative global alliance between public, private, philanthropic and civil society organisations aimed at accelerating the development of vaccines against emerging infectious diseases and to make these available during pandemics. CEPI was founded in August 2016 by the government of Norway, Bill and Melinda Gates Foundation, the Wellcome Trust, the World Economic Forum and India's Department of Biotechnology, and has received funding from countries including the Australian government.

As soon as SARS-CoV-2 was identified as the aetiological agent for COVID-19, CEPI fast tracked development of several vaccine strategies pursued by Inovio, Moderna Inc, and researchers at the University

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President,
Australasian Virology Society;
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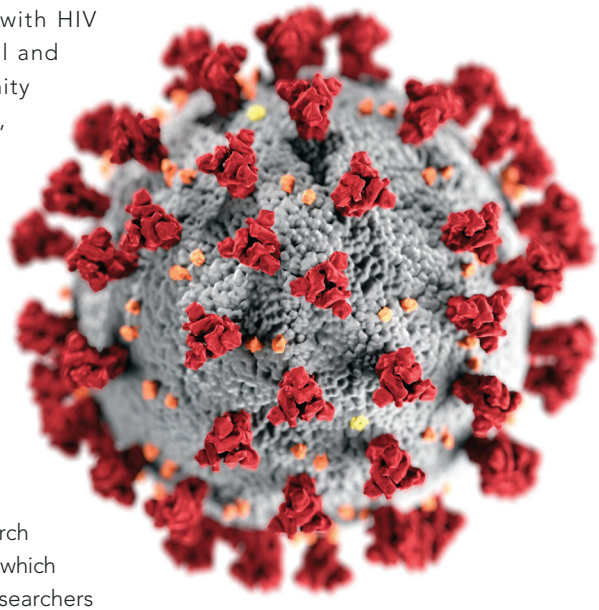
of Queensland. With CEPI support, the CSIRO Australian Centre for Disease Preparedness (ACDP, formerly the Australian Animal Health Laboratories) is evaluating COVID-19 vaccines for efficacy in an animal model within their high containment laboratories, unique in the Southern Hemisphere. This facility has enabled study of bat-borne viruses including Hendra virus and SARS-CoV-1, and development of a horse vaccine for Hendra virus, targeting the amplifying host, to prevent onward transmission to humans. It is not surprising that Australian HMRs are at the forefront of COVID-19 vaccine efforts standing on the shoulders of Australian giants in virology and immunology including Macfarlane Burnet (genetics of influenza virus), Frank Fenner (eradication of smallpox), Ruth Bishop/Ian Holmes (rotavirus vaccine), and more recently Ian Frazer, co-discoverer of the human papillomavirus vaccine against cervical cancer.

The Australian COVID-19 effort goes beyond vaccine development as a result of investment in pandemic preparedness by the National Health and Medical Research Council (NHMRC) and funding from the Medical Research Future Fund (MRFF). The NHMRC funded Partnership for Preparedness Research on Infectious Disease Emergencies (APPRISE), an Australia-wide network bringing together clinical, laboratory, public health and ethics research to improve Australia's preparedness and response to infectious disease emergencies, has played a prominent role in the COVID-19 response. Australia's response focuses on three pillars — public health, diagnostics and antivirals. Modelling studies underpin implementation of social distancing and lockdown measures to mitigate SARS-CoV-2 transmission in Australia. Public health laboratories have been key in SARS-CoV-2 diagnosis and culturing of the virus from Australian patients, critical for vaccine, antiviral and diagnostic development.

While vaccines are critical in the armoury to prevent infections, antivirals are also essential to treat those infected or for prophylactic use. The Australian government has invested, through the MRFF, to fund proposals to rapidly identify SARS-CoV-2 antivirals that can be accelerated to clinical practice as well as immunotherapies and clinical trials to fast-track implementation of treatments in patients with COVID-19. State governments have also invested in the three pillars. Many researchers with expertise in virology and other relevant disciplines have pivoted towards combatting SARS-CoV-2. A welcome announcement from the NHMRC is that researchers can request variations to their grants to undertake COVID-19 related studies. Australian industry has joined the fight against SARS-CoV-2: CSL has formed an alliance with other leading plasma companies to develop CoVIg-19, a potential plasma-derived therapy for serious cases of COVID-19.

It is predicted that SARS-CoV-2 will circle the globe for years to come. A coordinated research and development response is critical for combating COVID-19 in the long-term. After the initial response, that includes communications and behavioural research to strengthen restrictions aimed at preventing community transmission, there must be planning for the "long-game" to accelerate and build capacity in SARS-CoV-2 basic, clinical and public health research. Fundamental questions to be pursued include unravelling the SARS-CoV-2 replication strategy, understanding how the virus causes disease, and in particular why some individuals succumb to severe disease and death, while others are relatively unscathed, as well as determining the correlates of immunity to SARS-CoV-2 to inform vaccine strategies. Lessons can be learned from Australia's response to the last major global pandemic caused by human immunodeficiency virus (HIV), also a zoonoses, which has so far affected an estimated 70 million individuals globally. Australia's successful contribution to improving treatment, quality of life, and survival of individuals living with HIV was strong bipartisan political and scientific leadership, community engagement, strategic planning, a stable workforce, and sustained government funding. Investment in HIV research capacity was critical in training the next generation of researchers, many of whom have become international leaders in clinical, virology, immunology, and public health research and who now contribute to the SARS-CoV-2 research effort.



The investment in discovery research is the engine of innovation without which our clinicians and public health researchers would not have the diagnostic, vaccine, and antiviral tools needed to combat infectious diseases. Yet development of effective prophylactics and treatments takes years, requiring sustained funding and a trained workforce. Elucidating HIV replication at the molecular level was critical in identifying viral targets for development of antiretroviral drugs which has transformed HIV from a death sentence to a chronic manageable disease. Discovery research performed twenty years ago by Mark Denison, now Director of pediatric infectious diseases division at Vanderbilt, that unravelled the replication strategy of an obscure mouse coronavirus, was instrumental in discovering the drug, remdesivir, a promising frontrunner for treating SARS-CoV-2.

SARS-CoV-2 will have major economic costs on Australia and globally although Australia is perfectly positioned to conduct ground-breaking science to inform global responses to COVID-19 given our

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relative success in containment. The lockdown and current focus on COVID-19 will lead to individuals delaying medical treatment for other diseases, potentially leading to an increase in total disease burden. COVID-19 will also disproportionally affect our Indo-Pacific neighbours who will look to Australia for support in strengthening their fragile health systems unable to deal with added health challenges. As governments examine budget deficits in the future, they might be tempted to cut research funding. The lesson to be learnt from the SARS-CoV-2 outbreak is that funding in research and in our HMR workforce is a critical investment that saves lives and reaps financial returns — to cut research funding will be at our own peril.

The need for sustained research funding in a COVID-19 world

Dr Kirsten Spann,
Professor of Virology;
Deputy Head of the School of Biomedical Science;
Centre for Immunology and Infection Control; Queensland University of Technology

Dr Kirsten Spann

What will the medical research funding landscape look like in a post-COVID-19 world? Many of us are concerned that funding for this sector, at both state and federal levels, will inevitably be reduced to offset the massive cost of supporting businesses and individuals through this economic crisis. Indeed, we are on a trajectory towards a global recession, if not a depression, during which funding for medical research will no doubt compete with other government-funded priorities. Fortunately, Australia was buffered from the worst of the Global Financial Crisis in 2007–2009, despite medical research sectors in other parts of the world being hit hard, with success rates for large national funding schemes plummeting to below 5 per cent in some cases. However, now more than ever, we need an increase in financial support for medical research. COVID-19 has highlighted exactly how important medical research is when a health crisis, such as a pandemic, hits.

Should we have been better prepared for an emergent pathogenic coronavirus? In hindsight, we would probably say yes, as we have already experienced a SARS coronavirus pandemic (2003) and MERS is ongoing in Middle Eastern countries, particularly Saudi Arabia. Unfortunately, appetites for sustained funding for research on specific pathogens tend to wane once they are no longer perceived to be a significant threat to human health. Following the SARS outbreak of 2002–2003, the Institute of Medicine (USA) Forum on Microbial Threats identified that research and development of vaccines and antivirals, in addition to effective surveillance and early warning systems, are key to the control of future emergent human pathogens. Indeed, there was a global surge in SARS research initially, including vaccine and antiviral development. However, once SARS was no longer considered a pandemic and all but disappeared from the human population, bar some accidental lab-acquired infections and a small re-emergence in southern China, interest in sustained funding decreased dramatically. There was no longer a market for vaccines and drugs against SARS. However, the threat to global health from emerging viruses, specifically coronaviruses, was clearly not over.

We need to start recognizing that now, more than ever, we must bolster and sustain research that will support preparedness for future epidemics and pandemics. It is not always easy to predict which pathogen will emerge to infect humans. Therefore, funding technology platforms that enable rapid vaccine development and pipelines for validation and commercialisation are key. In addition, funding for broader testing of existing drugs will inform us of the multimodal functionalities of compounds, so that we can rapidly repurpose drugs to combat new infections as they emerge.

One important aspect to this preparedness is a need for better integration between human and veterinary research, in particular, basic research regarding pathogenesis, biology and transmission mechanisms of animal pathogens identified as a potential threat to human health. A large proportion of human pathogens are zoonotic, and those that have caused epidemics in recent decades have emerged from animals. Traditionally in Australia, government funding schemes have supported either animal or human research. Schemes that support and encourage better collaboration and integration between veterinary and human medical research need to be established. A One Health approach, that integrates human, animal and environmental health, has been recognised and promoted by infectious disease researchers for over a decade

as the ideal platform for zoonotic disease outbreak preparedness and management. Funding in Australia that promotes this holistic approach to outbreak preparedness is essential.

Basic research cannot be overshadowed completely by biotech and the push for antiviral and vaccine platforms. Successful strategies for prevention and treatment are always underpinned by a solid foundation of knowledge on pathogenesis, modes of transmission, infectious disease modalities in chronic conditions, the immune response across a broad and divergent population, and risk factors for both infection and disease progression. Basic research needs to continue otherwise, when disease outbreaks occur, we will not be armed with the knowledge we need to overcome them.

Therefore, now more than ever, we need the scientific and medical research sector to be funded. The best way to prevent a pandemic is to be armed and ready to fight the pathogen directly. It requires basic research centred around a One Health strategy and the development of vaccine and antiviral platforms that can be rapidly deployed to target specific emergent pathogens. Viruses, and in particular RNA viruses, with their propensity for rapid mutation and host-switching, will continue to cause outbreaks of disease in the future. That is a certainty, and as a scientific and medical community, we need to be supported in our efforts to avoid another COVID-19-like crisis; and so ASMR and other bodies within Australia's scientific and medical research community need to continue the good work of promoting research and advocating for funding.

Defining stress syndromes of disaster impact and recovery: A basis for self care and resilience

Rob Gordon PhD,
Consultant Psychologist.

This year, natural disasters affected a huge swath of Southeast Australia. For most of us, they are far away and fade as normal demands return. For many who experience it, disaster is life changing, taking years to absorb what happened and adjust future plans. Disasters are social events with social consequences distinct from localised traumas occurring to individuals or families.

For the past 37 years, I have worked with communities all over Australia and New Zealand after fires, floods, cyclones, droughts, earthquakes, shootings, bombs and other acts of human malevolence. As a consultant I have met people at all stages of recovery — months, years or decades later, learned how their lives were affected and followed their journey to recovery. Over the years of my interactions I have realised that although each disaster is unique, in other ways they all present the same problems and the same grinding work of recovery.

I have tried to reduce this complexity to provide understanding and help. There are repeated patterns of behaviour at different stages, then recognised patterns of emotional and cognitive difficulties associated with the behaviour and the physiology of stress helped understand the phenomenology of people's recovery experience.

Three processes occur during recovery, observable in behaviour, facial expression, posture and activity level as well as physiology, emotional and cognitive responses. Possible physiological responses to different stress situations provide the basis for these patterns and help people map their responses as part of a collective situation and give confidence in the recovery process.

Dr Rob Gordon — Clinical Psychologist in Private Practice and consultant Victorian Government departments for disaster recovery and Australian Red Cross Emergency Services for 25 years.

The first process I call Emergency Mode, is the response to acute stress, which occurs when presented with a threat that requires immediate action, such as responding to the emergency. The physiology of arousal activates adrenalin as a major driver. I think of this as sympathetic arousal.

Adrenalin mobilises energy from reserves and other adaptive changes, gained at the price of attention being narrowed onto the threat, and the self neglected. Sympathetic arousal activates the right frontal lobe at the expense of the left, ensuring dominance of sensori-motor thinking over verbal-conceptual thinking. If actions are not well rehearsed and practiced, people dither and do things that make no sense.

The facial expression is focussed, tense and expressionless. Emotions are shut down in favour of action. As long as people can act, arousal is discharged, even if the action is unhelpful. If action is blocked, arousal seeks alternative discharge via emotion in anger or distress. Hence emergency mode is often emotionally turbulent.

Personal and social recovery can only begin when arousal is reduced. Aroused people need to recognise and manage their state with de-arousing strategies and put more resources into self-care to avoid mental and physical crises.

The second process is Endurance Mode — the response to continuing stress about which nothing can be done now to resolve it, it must be endured. It must be managed with steps that are beyond control of the person and continually remove power to act. All this must be done while maintaining normal life under difficulties, temporary, low standard housing, disrupted community life, friends not understanding, financial problems, posttraumatic stress, isolation and misunderstanding as everyone reacts to stress differently.

The essence of endurance mode is what I call parasympathetic arousal dominated by cortisol and associated substances, conserving and protecting the body for extended exposure to stressors. What is observed is what we all know as "zombie mode." Numb emotions, fixed deadpan face, monotonous voice, working without reference to fatigue or state, doing things automatically and becoming impatient if anyone gets in the way. In this state people can do anything familiar and routine, but cannot remember, organise, innovate, plan, strategize or perform other "higher order" cognitive functions. Yet, these are skills essential for recovery. This can continue several years until routine lives are restored and sense of safety restored.

The mental and physical health pitfalls of protracted parasympathetic arousal are avoided if tasks are prioritised outside the stress state with a wider view: personal welfare, relationships, leisure and all that gives meaning and value to life must be included in recovery and the focus on material recovery reduced.

Then the third process comes into play. Cortisol has a selective effect on the hippocampus and other parts of the brain associated with processing and organising memory material so that it enhances the sense of identity. High parasympathetic stress eventually leads people to wonder what the point of it all is or feel they don't own their lives. They are vulnerable to a disorienting sense of identity confusion — perhaps for the first time in their lives. This Identity Crisis is inevitable if there is sustained parasympathetic arousal and high cortisol. It often occurs when things return to normal, yet it does not feel right, relationships change, people withdraw, life is no longer satisfying or enjoyable as it was.

The remedy for identity crisis is leisure to think and reflect, community conversations, art projects, history-making to integrate the disaster into personal, community and national culture. It can be a difficult few years later if friends and relatives no longer want to talk about it and suggest to "put it behind you", "stop dwelling on the past", etc.

A local community culture that understands these processes creates a sense of belonging and collective identity which support psychological processes required to integrate experiences for learning to become more compassionate, confident of the ability to survive and prepared for the future. These are key qualities of personal and communal resilience.

I have sometimes given a presentation to a community sketching these processes for people to recognise in themselves and each other and show it was essential to care for themselves through the process. A presentation in the language of their experience enables them to recognise their state and negates the most pernicious feature of stress – the loss of self-awareness in favour of focus on the stressor. They realise they must focus on themselves first, then on the disaster and its consequences, and not put everything aside until they have restored material losses.

Resilience hinges on self-awareness and having the mental space to make decisions to protect what cannot be replaced while replacing what can be while maintaining a quality of life.

Parenting after a disaster:
Challenges for family health and wellbeing after the Black Saturday bushfires

Dr Lauren Kosta and Professor Louise Harms

In Australia, and around the world, 2020 has started like few of us could have imagined. Now in the midst of the coronavirus pandemic, for those of us who did not experience them first hand, the summer's horrendous bushfires may seem an event of the past. However, we know that recovery from a disaster is a marathon, not a sprint, and so for people who were directly affected by the bushfires that reality is still very much the present.

In difficult times, there is often a focus on children's wellbeing and recovery, and with that has come recognition of the significant influence parenting can have. Post-disaster research has tended to look at how various aspects like parenting behaviours or parental mental health correlates with outcomes for children. However, parents have also notably been compared to first responders in relation to helping children cope. This analogy should remind us that a critical perspective for being able to support children and families is to understand how parenting is experienced by parents themselves.

For my (Lauren's) doctoral research I spoke to 22 parents in-depth to find out about their experiences on average six to seven years following the Victorian Black Saturday bushfires. Many of the parents began their stories recounting aspects of their experience during the fires. It was clear that their role as parents was a salient part of their own trauma. The threat to life during the fires often forced into conscious awareness limits in being able to protect their children.

In the years following the fires, parenting after the bushfires stood out for many as being different and even more difficult than it had before. There were new situations, ones that they had never expected to face as parents in Australia (e.g., talking to their children about the deaths of so many people), and ways in which the 'usual' challenges of parenting seemed amplified. For example, struggling with patience and tolerance became a prominent challenge for a number of the participants. Changes also included the need to be flexible and find new strategies for responding to their children's behaviour. For some, the volume or nature of the changes meant parenting felt so different there was a sense of having lost a valued part of their identity. Struggling with these challenges can be an isolating experience, as parents mentioned finding it difficult to speak to others when they felt like they were not able to be the parent that they wanted to be.

Across all of the families we heard from, it was clear there were needs for support at different levels: their own wellbeing, supports for their children, and opportunities as a family. Through this process of reflecting, parents identified having time (or space) for themselves and maintaining their own wellbeing, as being of critical importance to their ability to parent. This aligns with what health and mental health experts often advise. However, parents also spoke about how hard it had actually been to prioritize when it felt like there were so many other demands they needed to address, ones that were more directly related to their children's wellbeing. A key barrier to being able to engage in activities that fostered their own wellbeing was the availability of trusted arrangements for their children to be looked after. While some parents had access to extended family, many others did not. Regular, formal childcare may be disrupted or unavailable in the aftermath of a disaster. A vast range of services that may not see parenting as specifically related their core business, may unintentionally end up excluding parents if childcare is not provided. This includes, for example, whether parents are able to attend medical or mental health appointments.

Thinking of how to support children and families following a disaster involves being aware of the experiences of parents. Expert advice on strategies for helping children is certainly a form of support parents seek and appreciate, but it is only one part of the puzzle. The experience of parenting both influences and is influenced by parent's own recovery following a disaster. Acknowledging the range of challenges parents face, can be useful to thinking about service provision as well as helping parents feel heard, understood and supported in difficult times.

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Links

Parenting: Coping with crisis is saved here.

Helping Children and Young People Cope booklet is saved here.

An online resources guide for parents and carers can be found here.

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