NSW Health

As one system

The NSW Health System's Response to COVID-19

January 2023

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NSW GOVERNMENT

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November 2022

Foreword

A message from the Secretary of NSW Health,
Susan Pearce AM

Since the commencement of the COVID-19 pandemic health systems across the world have had to reinvent themselves over and over again, taking on roles and responsibilities that many of us would never have contemplated.

Consequently, given the gravity of the pandemic and its impact, it is imperative that we assess what we have done well, what we could have done better, and how learning from the last few years will help us both in the ongoing response to COVID-19, and preparation for public health emergencies of the future.

In 2022, I commissioned Robyn Kruk AO to conduct this work, and to consider how we implemented an emergency response as a health system, while also ensuring we continued to meet the ongoing healthcare needs of the NSW community.

In doing so, the team spoke to more than 350 stakeholders across the NSW Health system, as well as a wide range of government and external service providers including Primary Health Networks (PHNs), Aboriginal Medical Services (AMSs), Aboriginal Community Controlled Health Services (ACCHSs), unions, medical colleges, peak bodies, aged care service providers, disability service providers, and people with disability.

It was especially important to me that we provided people involved in our COVID-19 response with an opportunity to share their insights and experiences; the strength of our health system has always been our remarkable staff and partner organisations; their ability to adapt and respond to rapidly changing circumstances and our ability to work together every day with a focus on the right thing - the health and wellbeing of our community and each other.

I welcome the debrief report and its recommendations to strengthen NSW Health's emergency preparedness, and to maintain and reinforce existing strengths within NSW Health as we look to the future. Implementation of the recommendations is now under way.

I want to again express the heartfelt appreciation I have for the staff of NSW Health. Without you, regardless of what your role was during this pandemic, none of this would ever have been possible.

Susan Pearce AM
Secretary, NSW Health

A message from the Independent Convenor,
Robyn Kruk AO

COVID-19 has been called a 'one in a hundred-year' pandemic, but evidence suggests that no health system or community will have the luxury of 100 years of downtime. The World Health Organization has declared six public health emergencies of international concern since 2014. There is a rise in the frequency and diversity of outbreaks, with links to climate change, population increase, global migration and the increasing likelihood of spill-overs from animals to humans.

Noting this, the Secretary of NSW Health, Susan Pearce commissioned a Debrief of the NSW Health system's response to COVID-19 for many very sound reasons. There is an increasing recognition that pandemic preparedness needs to be treated as a permanent priority, rather than following the path of those that have adopted a 'panic and forget strategy,' allowing system preparedness to wane.

Secondly, the Secretary acknowledged the importance of providing people involved in the Response with an opportunity to share their insights of what went well, what was challenging, and lessons learnt – to avoid those that are subsequently charged with the responsibility having to bear the brunt of inaction or short memories.

NSW Health is well-equipped and prides itself on its emergency response capability. It is consistently acknowledged that the scale, impact, and duration of the COVID-19 response was unprecedented; so too was the scale of the NSW Health Response and the required broader whole-of-government response. COVID-19 required NSW Health to respond as one system, activating both its public health emergency response and a whole-of-health system response to support contact tracing, testing and vaccination, but also ensuring that the health system continued to meet the ongoing healthcare needs of the NSW community.

The NSW Health COVID-19 Response Debrief (the Debrief) has many key messages, none more important than the criticality of the capacity, capability and health and wellbeing of the clinical and non-clinical workforce; their commitment to a shared purpose and a preparedness to deal with their own fears in high pressure environments, do the hard yards, and produce some outstanding results for their community. At the same time, they were adapting existing emergency systems and health services to deal with COVID-19 related challenges. This complex environment makes it even more important for decision-makers to listen closely to their workforce, with a renewed focus on their preparedness and health and wellbeing. It also reaffirms that its people, supported by good systems as one of the most critical success factors.

The NSW Health Response highlighted the important need to be able to mobilise a timely and effective whole-of-government and whole-of-community response to support the needs of communities that were most adversely impacted. The health and social needs of priority populations and vulnerable people must be considered upfront in planning and responses, and this approach must be hardwired into future systems.

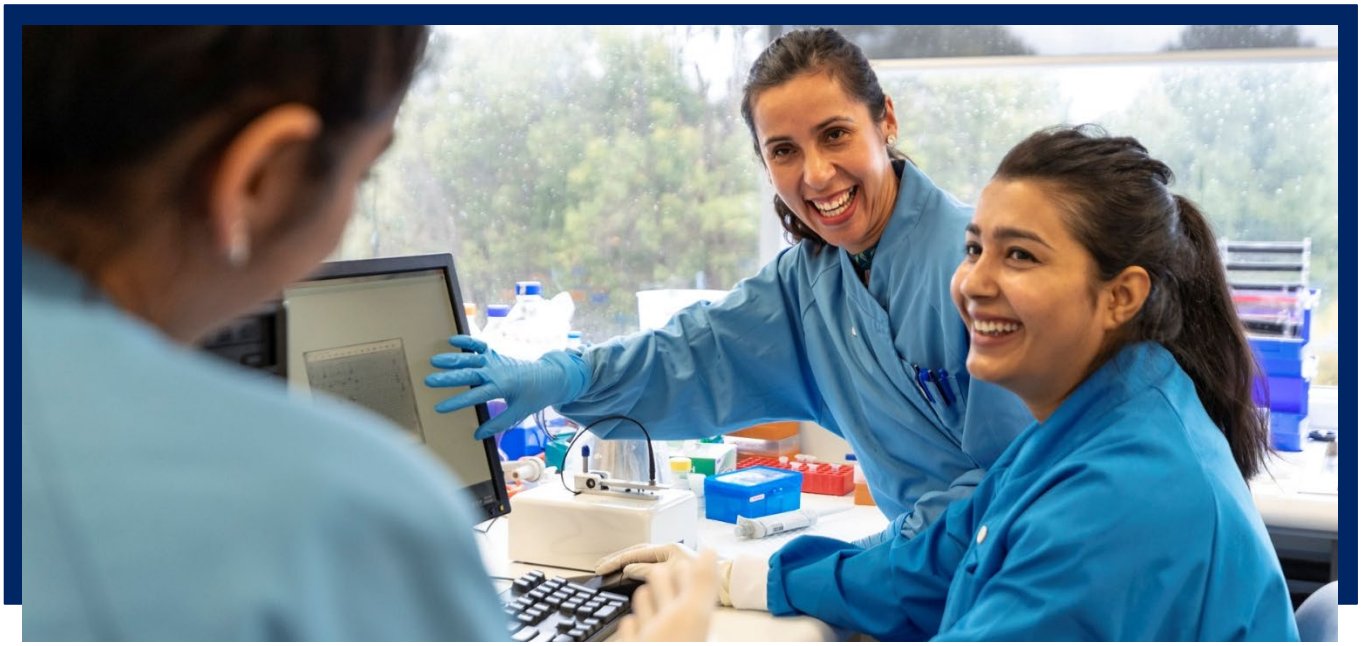
Increasing overall preparedness in health systems, governments and communities is needed, acknowledging the profound and inequitable health, economic, and social impacts that COVID-19 had on communities.

I would like to express my personal appreciation to every person and team that has contributed their insights into the Debrief. I would also like to acknowledge those many people who had previously provided inputs into local debriefs and other ongoing review processes – these also have been invaluable in shaping this report.

The Debrief would also not have been possible without the commitment of time of over 500 people who participated in the debriefing discussions, the support of leaders across the health system, the members of the Process Consultative Group, and teams from key Response partners within the NSW Government, community partners and leaders in key communities, including Aboriginal health, aged care, disability and primary care; and the vital support of its Secretariat, which was led by Ryan Broom and supported by a small team from PwC Australia.

Robyn Kruk AO
Independent Convenor

Executive summary



Background

The COVID-19 Response (the Response) is a singularly unique event in the history of NSW Health and its operation as a large, integrated public health system. As the first truly global pandemic in over a century, it is essential to understand what went well, what was challenging and why, and identify lessons learnt and improvement opportunities to inform future responses and ensure better preparedness and operation of the NSW Health system. This Debrief process provided the opportunity for the health workforce and key partners to do so.

We were asked to:

- Examine the suitability of the *NSW Human Influenza Pandemic Plan* (NSW HIPP) and *NSW Health Influenza Pandemic Plan – PD 2016_016* (Pandemic Plan) and existing and introduced emergency response structures to the COVID-19 pandemic in New South Wales (NSW) in 2020-2022
- Define the lessons learnt from the pandemic Response stage (including the action stage of the *Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)* and phases A-C of the *National Plan to transition Australia's COVID Response* (National Plan), inclusive of health system operational and public health response
- Identify system improvements and any required amendments to the *Pandemic Plan* and any associated emergency management plans, structures, and arrangements.

This Debrief is purposefully focused on the NSW Health system's response. While we have not explored budgetary decisions, decisions of the Australian Government and NSW Governments, or the nature of Public Health Orders (PHOs) made through the Response in accord with the Terms of Reference (see *Appendix A*), we have reflected on the responses of partner agencies where the interface with NSW Health was particularly important and impactful. It covers the period of March 2020-March 2022.

This Debrief aligns with, and was informed by, the Centre for Epidemiology and Evidence's *Reflections on the NSW COVID-19 public health response: Acknowledging the successes and learning for the future (2022* (the Public Health Response Debrief Report), which explores in detail the many facets of NSW Health's public health response to COVID-19.

Our process

This Debrief finds its purpose and power in listening to the experiences of hundreds of individuals, NSW Health teams and key partners, then translating them into lessons and actions to better prepare for emergency responses and improve business as usual (BAU) operations.

COVID-19 impacted everyone in NSW Health. We heard deeply personal stories about the impact of COVID-19 on colleagues, families, and communities; honest and frank discussions about what they are proud of, what worked well and what did not; cathartic reflections on extremely difficult experiences; and, to a great extent, overwhelming pride in being part of the Response. People were uniformly open and enthusiastic to help strengthen and shape future responses, and to build on the partnerships that underpinned an *'unprecedented collegiality to [respond to] an unprecedented incident.'*

Through more than 75 consultations and focus sessions, we spoke to more than 350 stakeholders across the NSW Health system. We also spoke with a wide range of government and external service providers, Primary Health Networks (PHNs), Aboriginal Medical Services (AMSs), Aboriginal Community Controlled Health Services (ACCHSs), unions, medical colleges, peak bodies, aged care service providers, disability service providers, and people with disability.

This Debrief was structured over seven domains of interest to guide discussion and reflection:

- Governance and Decision-making
- System Impact
- Communication and Engagement
- Community Impact
- Workforce Impact
- Innovation and Technology
- Data and Information.

As One System reports back to NSW Health across these seven domains, describing key strengths that we heard and key challenges that were consistently identified. It also identifies a wide range of lessons and opportunities for improvement that people, teams, and the system have recognised during the Response.

From these lessons and supplemented by research, submissions and debriefs already conducted by NSW Health teams, external reports, and literature, we make six Recommendations to help NSW Health better prepare for future emergency responses, and five Action Areas for NSW Health (detailed in the end of the Executive Summary) to improve its BAU operations based on the learnings, successful experiences, and innovation during the pandemic.

Setting the scene

On 25 January 2020, three cases of novel coronavirus (nCoV-19) were confirmed in NSW. On 11 February 2020, the World Health Organisation named the disease caused by nCoV19 as COVID-19. On 11 March 2020, the World Health Organization declared COVID-19 to be a pandemic.

Over the following days, months, and past three years, health systems and governments around the world mobilised public health, social and economic responses, the likes of which the world had not seen before, to protect people, communities, economies, and enable health systems to continue to respond to COVID-19 and its impacts.

No health system can claim to have been fully prepared for COVID-19

Emergency plans and supporting first response planning generally have not anticipated sequential and concurrent health and natural disasters at the scale and duration experienced in the last few years. Planning and preparedness have not caught up across all levels of government and community, nor the level of integration achieved to protect and support the differing needs of impacted communities effectively.

Despite this, NSW Health was relatively well-positioned to respond. This was a result of long-term and ongoing investment in data and information communication technology (ICT) infrastructure, analytics, and connectivity, devolved operational structures that retained the ability to respond and deploy resources across the health system, and sustained investment in local public health expertise and capacity. This was complemented by significant internal capability and capacity in pathology, Aboriginal health, quality and safety, governance, infrastructure planning, workforce training and development, procurement and logistics in the Pillar organisations and Shared Services agencies, the strong operational and local knowledge of the Local Health Districts (LHDs), and the expertise of the Specialty Health Networks (SHNs) and NSW Ambulance.

NSW Health could not have done what it did without the unrelenting efforts, unprecedented collegiality, and flexibility of its staff. Nor could it have done so without strong relationships with the broader health sector and key government, community, and non-government partners. We consistently heard that it is committed, hard-working and passionate people, prepared to go the extra mile, supported by good coordination and communication structures that make the difference in emergencies. NSW Health had to evolve and adapt existing emergency response processes to fit the unique challenges of COVID-19, highlighting the need to upgrade the existing emergency planning instruments and broader system preparedness.

A growing, innovative health system, but one which was facing a range of challenges

Health systems around the world are facing common challenges, including NSW Health – growing system demand, workforce challenges and limited capability to extend reach for emergencies while meeting BAU needs. Demand for healthcare has been rapidly growing across metropolitan and regional NSW for many years. This growing demand has led to sustained investment in new and expanded hospitals across NSW, new models of care that are digitally enabled, and a progressive shift in focus on delivering care that supports personalised and value-based outcomes.

Workforce pressure has also been growing; new and expanded facilities need new staff, rural and regional LHDs face challenges attracting and retaining staff, and the demographic mix of the workforce is shifting. Coupled with broader social change and economic shifts in housing, education and international workforce mobility, NSW Health shares the same issues in attracting and retaining skilled staff that all health systems in the world face.

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As one system

NSW Health's balanced model of system devolution provided the processes, relationships, networks, and systems with which to respond to COVID-19 ***as one system***, enabled by an experienced, highly skilled, flexible, and committed workforce.

COVID-19 presented itself following a period of sequential and compounding natural disasters and emergency responses involving NSW Health, particularly in regional, rural, and remote parts of NSW. Drought, bushfires, and floods impacted the resilience of communities and all first response workers and stoked a challenging mix of health and social challenges in many NSW communities. But these rolling responses also established many deep and consequential relationships between LHDs and other response agencies (including NSW Police), local government, Non-Government Organisations (NGOs), ACCHSs and other community leaders.

While there is no single metric that tells us how successful the Response was, or a benchmark regarding an appropriate level of preparedness, reports and review have highlighted the comparative metrics at the national and state level. This will continue to be the subject of ongoing research, given the broader social, economic and educational impacts. As cited by Shergold et al (2022), Australia achieved one of the highest vaccination rates in the developed world, but these results were accompanied by a range of social restrictions that, before 2020, may have been considered improbable. However, the NSW Response has been highly recognised on many counts, some of which are identified here:

NSW in numbers

To 31 March 2022:

- The first Australian state to reach over 90% double dose vaccination
- 94% double dose coverage by the end of 2021, above the 90% target and ahead of schedule
- Over 5 million COVID-19 vaccine doses delivered by NSW Health hubs and clinics
- Over 29 million COVID-19 tests performed in NSW
- The only Australian state not to experience any stock outages for PPE or other medical devices during the pandemic
- Over 2.4 million COVID-19 test results delivered by SMS, saving 423,000 hours in calls
- Over 209,634 people cared for in the community
- 2,102 lives lost to 30 March 2022 (CovidbaseAU 2022).

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NSW Health's emergency management responsibilities changed throughout the Response

NSW Health started briefing the system about nCoV-19 in January 2020, and NSW's emergency management arrangements were activated in March 2020 to respond, linking in with a range of national and state decision-making, policy, and operational responses (see Figures 1 and 2).

In line with these arrangements, as combat agency for a pandemic, NSW's response was initially controlled by NSW Health, and led by the Public Health Emergency Operations Centre (PHEOC). As COVID-19 escalated, from 29 March 2020 to December 2021 control and coordination of NSW's Response was led by the State Emergency Operations Controller (SEOCON) within NSW Police, with NSW Health remaining responsible for leading the health response, coordinating the public health and operational components across the health system (see *Appendix B* for the emergency management response structures assembled by Health).

As COVID-19 escalated, NSW Health activated a whole-of-health system emergency response. At the end of March 2020, the State Health Emergency Operations Centre (SHEOC) was established at a scale not seen before. Established under the *New South Wales Health Services Functional Area Supporting Plan* (NSW HEALTHPLAN), SHEOC's role was to support PHEOC and coordinate the broader health system operational response. The COVID-19 Critical Intelligence Unit (CIU) and COVID-19 Project Management Office (PMO) soon bolstered central decision-making with data insights, system-wide intelligence, and strategic decision support. The COVID-19 Clinical Council (Clinical Council) and Communities of Practice (CoPs) provided well-organised clinical engagement and input into decisions and provided clinicians from across the system a valuable opportunity to connect, share experiences, and collaborate.

Existing emergency management plans, including the *Pandemic Plan*, provide high-level guidance for governance and the functions of NSW Health organisations in an emergency response. But there was no up-to-date playbook to assist in navigating governance complexities centrally and locally. Between national and state emergency management plans and the broader partner agency relationships that needed to be activated centrally and locally, there were many gaps in how to most effectively leverage existing government services and financial supports to meet the significant health, social and economic impacts associated with a prolonged and high-impact pandemic incident. There was a non-uniform understanding across the health system of emergency responses in general and what each NSW Health organisation understood their role to be. Many were unfamiliar with the *Pandemic Plan* or related emergency management procedures and their impacts on BAU.

All stakeholders expressed the need for more detail about governance, roles, and responsibilities in the *Pandemic Plan* and how to translate this locally. Many reflected on the benefits of acting earlier and highlighted the benefits of more distinct escalation and trigger points, and more scope for local tailoring of responses within well-defined central strategic objectives.

There were many coordination challenges as the Response progressed, particularly across government, and particularly in the period leading up to the rise of the Delta variant. In many areas, Health 'filled the gaps' in key social and welfare supports in the absence of an agreed whole-of-government deployment of responsibilities. At the same time, there were reports of highly integrated local responses between government, councils, and communities to ensure families and children were cared for. Despite these challenges, at a system level, NSW government partner agencies were collaborative, supportive and responsive in supporting NSW Health's Response. The strength of many existing relationships between Health and other agencies and community partners both centrally and locally helped overcome much uncertainty.

While all reflected on the importance of these relationships, it was acknowledged that these needed to be supported by more formalised and enduring emergency structures in plans to provide for a more consistent and sustainable response to communities.

An ever-expanding role

NSW Health's role expanded considerably over time, arising from the deliberations of National Cabinet and other NSW Government decisions. This progressively increased the scope of SHEOC's responsibilities, and the whole system continuously adapted in this rapidly changing environment to deliver sophisticated, integrated responses as needed, with many exceptional results. Some highlights include:

- Executing a hotel quarantine system for international travellers in just 48 hours, protecting the NSW community while ensuring Sydney remained Australia's principal international gateway, recording only 8 transmissions between April 2020 and September 2021 and enabling over 152,000 people to return safely to NSW
- Establishing Special Health Accommodation across NSW for a range of at-risk people, recording no transmission events
- Scaling up virtual and community care models to support people in quarantine, other supported accommodation, and then later in their own homes, providing safe, high-quality healthcare to thousands of people, while retaining public hospital capacity for those who needed it most
- Developing and rolling out innovative SMS test results for COVID-19 Polymerase Chain Reaction (PCR) tests, putting information in the hands of consumers more quickly and efficiently, saving staff time along the way
- Establishing vaccine hubs across NSW that delivered more than 4 million COVID19 vaccines in a safe, professional, calm environment
- Amplifying the Patient Flow Portal (PFP) to be a rich, intuitive, and practical data portal for clinicians, hospitals, and the system to make better decisions to improve the coordination and integration of care
- Establishing the CIU to consolidate local and global literature, data, and evidence to provide objectives insights to decision-makers
- Developing surge capacity in the health system, including intensive care unit (ICU) capacity, assisted in managing demand across the system with the support of the Ambulance Service's assessment of ramping options and scenario planning
- Working with government and community partners to enhance whole-of-government communications to deliver consistent messaging, coordinate supports for Aboriginal communities, assess community sentiment, and using data to develop behaviourally focussed engagement plans to support impact of PHOs
- Progressively strengthening the planning and engagement to support Culturally and Linguistically Diverse (CALD) communities at both the central and local level through whole-of-government coordination.

Delta changed everything

Between 2020 and June 2021, NSW Health and partner agencies responded to the initial variants of COVID-19, managed an unprecedented border closure with Victoria, and dealt quickly and effectively with localised outbreaks that required postcode-based restrictions on mobility in the eastern suburbs and northern parts of Sydney, and regional NSW.

Prior to June 2021, NSW Health was, by default, 'filling the gaps' in many social and welfare services in some parts of the state – services that normally sit outside of Health's portfolio. Though Health rose to the challenge, this placed significant additional and unsustainable pressure on the system at a time when resources were already stretched. It created additional uncertainty in the absence of clear accountability for some functional areas across government and led to significant divergence of responses to these challenges across NSW, depending on local needs, resources, and relationships.

Led by Health and NSW Police, developing and executing the *Delta MicroStrategy* from July 2021 was consistently acknowledged as a 'game changer' in genuinely engaging and coordinating a whole-of-government response, and in involving and supporting priority and vulnerable populations in locked-down communities, and groups impacted by other restrictions, including state border closures. The importance of Health being able to leverage key data, expertise and other welfare and social supports from across

government and community was consistently identified as a critical success factor to embed in future emergency management responses.

An earlier focus on people and communities most impacted and most in need

The Response evolved significantly over time to respond to changing advice, changing resources, changing priorities, and changing information. The most significant shift, however, was the change to respond more directly to Aboriginal communities and other priority groups, and people and communities most impacted, at risk, or in need; elderly, people with disability, new migrants, CALD communities, vulnerable people in lock down, and those most impacted by public health restrictions. Coordination and communication at the whole-of-government level and with the community strengthened to respond to the challenges associated with the Delta variant.

While the approaches adopted were different across NSW, there was agreement that future responses for these people and communities need to happen earlier and be shaped with them to meet their needs. Community leaders and other key local government and community groups were not as closely involved in governance or decision-making at a local level as they would have liked, and as early as they should have been to shape key responses and monitor their effectiveness.

It is essential to include key leaders for these communities or their representatives in decision-making early at the outset, and to leverage the interconnected social networks community leaders have in developing and implementing culturally-appropriate supports and services. We heard that relationships with community leaders, including Aboriginal elders and religious figures, were often very strong, but these relationships were not formalised on an organisational level in emergency planning, making activation in an emergency more difficult and potentially less impactful.

From a sprint to a marathon to a daily endurance run

While first established as an emergency response, the Response ultimately morphed from a sprint into an ultramarathon. The ability of individuals, teams and leaders to continue to respond was negatively impacted over time, due to limited capacity to deploy surge workforces (especially in regional NSW), delegate ongoing health responsibilities, fatigue, limited scope to change emergency response governance and processes, and an admirable (yet unsustainable) 'whatever it takes' mindset. This reaffirmed the need to better shape the emergency planning measures to contemplate prolonged, high-impact incidents and strengthen the focus on both tactical and strategic workforce issues in both a pandemic response but equally important as part of BAU.

The efforts of all NSW Health staff - clinical and non-clinical - must be acknowledged, whether in direct emergency roles or impacted by the redeployment of staff to areas of immediate need or meeting the ongoing health needs of the community. Their combined contribution to the Response was widely acknowledged by all interviewed; it was exceptional.

Transforming care delivered in the community

Tough decisions were made throughout the Response regarding suspension of day-to-day and some face-to-face services, including health promotion and other preventive health programs, elective surgery, and other health services including mental health and dental care. In many situations, multidisciplinary clinical teams worked with community partners to ensure access to services continued, with virtual care and other technology solutions used to make it happen. Many of these are identified in the report and warrant retention for system-wide application.

New strategies and workforce roles were established that integrated care between the hospital and the community based on clinical advice developed through Communities of Practice (CoPs). Clinical engagement throughout the Response was collegiate and truly interdisciplinary.

Maximum flexibility was provided to enable the most effective use of scarce existing clinical and professional staff, upskill and onboard a 'surge workforce', and train an extended workforce from beyond the NSW Health

'*family*'. This reaffirmed the non-contested proposition that NSW Health's staff are its most valuable resource. The agility, resourcefulness and collaboration of the workforce was apparent throughout the system, especially striking in regional NSW, where existing capacity challenges further impacted their ability to respond.

'Never have we been more engaged with the vulnerable people in our community'

The Response shone a new light on communities, and the relationship they have with their local health services. Most communities have a strong connection with and sense of ownership of their local health service, whether Royal Prince Alfred Hospital in central Sydney, or the Multipurpose Service in Bourke.

This sentiment was shared repeatedly across the system, both as a strength and a driver for improvement. Many people discussed their significant knowledge gap in the scale and scope of vulnerable people in their community, and the pressure they faced to arrange the supports and services needed both in the pandemic and otherwise. Others raised the cultural and professional challenges faced in meeting the needs of the vulnerable, particularly in areas of high cultural and language diversity, expressing concerns about the inclusiveness of existing services and the importance of diversity in the future health workforce. Inequity in access to services was often exacerbated during the pandemic, highlighting the importance of change in this area.

A collaborative network of public health experts

A well-resourced, locally-informed, and centrally-coordinated public health network was a critical element of the Response. NSW's hub and spoke public health network was a fundamental enabler of local and system-wide responses, with the *Public Health Response Debrief Report* highlighting it as being the *'backbone'* of the Response. The effectiveness and responsiveness of the public health network is the result of sustained investment in public health expertise and capacity centrally and locally over many years and was a distinct advantage for NSW as compared to other response approaches in Australia and internationally.

An innovative leader in public pathology services

NSW Health Pathology was a clear leader in innovation and information systems, rapidly developing testing capability and capacity to respond to system and community needs. NSW Health Pathology's expertise and capacity to adapt was a distinct advantage for the Response, recognised by numerous awards and nominations.

An exceptional workforce

The flexibility, dedication, and preparedness of the workforce to go over-and-above the call of duty for extended periods of time saw the system through periods of intense pressure. Individuals were far more adaptable than systems and structures, such as pre-existing industrial arrangements, and worked around the changes required to create a flexible team to address the changing demands of the Response.

The Response called for unprecedented levels of collegiality and interdisciplinary cooperation, and this was reported as consistently displayed. In long-term evolving incidents, tactical and strategic workforce planning, supported by integrated data and analytics, is critical. The constantly evolving context of the Response and successive waves made workforce surge planning very challenging, centrally and locally. There is a point at which surge workforce models and contingency plans hit their limit; there are simply no more suitable staff available to respond. In times like these, planning and data becomes even more important, and NSW Health worked hard to overcome existing issues with data integration to do this to ensure the system continued to operate. It was acknowledged that better workforce data, and types of workforce flexibility enabled by the pandemic, particularly new roles, deserve close exploration to potentially build into practice across the system.

Transparent, credible leaders

The Response pivoted on the strength of new and existing relationships across the system led by transparent, credible leaders within agencies, between agencies, into communities, and with the workforce and NGO sector. Often, these relationships are reported to have masked and overcame unclear governance, uncertain roles and responsibilities, and a lack of coordination across service interfaces.

Sophisticated data analytics to inform decisions

Access to reliable data at a central and local level was essential. NSW Health's Patient Flow Portal was a critical strategic investment in data visualisation to support strategic decisions. Data sharing between NSW Health and partner agencies underpinned service innovation and communication and engagement strategies that better served the community. The importance of accessing and sharing key data throughout the Response and in BAU was uncontested. The decision to enable smoother data exchange across government through a Public Health Order was applauded and led to significant improvements in informing and operationalising decisions.

Elements of the Response were hindered by a lack of agreement to share data between levels of government and with key community partners. NSW Health must consider what the next decade should look like from a data culture and governance perspective. This needs to be done to ensure the benefits that data collaboration within Health, between levels of government, and with partner agencies has delivered during the Response can continue and expand to support key health priorities.

A whole-of-health, system-wide approach to communication and engagement

The communication challenges presented by this emergency response were vast; advice changed daily as new evidence and information came to light globally and domestically, making it increasingly challenging to make communication timely.

People, communities, schools, and workplaces were asked to rapidly respond and make decisions based on complex public health and risk-based information for the first time, in the midst of personal crisis, uncertainty and fear. Public expectations of government communication and information changed; timeliness and transparency became a public expectation, and it was usually met.

Timely and transparent information delivered by credible health leaders was critical in supporting the workforce during intense uncertainty. The importance of ongoing communication to workforce wellbeing cannot be underestimated.

Different communication tools and channels were required for different purposes to speak to the numerous stakeholder groups and provide credible information quickly. NSW Health invested huge effort into effectively managing ambiguity and volatility of changing evidence, differing public health approaches, conflicting expert views, redirection of policy and procedures, and relentless media scrutiny.

As the Response matured, these efforts became more streamlined and targeted, with processes and structures established to produce fit for purpose products. NSW Health's multimedia approach shaped with the advice of Aboriginal health expertise within the Ministry and government and community partners progressively strengthened the reach and impact of communication and engagement over time. Tailoring communications for communities most impacted and in need must be prioritised in future incidents. The role of key agencies and partners such as Aboriginal peak bodies, the Department of Customer Service (DCS) and Multicultural NSW needs to be incorporated into future emergency planning and responses.

Recurrent challenges emerged as the Response progressed

The Response was not perfect, and challenges emerged and were progressively dealt with throughout. While detailed further in the report, a range of persistent challenges arose throughout the Debrief and warrant particular attention in the review of future emergency planning, including:

- Establishing an authorising environment with clearer roles, responsibilities, and accountability in Health and between key state and national partner response agencies
- Improving emergency preparedness across the system, and reducing reliance on a small number of core individuals with key areas of expertise

- Supporting workforce sustainability during surge situations, to reduce the reliance on NSW Health's existing workforce, particularly in rural and regional LHDs
- Updating current pandemic and emergency response plans and governance structures with greater specificity and flexibility to manage prolonged incidents with whole-of-government impacts
- Integrating NSW Health's Response with the broader NSW Government response earlier to mobilise support more quickly from partner agencies with central coordination
- Including Aboriginal perspectives and voices into central, regional, and local governance, planning and response structures earlier to inform culturally appropriate responses
- Improving the timeliness of the engagement and response to vulnerable and priority communities, including people with a disability, elderly and CALD communities
- Streamlining how public health advice can be translated, communicated, operationalised and more transparent within Health and the broader community
- Making it simpler to access and share timely, accurate, consistent information and data to guide decision-making, within Health, between partner agencies, and between governments, particularly for priority communities.

This report consolidates what we heard through the Debrief and presents Recommendations for NSW Health to enhance its emergency preparedness, alongside Action Areas to maintain and reinforce existing strengths within the system to optimise BAU performance and patient outcomes.

Six Recommendations to strengthen NSW Health's emergency preparedness

Six interdependent Recommendations are put forward to strengthen NSW Health's emergency preparedness. These Recommendations were directly informed by the experiences of the health workforce and key partners across the NSW health system, broader government, and the community. Each Recommendation includes specific priorities to guide the review of NSW Health's own emergency management plans, and to inform NSW Health's position within the broader NSW Government emergency management environment. They are:

1. **Make governance and decision-making structures clearer, inclusive, and more widely understood**
2. **Strengthen coordination, communication, engagement, and collaboration**
3. **Enhance the speed, transparency, accuracy, and practicality of data and information sharing**
4. **Prioritise the needs of vulnerable people and communities most at risk, impacted and in need from day one**
5. **Put communities at the centre of emergency governance, planning, preparedness, and response**
6. **Recognise, develop and sustain workforce health, wellbeing, capability and agility.**

Five Action Areas to prepare NSW Health for challenges to come

Five Action Areas are put forward to maintain and reinforce existing strengths within NSW Health to enhance performance and outcomes across the system. Lessons learnt through the Response are discussed under domains throughout the report, recognising and celebrating system strengths and opportunities for improvement. These five Action Areas bring together the lessons that had particularly strong consensus and support, with the potential to improve systems and models of care in both emergencies and BAU.

Each Action Area includes reference to the relevant domain in the report where the actions are highlighted. They are:

A. **Build on the strengths of the NSW Health operating model *(Governance and Decision-making)***
B. **Continue investing in integrated data and analytics infrastructure and capability to support decisions *(Data and Information / Innovation and Technology)***
C. **Harness the passion of clinicians and communities to inform further system transformation *(System Impact / Communication and Engagement)***
D. **Support the health and wellbeing of the workforce and expand its impact for communities *(Workforce Impact)***

E. **Continue to empower new models of care that reflect and meet community needs and expectations *(Community Impact).***

Looking forward

COVID-19 is not gone. The Response is not over. Various accountability processes are underway and will follow this Debrief. More findings will be made, and more lessons learnt. These should recognise that any emergency response is highly reliant on people being prepared to go above and beyond their normal roles, take risks and explore different ways of doing things under often extreme pressures, to support colleagues and the urgent needs of communities. This Debrief gives those involved the chance to help shape future emergency responses.

There is little uncertainty that there will be further and potentially more frequent incidents like COVID-19 in the future. While the Debrief has focussed on NSW Health's Response, it is undeniable that an effective pandemic response is highly dependent on coordination between and within all levels of government in partnership with the community.

The Report needs to be considered in tandem with the Public Health Response Debrief Report with the intention, wherever possible, to align the reflections and consultative processes. Particular focus has been given to ensuring that the experiences of both key public health leaders and operational leaders were brought together to guide the necessary changes to the *Pandemic Plan* and other emergency response measures.

Recommendations (in detail)

1. Make governance and decision-making structures clearer, inclusive, and more widely understood	
1.1	***Establish a well-defined and communicated central governance structure*** for pandemic and high-impact prolonged incidents that require activation of public health (PHEOC) and operational responses (SHEOC) and broader whole-of-government responses (SEOCON), that supports collaborative decision-making and the timely leveraging of whole-of-government community supports. This should highlight key operational roles of LHDs.
1.2	***Formalise Aboriginal representation on central and local pandemic emergency governance structures*** to embed a true partnership approach with Aboriginal stakeholders in planning, decision-making processes, and emergency responses. (Link Rec 5;1 embedding early engagement with key community partners)
1.3	***Clearly define what command and control means in the devolved system*** during emergency responses; who does what, when, why, and how. Ensure strong linkage between central and local health structures, including key state, local government and community partners.
1.4	***Embed proven structures like the COVID-19 PMO, CIU, Clinical Council and CoPs and Risk Escalation Panel within pandemic emergency management plans*** to enhance strategic issue tracking, risk assessment, clinical and workforce input and prioritisation and escalation across existing NSW Health governance structures.
1.5	***Continue current reforms to enhance system preparedness for prolonged and concurrent health and other emergencies***. This includes the functions of the State Preparedness and Response Unit and organisation and activation of Health Service Functional Area Coordinators (HSFACs) across NSW Health to provide clarity of responsibilities, including aeromedical, in different types of emergency responses.
1.6	***Further develop and integrate clear emergency procurement mechanisms***, supply chain management, and disruption mitigation plans in Business Continuity and Disaster Recovery planning processes.
1.7	***Update the Pandemic Plan and related emergency management and other policies to reflect the recommendations of this Debrief and related inquiries***, including bushfire and flood inquiries. A summary of recommended changes is included in *Appendix C*.
2. Strengthen coordination, communication, engagement, and collaboration	
2.1	***Formalise and strengthen coordination and communication structures*** and processes between SHEOC, PHEOC and SEOCON to enhance the operationalisation of PHOs across the health system and broader community. This would be greatly assisted by earlier engagement in the development and ongoing review of PHOs and greater transparency on the nature of the public health advice to maximise impact and compliance.
2.2	***Ensure Health's governance and response systems and structures are clearly communicated and understood*** by partner agencies to support responsiveness and collaborative problem-solving. This would be assisted by embedding whole-of-system/government/community scenario planning and training. Planning needs to consider emergency responses across the broader health ecosystem and include clarity about roles/expectations on non-government providers.
2.3	***Ensure the system and public understand how an emergency response may change health service delivery*** models and priorities, access needs and public communications. Specific

strategies will be required to reach and involve priority and vulnerable populations in shaping responses and ongoing review.

2.4 ***Develop an integrated approach to communications across the Aboriginal community-controlled sector and NSW Government (led by NSW Health)*** to better engage Aboriginal people as well as health services through timely sharing of accurate and culturally appropriate information and data , informed and shaped by community needs and preferences

2.5 ***Ensure that rural and regional LHDs are resourced and supported in emergency responses***. This ensures the specific challenges faced by regional LHDs and facilities in planning and responding to emergencies are recognised and considered in decision-making, including capacity, capability, and access to clinical care. Supports may include formalised partnerships with metropolitan LHDs as occurred in recent bushfires; specific escalation pathways, customised engagement forums to share system intelligence; opportunities to share and bundle community care supports to maximise access and resources; and identifying lead LHDs with the capability/capacity to shape operational responses and minimise duplication.

3. Enhance the speed, transparency, accuracy and practicality of data and information sharing

3.1 ***Review data governance structures and systems to eliminate data and information flow barriers*** within, into and out of Health in an emergency response to ensure it is timely, available and usable. Overall preparedness would be enhanced by ongoing data sharing with partner agencies, including access to key Australian Government health and social data. Pre-agreed data sharing in emergency management responses needs to be prioritised in the interim.

3.2 ***Facilitate sharing of granular data with key government and community partners*** in planning and delivering services to all priority and vulnerable communities, given the potential health benefits. Prioritise hard-to-reach communities, noting the particular challenges relating to people with disability.

3.3 ***Work with the Aboriginal community and communities most at risk, impacted and in need to consider how best to collect and use data during a pandemic emergency response,*** *including ensuring all data systems used in a pandemic are designed to be equitable and meet population needs. This should be done in consultation with communities, peak bodies, partner agencies, service providers and data custodians to inform and enable responsive, locally informed emergency responses, while respecting privacy.*

3.4 ***Establish stronger, dedicated scenario and forward planning capability*** across the health system as part of system performance priorities.

4. Prioritise the needs of people and communities most at risk, impacted and in need from day one

4.1 ***Prioritise people and communities most at risk, impacted and in need with bespoke engagement, communication and service delivery approaches shaped by lived experience*** from the beginning of any emergency response (for example, in language radio broadcasts, leveraging trusted community leaders, religious leaders, and other trusted community voices) supported by the expertise of DCS.

4.2 ***Ensure public health policy and advice considers and responds to carer-supported models of care for vulnerable people in public hospitals and other care settings***, including the parent/carer/family-supported models of care for children in public hospitals, carers/family supports for aged care and high need individuals in acute settings, acknowledging the impact on health outcomes and the workforce if these models are disrupted.

4.3	***Establish agreements with key partners to ensure the broader socio-economic needs of children and families are consistently addressed by the most appropriate service provider, government or otherwise***, in an emergency response. Key groups include, but are not limited to, children in out-of-home care, foster care, and those experiencing mental ill health, homelessness, or are at risk of domestic or family violence.
5. Put communities at the centre of emergency governance, planning, preparedness and response	
5.1	***Include key primary care and local government and community partners, on central and local emergency management governance structures***, including but not limited to General Practice, community pharmacy, Primary Health Networks (PHNs), aged care and disability care representatives, and multicultural community representatives.
5.2	***Consider NSW Health's role in supporting other parts of the health ecosystem to prepare and respond to public health emergencies*** with appropriate joint planning, formal partnerships and ongoing dialogue and relationships on a national, state and local level. This should include, but not be limited to, aged care providers, disability care providers, primary care providers and key peak and professional bodies.
5.3	***Ensure redeployments and other operational decisions consider the specific challenges faced by rural and regional LHDs***, including capacity, capability, and access to clinical care, and the impact of these challenges on their ability to effectively plan and respond to emergencies.
5.4	***Ensure future pandemic responses anticipate the need for, plan for, and maintain capability to rapidly establish at-home testing and vaccination programs*** in partnership with primary care providers, particularly General Practitioners (GPs) and community pharmacists.
5.5	***Ensure the roles and responsibilities of partner agencies and NGOs in supporting vulnerable people during an emergency response are clear and agreed*** across government, including clear escalation pathways and coordination mechanisms. This is especially important for accommodation and social supports for homeless individuals, transitions from the justice system, transport and broader welfare supports.
6. Recognise, develop, and sustain workforce health, wellbeing, capability, and agility	
6.1	***Identify and integrate key workforce data with other NSW Health data systems*** and records across patient safety, patient flow, system performance, procurement, warehousing, stock management and other relevant domains to support tactical and strategic decisions locally and centrally.
6.2	***Prioritise the rapid central determination and distribution of consistent workforce safety guidance*** and related emergency provisions, without scope for local interpretation or amendment, during an emergency response.
6.3	***Closely consider the appropriateness of current industrial instruments and training supports in supporting flexibility and agility in emergency responses,*** including how they may better enable the rapid deployment of staff and enhance existing capacity and support fairness and equity of conditions for health staff in emergency responses.
6.4	***Consider how the system can best measure, access and consider evidence to protect its workforce***, including the risks and benefits of measures like furloughing and surveillance testing during an emergency response to inform ongoing workforce practices.

6.5	***Prioritise consultation and planning to make NSW Health's emergency resourcing and surge workforce model more sustainable***, from a *'family and friends'* model to one that is more suitable for long-term incidents and responsive to workforce pressures, trends and opportunities. This would be assisted by maintaining capability for rapid onboarding and training.

Five Action Areas (in detail)

A. Build on the strengths of the NSW Health operating model *(Governance and Decision-making)*	
1	***Continue to invest in system emergency response capability and capacity*** by regularly training current and emerging leaders and reflecting emergency preparedness in Service Agreements and capability frameworks.
2	***Continue to leverage the deep operational expertise of LHDs in developing and implementing emergency responses***, and closely consider how to best use the individual strengths of different LHDs in system-wide responses to minimise duplication, enhance speed, increase access and ensure consistency of responses.
3	***Investigate the merits of centralising procurement and logistics of the top 100 critical consumables across the system*** to mitigate supply chain risks in an uncertain global context, including Personal Protective Equipment (PPE).
4	***Continue to embed close relationships between HealthShare NSW, eHealth NSW, NSW Health Pathology and Health Infrastructure NSW and their commercial partners*** to maintain procurement expertise and preferred access to hardware, equipment and other critical consumables.
B. Continue investing in integrated data and analytics infrastructure and capability to support decisions *(Data and Information / Innovation and Technology)*	
1	***Review data governance structures and systems to eliminate data and information flow barriers across NSW Health*** to ensure it is timely, useful and available to inform decisions.
2	***Work with the Australian Government to establish faster and more practical data sharing agreements*** to support strategic decision-making, including trigger clauses in legislation if appropriate.
3	***In close consultation with Aboriginal leaders and communities, consider how the system should improve the way it collects and uses data to support services for Aboriginal people***. This could include sharing data more openly and easily with healthcare providers to better inform, plan and coordinate delivery of services.
4	***In close consultation with communities, consider how to better collect and use key data within and between governments that supports better services for priority groups and vulnerable communities***, including but not limited to the elderly, people with disability, new migrants, CALD communities, and other important vulnerable populations, noting the benefits of the PHO in facilitating this sharing in NSW.
5	***Continue to enhance the Patient Flow Portal as the central NSW Health system management dashboard*** to support more integrated care across key service interfaces. This could potentially provide greater insights and awareness of needs for Aboriginal communities, and

	better coordination of care for priority communities, including CALD communities and people living with disability in the community.
6	***Build the NSW Health workforce's long term capacity and capability to better use, integrate, and respond to data and information*** to inform decisions. This capacity, capability and community should be widespread across NSW Health and across clinical and non-clinical roles.
7	***Integrate NSW Health data systems and records across workforce, patient safety, patient flow, procurement, warehousing, stock management domains*** to support tactical and strategic decisions locally and centrally.
C. Harness the passion of clinicians and communities to inform further system transformation *(System Impact)*	
1	***Consider how to best use the collective and individual expertise and reach of the CoPs to inform strategic system decisions, planning and responses*** to public health or other challenges. The success of CoPs was strongly linked to a shared purpose, with many members highlighting the potentially shared and mobilising issues relating to workforce challenges and the need for significant innovation.
2	***Better recognise the important role of carers and visitors in the safety and quality of care for vulnerable people in public hospitals***, including children, elderly and people with disability, and the need for flexibility and compassion in applying any future restrictions.
3	***Embed the use of social media and other bespoke communication models into everyday public health communication practices*** to better connect with Aboriginal communities, CALD communities, vulnerable communities and young people. Ensure that these models embed collaborative development processes to identify relevant priorities.
4	***Strengthen relationships with key government and non-government partners at a central and local level,*** including but not limited to the DCS, NSW Department of Education, Multicultural NSW, and Aboriginal Affairs NSW. Roles of these agencies be incorporated into future emergency plans to provide data and inform messaging.
5	***Maintain and build on the successful allied health led, assertive outreach multidisciplinary teams designed through the Response*** to support vulnerable populations and improve health outcomes.
D. Support the health and wellbeing of the workforce and expand its impact for communities *(Workforce Impact)*	
1	***Integrate workforce data, including human resource, rostering, learning and development and capability management, to inform tactical and strategic workforce planning***, rostering, capability development of staff and emergency responses.
2	***With the workforce, develop new approaches to understand and managing wellbeing*** in high pressure situations to support retention and attract new staff and acknowledging the impact it has on staff and their families, the different challenges faced by staff in regional NSW, and the unique needs and constraints of clinical and non-clinical staff. Priority be given to embedding wellbeing considerations in both pandemic responses and BAU.
3	***Expand the number and scope of practice of the Aboriginal Health workforce across NSW*** to make the most of their trusted relationships and expertise in caring for their communities.

4	***Closely consider how new roles introduced during the Response can support ongoing workforce flexibility and capability***, including the benefits of streamlined recruitment practices and working arrangements to maintain the ability to surge the NSW Health workforce at short notice.
5	***Consider how best to harness the leadership experience gained by individuals and teams during the Response*** for individual and corporate benefit, through leadership pipeline strategies, targeted capability development programs or other initiatives.
6	***Review the resourcing model for public health units in regional LHDs*** to ensure capacity is available to address the needs of priority and vulnerable communities in emergency responses and key BAU activities.
7	***With professional bodies and educational stakeholders, consolidate the benefits gained from moving professional training programs to virtual or hybrid delivery models***, including increased access and equity of experience for people in regional NSW.
E. Continue to empower new models of care that reflect and meet community needs and expectations *(Community Impact)*	
1	***Build on the strong relationships built centrally and locally*** with local government, aged care providers, GPs, community health providers, community leaders, peak bodies and other partners to further embed LHDs and clinical facilities into the life of their communities.
2	***Debrief with border Governments, including Queensland, South Australia, Victoria, and the Australian Capital Territory on the operation of border closures*** and their impact of individuals, families, communities and the health workforce.
3	***Ensure consistent safety and quality governance systems are in place to support the accelerated uptake of virtual care,*** aligning with national frameworks or processes as appropriate, including services delivered by government and non-government providers.
4	***Consider how to sustainably support access to enabling technology and connectivity in disadvantaged communities*** where virtual care has the potential to enhance access and quality of services.
5	***Continue to embed social determinants of health into service design and delivery***, resource allocation, program evaluation and research.
6	***Increase the consistent and widespread familiarity and skill of the workforce in Aboriginal health,*** including developing policy and programs in partnership with Aboriginal communities and leaders.
7	***Continue to support and evaluate local innovation in delivering clinical care in the community*** to better understand the impacts on patient outcomes and system operations, with a particular focus on multidisciplinary outreach models.

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1 Introduction

EXIT
Adult Acute
EMU

Introduction

Terms of Reference

In May 2022, Susan Pearce, Secretary, NSW Health, appointed Robyn Kruk AO as Convenor of the NSW Health COVID-19 System Response Debrief (the Debrief). In considering the NSW Health system's response to the COVID-19 pandemic from February 2020 to March 2022 (the Response), the Debrief aimed to:

- Examine the suitability of the *NSW Human Influenza Pandemic Plan* (NSW HIPP) and *PD 2016_016 NSW Health Influenza Pandemic Plan* (Pandemic Plan)
- Define the lessons learnt from the Response phase (including the Action stage of the *Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)* and phases A-C of the *National Plan to transition Australia's COVID Response* (National Plan), inclusive of health system operational and public health response
- Identify system improvements and any required amendments to the *Pandemic Plan* and any associated emergency management plans, structures, and arrangements.

The Debrief was conducted during a period of transition – from pandemic to endemic management of COVID-19 - and was structured over seven domains of interest to guide discussion and reflection:

1. Governance and Decision-making
2. System Impact
3. Communication and Engagement
4. Community Impact
5. Workforce Impact
6. Innovation and Technology
7. Data and Information.

The following elements were out of scope:

- Budgetary decisions
- Decisions of the Australian Government and NSW Government
- Australian Health Protection Principal Committee (AHPPC) deliberations
- The responses of partner agencies, except in the context of the NSW Health element of them
- The contents of, and decisions made to issue, Public Health Orders (PHOs).

The Debrief aligned with, and was informed by, the Centre for Epidemiology and Evidence's *Reflections on the NSW COVID-19 public health response (2022)* (Public Health Response Debrief Report), debriefs undertaken within the health system, and other relevant processes where NSW Health's role in the NSW Government response to COVID-19 was considered. Note that some of these reflections and reviews are ongoing as the pandemic persists.

Methodology

The Debrief provided a range of opportunities for internal and external stakeholders to share their experiences and perspectives of the Response with the Debrief team and each another. In addition to a comprehensive stakeholder consultation process, the Debrief team used a range of sources of information to explore how the response unfolded to inform this Report.

The Convenor was assisted by a Process Consultative Group (PCG), made up of senior system stakeholders and partner agency representatives to advise on the conduct, strategic intent and overall direction of the Debrief.

Almost all information in this report was gathered through targeted consultations with a range of stakeholders from across NSW Health, government and community partner agencies and the broader health sector. The consultation process consisted of more than 75 consultations and focus sessions with more than 350 stakeholders from Local Health Districts (LHDs), the NSW Ministry of Health (the Ministry), all NSW Health

Pillar organisations and Shared Services agencies, the COVID-19 Clinical Council (Clinical Council) and Communities of Practice (CoPs). The Debrief team also met with a range of stakeholders from outside NSW Health, including Primary Health Networks (PHNs), Aboriginal Medical Services (AMSs), Aboriginal Community Controlled Health Services (ACCHSs), NSW Government partner agencies, community partners, unions, medical colleges, peak bodies, aged care service providers, disability service providers, and people with disability. Insights captured throughout the report are reflective of key reflections and themes – they have not been attributed to individuals or organisations. For a summary of the stakeholders consulted during the Debrief, see *Appendix D.*

Information provided in consultations was supported by a desktop review of publications and data, including a large amount of supplementary information, data, and reflections provided by stakeholders themselves, including their own debriefs. For the glossary accompanying this report, see *Appendix E*, and for the references used throughout, see *Appendix F*.

How to read this report

The Debrief Report is structured into the seven domains, with each containing insights that are categorised into *Strengths* and *Issues* related to the Response, with lessons learnt incorporated throughout. *Governance and Decision-making* is the exception to this approach, with insights categorised by key themes and recommendations for enhancing the effectiveness of the *Pandemic Plan*.

These seven domains (in order of sequence) consider:

1. **Governance and Decision-making** – the impact of governance structures and processes established, lessons learnt from coordination and communication at a central, local and whole-of-government level, operationalising PHOs and leadership sustainability
2. **System Impact** – the impact of the COVID-19 vaccination program, particularly for priority and vulnerable populations, testing systems, innovations across the system including value-based care, COVID-19 Care in the Community (CCiC) and virtual care, and lessons learnt on system planning, escalation pathways and rural and regional challenges
3. **Communication and Engagement** – the impact of communications and engagement in supporting and informing the workforce and community, and lessons learnt on formalised structures and tailored approaches in delivering the desired engagement outcomes
4. **Community Impact** – the impact on the New South Wales (NSW) community, with a particular focus on the vulnerable, border closures and lessons learnt, including the importance of listening to community's needs, value of agency and local community partnerships, and delivering solutions tailored for the community
5. **Workforce Impact** – impact of the public health workforce, including their dedication and leadership, lessons learnt on workforce wellbeing and safety, strategic and tactical workforce planning, and the value of external partnerships to deliver alternative workforces
6. **Innovation and Technology** – the impact of technology in enabling virtual care and innovation through new and existing Information Communication Technology (ICT) infrastructure and lessons learnt on interoperability and accessibility
7. **Data and Information** – the impact of real-time and integrated data analysis and lessons learnt on future data collection and data sharing to improve the consistency, availability and quality of data.

Cross-cutting themes emerged during the Debrief that span across several domains. Icons have been used throughout the report to highlight key content relating to:

- Emergency management plans
- Aboriginal communities
- Vulnerable people
- Rural and regional communities

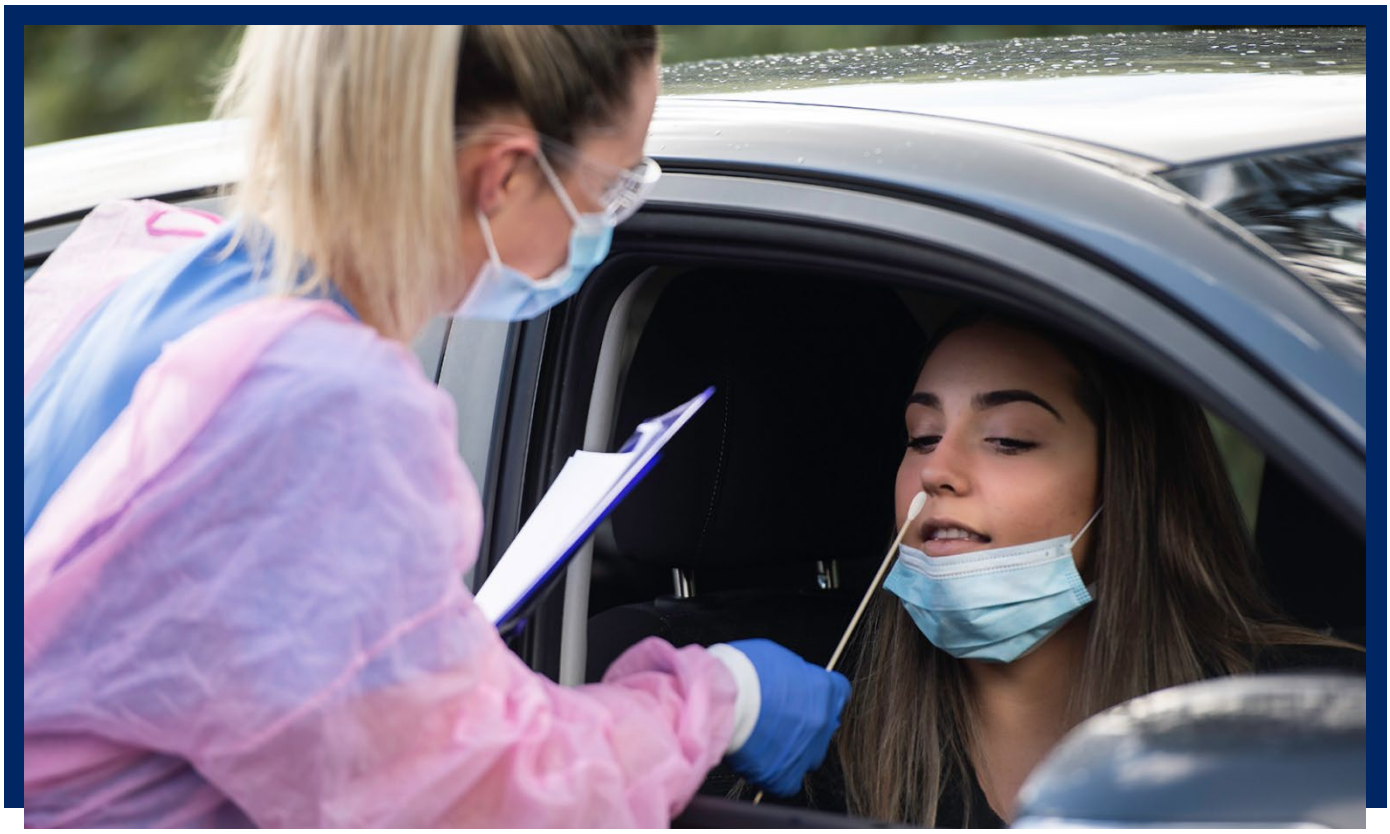
A note on vulnerable people
Some people and groups of people in the NSW community were more vulnerable to the negative impacts of COVID-19 or were more heavily impacted by the Response than others. This Report uses the term *vulnerable people* to discuss the impact of the Response on those groups of people, including but not limited to Culturally and Linguistically Diverse communities, new migrants, people who are homeless, people living with chronic health conditions (including many elderly people), and people with a disability.

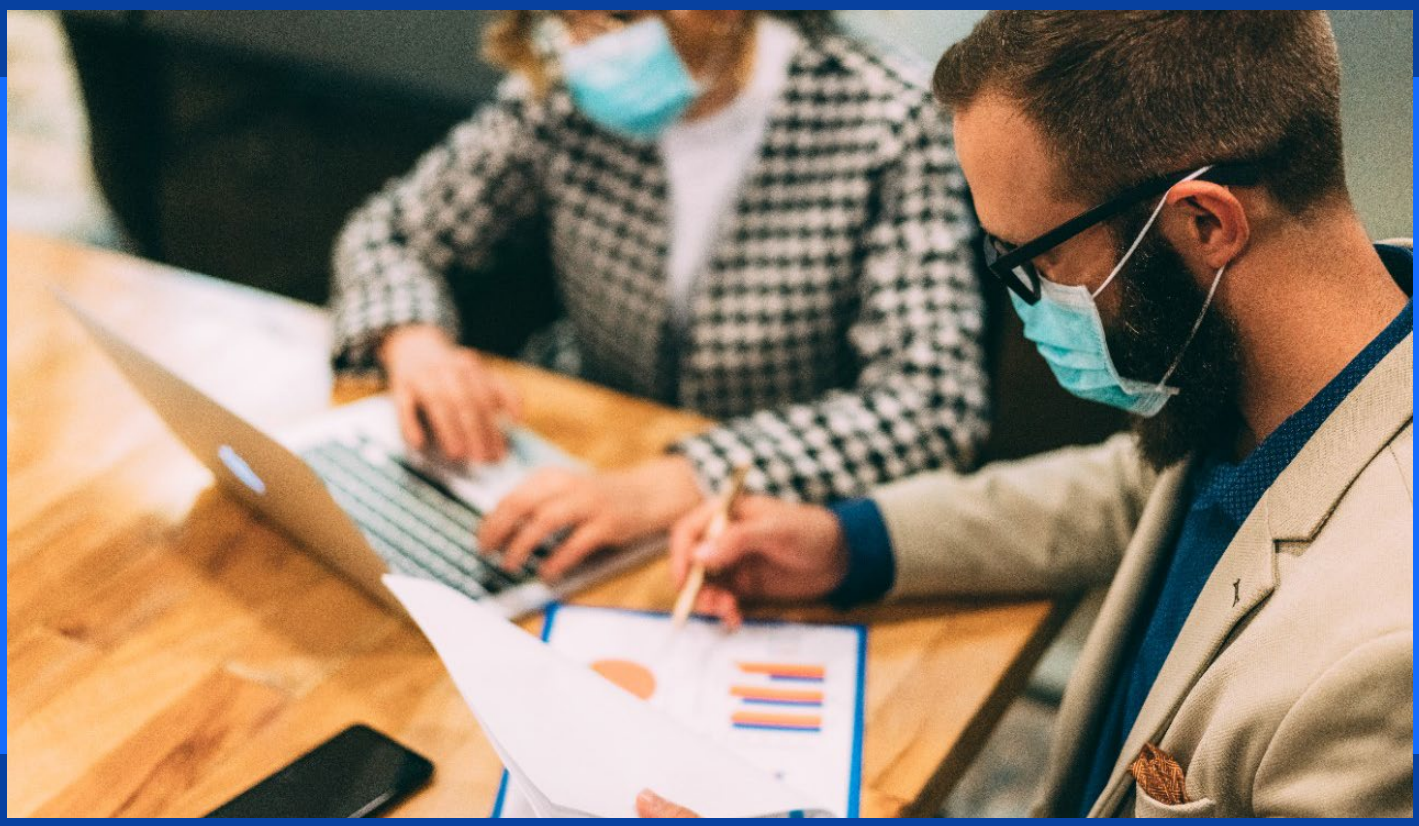
Awards that recognised strengths across the system and during the Response are also highlighted in relevant domains as follows:

Keeping People Health Award (COVID category)

NSW Ministry of Health: State Health Emergency Operations Centre

For the list of awards and nominations received by Health for its work in 2020 and 2021, refer to *Appendix G*.





2 Key insights

Governance and Decision-making

The following chapter considers the impact of governance structures and processes established, lessons learnt from coordination and communication at a central, local, and whole-of-government level, operationalising PHOs, and leadership sustainability.

The governance and decision-making processes underpinning the Response were extremely complex and were frequently adapted and modified to reflect changes in the pandemic and public health advice and the decisions of both National Cabinet and the NSW Government. Both National and NSW Government emergency responses were rapidly activated in early 2020, with public health advice significantly shaping policy and operational responses across governments.

The Council of Australian Governments and its reporting Ministerial Councils were dissolved and replaced by the National Cabinet. National Cabinet and NSW Crisis Cabinet meetings often occurred on a daily or at least weekly basis. The Australian Health Protection Principal Committee (AHPPC) advised on all aspects of the public health emergency response at a national level. The Australian Technical Advisory Group on Immunisation (ATAGI) advised on the use of vaccines, guiding National Cabinet and state decision-making and strategy. The Communicable Diseases Network Australia (CDNA) also provided national public health coordination and leadership input into National Cabinet and AHPPC processes. Public confusion arose in some instances regarding what was public health advice or a mandatory decision of governments. State government responses also varied, making communication and consistent messaging to the public even more challenging.

In NSW, the Secretary of Health, Chief Health Officer, and SHEOC Controller provided key guidance to the Minister for Health and the Crisis Cabinet on the public health and broader response of the health system to COVID-19. NSW Health's emergency management governance structures were stood-up and adapted quickly, based on existing emergency management structures and plans, some of which were undergoing updates, including consideration of the experiences from earlier emergencies, such as the 2019/20 bushfires. Plans were activated to establish emergency operation centres for both public health and broader health system emergency operations given the anticipated impact of COVID-19 on the community and health system. Early mobilisation of the Public Health Emergency Operations Centre (PHEOC) and the subsequent establishment of the State Health Emergency Operations Centre (SHEOC) under the *New South Wales Health Services Functional Area Supporting Plan* (NSW HEALTHPLAN) were pivotal in signalling the move to a system-wide Response.

NSW Health's responsibilities continued to evolve and, in many instances, expand in scope due to decisions of National Cabinet, NSW Cabinet, and changing public health risks, with early expansion into key areas more traditionally the remit of the Australian Government including quarantine, border screening, aged care and evolving responsibilities for vaccination.

Under the *NSW State Emergency Management Plan* (EMPLAN) and the *Public Health Act*, NSW Health is the designated combat agency for a pandemic in NSW. It has played this role in past pandemics, including during the H1N1 pandemic in 2009. In early 2020, NSW Health assumed this role once again.

As the scale and scope of COVID-19's impact became clearer, control of the Response transferred to the State Emergency Operations Controller (SEOCON) in late March 2020. This decision was made due to the significant coordination and communication required across law enforcement, quarantine and border control, resourcing, procurement, and logistics. The SEOCON's control and coordination of overall operations allowed NSW Health to focus on over a prolonged incident.

Following the response to the H1N1 swine flu pandemic (H1N1 pandemic) in 2009–10, NSW Health had reviewed its pandemic management arrangements to reflect the needs, response, and structure of the system at that time, including the *Pandemic Plan*. The revised plan better reflected the structure of the system, however, did not include the same level of operational or scenario detail as previous plans.

In the interim, Health had also been working to enhance system preparedness and implement more streamlined, well understood emergency management arrangements. These were redesigned to clarify the type of response based on the incident and its severity, with a focus on why central coordination may be required, and the role of LHDs in these scenarios. This included bringing whole-of-system emergency management oversight into the Ministry from NSW Ambulance, and reviewing how best to use the network of

Health Service Functional Area Coordinators (HSFAC) across the system to coordinate various types of emergency responses.

The Health Administration Act 1982 (NSW) and Health Services Act 1997 (NSW) set out the responsibilities and accountabilities of the Secretary, the NSW Ministry of Health, Local Health Districts, Specialty Health Networks and other NSW Health organisations led by a Chief Executive, including but not limited to NSW Health Pathology, eHealth NSW, NSW Ambulance, and HealthShare NSW. These, alongside other organisations including the Pillars, NSW Cancer Institute and the Bureau of Health Information, form NSW Health. NSW Health's organisational structure is included at Appendix B. For simplicity, this report refers to this collective as 'NSW Health organisations' and mentions specific types of organisations (like LHDs or Pillars) as appropriate.

NSW Health does not provide health services to the community in isolation, but in partnership. While not exhaustive, these partners include General Practice, community pharmacy, private hospitals, allied health professionals, aged care providers, disability care providers, Aboriginal Community Controlled Health Services (ACCHSs), private pathology providers, private medical specialists, and a wide range of other government and non-government organisations.

Organising and operationalising a one system Response was a test of unprecedented scale and complexity, compounded by the governance and decision-making landscape that rapidly evolved at both the state and national level. There were various decision-making structures and pathways, some less visible than others, that were, by necessity, the subject of frequent change.

Throughout this Debrief it has been consistently reaffirmed that relationships, a shared sense of urgency and purpose, and flexibility enabled the NSW Health system to evolve and adapt governance and decision-making structures to protect the health of the NSW community. NSW Health demonstrated system-wide leadership in its Response, rapidly establishing critical emergency governance structures, effectively leveraging its devolved structure, and drawing on a shared sense of purpose and strong relationships across the system to coordinate the Response as one system.

'NSW Health did an excellent job and should be commended for their efforts. They led the way for the rest of the country, despite all the challenges they encountered'

- Health Sector Stakeholder.

Themes

While NSW Health had established many key elements and emergency structures in previous influenza-related responses, the magnitude and nature of COVID-19 required a system-wide response untested at scale and at an extended duration. Strengths underpinning the Response and related lessons learnt are detailed below under the following key themes: central management structures, coordination, relationships, and sustainability. Suggested amendments to the *Pandemic Plan* follow.

Central emergency management structures

Central structures (like SHEOC and PHEOC) were established and mobilised early

Emergency Operations Centres (EOCs) were established and mobilised early as critical central structures to coordinate and communicate the Response across the system. PHEOC was established in January 2020 to lead the public health Response, including contact tracing, providing expert public health advice to inform PHOs, epidemiological research, surveillance, and a range of other functions. The operations of PHEOC in directing NSW Health's public health response are covered in detail in the *Public Health Response Debrief Report*. As evidence emerged on the potential scale of the incident, SHEOC was activated to mobilise a whole-of-health system response.

Establishing SHEOC was a critical milestone for the Response

The scale and duration of the incident dictated the need for SHEOC's early establishment. Led by the SHEOC Controller (the current Secretary and then Deputy Secretary, Patient Experience and System Performance), SHEOC unlocked the resources and expertise of the entire NSW health system to support the public health response and with whole-of-system coordination and operationalisation.

While the *NSW HEALTHPLAN* outlines the need to activate SHEOC during the Response phase for an emergency, this was the first time that it had been stood-up at scale to work in tandem with PHEOC and broader national and state responses for an infectious disease emergency. Over time, SHEOC's role expanded to lead critical areas such as the vaccination program, airport surveillance, the NSW hotel quarantine program, Special Health Accommodation (SHA), quarantine exemptions, testing clinics, intensive care, aged care and disability, workforce, COVID-19 logistics and communications. SHEOC worked with LHDs, the key agents of the operational Response, and SHEOC was awarded the 2021 NSW Health *Keeping People Healthy Award,* recognising its work in guiding the system and keeping the community safe.

Keeping People Healthy Award (COVID category)

NSW Ministry of Health: State Health Emergency Operations Centre

Establishing SHEOC came at a critical time in the Response and was uniformly viewed by stakeholders to be a turning point in harnessing NSW Health's collective resources to respond as one system.

'Our ability to be prepared for the pandemic was limited.... Once we mobilised the SHEOC that was a game changer for us'

- NSW Government Agency.

The strengths of a centrally coordinated, one system Response was evident in many areas that SHEOC was responsible for, including:

- **Managing hospital capacity and intensive care unit (ICU) resources in anticipation of increased demand.** ICU capacity quadrupled during 2020, and was supported by hospital Short Term Escalation Plans (STEPs) that guided escalation and utilisation of hospital capacity (more details on the impact of capacity management are captured in *System Impact*) (SHEOC 2022b)
- **Establishing the airport operations and hotel quarantine program**, managing associated exemptions, and providing critical operational expertise into the set-up and management of hotel quarantine and Special Health Accommodation along with other key stakeholders, including NSW Police, NSW Department of Communities and Justice (DCJ), NSW Clinical Excellence Commission (CEC) and other agencies
- **Rapidly establishing hundreds of COVID-19 testing locations.** By the end of 2020, 362 testing locations were in place, as well as surveillance testing for key staff for the hotel quarantine program (SHEOC 2022b)
- **Coordinating a world-class vaccination program** through establishing vaccination planning, operations and program support teams that provided support and consistency in implementing the state-wide vaccine rollout. This was instrumental for NSW Health to achieve a vaccination rate of 94% for two doses across the state population by end of 2021, above the 90% target and ahead of schedule (see *System Impact* for more detail)
- **Coordinating the procurement of Personal Protective Equipment (PPE) and medical equipment** in terms of sourcing supply and selection, promoting staff safety and ensuring stock availability to support state-wide operations – noting this responsibility was transferred to NSW Police when SEOCON assumed control of the state-wide Response and NSW Health provided input as expert advisors for sourcing and selection of supply
- **Providing central communications to inform the public and workforce about COVID-19 developments.** More than 1,000 communication resources were developed in 53 languages throughout 2020 (SHEOC 2022b).

Coordination between SHEOC and PHEOC was important

Establishing strong relationships and clear roles between SHEOC and PHEOC (and also LHDs) was acknowledged to be important in enabling joint problem-solving approaches during the Response and a *'no blame game'*. Communication between the Secretary (as Incident Controller), PHEOC, SHEOC and the Executive Leadership Team was also acknowledged to be vital for facilitating operationalisation of the whole of system Response, although challenging at times.

While there were challenges associated with the speed of decision-making and the maturity of the untested governance structures, processes and communications between PHEOC, SHEOC and LHDs were refined and strengthened throughout the Response. Across the system and partner agencies, SHEOC and PHEOC were progressively viewed as key points of contact, providing centrally coordinated and communicated decision-making that was clear and responsive to the changing Response.

'SHEOC was very responsive. Once you learnt who was who, there was a lot of engagement through border security, border force and interagency agreements across medical retrievals. Once a relationship was developed with the right people... they were responsive to the issues and could identify the right person to go to'

- Metropolitan LHD.

Clearer communication about health emergency structures is required to enable a one system response

NSW Health's governance is complex, and the emergency management roles were not uniformly understood across parts of the health system with less experience in emergency management. Previous health emergencies, such as influenza management, were largely focused on public health aspects and confined to certain geographical areas, as opposed to requiring system-wide and cross-agency operations. This meant that NSW Health's operating model for COVID-19 was relatively unfamiliar to some partner agencies across the NSW Government, and the roles played by SHEOC and PHEOC and the LHDs were in some instances less well understood. Greater clarity was provided as the Response rolled out, making it clearer who the decision-maker was, and clarifying the accountabilities of the PHEOC, SHEOC, LHDs and their EOCs.

'The activation of the emergency management response - that SHEOC was stood-up, and what its role was - was not well communicated'
- Professional Body.

Lessons learnt 1

Mobilising SHEOC and PHEOC early as central strategic and decision-making structures was critical to effectively coordinate a whole-of-health response at scale, though there are some lessons on clarifying the structures' roles and responsibilities following emergency response activation.

Review of emergency management plans for NSW Health to integrate learnings for future incidents should consider the following alongside reviewing broader state emergency management plans:

- Following activation of an emergency response, clearly define the role of the emergency structures and communicate across the system that these are in place (i.e. PHEOC and/or SHEOC). This should include the role of SEOCON and regional and local emergency structures.
- Clarify authorising environments early with supporting processes to identify accountability and support confident operational decision-making and ongoing review.

Links to Recommendation 1.1: ***Establish a well-defined and communicated central governance structure for pandemic and high-impact prolonged incidents that require activation of public health (PHEOC) and operational responses (SHEOC) and broader whole-of-government responses (SEOCON), that supports collaborative decision-making and the timely leveraging of whole-of-government community supports. This should highlight key operational roles of LHDs.***

Well-defined coordination and communication structures between SHEOC, PHEOC and the SEOCON are vital

One of the key functions of the SEOCON is to ensure state-wide coordination and communication across emergency structures and leverage broader whole-of-government support across state, regional and local levels. This required unambiguous and seamless communication and decision-making pathways between the SEOCON, SHEOC, PHEOC and the Incident Controller to deliver clear and consistent state-wide and cross-agency coordination and communication. Despite challenges associated with the scale and speed of decision-making, data accessibility, and changing responsibilities throughout the Response, strong working relationships developed between the SHEOC and the State Emergency Operations Centre (SEOC). This was vital in establishing an effective interface between the health system and broader state emergency response.

These relationships were also important in operationalising the Public Health Orders (PHOs) that were developed in tandem with Police and legal input from the Department of Premier and Cabinet. They progressively helped make broader supports available to communities impacted by COVID-19 in a timely manner across the state - noting that in absence of these supports, LHDs were the default provider for a broad range of welfare and social supports much needed by families and communities. As the Response evolved, systems were developed to facilitate the earlier sharing of insights and data to assist in operationalising PHOs, monitor compliance, and provide key supports.

Over time, improved linkages between the SEOCON, SHEOC Controller, SHEOC, PHEOC and the Incident Controller played an important role in cascading central cross-agency coordination through to regional and local approaches. Leaders acted quickly to strengthen governance structures, identifying critical data and information sharing mechanisms to support the extended and increasingly high-impact incident. However, there were variations in how LHDs linked into the regional and local emergency management structures and their ability to access broader government supports for communities; this is further discussed later in this Chapter.

Agreed operating principles between the response structures of the SEOC, PHEOC, SHEOC and the Controllers are required to facilitate clear communication and decision-making pathways to best support state, regional and local responses. Experience also highlighted the value of appropriately authorised Liaison Officers to enhance coordination between the emergency response teams, the deployment of strategic communication functions to ensure alignment across health and broader government emergency responses, clear delineation of tasking and information sharing meetings and clear documentation of processes.

While SHEOC and PHEOC included many Liaison Officers to connect with key stakeholders, these communication pathways could also be enhanced by including representation from relevant partner agencies to engage in these structures, support information exchange, facilitate effective coordination, and enable rapid decision-making. Health representatives or Liaison Officers in the SEOC or other forums also need to be empowered and informed enough to provide authoritative advice and contribute to decision-making, including in meetings of the State Emergency Management Committee. Specifically, it highlights the need for earlier introduction of Liaison Officers with the appropriate authority and expertise to attend the relevant meetings and strengthen coordination across emergency response structures.

As the scale of the Response became clearer, leaders in Health acted quickly to adapt and strengthen governance structures and identified critical data sharing mechanisms to support the extended and potentially high-impact incident. The NSW Government has since agreed in-principle to the recommendation of the *2022 NSW Flood Inquiry* to establish the SEOCON as a permanent structure within NSW Police, recognising its importance in supporting whole-of-government emergency preparedness (NSW Independent Flood Inquiry 2022). Formalising the SEOCON structure for future responses will assist in formalising decision-making and communication pathways between PHEOC and SHEOC, as well as the Incident Controller. Based on the experiences gained throughout this Response, this will assist in increasing preparedness across government.

Lessons learnt 2

Coordination across emergency structures, particularly between SHEOC and PHEOC was acknowledged as crucial for supporting joint decision-making throughout the Response, with several opportunities noted to support emergency management plan reviews. These include strengthening formal and informal engagement, communication and information sharing between the PHEOC, SHEOC, SEOCON and the Incident Controller, with clear operating principles to guide decision-making; integrating information exchange and data sharing capacity; and appropriately incorporating authorised cross-agency representation through Liaison Officers.

SEOCON has since been established as a permanent part of future emergency responses, including pandemic incidents. This continuity will facilitate better alignment and integration between health and state emergency responses.

Review of the *Pandemic Plan* will require:

- Strengthening and formalising decision-making, coordination and communication pathways between the Secretary, Incident Controller, SHEOC, PHEOC and SEOCON to enhance the operationalisation of PHOs across the health system and broader community, improve linkage between central and local emergency management structures, and facilitate the provision of timely whole-of-government supports to communities
- Appropriate authorisation of cross-agency representation in SHEOC, PHEOC and SEOCON given the range of skill sets required and the speed of decision-making.

Links to Recommendation 2.1: ***Formalise and strengthen coordination and communication structures and processes between SHEOC, PHEOC and SEOCON to enhance the operationalisation of PHOs across the health system and broader community. This would be assisted by earlier engagement in the development and ongoing review of PHOs and greater transparency on the nature of the public health advice to maximise impact and compliance.***

Supporting structures helped to place decisions in their appropriate context

The COVID-19 Project Management Office (PMO) played a critical role in providing visibility of the system-wide Response and should be incorporated (where appropriate) as part of future pandemic emergency management plans. The PMO was especially important in effectively supporting the Secretary (as Incident Controller) and other senior leaders to proactively respond to ongoing challenges, ensure coordination and oversight of the multiple components of the operational and public health response, address emerging issues, mitigate risks, and strengthen executive accountability.

The PMO, established by the Office of the Secretary with external assistance, offered robust reporting architecture and cadence to support escalation, discussion, and decision by the Ministry Executive team. While the PMO did not provide a central oversight team for PHEOC and SHEOC, it served as a coordination channel for issues where there was no clear senior executive owner, or where issues straddled multiple portfolios.

The PMO was broadly acknowledged by stakeholders as providing critical governance rigour and decision-making support throughout the Response. This became essential as the Response escalated and required more extensive whole-of-system and government coordination, and as the PMO's role evolved in the Delta outbreak to develop and manage the *Delta MicroStrategy*. Its holistic system view of strategy, risks, and coordination was invaluable, particularly at times when there was a critical mass of decisions or issues requiring attention.

The Risk Escalation Panel, supported by the COVID-19 Critical Intelligence Unit (CIU), also played a key role in proactively assessing and determining the level of risk that the system faced based on timely and accurate data across a holistic range of indicators to support decisions. Central governance structures were also

supported by strong clinical engagement through the Clinical Council and CoPs. The impacts of the Risk Escalation Panel, CIU, Clinical Council and CoPs are further detailed in *Communications and Engagement*.

Lessons learnt 3

Having visibility of the Response across the system was important and enabled through oversight structures, such as the PMO and Risk Escalation Panel. These oversight structures were supported by tools such as integrated dashboards that were developed or expanded using existing systems over the Response to provide accurate, timely system-wide data to support public health and health system-wide decision-making. These tools were recognised to increase visibility across the leadership team, inject additional capacity at speed into areas of need for the system, assess progress over multiple fields, and enhance analytical capability (discussed in detail in *Data and Information*).

Review of the *Pandemic Plan* should therefore consider establishing structures and systems for strategic issue tracking, prioritisation and escalation where required across existing NSW Health governance structures, such as the COVID-19 PMO.

Links to Recommendation 1.4: ***Embed proven structures like the COVID-19 PMO, CIU, Clinical Council and Communities of Practice, and the Risk Escalation Panel within pandemic emergency management plans to enhance strategic issue tracking, risk assessment, clinical and workforce input and prioritisation and escalation across existing NSW Health governance structures.***

Whole-of-government and system coordination

Need for early engagement and leveraging whole-of-government supports across the system

Earlier, whole-of-government coordination would have benefited the community, especially those most at risk, impacted or in need. Effectively leveraging whole-of-government services and supports became increasingly important throughout the Response, with escalating restrictions on households and businesses. Lessons learnt highlight that pandemics cannot be effectively handled by the health system in isolation – noting the significant health, social, and economic impacts on community.

'No agency can address all of the impacts of a particular hazard, either in a proactive or reactive sense. It is necessary for a lead agency to coordinate the activities of the large number of organisations and agencies that are involved. These can be drawn from across all levels of government and non-government and private sectors'

- EMPLAN, NSW Government, 2018.

NSW Health's ability to rapidly respond to short-term health-related emergencies is uncontested. It is quintessential NSW Health culture to leverage strong internal relationships to support these types of responses; *'Health is great at managing short emergencies with all hands on deck' - Ministry Stakeholder.* However, this becomes impractical in a prolonged, high-impact pandemic, especially one with significant and complex social and economic impacts.

As the Response continued and developed into a state-wide emergency, it expanded significantly outside of Health's traditional service delivery responsibilities. The shift to whole-of-government coordination was signalled by NSW Police assuming control of the NSW Government response as SEOCON in March 2020, and became increasingly significant as the incident escalated during the Delta phase (see Figure 1 in the *Executive summary*). Prior to that time, many of the key interactions between Health and key partners in state and national government and the community had been based around the public health response mechanisms. Until such time that comprehensive whole-of-government supports were activated, Health *'filled the gaps'* in a wide range of services, including welfare and social supports, logistics, and support for vulnerable people. Not all parts of the health system were directly or equally impacted by COVID-19 during the initial phases, and with the wisdom of hindsight, early activation of planning and response measures should be anticipated in future pandemics.

Aboriginal partners and leaders must be included in governance and decision-making structures at a central and local level from Day One

NSW Health prioritised Aboriginal communities very early in the Response, led by the Centre for Aboriginal Health (CAH). The proactive leadership of CAH was even more critical given the very unclear roles and responsibilities between the Australian Government and state governments for Aboriginal health during the Response.

In April 2020, CAH established a dedicated COVID-19 Response Team that contributed to a broad range of governance, policy, engagement, communication, operational, surveillance and reporting activities, most commonly in partnership with PHEOC and SHEOC, including:

- representing NSW Health on NSW Government committees led by the Aboriginal Affairs NSW
- representing NSW Health on the national Aboriginal and Torres Strait Islander Advisory Group on COVID-19.
- participating in Public Health Response Branch (PHRB) management and Health Protection Leadership Team (HPLT) meetings.

Key policy questions were taken back to the Aboriginal Health and Medical Research Council (AHMRC), community groups and other stakeholders for discussion, and this formed part of a feedback loop of revision and refinement that COVID-19 policy underwent to ensure it met the needs of Aboriginal people. These consultation mechanisms were established early in the Response and strengthened as it progressed, but the fast-paced nature of decision-making and immense pressure on the Aboriginal health sector during periods of high demand occasionally made extensive engagement on policy issues difficult.

'Partnerships are hollow without inclusion in governance and decision-making early on'

- Peak body.

While often early and with good community engagement, central and local coordination of the Response often met challenges because Aboriginal Health teams themselves were initially outside the main COVID-19 response teams and structures. We heard that a lack of clear roles and responsibilities, delegation to act, and being involved in the right forums at the right time was also experienced between NSW Government partner agencies like Aboriginal Affairs NSW. This contributed to a range of operational and communication challenges, including data access and ongoing issues in prioritising analysis or proactive decisions for Aboriginal-specific issues.

The lack of Aboriginal perspectives in key central decision-making structures and forums meant that it was often very challenging to drive consistent system wide approaches to issues affecting Aboriginal communities, despite the efforts rolling out across the system. Key Aboriginal stakeholders raised concerns for their communities early in the Response, yet targeted approaches were not developed across the system until later.

Similar governance challenges were experienced at a local level, but local action started early through the tremendous efforts of local Aboriginal Health teams. Areas with large Aboriginal communities prepared and enacted local action plans to respond to COVID-19, and these were integrated with the public health response through close liaison between LHDs, CAH, AHMRC and ACCHSs, as primary partners.

There was a strong acknowledgement of the benefits of better integrating key community and primary care providers, especially ACCHSs and AMSs, into the emergency response. An effective example was outlined in Section 4.1, Case Study 7 of the *Public Health Response Debrief Report,* which includes how Hunter New England LHD established a Cultural Governance Model to address the lack of representation of Aboriginal people in formalised governance structures.

Lessons learnt 4

There is a need for more formalised partnerships with Aboriginal stakeholders and key Aboriginal health leaders to allow Aboriginal representation in decision-making processes and policy development from the start. Pandemic emergency management plans must clarify the roles and responsibilities for Aboriginal health and Aboriginal communities in responses like these, particularly CAH and AHMRC, but also other agencies who deliver services to Aboriginal people and communities, including Aboriginal Affairs NSW. This must occur early and be transparent.

Thinking through beforehand how these different agencies can support each other on issues, as well as who takes the lead on what, would help streamline culturally informed decisions during a response.

Review of the *Pandemic Plan* should formalise Aboriginal representation to embed a true partnership approach with Aboriginal stakeholders in decision-making processes, policy development and responses.

Links to Recommendation 1.2: ***Formalise Aboriginal representation on central and local pandemic emergency governance structures to embed a true partnership approach with Aboriginal stakeholders in planning, decision-making processes, and emergency responses.***

Links to Recommendation 5.1: ***Include key primary care and local government and community partners, on central and local emergency management governance structures, including but not limited to General Practice, community pharmacy, Primary Health Networks (PHNs), aged care and disability care representatives, and multicultural community representatives.***

The *Delta MicroStrategy* was a turning point for the community and the whole-of-government response

The emergence of the Delta variant, which was significantly more infectious than its predecessor variants, presented challenges to control community transmission with test, trace, isolate, and quarantine measures. To control community transmission, lockdowns and related movement restrictions were imposed, starting with four high-risk Local Government Areas (LGAs) and then extending to eight LGAs. The *Delta MicroStrategy* (that was subsequently renamed the *Delta Strategy*) was developed to target responses to support impacted communities in these high-risk locations. The *Delta MicroStrategy* emerged approximately a fortnight after the Fairfield LGA lockdown in mid-2021. By the time it was in place, agencies, local government, and the communities were already grappling with operational challenges from the lockdown and movement restrictions, which especially impacted people most at risk, impacted, or in need.

Once the *Delta MicroStrategy* was in place, it shifted the approach to listening to the community, rather than telling, and provided the space for community-focused agencies to collaborate on joint efforts in supporting the community, and tailor communication and engagement.

'[The] Delta [Micro]Strategy clarified a lot of things. The entire burden of COVID-19 was falling on Health, and many other agencies had an important role to play. This brought us all together'

- NSW Government Agency.

The *Delta MicroStrategy* brought overdue coordination of the whole-of-government response, with clear governance mechanisms and collaborative decision-making pathways established. It also acknowledged the key roles of local government and community leaders and groups in shaping and delivering supports to impacted communities. The strong role played by Multicultural NSW and community leaders in shaping the response and key communication with ethnically diverse communities was widely acknowledged during the

Debrief. Significant lessons were learnt during this phase relating to the engagement and support of Aboriginal communities in future, which are further discussed in *Community Impact.*

'[It] was the start of a whole-of-government approach and coordination. [It] gave us a greater understanding of the multicultural issues, roles of others, [and] what they could and couldn't do. The risk of different people doing different things was high, double funding, etc. [The] coordination was terrific'

- NSW Government Agency.

Stakeholders across agencies praised NSW Health's establishment of the Delta MicroStrategy Executive Committee, which sent a strong signal of the strength of partnership between NSW Police and Health, with the former Secretary of Health, and the SEOCON co-chairing the committee.

'Executive Committee was fantastic. First time people got engaged. Prior to that, the expectation was that it was Health's problem. Provided greater understanding of the role of [NSW] Police and other agencies. Whole-of-government coordination should have started earlier. Previous emergency management arrangements did not engage the right people or have decision makers at the table'

- NSW Government Agency.

The *Delta MicroStrategy* and Executive Committee were formed in a time of rising anxiety and high intensity community need and pressure, on Health's initiative. This type of approach is well planned for in existing emergency management plans, including the *NSW Human Influenza Pandemic Plan (HIPP)*, and the benefits of such an approach offer important guidance for future emergency plans.

Drawing on the circumstances and successes of the *Delta MicroStrategy*, stronger formal links and governance between NSW Health's Response and the whole-of-government response are needed and warrant earlier activation in future responses. This would allow earlier collaborative planning across government and key community partners, including clear guidance on the roles of partner agencies and other service providers to ensure they can activate and scale their responses as an emergency evolves.

Beyond the limited detail included in the *EMPLAN* and *NSW HIPP*, practical agreements should be struck with NSW partner agencies on roles and responsibilities during a pandemic response, the operational impacts of such, and how governance and decision-making will work. Partner agencies include, but are not limited to, NSW Department of Customer Service (DCS), Department of Communities and Justice (DCJ), NSW Department of Education (DoE), Department of Premier and Cabinet (DPC), NSW Treasury, Aboriginal Affairs NSW, and Multicultural NSW.

Different approaches are needed to embed Aboriginal perspectives into whole of government coordination

While the community-specific Fifth Pillar of the *Delta MicroStrategy* is discussed in more detail in *Community Impact*, it is essential to note that during the initial phases of the *Delta MicroStrategy*, it was identified that the needs of Aboriginal people were unique, and that the structure was not conducive to capturing or actioning their perspectives, noting differences in context, cultural considerations, and stakeholders. This view was also reflected in the Multicultural NSW Debrief Report on the Fifth Pillar (Multicultural NSW 2022).

In response, Pillar 8 of the *Delta MicroStrategy* was established. However, we heard that the principle of prioritising Aboriginal voices in these types of initiatives was missed. We heard some stakeholders found Pillar 8 to be more hindrance than help, served predominantly to share data and information updates, and that it did not meet initial expectations to effectively coordinate whole of government supports that other Pillars of the MicroStrategy were able to, particularly housing and other social supports. Pillar 8 was also focused on

Aboriginal communities in regional and remote NSW, despite around 45% of Aboriginal people in NSW living in major cities.

Lessons learnt 5

While system-wide and whole-of-government emergency management responses can be facilitated by relationships, the delay in formalising these added to pressure on the system and potentially delayed responses. Determining which relationships should be formalised, within NSW Health and key government, academic and community partners, at both central and/or local levels would enable more predictable and sustainable processes and arrangements to effectively support the health ecosystem approach to emergencies, including a pandemic.

Aboriginal people must be involved in the design and governance of programs for the Aboriginal community. Cross government governance and coordination approaches will be strengthened with a more consistent understanding across government of the Aboriginal community in NSW, where they live, and the types of services that might best support their needs.

Formalising relationships would also be useful in a BAU context to ensure that cross-agency collaborative efforts can be enacted quickly in future incidents or emergencies, as well as support future leaders to call on these quickly with supporting processes and structures.

Changes to the *Pandemic Plan* should embed and grow partnerships with DCS as Public Information Functional Area Coordinator (PIFAC) in emergency management. Roles of keys partner agencies, such as DPC, DCJ and others, should also be reflected in future responses.

Links to Recommendation 5.1: ***Include key primary care and local government and community partners, on central and local emergency management governance structures, including but not limited to General Practice, community pharmacy, Primary Health Networks (PHNs), aged care and disability care representatives, and multicultural community representatives..***

Links to Action Area C.4: ***Strengthen relationships with key government and non-government partners at a central and local level, including but not limited to the DCS, DoE, DCJ, Multicultural NSW, and Aboriginal Affairs NSW. The roles of these agencies should be incorporated into future emergency plans to better leverage government and community supports, provide data and inform messaging.***

Provision of disability and housing services in crisis

As raised earlier, prior to the *Delta MicroStrategy*, Health was filling key gaps in social and welfare services by default – services that normally sit outside of NSW Health's portfolio. While Health rose to the challenge as part of broader locally coordinated responses, greater clarity is required in future emergency planning regarding approaches for populations most in need and at risk, and functional areas across government.

Challenges were noted in the provision of accommodation (including for families and individuals with complex needs), food, transport and broader social care and welfare supports. DCJ was able to extend temporary accommodation from one to three months with additional funding from NSW Treasury, and a formal agreement was made between Health and DCJ to better support homeless people and address housing challenges experienced by released prisoners who would otherwise be homeless. However, the communication and implementation of this agreement across the system was inconsistent, meaning its impact varied.

'[There was a] gap in the provision of services for those not homeless or in public housing. No plan for accommodation for people not linked to health issues. Health responsible for COVID positive people, [agency], close contacts – the number of people in temporary accommodation went up from 700 to 2,200'

- NSW Government Agency.

These challenges were further exacerbated in regional areas by existing housing shortages and a lack of alternate accommodation, highlighting the need to consider broader social determinants of health in emergency planning.

There is limited guidance in existing emergency management plans on the role of Non-Government Organisations (NGOs) and other service providers. This is significant given the high proportion of non-government providers that deliver disability and housing support services in NSW. Uncertainty during the Response led to differing approaches being adopted across the health system, with some LHDs picking up these services by default. This set a precedent and was inconsistent with broader state level agreements for health and housing. Certainty is needed on the role of non-government service providers in the application of PHOs and the broader emergency response, including the provision of disability services, housing support and custodial services.

Clear whole-of-government coordination, collaboration, and communication on issues such as these would improve consistency in service delivery and clarity of expectations from service providers. This should include:

- Clarifying roles and responsibilities of functional areas, NGOs and outsourced providers in crisis incidents as part of emergency management plans and in service contracts to ensure there are no gaps in the state-wide Response
- Establishing mechanisms to ensure that any state-wide agreements centrally made between response agencies are communicated and able to be cascaded across LHDs to enhance coordination. The value of this was demonstrated in the agreement between Health and DCJ, which addressed the intersection of health and social issues experienced by the community.

Revised emergency management plans must be clearer in highlighting key linkages with national and state emergency management plans and indicate potential escalations points when circumstances require the activation of broader whole-of-government responses.

While the *EMPLAN* does include this type of detail, it is highly dependent on the judgement and experience of key leaders, rather than situational characteristics. Feedback strongly suggests that a revised *Pandemic Plan* needs to be flexible enough provide guidance in differing types of emergency responses, based on the lessons learnt during this Response. Using similar terminology in all emergency management plans used across NSW Government would also assist in a consistent understanding and application.

The whole-of-government response also needs to be supported by agreements with responsibilities for functional areas in an emergency management response. This would ensure that they can be implemented wherever practicable throughout future responses across the entire ecosystem.

Lessons learnt 6

Stronger formal links between public health decision-making, the broader health system and the whole-of-government operational response – drawing on experience in the *Delta MicroStrategy* – are needed. Practical arrangements between health and other agencies, including NGOs and outsourced providers, will require clarifying roles and responsibilities within a crisis incident, which sets expectations for who and how NSW Health and LHDs will work to best serve the needs of communities. This focus will need to include a specific approach for Aboriginal communities, as well as tailored view on disability, housing, and regional needs.

These will be enhanced and highly reliant on earlier joint planning and state-wide agreements across government agencies that clearly outline partner agency roles to better leverage state government and community-based services (at a state and local level). Mechanisms, such as these, should also be reflected in the operational responses at a local level.

Links to Recommendation 5.5: ***Ensure the roles and responsibilities of partner agencies and NGOs in supporting vulnerable people during an emergency response are clear and agreed across government, including clear escalation pathways and coordination mechanisms. This is especially important for***

accommodation and social supports for homeless individuals, transitions from the justice system, transport and broader welfare supports.

Links to Action Area A.1: ***Continue to invest in system emergency response capability and capacity by regularly training current and emerging leaders and reflecting emergency preparedness in Service Agreements and capability frameworks.***

Earlier, whole-of-government coordination and a commitment to joint preparedness training will benefit future responses and require updating and integrating existing health (including the *Pandemic Plan*) and whole-of-government emergency management and response plans.

'Tight-loose-tight' principles are more complicated in a command and control environment

For some time, NSW Health has exercised a 'tight-loose-tight' approach to the local delivery of strategic state-wide priorities. Widely understood and accepted across the health system, this devolved approach provides for strategic direction, prioritisation, and oversight of performance from the Ministry, combined with local flexibility in delivering priorities in a way that reflects the needs of local communities and supports innovation. Feedback strongly supported the merits of this approach in enabling an effective system-wide response to an emergency.

There was consistent feedback about the high degree of collegiality that underpinned the Response, noting the strong shared commitment to work cooperatively and overcome challenges. The Secretary's weekly State Pandemic Management Committee meetings brought together all Deputy Secretaries and NSW Health organisation Chief Executives to provide central communication and coordination in a transparent way, supporting this ongoing collegiality to respond as one system.

All acknowledged that this was relatively new territory and existing systems needed to be modified, or new operating systems built, to accommodate uncertainty and rapidly changing circumstances, with changes captured in the upgraded emergency plans. The Response highlights the key role that the LHDs played in both supporting the public health response when COVID-19 numbers reached a scale that could not be managed within the public health system's existing capabilities, and in the broader health operational response.

'The LHDs were the perfect size so that they could do their own thing, and yet the Ministry could pull strings when needed'

- NSW Government Agency.

Examples where this approach was adopted smoothly during the Response included coordinating mass vaccination (centrally guided with local approaches to implementation), managing hospital capacity (applying a system-wide view to support local planning needs) and managing infection control (through central collation and dissemination of public health evidence to support local initiatives).

Not surprisingly, the need for a more clear and consistent understanding about the impacts of command and control activation and its implications for local decision-making in LHDs was noted. Moving from BAU to a command and control setting was noted by several LHDs as challenging during the early stages of the Response. Feedback confirmed the importance of providing early system-wide advice when an emergency response is activated and clarifying impacts of command and control on existing decision-making structures, including the roles of the Boards.

We heard this was particularly important in NSW Health organisations where many, if not all, clinically experience staff were absorbed into SHEOC, or redeployed to support the Response in other ways. In practice, this meant that many senior executives, including Chief Executives, were working under the specific direction

of the Secretary (as Incident Controller) and SHEOC. Given the statutory responsibilities of Boards, the Pandemic Plan should provide clarity about the shift in accountability for NSW Health organisations in a 'one system' response. It should be clear how the Secretary, Incident Controller or other person may coordinate and direct activities, the role of the Boards in these situations, and the impact of these changes on BAU priorities.

LHDs were highly responsive to requests for assistance and directives made by central governance bodies and decision-makers - a testament to the strong relationships between the Ministry and the LHDs. Any challenges were readily resolved. Feedback suggests there is a need to minimise the future potential for confusion as to whether decisions and directions are made under emergency provisions, and to clearly distinguish advice from directives. We heard about the need for clarity and a consistent approach for workforce-related directives (such as leave conditions, safety, etc.). For example, some LHDs adapted central communications on Personal Protective Equipment (PPE) protocol, rather than operationalising it without amendment. There were also LHDs that added further PPE requirements on top of this protocol, and some LHDs had variations in protocol across different facilities. Inconsistent interpretations in areas such as these needs to be avoided.

There was strong agreement about the merits of an upgraded *Pandemic Plan* and related plans having the necessary flexibility to guide responses that respond to emergencies of different type, scale, and duration. This also acknowledged the increased likelihood of concurrent health emergencies and natural disasters. A revised *Pandemic Plan* should have a stronger focus on workforce-related considerations, including capacity, surge strategies, safety, health, and wellbeing. Benefits were perceived in including escalation triggers and possible response pathways based on the COVID-19 experience, and clearly describing what the impact of moving from one setting to another would have on system governance and operations. This approach was used to good effect with Intensive Care Unit STEP planning, but broader consideration of this is needed.

Clearer escalation triggers would provide greater guidance to the level of response required. That is, when a response is required at a local, system or cross-agency level depending on the nature and analysis of the incident. There is strong existing capability in the system in epidemiological data and analysis that should be effectively used to better inform the extent and timeframe of the emergency, as well as determine the escalation required. The way in which to operationalise this in a wide range of different responses should be considered in the revised *Pandemic Plan.*

Lessons learnt 7

An early, agreed understanding of the impacts of the devolved structure in a command and control setting will be key to ensuring that there is clarity and consistency in interpreting and translating central directives and guidance into local responses. This should include:

- Clearly defining what command and control means in the devolved system during emergency responses; who does what, when, why, and how
- Ensuring strong linkage between central and local health structures, including key state, local government and community partners
- Outlining how the Secretary, Incident Controller or other person may coordinate and direct activities of NSW Health organisations during an emergency response, the role of the Boards in these situations, and the impact of these changes on BAU priorities of organisations.

Establishing an early, agreed understanding of the 'tight-loose-tight' approach and clarifying when the system is operating on command and control or BAU, and what that means would be valuable. This should be supported with practical tools to assist LHDs in standing up an emergency response, in a way that suits their local context while remaining consistent with state-wide directives.

Escalation triggers from the COVID-19 experience, should be built into the *Pandemic Plan*, both in terms of triggers between emergency and BAU, as well as triggers by the level of response required (local, state or whole-of-government) and informed by Health's analysis of the expected impacts of the incident.

Links to Recommendation 1.3: ***Clearly define what command and control means in the devolved system during emergency responses; who does what, when, why, and how. Ensure strong linkage between central and local health structures, including key state, local government, and community partners.***

Noting these lessons, review of the *Pandemic Plan* will require:

- Articulating clear roles and responsibilities for all NSW Health organisations in an emergency environment and clearly distinguish decision-making and advisory roles
- Clearly defining what command and control means in the devolved system or tight-loose-tight principles during emergency responses (who does what, when, why, and how); tight in setting direction and outcomes and loose in providing flexibility in the way outcomes are achieved to reflect local community needs
- Considering specific challenges met by LHDs and government agencies on the ground. These include clarification of accountabilities and decision-making processes to support effective and rapid operationalisation of local responses.
- Describing risk and response escalation triggers to allow more strategic and tactical planning, including transitioning services from BAU to response, and back again, as well as the level of response required (local, state or whole-of-government) and the impact of those on system governance and operations. Escalation triggers will need to be informed by Health's analysis of the extended impacts that consider the longevity of command and control structures in prolonged incidents, including potential triggers and escalation/de-escalation for transition back to BAU, or to evolved BAU settings.

Using the skills and expertise in NSW Health and enhancing system preparedness

NSW Health has significant internal expertise that was effectively mobilised as the Response evolved. This expertise was also extensively used by other states, networks, and government, primary care and community partners. For example, the work of the CIU, CEC, HealthShare NSW, Health Education and Training Institute (HETI) and eHealth NSW was leveraged locally and across jurisdictions.

Engagement with NSW Health's Pillar organisations and Shared Services agencies strengthened as the incident progressed. This was facilitated by a growing awareness within the system about the valuable roles these entities could and should play, and also through the entities gaining a better appreciation of the impacts of the Response on BAU. While the functions of NSW Health organisations and their roles in an emergency response are outlined in the *Pandemic Plan* and the *NSW HEALTHPLAN*, there is limited detail in the current plans about the capability they offer in an emergency management response and how best to operationalise their expertise in a rapidly evolving environment. We heard how the understanding of emergency responses differed across NSW Health organisations, including what each understood their role to be as part of the Response. Many were unfamiliar with the *Pandemic Plan* or related emergency management procedures and their impacts on business as usual (BAU).

Clarifying the roles and potential contributions of all NSW Health organisations in emergency management plans, with supporting arrangements to link expertise into central decision-making structures early, will ensure that the full capability of the health system is activated in a future emergency. This has the potential to also reduce duplication of effort if there is an agreed understanding at the outset about roles and responsibilities. The System Flow Centre established during 2021, supported by the Patient Flow Portal (PFP) and interagency collaboration, was widely recognised as a successful example in managing ICU capacity on an ongoing basis, working closely with HealthShare NSW and NSW Ambulance. *'After we had everyone in the room, we had Ministry, SHEOC, ICU, [NSW] Ambulance, HealthShare [NSW] etc. … visibility of everything that was going on, the universal comments at the end was good - we should use that more in everyday life, but so far we haven't because there has been no real mechanism to do that' - Shared Services Agency.* By establishing a common understanding of system capacity between key leaders, it was possible to more effectively use system resources to manage demand and ensure patients received the care they needed. One outcome was the Ambulance carousel model

that was used to alleviate pressure in Western and South Western Sydney LHDs. This also leveraged NSW Ambulance's experience as a first responder, expertise in predictive modelling and scenario planning, and their ability to swiftly respond based on escalation protocols and scenarios.

Variation in how expertise from different parts of the system was used was in part due to a mixed understanding of roles. Some LHDs benefited from leveraging the advice and expertise of Pillar organisations early and minimised duplication of efforts in areas such as infection prevention and control (IPC) from the CEC. In other areas, there were opportunities to better use the Pillar organisations and Shared Services agencies. For example, HETI could have been involved earlier in training for staff scope and role changes and to support adoption of international models of care. Noting the roles of HealthShare NSW and NSW Health Pathology are already outlined in the *NSW HEALTHPLAN*, this should be repeated for all NSW Health organisations.

Greater clarity was sought by some Districts on the governance of Public Health Units (PHUs) across LHDs, recognising the merits of greater integration of PHUs into LHD and local governance structures. While the deep relationships across and between PHUs and the broader public health network were recognised to be a critical strength for NSW Health, greater visibility was needed on how local decisions were made and how they should be actioned. Leaders highlighted the benefits of integrated responses at a local level and the need for greater consistency, specifically the need for clear lines of accountability and more transparency about the rationale underpinning public health advice and decisions.

Lessons learnt 8

NSW Health organisations collectively bring considerable expertise from their BAU roles - expertise that could be better leveraged earlier in future emergency responses. The importance of NSW Health having a key role in procurement of health-related equipment and PPE in a future pandemic is noted and should be supported by identifying those areas where the Ministry/Pillar organisations could immediately step in and play a supportive state-wide role. This could include the development and distribution of patient material, purchase, and maintenance of stocks of pulse oximeters, dispatch of pulse oximeters and managing their return and cleaning, state-wide media messaging and more support for General Practice.

Links to Action Area A.5: ***Continue to embed close relationships between HealthShare NSW, eHealth NSW, NSW Health Pathology and Health Infrastructure NSW and their commercial partners to maintain procurement expertise and preferred access to hardware, equipment and other critical consumables.***

Integration of health and other emergency responses at local and regional levels

All LHDs moved rapidly to establish emergency management governance structures that reflected the level of risk and capacity considerations at the time. The adopted approach reflected the recency of LHDs' experiences in floods and fires, and existing formal and informal relationships at the local level. Many LHDs followed the traditional Incident Control System (ICS) /EOC model, whereas others applied their own variations, reflecting capacity constraints in establishing standalone emergency responses. *'The EOC aligned with the management structure and traditional roles of the Incident Control System - operations, logistics ... coordination and governance worked very well. ... We found that this is something we would keep and put it into action fairly swiftly. We could also dial it up and dial it down' – NSW Health organisation.*

LHDs adapted the approach, scope, and membership of these emergency management governance structures as the scale of the incident became better understood and the nature of the risk changed. LHDs with higher numbers of positive cases and vulnerable people expanded the membership of their governance structures to best support their community's needs. Many acknowledged and agreed that they should have done this earlier (further discussed below in this chapter). One metropolitan LHD restructured their EOC at the height of the Delta outbreak to embed a more multidisciplinary approach to protect the community and their workforce; *'an acute team, community team, vaccination team, logistics team, and a health worker exposure team. This supported a consistent, standardised approach across facilities.'*

Another metropolitan LHD aimed to align their emergency structure with the *Pandemic Plan*, while making the adjustments they needed due to staffing changes; *'we stayed aligned to [the] state system but stood it up consistently with where we were at with priorities. We had several Chief Executives during this. We had a framework, but had to adapt that to leadership and [the] Chief Executive … trying to marry those two things, overarching and trying to follow the Pandemic Plan.'*

There was variability in how LHDs engaged with broader NSW emergency management structures

The different ways LHDs related to broader emergency management structures, particularly Regional EOCs (REOCs) and Local EOCs (LEOCs), potentially impacted their ability to draw on timely support for local responses and was reported as challenging in supporting a whole-of-government response. *'There wasn't coordination from the start to coordinate all the LHDs with REOC and LEOC with each other' - NSW Government Agency.* LHDs with recent experience in emergency management rapidly activated established relationships with partner agencies, local service providers and community leaders to effectively support their community. *'Strong relationships with police, fire and rescue and Non-Government Organisations are something we want to keep in place. … With our LEOC, it strengthened our response out into community-based settings like social housing outbreaks. Having multiple agencies around the table was one of the key benefits; we managed that well. We'd never had that or scenario tested a pandemic response in social housing' - Metropolitan LHD.*

With the wisdom of hindsight, some leaders reflected on the benefits of acting earlier and highlighted how an updated *Pandemic Plan* could assist in defining escalation and trigger points. The *Pandemic Plan* provides high-level principles instead of detailed escalation triggers and protocols. Some LHDs were able to mobilise quickly to scale-up and down, while some sought for more details in the *Pandemic Plan* to support their decisions. This highlights opportunities to better define risks and escalation steps in the emergency management plans. Some stakeholders also expressed the need for more detail about governance, roles and responsibilities in the *Pandemic Plan* and how to translate this locally. *'I don't know if we got a lot of value out of the Pandemic Plan. … It wasn't useful based on the environment' - Metropolitan LHD.* The lack of clarity on how to apply the *Pandemic Plan* impacted the speed at which some LHDs could draw on the regional and local coordination supports in their local responses.

Despite the above, throughout the Response, rural and regional LHDs showcased the power of existing relationships and governance pathways that were tried and tested through hardship and disasters; droughts, bushfires, floods and mouse plagues. The impacts of these relationships are further explored in *Community Impact*.

Overall, the success of local governance structures was largely attributable to senior leaders with prior experience establishing emergency management structures and knowing how to use them effectively, established relationships with key local partners such as ACCHSs, and engaging effectively with broader state emergency management procedures. The most effective structures observed were the ones that ensured the public health and operational arms were linked, communicated constantly, and made decisions together. In these approaches, NSW Health organisation Chief Executives provided oversight, leadership, holistic operational accountability, and focussed on internal and external coordination and communication. The impact of the Response on leadership, including key person risk (i.e. risk to operations in the event of the absence of the key person who controls the operations), is discussed further in this Chapter.

Lessons learnt 9

While local variation is expected in a devolved system, more detailed guidance in prolonged, high-scale emergency incidents is needed within the *Pandemic Plan* and *NSW HEALTHPLAN* to guide different parts of the health system, noting the many unique challenges experienced by rural and regional areas.

LHDs with prior experience in operating as part of the broader emergency response to floods and fires were able to readily facilitate and contribute local emergency responses. LHDs with less experience could look

to LHDs with prior experience to support learnings and adopt practical approaches to support future responses.

Links to Action Area A.2: ***Continue to leverage the deep operational expertise of LHDs in developing and implementing emergency responses, and closely consider how to best use the individual strengths of different LHDs in system-wide responses to minimise duplication, enhance speed, increase access and ensure consistency of responses.***

Formalising key relationships between existing government and community partners holds many benefits; using this opportunity to clarify roles and responsibilities of emergency management structures at a regional and local level in the most resource efficient and responsive way to address community needs.

Links to Action Area A.3: ***Develop a simple governance and engagement model that can be used by LHDs to formalise local partnerships with primary care and other partners relevant to their communities.***

Links to Action Area E.1: ***Build on the strong relationships built centrally and locally with local government, aged care providers, GPs, community health providers, community leaders, peak bodies and other partners to further embed LHDs and clinical facilities into the life of their communities.***

The Response has generated a widespread uplift in emergency management experience and preparedness, which must be grasped and maintained both in existing senior leaders and future leaders. The system should also consider how to prepare all leaders for emergency management readiness through training, particular senior executives, senior clinicians, and Board Chairs.

Links to Action Area D.6: ***Consider how best to harness the leadership experience gained by individuals and teams during the Response for individual and corporate benefit, through leadership pipeline strategies, targeted capability development programs or other initiatives.***

Enhancing forward planning

The need for more effective forward planning echoed across the system. We heard many times that data to inform in the moment decisions needed to be balanced against data to inform future preparedness and capability, making use of 'down time' where possible to achieve this. Many teams acknowledged the merits in strengthening forward planning, including scenario testing and stress testing of various approaches before and during future incidents

NSW Health participated in SEOCON-led scenario planning in mid-2020, testing collaboration and communication with partner agencies. Many LHDs prioritised it where possible, having a small team dedicated to scenario planning workforce contingencies, service withdrawals and other impacts, and working through the responses required. This was particularly important and impactful from a workforce perspective.

Revised emergency management plans and related policies should consider dedicated resources led by both central and local senior leaders to conduct and coordinate forward planning and scenario testing that remain a few steps ahead of the Response, as well as ask difficult questions and pre-empt 'what if' scenarios. Forward planning should also be extended to include the broader health ecosystem, including key partners in the local community and local government, Aboriginal stakeholders, and others that can focus on the experiences of vulnerable people, including CALD communities, aged care and people with disability.

Lessons learnt 10

Forward planning and scenario planning should be built into the central coordinating governance structure with dedicated resources to remain ahead of the emergency response with consideration to local structures.

Review of the *Pandemic Plan* will require:

- Establishing stronger, dedicated scenario and forward planning capability in BAU and during future public health emergencies
- Enhancing central and local preparedness activities that engage government and community partners, and maintains system preparedness
- Enhancing system preparedness for prolonged and concurrent health and other emergencies, including clarifying and embedding the functions of the System Preparedness Unit and the roles and activation of HSFACs and aeromedical in different types of emergencies.
- Establish stronger, dedicated scenario and forward planning capability across the health system as part of system performance priorities

Links to Recommendation 1.5: ***Continue current reforms to enhance system preparedness for prolonged and current health and other emergencies. This includes the functions of the State Preparedness and Response Unit and organisation and activation of Health Service Functional Area Coordinators (HSFACs) across NSW Health to provide clarity of responsibilities, including aeromedical, in different types of emergency responses.***

Links to Recommendation 3.4: ***Establish stronger, dedicated scenario and forward planning capability across the health system as part of system performance priorities.***

Operationalising PHOs

As the pandemic rapidly evolved, new policy and public health considerations and decisions needed to be made in real time. At times, details regarding their implementation lagged the announcements, causing confusion and delays in their implementation both within Health and across the community.

Clearly linking public health and operational decision-making

Community circumstances, infection rates, and local and international epidemiological evidence evolved rapidly throughout the Response. This necessitated a near constant iterative state of public health advice, and often very fast decision-making. Consistent sharing of data and effective two-way communication was noted to be key in these situations, particularly when public health advice needed to be based on emerging evidence and provide maximum transparency to be effectively operationalised across a complex health system, within diverse communities, and across government. We heard that the clarity, speed and way public health advice was communicated sometimes led to challenges in operationalising that advice, both practically and in the timeframes required.

Very short timeframes between proposals, decision-making and public announcements left minimal opportunities to meaningfully consider the feasibility and operational impacts of the advice on the system and the community, creating unease and, at times, frustration. We consistently heard about the very long wait times for COVID-19 testing in July 2021, after public health advice was announced requiring essential workers to get tested before leaving the Fairfield LGA to work. Many people waited in their cars for lengthy hours or overnight, with extensive traffic delays and pressure on surrounding infrastructure. This was preventable and insights gained from it were reflected in future operational protocols.

PHOs created very different impacts in different settings, including communities, workplaces and individuals' lives. Communities and the workforce sought earlier and greater clarity about what the PHOs meant for them in different settings to ensure compliance, as well as ensure their personal health and safety (discussed in more detail in *Communication and Engagement*).

A more collaborative approach was sought to assist in operationalising and practically applying complex public health directives, guided by earlier insights from the heath system and key sector and community partners. Enhanced transparency and earlier information exchange would mitigate some of the reported frustration experienced by the public and system, which were faced with frequently changing and complex PHOs. Note that the communication of PHOs progressively improved with tailored communications through the

partnership with DCS, as well as with key community and business partners to support their unique needs (highlighted in *Communications and Engagement*).

The formal and informal engagement, communication, and decision-making pathways between PHEOC, SHEOC and the SEOCON must be strengthened to allow for better alignment and operationalisation of key decisions across the health system and government before they are announced publicly. This may be difficult to achieve in all instances depending on the health risks present; however, there would be benefit in attempting to define a more predictable operating rhythm for these types of announcements, which reportedly is done in other jurisdictions, with announcements made early in the week when possible (rather than near, or on, weekends). This would likely better facilitate the necessary changes to be introduced in workplaces and the broader community. Such a rhythm would solidify consultation arrangements between PHEOC, SHEOC and other key partners; operational consultation and advice to be considered; forward communications to be drafted; and operationalisation to be systematically planned and actioned. It would also give the public certainty about what advice to expect and when, and greater clarity about what it would mean for them.

This type of decision-making rhythm would be further supported by early transfer of data, insights, and emerging trends within Health, with the SEOCON (which will likely be a permanent position in future emergency responses), and across government agencies that facilitate alignment of communication to the public and the workforce. Improvements in aligning communication internally and across agencies are further explored in *Communication and Engagement*.

Across the system, it was noted that it was very challenging to be given new public health advice on a Friday night, a weekend or before public holidays. While it cannot always be avoided, minimising this sort of timing reduces system additional demands on frontline staff and broader workforce disruption. This is discussed in more detail in *Communication and Engagement*.

Lessons learnt 11

A review of the *Pandemic Plan* should consider a sustainable rhythm for PHOs during emergency responses to enable data sharing and two-way communication between public health and operational decision-making.

Useful measures to enhance PHO communications include early transfer of data, insights and emerging trends within and across agencies to facilitate alignment of communications, especially in multidisciplinary and/or multiagency responses.

Links to Recommendation 2.1 ***Formalise and strengthen coordination and communication structures and processes between SHEOC, PHEOC and SEOCON to enhance the operationalisation of PHOs across the health system and broader community. This would be greatly assisted by earlier engagement in the development and ongoing review of PHOs and greater transparency on the nature of the public health advice to maximise impact and compliance.***

Links to Recommendation 1.7: ***Update the Pandemic Plan and related emergency management and other policies to reflect the recommendations of this Debrief and related inquiries, including bushfire and flood inquiries.***

Relationships

Relationships drove success and need to be reflected in structures

Existing relationships were uniformly acknowledged as key in supporting the most successful components of the Response. New relationships were also created and bound by a shared sense of purpose to act as required by the Response. While this was commendable, leaders also noted that an over-reliance on relationships and individuals has clear risks and highlighted the need to establish, formalise and agree processes, systems, and

guidelines in emergency management planning structures to ensure consistency and sustainability in future responses.

Trusting relationships exist across NSW Health and partner agencies, and the importance of these relationships in sustaining the Response in the face of ongoing uncertainty was consistently raised. We heard that NSW Government partner agencies were collaborative, supportive and responsive towards Health's leadership throughout the Response (discussed in *System Impact* and *Communications and Engagement*).

This was also true at a local level, where effective coordination between Health and partner agencies relied on the strength of existing relationships on the ground. We heard from regional LHDs that the strength of their relationships with local DCJ leads meant they could cut through the uncertainty that was slowing down centrally made decisions, and this pattern was repeated across many LHDs.

New relationships and cross-government synergies that the Response has sparked and developed are a positive outcome of this challenging event. We consistently heard that despite the delay in overall whole-of-government coordination, senior leaders and public servants sought each other out to coordinate, collaborate and share information.

Capitalising on these newly formed relationships as part of BAU holds many benefits, which may require establishing formal structures and processes to enable them to be called on quickly for future responses. Public expectations regarding whole of government coordination have also significantly increased throughout recent natural disasters, as reflected in the changes made by the NSW Government to emergency planning structures and will impact on the NSW Health's future emergency planning.

Whether relatively new or long established, strong relationships between senior leaders, clinicians and colleagues enabled rapid decision-making, answered complex questions quickly, inspired confidence to innovate in uncertain workplaces, and led staff to step out of their work hours or role description to support their colleagues or their community. The shared sense of purpose was critical, and the workforce felt proud to be operating as one system (see *Workforce Impact* for further detail).

Lessons learnt 12

Productive relationships will continue to be critical to supporting ongoing partnerships between agencies and community organisations. These are often related to individuals and need to be formalised to endure. The risk of losing these should be mitigated by codifying ways of working and systems for communicating, data sharing and decision-making which ensures that these are as predictable and transparent as possible. This will set a path toward managing and mitigating for key person risk and enable emergency responses to be more sustainable (key person risk at leadership level is discussed in more detail in *Issues* in this chapter). The sustainability of leadership practice, among the broader workforce, is also an important issue in the Response and is discussed further in *Workforce Impact.*

Links to Recommendation 2.2: ***Ensure Health's governance and response systems and structures are clearly communicated and understood by partner agencies to support responsiveness and collaborative problem solving. This would be assisted by embedding whole of system/government/community scenario planning and training. Planning needs to consider emergency responses across the broader health ecosystem and include clarity about roles/expectations of non-government providers.***

Community-based care should be formalised in emergency management plans and structures

The Response showcased the benefits of community-based care for people, health professionals and the health system. It was a key part of the Response, supporting health needs, enhancing the impact of public health measures, and supporting system performance, particularly as the Omicron wave emerged in late 2021. While discussed in detail in *Community Impact*, there was unanimous agreement that this approach

deserves more prominence in revised emergency management plans and BAU, particularly considering the growing adoption of virtual care and more holistic care models in the community.

In particular, the roles of primary care providers like GPs and community pharmacists need to be better articulated and supported by governance arrangements and active partnerships at a central and local level. Many LHDs struggled to engage with their PHNs and the most effective interactions were built on existing relationships.

A whole-of-health system response that leverages broader community, state and national supports is key to effectively managing a pandemic of COVID-19's scale. This requires central and local governance arrangements, such as service agreements, that embed key community and primary care partners into decision-making from day one.

Lessons learnt 13

The need for earlier joint planning across government, including roles of partner agencies, to better leverage state government and community-based services (at state and local level) for future responses was highlighted. This should include embedding community-based care in emergency management plans and structures. Approaches should reflect the important role of key community and primary care partners (including PHNs, ACCHSs/AMS, GP alliances) in emergency response plans and structures to ensure they are at key decision-making tables from day one.

The system should also use this opportunity to consider how to include emergency management preparedness within service agreements, and whether this could effectively support maintenance of capability. This could include demonstrating active partnerships or agreements with local community leaders, primary care providers, and other relevant community groups, supported by regular joint planning and scenario testing. Codifying agreements across health agencies and NSW partner agencies, and agreeing roles and responsibilities during a pandemic response could enable closer integration earlier.

Links to Recommendation 5.1: ***Include key primary care and local government and community partners, on central and local emergency management governance structures, including but not limited to General Practice, community pharmacy, Primary Health Networks (PHNs), aged care and disability care representatives, and multicultural community representatives.***

Links to Recommendation 5.2: ***Consider NSW Health's role in supporting other parts of the health ecosystem to prepare and respond to public health emergencies with appropriate joint planning, formal partnerships and ongoing dialogue and relationships on a national, state and local level. This should include, but not be limited to, aged care providers, disability care providers, primary care providers and key peak and professional bodies.***

Links to Action Area A.3: ***Develop a simple governance and engagement model that can be used by LHDs to formalise local partnerships with primary care and other partners relevant to their communities.***

Noting these lessons, review of the *Pandemic Plan* will require:

- Highlighting the importance of community-based care and responses, and the benefits of multidisciplinary approaches
- Including key primary care and community partners in emergency management governance structures, particularly ones that are local.

Leadership sustainability

Key person risk, sustainability and building future leaders

Courageous, consistent, and trusted leadership is critical in emergency responses, and every one of Health's more than 165,000 staff demonstrated personal and professional leadership throughout the Response in a

multitude of ways. Senior leaders are often under particularly prolonged and consistent pressure in a crisis, and in these situations the risk of burnout, decreased morale and decision fatigue grows rapidly. The broader impacts on workforce health and wellbeing are discussed further in *Workforce Impact*.

There was a strong acknowledgement of the need to maintain leadership consistency during pandemics that require complex policy and public health expertise, which normally resides in a limited number of key people. We heard that leaders, managers, and staff worked exceptionally long hours and were under unsustainable pressure, in many instances working hundreds of days without a weekend or a day off. *'There were times where you couldn't be at your best because you were too tired' – NSW Health organisation.*

This was observed at the central and local level, where many of the HSFACs and Operational Controllers were also the Chief Executives or part of the Executive Leadership Team, and retained responsibility for their existing roles. While it was noted this may be a sustainable way of working in short-term emergency responses; other options need to be considered in prolonged incidents.

'In hindsight, a command centre or a EOC should have been established. ... Instead, leaders ... were also doing emergency work as part of their regular job, often working very long hours'

- NSW Government Agency.

Health's emergency management plans and other approaches require more guidance on delegation of, and supporting structures for, these key roles. This should also include consideration of backfilling BAU roles for leaders who take on an important emergency management function. There are examples of potential approaches across the emergency services in NSW, with mandated terms in key roles, backfilling arrangements, and rotations to support sustainability and build system capability.

As Health's most experienced emergency responder, NSW Ambulance established an Incident Management Team with rolling turnover of key leadership roles. As a result, NSW Ambulance has well-dispersed experience in incident management across the organisation and flexibility for backfilling as required. NSW Police demonstrated a similar approach in the way it cycled Liaison Officers through SHEOC on a regular basis. While there are inevitable handover challenges with this approach, it helped to grow the future leadership pipeline by supporting current and future leaders and developing emergency management experience.

Revised Health emergency management plans should also consider including the ability to delegate the role of Incident Controller, rather than relying on the Secretary to perform the hybrid role. The SHEOC Controller should be able to dedicate their time entirely to system-wide coordination and communication, and their substantive senior executive role should be backfilled as soon as they are appointed as Controller. Similarly, the pressure on the Chief Health Officer (also PHEOC Controller) should be delegated to appropriately skilled and capable clinicians.

Building and maintaining system-wide capability and capacity in leadership and emergency management could also be supported by drawing on staff with previous emergency management experience and taking on leadership decision-making opportunities. *'I want to share the roster and share the hard-won knowledge, so when I do retire, people still know what to do' - Shared Services Agency.*

Lessons learnt 14

A range of measures need to be planned for, and highlighted in, the *Pandemic Plan* to enhance sustainability of key system leaders and staff. Prolonged emergencies require NSW Health to contemplate handover arrangements that are fit for the circumstances, as is the case with other first response agencies, and recognise that the unrelenting demands associated with a prolonged emergency pose significant personal and system-wide risks. These also need to be regularly reviewed throughout the Response.

The Response highlighted the importance of critical leadership roles that should be able to be delegated and the changes required to the *Pandemic Plan*, including Incident Controller, the Chief Health Officer, SHEOC Controller, and key emergency management response leads in LHDs. Adopting good practice demonstrated by first response agencies, including the ability to delegate key emergency management response leadership roles, could better support sustainability of future responses and build system capability. Enhancing and maintaining system-wide capacity and capability in emergency management responses will need to ensure that senior leaders in Health in Executive Bands 2, 3, and 4, or equivalent have completed relevant emergency management training and refresher training every 18 to 24 months, including Board Chairs and senior clinicians.

Links to Action Area A.1: ***Continue to invest in system emergency response capability and capacity by regularly training current and emerging leaders and reflecting emergency preparedness in Service Agreements and capability frameworks.***

Links to Action Area D.6: ***Consider how best to harness the leadership experience gained by individuals and teams during the Response for individual and corporate benefit, through leadership pipeline strategies, targeted capability development programs or other initiatives.***

System Impact

The following chapter considers the impact of the COVID-19 vaccination program, particularly for priority groups and vulnerable people, testing systems, innovations across the system including value-based care, CCiC and virtual care, and lessons learnt on system planning, escalation pathways and rural and regional challenges.

Early and sustained pressure was placed on all parts of the health system to manage BAU demand on top of pandemic-related hospital, laboratory, and workforce capacity challenges. Establishing an effective public health response to support border screening, contact tracing, surveillance reporting, vaccination and quarantine management was highly resource intensive. Some of these areas, such as border screening and quarantine, as well as the state-wide rollout of vaccine beyond the health workforce, were a result of the ongoing expansion of NSW Health's responsibility in key areas traditionally under the Australian Government's remit. Further, the redeployment of staff across different LHDs and across the system added additional complexity for the system to mount efforts in an environment where the workforce is at capacity.

The Response was highly dependent on increasing the population's health protection through mass vaccination, operating in an uncertain environment reliant on the Australian Government's ability to supply vaccines and the need to assure and continue to build public confidence in their safety. Health was accountable to achieve the ambitious and critical vaccination targets that were pre-requisites to the NSW Government's 'Roadmap to Freedom' and the broader reopening ambitions for the public and businesses. Targets were applied to all LHDs to achieve these.

Despite these challenges, Health delivered a world-class vaccination program, enabling partnerships, collaboration, and innovation to meet central and local needs flexibly at an unprecedented scale. Lessons learnt point to addressing structural challenges, clarifying whole-of-government accountability, roles and responsibilities, inclusive planning to address the needs of communities most impacted, at risk and in need, and improving system visibility, to better support the pace of decision-making and implementation required to meet the needs of a rapidly changing Response across all population groups and regions.

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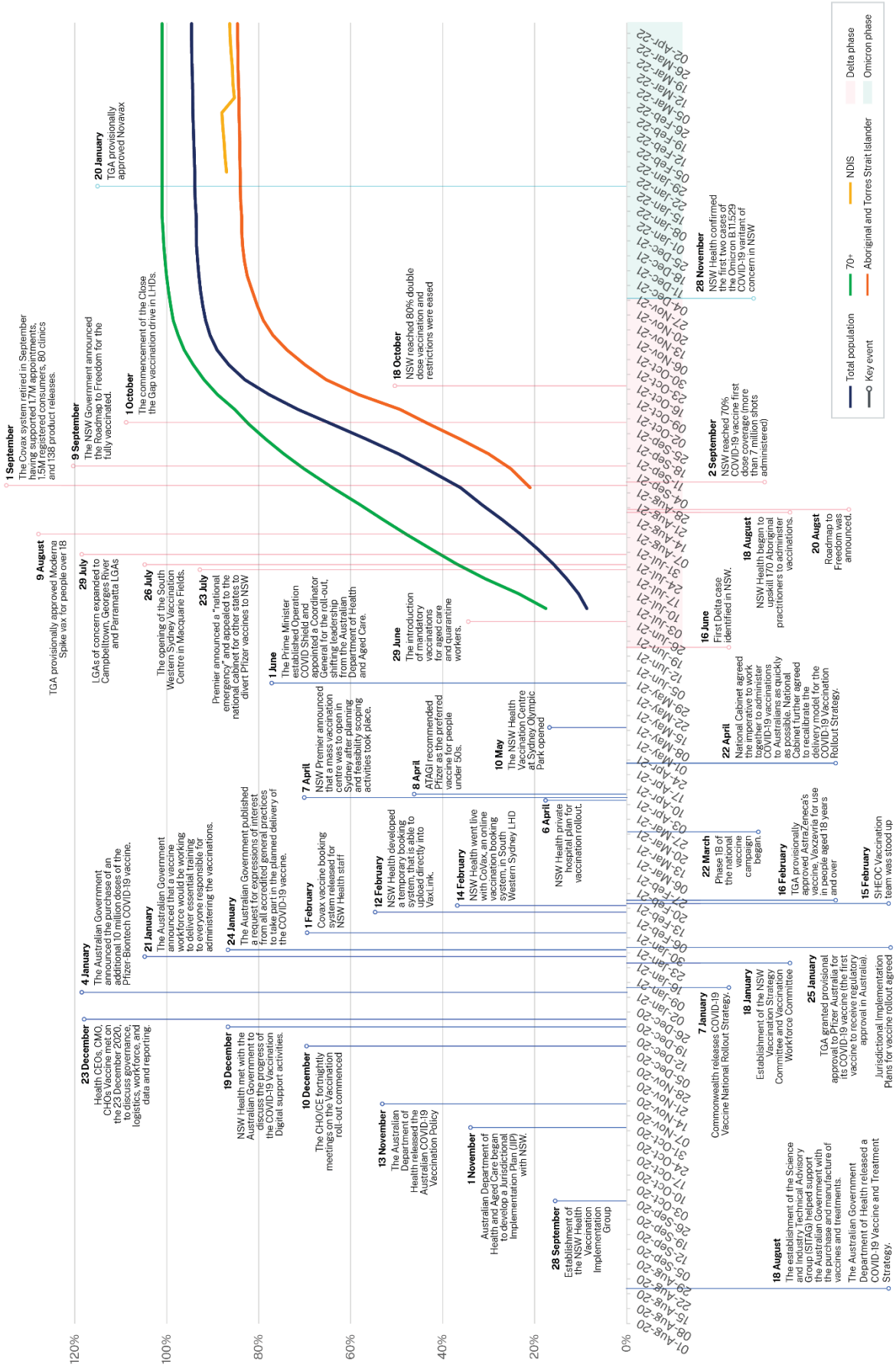

Figure 2 - Vaccination rates and key milestones during the Response

Strengths

Vaccination program

NSW Health has been widely acknowledged to have delivered a world-class vaccination program that achieved significant outcomes for the system and community, as illustrated in Figure 3 on the previous page. NSW Health's vaccination program has been widely acknowledged as highly successful (NSW Health 2021a). It was the first Australian state to reach over 90% double dose vaccination, nine months after commencing the rollout on 22 February 2021, helping to minimise the spread of disease and the impact of COVID-19 on NSW's population (NSW Health 2021a). The success of the vaccination program was attributable to progressive improvement, differentiation, and integration. This required strengthening procurement and supply chains, adopting technology to enable operational and public-facing requirements, drawing on partnerships to rapidly integrate changing evidence into practice (and communications), and creating local flexibility in the vaccination response to better support priority groups.

NSW Health's role in the vaccine rollout changed from its initial expectations

NSW Health had substantial vaccination responsibilities in line with the national program coordinated by the Australian Government, including:

- *Phase 1a and 1b (mid-February to end April 2021):* key workforce staff (such as quarantine workers, border workers, frontline health care workers (1a); other health care workers and staff, and residents in prisons (1b); NSW Health operated residential aged care facilities (RACFs) and multipurpose services; and staff and residents in correctional facilities
- *Phases 2 onwards (from May 2021):* identified priority populations (such as adults aged 50-59 years and 60-69 years) from public hospital sites only (DoH 2021a; Australian Government and NSW Health 2020a).

For details on how NSW Health vaccinated its workforce, see *Workforce Impact.*

Central structures supported the rollout

As mentioned in *Governance and Decision-making*, vaccination planning, operations and program support teams were established to support the coordination of vaccination activities with wider pandemic preparedness activities, communications, and reporting. The Ministry, SHEOC and eHealth NSW worked in partnership with the Australian Government to fast-track digital support for the vaccine rollout. CoVax, an online vaccination booking system for NSW Health staff, was launched in South Western Sydney LHD on 14 February 2021, with just 21 business days from development to 'go live', showcasing the technical expertise of eHealth NSW and their commitment to supporting the Response (eHealth 2021).

Sydney LHD also provided critical support in the initial set up by scouting, establishing, and managing mass vaccination centres including setting up the first mass vaccination centre - Sydney Olympic Park, that led to the planning of subsequent mass vaccination centres at Belmont, near Newcastle, Macquarie Fields in South Western Sydney, Wollongong, Qudos Bank Arena and a large centre in the Sydney CBD (NSW Health, 2021a). Sydney LHD also designed the first human-centred, end-to-end vaccine management solution to support the first NSW Health Vaccination Centre (at Mallett Street) that was then adapted to support the Sydney Olympic Park centre (SLHD, 2021).

More details on supporting vaccination systems, including the Vaccination Administration Management system (VAM), is discussed in *Innovation and Technology.*

Implementation adapted to the demands of the Response

NSW Health's role throughout the Response needed to be adaptive, scaling up and down to meet the changing demands of each pandemic phase. Mass vaccination hubs and services were established in May 2021 in response to growing case numbers and the release of vaccination targets set by the National Cabinet and NSW Government. Central vaccination teams adjusted their implementation efforts to align with changing PHOs, ATAGI advice, Therapeutic Goods Administration (TGA) advice, and the Australian Government's advice about designated priority groups.

Frameworks were developed to support gaps as they became evident. For example, the August 2021 *Vulnerable Populations Vaccination Strategy* provided guidance to LHDs and SHNs on vaccinating vulnerable people. In addition, SHEOC routinely created and updated *Standard Operating Procedures* as the rollout progressed, such as procedures to cover the emerging issue of vaccinating seafarers in November 2021. This was also against a background of evolving eligibility for vaccinations – the recommended vaccines by age group shifted in April 2021 amidst concerns of Vaxzevria (AstraZeneca) side-effects, and vaccines and booster doses were initially targeted at priority groups before expansion to the broader community (ANAO 2022).

There were also issues surrounding eligibility for Pfizer. We heard how pregnant women faced initial uncertainty about getting vaccinated in the absence of clear government advice, and how once they became eligible group for a Pfizer vaccine, the appropriate guidelines were not updated across the system in time. This caused distress at clinics as women were being advised they were eligible for the Pfizer vaccine but were not a priority group so could not make an appointment to receive it. Stakeholders also described how vaccine mandates for various categories of workers created another level of complexity for the public to navigate and the system to operationalise, such as the PHOs outlining vaccination requirements for teachers, and aged care and disability workers.

LHDs played a critical role in driving effective vaccination uptake locally in line with changing PHO advice and targets. Vaccination centres and mobile clinics were established throughout the pandemic to increase vaccine accessibility, scaling up and down to changing case numbers and local needs. Guidelines around vaccine administration were developed to expand the workforce able to administer vaccines safely (discussed in more detail in *Workforce Impact*).

The use of community pharmacists in the vaccination program was critical in rural and regional areas, highlighting the need to challenge traditional ways of doing business given the scale of the incident. NSW Health leaders noted the rapid turnaround time of mobilisation activities once the vaccine rollout commenced. *'Once the vaccine came in, we had to do things quickly … 12 days between the phone call and opening [of our vaccination service]' - Metropolitan LHD.* One metropolitan LHD created a workflow to administer up to 30,000 injections at 90 seconds an injection - a substantial reduction from the previous average administration length of five minutes. At times, there was uncertainty about vaccine supply and allocation of required vaccine quantities to certain LGAs, which added complexity to the vaccine rollout particularly from a community's perspective. However, LHD's flexibility demonstrated the system's willingness to 'problem-solve' in the moment, through regular participation in forums and the establishment of processes alongside, including stock redistribution to minimise waste. More details on vaccination services provided to the community are captured in *Community Impact*.

LHDs and primary care providers worked together to deliver vaccines

The rapidly changing needs of the vaccination program expanded NSW Health's role and responsibility in supporting broader community vaccine rollouts, requiring extensive support from external partners. NSW Health worked with primary care providers, including GPs, community pharmacists and ACCHSs, to support the vaccine rollout. Arrangements were particularly effective where there were established relationships with primary care providers and PHNs in place; it was more challenging in areas when there were less developed relationships (as explained in *Governance and Decision-making*, as well as *Community Impact*). Of the 14.3 million vaccines administered across NSW (as at 11 January 2022), most were administered by primary care providers (overseen by the Australian Government) and more than 4.5 million were administered by NSW Health (SHEOC 2022a).

LHDs used existing systems, such as HealthPathways, to directly upload the latest information (often within 24 hours) to keep GPs up to date on vaccination and treatment pathways, providing visibility across the system. Timely information on outbreaks and where they were occurring was also provided by LHDs directly to GPs to allow them to prepare accordingly. Reports suggest NSW health data was more readily available and highly relied on by the primary care sector.

Vaccination targets were effectively communicated for most of the population, except priority groups and vulnerable populations

Vaccination targets and the associated policy measures were agreed by the National Cabinet through the *National Plan* in August 2021, shortly followed by NSW's 'Roadmap to Freedom' and the vaccination targets required to achieve it. These all contributed to the public's engagement to get vaccinated, supported by significant efforts to consistently communicate vaccination choices, the impact of vaccination milestones, and progress against those milestones to the community, as data and guidance became available. Vaccination efforts were initially focused on achieving NSW's targets by maximising the number of people vaccinated to achieve protection across the population. These efforts were closely informed by decisions made by the Australian Government to manage the vaccination of certain priority groups, including people in residential aged care facilities, Aboriginal people, and people with disability.

This approach initially impacted the progress of, and attention on vaccination for Aboriginal communities and other priority groups in many instances most impacted and at risk. While there were target groups set in the phased rollout of the *New South Wales COVID-19 Vaccination Program Implementation Plan*, there were no specific vaccination targets or timelines set for Aboriginal communities and other priority groups. Further, even if targets were set, data associated with these populations were difficult to obtain and to be used to monitor the progress (discussed in detail in *Data and Information*). Other challenges persisted throughout the Response regarding the perceived safety of some vaccines which we heard to have hampered uptake in many priority groups and vulnerable communities. The role of CAH in working with Aboriginal communities here is detailed in *Governance and Decision-Making*.

Australia wide, effectively countering safety concerns about the Vaxzevria (AstraZeneca) vaccine was challenging, as well as accelerating vaccination progress, where vaccine alternatives were unavailable, largely due to supply. These challenges were further compounded by uncertainty in differing priority groups, which impacted how vaccines were distributed across communities.

Vaccination targets were met for most of the population to achieve the 'Roadmap to Freedom'

NSW Health's vaccination efforts were critical in supporting NSW Government decisions to lift restrictions on public movements and business operations in October 2021 while managing health system capacity. Notwithstanding many challenges, by the end of 2021, 94% of NSW's population aged 16 and over had received at least two COVID-19 vaccination doses, compared to the 91% national average, and above the 90% target that had been set (Operation COVID Shield 2021).

As illustrated in Figure 4 overleaf, data from April 2022 suggests the impact of vaccination on mortality and hospitalisation rates for those who received two doses of the vaccine. While less than 5% of people in NSW have had no vaccine, they represent 24% of deaths (NSW Health 2022c).

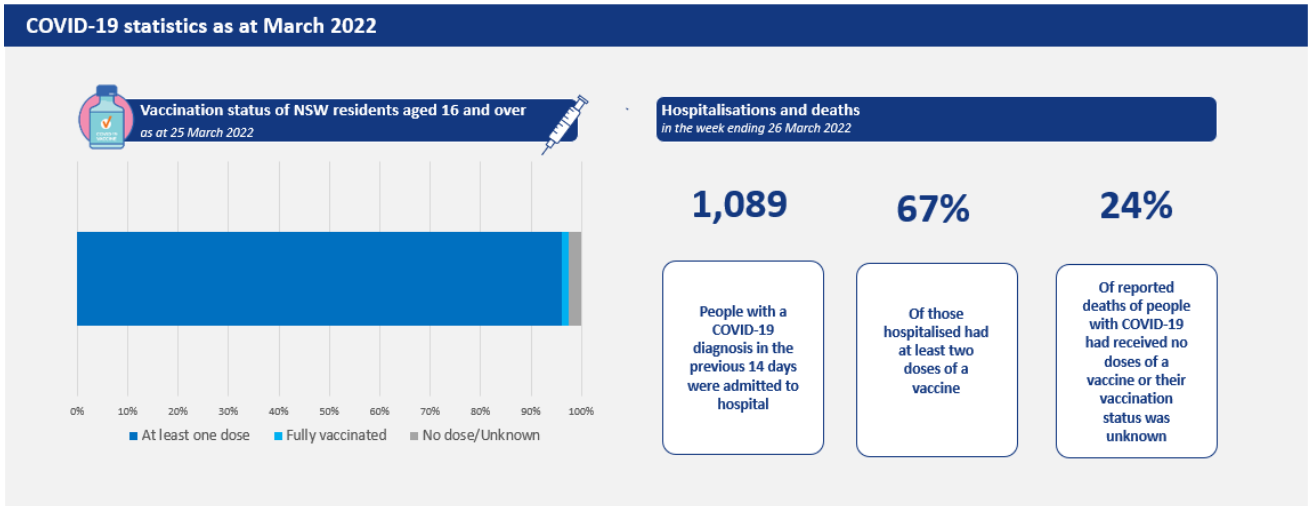

Figure 3 - An overview of COVID-19 cases and vaccination data Sources: DoH 2022; NSW Health 2022c.*

To recognise efforts in establishing a mass vaccination centre with the community at the heart of their decision-making, Sydney LHD was awarded a 2021 NSW Premier's Award.

Putting the Customer at the Centre

Welcome to the NSW Health Mass Vaccination Centre

Without timely access to accurate data for Aboriginal communities and other priority groups, it was difficult to track vaccination progress for these populations despite strong local efforts

Despite the lack of data to track vaccination progress and targets in place for Aboriginal communities and other priority groups, LHDs worked hard to support and prioritise groups most at risk, impacted and in need as the pandemic progressed. These focused on employing bespoke and targeted strategies in partnership with local organisations and community representatives (for more detail see *Community Impact*). A key example was the establishment of the Inner City COVID-19 Vaccine Hub in May 2021 to improve vaccine accessibility for people experiencing, or at risk of, homelessness. A collaborative effort by St Vincent's Health Network Sydney, South Eastern Sydney LHD, Kirketon Road Centre and Matthew Talbot Primary Health Clinic, the Inner City COVID-19 Vaccine Hub provided effective support to the rollout, with more than 5,000 people vaccinated by mid-September 2021 – only four months after it was formed (St Vincent's Hospital Sydney 2021).

While vaccination progress for Aboriginal communities and other priority groups lagged behind the rest of the population across NSW (see Figure 3), there were clear examples of success – driven by the commitment and engagement of both health and community partners across the system, highlighting the importance of community-centred relationships and place-based roles in supporting uptake.

In NSW, around 70% of Aboriginal people access primary care from a non-ACCHS GP, meaning that the Australian Government's vaccination strategy for Aboriginal communities that focussed heavily on distribution via ACCHSs was not going to effectively meet the needs of Aboriginal people in NSW.

Understanding this, CAH advocated through national working groups to expand access to other GPs and community pharmacists; once this was done in mid-August 2021, access improved significantly. CAH worked with public health teams in developing awareness and education materials to engage pharmacies and general practices to prioritise and promote COVID-19 vaccinations for Aboriginal people.

GPs were the primary delivery mechanism for first and second dose vaccines in NSW, with 55% of the Aboriginal community in NSW vaccinated by GPs. Community pharmacists were particularly important for rural and regional areas without health centres. This was the result of strong forward planning and communication with Aboriginal people, demonstrated by long waitlists of Aboriginal people wanting and waiting to be vaccinated.

The value of community-centred and place-based approaches in promoting vaccination uptake is further discussed in *Community Impact.*

Lessons learnt 15

Ambitious vaccination targets achieved across the general population were attributable to the mass vaccination strategy, alongside the incredible efforts and commitment of the system. Vaccination among Aboriginal communities and other priority groups most impacted and at risk were less successful, and specific strategies are required in future emergency responses to prioritise these communities in tandem with broader vaccination efforts. Identifying and maintaining mass vaccination capability, along with sharing data to promote access, will be key to achieving timely, effective and equitable vaccination for future responses.

Links to Recommendation 2.3: ***Ensure the system and public understand how an emergency response may change health service delivery models and priorities, access needs and public communications. Specific strategies will be required to reach and involve priority groups and vulnerable people in shaping responses and ongoing review.***

COVID-19 testing

NSW Health adapted its testing approach as the Response progressed

Overall, the Response delivered widely accessible testing for people across NSW (for detail on testing of the workforce, see *Workforce Impact*). NSW Health Pathology rapidly expanded its testing capacity, and its expertise and ability to expand were a critical success factor for NSW. In partnership with private pathology providers, NSW Health Pathology delivered a range of innovations that improved access to test results for the public, including a collaboration with DCS to rapidly develop the Service NSW Rapid Antigen Test (RAT) registration system, and integrate its data with other data systems to inform local care pathways (see *Data and Information* and *Innovation and Technology* for more information).

Section 3.1 of the *Public Health Response Debrief Report* details NSW's approach to COVID-19 testing, with a particular focus on accessibility. During late 2021, as Omicron became the dominant variant and positive cases rapidly grew, NSW's reliance on Polymerase Chain Reaction (PCR) testing came under pressure, with many pathology providers becoming overwhelmed almost overnight, reducing capacity and blowing out waiting times. Combined with reopening domestic and international borders, associated testing requirements and a seasonal peak in travel, there was shared confusion amongst the community, businesses, clinicians and the system of why RATs were not planned for earlier. This was particularly apparent given the accepted use of RATs internationally and in some industries and workplaces, including prisons. *'RATs were not appreciated until this time. ...Took a long time for the Ministry to let go of the expected repercussions of doing this' – NSW Health organisation.*

A combination of forward scenario planning and targeted communication to build awareness could help to mitigate some operational challenges experienced during the transition between testing regimes, as well as minimise the risk of confusion, delays and frustration associated with the changes.

Collaboration across the system

The complex and changing demands of the pandemic encouraged unprecedented collaboration, driving innovative responses and new ways of working to manage capacity constraints across the system.

Access to funding to support change and innovation

New and adaptive approaches were required in NSW Health's Response to meet evolving local and system-wide needs, driven by emerging issues and ongoing pressures from COVID-19. The ability to call on resources

and funding flows was enabled by a strong relationship between NSW Treasury and NSW Health, allowing the system to rapidly scale-up and create necessary capacity to meet changing demand. The relationship was supported by daily liaison between NSW Treasury and Health to help build trust and confidence in the efficient and effective use of funds. Funding flexibility also allowed for change and innovation, such as grant funding from NSW Health to NGOs to rapidly stand-up and implement community-led initiatives to meet local needs. The merits of streamlining these processes warrant inclusion in future incident. Another example was the arrangements with private hospitals; new contracts were rapidly negotiated at the start of the pandemic to enable public hospitals to use private bed capacity and staff that was supported by NSW Treasury (discussed in more detail below in this chapter).

This was particularly impactful and necessary to better support rural and regional responses. For example, it enabled the use of light aircraft to fly tests to pathology clinics and provide direct social supports to isolated families, as well as funding local community groups to provide key social and welfare supports to people in need. Strong audit processes were established by NSW Health to provide necessary assurance and expenditure controls, which were well-received and acknowledged to have contributed to building trust.

Addressing capacity constraints across the system

Fit for purpose and, at times, innovative solutions were developed wherever possible to address capacity constraints as they arose. This required effective collaboration across the system and across different contexts and settings, enabled by an authorising environment for innovation and taking sensible risks. Notwithstanding the strengths of the overall system Response, geographic isolation, and capacity constraints in rural and regional LHDs limited their ability to implement and benefit from some of the solutions described below – a key factor for consideration in preparing for possible future public health emergencies. This capacity constraint was highlighted in the early redeployment of staff from regional and rural areas in the first stages of the pandemic, when the Response was mainly focused on metropolitan areas. Consequently, the already elevated workforce vacancy rates in regional areas were exacerbated, and when the same workforce was redeployed back to their community to deliver both the Response and BAU services, their previous deployment compounded fatigue and pressure.

At the same time, capacity was enhanced by the productive partnerships that were established at the local level with other first responders and key community partners. Partnerships were also formed with metropolitan LHDs to share resources and enhance access to clinical and other supports. These arrangements were used in previous natural disasters and warrant formalisation in future emergency planning.

Shifting from hospital-based models of care and opportunities to shift surgical care

Central and local planning was initiated early to manage hospital capacity and ICU resources against anticipated changes in demand. National Cabinet suspended non-urgent elective surgery on 25 March 2020 (Parliament of Australia 2020a). For NSW Health, in addition to freeing up health staff and beds that would have otherwise been used for these services, this decision aimed to preserve medical supplies, including PPE, and protect surgical teams and patients from infection. Figure 5 shows the number of elective surgery procedures performed, broken down by metropolitan and rural and regional LHDs. It demonstrates the impact of these suspensions on system activity and the ability for the system to rebound, which was quite different in the June 2022 quarter as compared to the September 2020 quarter.

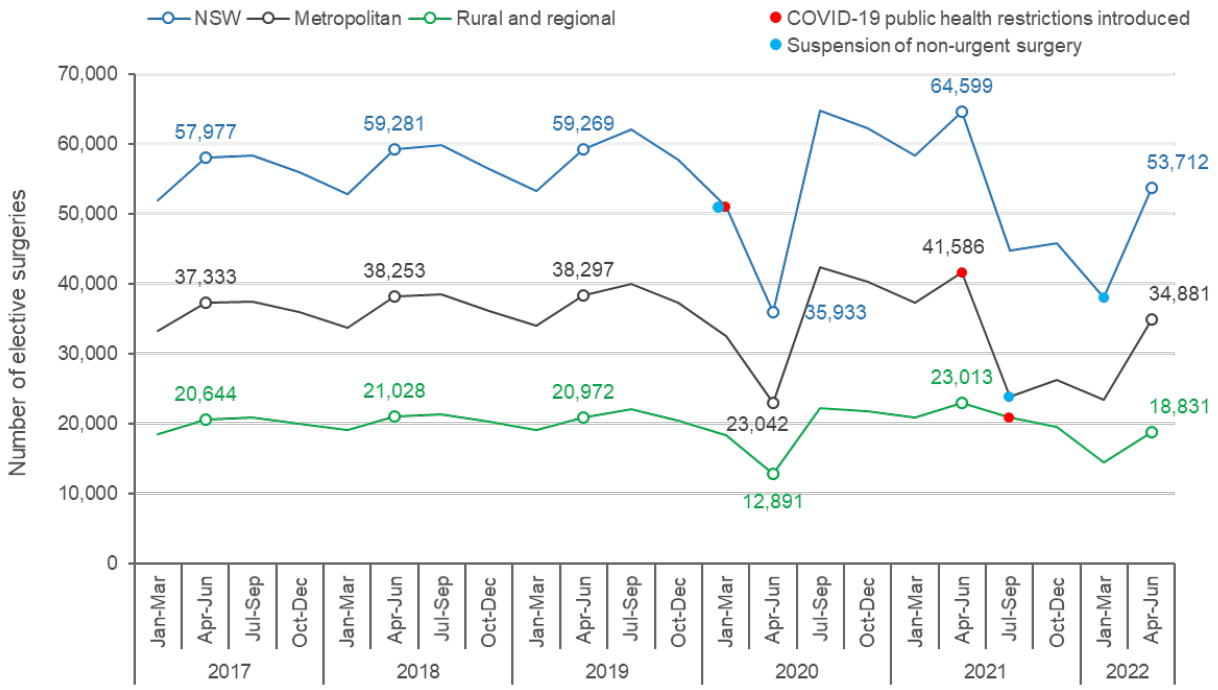

Figure 4 - Elective surgeries performed, NSW, metropolitan, and rural and regional local health districts, January 2017 to June 2022 (NSW BHI 2022)

Stakeholder feedback suggested that some centrally driven directives like surgery suspensions had an inconsistent and varied impact at a local level, and further consideration of local capacity, hospital demands and COVID-19 impacts in future emergency planning may be desirable. Surgical Action Plans were subsequently developed by the NSW Agency of Clinical Innovation (ACI) to assist with more efficient surgical planning to cope with increasing backlogs – providing the opportunity to reimagine improved models of care to better support value-based care approaches and enhanced recovery. This shift to value-based surgical care is also being explored in BAU as part of the *Elective Surgery Improvement Plan*. It will also be important to consider emerging data about the rate of people being add to elective surgery waiting lists. There may be a need to consider how best to monitor waiting lists and system performance during future emergency responses to inform decision-making, including patterns of different types of procedures, the length of time spent on a waiting list, and trends in length of stay.

The statistics on the COVID-19 induced elective surgery backlog highlight challenges in the system; while the number of surgeries performed each week gradually increased in the January to March 2022 quarter, wait times are still high (BHI 2022b). Supported by over $400 million in additional funding, NSW Health is implementing a range of strategies to fast-track surgery that was delayed by the Response. These strategies include tools to improve surgery planning and patient flow, extending theatre hours, implementing theatre efficiency guidelines, and establishing long-term partnerships with private hospitals to lock in theatre lists for surgical services and to provide pandemic support for future pandemic outbreaks. This type of collaboration will be important to ensure the system is increasingly flexible to meet the competing demands placed on it.

At a system level, data from the Patient Flow Portal (PFP) was used to understand system capacity and inform the efficient allocation of resources locally and across the system. Further outlined in *Data and Information,* the PFP is an example of why central data integration was so critical to developing appropriate mitigation strategies in response to system pressures, and the benefits this offers to patient safety and outcomes.

At a local level, LHDs worked with Health Infrastructure NSW to maximise the use of existing physical infrastructure and improve local readiness for possible surge requirements, although adapting ageing infrastructure to meet IPC requirements, most commonly in rural and regional LHDs, was sometimes difficult. This relied on Health Infrastructure NSW's expertise and experience with other emergency responses. For example, Health Infrastructure NSW brought rapid and detailed 'shelf-ready' bespoke design plans to

implement temporary field hospitals in the case of significant outbreaks, increasing NSW's public and private acute and intensive bed capacity by 5,000 beds, along with considering the potential need to expand mortuary capacity, and how to do so.

'Our planning demonstrates the collaboration and goodwill of not only our interagency partners in NSW, but internationally with support from across the globe to ensure the planning for our community is best practice'

- Temporary Hospitals Case Study, NSW Government, 2020.

This scenario planning was proactively prepared in anticipation for increasing demands and clearly contributes to the system's readiness for future responses. It should be continued in the future as part of emergency management planning, as discussed in *Governance and Decision-making.*

LHDs also operated under the ICU pandemic STEPs, a framework that supports the provision of critical care during an escalating pandemic. Managed by SHEOC and the System Flow Centre, STEPs provided practical guidance, tools, and templates to support hospital triage, capacity planning, infrastructure considerations, clarity about roles, responsibilities, communication and coordination, while enabling system-wide oversight for the rapid identification and escalation of capacity concerns when needed.

COVID-19 Care in the Community (CCiC) alleviated pressure on the hospital system where it was most acute
Primary care provider engagement in the emergency response governance structures enabled better reach of care into the community and proactive diversion of patients away from hospitals where possible. The CCiC model was established to support positive COVID-19 positive patients to be monitored and consulted from their own home to manage rising Emergency Department (ED) presentations. It enabled more integrated care to be delivered and informed by socio-economic needs at home. CCiC used multidisciplinary teams, including GPs, nurses, allied health professionals, Aboriginal health staff, and staff with expertise in abuse and neglect issues. *'CCiC was more than health - it was dealing with children in out-of-home care ... dealing with drug and alcohol problems' - NSW Government Agency.*

Overall, CCiC was observed to have significantly strengthened the Response, proactively addressing socioeconomic, cultural and geographical challenges to accessing services. One LHD suggested that CCiC reduced the proportion of COVID-19 ED presentations to less than half the NSW average. The shift towards virtual care has also had positive benefits for the patient experience, with survey data from BHI showing almost three-quarters of patients reporting they found it convenient (73% of patients), with smaller cohorts indicating they felt at ease in their own home (37%) and it saved money (30%) (BHI 2022a).

Changes to models of care, including care in the home and community, and shifts from hospital-based care should become BAU and continue in future emergency responses, and some LHDs are already doing so. Other opportunities include joint commissioning models that were seen in the transition of COVID-19 case management to primary care – a lesson NSW Health is progressing. Building from these experiences, early central and regional planning in future emergency responses is warranted, with dedicated planning for vulnerable people that acknowledges broader social care and support needs for appropriate care in the community.

Lessons learnt 16
Changes to models of care, including care in the home and community, and shifts from hospital based care, that have embedded social determinants of health should be expanded in BAU to broader service design delivery. This needs to be supported by resources and continuously improve through program evaluation and research. Evaluation should explore the impacts of patient outcomes and system operations from these changes of models of care, particularly for multidisciplinary outreach models.

Links to Action Area E.5: ***Continue to embed social determinants of health into service design and delivery, resource allocation, program evaluation and research.***

Links to Action Area E.7: ***Continue to support and evaluate local innovation in delivering clinical care in the community to better understand the impacts on patient outcomes and system operations, with a particular focus on multidisciplinary outreach models.***

Private hospital partnerships allowed system flexibility

Enabled by funding via the *National Partnership on COVID-19 Response*, NSW Health executed agreements with private hospitals to purchase private hospital services as required, and to maintain their capacity to respond as required for NSW Health's needs. Private hospitals played an important role during the Response as a complement to public hospitals for receiving patients. In practice, staff from private hospitals were not readily deployable to public hospitals, due to differing skillsets and restrictions in their existing employment contracts, limiting the ability to rapidly transfer staff to public hospital settings to support patients with complex needs. Building on these relationships, future opportunities exist to work together to address patient needs and system demand.

Innovative initiatives driven by NSW Ambulance were key to alleviate system pressure during the Delta wave

An ambulance carousel model, adopted by NSW Ambulance, was able to alleviate capacity constraints by diverting patients away from hospitals in Western and South Western Sydney, with higher patient loads to minimise delays in the delivery of care. The training of 180 paramedics was brought forward to bolster NSW Ambulance's workforce to support this model. Driven by central direction, the carousel model was viewed to be an important mechanism to relieve facilities under immense pressure and provide more timely care. It also demonstrated the benefits of NSW Ambulance being part of the broader health system and working collaboratively to quickly respond to patient needs. There were other initiatives delivered by NSW Ambulance to support the community including predicting and assisting in managing demand, supporting care coordination and virtual care and in avoiding unnecessary ED attendances, such as the Save Triple Zero for Saving Lives Campaign to educate the community, as well as introducing messages at the start of triple zero calls to prompt non-emergency calls to contact HealthDirect.

The above examples highlight the benefits of using all parts of the health system, and the importance of NSW Ambulance in being part of the broader NSW health system and working collaboratively to support and rapidly respond within the existing structure. This is a valuable model that could be continued in BAU to manage system demand, with special significance for metropolitan services.

Collaboration increased laboratory capacity for testing

NSW Health has a well-established and well-prepared network of public diagnostic laboratories that were able to respond flexibly and quickly to support the pandemic Response. *'All states that did well had a public pathology service' – NSW Health organisation.* Early activation of emergency management structures in NSW Health Pathology and proactive resourcing decisions enabled them to be early leaders, tactically securing local resources and retaining testing capacity within the public system to support the increasing load of COVID-19 tests; approximately 6.15 million COVID-19 tests were processed by NSW Health Pathology clinics from 2020-21. We have heard that NSW Health Pathology's capacity and expertise was *'the difference between success and failure'* of the Response (NSW Health 2021a).

Existing relationships across the system further enabled NSW Health Pathology to expedite early access and use of animal testing laboratories to expand laboratory capacity. These partnerships also enabled critical access to additional laboratories equipped with the necessary resources (tools and technology) and a highly skilled and experienced workforce to cope with the demand pressures on the system. Partnerships with the animal pathology laboratories in particular enabled skills and information transfer from a workforce highly experienced with preparing for, and managing, animal disease outbreaks. *'Due to their expertise, they were able to pass knowledge on ... This allowed for a great deal of autonomy within [our] teams' - Shared Services Agency.* With this additional capacity, NSW Health Pathology was able to achieve a testing rate of 5000 to 10,000 tests

per day, supported by automated delivery of COVID-19 results to more than 300,000 people within 24 to 72 hours of laboratory testing (outlined further in *Innovation and Technology*) (NSW Health 2020b).

Cross-organisation collaboration was supported by enhancements to NSW Health Pathology's laboratory information system to be interoperable with other organisational systems, allowing the efficient processing of COVID-19 test results and strategic use of laboratory capacity. *'LHDs and pathology labs – COVID-19 leapfrogged us all to think of it as a single system' - Shared Services Agency.*

Models of care

Flexibility in the system Response, including a tight-loose-tight approach, a devolved model and funding flexibility empowered local innovation to meet local needs. New ways of working and models of care were trialed during the pandemic to address emerging issues, encouraging better coordination of services and resources.

The Clinical Council and CoPs (discussed in detail in *Communication and Engagement)* were new structures that drove partnerships, interdisciplinary cooperation, integration, and provided timely guidance – centrally guided through the system and implemented locally. These structures helped implement new models of care and increased flexibility in practice to adapt to workforce capacity. Importantly, some CoPs included primary care members and a broad range of specialties, such as pharmacy, rehabilitation, aged care, and experts from many other fields, providing a broad platform for service innovation. This model was noted by many stakeholders to be worthy of consideration in future emergency management and more so in supporting ongoing system improvement. The CoPs also played an important role in reducing anxiety, provided a place for clinicians to raise issues requiring escalation, and enabled clinically informed changes in models of care.

Some examples from CoPs include the set-up of virtual care programs and expansion of partnerships with primary care and NGOs in management that should be considered for BAU. Other examples of new models of care highlighted in Section 6, Case Studies 25 and 26 of the *Public Health Response Debrief Report* include:

- The use of Teledentistry in Western NSW LHD while stay-at-home restrictions were in place
- Re-orienting the Opioid Treatment Program to include pharmacies as places for treatment to minimise travels for patients and therefore community transmission.

Transport models as clinical models of care

HealthShare NSW's implementation of 'COVID-19 discharge buses', alongside the use of Patient Transport Services to transport COVID-19 patients in the community to and from the hospital, were safe and effective models of care, beyond simple transport solutions to meet patient needs. These approaches drove clinician buy-in, and relieved pressure on facilities, with shuttle services increasing from transporting 180 patients each week to 1,800 patients each week, in just 12 weeks. *'Community members needed to get to hospital. Patient Transport [Services] became the solution … [from] 180 to 1,800 transports each week, in just 12 weeks. Shuttle services were set-up at that point, with 10 COVID-19-positive patients being taken to hospital. Shuttles were a great way to reduce travel time' - Shared Services Agency.*

Virtual care

Virtual models of care played a critical role in supporting continuity of care and some BAU functions to the extent possible. Rapid expansion of virtual care (telehealth and video conferencing) models saw 30,105 telehealth consultations via myVirtualCare during the pandemic (NSW Health 2021a). This has played a part in shifting expectations, experiences, and uptake of virtual care across all parts of the system. NSW Health has recognised the need to build from this momentum and has established a taskforce to guide the development of the *NSW Virtual Care Strategy* that includes for care planning and coordination, clinical collaboration, innovation and research, patient self-management, and growing a digitally capable workforce (refer to *Innovation and Technology* for more detail on virtual care*).*

Alternative models of care, ways of working and local innovation captured here warrant consideration of what could be retained as BAU. We heard that many LHDs intend to maintain these, particularly the use of virtual care models (including telehealth models), Care in the Home (CITH) models, assertive models of care, and CoPs.

Lessons learnt 17

Fit for purpose innovative solutions were critical throughout the Response to address capacity constraints. These were enabled by a mix of ingredients, including effective collaboration across the system and across different contexts, local flexibility to implement community-based approaches, and authorising environments that embraced innovation and taking sensible risks.

The innovative solutions developed throughout the Response, including the use of CoPs, CITH, CICC, virtual are models and assertive models of care, which should be explored as part of BAU to continue to support the system with capacity and maintain delivery of quality patient outcomes.

Links to Recommendation 5.4: ***Ensure future pandemic responses anticipate the need for, plan for, and maintain capability to rapidly establish at-home testing and vaccination programs in partnership with primary care providers, particularly General Practitioners (GPs) and community pharmacists.***

Links to Action Area C.1: ***Consider how to best use the collective and individual expertise and reach of the CoPs to inform strategic system decisions, planning and responses to public health or other challenges. The success of CoPs was strongly linked to a shared purpose, with many members highlighting the potentially shared and mobilising issues relating to workforce challenges and the need for significant innovation.***

Issues

Strategic system planning

With many parts of the system at capacity, there is a need to use the existing workforce effectively

While varied across the different pandemic phases, many parts of the system were already performing at capacity, with limited redundancy and ability to surge and respond flexibly. *'It was difficult to pull resources from the system - there was no capacity for the different stages. There were no additional resources to be had' - Ministry Stakeholder.* These challenges were acutely felt in rural and regional areas that lacked the ability to surge from within existing or redeployed workforces (refer to *Workforce Impact* for more information). This highlights the importance of planning and utilising the workforce (at capacity) effectively, both strategically and operationally in future emergencies. This needs to be enabled by an integrated view of workforce availability and capability, which requires the necessary workforce data to be collected and analysed on an ongoing basis to support BAU and key elements of the emergency response (further discussed in *Workforce Impact*).

Early and enhanced system-wide planning to improve system readiness

The Response could have benefitted from earlier strategic system-wide planning to enable rapid decision-making to address immediate capacity issues. For example, early engagement between the Ministry and NSW Health Pathology could accelerate access to pathology resources, coordinate data collection, support surveillance testing across different settings (such as hotels), and guide the efficient and effective commissioning of private providers about rural and regional challenges. Leveraging existing contracts with private providers could also lessen these risks.

Lessons learnt 18

There are many opportunities to capitalise from the Response to improve the system's readiness and responsiveness to inject capacity into areas of need, and enhance system-wide decision-making:

- Establishing oversight structures early (***Recommendation 1.4*** discussed in *Governance and Decision-making*)
- Better utilising periods with lower caseloads (in 2020 for example) for strategic and forward planning of this nature (***Recommendation 3.4*** discussed in *Governance and Decision-making*)
- Reviewing the *Pandemic Plan* to strengthen data collection on workforce, building in proactive and over-the-horizon planning, including scenario stress testing for workforce and operations and public health advice (***Recommendation 6.1*** further discussed in *Workforce Impact*).

System-wide responsibilities

Clarifying responsibilities across the system at key transition points

As discussed in *Governance and Decision-making,* different challenges emerged as the pandemic progressed, with the successful implementation of a coordinated Response highly dependent on clarity of responsibilities, especially at key transition and pressure points. It was acknowledged that the revised *Pandemic Plan* and supporting processes should highlight some of the following:

- Clear central direction on critical service priorities, and guidance on preparation, would assist with scaling of local responses
- Clear guidance for each level of response would better support LHD decision-making on service models and priorities, access needs and public communications
- Clear processes are required to guide decision-making around closure or deferral of services associated with PHOs or redeployment of staff.

Difficulty in addressing procurement and supply chain risks

Availability and access to key consumables was extremely challenging during many phases of the pandemic, with many issues beyond the control of NSW Health. Existing information systems were found wanting, and frequently relied on manual data capture. Health leaders were highly focussed on staff safety and patient safety, and the pace of the Response highlighted challenges and inconsistencies with existing procurement and supply chain management. Many stakeholders noted that the system tends to address supply issues over demand issues, when in fact both issues should be considered in tandem. Where there appears to be a gap between supply and demand, there was a tendency to immediately source additional supplies, as opposed to modulating demand and considering what is required in terms of clinical needs and safety requirements. While some excess procurement is to be expected in an emergency incident, there is merit in maintaining an up-to-date understanding of demand, supply and safety requirements to guide effective procurement decisions.

While system-level procurement responsibility was transferred from SHEOC to NSW Police during 2020 to assist in expediting procurement, there were some lessons learnt from better utilising the existing expertise of Pillar organisations to support PPE procurement for a more consistent, clinically-informed approach to source based on safety requirements. *'There is a big team who are procurement professionals that are ready to draw from and ready to go. ... Centralised procurement of HealthShare [NSW] is incredibly important' - NSW Government Agency.*

Lessons learnt 19

Emergency procurement mechanisms, supply chain management and disruption mitigation will need to feature early in Business Continuity and Disaster Recovery planning and be included in the *Pandemic Plan*, noting a need for integrated domestic and national supply chains. In practice, this could be centralising order and stock control of top 100 procurement consumables across the system via a diversified instrument platform to allow LHDs to control fluctuating procurement flow throughout

different stages of the pandemic, and pre-emptively avoid last-minute escalation and emergency shortages in hospitals. This would help to mitigate workforce anxiety about the availability and appropriateness of PPE. The management of PPE should also come with early and clear advice about product safety and efficacy, as well as clear messaging from leaders that staff safety is a top priority. Identifying clear transition points would also support de-escalation of the emergency response back to BAU.

Links to Recommendation 1.6: ***Further develop and integrate clear emergency procurement mechanisms, supply chain management, and disruption mitigation plans in Business Continuity and Disaster Recovery planning processes.***

Links to Action Area A.4: ***Investigate the merits of centralising procurement and logistics of the top 100 critical consumables across the system to mitigate supply chain risks in an uncertain global context, including PPE.***

Quarantine arrangements were stood-up very quickly and adapted throughout the Response

Following the then Prime Minister's announcement on 27 March 2020 regarding quarantine arrangements for incoming travellers effective (almost) immediately, NSW Health rapidly stood-up arrangements to coordinate with NSW Police, Australian Defence Force staff, food services, customer experience and hotel facilities. Sydney Airport is the primary international gateway into Australia, receiving a higher proportion of international incoming passengers during the pandemic at 48% between March and August 2020 (DoH 2020). This meant that NSW took on a significant portion and pressure of border screening and hotel quarantine for Australia.

While quarantine arrangements were stood-up quickly, they were based on strong clinical protocols that were pressure-tested and adapted through weekly forums with Sydney LHD, SHEOC, NSW Police, the CEC and other partner agencies to ensure appropriate inputs, such as infection control, review of breaches and audits were considered. These practices resulted in an infection rate of 0.8% of the total number of international incoming passengers between March and August 2020 (DoH 2020).

Not knowing how long hotel quarantine would be needed across the system and the changing landscape of COVID-19 research meant that infrastructure requirements shifted throughout the Response. For example, while the 2020 *National Review of Hotel Quarantine* found the hotel quarantine system was largely effective as a first line of defence, it suggested the one-size-fits-all model should be removed within six months of delivery, in recognition of the improved knowledge of COVID-19 transmission and operational maturity (DoH 2020). This would shift the approach to tailoring quarantine measures by traveller origin and incorporating risk into system design.

Response priorities required a balance with BAU activities

During an emergency, both the *NSW HIPP* and *Pandemic Plan* outline the importance to maintain business continuity where possible, supported by *'regular training, exercises and business continuity plans, policies and guidelines'*.

'During a pandemic, all NSW Government agencies are responsible for maintaining core business to the greatest extent possible, according to agencies' business continuity and pandemic plans, as well as undertaking emergency-related roles identified in the NSW State Emergency Management Plan and sub/supporting plans'

- NSW HIPP, NSW Health, 2018.

Maintaining key health services, where safe and possible, was a key component of the complex decision-making that underpinned the Response. This includes the need to consider *'the use of pandemic response strategies that can be scaled-up or down, proportionate to the clinical severity of the pandemic virus and to the needs of the NSW population'*, as outlined in the *Pandemic Plan.* Many BAU functions continued during the pandemic, but many were suspended, most often to assist in managing system-wide capacity. Experience

highlights the need for early and ongoing discussions about system priorities and the tolerable impacts on BAU at various stages of a pandemic. This would assist in providing consistency where appropriate, flexibility regarding the use of scarce resources, and regard to the broader and longer-term health impacts of suspending various health services; these are difficult decisions to make, with many perspectives to consider.

There is also merit in considering the administrative and other activities that could be deferred during a pandemic incident to release staff for other key roles. This would avoid any unnecessary diversion of effort across the system and highlight a joint sense of urgency through alignment on key priorities. We heard how greater guidance and understanding of the underpinning rationale for service suspensions could better support future decisions, as well as identify key metrics to monitor system impacts. While closure of services such as BreastScreen was variable across LHDs, proactive data analysis in mid-2021 instigated by Cancer Institute NSW to better understand the impacts of the service closures on patient cohorts involved has not suggested any significant impact on patient outcomes to date.

Directives to suspend non-urgent elective surgery were made on 25 March 2020. While the long-term impacts of suspending non-urgent elective surgery are not well-known, waiting longer than clinically recommended can reduce quality of life and lead to more complex surgical requirements (The Lancet Rheumatology 2021). In the week ending January 9 2021, 80.1% of elective surgeries were performed on time, compared to 96.8% for the same period in 2019 (BHI 2022a). However, it is worth also mentioning that 99% of all urgent surgeries in 2021 were performed on time and more semi-urgent surgeries have been performed on time (BHI 2022a). Figure 5 (below) demonstrates the challenge facing NSW Health in working through the backlog of elective activity and improve on-time elective surgery performance. These challenges are further highlighted by the large growth in people on the elective surgery waiting list over the past three years.

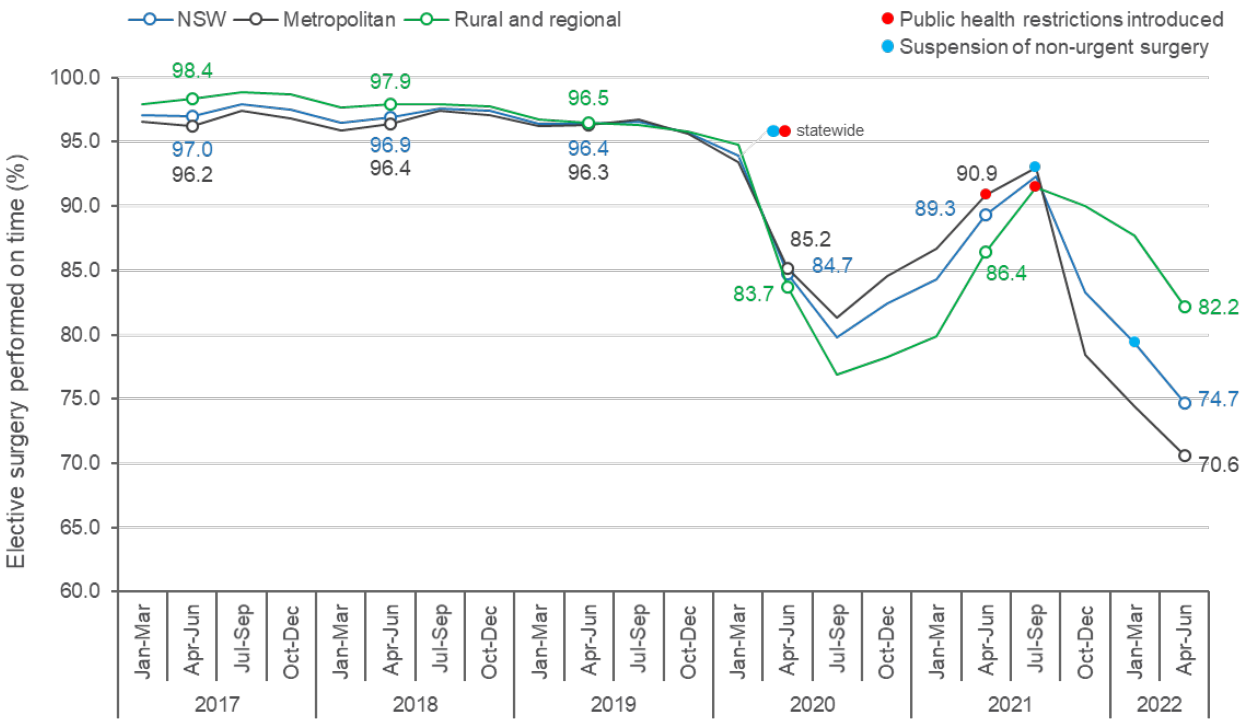

Figure 5 - Percentage of elective surgeries performed on time, NSW, metropolitan, and rural and regional local health districts, January 2017 to June 2022 (BHI 2022)

Lessons learnt 20

Clear state-wide guidance on BAU priorities is required to build an understanding of minimum services to be considered in key areas, including cancer screening and other health prevention measures and clinical services in an emergency context. For LHDs, clear central direction on critical service priorities, and guidance on preparation, would assist scaling of local responses. This could include guidance for each level of response that supports LHD decision-making on service models and priorities, access needs and public

communications. This must include clear consideration of the patient's actual or possible care journey, including the potential need for surgery following screening, and the system's ability to support those journeys during a response.

The *Pandemic Plan* needs clear decision-making processes to support any closure or deferral of services and provide an understanding about who makes the decisions, and how they will be communicated, including PHOs or redeployment of staff, alongside providing LHDs with practical resources to guide local partnerships with diverse community groups to enhance BAU and support emergency responses.

Links to Recommendation 2.3: ***Ensure the system and public understand how an emergency response may change health service delivery models and priorities, access needs and public communications. Specific strategies will be required to reach and involve priority groups and vulnerable people in shaping responses and ongoing review.***

Collaborative and proactive efforts in aged care settings achieved outbreak management, despite existing systemic issues in the aged care sector

The lack of clarity of roles and responsibilities in aged care between the Australian Government, states and territories, and aged care providers, was further amplified throughout the pandemic (Royal Commission into Aged Care Quality and Safety 2021). The use of outsourced providers to manage COVID-19 outbreaks in aged care facilities added further complexities in the provision and broader accountability of aged care services.

'There is poor clarity about the responsibilities of aged care providers and health care providers to deliver health care for people in aged care, and inadequate communication between them'

- Royal Commission into Aged Care Quality and Safety, Australian Government, 2021.

Despite this uncertainty, there was significant central coordination and support provided by SHEOC and strong local engagement by LHDs with Residential Aged Care Facilities (RACFs), discussed further in *Communications and Engagement*. In many instances, LHDs convened regular forums with key community partners and drew upon PHN and GP engagement in governance structures to leverage primary care support in managing facility outbreaks. For example, GPs supported some RACFs with planning and referrals for escalation protocols. We heard from many that this was a success at a local level and highly appreciated. This was seen in the Western NSW *'RAC-off COVID' Preparedness Strategy*, which successfully identified and assessed the unique needs and resources of 49 RACFs in advance to major outbreaks, which is further explored in Section 4.1, Case Study 10 of the *Public Health Response Debrief Report*.

NSW Health's *Protocol to support joint management of a COVID-19 outbreak in one or more residential aged care facility (RACF) in NSW* was developed in June 2020 (NSW Health 2020b). The SHEOC Aged Care team led operational planning and supported the coordination and escalation of COVID-19 emergency response capability across more than 940 RACFs in NSW (SHEOC Aged Care 2020). Collaborative efforts, though challenging, acknowledged the distress of families and aged care residents and enabled more effective and compassionate outbreak management to be implemented. We heard that the relationships matured over time and that there was willingness to *'adapt and refine as the pandemic shifted',* with the Response strengthening the infection prevention and control (IPC) preparedness of the sector.

The rapidly evolving nature of the pandemic and changing public health advice created challenges for the system to keep up and maintain consistency of messaging on key issues such as IPC, visitors, and on the ground application of public health advice. Application of the controls in RACFs, such as visitor screening and masks, were reportedly implemented inconsistently as a result (DoH 2021b).

Lessons learnt 21

Changes to the *Pandemic Plan* should consider earlier joint planning and clear definition of roles for all key stakeholders to improve emergency management coordination and governance, agility to effectively address emerging issues, and consistent application of new public health advice across the aged care sector (***Recommendations 5.1 and 5.2*** discussed in *Governance and Decision-making*).

Escalation pathways

Clear system-wide escalation points to improve consistency of responses across the system
Clear system-wide escalation points would improve consistency in responses across the system and minimising over-escalation of issues. As discussed in *Governance and Decision-making*, there were variations across LHDs in local responses and feedback highlighted the benefits of including additional details on escalation triggers and protocols in the upgraded *Pandemic Plan.*

Managing the transition between the Response and BAU
Feedback highlights the benefits of providing greater clarity in directions and system-wide communications on the various transition points, including the move to an emergency management setting and the transition back to BAU. *'We ran a short-term crisis response for a long-term problem' - Metropolitan LHD.* This call for some certainty also came with a call for flexibility. Noting this is a difficult balance to achieve, clear public health advice to the system highlighting clear pivot points, such as the system-wide move from an elimination to suppression approach, should always be the aim.

A future *Pandemic Plan* should aim to provide the community and workforce as much clarity as possible on transition points, supported by clear communication on when those transition points may be amended to suit circumstances.

Using the expertise of key partners

As mentioned in *Governance and Decision-making,* whole-of-government coordination and interfaces with partner agencies were an important part of providing joint planning, support and communication for individuals, communities, and businesses. For example, at times, DoE was translating PHOs for schools on the weekend before they were brought into place. Similarly, NSW Treasury was responsible for communicating the economic impact of the public health response to the business community and including SafeWork in the process of producing COVID-safe business and workplace health and safety advice, including managing employee communications for COVID-19 messaging and mental health and wellbeing. NSW Health also partnered with DCS to leverage their expertise in customer-facing services, as well as improving the effectiveness of public messaging. This is explored in more detail in *Communications and Engagement.*

Lessons learnt 22

A revised *Pandemic Plan* should clearly articulate the roles, expertise and expectations of all NSW Health organisations within an emergency management environment (***Recommendations 1.6*** and ***1.3*** discussed in *Governance and Decision-making*). This includes partner agencies that Health interface with including DoE, DCS, and community partners (detailed in *Community Impact*).

Rural and regional

Rural and regional LHDs continued to innovate to overcome the challenges unique to their communities
Throughout all phases of the Response, rural and regional LHDs faced unique challenges in preparing and implementing local responses in the same way as metropolitan LHDs. For example, the demand for efficient

testing processes could not be met where clinics and facilities were too dispersed to turnaround pathology results at the same rate of metropolitan areas. While obtaining and distributing PPE was a state-wide issue, isolated communities experienced these challenges more acutely and had sourced their own PPE when supplies were not available fast enough. Internet connectivity was also challenging across many regions, limiting access to public health messages and virtual care, noting devices and phone credit were often provided to help address these issues (accessibility issues are discussed further in *Innovation and Technology)*. However, rural and regional LHDs were highly proactive and able to innovate and share resources with community and government agency partners to best support their communities, as well as providing redeployment support to metropolitan LHDs earlier in the Response (detailed further in *Community Impact* and *Workforce Impact*). This highlights the importance of formalising partnerships with metropolitan LHDs to share clinical and support services across the system where possible.

Border closures also disproportionately affected regional areas given the community's needs to access services across border, the heavy reliance on international and locum workforces and the number of health staff and their families that reside across borders. (detailed in *Community Impact* and *Workforce Impact*). Arrangements need to be agreed between states to facilitate movements of essential workers, minimise risks to patient care and provide greater flexibility on compassionate grounds based on lessons learnt in the Response (detailed in *Community Impact*).

Lessons learnt 23

Challenges highlight the need for earlier regional and remote emergency management planning to be built into BAU and activated at the declaration stage of the pandemic. In doing so, system planning and associated responses need to be considered against the unique challenges experienced by rural and remote regions. Additionally, system responses need to ensure that redeployments and other operational decisions consider and design specifically for these challenges, including capacity, capability, and access to clinical care for regional LHDs.

Links to Recommendation 2.5: ***Ensure that rural and regional LHDs are resourced and supported in emergency responses. This ensures the specific challenges faced by regional LHDs and facilities are recognised and considered in decision-making. This may include formalised partnerships with metropolitan LHDs as occurred in recent bushfires; specific escalation pathways customised engagement forums to share system intelligence; opportunities to share and bundle community care supports to maximise access and resources; and the identification of lead LHDs with the capability/capacity to shape operational responses and minimise duplication.***

Links to Recommendation 5.3: ***Ensure redeployments and other operational decisions consider the specific challenges faced by rural and regional LHDs, including capacity, capability, and access to clinical care, and the impact of these challenges on their ability to effectively plan and respond to emergencies.***

System-wide commissioning of private services requires recognition of the need to service rural and regional communities equitably. Services traditionally commissioned by the Australian Government, such as Royal Flying Doctor Service and other providers in regional and remote communities, need to be done in tandem with local community providers, particularly ACCHSs and AMSs (not in competition) to build trust and promote uptake (this is explored further in *Community Impact*). The importance of establishing local coordination structures authorised to make decisions on housing, transport, social care was noted, with locally relevant, timely and culturally appropriate resources (for example Resilience NSW packs) being made available to support the community. **(Recommendations 1.2 and 5.1** are discussed in *Governance and Decision-making).*

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Communication and Engagement

The following chapter considers the impact of communications and engagement in supporting and informing the workforce and community, and lessons learnt on formalised structures and tailored approaches in delivering the desired engagement outcomes.

The communication challenges presented by this emergency response were unprecedented, with advice from NSW Health and the NSW Government changing daily as new evidence and information came to light. People, communities, schools, and workplaces were being asked to rapidly respond and make decisions based on complex public health and risk-based information for the first time, in the midst of personal challenges, uncertainty and fear. Transparent and honest communication was needed to build trust in public health advice and government decisions, which became an expectation from the public and health workforce as the Response rolled out. Significant ongoing efforts were made by NSW Health and by key partners to enhance the accessibility, relevance of information to specific community needs, granularity, timeliness, and transparency of communications, limited only by Cabinet conventions and processes. Further opportunities are currently being explored to enhance transparency, recognising that public expectations have changed because of COVID-19 and the very high degree of access to information provided by NSW Health and the NSW Government during the Response. Different communication tools and channels were required for different purposes to speak to the numerous stakeholder groups and provide credible information quickly.

The strength and success of NSW Health's communications and engagement during the Response was based on the principles of crisis communication: *'be first, be right, be credible'*. Behind the scenes, considerable effort was invested into effectively managing ambiguity and volatility of changing evidence, differing public health approaches, conflicting expert views, redirection of policy and procedures, and ongoing media scrutiny. As the Response matured, these efforts became more streamlined, with processes and structures established to produce fit-for-purpose products. They included establishing the Communications portfolio within SHEOC, creating the Clinical Council, CIU and CoPs, and implementing the Risk Escalation Panel. These supported health leaders with the necessary tools to consolidate, assess and apply evidence into practice, and communicate guidance and impacts to the workforce and the public.

Key learnings recognise that the pandemic required a one system approach to communications, which were shaped to reflect the needs of the most affected communities, and align with broader national and state approaches.

Strengths

Central communication and internal structures

Structures across the system supported responsive communication

Communication processes and structures evolved as the Response did to translate and communicate changing public health requirements and better manage the magnitude of information flowing to various audiences and regions. Some of these structures include the Communications Portfolio (set-up as part of SHEOC) and the *Whole of Government Communications Strategy* (implemented by NSW Government), as well as the Clinical Council, CIU, and CoPs (discussed further below).

SHEOC and PHEOC established regular communication forums with central teams, LHD Chief Executives and local PHUs to coordinate and operationalise frequently changing PHOs, engage health system capability, and align messaging across the system. The frequency of these meetings increased during peak periods to reflect demand and continue connecting health leaders and staff with information and data they needed to support their local responses.

Simultaneously, the Centre for Aboriginal Health (CAH) proactively established weekly briefings for Aboriginal Health Unit Directors to help them make local decisions using the most up to date information. CAH also acted as a primary partner and liaison point with the Aboriginal Health and medical Research Council of NSW (AHMRC) and ACCHSs to ensure they were integrated into the overall delivery of the Response. The urgent nature of communication required early in the Response and rapidly changing rules and related advice often limited the flexibility for consultation to inform policy, and the way public health advice was released sometimes limited the timeliness of supporting communications.

Lessons learnt 24

The Response reaffirmed the need for clear communication and engagement pathways between the operational and public health leaders and agencies to inform effective, time-critical decisions. Establishing a dedicated and coordinated system-wide communication structure in SHEOC to manage complexity, efficiently adapt to frequently changing PHOs, and align messaging across the system is essential, and needs to also include LHDs and important community partners in the development of health system communications. (***Recommendations 1.1*** and ***2.1*** discussed in *Governance and Decision-making*).

The use of credible spokespeople built trust in system-wide messaging

Timely and transparent communications delivered by health leaders were also noted as critical to supporting the workforce during the pandemic. Clinical spokespeople were open and honest in acknowledging the unknowns, while highlighting work underway in the broader system to strengthen the Response. This was highlighted through daily 11am and weekly press conference updates, most often led by the Chief Health Officer, and senior health specialists, including medical epidemiologists. These updates were internally and externally considered one of the strongest elements of the Response. They were vital to the workforce, other government agencies and the community as a reliable, accurate and consistent source of information based on real-time clinical advice. The updates also increased public trust during a time of uncertainty, as they provided people with near real-time data and allowed them to make their own decisions about risk.

While the updates often foreshadowed responses to increasing case numbers as a means of encouraging compliance with public health advice, the delay between these communications and the actual release of PHOs challenged the system and broader community, with health staff especially eager for early insights to assist their implementation of key changes and in briefing their workforce. Once released, the PHOs were often complex and occasionally confused messaging to the workforce and community. *'There would be the 11am update, but those changes hadn't necessarily filtered through to LHDs. We worked on operationalising [the changes] only once things came through. There were times we were quite challenged in that regard' - Metropolitan LHD.*

Lessons learnt 25

Throughout the Response, open, transparent, and regular communication with the public and health staff was not only vital; it was expected. Public expectations have now been set around data and transparency, with public health practitioners recognised as needing to be the 'public face' of communication to build trust. Across the system, clear communication and engagement pathways between health leaders and agencies were seen as essential to effective, time-critical decisions, recognising that inconsistencies in messages and key data from health leaders can be effectively mitigated with supporting structures in place. (***Recommendation 2.1*** and ***Recommendation 2.3*** discussed in *Governance and Decision-making*).

System communication

Establishing clinical and systems intelligence forums encouraged strong collaboration and timely guidance

Embedded clinical and workforce engagement was critical across the system (engagement at a local level and the strength of LHDs is explored in *Issues* below and *Community Impact*). Existing emergency management plans foreshadow the consultation of specialist clinical groups to provide advice on how to manage different patient cohorts during a pandemic response (NSW Health 2016, section 9.1). NSW Health activated and expanded this engagement approach, establishing 31 CoPs and the Clinical Council. The CoPs enabled two-way communication with clinicians, providing updates on local and state responses, access to advice in the moment, a channel for escalating risks and issues, solutions to individual and shared challenges, and support for discussions around PHO impacts on their specialties. These forums facilitated information sharing and joint problem-solving, and provided essential clinical advice and local intelligence into central governance structures. They were widely regarded for providing clinicians with valuable opportunities for reflection and

experience sharing, fostering stronger interdisciplinary relationships and rapid, collaborative decision-making on changes to models of care.

The Clinical Council assured clinical perspectives were factored into central decision-making
Comprising the Clinical Leads of each CoP, the Clinical Council provided expert clinical advice on patient care issues, enabling local voices to be heard and supporting the Response with clinical leadership. It was widely commended for the role it played in engaging clinical specialties during times of uncertainty and providing practical guidance on issues; *'the Clinical Council and CoPs were impressive... a critical group for expert, consistent advice, to dispel myths, emphasise facts and increase trust' – Ministry Stakeholder.*

While the regular cadence of the Clinical Council's meetings was valuable in connecting the workforce with a consistent flow of information, its operation was not as transparent for non-members. Some stakeholders suggested that more specific feedback channels were needed to communicate outputs from Clinical Council to the system. Additionally, they felt the Clinical Council's role required more definition and communication to the system for greater awareness about its objective – to act as an escalation point for the workforce to ask questions and raise their issues and concerns.

CoPs were a unifying force and championed innovation across the health system
The ACI's extensive experience in collaborative clinical engagement and policy development was very effectively leveraged to inform how to establish and effectively support the CoPs, which became a unifying force for clinicians with a shared purpose and sense of collegiality. *'[The CoPs were] a great mechanism for keeping us up to date on system-wide issues, and how we could support one another. [They] helped us prioritise key pieces of work. ... They were good at triaging where matters should go. [We] absolutely should look at this for future crises' – Health Sector Stakeholder.*

Where possible, they adopted a 'big picture' approach, considering over-the-horizon plans and engaging stakeholders from across the health sector, such as community pharmacists and GPs. This helped the system work towards consistency in clinical practice, drive better integration with primary care sector, build confidence in the Response, and streamline administration to focus on care.

The CoPs were recognised as a critical communication and engagement mechanism between the Ministry and clinical specialties, encouraging transparent, system-wide collaboration on clinical and community-based responses; *'[a key] characteristic was the disarming honesty between the Ministry and LHDs. We normally get selective information, [but] people were sending problems with honesty I hadn't experienced before' – Ministry Stakeholder.*

We also heard that the CoPs were an important strategy for engaging and collaborating with regional LHDs and, while slow to start, gave a voice to limited profile clinical specialties such as nephrology and endocrinology, as well as services such as palliative care and rehabilitation.

While CAH attended a range of CoPs including those for primary care and NGOs, the absence of a CoP for Aboriginal Health was an oversight that needs to be addressed for future emergencies.

The CIU and Risk Escalation Panel processed data into digestible insights and provided advice on emerging risks across the system
The CoPs and Clinical Council were supported by the CIU and Risk Escalation Panel – two initiatives that equipped health leaders, staff and the broader system with up-to-date information to guide decision-making and Response efforts. Drawing on local and international data and evidence, the CIU produced various communication tools targeted to empowering health staff with the latest information on COVID-19. An example of this is the COVID-19 Risk Monitoring Dashboard, which was issued weekly and captured data on cases, clusters, the Response, and the impact of COVID-19 on the workforce (see *Data and Information* for more detail). Before being uploaded to the CIU's website, the dashboard was shared with the Risk Escalation Panel, which was responsible for providing a strategic perspective of the system's level of COVID-19 related risk. In providing

advice on the level of risk and whether the Response was proportionate, the Risk Escalation Panel was also involved in public communications on transitioning between risk levels.

The strength of the Risk Escalation Panel and its dashboard was its focus on the whole health system, as well as the timeliness of its data and the broad range of inputs that it used to inform its ratings. Rating the level of risk posed by COVID-19 using a traffic light system, the Risk Escalation Panel quickly became a valued source of information for the mainstream media, the public, and clinicians. While this increased the pressure on the Risk Escalation Panel to maintain this focus, it provided important exposure to the strategic way the system was using data from a range of sources to inform its Response.

The Risk Escalation Panel became an important forum to discuss policy responses to risks that were emerging in the system, and make decisions based on the many points of epidemiological, workforce and system activity data that were part of the dashboard. It changed over time as data availability changed, different pressures emerged and others dissipated. It provided an independent, consistent, and transparent source of information for the workforce and public that subsequently enhanced confidence and trust in the Response. Based on these benefits, there is a general desire among stakeholders to continue the operation of the Risk Escalation Panel and dashboard in BAU, particularly for issues that require whole-of-system thinking.

Lessons learnt 26

The Clinical Council, CoPs, CIU and Risk Escalation Panel played an important role throughout all phases of the Response and were considered critical to its strength. As principles, access to clinical guidance and workforce implications should be embedded as part of future emergency management responses to support decision-making and communications at a local and system level. These structures provide useful foundations to leverage again, with many useful learnings to enhance their role across possible future responses. (***Recommendation 1.4*** discussed in *Governance and Decision-making*).

Additional enhancements for BAU should consider including medical and non-medical membership, with rotating leadership to build capability and capacity across the system. Formalising feedback arrangements and linkages across the broader system will also better support (with supporting authorisation) system-wide decision-making processes. Building on the CoPs' responsibilities in communicating and linking with GPs and pharmacies would go some way to growing interdisciplinary capability and input into clinical engagement, particularly as GPs and pharmacies played such a critical role in RACFs and the Disability community. Strengthening these connections and feedback mechanisms would allow appropriate implementation and continuous improvement at pace.

Links to Action Area E.1: ***Build on the strong relationships built centrally and locally with local government, aged care providers, GPs, community health providers, community leaders, peak bodies, and other partners to further embed LHDs and clinical facilities into the life of their communities.***

Community and public communication

A collaborative cross-government approach to communications and engagement

The NSW Government championed a whole-of-government approach centred on the customer very early in the Response. NSW Health developed progressively more targeted communication and engagement strategies to fulfil these objectives, working closely with DCS in a highly fruitful partnership (see Figure 7 for examples of DCS' sentiment analysis and materials used as part of the Response).

Receiving approximately 35,000 phone calls each day to their customer service number, accessing daily data from other NSW government agencies and private sector partners, and with more than 400,000 customer contacts through various social media channels, DCS had access to a large volume of near real-time data on community behaviour and sentiment. This also included information on potential indicators of PHO compliance,

such as the use of transport. This data was vital to inform NSW Health's Response and monitor its efficacy, as it could be rapidly applied to augment communication and engagement. This helped to directly respond to community anxiety and questions about public health advice, as well as give leaders confidence in the progress of the Response.

Public sentiment data and other intelligence informed ongoing refinement of health advice

Real-time analysis of these sentiments provided rapid insight into the key interests, concerns, and preferences of specific cohorts, with segmentation across a range of demographic, geographic, and personality fields. This was supplemented by intelligence from contact tracing and other public facing teams, to help understand gaps in communication and quickly address widespread misunderstanding.

These insights and processes allowed NSW Health and DCS to develop targeted messages for different cohorts to achieve maximum impact. An example of this was the use of data to inform the development of tailored vaccination messaging, with a focus on the needs of high-risk communities, postcodes with low vaccination rates, and groups opposed to vaccination.

'Team NSW helped everyone adopt a customer mindset and that is reflected in different interventions, comms strategies and cohorts'

- NSW Government Agency.

This enhanced the reach, responsiveness and evidence-base of local communications and engagement. Additionally, this approach was praised by some stakeholders representing NSW's most impacted communities, with the development of messaging shaped by Multicultural NSW, CAH, and key peak organisations, nuanced to individuals' needs, and shared through key community leaders (detailed further below).

DCS was an indispensable partner in empowering and enhancing NSW Health's public communication and engagement strategy (examples illustrated in Figure 7 below). *'[We] knew our team had comms capability and that [there] would be a big load on Health, so we could take some of that load … [and start to] help to understand and change community behaviour' – NSW Government Agency.*

Future changes to the *Pandemic Plan* should continue to leverage live and ongoing sentiment data inform messaging as incident processes by outlining role of key partner agencies such as DCS in providing these data.

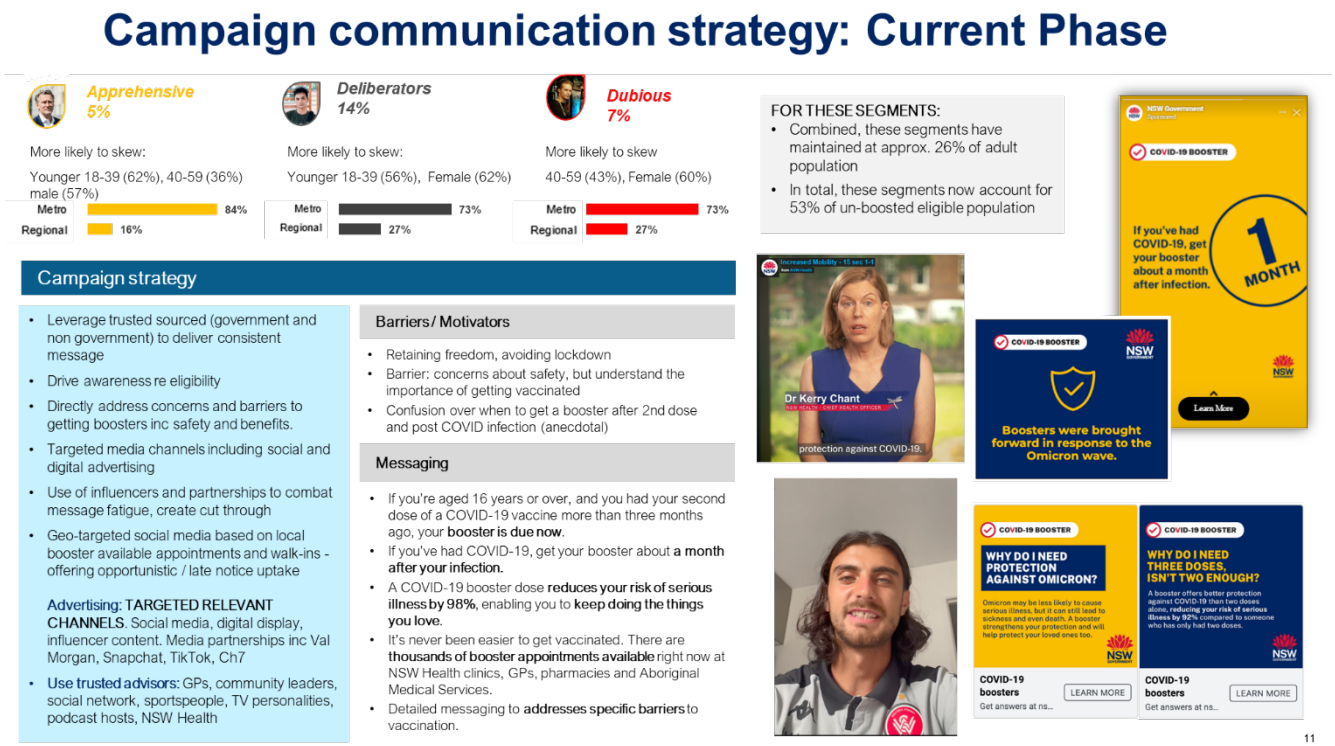

Figure 6 – Examples of DCS' sentiment analysis and communication materials

Partnering with DCS assisted the development of community-specific advice

To support Health's Response, DCS established partnerships with community leaders and influencers, such as religious leaders, football clubs, celebrities and Twitch streamers to distribute public health advice, particularly messaging on vaccination and isolation restrictions. Another way in which DCS assisted NSW Health was in its curation of the NSW.gov.au website. The website was used to package and share tailored information on public health advice for different population groups and businesses. The reach of this strategy is evidenced in the 20 million visitors that accessed the website each week and positive feedback from the

community, particularly local businesses, and schools, who appreciated the coordination, consistency, and accessibility of the information on it.

Feedback suggests that the widespread positive impact of NSW Health's partnership with DCS is just beginning. There are valuable opportunities to continue this collaboration and the incorporation of behavioural insights into health messaging as part of BAU, as well as in future public health emergency responses. Key to reinforcing public communication processes will be codifying the roles, responsibilities, and ways of working between NSW Health and DCS required in an emergency response, including how to effectively share data and information. There is also a clear benefit of DCS leading all public information functions in emergency management situations as the PIFAC, as recommended in the *NSW Flood Inquiry* (2022).

Developing impactful and relevant messages for Aboriginal communities

Early in the Response, NSW Health prioritised the development of communication resources and associated media to support what was happening on the ground, both by LHDs and by ACCHSs and AMS partners. CAH very quickly established a communications strategy involving AHMRC, and progressively led this work with close support from the SHEOC Comms team. CAH also funded an Aboriginal creative media agency to support the work and allowed open access for all stakeholders to participate and access resources. This recognised the critical mass of Aboriginal-specific communication and policy expertise held by CAH, and the value this would bring to local service providers, both within NSW and outside.

Throughout the Response, CAH continued to develop and produce a range of hard copy resources that were printed and distributed directly to health services across NSW to meet urgent need. Urgent communications (typically social tiles) were also issued to advise specific communities on changes to lockdown requirements and other public health order requirements. We heard widespread praise for CAH's resources across flyers, social media tiles and banners, and other messaging resources; In many instances, it was able to be distributed by ACCHSs and other community partners to Aboriginal communities across NSW unchanged.

In addition, a dedicated Aboriginal Health COVID-19 and Flu NSW Health website page was developed to facilitate sharing of information and resources. This was linked to the 'COVID-19 information and advice for Aboriginal people and communities' webpage, which provided information for both the public and health professionals. With these efforts in mind, many ACCHSs found it difficult to identify a single point of contact and expertise, sometimes receiving similar but conflicting information from multiple sources.

As the Response matured, CAH used extensive focus group testing of messages and strategy, facilitated by an Aboriginal creative media agency, to ensure both Aboriginal specific campaigns like Keep Our Mob Safe, and other mainstream campaigns, were culturally appropriate and impactful. This was supplemented by a close partnership with DCS, providing social media analytics and other data insights to support decisions along the way. DCS also arranged the projection of key Aboriginal people involved in the vaccine rollout to be projected onto the Sydney Opera House when the 85% milestone was reached, demonstrating their culturally-inclusive approach.

Drawing upon the resources developed by CAH and other partners, ACCHSs were able to tailor their communication to suit their communities. In South Eastern NSW, Katungul Aboriginal Corporation tailored messaging in videos and social media pages to encourage testing and vaccination uptake, such as interviewing people who tested positive for COVID-19, and designing an animation with the voices of Aboriginal children who talked about vaccinations for children; *'It was important [for messages] to come from their community, it worked to break down barriers and debunk these myths' – Health Sector Stakeholder.*

Lessons learnt 27

There would be benefit in developing an integrated approach to communications for the Aboriginal community-controlled sector and NSW Government (led by NSW Health) to better engage Aboriginal people as well as health services through timely sharing of accurate and culturally appropriate information.

Links to Recommendation 2.4: ***Develop an integrated approach to communications across the Aboriginal community-controlled sector and NSW Government (led by NSW Health) to better engage Aboriginal people as well as health services through timely sharing of accurate and culturally appropriate information and data , informed and shaped by community needs and preferences.***

Links to Action Area C.4: ***Strengthen relationships with key government and non-government partners at a central and local level, including but not limited to the DCS, NSW Department of Education, Multicultural NSW, and Aboriginal Affairs NSW. Roles of these agencies be incorporated into future emergency plans to provide data and inform messaging..***

Use of multimedia

Communication methods adopted to improve the public's understanding of health advice included print, radio, and social media; digital cartoon tiles and videos; and standardised branding and signage in public health and community settings, such as public transport stations. Many strategies adapted over time to incorporate feedback and maximise effectiveness, with data indicating a positive reach of:

- 1.5 million webpage views and more than 250,000 downloads of COVID-19 resources on the NSW Health website, including content in community languages
- Over 1,500 COVID-19 resources created in more than 60 languages
- 2,475,199 people registered for the COVID-19 SMS results service, saving 423,000 hours in calls (NSW Health 2021a).

Tailoring communications and engagement to priority populations

We heard many examples of simple yet effective communication and engagement tools deployed across the system to support local communities. The importance of listening to, rather than talking to, communities to understand their needs was essential for developing fit for purpose communication and building trust. This community-centred approach to communication and engagement was particularly important in Aboriginal communities, where consultation is required to assess community priorities and concerns, and to identify motivating factors on which to focus communication strategies. It is also true for other priority and highly impacted communities, including people with disability, the elderly, and people from CALD backgrounds. The *Delta MicroStrategy* played an important role in this and is detailed further under *Community Impact* and *Governance and Decision-making.*

The use of social media especially assisted with circulating information to and through CALD communities. Additionally, multicultural health teams helped to enhance access to translation and flexible in-reach testing models, and trusted community leaders and influencers became spokespeople, sharing their experiences with testing and vaccination to encourage adherence with PHOs. *'[The] communication process was challenging, but [we developed] the relationship with local members, [Members of Parliament] MPs [and] local council through regular structured and unstructured conversations … so that messaging was clear' – Metropolitan LHD.* *The Public Health Response Debrief Report* further details CALD engagement approaches, such as the Equity Engagement Model in Section 4.2, Case Study 8.

Examples of multimedia approaches used in the Response include:

- ***For health staff:*** a video series run by a metropolitan LHD called 'You Can't Ask That' featured medical staff answering questions about their feelings and experiences during the Response, helping to exercise transparency, foster a sense of collegiality, and normalise the range of emotions impacting the workforce; *'it's very powerful to hear that from your colleague–' - Metropolitan LHD*
- ***For the public:*** the 'Help Us Save Lives' COVID-19 Safety Campaign, developed in partnership with DCS, used real-time data to provide information on restrictions and case numbers, assisting traffic to the relevant websites (see *Case Study 1* for information on another public campaign, tailored to specific groups, the 'Let's Do This' COVID-19 Vaccination Campaign)

Challenges with communication between the system and vulnerable communities are detailed below in *Issues*. For more information on broader community engagement, see *Community Impact*.

Lessons learnt 28

Overall, NSW Health's multimedia approach, informed by data and progressively shaped by community partners, strengthened the reach and impact of communications and engagements over time. Tailoring communications and engagement for communities needs to be prioritised. Engaging an Aboriginal owned creative agency enabling communications to be developed from a place of cultural understanding was a key success factor. Working closely with community leaders and people with deep community connections was vital to amplify the reach of messages and build trust in the Response. The role of agencies, such as DCS, needs to be incorporated into future emergency management plans to provide data (for example, live and ongoing sentiment) to inform messaging as incidents progress. Further, DCS should be explicitly named as the lead agency for all public information during an emergency response, including future public health responses. We note that this finding is already recommended in the *2022 NSW Flood Inquiry*.

Links to Action Area C.3: ***Embed the use of social media and other bespoke communication models into everyday public health communication practices to better connect with Aboriginal communities, CALD communities, vulnerable communities and young people. Ensure that these models embed collaborative development processes to identify relevant priorities.***

Case Study 1

'Let's do this' Vaccination Communication Campaign

In August 2021, the 'Let's do this' state-wide advertising campaign and associated strategy was launched, which was effective in supporting 'SW's achievement of its 16+ fully vaccinated rate of 93.5 % by the end of the year (SHEOC 2022b).

Materials were tailored for the Aboriginal community, developed in partnership with the Centre for Aboriginal Health and Aboriginal agency 33 Creative, which featured health professionals and community ambassadors as trusted voices advocating for vaccination. The campaign was also adapted for CALD audiences, with messaging rolled-out in at least 19 languages.

The campaign was awarded the NSW Premier's 2022 *Multicultural Communications Award for Business Campaign of the Year* for its widespread and positive impact, made possible through its effective use of a range of communication mediums, including metropolitan and regional television and newspapers, as well as radio, digital, social media and out of home advertising across the state.

Issues

Communications across government

Establishing and maintaining communication forums was difficult initially
From the outset, cross-government communication and engagement was challenging, as the forums in place were not attended by all agencies involved in the Response, or at the pace required for timely decision-making. *'It was nice to have catch-ups and check-ins, but they were irrelevant to the pace at which we were moving' – NSW Government Agency.* Outside of these forums, this challenge was heightened by the differences in the structures and emergency management experiences across government agencies, which at times made communications and engagements within and across them difficult.

As a result, the early lack of clarity and agreement of roles, responsibilities and pathways between agencies limited operationalisation of a whole-of-government response. For example, we heard government and key non-government stakeholders often felt undervalued and frustrated when they were informed of important updates at the same time as the public.

The need to look elsewhere for information and the role of LHDs
This heavy reliance was noted in informal relationships for support and information, predominately among leaders – an approach that created a sustainability challenge during the prolonged Response. *'[We] relied on direct contact with [the Chief Health Officer], then your connection to the public health area. [It was] not brought together with emergency response meetings' – NSW Government Agency.*

This relied on leaders within LHDs having strong networks across government to support their local responses. Wherever possible, they used existing clinical structures and expanded these to reflect Response priorities. However, LHDs without these relationships relied on other existing communication channels, such as the daily press conference updates. More formal information sharing forums were also established to maintain regular communications and contact; we heard that these were useful for sharing information, but needed to be differentiated and did not negate the need for formal decision-making forums.

The important role of LHDs in local communications was strongly acknowledged by local partners to provide local perspectives and updates, assist in interpreting the underlying rationale for public health advice and is impacts, and improve transparency with the public. LHDs designed and distributed their own materials to keep their community informed, including interacting through social media accounts and filming daily video updates. The role of LHDs in local communications is explored further in *Community Impact*.

As highlighted in *Governance and Decision-making,* the *Delta MicroStrategy* was a turning point for whole-of-government communication and engagement with the community, enabled by greater clarity of roles, coordination and collaboration. *'In a crisis, coordination is everything' - NSW Government Agency.* Stakeholders highlighted the value of having this type of strategy in place from the outset – one which leverages the unique strengths of each agency, coordinates their contributions, and promotes regular communication to inform timely decision-making across government.

Communicating PHOs

Managing and interpreting the complexity of PHOs required considerable effort
The number and frequency of changing directives and PHOs was immense, with over 450 PHOs and amendments made between March 2020 and March 2022. Each one had different impacts on different people. The timing of PHO changes (captured further under *Governance and Decision-making*) and the rapid turnaround required to operationalise guidance for specific stakeholders placed pressure on the system to interpret, communicate and operationalise them effectively. Stakeholders raised that resourcing this frequent pivot in focus often redirected valuable resources away from other local demands. Changes were often complex, with additional restrictions for some locations and communities, alongside exemptions for different workforces and settings. *'Where they had different rules for different parts of the city, [it] caused a lot of pain and were divisive.*

... Qantas staff getting different isolation rules to small businesses around Easter' - NSW Government Agency. Further detail on the exemptions process can be found in *Community Impact.*

Re-packaging information to meet stakeholder expectations was challenging

Changes to PHOs were often targeted directly to the public, leaving little room or time for government agencies to oversee and support their operationalisation. This created confusion and frustration across LHDs and communities, creating potential barriers to compliance. *'Public health orders were hard to interpret'; 'what does it actually mean?' [We would] have to ring and clarify ... seek advice through the governing body - so that in itself took a bit of time. One [other] thing was changes in messages ... that can become quite chaotic for staff when they are already worried' – Rural and Regional LHD.*

We heard widely of the need for pre-emptive system-wide engagement and communication to minimise anxiety and prepare stakeholders for new public health advice and what changes it might bring to their circumstances. Stakeholders indicated that they heavily relied on central information flow (from the Ministry, SHEOC and PHEOC) to assist with consistent messaging, planning and implementation of changes to public health advice. It was also noted that this type of central information was not always readily or easily available, especially at times when it could have been of most value. NSW Health staff watched the 11:00am press conferences as closely as any member of the public to understand where the system was heading next and what they may have to do in response.

We also heard that while NSW Health's website was available, it did little to assist with the interpretation of PHOs and their implications for individuals, communities, and different stakeholder groups. Many government agencies and LHDs invested significant effort into interpreting and re-packaging the information on the website for specific stakeholder groups, such as local businesses.

Challenges stakeholders faced include:

- Limited additional guidance in developing and implementing proactive, timely and aligned communications for their workforces and communities, particularly during periods where there were high levels of uncertainty and fear; *'it was overwhelming to be sitting in a position where you didn't have people to help you make a decision. When decisions were allocated to us locally, it was uncomfortable, so there should be more shared decision-making to feel like you have endorsement of decisions' – Rural and Regional LHD*
- Lack of a centralised process to share best practice strategies that led to positive outcomes, such as behavioural change and compliance with PHOs. For example, one rural and regional LHD successfully established its own PHEOC, which acted as a central hub for coordinating the local response; *'all communications came through us and back out. All decision-making was done within the PHEOC. ... [Our] establishment felt supported and we could provide a response to the community'*
- The need to make fast decisions at a local level to develop, approve and distribute important messages was unsustainable; *'we were learning as we went and there was no information or evidence to guide [our] decisions, so we needed the agility and ability to adapt. ... In the future, the risk [of this approach] is sustainability and that needs to be looked at' – Metropolitan LHD.*

Timing of PHOs requires a broader strategy that more closely considers operationalisation and community impacts

The timing of changes to major public health advice heightened extreme workforce pressure and operational strain that could have been mitigated in part by greater forward communication and engagement. For example, a state-wide, Ministry-mandated model of COVID-19 care was introduced in the week leading up to Christmas Day, placing significant operational pressure on the workforce. Similarly, LHDs noted that changes announced late on Friday afternoons posed significant operational challenges, often requiring health staff and other workforces to be recalled from leave. While urgent changes in advice and operationalisation will be inevitable in responses such as ones of this magnitude, wherever practicable, the timing of public health advice must closely consider the timeframes, scope, and scale of operational impacts, and have a targeted communication and engagement strategy developed to suit the anticipated level of impact.

Lessons learnt 29

There is a need for regular and centralised communication flow supported by clear decision-making guidance is to better support LHDs and NSW Health-operated services to operationalise PHOs. LHDs have a clear role in targeting communications to their communities and need central support that also guides tailoring material to the needs of different population groups and allows sharing of local ideas. (***Recommendation 1.3*** discussed in *Governance and Decision-making*).

Reviewing emergency management processes should activate or extend internal communication systems to focus on enabling practical information flow from central governance (Secretary, SHEOC, PHEOC) to and between Health (Ministry, LHDs and health-operated services). Engaging these communication systems early should assist with better supporting timely and guided decision-making, integrating operational advice, circulating consistent messaging, and in turn build system confidence in response coordination. (***Recommendation 1.1*** and ***Recommendation 2.1*** discussed in *Governance and Decision-making*).

Communication and engagement with the Aboriginal community

In the early stages of the Response, media campaigns for the general community did not fully cover the need for bespoke Aboriginal communications, including social media.

In response, CAH developed and rolled out targeted communications strategies to ensure communication approaches and resources were appropriate and accessible for Aboriginal people. Amongst a range of examples, the *Keep our Mob Safe* campaign was a wide-ranging media campaign across social media, print media, and television across metropolitan and regional NSW. Partnerships were forged with Aboriginal media including the Koori Mail, Koori Radio, and NITV to supplement the campaign with more detailed information and personal engagement opportunities. The Campaign was also scalable to respond to different outbreaks in Aboriginal communities and complemented by partnerships with Aboriginal musicians and social media events like 'Aboriginal Yarn Ups' held on Facebook.

Importantly, CAH's centrally coordinated campaigns strengthened and enabled more local approaches. For example, Katungul Aboriginal Corporation developed tailored messaging in videos and social media pages to encourage testing and vaccination uptake, translating information to the needs of their community; *'[We] created two video prom–s - 'don't be scared' interviewed Aboriginal community members who got COVID; and ...[an] animation designed with the voices of Aboriginal kids to talk about child vaccines... It was important [for messages] to come from their community, it worked to break down barriers and debunk these myths' – Health Sector Stakeholder.*

The strength of the Aboriginal Community Controlled Health sector is discussed further in *Community Impact*.

Populations with unique challenges need tailored communications and engagement from day one

Communication and engagement with the CALD community

As with other priority populations, we heard that engagement with the CALD community needed to be a part of the Response from the start. Stakeholders endorsed the approach to communications that was formalised as a part of the *Delta MicroStrategy* in 2021, particularly the Fifth Pillar of the *Delta MicroStrategy* that focused on local community engagement. This work involved key community leaders in the delivery of messaging, which helped to better align consistent and more effective approaches to communicating with community audiences. For more detail on the Fifth Pillar of the *Delta MicroStrategy*, see *Community Impact.*

As mentioned in the above *Strengths*, the Behavioural Insights Unit in DCS was integral in better understanding the community and better targeting communications. For the first time, real-time customer sentiment and other

data were integrated into the way messaging was developed and delivered. We heard the collaboration with DCS was further enhanced when it was combined with complementary work undertaken by Multicultural NSW.

Communication and engagement with people with disability
We heard clearly that people with disability need practical advice that considers the unique challenges they face in doing what has been asked of the broader community. While there is significant diversity amongst people living with a disability, the needs of this high risk population must be considered holistically to ensure they are included in all mainstream public messaging.

Further, guidance is needed for the broader community on how to interact with, and assist, people with disability in these situations; stakeholders indicated this type of advice was a clear gap in communications. For example, people with low vision faced difficulties with physical distancing requirements, which became a significant barrier to them living independently during the pandemic, particularly when seeking assistance in retail environments. The public need to be told that it is acceptable to remove a mask to allow people who are deaf or who have a hearing impairment to read their lips.

The need for more specific guidance extends to people interacting with, and caring for, people living with disability, and warrants consideration of the most effective communication channels – phone numbers can be more accessible than websites for people with disability. This reinforces the need for inclusive communication approaches developed by people with lived experience, as a critical part in the development of all communications.

Communication and engagement with the aged care sector
NSW Health worked closely with aged care stakeholders to support the sector during the Response. As mentioned in *System Impact*, the *Protocol to support joint management of a COVID-19 outbreak in a residential aged care facility in NSW* supported coordination between the Australian Government, the NSW Government and aged care providers (NSW Health 2020b). The Ministry, alongside Australian Government colleagues, was part of the Senior Inter-Government Oversight Group that managed actions in response to outbreaks in facilities. LHDs played an important role in leading local communication, engagement and support strategies targeted to RACFs in their communities both during and outside outbreaks.

As the Response progressed, NSW Health increasingly led engagement with RACFs, providers and representative bodies to provide open communication pathways. Stakeholders indicated that weekly meetings across the sector were a critical touchpoint, and that the engagement and honesty of the Ministry during the Response in this regard was noticed and appreciated. One LHD established and facilitated a tri-weekly aged care forum, which was attended by 80 to 100 aged care providers in their District to communicate updates, share data, and discuss solutions to emerging issues across the aged care community. Stakeholders also acknowledged that the regular communication channels built confidence and transparency in NSW Health's support of the sector.

SHEOC provided significant central coordination of RACF support, particularly during outbreaks. LHDs were given guidance and resources to support their engagement with local RACFs to manage their own outbreaks, often via regular (usually daily) Outbreak Management Team meetings (OMTs). Despite some variation, stakeholders consistently commended this approach; however, some felt that OMTs served more as a one-way data gathering exercise for some agencies, rather than a collaborative problem-solving forum. It was also heard that as the burden of RACF outbreaks increased, the responsibilities on LHD staff to attend OMTs rose dramatically, with impacts on other operational activities. Co-designing an approach to outbreak management with the sector is needed to better balance reporting and operational needs in the future. The issue of reporting burden is explored further in *Data and Information.*

Lessons learnt 30

Earlier system-wide communication and engagement mechanisms are needed to enhance communication across the health system and broader community. Processes to support both the development and the translation of PHOs and their implications for particular stakeholder groups requires early and frequent engagement across agencies and communities to minimise the burden of effort in translating and re-packaging information to be fit for purpose. Where practicable, this work could be done before the release of PHOs to support their rapid operationalisation and maximise compliance. The NSW Health website could also be improved in the future to enhance the accessibility and transparency of information and better meet the expectations of stakeholders across government and the community.

A new Pandemic Plan will need to consider upfront and primary engagement with priority groups and vulnerable communities. This will help to shape practical and fit for purpose local responses that are informed by lived experience and supported by appropriate and accessible communication and engagement strategies.

Links to Recommendation 2.4: ***Develop an integrated approach to communications across the Aboriginal community-controlled sector and NSW Government (led by NSW Health) to better engage Aboriginal people as well as health services through timely sharing of accurate and culturally appropriate information and data, informed and shaped by community needs and preferences.***

Links to Recommendation 4.1: ***Prioritise vulnerable people and communities most at risk, impacted and in need with bespoke engagement, communication and service delivery approaches shaped by lived experience from the beginning of any emergency response (for example, in language radio broadcasts, leveraging trusted community leaders, religious leaders, and other trusted community voices) supported by the expertise of DCS.***

Links to Action Area C.3: ***Embed the use of social media and other bespoke communication models into everyday public health communication practices to better connect with Aboriginal communities, CALD communities, vulnerable communities and young people. Ensure that these models embed collaborative development processes to identify relevant priorities.***

COVID-19 VACCINATION
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Community Impact

The following chapter considers the impacts on the NSW community, including Aboriginal communities and other priority and vulnerable communities, border closures and lessons learnt, including the importance of listening to the community's needs, value of agency and local community partnerships, and delivering solutions tailored for the community.

The impact of the Response on the community was immense. There were unique experiences and impacts on different communities and population groups that simply cannot be reflected in depth in this Debrief. Data highlights the disproportionate impacts of COVID-19 on low income people, young people, the elderly, and other groups. This is further supported by *Fault Lines: An independent review into Australia's response to COVID-19* by Shergold et al (2022), which reported that:

- The COVID-19 death rate for people born overseas was 2.5 times as high as for those born in Australia, with mortality rates for CALD communities higher still
- Australians in the bottom 20% by socio-economic status were 3 times more likely to die of COVID-19 than the top 20%
- The rate of severe illness was 40% higher for Aboriginal and Torres Strait Islander people during the Omicron wave.

During the Response, individuals, families, and communities were asked to change their lives and lifestyles in ways not seen for over a century. The scale of the Response and the significant economic, social and educational impacts on individuals and communities cannot be underestimated. These impacts have long-term consequences which are yet to be understood. The impact of COVID-19 on different communities was uneven, usually following socio-economic disadvantage. It affected our most vulnerable more directly, particularly the elderly and those living in aged care facilities, as well as people living with a disability or mental illness, and the Aboriginal community (Kidd 2020).

The impact and ultimate success or failure of the Response depended on the understanding, cooperation and action of individuals, families and communities to change the ways in which they worked, socialised and supported each other. In a rapidly changing environment, it was often hard to translate complex and competing public health advice so that people knew what was required of them. Consistent feedback reflected on what needed to be done differently both earlier and during the Response to gain a better understanding of the needs and concerns of the most impacted communities, as well as improve outcomes and incorporate their voices into future emergency planning. While there were improvements in some areas over time, there was no complacency about the need to deliver components of the Response differently based on, and drawing from, the outcomes and experiences of these communities.

Despite these challenges, the quality and extent of interagency collaboration strengthened as the Response matured and broader whole-of-government and community supports were activated, with a particular shift when the *Delta MicroStrategy* was stood-up. The *Delta MicroStrategy* established a strong, whole-of-government decision-making environment that applied wraparound supports to address the specific needs of different communities, including vulnerable people. However, we heard that this approach needed to be activated earlier and did not cater to the needs of all the key population groups, particularly Aboriginal communities. This is discussed further in *Governance and Decision-making.*

CCiC models introduced across NSW cared for thousands of people in their own homes and other supported accommodation models, demonstrating how to deliver effective, patient-centred care at scale, in the community, supported by technology. The lessons learnt from these models can now inform future emergency response planning by NSW Health and others.

Communities are built on relationships, and LHDs with already established, trusting relationships with other service providers, partner agencies and communities were able to respond faster with more comprehensive responses than others. All LHDs report they now have a better understanding of vulnerable people in their communities and deeper relationships with their communities, and these should be formalised where possible so that they can be called on next time an emergency response is needed and support ongoing changes in healthcare to provide more care in the home and in the community.

Strengths

Community partnerships

As the Response progressed, all LHDs recognised the importance of tailored approaches to engage with and support vulnerable people in their communities.

'Never have we been more engaged with the vulnerable people in our community'

- Rural and Regional LHD.

While doing so, LHDs not only strengthened their understanding of their communities, but they also formed and changed the nature of some of their existing relationships with them. These relationships are vital foundations on which to continue to support innovative models of care and community outreach programs as BAU.

Strategies were progressively tailored to address the needs of people most at risk, impacted or in need

The Response evolved to become one that was more informed and structured by the input of lived experience and leadership across Aboriginal, CALD, aged care and disability groups. Though acknowledged as needing to be more engrained and rapid, NSW Health's network of local PHUs progressively leveraged their community networks and partners to set-up bespoke responses to meet the unique needs of differing communities and increase their impact. Local flexibility and responsiveness were critical. In some LHDs, faced by the challenge of low vaccination rates in public housing communities, staff doorknocked households with unvaccinated people together with DCJ colleagues to discuss their concerns and encourage vaccination, and set up pop-up vaccination hubs in social housing areas. In other LHDs, health staff from CALD backgrounds shared their skills to translate messages and help create COVID-19 videos for CALD communities to improve access to care and health information. *'[The] workforce's ability, adaptability and collegiality were important. People stepped up and stepped up and stepped up' - Metropolitan LHD.*

This challenge and commitment to equitable access to care was paramount, with various examples demonstrating how approaches evolved to meet the unique needs of highly impacted communities including the elderly, people with disability, new migrants, and CALD communities. For example, a NSW Health drive-through vaccination centre was able to be notified of vehicles transporting children with severe autism, allowing vaccine administrators to vaccinate children in the car to minimise disruption and avoid distress where possible. While there were challenges in making services consistent and accessible for everyone, these examples reinforce the workforce's commitment to their communities, their adaptability, and their dedication to delivering quality patient outcomes and experiences.

Another example was the use of an equity engagement model that was delivered in combination with partner agencies to engage with CALD communities on local COVID-19 communication interventions in Western Sydney. This included listening to, and gathering information about, the target audiences; using rapid community consultations to identify different needs; co-designing and testing materials; and tailoring and disseminating multichannel communications based on the evaluation of impacts to date. This is further detailed in Section 4.2, Case Study 8 of the *Public Health Response Debrief Report.*

During consultation, aged care providers and sector representatives noted that the support provided by LHDs was largely flexible and responsive to their needs, particularly in rural and regional LHDs. There was a clear, shared commitment across the system to work collaboratively with aged care providers to address the needs of the sector. We heard that the complexities of the system from a funding, policy and service delivery perspective were secondary to the focus of caring for the community, regardless of where they live. Engagement with the aged care sector is discussed further in *Communication and Engagement.*

These examples highlight opportunities to embed proactive responses shaped by and targeted to the needs of these population groups, which may include scenario planning for different population groups of the anticipated support they require.

LHDs and PHNs worked together to support specific community needs

Collaboration between LHDs and PHNs varied across the state and was strongest where relationships had been established during previous emergency responses. In many LHDs, collaboration with PHNs leveraged their respective strengths to help priority groups. For example, one LHD coordinated regular aged care provider meetings to share information and discuss emerging issues across the sector, while the local PHN produced and distributed communications via newsletters and webinars – reciprocally feeding back the level of content interaction to help identify areas for further discussion.

This collaboration across rural locations provided more support for a population isolated from the hubs of metropolitan areas. However, there is an opportunity for further coordination of funding to assist priority groups. We heard how both PHNs and LHDs were separately allocated funding to organise on the ground community initiatives – in future this ideally needs to be coordinated locally to reduce duplication, maximise use of scare clinical supports, and improve joint support of specific community needs.

Other partnerships across the system and community

LHDs worked with community leaders, local governments, private organisations, and other government agencies to establish wraparound supports for priority groups and vulnerable communities. *'We have strengthened our partnerships with business, Aboriginal and multicultural communities' - Rural and Regional LHD.* This is demonstrated in many examples, including but not limited to:

- The IPC service housed in an LHD increasing its capacity to seven days a week, sometimes 24 hours a day, to deliver on the multitude of requests for its support, with a primary driver of this demand stemming from disability services
- Some LHDs leveraging relationships that were established when NSW Health supported the development of the *Intersectoral Homelessness Health Strategy,* to help people experiencing homelessness access accommodation during the pandemic; *'we had great relationships in place that helped in the early stages. A lot of the first part of the pandemic [response] was focused on supporting people who were homeless into accommodation. It was absolutely a multi-agency approach, and DCJ was a key member of that' - Speciality Health Network*
- NSW Health partnered with Multicultural NSW to support LHDs in catering and providing for vulnerable communities with greater depth, cultural appropriateness and capacity. One of the ways Multicultural NSW did this was by flying interpreters to LHDs with high CALD populations to support pandemic efforts.
- The local response to the outbreak in Dubbo in August 2021 included a surged Aboriginal workforce to provide culturally appropriate support, a contact management team that provided advocacy and general support, operationalisation of the CCiC Program, in-reach mobile testing for Aboriginal people and LHD-led health accommodation for patients with COVID-19 (further detailed in Section 4.1, Case Study 6 of the *Public Health Response Debrief Report).*

While not exhaustive, these examples highlight NSW Health and its counterparts were committed to working together to deliver a community-based approach that, although slow to start, sought to meet the needs of communities most impacted by COVID-19.

We also heard that the strength of local responses varied both across and within LHDs, as they were heavily reliant on existing relationships with different community groups. Future emergency response planning must confirm the necessity for community-based responses to be embedded within emergency planning structures to enhance equitable access to care and support across all LHDs and the communities through a whole-of-community approach. This approach could be achieved through formalising the partnerships that were established or leveraged as discussed in *Governance and Decision-making.*

Innovative responses supported the health and safety of people and staff in the justice system
We heard that governance was initially challenging between JHFMHN, MoH, Corrections and DCJ, however partnerships were quickly established to inform a systematic response.

We heard there was initial confusion on roles and responsibilities between agencies in keeping courts safe, particularly for public health advice and best practice in infection prevention and control. However, the Response generated a new level of understanding of the role of JHFMHN in the system, and how it could expertly support the health and wellbeing of both staff and people in custody.

In prisons, JHFMHN rapidly responded to protect the health and wellbeing of their staff, NSW Corrections staff, and people in custody, using PPE, extensive workforce, outbreak management and control planning, and through close support of privately operated correctional centres around NSW in infection prevention and control, vaccination, and PPE. Case Study 11 in the *Public Health Response Debrief Report* details how JHFMHN used its internal public health expertise to rapidly develop a corrections-specific risk matrix and a wide range of clinical protocols, effectively empowering local managers to make informed decisions, effectively manage outbreaks and see good clinical outcomes for prisoners and staff.

While this support of private centres has built deeper relationships and understanding between JHFMHN, NSW Corrections and private providers about the importance of public health capability in correctional settings, clearer governance and accountability for emergency responses (particularly for private providers) would assist in streamlining advice and decision-making. Policy often differed between public and private prisons, and this caused confusion within the system, and with external partners. Lack of widespread, consistent expertise in IPC through the private prison system also led to further pressure on JHFMHN staff to provide increased support to those prisons.

Despite the transient prison population and widespread reported vaccine hesitancy among prisoners, JHFMHN oversaw a strong vaccination program, including for corrections staff. We heard that the supply issues that challenged the broader community vaccine rollout also affected the rollout in prisons. As at January 2022, over 80% of the adult prison population had received two doses of a COVID-19 vaccine.

Transitions to community
The release of people from corrections centres into the community is a very important transition point in BAU, and became even more important during the Response, relying on partnerships between agencies to facilitate. We heard that appropriate transport and accommodation was sometimes difficult to secure, particularly if an individual was COVID-19 positive, late at night or on a public holiday, or if they lived far away from where they were released. Local relationships between prisons, LHDs and partner agencies proved critical across NSW to solve these challenges and keep released people safe. It was a unique environment to release people into, and JHFMHN was creative in its response, providing released individuals with personal supplies of PPE for their use in the community. While we heard partner agencies are deploying resources to support smoother transitions back into the community for prisoners, this should continue to be an area of close collaboration between NSW Health, Corrections, DCJ and community partners.

Multidisciplinary community care
The Response enabled LHDs and their staff to work differently and re-imagine models of care to best suit their community's needs. Targeted, holistic models helped to support the delivery of appropriate and coordinated care, particularly to more vulnerable communities. In one regional LHD, allied health staff worked with nurses to deliver two-person multidisciplinary home visits. *'Mental health was built into the team from the beginning. They [mental health staff] were involved and central to what was provided. A lot of clients in early stages had mental health, alcohol and drug needs' - Rural and Regional LHD.*

Another example of this is virtualKIDS. Established in March 2020, virtualKIDS is the Sydney Children's Hospitals Network's first dedicated virtual care program, led by a multi-agency partnership between the network, eHealth NSW, ACI and the Ministry. Staffed by a multidisciplinary team including social workers,

dieticians and music therapists, the virtualKIDS service provides virtual and in-person care to children who have tested positive for COVID-19, but who are well enough to be cared for at home. In partnership with the Child Life and Music Therapy team at the Sydney Children's Hospitals Network, the holistic approach to care provided children and their families with support for their emotional as well as physical wellbeing while in isolation. The impact of this community care solution was evidenced by more than 1,000 children receiving specialist care at home through the service by September 2021 (eHealth 2021). More detail on the strength of allied health leadership and multidisciplinary teams is covered in *Workforce Impact*.

Lessons learnt 31

Future system-wide responses need to proactively consider how partnerships across the community and between disciplines can provide targeted community support, noting underlying workforce capacity constraints. Many of the multidisciplinary models introduced that are worthy of retention and ongoing resourcing highlighted the benefits of strong investment in hospital avoidance and providing care in situ, particularly when leveraging allied health leadership and supporting rural and regional LHDs. Consideration of opportunities to share and bundle community care supports across LHDs will help maximise access and resources. (***Recommendations 5.1 and 5.1*** discussed in *Governance and Decision-making*).

Links to Action Area E.7: ***Continue to support and evaluate local innovation in delivering clinical care in the community to better understand the impacts on patient outcomes and system operations, with a particular focus on multidisciplinary outreach models.***

Roles and responsibilities for justice system pandemic emergency responses must be clearer for all involved agencies and community partners, and consider the importance of transitions between different parts of the system, including custody, courts, prison, and release.

Links to Recommendation 2.2: ***Ensure Health's governance and response systems and structures are clearly communicated and understood by partner agencies to support responsiveness and collaborative problem solving. This would be assisted by embedding whole of system/government/community scenario planning and training. Planning needs to consider emergency responses across the broader health ecosystem and include clarity about roles/expectations of non-government providers.***

Collaborative community partnerships driven by community-based care

The licence to work differently extended beyond LHDs and their workforces to the way they collaborated with other government agencies and private health organisations to solve challenges facing patient care. Historical scopes and boundaries of work were expanded, with key stakeholders involved in the Response willing and eager to share their support. With a forecast of 6,000 COVID-19 cases in their community and capacity for only 1,000, Western Sydney LHD partnered with Silverchain and Medibank Private to rapidly increase their virtual care capacity to support community care patients over the course of the pandemic; *'there's no way the system would have coped solely through hospital management.'*

Emergency management experience

Tested and established local relationships often made the difference

As discussed in *Governance and Decision-making*, LHDs with prior emergency management experience had tested and rehearsed their regional and local relationships to rapidly respond through these channels. *'We've had a bit more practice from the natural disasters we've had, which gave us a head start. … I am incredibly proud of the team's response' - Rural and Regional LHD.*

As an example, Mid North Coast LHD drew from its strong existing partnerships with communities and partner agencies to activate Regional Emergency Operations Centre (REOC) and Local Emergency Operations Centre (LEOC) structures to coordinate support from local government and NSW Police. These emergency response

structures were founded on strong existing relationships to gather intelligence from different parts of the community in delivering a local response. *'[The] relationship with [NSW] Police was strong and local councils was cooperative and productive. This was based on relationships that were already in place…clear inter-agency agreements are essential' - Rural and Regional LHD.*

During an outbreak in Kempsey in mid-2021, the established relationships between the LHD and Aboriginal community partners were critical, with the Aboriginal community open to taking advice from the LHD and working together to rapidly ramp up resources to provide in reach support, increased testing and vaccine access.

Community pillar of the Delta MicroStrategy

A whole-of-government response tailored to community needs
Established by NSW Health in response to the Delta strain in mid-2021, the *Delta MicroStrategy* showed the effectiveness of activating a whole-of-government approach to place-based issues during a long-term incident. Co-led by the Secretary of NSW Health and the SEOCON, the *Delta MicroStrategy* enhanced support in specific LGAs of concern while feeding local issues back into broader emergency governance structures. This included reporting into the NSW Crisis Policy Committee of Cabinet, providing a direct line of sight to the Premier, Health Minister and other key Ministers. The coordination between government agencies also increased the confidence and capability across government to respond to the quickly changing circumstances of the Response.

'[The Delta] MicroStrategy gave us a great vehicle… [to] bring the whole sector together on messaging'

- NSW Government Agency.

Leveraging the relationships and capabilities of community organisations to provide support
Focused on adapting the Response to specific local areas affected by COVID-19, the Fifth Pillar of the *Delta MicroStrategy* created a strong authorising environment to empower local organisations to deliver services and support. Stakeholders particularly praised the rapid and strategic management of the large-scale grants process, which prioritised funding to organisations representing and assisting vulnerable communities. Messaging delivered by key community figures, also driven by this strategy, was noted to increase the impact and reach of this messaging in communities. These insights are consistent with what Multicultural NSW heard through their debrief process on the Fifth Pillar (Multicultural NSW 2022).

The effectiveness of the Fifth Pillar led to its scope expanding to communications, sentiment analysis and reporting. Becoming one of the key strengths of the strategy, the sentiment analysis contributed numerous benefits, including:

- Identifying shifting needs in the community over time such as white goods or food relief, which in turn informed multiple grant rounds for community organisations
- Providing detailed feedback on the varied interpretation of PHOs; for example, the different cultural definitions of 'home' when 'stay home' orders were first communicated. This allowed messaging to be adapted by audience
- Strengthening connections with the community as people felt like they were being heard and could see evidence of regular consultation improving service delivery and messaging (Multicultural NSW 2022).

Given the scope of the Fifth Pillar grew over time, future place-based approaches to an emergency could use the final scope as a baseline. The collaborative nature of the *Delta MicroStrategy* could also be further improved by considering formalising the involvement of peak bodies and NGOs.

The lessons learnt from Pillar 8 of the *Delta MicroStrategy* are discussed in *Governance and Decision-making.*

Lessons learnt 32

Multicultural NSW brought immense value to in effectively engaging with diverse communities. Future emergency responses should note how the Fifth Pillar structure supported coordinated and cooperative relationships between government and communities, including improved accessibility of public health advice in priority and vulnerable communities.

The need for early and more transparent engagement with community leaders and organisations is critical, drawing on the strengths and deep community connections, relevant to culture and context to enable meaningful local responses to be implemented with empathy, while balancing community safety. (***Recommendation 5.1*** discussed in *Governance and Decision-making* and ***Recommendation 4.3*** discussed above in this chapter).

Links to Recommendation 4.1: Prioritise vulnerable people and communities most at risk, impacted and in need with bespoke engagement, communication and service delivery approaches shaped by lived experience from the beginning of any emergency response (for example, in language radio broadcasts, leveraging trusted community leaders, religious leaders, and other trusted community voices) supported by the expertise of DCS.

Mental health

The impact of the Response on mental health was identified early, with a range of accessible, community-based services rapidly expanded or established. Adolescent presentations to ED for self-harm – previously increasing annually by 8% – have grown with COVID-19, increasing 19% annually (from March 2020 to June 2021) (Sara et al. 2020). Calls to Lifeline also increased by 37.6% in September 2020 compared to September 2019 (AIHW 2022).

Greater integration and different models of care adopted during the Response were critical for providing extra support to young people and families in the community and mitigating suicide risks. There are many opportunities to consider how these activities could be progressed in BAU, particularly considering the cumulative and long-term impacts of social isolation and compounded emergencies on the mental health of people and communities (NSW Independent Flood Inquiry 2022).

Providing holistic care to support mental health

LHDs developed wraparound solutions to provide social service supports alongside mental health care in the community. As mentioned above, multidisciplinary outreach teams in regional areas included mental health expertise at their core in recognition of the mental health concerns in their communities. This allowed families to stay together by comprehensively addressing the presentation of mental health concerns in households. Separate challenges were faced by drug and alcohol patients managing their withdrawals symptoms during isolation and quarantine, and for staff caring for them. Although wraparound solutions for this group were delivered through inter-agency connections with NSW Police, DCJ, Fire and Rescue NSW and local drug and alcohol services, this took some time.

Telehealth services were critical in providing access to mental health services

From April to June 2020 (at the height of initial restrictions), almost half of all patients who received tele-mental health services reported that this change improved their experience, as evidenced by NSW Health's 2021 report on the *consumer and carer experience of NSW mental health services during the 2020 COVID-19 pandemic* (NSW Health 2021b). This report also found that patients' access to their doctor or psychiatrist improved due to the availability of frequent telehealth appointments, compared to access in 2019 (NSW Health 2021b). However, it was noted that consistent governance from a safety and quality perspective needs to be developed alongside the uptake of telehealth for mental health, with legislative changes introduced as appropriate to enable better

uptake of technology. Any ongoing changes to telehealth also require cooperation with Australian Government investment through the Medicare Benefits Schedule.

Enhancing existing data supported mental health services
Establishing the MH-TRACE dataset provided a regular, comprehensive indication of changing mental health demands which enabled targeted planning, more accurate advice and targeted and coordinated supports in the face of intense uncertainty.

'We got excellent data. One of the great innovations was the development of a fortnightly MH-TRACE. ... [It] had all the activity data that we needed...[and] gave us a signal on what the level of community distress was'

- Ministry Stakeholder.

Cooperation between NSW Health and NSW Police facilitated proactive mental health supports
As the Response progressed, sanctions for incorrectly following public health restrictions were observed to correlate with higher prevalence of mental health concerns. This prompted NSW Health and NSW Police to link data, enabling detailed information to be made available to LHDs to proactively reach out to the community and provide targeted support for community members.

Another example of useful data linkage between health and police and justice data was the Suicide Monitoring System that provided information on suicide trends at an LGA level and by age group. Established in 2019, this data provided early insights on suicide trends during the Response, providing importance advice to support the provision of community and other mental health supports in areas of high community distress.

Sharing data across government allowed DCJ to understand potentially unknown vulnerability
The smoother flow of information between partner agencies allowed further opportunities to understand pockets of potential vulnerability, particularly between DoE and DCJ. These approaches enabled more proactive service delivery to a range of populations, including homeless populations, creating new pathways of care into mental health and drug and alcohol services with NSW Health. Inviting DCJ to the Health and Homelessness CoP further solidified the alignment on mental health between DCJ and Health, and raised the profile of working more collaboratively across government.

Access to data from helplines assisted in tracking community distress levels
Data analysed by DCS on the number of calls to telephone support services supported government decision-making, including the relaxation of rules, investment in community mental health programs and rollout of social care supports, such as food and clothing. The agency worked with policy-makers to progressively relax social visit restrictions, which was subsequently reflected in the reduction of calls to BeyondBlue and Lifeline data.

More work required on the longer-term effects of COVID-19 on mental health
While the system responded quickly to the impact of the Response on mental health, stakeholders have raised concerns that the longer-term effects are still unclear. Additionally, the ongoing increase in mental health presentations coupled with the prolonged nature of the pandemic provides an opportunity to consider further investment in the system to reduce the poorer health outcomes associated with mental ill health. A patient's risk of COVID-19 infection and COVID-19 related mortality is higher if they have a mental health disorder (Fond et al. 2021). In addition, people with mental health concerns have low rates of seeking health advice, and research suggests those who do are more likely to see a GP than another health professional (Andrews et al. 2001). Exploring further investment must recognise the need for priority vaccination of mental health patients, address interfaces between PHOs and legislation such as guardianship and complexity due to comorbidities and service use. *'Concerns remain that the mental health consequences of the pandemic will be slowly developing over years [to come]' - Ministry Stakeholder.*

Delivering holistic, culturally safe care to Aboriginal communities

Local knowledge led and supported local responses

NSW Health has a key responsibility to provide health care to Aboriginal people, delivered in partnership with a range of community providers. ACCHSs are leaders in culturally safe care and were key partners, as well as Aboriginal Health teams in LHDs. Community responses provided holistic, person-informed care in a partnership model, with central strategy, resources, support, and enablement from CAH. With the sector's community relationships and expertise in culturally appropriate health services, these partnerships were essential in collaborative efforts to deliver the health services needed by the community in the most appropriate way.

Each region did this differently. For example, the Bulgarr Ngaru Medical Aboriginal Corporation in northern NSW collaborated with Northern NSW LHD and NSW Police when funerals were announced, to ensure PPE and hand sanitiser were provided, and the community could conduct their Sorry Business safely. They worked very closely with the LHD IPC team, helping each other map the potential spread of COVID-19 amongst family groups and community networks to better target testing outreach and local communications. For more detail on their kinship approach see Case Study 2.

Another example is the collaboration with Kimberwalli in Western Sydney. Kimberwalli was a high throughput, culturally safe, Aboriginal specific vaccine hub that was stood up as a fixed place clinic, and is a perfect example of a partnership approach where each party plays to their strengths. CAH negotiated with Western Sydney LHD, and brough the expertise and coordination to deliver major enabling works to the centre, owned by the Department of Education. Best practice Aboriginal governance supported services led, designed and run by Aboriginal people, leveraging expertise from Aboriginal health experts and community to create something that met community need and delivered vaccines in a positive way.

Aboriginal Health Workers are an essential workforce, but were stretched beyond capacity

NSW Health's Aboriginal Health workforce is a highly skilled group of people working in a variety of roles across NSW, and were absolutely central to NSW Health's response for the Aboriginal population. Often seen as the face of NSW Health in the Aboriginal community, we heard how AHWs worked around the clock to find solutions and assist other staff in delivering culturally appropriate services.

We consistently heard the value this small workforce brought to local response planning and decision-making. In one LHD, Aboriginal Health Workers and members of the workforce who are Aboriginal worked together with their Public Health Unit to ensure Aboriginal people were contacted by Aboriginal health personnel for contact tracing and other outreach care. This boosted the number of staff who could provide a culturally informed service and reflected the type of partnership approaches that were effective across NSW.

However, the personal burden of providing support in their communities both during and outside work hours, has meant that workforce wellbeing and mental health is an ongoing concern. Considerations of improving workforce health and wellbeing, as detailed in *Workforce Impact*, must also address the specific concerns in the Aboriginal Health workforce. Broader workforce planning should consider the unmet need across NSW for more Aboriginal Health Workers, and Aboriginal health staff in general. This is discussed further *in Workforce Impact.*

Case Study 2

A kinship approach to COVID-19 in Aboriginal Communities - Katungul Aboriginal Corporation Regional Health and Community Services

The kinship approach used by the Katungul Aboriginal Corporation (Katungul) on NSW's south coast put local knowledge of kinship relationships front and centre of health service delivery during the Response.

Katungul established partnerships between key service providers to promote an Aboriginal-led, joint Response to vaccinations and care delivery. NSW Government agencies, such as Southern NSW Sydney LHD, Land Councils, NSW Police and Aboriginal Affairs NSW, provided support under the guidance of community leaders and representatives who shared their deep local cultural knowledge and networks.

Some of these supports include outreach in homes, virtual care management, pop-up testing sites, ongoing education and the successful Katungul #Don'tbescared video campaign. Outcomes of this approach went beyond building trust and confidence in the Response, it enabled greater flexibility and agility in designing bespoke solutions to local challenges and meeting the unique needs within the community.

Lessons learnt 33

Local partnerships with the Aboriginal community sector were essential to collaboratively deliver the health services needed by the community in the most appropriate way.

The Aboriginal health workforce played a pivotal role in connecting with the Aboriginal community and providing culturally-appropriate services. We heard that there are opportunities to expand this workforce and their scope of practice to ensure the needs of the Aboriginal community remains front of mind in the delivery of care – in BAU and future emergency responses.

Links to Recommendation 6.5: ***Prioritise consultation and planning to make NSW Health's emergency resourcing and surge workforce model more sustainable, from a 'family and friends' model to one that is more suitable for long-term incidents and responsive to workforce pressures, trends and opportunities. This would be assisted by maintaining capability for rapid onboarding and training.***

Links to Action Area D.3: ***Expand the number and scope of practice of the Aboriginal Health workforce across NSW to make the most of their trusted relationships and expertise in caring for their communities.***

Links to Action Area E.6: ***Increase the consistent and widespread familiarity and skill of the workforce in Aboriginal health issues, including developing policy and programs in partnership with Aboriginal communities and leaders.***

Formalised relationships to facilitate proactive planning and local community resourcing

We heard widely and consistently from LHDs and communities across NSW that existing relationships and arrangements with local Aboriginal community leaders and service providers made the difference in planning and implementing appropriate local responses early. This was based on a foundation of understanding capability, capacity and where strengths were complementary in nature. Where these relationships existed, joint initiatives were informed by cultural guidance to improve care in safe and comfortable environments, such as local community spaces being created in healthcare settings. Where relationships that had to be developed from scratch or deepened, it took longer to initiate joint planning and implementation approaches.

Including Aboriginal community partners in local planning discussions early was varied across NSW, and some services noted having limited access to data and information about local Aboriginal people. This initially created difficulty in accurately tracking transmission rates in the community.

In many instances, CAH stepped up to resource and support ACCHSs and AMSs where other supports were insufficient or non-existent, including:

- Working with HealthShare NSW to access and distribute PPE, gowns, hand sanitiser, masks, and later in 2021, RATs.
- Organising food supply for isolated Aboriginal communities and households, working closely with the NSW Aboriginal Land Council and Aboriginal Affairs NSW.
- Partnering with AHMRC, ACCHSs and LHDs to ensure local responses in communities with significant Aboriginal populations were integrated with broader public health strategies.

Future response planning, governance, communication, and engagement must empower Aboriginal services and communities

The benefits of early, proactive and inclusive response planning are clear, particularly in meeting the needs of priority communities. In LHDs where Aboriginal community voices were incorporated, health seeking behaviours and vaccination rates were higher, such as in South Eastern NSW where vaccination rates were greater than 80% (Coordinare 2021).

While discussed further in *Governance and Decision-making*, *Communication and Engagement* and *Data and Information*, feedback reaffirmed the need for Aboriginal communities and service partners to be involved in the early stages of governance, planning and decision-making at a central, regional, and local level. Data and information sharing arrangements need to also be developed to inform and enable local Aboriginal engagement and responses.

Increased cultural competency across the system is needed, including Aboriginal representatives as a formalised part of emergency planning structures

We heard that Aboriginal people continue to experience racism in interacting with different parts of the Response ecosystem, including from NSW Health facilities, accommodation services, and businesses. This, combined with intergenerational disadvantage and past experiences with government service and law enforcement agencies, hampered engagement with Aboriginal communities in many areas across NSW for vaccination, testing, and public health awareness.

In some areas, the presence of ADF staff and NSW Police officers was a specific challenge to parts of the community, including Aboriginal people and migrant communities. On many occasions, issues like these were resolved with collaborative effort between health and social support service providers working alongside ADF and Police staff to lower barriers to engagement and increase the perception of safety.

These types of cultural competency challenges must be an ongoing high priority for the system to address in BAU, as well as in considering the rollout of large-scale community responses.

Lessons learnt 34

Relationships with Aboriginal leaders and the community-controlled sector are key to engaging effective community responses and access. This needs to be an embedded part of future emergency responses. Relationships between the Aboriginal community-controlled sector and LHDs varied both across and within LHDs, impacting the strength of the Response. Consistent structures are needed to enable and support these relationships to remain in place. (***Recommendation 1.2*** and ***Recommendation 5.1*** discussed prior).

Infection Prevention and Control

The pandemic raised the profile of Infection Prevention and Control in the community
From the outset of the pandemic, NSW Health prioritised understanding patterns of virus spread to inform infection prevention and control (IPC) within healthcare and community settings as case numbers increased. The benefits of effective IPC are known - reducing infection by 70% (WHO 2022). A multi-channel approach, including televised public health alerts; radio advertisements; social media advertisements and messaging; online and traditional news articles; and signage, was employed to rapidly push IPC messaging into the community.

A range of resources were developed to support emerging PHO guidance, including a dedicated COVID-19 webpage on the NSW Health website with up-to-date information and statistics on the impact of the pandemic. Touchpoints between community members and essential public service workers, such as quarantine, border, health, and police staff, also supported community education. Additionally, tailored content was developed for key stakeholder and population groups, such as community and business, GPs, immunisation providers and PHUs. While initially overlooked, bespoke IPC communications targeted to priority groups and vulnerable communities were also developed. This assisted in helping improve community literacy on IPC, as well as compliance with public health advice.

Issues

Service delivery in an emergency

A range of government and non-government providers deliver social welfare and support services to people and communities around NSW, including homelessness support, public housing, social housing, disability housing, food security, and out-of-home care for children. In an emergency, there is a need to undertake joint planning with these providers, ensuring clear roles and responsibilities exist for all government and non-government providers across the broader health and social service ecosystem to reflect local knowledge in service delivery – particularly housing and disability services. Without the joint planning and clarity of roles, service gaps are likely to occur as the needs for services evolve rapidly and unexpectedly in an emergency (discussed in more detail below).

Central and local planning of responses must acknowledge broader social care and support needs, and be clear on who is doing what
Discussed further in *Governance and Decision-making*, the scale of impact of the Response meant some social support services broke down, with many providers unable to provide their normal scope of support or ceasing operation entirely. Many providers were unfamiliar with emergency management processes, IPC requirements, and their contracting arrangements were not sufficiently detailed on their roles and responsibilities during an emergency response.

LHDs were initially able to fill service gaps as they were detected, such as supplying food and nappies to families in lockdown with children at home (during Delta). Some NGOs were later able to pick up these services once effective outreach and support provisions became better established, but this was not a consistent experience across NSW.

In a range of Aboriginal communities across NSW, the socioeconomic factors that influence COVID-19 transmission and risk were known and understood well beforehand. However, NSW Health struggled to gain and maintain the traction required to drive proactive whole-of-government action to address these issues which were outside of NSW Health's portfolio. This was a particular problem with housing.

The response in the western NSW town of Wilcannia, with a large Aboriginal population, is well known, with campervans distributed to the town to alleviate housing pressure and allow people and families to isolate more easily. However, these challenges were known before COVID-19, and local communities, including the local ACCHS, had raised their concerns publicly. With earlier whole of government coordination and more consistent and widespread understanding of these issues, strategies to address these challenges proactively could have been implemented earlier.

Strong local responses need the support of clear central governance and communication
As discussed above and in *Governance and Decision-making*, clarity of roles and responsibilities of NGOs and contracted service providers are important in an emergency to ensure there are no gaps in service delivery. In particular, the clarity of roles and responsibilities need to be built into emergency structures, plans and service agreements, such that there are levers for government agencies to call on NGOs in service delivery. *'In a crisis, government doesn't have enough levers to pull with NGOs' - NSW Government Agency.*

A good example of this was the agreed approach between NSW Health and DCJ on the roles and responsibilities of each agency in providing accommodation to people in different circumstances, and managing outbreaks in public or social housing. Both Health and DCJ worked together to plan and agree the approach in the event of a lockdown, including conducting a mock exercise, establishing arrangements for linen, laundry and food delivery. We heard of extraordinary efforts taken by different LHDs and agencies to avoid lockdowns, increase communication into these communities, and support vaccination. However, while it was clear centrally about who was responsible for what, this level of awareness was not shared across the system or with non-government service providers. It led to confusion and widely variable responses between LHDs.

In some circumstances, these outbreaks placed extra pressure on NSW Health to fill gaps outside its traditional role, with LHDs working in partnership with NSW Police to secure perimeters and coordinate food arrangements. Although the Health-DCJ agreement was in place, inconsistent knowledge across the system of its coverage and operation meant LHDs were still filling gaps outside their remit; this disconnect is eminently preventable. *'In the end, the call was made that the LHD would run the site. … This was made more difficult by a precedent from another LHD' - NSW Government Agency.*

People with disability

'A system that is not inclusive before an emergency response cannot easily be made inclusive during one'

- Health Sector Stakeholder.

The system found delivering consistent and practical support for people with disability challenging, requiring more structure and coordination
People with disability in lockdown were least visible during the Response, exposing the limited social supports available for them and their carers. Vaccination of people with disability living in care facilities was the responsibility of the Australian Government. While people with disability were prioritised early on for vaccination, many found it challenging to access a vaccine; difficulties were encountered with the online booking system, and finding information on accessible vaccination locations.

The rollout of vaccines in primary care, particular through GPs and community pharmacies, played a critical role in increasing the accessibility of vaccines for people with disability. Noting that this program was managed by the Australian Government, this is an important lesson for future vaccine program planning.

We heard that accessible testing options were challenging for some people with disability. In particular, the lack of a coordinated, easily accessible at home testing option in NSW, like that rolled-out in Victoria, was a key gap. Often, people were advised to contact their GP or local PHN, with limited success. When NSW's testing strategy expanded to include RATs, there were no accessible RATs approved for use in Australia, meaning people who are or have low vision could not independently test themselves.

There were also challenges in knowing where people with disability were, what their needs were, and how best to support them

The complex disability service sector and limited integrated data hampered local efforts to assist this priority population and provide consistent and relevant advice to service providers. The systematic identification of people with disability needs to be worked through with individuals, peak bodies and the service delivery sector to improve the coordination of support services in emergency situations.

While there is significant diversity amongst people with disability, this priority population must be considered holistically in response planning and implementation to address access issues before they occur.

Children

Stakeholders shared that the Response handled the needs of children well in general, particularly through the Sydney Children's Hospitals Network and the several CoPs focused on child health issues. Future responses would be enhanced through the provision of guidance for at-risk children, particularly children with a disability and children in low-income households.

Changes to models of care must consider the additional support required for children

Public health policy and advice must also be responsive to the carer and family-supported models of care for children in hospitals and consider the impact on the workforce if these models are disrupted. The Home in the Hospital Program implemented by the Sydney Children's Hospitals Network is a strong example of how the system successfully shifted during the Response to provide multidisciplinary wraparound care, including the social support usually provided by parents and carers, to COVID-19 positive children in hospital. However, providing 24/7 support to children was not without challenges for health staff, who stepped into roles normally occupied by parents and carers. As a result, the system developed a new understanding of the role played by parents and carers in patient care, as staff were required to make constant shifts in service delivery to include activities like playing with children, changing nappies and providing food. Families remained connected to their children virtually, however stakeholders have also suggested that flexibility in visiting children across the whole system could be considered earlier in future planning.

Cross-agency work built a fuller picture of children's experiences

Given the priority of education for child development, joint research commissioned by NSW Health and DoE was integral to understanding transmission patterns in educational institutions and adjusting public health advice as required. These co-designed approaches can be further leveraged for BAU decision-making, as well as replicated across government to assist children living with disability and child protection policy.

It is important children are considered in response planning and implementation, supported by relevant data, workforce flexibility, and connections across government, particularly in education and out-of-home care settings.

Lessons learnt 35

Future emergency planning and responses will require development of joint roles and responsibilities for locally-led responses, supported by strong central communication and governance, including:

- Highlighting local response roles and responsibilities between Health, DCJ and NSW Police in a clear statement with mock exercises to ensure readiness for outbreaks in public housing (***Recommendations 1.1 and 1.3*** discussed in *Governance and Decision-making*)
- Clarifying NGO roles and responsibilities to support local responses and when these are triggered or transitioned to BAU (***Recommendation 5.5*** discussed in *Governance and Decision-making*)
- Prioritising vulnerable communities with bespoke vaccination approaches available in community at the outset of the Response (***Recommendation 4.1*** discussed in this chapter)
- Ensuring public health policy and advice are responsive to vulnerable people in public hospitals, including children, elderly, and people with disability. This means recognising the role of parents/carers/visitors in the safety and quality of care through parent/carer/family-supported models of care in acute settings, acknowledging the impact on health outcomes and the workforce if these models are disrupted. There also needs to be flexibility and compassion in applying any future restrictions to ensure parents/carers/visitors can support these populations in future emergencies.

Links to Action Area E.6: ***Increase the consistent and widespread familiarity and skill of the workforce in Aboriginal health issues, including developing policy and programs in partnership with Aboriginal communities and leaders.***

Links to Recommendation 4.2: ***Ensure public health policy and advice considers and responds to carer-supported models of care for vulnerable people in public hospitals and other care settings, including the parent/carer/family-supported care for children in public hospitals, carers/family supports for aged care and high need individuals in acute settings, acknowledging the impact on health outcomes and the workforce if these models are disrupted.***

Links to Action Area C.2: ***Better recognise the important role of carers and visitors in the safety and quality of care for vulnerable people in public hospitals, including children, elderly and people with disability, and the need for flexibility and compassion in applying any future restrictions.***

- Capturing whole-of-government approaches to drive local outreach support, drawing from people with deep community connections on the ground, acting as cultural support/navigators, to locate and support people who actively avoid government and health agencies.

Links to Recommendation 4.3: ***Establish agreements with key partners to ensure the broader socio-economic needs of children and families are consistently addressed by the most appropriate service provider, government or otherwise, in an emergency response. Key groups include, but are not limited to, children in out-of-home care, foster care, and those experiencing mental ill health, homelessness, or are at risk of domestic or family violence.***

Health advice for vulnerable communities

Earlier and more accessible public health advice will improve community understanding of the Response

There are certain communication challenges that set pandemics apart from other emergency scenarios. The community is less familiar with public health and pandemic language, relative to emergency and crisis language. While the accessibility of public health advice improved progressively, opportunities to build and

embed baseline community understanding could be taken earlier in the future, balancing community safety with empathy and flexibility.

Effectiveness of different communication channels varied for vulnerable communities
The distribution of PHOs via text messages with links to relevant information had limited impact in some communities due to several factors including access to technology and differences in health literacy across the community. *'The lack of health literacy was overlooked. A lot of people didn't have credit on their phones to open the links, or if they couldn't access it/read it they would go see their neighbour to explain it, and thus expose themselves to transmission' - Health Sector Stakeholder.* While this was eventually addressed using a virtual GP line that helped to translate what PHOs meant for their community and geographical location, a flexible implementation approach was required to build trust in the community. *'During the pandemic - people couldn't come to funerals...people would come regardless of the limit. If more than 100 people turn up, they would provide the PPE/hand sanitizer... Area commanders worked well to help people to attend funerals...nobody got fined...that was a local flexibility that was provided' - Health Sector Stakeholder.*

Border closures disproportionately affected rural and regional areas
Announced on 7 July 2020 and brought into effect the following day, the first jurisdictional border closure affecting on the ground service delivery was between Victoria and NSW. This, and subsequent closures, placed divisions within communities that had not been seen before, impacting access to services, households, and workplaces (see *Workforce Impact* for more detail). The approach to border communities continually evolved to address their specific needs, including the creation of 'travel bubbles' to allow some movement. Knowing now the wide ranging impacts this type of mobility restriction has on people's ability to access the care they need, greater planning for these types of bubbles to allow reasonable access to health care should be done to enhance preparedness. *'[We now have greater] understanding of how border communities' function, and they need to be factored in from the start. Back then [at the start of the pandemic] there wasn't the time invested to do that'- Ministry Stakeholder.*

A flexible and compassionate approach to exemptions was developed
In May 2020, SHEOC established an Exemption Operations team that aimed to provide exemptions to restrictions, in particular border closures, on compassionate grounds while protecting community safety. The team included people from across LHDs and Pillars organisations to enable rapid and relevant responses to requests from the public. In December 2021, close to 45,000 applications were assessed, of which a third were approved (SHEOC 2022a). Exemptions were granted for a range of compassionate reasons, including for people to farewell deceased loved ones or support family ill members. We heard from stakeholders how other teams in NSW Health helped manage the large workflow of requests, with a spirit of comradery and always looking for new ways to improve the processes. However, it was also noted that the process could have been initiated earlier, supported by an appropriate ICT solution to handle the high volume of requests and dedicated public communication channels to reduce community distress.

Lessons learnt 36

The needs of individuals, families and communities living on borders are unique and need to be considered differently. Addressing their needs and the use of a compassionate and flexible approach to exemptions were eventually in place. The learnings and changes in approaches should be considered in future instances where border closures are in place.

Links to Action Area E.2: ***Debrief with border Governments, including Queensland, South Australia, Victoria, and the Australian Capital Territory on the operation of border closures and their impact of individuals, families, communities, and the health workforce.***

Workforce Impact

The following chapters considers the impact of the public health workforce, including their dedication and leadership, lessons learnt on workforce wellbeing and safety, strategic and tactical workforce planning, and the value of external partnerships to deliver alternative workforces.

Throughout a pandemic, a flexible and skilled workforce is needed to sustain health services and deliver critical parts of the Response including testing, contact tracing and vaccination. As identified in the review of Australia's response to the H1N1 pandemic, *'considerable resources are required to sustain a public health emergency response over several months, even during a less severe pandemic'* - Department of Health and Ageing 2011. This was also highlighted in the *Key Recommendations on Pandemic H1N1 2009 Influenza* by NSW Health that *'appropriate resources are committed towards developing and acting upon an implementation strategy'* - NSW Health 2010.

With 127,545 FTE and more than 165,000 individual staff, NSW Health has the largest health workforce in Australia (NSW Health 2021a). Access to this large supply of capable and committed health staff was critical in delivering and sustaining the Response over multiple years, with the dedication and flexibility of both clinical and non-clinical staff noted as fundamental to the success of the Response and the ongoing provision of health services. However, the pandemic intensified demands and brought new challenges to a workforce already operating close to, or beyond, its capacity. The commitment of the workforce was further amplified to meet these challenges by strong support from unions and colleges, increased flexibility in scopes of practice, and the creation of new roles to support patient care. NSW Health, like other health entities, has since noted increased attrition and sick leave, likely reflective of the prolonged strain on the workforce for the past two years which has manifested as fatigue and burnout. Improving workforce health and wellbeing is an important consideration for future preparedness planning.

Common strategies used globally to increase workforce capacity included calling on students, retired clinicians, agency and private hospital staff to create surge workforces (Regional Office for Europe 2020). In NSW, alternative and surge workforces were also sourced through partnerships with private organisations, universities and colleges, which contributed alternative and surge workforces to alleviate pressure on existing health staff and assist with key elements of the Response.

Existing workforce guidance covered emergency capability, development activities, dissemination of planning materials, and the development of contingency plans for staff absenteeism. Critical aspects of the Response that need to be considered prior to the onset of a pandemic event were clearly identified and assisted the deployment and management of staff. However, as the Response progressed, the ability to extend some approaches into the long-term was identified by stakeholders as limited. It is important that guidelines are developed to address the need for scenario planning, as well as specific concerns identified in regional areas and emergency management roles. Any approach in the future must also be supported by appropriate strategic and tactical workforce data and modelling and planning.

Strengths

Workforce attitude

Selflessness and dedication were the backbone of the Response

Notwithstanding the significant requirements that public health emergency responses place on the workforce, numerous examples were noted across the system of health staff going 'above and beyond' to assist outside the remit of their immediate roles. *'Our workforce was able to pivot and adapt in a really quick manner under extreme anxiety and stress, which put us in a good position moving forward. Recognising we had to get out of our comfort zones, we could do other things and transfer skills – be a part of the bigger solution' - Rural and Regional LHD.*

Staff extended themselves to provide support across the system

This was witnessed firsthand through interactions with health staff during the Response, as well as consistently heard throughout the Debrief process from every stakeholder across the state. Key examples of this dedication included health staff travelling significant distances to provide patient care and operational support to isolated communities; NSW Health's Finance team delivering groceries to community members in home isolation, while partnerships were being mobilised to takeover this activity; and crowdsourcing basic

goods, such as nappies, for families in need (see *Community Impact* for more examples). *'[We] had to provide physical care, because they didn't have an adult [in the house] - play [with them], change nappies - things that parents would normally provide … staff found that very challenging. Each day or each hour, we had to pivot and figure out new solutions to things' – NSW Health organisation.*

Leadership was demonstrated at all levels

Stories describing leadership at all levels and the role that leaders played to support the Response have showcased the talent and capability that exists across the system. In addition to working beyond their scope of practice and traditional settings, many health staff drove innovations in services and care in the moment to overcome capacity constraints and meet the demand of the pandemic (discussed in more detail below). These opportunities have identified emerging leaders, whose accelerated personal growth and accountability for others should be celebrated and supported as they continue their leadership journey with NSW Health.

These collective efforts were regarded as a key strength to the Response, showcasing the willingness and generosity of health staff supporting their communities whilst navigating their own personal and family experiences of the pandemic. They did, however, also come at some cost. The unrelenting nature of the pandemic led to increased rates of stress, sickness, burnout, and higher employee turnover across the system (further detailed in the *Issues* of this chapter). Consultation insights signal the reasons for turnover include health staff bringing forward retirement plans, role dissatisfaction and career changes, largely driven by the pandemic's significant and prolonged impacts on the workforce. This is supported by NSW Health workforce data, which shows staff retention has fallen by 2% in relation to pre-pandemic trends. This is specifically related to people leaving the system, not moving from one health agency to another.

Workforce vaccination and testing

NSW Health was responsible for vaccinating their workforce

As detailed in *System Impact,* NSW Health prioritised clinical and frontline workers in the first stages of the vaccination rollout in early 2021. Workforce vaccination rates accelerated quickly to protect staff. For example, Special Health Accommodation implemented a vaccination program that saw 97% of their staff receiving a first dose of the vaccine by the end of March 2021 (SHEOC 2022a).

In support of the rollout, the workforce vaccination booking system CoVax was rolled out to 15 LHDs, and used to vaccinate 74,000 health staff and frontline workers. Its scope was later expanded to the general public and was used to vaccinate 161,000 people before the introduction of VAM (see Case Study 2 and *Innovation and Technology*) (SHEOC 2022a).

We heard little opposition to the policy approach taken by NSW to mandate vaccination for its workforce, the way it was communicated or implemented. A large part of this comes down to the strong relationships and open communication with key professional organisations and unions, noting that Health, like any other workplace, would have staff with differing views on mandated vaccination, with some reportedly having left the system.

Surveillance testing

Workforce surveillance testing was used to detect COVID-19 in staff and minimise transmission to the broader community. The surveillance testing program was piloted by SHEOC in December 2020 with hotel quarantine workers. In February 2021, a dedicated team was established within the SHEOC to oversee surveillance testing for airport and quarantine workers, and transport providers. Daily surveillance testing began in December 2020 with hotel quarantine workers, which later expanded to include clinical staff and border workers to minimise transmission across borders. In 2021, 556,358 PCR tests were conducted for quarantine workers under the daily testing program (SHEOC 2022a). However, staff testing requirements and IPC capabilities varied considerably between LHDs, and patient and workforce safety were not considered alongside each other (further detail below under *Issues*). For example, Sydney LHD was responsible for testing frontline workers across the hotel quarantine system and, at its peak, were screening 8,000 staff a day. Advice suggests that supporting communications were heavily used to affirm the need for testing from both a workforce and patient perspective.

New roles

Targeted training supported newly created positions

The changing nature of the pandemic required the workforce to rapidly upskill and deploy to different functions across the system. Alongside the goal to increase workforce supply, efforts also focused on increasing workforce capacity. This included designing different ways to complete work, such as shifting and sharing tasks across traditional professional boundaries and the significant contributions of the NSW Training Program initiatives, which allowed trainees to be rapidly deployed to support the operational priorities of NSW. The CoPs also provided significant input and support in these areas. This is explored in further detail in Section 5.2, Case Study 12 of the *Public Health Response Debrief Report.*

Training played a fundamental role in lifting the skills of the available workforce to service immediate needs, as well as enabling first-hand exposure to new skills, roles and functions outside health staff's day-to-day activities. *'Keeping clinical training and education up to the speed [of the pandemic was a] concerted effort by the LHD and us; consistent training, guidelines and new information' – PHN.* The Response also saw more training provided through virtual delivery mechanisms, and we heard of the growth in support for remote and virtual training solutions rather than only face-to-face as options in BAU. Stakeholders also noted how the virtual environment increased equity in access for regional and rural sites. The work of HETI was strongly recognised in this area and provides a useful tool for future emergency planning.

Upskilling clinical university undergraduates to support vaccination administration was also a key strength of the NSW vaccination program (discussed further in *System Impact*). NSW expanded the role of students more than any other state or territory, as well as the number of vocations who could assist (refer to Table 1 for the complete list). In considering ways to further enhance the reach of the workforce and vaccination efforts in possible future public health emergencies, there is an opportunity to consider expanding the scope of Aboriginal Health Workers to include vaccine administration in some capacity - either as an authorised administrator or, under the supervision of, or under a written direction from, an authorised health professional, similarly to the approaches taken by some other jurisdictions.

Table 1 Ability of the public health workforce and student workforce to administer COVID-19 vaccinations in NSW Source: Operation COVID Shield 2021.

Health professional	Able to administer vaccine?
Nurse Practitioner	Yes
Authorised Nurse Immuniser	Yes
Registered Nurse	Yes
Enrolled Nurse	Yes
Midwife	Yes
Aboriginal and Torres Strait Islander Health Practitioner	Yes
Aboriginal and Torres Strait Islander Health Practitioner Authorised Immuniser	N/A
Aboriginal Health Worker	No
Pharmacist Immuniser	Yes
Pharmacist	Yes
Paramedic	Yes
Dentist	Yes

Health professional	Able to administer vaccine?
Oral Health Therapist	Yes
Radiographer	Yes
Radiation Therapist	Yes
Occupational Therapist	Yes
Physiotherapist	Yes
Podiatrist	Yes
Dietician	Yes
Speech Pathologist	Yes
Students (in Medical, Nursing, Midwifery, Pharmacy, Paramedicine, Dentistry, Podiatry, Radiation Therapy, Radiography, Physiotherapy, Occupational Therapy, Speech Pathology, and Nutrition and Dietetics fields)	Supervision – Line of sight

Deployments supported new functions

Various new functions were established as part of the Response to address the specific issues of COVID-19, including contact tracing, testing and vaccination. Where capacity existed in LHDs and central teams, hundreds of health staff were redeployed to perform these critical roles. Within NSW Health alone, 475 people were deployed, with many deployed multiple times. Examples of this include a metropolitan LHD redeploying its dental staff to assist with testing, and the Cancer Institute NSW sharing its workforce to support the state's contact tracing efforts. In addition to these COVID-19 functions, LHDs also indicated they relied on utilising some health staff outside of their substantive roles to support the management of the Response, such as Liaison Officers being redeployed into the SHEOC and PHEOC to assist with coordination.

Care Assistants and Assistants in Medicine freed capacity for existing roles

To alleviate pressure on the workforce and support patient care, a Care Assistant role was designed by NSW Health's Workforce Planning and Talent Development team in collaboration with industrial bodies and clinicians across the system. Based on the United Kingdom National Health Service's COVID-19 Bedside Buddy model, the Care Assistant role was designed to support workforce capacity constraints by fulfilling low risk, non-clinical tasks. Implemented across 11 LHDs, the Care Assistant role freed clinical staff to focus on COVID-critical activities during peaks of the pandemic.

Another example was the use of Assistants in Medicine who were final year medical students that augmented the existing junior medical workforce. Approximately 1,574 Assistants in Medicine were deployed across 15 LHDs and the Sydney Children's Hospital's Networks between 2020 and 2022.

While the pilot of these roles signposted opportunities to improve flexibility in NSW Health's existing recruitment and surge workforce practices, it also highlighted untapped possibilities in designing new, non-traditional career pathways into NSW Health in the future. These roles should be closely considered for their value in BAU to the system, and to those working in them for their professional development.

Expanded roles

Extending existing scopes of practice increased workforce capacity

Clinicians were able to work beyond their traditional scopes of practice to alleviate workforce capacity constraints, broaden the reach of surge workforces and expand access to care. Numerous examples were indicated where this was implemented safely; these include LHDs and SHNs:

- Redirecting their allied health workforce to complete tasks traditionally performed by nursing, as mentioned above. *'[We] had physios in nursing roles, proved ICU could be done [by other disciplines' … 'Allied health adopted those traditional nursing roles well - showed [their] versatility' – SHN*
- Accessing their non-clinical workforce to assist with business support operations and maintenance, such as setting-up technology, such as Wi-Fi and iPads, in inpatient units
- Using their senior nurses to train nurses from other locations to deliver critical ICU activities
- Cross-credentialing medical staff to support areas outside their traditional specialities, such as respiratory and infectious diseases
- Establishing psychosocial teams to manage referrals for complex COVID-19 cases from a metropolitan PHU, which *'improved the pathway for disability services' – PHN.*

Stakeholders also noted the opportunity to trial new roles and activities uncovered an appetite in some staff for pathways into new, alternative working arrangements, and temporary rotations to other areas to become formalised. *'There was a burning platform that people wanted to share [their skills and knowledge] - we should keep those elements alive; alternate workforces should be kept alive' – Metropolitan LHD.*

Support from industrial groups was critical to the Response

The continued support and engagement of industrial groups throughout the Response was recognised as key to the ongoing focus on workforce health and safety, as well as encouraging compliance with public health advice. We heard from unions and colleges how they were consistently involved in potential workforce changes to support that needs of the Response. We also heard from those leading engagement with unions and colleges about how responsive and flexible they were during discussions of workforce deployment and role changes. Most of the role changes would not have been possible without their support, and none would have had the capacity to endure without it. This reflects the consistent theme throughout consultations of how people worked together across the system to achieve a common goal. However, people were more adaptable than systems and structures, such as pre-existing industrial arrangements, which did not consistently support flexible and equitable solutions. For example, differences in overtime for specialists and medical managers limited the ability to create flexible teams to address the changing demands of the Response, as well as recognise effort in a consistent way. Attention is needed to get these things right for next time.

Lessons learnt 37

There is general agreement that aspects of workforce flexibility enabled by the pandemic could be further explored and potentially built into practice across the system. This will require some effort in exploring how it is done safely and in a way that adequately prepares and supports health staff to perform the new roles and activities, without the associated pressure of filling operational gaps required to maintain services and care delivery during a pandemic. Some balance between which training elements are mandated versus optional will be required such as RAT testing, PPE use, close contact tracing, and Care Assistant training to support the workforce to work safely.

Debriefing with the Australian Government would be a useful exercise to put measures in facilitate rapid and timely changes to scope of practice during a response. This could include the ability to expand training (education and qualification opportunities) to build flexibility in the future workforce. Health's early leadership in supporting trainees, graduates and expanded scopes of practice forms a strong basis for future workforce evolution.

Further work in this area will also need to consider the role of training in supporting the flexibility and rapid deployment of new workforce models, including accessibility of training (such as through virtual or in compressed formats). Professional bodies and educational stakeholders could consolidate their experiences in delivering virtual training throughout the Response to consider how key learnings and benefits might be incorporated into BAU - either through virtual or hybrid forms. This would support rapid redeployments when required and improve access for regional and remote communities.
Changes to the *Pandemic Plan* should consider to how to maintain and protect the ability to surge public health and broader workforce, through relevant industrial instruments, partnerships, and investments.

Links to Recommendation 6.3: ***Closely consider the appropriateness of current industrial instruments and training supports in supporting flexibility and agility in emergency responses, including how they may better enable the rapid deployment of staff and enhance existing capacity and support fairness and equity of conditions for health staff in emergency responses.***

Links to Action Area D.4: ***Closely consider how new roles introduced during the Response can support ongoing workforce flexibility and capability, including the benefits of streamlined recruitment practices and working arrangements to maintain the ability to surge the NSW Health workforce at short notice.***

Links to Action Area D.5: ***Consider how best to harness the leadership experience gained by individuals and teams during the Response for individual and corporate benefit, through leadership pipeline strategies, targeted capability development programs or other initiatives.***

Links to Action Area D.7: ***With professional bodies and educational stakeholders, consolidate the benefits gained from moving professional training programs to virtual or hybrid delivery models, including increased access and equity of experience for people in regional NSW.***

Multidisciplinary teams

Collaboration between disciplines focused on patient needs

Throughout all phases of the pandemic, clinical and non-clinical staff demonstrated a willingness to collaborate towards achieving a common goal - to maintain service delivery and quality patient care. This required health staff to work across disciplines, professional cultures, different settings and, in many instances, with representatives from different organisations and sectors. *'It was run as a system-wide response. I think there are challenges in that, but we were liaising very closely [with one another]. We were all in it together. This system-wide approach made a difference in [the] coordination and management of the response - [it] worked really well' - Rural and Regional LHD.*

Allied health flexibility expanded overall workforce capacity

Stakeholders consistently acknowledged the agility and leadership of the allied health workforce in supporting community care and other disciplines. For example, allied health staff led a program focused on social welfare checks in Far West LHD. The checks were performed in teams with allied health staff, nurses and social work students, with mental health staff providing support throughout; *'[we have a] limited workforce out here. [We] needed to bring together clinicians from all backgrounds to manage the response' - Rural and Regional LHD.*

Western Sydney LHD also established an outreach program for patients in aged care facilities during the pandemic. With patients' preferences to be cared for in situ, 'flying squads' led by redeployed allied health staff were sent into the facilities. As a result, this approach to support aged care facilities to care for their residents in situ was successfully replicated across NSW. Opportunities for models, such as this one and others, which offer increased support for aged care citizens warrant further consideration by the Health Transformation Unit.

Some LHDs and SHNs also redeployed allied health staff into nursing roles to support their local responses. Allied health staff led multidisciplinary teams to accommodate for nursing shortages in one rural and regional LHD, providing seven days-a-week coverage to ensure continuity of services and care. The adaptability and versatility of the allied health workforce in multidisciplinary teams should be considered as part of BAU and possible future responses; *'how do we modify duties so that other disciplines, such as allied health workers, can be brought in? Allied health was flexible, willing and strong' – Metropolitan LHD.* They were described by some as the *'unsung heroes'* of the Response.

New roles built new team structures

Care Assistants were engaged in local aged care facilities in Northern NSW LHD to work under the supervision of nurses and assist in releasing capacity for clinical staff to focus on COVID-critical, specialised activities (see above for more detail on Care Assistants).

While stronger multidisciplinary ways of working enhanced the accessibility of deep system knowledge and health capability, partnerships with universities (discussed further below) also enabled rapid access to expertise in key subject matter areas, such as setting-up infection control systems, which required collaboration across the system to implement in practice; *'partnerships with universities [were] positive and important. It [was] their role to do the research and understand the international context; they could help with information [gathering]' – Ministry Stakeholder.*

Lessons learnt 38

In capitalising on the progress made toward greater multidisciplinary collaboration during the Response, consideration could be given to the new roles and activities that may be performed by redeployed non-clinical staff during possible future public health emergencies. In doing so, their skill sets and knowledge of the system could be targeted towards COVID-19 critical activities and help to alleviate pressure across the system. An example of this that was raised in consultation was to consider establishing a system-wide view of non-clinical staff with emergency management experience who could be engaged in local and state governance structures to support planning and response efforts. (***Action Area D.4*** discussed above in this chapter).

Links to Action Area C.5: ***Maintain and build on the successful allied health led, assertive outreach multidisciplinary teams designed through the Response to support vulnerable communities and improve health outcomes.***

External partnerships

Partnerships with the Aboriginal Community Controlled Health sector are covered in detail under *Community Impact*. They constitute key partners and leaders in future emergency planning.

Partnerships with universities

Partnerships with universities enabled clinical students, largely those in nursing and medical disciplines, to be rapidly identified, recruited, onboarded, trained and deployed to support different functions across the system. Nursing undergraduates, as one example, were employed as Assistants in Nursing to free-up time for Registered Nurses to focus on more acute cases, allowing them first-hand experience working in and with the system. While overall, the use of students to enhance workforce supply was viewed favourably, this model did place additional responsibilities on clinicians, who were balancing the new responsibilities required by the pandemic and supervision of university undergraduates on top of their BAU roles. This approach prompted some LHDs to design simpler learning pathways for clinical undergraduates to rapidly enter and work in the system.

This was a particularly useful strategy for rural and regional LHDs, where workforce supply was limited due to geographical isolation; *'we created our own learning pathway for rural sites, [which] leads to the gradate pathway. [It] increased grad numbers … physically we cannot fit any more people in'.* Stakeholders indicated there is a shared desire to consider how these types of learning pathways could be supported in the transition to BAU, as well as in preparation for future emergencies. *'We were slow as a health, community and university system in [to work out] how medical students and nursing students fit into the pandemic response. [They were] really an essential part of the clinical team and needed to be considered as such' - Metropolitan LHD.*

Lessons learnt 39

The strengths of drawing from a student talent pool during the Response warrants debriefing with universities and training providers to understand what worked and why in an emergency

management setting. Opportunities to formalise and embed partnerships with universities, colleges, and other training providers should be explored as transition pathways into practice for graduates and final year medical, nursing and other health professional students. Equally, there is potential to use welfare graduates to shift to counselling/support models for mental health services.

Both pathways should investigate initiatives that provide valuable workplace experience to graduates and students and capitalise on these opportunities to build a graduate pipeline that more effectively meets system needs and graduate learning goals. This should include exploring paid roles within NSW Health facilities to help grow the workforce. (***Recommendation 6.3*** discussed above in this chapter).

Links to Action Area D.4: ***Closely consider how new roles introduced during the Response can support ongoing workforce flexibility and capability, including the benefits of streamlined recruitment practices and working arrangements to maintain the ability to surge the NSW Health workforce at short notice.***

Partnerships with private organisations

Partnerships with private organisations enabled a broader workforce to be engaged to support the Response. Staff were sourced from organisations and industries hardest hit by pandemic restrictions, including Qudos Bank, Baxter and Qantas, to support COVID-19 functions across the state. *'Qudos Bank [was a] great source of workforce support; Baxter did vaccine [administration]; Qantas flight attendants worked as navigators for people. ... We exhausted every source of locums and workforce that we could. Faced difficulty when we couldn't bring in overseas talent [to support too]' – Metropolitan LHD.* The ability to leverage these partnerships and engage and deploy alternative and surge workforces at scale during the Response was partially enabled by temporarily loosening BAU recruitment policies and processes. This resulted in simpler, more efficient ways to source external support when and where it was needed most, which many stakeholders have encouraged further consideration to retain as the system transitions to BAU.

It was recognised that these types of partnerships, while generally able to be leveraged across the system to increase workforce supply, were less successful in rural and regional LHDs due to their geographical isolation. There were also activities that external surge workforces could not perform, such as virtual care, as well as certain roles, due to misalignment in skills matching between similar private and public health positions. Additionally, several LHDs faced challenges accessing agency nurses to support their existing nursing workforces during the Response, due to the need for, and lack of, existing relationships with these organisations. *'[We] moved away from [nursing] agency staff a few years ago, so when we wanted to access them, we had no relationships ... [we need to consider] the minimum number of agency nurses you need to keep to maintain these relationships' – Metropolitan LHD.* This highlights an opportunity to establish and maintain relationships with other health organisations as a valuable network connection in BAU, as well as to enable access to greater workforce supply in possible future public health emergencies, recognising the particular challenges faced by rural and regional LHDs during the Response.

Lessons learnt 40

The ability for the system to quickly recruit and train new staff was critical, employing innovative approaches successfully to grow workforce capacity during the Response. Existing workforce shortages in key areas were heightened during the Response, for example by border closures, and highlighted the limited pool of qualified staff during a market of high demand.

In future, key capabilities for an emergency response including health protection, epidemiological, policy and strategy capability need to be identified and maintained through these approaches. (***Action Area D.4*** discussed above in this chapter).

Issues

Workforce health and wellbeing

Workforce health and wellbeing was impacted by sustainability challenges associated with a high reliance on critical emergency management leaders, the effects of furloughing, and ongoing workforce pressures across the system.

The fatigue, stress and burnout experienced by frontline workforces throughout the pandemic has been widely acknowledged both at a national and global scale, with *'levels of anxiety, distress, fatigue, occupational burnout, stigmatisation, physical and psychological violence [having] all increased significantly' - Steering Committee for the International Year of Health and Care Workers 2021.* At a state level, 56% of NSW Health staff reported a positive sense of wellbeing through the People Matter Employee Survey between August and September 2022, compared to 66% in 2019 (WPTD 2022).

We consistently heard that ongoing high workloads, significant changes to work environments through PPE requirements and closed social and rest spaces, and constantly changing pressures negatively impacted wellbeing during a time when the system was at capacity. NSW Health data also showed an increase in sick leave and a steady decline in employee retention throughout the Delta and Omicron waves, likely reflective of the prolonged strain placed on the workforce.

Many health staff across Australia experienced symptoms of depression, anxiety, burnout, and post-traumatic stress disorder (Smallwood et al. 2021). Contributing system factors relevant to NSW's experience include:

- High COVID-19 testing volumes increasing processing times and delaying reporting of COVID-19 positive cases, which had flow-on impacts for patient identification, contact tracing and transmission risks
- Limited access to appropriate PPE and guidance, increasing levels of anxiety
- The high volume of public health announcements that often did not provide timely consideration of resourcing and time constraints, leading to change fatigue
- The practice of furloughing placing additional pressure on an already stretched workforce to cover operational roles. Health staff expressed frustration as at times few furloughed staff returned COVID positive results (we heard that in one area approximately 1,100 people were furloughed, yet less than 10 tested positive).

The 24/7 impacts of staff experiencing COVID-19 both at work and at home

Many raised concerns of safety of their family members due to the risk of COVID-19 transmission at work (Li et al. 2021). The experience of restrictions contributed not only to a surge in mental ill health across the community, but also increased concerns health staff had about safety at work and at home, while they carried the emotional toll of caring for patients and families. This likely contributed to the reported increase in the uptake of employment counselling services and number of mental health referrals during the pandemic.

The issue is a key one for all health leaders. While LHDs prioritised workforce wellbeing, rapidly making a variety of approaches available to provide ongoing face-to-face support and other accessible resources, ongoing concerns about fatigue, morale and retention persist. With limited experience data being collected by NSW Health to monitor and manage sentiment and wellbeing at the time, there was a reliance on anecdotal data to inform initiatives and supports. In the moment and structured data will be required to inform fit for purpose initiatives and support staff during prolonged responses in the future. Wellbeing is a key focus of the next *NSW Health Workforce Plan*, released in June 2022, which recognises the value of collecting experience and sentiment data to enable responsive support initiatives for health workforce (NSW Health 2022a).

Workforce safety

Integrated risk management that considers the health and safety of both patient and staff concurrently is required, noting that this did progressively improve throughout the Response. The Review of Serious Incidents by the CEC found that health staff were overwhelmed by the high demand for health services and this had an impact on their wellbeing. The Review also found workplace safety was also jeopardised by the poorer quality of breaks associated with the need for hyper-vigilance and the risk of transmission during the pandemic. *'What became evident is that pandemic policy deals with a clinical approach, and not a workforce approach' - Ministry Stakeholder.*

Lessons learnt 41

The review of the *Pandemic Plan* would need to consider how to ensure patient and staff health and safety concurrently. Protecting the workforce's safety and wellbeing is critical to enable them to confidently perform their role and achieve patient safety and outcomes. (***Action Area D.2*** and ***Recommendation 6.4*** discussed above in this chapter).

Links to Recommendation 6.2: ***Prioritise the rapid central determination and distribution of consistent workforce safety guidance and related emergency provisions, without scope for local interpretation or amendment, during an emergency response.***

Changing workforce expectations

While the nature and pace of role changes experienced during the Response was viewed to be stimulating by some, others experienced the level of change to be overwhelming and unsustainable. Workforce expectations and experiences during the Response have stimulated shifts in patterns of work. For example, more than half of all nurses in some regions have now moved to part-time hours, increasing pressure in a system transitioning back to BAU. The ability to work from home is another area where expectations have diverged. Not all roles could be performed remotely, placing different pressures on different parts of the workforce (for more detail on working from home, see *Innovation and Technology*). This will require further design as the system transitions back to BAU to balance role requirements against expectations and create equity in hybrid working opportunities.

The range of factors that contribute to staff health and wellbeing during and after a pandemic must be explored in-depth to inform the design, development and implementation of evidence-informed initiatives to support the workforce, noting current initiatives are already underway, such the focus on HSFAC wellbeing and the recent NSW Health Wellbeing Report that makes several recommendations to improve workforce wellbeing across the system (NSW Health 2022d).

Lessons learnt 42

Contemporary approaches to understanding and managing wellbeing in high pressure situations and BAU are needed to support retention and attract new staff. As a priority, embedding wellbeing considerations into both pandemic responses and BAU warrants refreshing existing mental health support structures and exploring how wellbeing ecosystems can better address changing workforce pressures. This should include considering more detailed staff wellbeing initiatives, including successful measures introduced during the current incident, regular pulse surveys or other data collections to improve awareness and inform future initiatives, and the management of workforce expectations on what is required during an emergency. (***Recommendation 6.5*** discussed below in this chapter).

Links to Recommendation 6.4: ***Consider how the system can best measure, access and consider evidence to protect its workforce, including the risks and benefits of measures like furloughing and surveillance testing during an emergency response to inform ongoing workforce practices.***

Links to Action Area D.2: ***With the workforce, develop new approaches to understand and managing wellbeing in high pressure situations to support retention and attract new staff and acknowledging the impact it has on staff and their families, the different challenges faced by staff in regional NSW, and the unique needs and constraints of clinical and non-clinical staff. Priority be given to embedding wellbeing considerations in both pandemic responses and BAU.***

Emergency management roles need to consider staff and leadership sustainability

As discussed in *Governance and Decision-making*, leaders and health staff working in emergency management roles were placed under additional pressure, often with limited mitigation strategies to cover redundancies and leave. This also included responsibilities and extension of efforts from preceding and concurrent disasters, including floods and bushfires. *'Catastrophic floods through COVID showed how fragile and vulnerable our communities were. From an acute hospital point of view, [the] diversion of resources was a strain but necessary' - Rural and Regional LHD.* Coupled with often feeling personal ownership of their role and a moral obligation to continue supporting their staff, leaders were regularly working long hours to support their teams without sustainable structural support. *'It was exhausting, we kept our roles every day of the week, available 24/7' – Rural and Regional LHD.*

Inconsistency of safety advice created uncertainty for staff

Initial anxiety in the workforce around the transmission of COVID-19 was exacerbated by limited transparency on the availability and use of PPE in the workplace. Stakeholders mentioned that, as the Response progressed, available guidance did not always evolve quickly to reflect emerging research on transmission. This led to LHDs creating additional advice and potentially increasing workforce confusion especially where staff were deployed, including adding extra precautions and developing their own fit testing approaches. This improved as the Response progressed, supported by system-wide advice developed by the CEC.

Surge workforce

Models were more suited to short-term incidents

We heard mixed views on how existing surge workforce models were able to effectively support workforce planning throughout the different phases of the pandemic. Ministry Workforce convened surge workforce planning workshops with LHDs in early 2020 to prepare for a range of scenarios with increasing severity to identify the tipping point at which LHDs would need to seek centralised support. We heard that these workshops were a useful, practical way for LHDs to understand their own capacity, however, some LHDs found that their plans were not as reliable as they would have hoped as the Response progressed. With the benefit of hindsight, the system now has very detailed data on what happened and how, and this will assist in future response planning.

Workforce challenges amplified as the pandemic response extended into a long-term incident, with key challenges including:

- BAU activities, such as elective surgery, pathology testing and cancer screening, put on hold indefinitely with no clear indication of when they would be needed to transition back and with what workforce support
- Ongoing challenges in aligning training for surge workforces with system demand and surge context
- The introduction of vaccine mandates reducing the available workforce, in addition to isolation requirements and border closures (detailed further below in this chapter)
- Continued high demand for additional staff with progressively reducing surge workforce availability, particularly as BAU returned, and PHOs were repealed.

Staff were trained early in the Response, particularly for ICU, and while many LHDs ensured their surge workforce were ready to respond at short notice with refresher training, this was difficult to maintain in

practice. We heard that some LHDs often had difficulties in attaining a surge workforce later when needed, despite them supplying many of their own staff for redeployment elsewhere earlier in the Response.

A lack of data availability and integration hampered existing surge workforce models and effective scenario planning for different workforces. Consequently, the system did not have data to rapidly design and fill new roles as they were required, such as drawing on other industries to support non-clinical demands.

Industrial instruments complicated flexibility

As mentioned in the above *Strengths*, it was heard from various stakeholders that existing industrial instruments restricted movement of staff, limiting the system to grow surge capacity rapidly. *'The award system isn't fit for purpose, which came under pressure and wasn't flexible or easy to manage. It's an existing weakness in BAU' - Ministry Stakeholder.*

Lessons learnt 43

The constantly evolving context of the Response and successive waves made workforce surge planning very challenging, centrally and locally. A short-term crisis model was not suitable for a long-term, evolving pandemic event and in future needs to move beyond a 'friends and families' model to one that is more suitable for long-term incidents. Future responses need to be enabled by new data integration and analytics that can support agility to respond to changing workforce pressures, workplace risks, workforce capability, and limitations particularly in regional and rural areas, as well as the adaptability to review policies during an emergency as required. Formalised relationships between LHDs for workforce surge are also needed to ensure consistency and flow of staff during an emergency. Some flexibility is needed in applying BAU employment instruments to meet pandemic related challenges and workforce pressures, whilst ensuring fairness in conditions.

Links to Recommendation 6.5: ***Prioritise consultation and planning to make NSW Health's emergency resourcing and surge workforce model more sustainable, from a 'family and friends' model to one that is more suitable for long-term incidents and responsive to workforce pressures, trends and opportunities. This would be assisted by maintaining capability for rapid onboarding and training.***

Cultural knowledge of Aboriginal health

Overall, the demands of the Response revealed the large gap of general capability across the workforce with cultural knowledge of Aboriginal health. One example is the limited cultural preparedness to work with Aboriginal people and communities during contact tracing. During the Wilcannia outbreak, there was limited support or information for contact tracers on how to best work with Aboriginal people, families, and the community. While this evolved and improved quickly through rapid training, it must be considered earlier in response planning. This type of rapid cultural awareness training should be part of system wide pandemic emergency preparedness but is also an important complement to existing mandatory cultural awareness training for NSW Health staff to boost broader cultural competency.

The Aboriginal Health workforce is in high demand, but has limited capacity

As detailed by the Public Health Response Debrief Report, staffing concurrent components of the response, such as support for cases, testing and vaccination, necessitated the redeployment of existing staff. Without any surge capacity, this meant that other important Aboriginal health programs were often left understaffed or without staff (e.g. domestic violence and maternal health programs). This challenge again highlights the need to invest in and expand the Aboriginal Health workforce across NSW, so the needs of Aboriginal people can be met on an ongoing basis and at times of crisis.

Despite these challenges, innovative solutions emerged to meet Response demands. As detailed in *Community Impact,* at Kimberwalli, and with central advocacy through CAH, Aboriginal Health Workers were rapidly trained to administer COVID-19 vaccines. While this came later in the vaccine rollout, it demonstrates the potential of

increasing the practice capability of workforce groups to be most impactful for their communities. In the future, the practice potential of Aboriginal Health Workers should be further considered, potentially to administer other vaccines like influenza.

Better supporting and equipping primary care providers in Aboriginal health
Noting the essential role played by primary care providers in the Response to Aboriginal communities, particularly in vaccination, there are gaps in cultural awareness and understanding of providing health services to Aboriginal people in the broader health system.

This was highlighted particularly in Aboriginal Medical Services that needed surge workforces, but the workforce available lacked the understanding and awareness required to deliver culturally safe care, creating new barriers to access. We heard that while additional funding for staff was welcomed by ACCHSs, staff were often not able to participate in broader ACCHS service delivery, due to their contracts limiting their work to COVID-19 vaccination. Given workforce scarcity, this type of limitation must be reassessed.

NSW Health should consider how to work with the Australian Government and other stakeholders to better equip frontline primary care providers like GPs and community pharmacists to deliver culturally appropriate care, both in an emergency response and in BAU.

Lessons learnt 44

Previously discussed in Community Impact, the Response acutely demonstrated the constraints of the current Aboriginal Health workforce.

Working to improve consistency in knowledge of Aboriginal health across the NSW Health workforce and the wider health workforce, particularly primary care providers, may reduce the pressure on the Aboriginal Health workforce to provide ongoing support and input across the system.

Links to Recommendation 6.5: ***Prioritise consultation and planning to make NSW Health's emergency resourcing and surge workforce model more sustainable, from a 'family and friends' model to one that is more suitable for long-term incidents and responsive to workforce pressures, trends and opportunities. This would be assisted by maintaining capability for rapid onboarding and training.***

Links to Action Area D.3: ***Expand the number and scope of practice of the Aboriginal Health workforce across NSW to make the most of their trusted relationships and expertise in caring for their communities.***

Links to Action Area E.6: ***Increase the consistent and widespread familiarity and skill of the workforce in Aboriginal health issues, including developing policy and programs in partnership with Aboriginal communities and leaders.***

Workforce planning

Need for a system-wide view of workforce capacity, skills and location linked to patient flow and outcomes to provide tactical and strategic workforce advice during the pandemic and in BAU
During a pandemic, the ability to deploy a capable workforce is influenced by the ability to anticipate changing demands and an up-to-date understanding of the system capability and capacity. From March 2020, MoH Workforce established four workstreams to address immediate surge, longer term catastrophic planning, wellbeing, and recovery planning. However, without a holistic, system-wide view of the workforce and their skills, NSW Health was challenged in identifying the right people for the right role, identify where skills (and skill gaps) sat across the system, and predict staffing needs and requirements in response to frequently changing pandemic restrictions and associated guidelines.

While the single payroll system helped to view staff across the state and reporting structures across the system, data was not consistently structured, nor integrated, across different organisational systems and prevented the tactical mapping of all available staff into a system-wide view. This is turn potentially inhibited tactical and strategic workforce hypotheses and scenarios to be tested to support effective response planning at the pace required.

Existing data systems did not enable workforce planning teams to link workforce data to patient flow, outcomes and other relevant information. This limited workforce planning teams' insight into the effectiveness of different workforce changes during the Response and how they influenced the patient journey, hampering ongoing strategic planning.

Lessons learnt 45

Earlier strategic and tactical workforce planning, enabled by integrated workforce data, would provide the system with more confidence and foresight on its capability to respond with workforce wellbeing in mind. The need for coordinated and integrated data is evident to enable broader system visibility and improve the ability to appropriately plan proactively to meet changing response needs. Incorporating visibility of what and where skills are located to rapidly identify skill needs/gaps such as intensive care experience would be helpful in future responses. This will need to combine key data currently held by NSW Health and the Pillar organisations and incorporate hypothesis planning to support future workforce and emergency response needs.

Links to Recommendation 6.1: ***Identify and integrate key workforce data with other NSW Health data systems and records across patient safety, patient flow, procurement, warehousing, stock management and other relevant domains to support tactical and strategic decisions locally and centrally.***

Links to Action Area D.1: ***Integrate workforce data, including human resource, rostering, learning and development and capability management, to inform tactical and strategic workforce planning, rostering, capability development of staff and emergency responses.***

Regional workforce

The amplification of system-wide issues in rural and regional LHDs was also felt in workforce planning and deployment. Challenges that were already present in rural and regional LHDs and subsequently put under increased pressure included high vacancy rates and staffing arrangements between LHDs and across borders.

With smaller workforces in general and high vacancy rates prior to COVID-19, rural and regional LHDs had little-to-no capacity to flex their workforce up and down to meet Response needs. Additionally, redeployment of regional health staff into metropolitan areas in the initial stages of the Response meant that those same LHDs were less equipped to tackle subsequent waves of COVID-19.

Delayed onset of COVID-19 in regional areas

The allocation of surge workforce has also disproportionately affected regional areas where the disease was not transmitted until later in 2021. When COVID-19 cases first increased in metropolitan LHDs, health staff were redeployed from rural and regional LHDs to assist, which left those regions short-staffed from furloughing and without access to an adequate surge workforce when their own COVID-19 burden increased. *'Rural and regional areas where access to alternative workforce supply is limited and small workforce numbers means the loss of just one or two workers adversely impacts workforce availability' - Ministry Stakeholder.*

Border closures had specific implications to staff's ability to deliver care

Regional areas rely heavily on agency locum, fly-in fly-out, and international workforces to deliver health services, as well as many health staff living on the other side of a border to where they work. Border closures

prevented people crossing from one site to another to provide or receive health care. In one LHD, over 400 health staff were affected. Stakeholders suggested an earlier mechanism to exclude medical staff from border restrictions could be considered in future.

ACCHSs across NSW experienced particularly extreme challenges with border closures, with a very limited pool of suitably experience professionals to draw from. Domestic fly-in fly-out staff, both medical and non-medical, and international medical staff were lost, increasing the pressure on existing staff in these services.

These issues also affected the ability of other agencies to access workforce, such as teachers. Stakeholders raised that without a clear exemption process, each movement of a teacher across jurisdictions required negotiation between state public health and education teams. NSW Health stakeholders noted that it was often quicker to understand and adapt healthcare arrangements across borders *'because it is our DNA, but the other agencies that required support we understood less of.'* For more detail on border closures and the exemptions process, see *Community Impact*.

PHUs were effective in regional areas despite resourcing challenges

The effects of unsustainable leadership structures and furloughing were also exacerbated in regional areas, where limited workforce capacity was a pre-existing challenge and internal redeployments were often required. This was particularly felt by PHUs who were already providing services for more than one LHD, and were unable to meet the demand for seven day-a-week coverage without staff working 'above and beyond' for long periods without a break. However, there was also *'recognition of the benefits of working across teams in the districts - new connections [were] formed across clinical and population health teams, small and larger hospitals, clinical and corporate services' – Rural and Regional LHD.*

Lessons learnt 46

The challenges outlined highlight the importance of the system needing to be better prepared and able to access emerging evidence on the risks and benefits of different approaches employed during the Response. This includes the need for:

- More proactive research to assess the impact and efficacy of furloughing and other workforce responses (***Recommendation 6.4*** discussed above in this chapter)
- Workforce responses that are fit for emergency purposes, established early and capably to minimise the need for re-engineering during a response (***Recommendation 6.5*** discussed above in this chapter)
- Understand the impacts of streamlining and enhanced flexibility in recruitment practices and working arrangements (***Recommendation 6.3*** discussed above in this chapter)
- Clear guidance accompanying workforce-related directives, including border closures for staff living across borders ***(Recommendation 6.2)***

Links to Action Area E.2: ***Debrief with border Governments, including Queensland, South Australia, Victoria, and the Australian Capital Territory on the operation of border closures and their impact of individuals, families, communities and the health workforce.***

- Sustainable workforce sharing arrangements between LHDs, particularly for PHUs

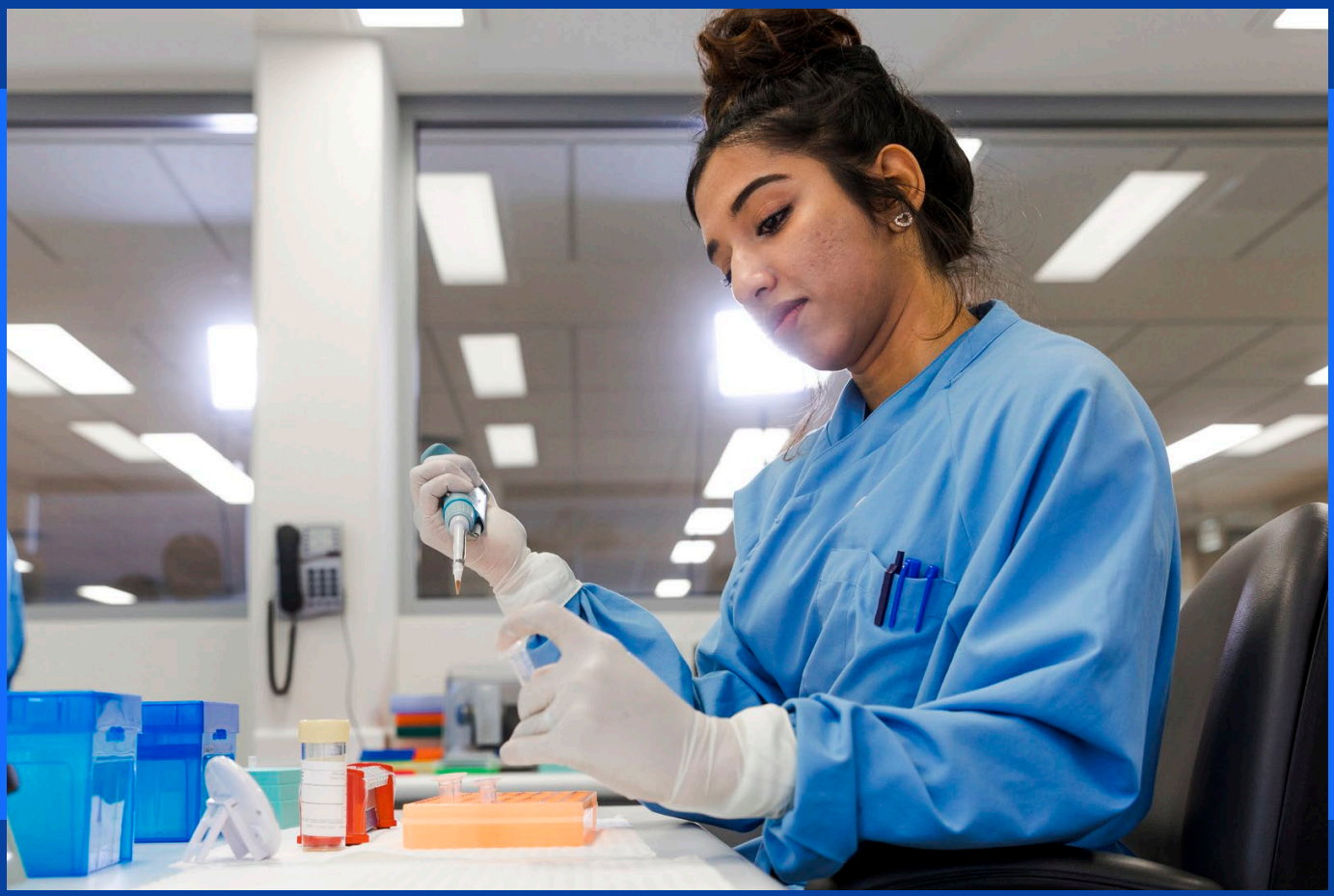
Links to Action Area D.6: ***Review the resourcing model for PHUs in regional LHDs to ensure capacity is available to address the needs of priority and vulnerable communities in emergency responses and key BAU activities.***

- Formalising partnerships or buddies between metropolitan and rural and regional LHDs (***Recommendation 2.5*** discussed in *Governance and Decision-making*).

Face Shield
Direct Splash Protection

Innovation and Technology

The following chapter considers the impact of technology in enabling virtual care and innovation through new and existing ICT infrastructure and lessons learnt on interoperability and accessibility.



Making connections through effective ICT systems was essential in a pandemic where keeping distance was a key part of IPC. The systems implemented throughout the Response provided a strong foundation for innovative models of care, data for decision-making, and key public health operations, such as vaccinations and testing. As illustrated in Figure 8, the system was able to do this by leveraging the existing investments into in-house expertise and prior investments in ICT infrastructure, which enabled the system to rollout new models of care, proactively use health data analytics in addressing system capacity, and enable flexible ways of working (such as working from home).

NSW Health was tested by the rapid deployment of staff, shift to virtual care, and need for integrated, near real-time information during the pandemic. The emergence of these types of demands highlighted gaps in the adequacy and maturity of some existing ICT systems and infrastructure. This led to impacts on staff workloads and ways of working, as well as priority populations' access to care. As highlighted in this chapter and the *Public Health Response Debrief Report*, in the face of these challenges, the system demonstrated significant in-house technical expertise and agility to efficiently recast and develop new technologies. While noted as a strength of the Response, there are opportunities to improve system-wide alignment on technology projects underway to avoid duplication of effort and streamline solutions for staff.

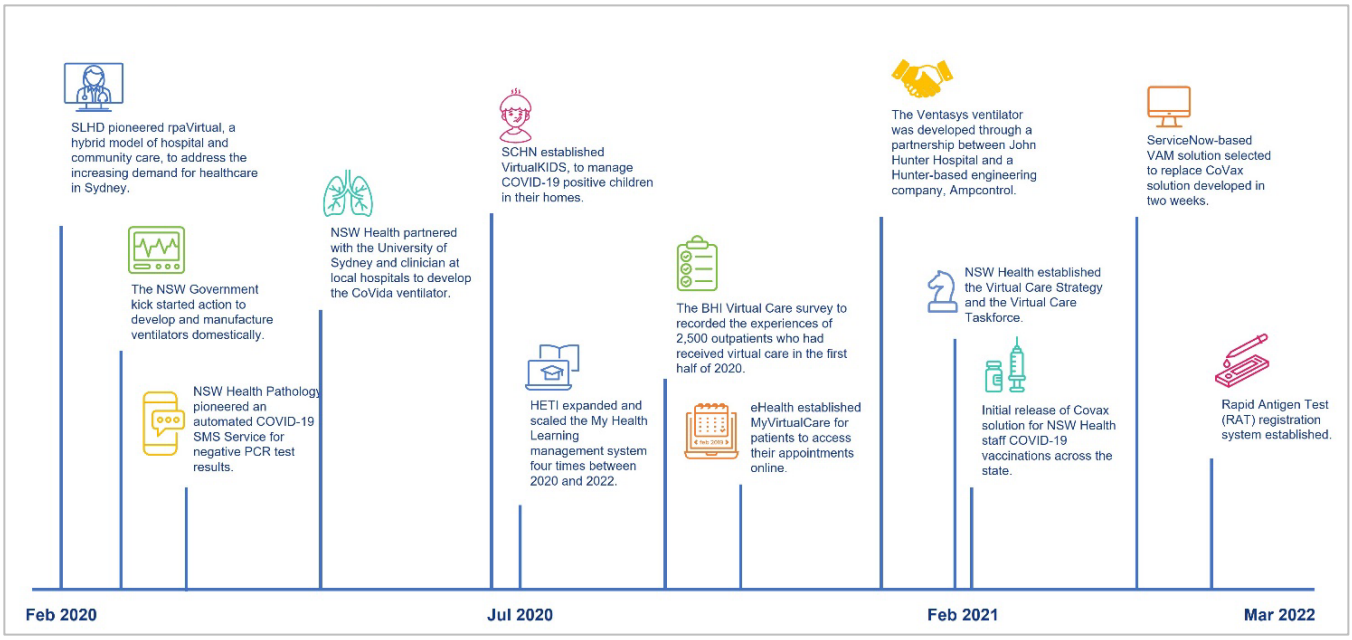


Figure 7 - Technological milestones achieved during the Response

Strengths

Virtual care

The ability to rapidly transition care to virtual methods of delivery was a key success factor of the Response, continuing BAU services and care to meet patient and community needs. Earlier investment by NSW Health in the MyVirtualCare platform allowed it to be rapidly scaled and adopted by the system, adding it to the suite of virtual care tools for health staff and patients, with Skype, Pexip and Microsoft Teams also available throughout the Response. Some of these are now being actively considered by LHDs to further advance these and incorporate as part of BAU.

Virtual care was a critical support for the clinical workforce, particularly given the capacity constraints, transmission risks, and public health advice that limited non-urgent in-person care delivery mechanisms. *'[There was a need] to limit face-to-face, [so they were] moving people to virtual care where they could. ... [This allowed them] to reframe their model of care for the future. ... Virtual care is important now' – Pillar Organisation.*

Access to virtual care made a significant difference for rural and regional LHDs; despite equity of access challenges, they were able to rely on this approach to address barriers to accessing primary health providers to manage positive COVID-19 cases in the community. Clinical supports were also more readily available from other parts of the health system, including rural and regional LHDs when able to be accessed virtually.

Technology supported communication, care delivery and information sharing

The use of technology allowed patients, carers and health personnel to remain connected across the state. virtualKIDs, a virtual care and communication platform led and implemented by Sydney Children's Hospitals Network, was noted to enable the effective flow of information across paediatric groups – supporting sharing of trends, options and access expertise for key operational decisions and proactive planning (see *Community Impact* for more detail). This type of tailored approach for children and young people also reinforced the need for specific parts of the community to be considered in how public health advice is best operationalised.

Many LHDs leveraged existing virtual care infrastructure and expanded their virtual models of care as part of their local responses. With Sydney LHD launching its new RPA Virtual Hospital (rpaVirtual) in early 2020, the groundwork was laid for virtual care to play a critical role in supporting its surge workforce in managing increased local activity resulting from the pandemic. This not only led to improved patient experiences, but also helped to reduce avoidable ED presentations and hospitalisations. Resulting from its success, rpaVirtual was nominated for, and won, the 2020 NSW Health *Excellence in Digital Innovation* Award.

Excellence in Digital Innovation

rpaVirtual: a new way of care

In other LHDs, as virtual models and uptake increased, leaders were required to source and provide health staff and community members with devices, such as iPads and laptops, to facilitate virtual care. These examples highlight progress toward, and opportunities to further integrate, virtual care as an effective and accessible option for ongoing care delivery in NSW. In doing so, it will be essential to continuously and proactively consider ways to support access to enabling technology and connectivity in disadvantaged communities where virtual care has the potential to enhance access and quality of services.

Virtual care was commended for enabling greater convenience, accessibility and time savings

The community impact of the transition to virtual care was largely positive. BHI's 2020 Virtual Care Survey supports this, indicating that, of the 2,500+ adult patients who had a virtual care outpatient appointment with a NSW public hospital in July and August 2020, 94% believed the virtual care they received helped them and nine in 10 patients rated their virtual care as 'very good' or 'good' (BHI 2021). There also appeared to be a correlation between the more virtual care appointments a patient had and their increased positivity about their overall experiences. The survey reported the benefits most frequently cited by patients were time savings, financial savings, more timely access to care, less time off work, convenience, and feeling at ease in their own home and surroundings (BHI 2021).

While some health staff acknowledged it was initially challenging to adapt to this new work arrangement, the reliance on virtual care as part of the Response was noted as helping to increase IT confidence and uptake in some local areas. It was also acknowledged to have improved accessibility of care for many people; *'the use of Telehealth was incredibly positive' – Health Sector Stakeholder.*

The Aboriginal community placed stronger emphasis on face-to-face consultations, ideally delivered by an Aboriginal Health Worker; however, recognised virtual care was convenient and provided greater access to services, with significant potential for increased uptake with more use (NSW Health 2022b). This was particularly the case in regional and remote areas.

CALD communities and people with disability also shared a strong desire for these services to be continued as part of BAU, with technical education and support tailored for community members.

NSW Health has used the momentum of virtual care practices gained through the pandemic to mobilise a Virtual Care Taskforce to explore and identify new virtual care pathways to form part of BAU, such as chronic diseases and respiratory illnesses like influenza (NSW Health 2022b). With stakeholders eager to see strong governance of this model of care, the CEC is also leading work to ensure quality and safety standards are embedded in day-to-day practice and virtual care is incorporated into existing clinical governance frameworks.

New and existing technologies

'The future of NSW Health is in large part digital ... human-centred design, deep and wide collaboration, and creativity and diversity are key to its success'

- Metropolitan LHD.

Long-term investments in ICT proved invaluable, with existing capability and infrastructure used to scale-up established technologies and rapidly design new systems targeted to meeting the evolving needs of the workforce and community. There is shared acknowledgement across the system of the critical role new and existing technology and enabling infrastructure played in supporting key elements, such as care in the community, vaccine management and remote monitoring.

Development and rollout of new technologies enabled flexible innovation
The Response was supported by the rapid development and rollout of innovative, flexible, and fit for purpose new technologies at a local and state level. For example, the RAT registration system was set-up in 12 days, and included registration capabilities and risk stratification by DCS through collaboration and support from ACI. Strong existing relationships with private organisations and universities were key to enabling the design and implementation of new technologies in short timeframes and with limited capacity during the Response, with genuine goodwill shared with private sector delivery and procurement partners. The importance of investing in these relationships as BAU is invaluable, recognising NSW Health's own expertise in ICT design, procurement and delivery, which enabled this type of collaboration to flourish.

Examples of key innovations of the Response include:

Vaccine Administration Management System (VAM)
VAM, a Finalist for *Keeping People Healthy* in the 2021 NSW Health Awards, is a digital system designed in partnership with ServiceNow to support the Response. Configured and implemented in just 14 business days, VAM enables the booking and management of mass vaccination appointments. The system was considered a 'game changer' for the vaccine rollout, with more than two million doses administered via VAM and four million vaccination records successfully uploaded to Services Australia's Australian Immunisation Register (AIR) through the system (eHealth 2022). *'[We] needed a self-service system. [We] didn't have something scalable, sustainable or extendable, so as change requests came through, we couldn't address those, including adding vaccination types and age groups' – Shared Services Agency.*

Noting that implementation of technology platforms often garners mixed views, constructive feedback about VAM recognised the nature of the system as a 'one-size-fits-all solution'. VAM was acknowledged by the Premier and received an Honourable Mention for the 2021 NSW Premier's Award. For more information on VAM, see *Case Study 3* below, and for details on the vaccine rollout, see *System Impact*.

Excellence in Digital Innovation
Honourable Mention: NSW Health's COVID-19 vaccination management systems

COVID-19 testing and SMS Results Service

In the very early stages of the Response, NSW Health Pathology efficiently established specialist diagnostic testing capability at dedicated laboratories and deployed new rapid testing platforms throughout rural and regional NSW. This enabled the state's testing rate to quickly become one of the highest in the world per capita (NSW Health Pathology 2020). Shortly after, NSW Health Pathology designed and established the COVID-19 SMS Results Service, which notified people in the community of their negative PCR test results. Positive test results were later built into the service, with messaging included on how to manage their condition and reduce the risk of transmission. *'[The] texts had to have information about where to get care – [yes], communicate the result, but make sure its accessible for patients; [that] they understood what the result means' - Shared Services Agency.*

Additionally, data on positive cases was integrated with other health systems to support contact tracing efforts. Prior to the SMS service, LHDs were responsible for notifying patients of their PCR results, with the introduction of the technology releasing critical health staff back to the frontline. It also reduced pressure on hospitals, call centres and laboratories across NSW, which people in the community would contact to follow-up their test results if they had not yet received them. By the end of June 2020, more than 2.4 million people had registered for the SMS service (NSW Health 2020c). The success of this innovative service won NSW Health Pathology the 2020 NSW Premier's *Putting the Customer at the Centre* Award.

Putting the Customer at the Centre

NSW Health Pathology's new COVID-19 SMS Result Service

Ventilators approved by the Therapeutic Goods Administration

Early in the pandemic, health leaders foresaw capacity challenges in ventilators required to manage the care of COVID-19 patients in hospitals, issuing a state-wide appeal for support from businesses. With global supply chains disrupted, Health Infrastructure NSW leveraged its existing contacts across industry to kick-start and accelerate innovation in response to the challenge. As a result, collaborative partnerships were forged, resulting in two ventilators being designed and approved by the Therapeutic Goods Administration for manufacturing:

- The CoVida ventilator, led by the University of Sydney, with clinicians at Westmead and Royal North Shore Hospitals
- Ventasys, developed by AmpControl with clinicians at John Hunter Hospital.

Use and scaling of existing technologies to meet emerging needs

In addition to these new technologies, the Response was supported by the system's utilisation and enhancement of existing ICT infrastructure, some of which were scaled to meet emerging local and state needs. Stakeholders noted that this helped to improve visibility and management of capacity across the system; *'moving to automated processes helped. ... We are getting better system-wide data' – Shared Services Agency.* This was made possible by NSW Government's long-term investments in Health's ICT capability, which reduced reliance on in-demand external vendors and enabled greater responsiveness to issues during the pandemic.

Sequencing the COVID-19 virus genome

In early February 2020, experts from NSW Health Pathology's state-of-the-art biosecurity P4 laboratory made a ground-breaking discovery, when they successfully grew the live COVID-19 virus from NSW patients, as opposed to synthetic materials (NSW Health 2020a). Within two weeks, NSW Health Pathology's Westmead laboratory had developed an in-house whole genome sequencing process for the virus, in collaboration with academics from the University of Sydney, soon followed by NSW Health Pathology's laboratories at Randwick (NSW Health Pathology 2020). *'From growing the live virus and sequencing its genome, to creating an SMS results service to notify the majority of negative results to patients within 24 to 48 hours, NSW Health Pathology has proved itself essential to protecting the health and safety of the people of NSW' – Elizabeth Koff, Former NSW Health Secretary.* The NSW Health Pathology's success saw them presented with the 2020 NSW Health *Keeping People Healthy* Award.

Keeping People Healthy Award

An Extraordinary Response to the Global COVID-19 Pandemic – NSW Health Pathology

The infrastructure and capability needed to achieve these advancements were enabled by NSW Government's 2018 investment of $2.4 million, which was used to establish the state's first public health pathogen genomics service (NSW Health 2020a).

Other noteworthy examples

While there are some examples captured in *Data and Information* showcasing instances when the system leveraged existing ICT infrastructure to support the Response, such as the PFP, some other noteworthy examples include:

- Extending the functionality within the electronic Medical Record (eMR) to support end-to-end workflows and care delivery to COVID-19 positive inpatients and outpatients
- Scaling of HETI's Learning Management System to support system-wide learning and development when face-to-face interactions were limited by public health directives; *'our existing training systems performed well, despite the extreme uptake in use - proves the value of upfront investments in capable, flexible systems' - Pillar Organisation*
- Extending the CEC's Quality Audit Reporting System (QARS) beyond its original use of helping LHDs audit and track quality and safety metrics at a local level. This enhancement created a system-wide view of critical medical stock volumes across the state, enabling efficient procurement where supply chains were constrained and spare stock was needed.

Lessons learnt 47

Technology-enabled innovation was developed across the system, throughout the Response to effectively address arising challenges. The numerous examples described here illustrate how digital technology will be core to the future of Health, with human-centred design, deep and wide collaboration, and creativity/diversity being key to its success. This Response has triggered a big uplift in human centricity and collaborative co-design for the delivery of digital solutions and related non-digital workflows – demonstrating the pace at which innovation can drive behavioural insights, systems design, and digital communications. Benefits included minimising resource burden and improving citizen experiences and convenience. Continuing the uplift of digital solutions will need to be supported by a consistent safety and quality governance system that is aligned with the appropriate national frameworks and processes.

Links to Action Area E.3: ***Ensure consistent safety and quality governance systems are in place to support the accelerated uptake of virtual care, aligning with national frameworks or processes as appropriate, including services delivered by government and non-government providers.***

Additionally, ICT infrastructure in rural and regional LHDs requires efficient prioritisation to enable equitable access to, and use of, these technologies, as well as effectively support the realisation of the eHealth Strategy for NSW Health and Virtual Care Strategy (discussed in more detail below in this chapter).

Links to Action Area E.4: ***Consider how to sustainably support access to enabling technology and connectivity in disadvantaged communities where virtual care has the potential to enhance access and quality of services.***

Case Study 3

VAM

Prior to COVID-19, vaccinations were entered into AIR; NSW Health did not have a system for booking and managing mass vaccination appointments, or a database for recording vaccinations at a state level (eHealth NSW 2022).

VAM was designed by eHealth NSW to fill this technological gap at a critical point in the

Response, providing clinicians, consumers and vaccination hubs with one of NSW Health's first single systems to manage the end-to-end vaccine administration management process and create a more streamlined, user-friendly experience.

'The eHealth NSW team has worked collaboratively with key stakeholders to provide a secure digital solution for bookings in record time to ensure the safe and timely rollout of the vaccination program in NSW. ... This is a significant achievement for eHealth NSW and the NSW Health system' - Simon James, eHealth NSW Executive Director, Customer Engagement and Services Transition.

Not only did eHealth NSW's work on VAM enable it to complete the first inter-jurisdictional system integrations between VAM and AIR, its efforts were also recognised through VAM's achievement as a Finalist for Keeping People Healthy in the 2021 NSW Health Awards and a Honourable Mention for the 2021 NSW Premier's Award.

Working from home

In compliance with PHOs, health staff who were not exempt from isolation rules were supported to work remotely. This challenged historical norms for leaders and health staff in working independently and together from remote locations, and required virtual touch-points to be put in place within teams to maintain connections and ongoing communication. It also required adaptations in the way some state-wide services were delivered during the pandemic, such as HETI's rollout of more virtual training solutions to maintain compliance with training requirements for new and existing health staff.

Benefits of hybrid working arrangements can transition to BAU

As in other industries, the shift to remote working during the pandemic has become a catalyst for longer-term change across the system. Rural and regional LHDs voiced their appreciation for the opportunities presented to them by remote working during the pandemic, noting improved connectivity, time efficiencies and collaboration as key outcomes; *'working from home has forced a shift, like for teams and virtual meetings – living out in the middle of nowhere, we used to have to travel to Sydney. That's not the case now. It's allowed a much more efficient use of our time and resources, and given us a stronger voice in meetings.'*

While this shift is welcomed in the LHDs, many health staff are unable to work from home. Transitioning the broader system to hybrid working arrangements must also acknowledge the limited flexibility available to parts of the workforce, and consider how flexibility for this workforce can be provided in ways that are meaningful to them to better support their wellbeing (see *Workforce Impact* for more information on workforce wellbeing and new ways of working).

Issues

ICT systems

Interoperability across different ICT systems impacted staff workload
Interoperability enables integration of different datasets across ICT systems. Its value in providing visibility of system-wide capacity and pressure is further discussed in *Data and Information.* Interoperability was seamless in some parts of the system and were more challenging in others. The PFP was one that enabled a system-wide view of patients, both in the private and public health system and has enabled effective private and public partnerships to deliver virtual care for patients, as well as effective triage across the system. *'A few private providers were able to provide telehealth services from across the state to provide virtual care to NSW, when locals were overwhelmed. They took 30-40% of the virtual care for the patients. ...The great thing was that we had the technology platform, so they could log in' - Ministry Stakeholder.*

Another example of where interoperability was needed, yet lacked, includes StaffLink's integration with procurement systems to provide insight into the demand and supply of PPE to support streamlined logistics and procurement. This particularly impacted work with PHNs, as well as within LHDs and SHNs. For example, stakeholders indicated they had to manually reconcile data due to the different ways in which it was captured across the ICT systems. This led to a diversion of staff's efforts in data cleansing and analysis, which added to their frustration given their workload demand and capacity constraints. There were also additional challenges associated with integrating the data across the different systems due to the use of different data sources and definitions (such as population estimates extrapolated from Census data at the federal level, compared to a hybrid average model used by LHDs) (see *Data and Information* for more detail on this issue).

Instances where new ICT systems were designed to address the same need reduced over the Response
When system-wide ICT solutions were non-existent or not developed in time to meet operational needs, LHDs developed and implemented new initiatives prior to, or in parallel with, these central initiatives. For example, an end-to-end vaccination booking system was developed by one LHD in parallel to eHealth NSW's design of VAM for the state. eHealth NSW's establishment of weekly meetings with Chief Information Officers across LHDs to align local and system-wide work was able to mitigate this issue over time. This collaboration highlights the importance of LHDs and system leaders being able to share their experiences, lessons learnt, and support with one another to streamline key activities.

Although this issue shows the strength of the system to efficiently respond to emerging needs, the benefit of having central visibility of systems in development to meet immediate local needs is evident. This requires supporting communication to minimise duplication, ensure that LHDs are informed of progress, and ongoing encouragement for the system to collaboratively share resources and expertise to build repeatable and scalable solutions.

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Accessibility

Regional and remote areas were limited by internet access

Limited internet coverage in regional areas of NSW meant that access to online care models was not always available. *'Tech issues in regional areas are still problematic. Wi-Fi is not that great [and] connectivity can be [a] problem … particularly if you are managing people at home. Not everyone uses phones and things like that either' - Rural and Regional LHD*. While only 64% of adults in regional areas have a connection to the NBN network, compared to 78% in metropolitan areas (ACMA 2022), virtual care was largely well-received by the community throughout the Response, with telehealth improving access to health care for a large proportion of people with a disability.

Accessibility was not consistent across priority populations

While everyone is entitled to the same level of care in the system, the rapidly changing nature of the Response meant that some gaps in access were only apparent once a system was delivered. For example, we heard that content in online vaccination booking systems was not always developed with accessibility front of mind, such as how to navigate the booking system and follow-up questionnaires. *'The assumption that everyone can find and use websites is a concern' - Health Sector Stakeholder.*

Stakeholders also acknowledged the difficulties faced by families from low socio-economic backgrounds who needed to make decisions on prioritising the use of limited internet access. This included the need to use any free wireless internet for a variety of different services during lockdowns, such as home, creating economic challenges for the low-socio-economic background households. *'[We] would engage with the system through telehealth, but [were] reluctant to waste their data' - Rural and Regional LHD.*

Considering ways to support access to enabling technology and connectivity in disadvantaged communities would be valuable as BAU and in future emergency responses, where virtual care has the potential to enhance access and quality of service. As noted earlier, community leaders must be involved in developing targeted approaches to improve accessibility, supported by appropriate cultural and quality and safety assurance.

Lessons learnt 48

Access to and use of ICT infrastructure in rural and regional LHDs and communities requires efficient prioritisation to enable equitable access to, and use of, these technologies, as well as effectively support the realisation of the eHealth Strategy for NSW Health and Virtual Care Strategy (discussed in more detail below in this chapter).

Links to Action Area E.4: ***Consider how to sustainably support access to enabling technology and connectivity in disadvantaged communities where virtual care has the potential to enhance access and quality of services.***

Data and Information

The following chapter considers the impact of real-time and integrated data analysis and lessons learnt on future data collection and data sharing to improve the consistency, availability and quality of data.

Access to and sharing of timely, accurate, consistent information and integrated data was consistently acknowledged to be critical throughout the Response. Data was used to inform effective decision-making, build confidence and transparency, enable monitoring, and guide risk assessments. Data inconsistencies related to quality, behaviours (for example, willingness to share data), legal restrictions and data lags reduced its relevance to support fast-paced decisions. Many stakeholders have called for new approaches to consolidate and transform epidemiological, system, workforce, community sentiment and public health data to support policy implementation and planning more meaningfully.

All stakeholders acknowledged and shared the frustration of accessing timely and accurate data. Challenges were experienced at all levels – within NSW Health, between NSW Government agencies, with Australian Government agencies and across the broader health system. This was improved in March 2020 by the introduction of a Public Health Order authorising government sector agencies and NSW Ministers to collect and share information where it was deemed necessary (NSW Government 2020a). Though the Response uncovered gaps in existing datasets and barriers to data sharing, it also provided lessons for BAU and future emergencies on the importance of formalising data sharing arrangements and improving data collection methods.

Strengths

Use of existing data

Timely and accessible data was critical throughout the Response to provide meaningful and actionable insights. Investments in data systems and infrastructure over the past 20 years across NSW Health enabled considerable, but not all, data to be integrated across different systems meaningfully, expanding functionality to better serve the needs of the Response. Integrated data analytics was vital for informing key decisions, risk assessment and operational responses, highlighting the importance of early engagement with eHealth NSW and key system designers during problem-solving stages. *'It made us rethink the data we had access to and how to use it differently' - Pillar Organisation.*

The *Public Health Response Debrief Report* provides extensive detail and commentary about how existing data and information systems adapted, expanded or were significantly reformed to effectively supported the Response. Its findings and recommendations are complementary to those following.

The Patient Flow Portal demonstrated the power of integrated data to support ongoing care and forward decision-making

The PFP is an exemplar central dashboard management tool, supporting improved visibility across the health system. Originally built in 2015, the PFP was supercharged as part of the Response to integrate data into a dashboard including real-time COVID-19 cases, triage categories, waiting times, discharge information, and ambulance movements, ICU bed capacity and ED presentations. The integration of CCiC patients into the PFP was viewed to be a *'game changer'*, allowing clinical teams to holistically view their patient cohort, identify risk profiles, forward plan capacity needs, and effectively allocate resources.

The PFP also continued to improve over time based on ideas and system needs. Functionality evolved to include drill-downs with more fields, including Aboriginality, aged care, and disability status to give LHDs more information about how their community was doing. It also extended to include a statewide view of capacity and room availability in the Special Health Accommodation and Community Support Accommodation, further supporting local decisions.

Later in the Response, the PFP was further extended to include RAT registration and results where existing patient information was present, linked with the AIR, and included information about chronic disease and admission history to inform an integrated risk assessment. *'The depth and granularity of available patient information and data dashboard views is a direct result of 'COVID-19' - Ministry Stakeholder.*

Further, PFP's ability to show the total patient journey was able to address the gap in the existing system for monitoring and reporting infectious diseases, Notifiable Conditions Information System (NCIMS). NCIMS could not accommodate the high volume of COVID-19 cases, leading to an initial delay in tracking patients. Several short-term system enhancements were made to address this, including additional servers and modifying current services to increase capacity, as well as the release of NEGCOV to capture and store negative COVID-19 test results. Additionally, the usefulness of data captured by NCIMS increased through the linkages with other systems, such as AIR and the PFP, which enhanced decision-making by connecting the public health surveillance data and clinical information. Overall, NCIMS provided valuable lessons learnt that the system needs to be future-proofed and minimise single person risk in the administration of the system. As a result, a longer-term, fit for purpose new notifiable infectious disease information system, SIGNAL, is currently in development (discussed in more detail in the *Public Health Response Debrief Report*).

Given its success, Health should continue to enhance the PFP as the central system management dashboard, as well as investigate potential opportunities to better integrate patient data across different health care settings and providers, and provide more granular insights into patients with high care needs.

Lessons learnt 49

Continuation of integrated system, such as the PFP, will continue to provide value to provide insights for patient outcomes, particularly also for priority groups and vulnerable communities.

Links to Action Area B.5: ***Continue to enhance the PFP as the central NSW Health system management dashboard to support more integrated care across key service interfaces. This could potentially provide better coordination of service for Aboriginal people, and greater insights into priority and vulnerable communities, including CALD communities and people living with disability in community settings.***

Predictive analytics and modelling throughout the Response

Health rapidly improved its capability in advanced analytics and modelling throughout the Response. Predictive analytics was used to support ICU and ambulance demand management activities (discussed in more detail below in this chapter). *'The potential of modelling was unlocked during COVID, not just to know cases or hospital bed spaces, but to answer 'what if' questions' - Pillar Organisation.* Consolidating data improved visibility across the system to better pre-empt demand and support evidence-based decision-making.

Health's Susceptible-Exposed-Infected-Quarantined-Removed (SEIQR) model supported real-time demand management, modelling how the system would be impacted by the spread of COVID-19 under the different epidemiological scenarios. Developed with universities and other data experts, the model gave Health analytical insights that proved critical to understand and plan for current and future scenarios, particularly how the system would respond under increased demand for intensive care beds. *'There has not been modelling like this before and it was integral to the success of the system. As input changed, so did the output' - Ministry Stakeholder.*

Integrated data analytics is vital in all key decisions, risk assessment and operational responses, and engaging key system designers and implementation experts such as eHealth NSW at the problem-solving stage of a response would only improve long-term data use and application. As mentioned in *Workforce Impact,* stakeholders saw value in future integration of workforce data with patient flow, experience and outcomes information to improve the system's ability to provide tactical and strategic workforce advice during the pandemic and in BAU.

Surveillance data use

Data was also used differently for surveillance purposes to build a better understanding of transmission trends and to help pre-empt demand on the system. We heard how the system's ability to process and translate data

into relevant insights was very valuable; for example, how NSW Health Pathology data and virus genomics was innovatively used to map the spread of the disease within the communities.

NSW Ambulance also effectively used surveillance data to predict the daily load of patients up to 11 days in advance. As the modelling matured, it enabled the system to prepare for the expected demand as real-time data was feeding into the demand prediction; *'we did some fantastic things with the data we were accumulating...had emerging infectious disease surveillance in control centre. ... By the end, we could predict what the daily load of patients was going to be in 11 days' time from the numbers announced today. Particularly with delta and alpha waves, day 9 was the worst day for people, but day 11 they were ringing NSW Ambulance'.* Further, NSW Health shared these insights and expertise with Victoria to support their response during the Delta outbreak.

The CIU took a frank and objective approach to evidence gathering and evaluation

Real-time data and information sharing were critical to inform decision-making throughout the Response, supported by key structures like the CIU and its development of the COVID-19 Risk Monitoring Dashboard. We heard from across the system the value of the CIU's evidence briefs and digests to cut-through the ballooning local and international literature and provide objective evidence and insights. Established early in the Response to guide complex health system responses and public health decision-making, CIU made complex information into *'digestible chunks meaningful for decision-makers.'*

For example, to complement the CEC's *COVID-19 Infection Prevention and Control Response and Escalation Framework*, the CIU designed, implemented and maintained the COVID-19 Risk Monitoring Dashboard to inform and manage transmission risk in public health settings during the Response (CEC 2022). The COVID-19 Risk Monitoring Dashboard enabled the Risk Escalation Panel to holistically use data to inform and manage risks during the Response. The dashboard brought together data on cases, clusters, vaccination rates, and the impact of COVID-19 on the workforce to produce weekly reports and enabled the Risk Escalation Panel to examine it on an ongoing basis to determine the appropriate risk rating to guide the Response. It also served the purpose to communicate the level of risk with transparency and provided predictability to the workforce and the public, to help build confidence of the decisions made, as discussed in *Communications and Engagement*.

There is a risk that the structures, relationships, and ways of working that delivered so much value to the Response will be difficult to re-establish once disbanded. This is particularly relevant in the way CIU established and leveraged international networks to gain intelligence and real-time insights of the experience of other health systems. Much of this activity comes down to long established relationships between senior leaders. However, the system should closely consider how the CIU can continue to add value to BAU operations, particularly in informing more strategic and flagship health issues and system-wide challenges with these internal and international networks of experts. This would help to capitalise the value of data sharing which were evident throughout the Response and support mitigating future aversion to data sharing as settings revert to BAU.

Data sharing arrangements

Shared data informed tailored and timely communication, decisions and local responses

> *'A government sector agency or a NSW Minister [the first agency] is authorised to collect or use information from, or disclose information to, a related agency if the first agency considers it necessary to do so for the purposes of protecting the health or welfare of members of the public during the COVID-19 pandemic'*
>
> *- Government Gazette of the State of New South Wales Number 65, NSW Government, 2020.*

The importance of sharing data across the system and across government was widely acknowledged, and the PHO made in early 2020 (shown in the above extract), was a significant lever for facilitating access to data and information across government.

Amongst other opportunities, it enabled Health to share granular data to inform and assess vaccine uptake and support tailoring vaccination strategies to the needs of populations. *'[We] could demonstrate which regions were falling behind, community housing vaccination rates, this helped to focus attention to drive vaccination rates...got data on children of out-of-home care...had foster parents who were slow to get vaccinated or were anti vax - this data was helpful for tailoring the Response. This data was provided from the central health units' - NSW Government Agency.*

The sharing of data enabled across government by the PHO, particularly between Health, NSW Police, DCS and DCJ, both strengthened the integration of responses, and deepened relationships between agencies.

- *'A turning point was [partner agency] seeing the value of the data and strategic conversations happening, and its relevance to local operations' – Ministry Stakeholder.*
- *'We hadn't realised what we could get, what was available – we didn't fully understand the possibilities' – NSW Government Agency.*

Another example of cross-government data sharing supporting local decision-making was seen in the implementation of the NSW Suicide Monitoring System, covered in more detail in *Community Impact*.

Taking a customer approach to data and information decisions proved helpful

The value of the partnership between Health and DCS is detailed in a number areas of this report, and discussed in detail under *Communications and Engagement*. Overall, Health should maintain and expand collaboration with DCS for consumer insights and other key data that support service delivery, developing and delivering better messages for the community, and supporting future emergency responses. This type of collaboration is naturally focused around the consumer; their needs, language background, literacy level, or other demographic indicators. DCS data from social media platforms, private sector partners and other sources provided invaluable intelligence to Health in making information and communications nuanced and targeted.

Data predictability and accessibility is also important. Stakeholders raised how Health's regular guidance and updates to DoE were communicated through a single point of contact, providing clarity, and reducing duplication, though it took some time for information sharing to take place. This was important as DoE was working hard to mitigate the operational impacts on schools of the changing advice as new evidence emerged.

Embedding whole-of-government data sharing (including Australian Government health and social care data) to drive ongoing cross-government collaboration is a natural evolution to the success demonstrated through the Response. While appropriate privacy and protection protocols will be necessary, there is boundless potential to embed the more intelligent use of information across agencies to provide better, more informed, and more customised health services and support to the people of NSW.

Embedding research into the Response

Embedding research throughout the Response at the outset, including the way data and information is collected, is critical to make sure the system continuously learns. Also detailed in the *Public Health Response Debrief Report*, many parts of the system commissioned research at the outset of the Response to address both known and unknown knowledge gaps. Recognising the need for expediency, one metropolitan LHD pulled together a research team, developed a rapid approvals process and fast-tracked approval for COVID-19 related research in under a week, to ensure evidence could rapidly inform practice. This type of approach is important both at a local level and system-wide, to gather assessments and evaluations of the efficacy of various response measures to inform future response measures, including sentiment data.

Lessons learnt 50

New and better integrated data is required to support whole-of-system intelligence and responses in future. Expediting investigation and implementation of measures to integrate data systems and records is warranted and should be considered across workforce, patient safety, patient flow, procurement, warehousing, stock management domains to support readiness and broader system efficacy and efficiency (discussed in more detail below and in *Workforce Impact*).

Links to Action Area B.7: ***Integrate NSW Health data systems and records across workforce, patient safety, patient flow, procurement, warehousing, stock management domains to support tactical and strategic decisions locally and centrally.***

Across the system, investigating how to improve sharing of data between NSW Health services and authorised community services, to support transitions of care should be explored as BAU. For example, there are many benefits to re-establishing protocols between the Justice Health and Forensic Mental Health Network and primary care providers to facilitate transitions from justice facilities back to the community. These improvements should be considered as part of BAU and within the context of a response.

Links to Recommendation 3.2: ***Facilitate sharing of granular data with key community partners in planning and delivering services to all priority groups and vulnerable communities, given the potential health benefits. Prioritise hard-to-reach communities, noting the particular challenges relating to people with disability.***

Links to Action Area B.4: ***In close consultation with communities, consider how to better collect and use key data within and between governments that supports better services for priority groups and vulnerable communities, including but not limited to elderly, people with disability, new migrants, CALD communities, and other important vulnerable communities, noting the benefits of the PHO in facilitating this sharing in NSW.***

Links to Action Area B.6: ***Build the NSW Health workforce's long term capacity and capability to better use, integrate, and respond to data and information to inform decisions. This capacity, capability and community should be widespread across NSW Health, clinical and non-clinical roles.***

Issues

Data quality

Consistent data availability and quality was a challenge
Data gaps became evident as the Response progressed. Data such as stock inventory (for PPE, ventilators, ICU beds and drugs), workforce data (staff vacancy and furloughing) were missing, hampering speed of response and decisions making.

The Response exposed the urgent need to improve stock management and procurement data across the system at all levels, and this is already underway. Stakeholders raised that the limited stock inventory data in turn limited their ability to view stock availability in real time, making decision-making around procurement difficult and requiring extensive manual data collection by the already stretched workforce. This was expressed by nearly all LHDs; *'[we did] a lot of manual counting, ventilators, ICU beds/patients. This became burdensome and use of beds and equipment was different across Districts [as seen in the PFP] - repetition in counting was seen' – Metropolitan LHD.*

There was also mixed understanding in the data that needed to be collected; *'counting of beds was different [some were ED accessible beds] - the system increased the amount of work. ... There was a demand for information, but the wrong type of information was provided' - Metropolitan LHD.*

As the data collection was manual in nature, it could not provide an accurate view of the stock availability at the time and decisions were made based on lagged data. *'Real-time data was seldom real time and that led to some issues' - Metropolitan LHD.*

Prioritising data collection activities
Many across the system raised that there was ambiguity about what was urgent and what was important. Further, the effort and value return on collecting the data was often questioned, as no output or analysis was returned on providing it. We heard that the reporting burden wore down the patience of many NSW Health organisations, negatively impacting their engagement and requiring a heavy diversion of resources. *'[There was a] bit of an obsession with reporting - so much wasn't practically useful' – NSW Health organisation.* This issue extended to practice around meetings; *'[there was a] ridiculous meeting burden - no assistance offered, just an information and reporting vortex' – Metropolitan LHD.*

These insights demonstrate the importance of clear communication on the purpose and use of data collection, and to acknowledge the benefits in providing feedback on its value in shaping responses. This is particularly important when the resources invested in collection are high, and the requirements are described as urgent.

Gaps in system-wide workforce data limited planning
As discussed in *Workforce Impact,* there is a critical gap in reliable, system-wide workforce data that is useful for tactical and strategic decision-making. Reflections were made by stakeholders that the various gaps in workforce data significantly impacted their understanding of the workforce's availability, capability, health and wellbeing throughout the Response. This resulted in restricted scope to provide tactical and strategic workforce responses both locally and system-wide – particularly important in prolonged incidents.

For example, we heard how the inability to efficiently capture personnel exposure to COVID-19 affected visibility of who was furloughed, with a Pillar organisation noting, *'this is not something that is necessarily pandemic-specific. Infection control had been dealing with it for years, [and handling it] on a broad scale when you don't have a good system, particularly electronic; it gets very difficult and inefficient'.* A metropolitan LHD also shared their frustration and burden of the *'very complex staff furloughing reporting [that] took a whole person to do, all day.'*

Data on workforce capacity developed progressively and was useful for LHDs. Despite limited data being available centrally for LHDs to understand staff wellbeing and morale, LHDs were able to run their own

workforce wellbeing checks as needed. While various approaches to gather information about workforce wellbeing were taken throughout the Response, a more systematic approach to collecting and analysing this information is needed, rather than a reliance on anecdotes, as discussed earlier. In general, it was acknowledged that the focus on workforce health and wellbeing was something that needed to be embedded in BAU, with greater prominence provided in emergency plans to the contemporary and necessary data and action that may be deployed to assist staff in prolonged incidents.

As a priority, Health should investigate how to enhance and integrate human resources, recruitment, and rostering platforms to give managers, facilities, LHDs and the system clear insights on staff capability, availability, and health and wellbeing. While data on workforce capacity gradually developed with progressively more access by LHDs, it is currently still unable to drive behaviour, insights, and real time responses.

There is substantial opportunity in integrating workforce data with patient experience, patient outcomes, patient flow, and financial performance data. This type of widespread integration can enable analysis of whole-of-system impacts of workforce responses, and inform discussions on workforce supply, capability, training, and future models of care.

Lessons learnt 51

Several opportunities exist with integrating and enhancing workforce-related data:

- Integration of workforce data with patient experience, patient outcomes and financial performance data would enable analysis of the performance of the system from workforce response, and better support tactical and strategic workforce planning and response based on the real-time data of the impact of the responses
- Investigating how to enhance and integrate human resources, recruitment, and rostering platforms to provide managers, facilities, LHDs and the system with clear insights about staff capability, availability, and wellbeing/morale should be given priority
- The Response highlighted limitations in staff experience and sentiment data (in real time), resulting on a heavier reliance on anecdotal information and/or primarily sourced through unions and colleges. NSW would benefit in developing its own data source on staff experiences.

(***Recommendation 6.1*** and ***Action Area D.1*** discussed in *Workforce Impact*).

Improved integration and alignment of data to improve accuracy of information

Stakeholders raised that many data issues could be mitigated by improved integration and alignment between Australian and State Government data collections and specifications. One example is the different assumptions used by NSW versus the Australian Government to estimate local populations, leading to inconsistent advice about vaccination rates, both in the general population and for priority communities.

One metropolitan LHD expressed that an agreed single source of COVID-19 case data would have been helpful to align coordination efforts between the central Public Health team and the LHD in tracking the number of COVID-19 positive cases in the local area and match it with patient's health outcome and care required; *'one of the other challenges between the PH unit and LHD was different info and data. The number of active cases, we were operating off different lists, different data was challenging at times. ... We had three separate lists, who was active patients of the care, who was under PH list, and who were in hospitals.'*

Changes are required to establish faster and more practical data sharing between NSW and the Australian Government to support BAU and emergency management responses, including trigger clauses in legislation if appropriate. While data sharing is a known objective of many intergovernmental agreements and reform initiatives, the urgency and value to be gained is clearer now more than ever. This work should also include pre-agreed data sharing protocols with the Australian Government and key NGO and community partners. This type of practice is useful not only for a pandemic response, but for any type of emergency response, or indeed, BAU.

Lessons learnt 52

There is a need to pre-agree data sharing protocols between the State and Australian Government, as well as enabling the NGOs and community partners to access these for both BAU and during an emergency management response to allow for timely data sharing to inform national and local responses. (***Recommendation 3.2*** discussed above in this chapter).

Links to Recommendation 3.1: ***Review data governance structures and systems to eliminate data and information flow barriers within, into and out of Health in an emergency response to ensure it is timely, available and usable. Overall preparedness would be enhanced by ongoing data sharing with partner agencies, including access to key Australian Government health and social data. Pre-agreed data sharing in emergency management needs to be prioritised in the interim.***

Links to Action Area B.1: ***Review data governance structures and systems to eliminate data and information flow barriers across NSW Health to ensure it is timely, useful and available to inform decisions.***

Links to Action Area B.2: ***Work with the Australian Government to establish faster and more practical data sharing agreements to support strategic decision-making, including trigger clauses in legislation if appropriate.***

Increased granularity of data is needed to support targeted policies

Though data became progressively available, delays in accessing accurate granular data at the local level and by priority and vulnerability impacted local and system-wide coordination. As a result, the system had limited visibility of where high risk and vulnerable people were, the support they needed or how best to assist them. An inclusive discussion is required between disability care providers, partner agencies, primary care providers and the disability community to rectify this. One PHN expressed that *'...long time to get data on proper vaccinations, potential rate - wanted it down to LGA level to target vulnerable communities. Here is some money to target vulnerable communities for PHNs and LHDs separately but that really wasn't coordinated at all or aligned, lack of coordination of on the ground initiatives from different areas.'*

One NSW government agency also echoed the missed opportunity in delivering communication and community outreach for vaccination and contact tracing due to lack of access to the granular data required; *'... we didn't know who was testing, so we couldn't focus our messaging, didn't know if people were getting the messaging, didn't know who was testing positive, the data was 1,600 cases - 900 were unknown'.* While data eventually became available at the local level (by LGA and postcode), stakeholders highlighted the benefits of having it from the outset. A PHN expressed that *'... know where the areas are so we can specifically work on those communities and pockets, being able to have by postcode so you can focus on those areas, if it was there at the beginning.'*

In addition to accessing existing granular data, the Response also highlights opportunity to further improve this granularity for priority groups and vulnerable communities; *'... the granular level of information that is captured is insufficient, ethnicity and language wasn't asked and didn't provide the level of info even if we could access it' - NSW Government Agency.*

Lack of consistent collection of Aboriginality made data use challenging

Any data gaps in public health systems prior to an emergency will only be amplified during an urgent response. Noting this, the data landscape for Aboriginal populations during the Response was

extremely challenging. CAH was closely involved in efforts to collect and report data centrally to drive targeted action and communication strategies for Aboriginal people across NSW. To do this, CAH liaised with data custodians so data on cases by LHD, mortality, and vaccination rates for Aboriginal people was available. Some of the key products include:

- Surveillance data, including cases in Aboriginal people by LHD, and Aboriginal COVID-19 deaths
- Distribution of Aboriginal vaccination data to AHUs and PHUs in LHDs, later included on the Vaccination Dashboard distributed to LHD and other government stakeholders
- Preparation of Pillar 8 vaccination reporting (incl. collation of vax clinic activities from LHDs with LGAs of concern), for cross-government collaboration.

The work of many internal data analysts and experts within NSW Health in disaggregating a range of different datasets by Aboriginality was acknowledged. We heard that often these requests were successful due to existing relationships, rather than an embedded understanding of why that data was important from an Aboriginal perspective, or a pre-agreement that that type of analysis was needed.

Data sharing between the Australian Government and States was cumbersome, often due to the delineation of data ownership and the terms of use of that data. Often data for Aboriginal populations was seen as an added extra, so it wasn't produced readily, requiring further processing by downstream teams within NSW Health, adding to their workload. In turn, these challenges impacted how easily data could flow out to inform local response strategies, communications and decision-making, meaning some local service providers found it extremely difficult to access additional resources they needed in a timely way.

Systems, structures, and processes that support this work are important to make sure these things happen regardless of who asks for it. One NSW Health organisation highlighted how the delineation of data ownership impacted their ability to access data at the right level of granularity; *'[the] data belonged to [the] Australian Government, issues around what to access and what to use it for. … The data team advocated for us to get it, one issue, but also issue where data for Aboriginal populations is seen as an added extra, so teasing out for Aboriginal people was an extra burden of work.'*

Data sharing rules were also encountered in NSW Health sharing data with partner agencies like DCS. This had a particular impact in developing and implementing targeting communication for Aboriginal communities.

During the vaccine rollout, the power of data was clear. CAH identified that general practices and community pharmacies were high-volume/low-barrier sites for Aboriginal people to get a vaccine, and so CAH developed an awareness campaign and support materials for practitioners in each sector. Lack of data led some local service providers to believe their vaccination rate was higher than it was. When data was available and locally relevant, LGA-specific data informed strategies and decisions specific to local communities, bringing power to conversations that reminded these highly accessible vaccine providers how important it was and how many Aboriginal people were in their community.

Data privacy and confidentiality is critical in BAU and during emergency responses. As previously noted, around 70% of Aboriginal people in NSW do not access care from an ACCHS or AMS. With this in mind, decisions on data sharing with ACCHSs or AMSs must be made very carefully in consultation with the people involved, to ensure it balances the needs and wishes of individuals as well as the potential benefits to community safety.

There is an opportunity here to work with the Aboriginal community, everyone who provides health services to Aboriginal people, and data custodians to consider how best to standardise the collection of data to inform BAU service planning and delivery, as well as emergency responses.

Lessons learnt 53

All systems developed for use in a pandemic must be designed to be equitable and meet Aboriginal population needs without later add-ons. Building data granularity and consistent collection of key fields like

Aboriginality into existing integrated data systems are critical to serve different parts of the NSW community effectively. This requires working closely with Aboriginal leaders and community partners to enable appropriate and agreed data flow between different systems.

Links to Recommendation 3.3: ***Work with the Aboriginal community and vulnerable communities to consider how best to collect and use data during a pandemic emergency response, including ensuring all data systems used in a pandemic are designed to be equitable and meet population needs. This should be done in consultation with communities, peak bodies, partner agencies, service providers and data custodians to inform and enable responsive, locally informed emergency responses, while respecting privacy.***

Links to Action Area B.3: ***Review data governance structures and systems to eliminate data and information flow barriers across NSW Health to ensure it is timely, useful and available to inform decisions.***

Links to Action Area B.3: ***In close consultation with Aboriginal leaders and communities, consider how the system should improve the way it collects and uses data to support services for Aboriginal people. This could include sharing data more openly and easily with healthcare providers to better inform, plan and coordinate delivery of services.***

Links to Action Area B.5: ***Continue to enhance the PFP as the central NSW Health system management dashboard to support more integrated care across key service interfaces. This could potentially provide greater insights into priority groups and vulnerable communities, including Aboriginal communities, CALD communities and people living with disability in community settings.***

Data access

Delayed data access between the Australian and State Governments and with community partners
The challenges experienced in accessing relevant data, such as those detailed above concerning access to federal and state data, highlighted some impediments in data sharing. We heard that data exchange within the system and across governments was useful, although activation of data sharing arrangements would beneficial if actioned earlier. *'[There were] restrictions to the circulation of data; they started to share existing data but they had it the whole time. The data sharing relationships that are in place [need] to be activated earlier [rather] than later' - NSW Government Agency.*

Supporting this need for formalised data sharing arrangements, the lessons learned from Pillar 5 of the *Delta MicroStrategy* found that: '*federal and state issues around delivery of service and data sharing need to be resolved as a matter of priority. Stakeholders suggested a standing Memorandum of Understanding around data sharing and information exchange, with protocols that can be activated in times of emergency.'*

While the Response has paved the way for future responses to better prioritise and coordinate tactical, operational and strategic data points, there are gaps. It was consistently raised that work is still required to collect, use and share information about priority groups and vulnerable communities. This would also benefit care for these populations in BAU, particularly for chronic disease management.

On 14 October 2022, the PHO provisions related to cross-agency information sharing were repealed, and this is already impacting the coordination of services to vulnerable communities. As a priority, an approach to support ongoing information sharing between service agencies is needed; a consent-based model will likely be the most appropriate.

Sharing data with key community partners like GPs and ACCHSs led to significant improvements in pandemic planning and community-informed responses. However, we heard from many service providers that they simply could not get access to the information they needed about their communities fast enough to respond

effectively, including infection rates, positive cases, vaccination statistics, and other epidemiological information.

Structural and behavioural impediments between governments and government agencies, including interoperability between systems

The delays highlighted the impediments of data sharing between Australian Government and NSW. Many stakeholders shared their views of the structural impediments in unclear data ownership, and behavioural impediments to data sharing as a risk mitigation strategy.

There were also issues regarding sharing data between NSW and Australian Government entities, including PHNs and LHDs. PHNs were not given direct access to LHD information, and the information was not cross-matched with Australian Government information, making it increasingly laborious for the PHN to pool 26 reports into one to avoid discrepancies between the two datasets. Both PHNs and LHDs shared challenges in accessing Australian Government data.

This also highlighted the need to improve interoperability across the different ICT systems, particularly between LHD/SHNs and PHNs. The example above highlighted the additional efforts required to manually reconcile patient groups due to different ways the different systems capture patient data. Though this connection was eventually made to work with NSW Health to support the vaccination response, these types of issues should be reasonably foreseen and resolved ahead of time; *'we only got CALD data at the end of last year, not regular it was sporadic, now share it with the local vaccination team that can be mobilised, working closely still with LHD to target those populations' - PHN.*

Better data flow to support transitions of care

Improving data sharing to support smoother transitions of care is not a new idea, but stakeholders acknowledged its impact on individuals, the health system and partner agencies during the Response. For example, data about people being released from prison during the Response would have assisted Health and housing services to plan and prepare for primary care and accommodation needs.

Health should investigate how to improve BAU sharing of data between NSW Health services, partner agencies and authorised community services (including AMSs/ACCHSs) to support transitions between Government agencies. Protocols to share information about individuals with a relevant health service or community leader ahead of transition (for example, prison release) should be established. This would support better outcomes for patients in BAU, as well as better outcomes for communities during a pandemic.

Structural and behavioural impediments to sharing data within NSW Health

Severe and significant challenges to data flow and access within NSW Health were raised consistently, including between key response governance structures, existing Ministry divisions, and a range of data custodians and owners. This impacted the ability of leaders to make informed and timely decisions, particularly early in the Response.

Even after the introduction of the March 2020 PHO data sharing mandate, we heard that a general reluctance to share data within NSW Health remained, signalling an underlying culture of data protectionism that needs to be addressed by health leaders. The value in doing so is clear and extends to how central structures can be more open with the system, particularly clinical leaders, with the data and information required to inform decisions, including how public health advice decisions were made. Stakeholders consistently raised their frustration in a lack of openness here (noting the challenge associated with being able to disclose Cabinet-confident information); this explains, to a great extent, the popularity of the Risk Monitoring Dashboard with clinicians and also the media, as near real-time, detailed information that was not commonly available elsewhere. However, we also heard consistently that the system was more transparent than ever before, in terms of information and data sharing during the Response, particularly through structures such as the CoPs and platforms like the NSW Health website.

While outside the scope of this Debrief, Health should consider what the next decade should look like from a data culture and governance perspective. This needs to be done both to ensure this type of data protection does not take place again, but also to ensure the benefits that data collaboration within Health and with partner agencies has delivered during the Response can continue and expand, with the clear need and benefits highlighted by the Response.

Data owners were also hesitant to share and use data outside of its existing scope of purpose (for example, the use of data for tracking vaccination progress). Data by population and by vaccination rates could only be used for the purpose of providing backend information to enable vaccine rollout as opposed to external reporting of the community's uptake of the vaccine, this inhibited all parts of the system to have a transparent view of the uptake and monitor vaccination rates in priority groups and vulnerable communities, sometimes hampering the effectiveness of supports provided.

Public expectations about data access have shifted dramatically

Enabled by rapid innovation and transparency, the community's expectations about data and how it is used has changed dramatically during the Response. There is now greater appetite and expectation for transparency and awareness, driven by the reliance on data to inform public health and other decisions. Timeliness and scope of access has expanded, made more important by the limited access to GPs during the Response, and enduring access challenges across NSW. At the same there is a greater level of concern about the misuse of private data which needs to be considered in going forward.

Consumers are now asking reasonable questions about access to personal health information; *'if I can get my COVID-19 test result by SMS within hours, why not other test results?'* There are complexities and details to be worked through here. However, Health should assess closely how different approach to transparent data and information could work, informed by key stakeholder groups and partner agencies. Further, data access arrangements specific to a pandemic response should be detailed in revised emergency management plans.

Lessons learnt 54

The benefits of sharing data within health, across government agencies and with community organisations at the granular level required were evident. Addressing significant restrictions and limitations on data sharing and access, through formalising data sharing agreements from the outset will go a long way to enabling timely and effective local responses informed by data. As a start, changes to future emergency management plans should therefore identify the key data gaps and challenges associated with data sharing across agencies.

As a priority, working with Australian Government to establish faster and more practical data sharing to support BAU and emergency management responses should consider including trigger clauses in legislation where appropriate. This could be complemented by pre-agreed data sharing protocols with Australian Government and key NGO and community partners to support pandemic response and BAU. Establishing feedback loops to provide transparency about how data is being used and to build confidence that is being used appropriately. (***Recommendation 3.1***, ***Recommendation 3.2***, ***Action Area B.2***, ***Action Area B.3*** and ***Action Area B.4*** discussed above in this chapter).

While the system has never been as open and transparent before in sharing data and information, we heard the need to provide greater transparency on how decisions have been made in relation to public health advice to provide more confidence in decision-making and maximise its impacts. (***Recommendation 2.1*** as discussed in *Governance and Decision-making*).

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NURSE

3 Appendices

Appendix A: Terms of Reference

NSW Health COVID-19 Response Debrief

Background
The NSW response to COVID-19 has been extensive and robust, and continues to test the NSW health system deeply, highlighting strengths, sparking innovation and uncovering areas for improvement.
The transition from pandemic response to endemic management of COVID-19 in NSW is an opportune point to reflect on the response to date, to inform future planning. To that end, the Ministry of Health has convened a Reflection and Debrief process ('the Debrief') to consider NSW Health's response to the pandemic response stage of COVID-19 in NSW.

Objectives
The Debrief aims to:

- Examine the suitability of the *NSW Human Influenza Pandemic Plan* (NSW HIPP) and *NSW Health Influenza Pandemic Plan – PD 2016_016* (NSW Health Plan) and existing and introduced emergency response structures to the COVID-19 pandemic in NSW in 2020-2022
- Define the lessons learned from the pandemic response stage (including the action stage of the *Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)* and phases A-C of the *National Plan to transition Australia's COVID Response* (National Plan), inclusive of health system operational and public health response
- Identify system improvements and any required amendments to the *Pandemic Plan* and any associated emergency management plans, structures and arrangements.

Scope
The Convener will consider NSW Health's response to the COVID-19 pandemic from February 2020 to March 2022. Domains to be considered include, but are not limited to:

1. Governance and Leadership
2. Communication and Engagement
3. Innovation and Technology
4. Community Impact
5. Workforce Impact
6. System Impact.

Exclusions
The following elements are considered out of scope of the Debrief:

- Budgetary decisions
- Decisions of the Australian Government and NSW Governments
- AHPPC deliberations
- The responses of partner agencies, except in the context of the NSW Health element of them
- PHOs.

Governance
The Convenor will report directly to the Secretary, NSW Health.
The Convenor will be assisted by a Process Consultative Group which will meet regularly throughout the Debrief process to:

- Provide advice on the proposed program of activities to achieve the key deliverables
- Inform the proposed stakeholder interview list and schedule to ensure the Debrief's scope is adequate and that an appropriate diversity of relevant views are heard

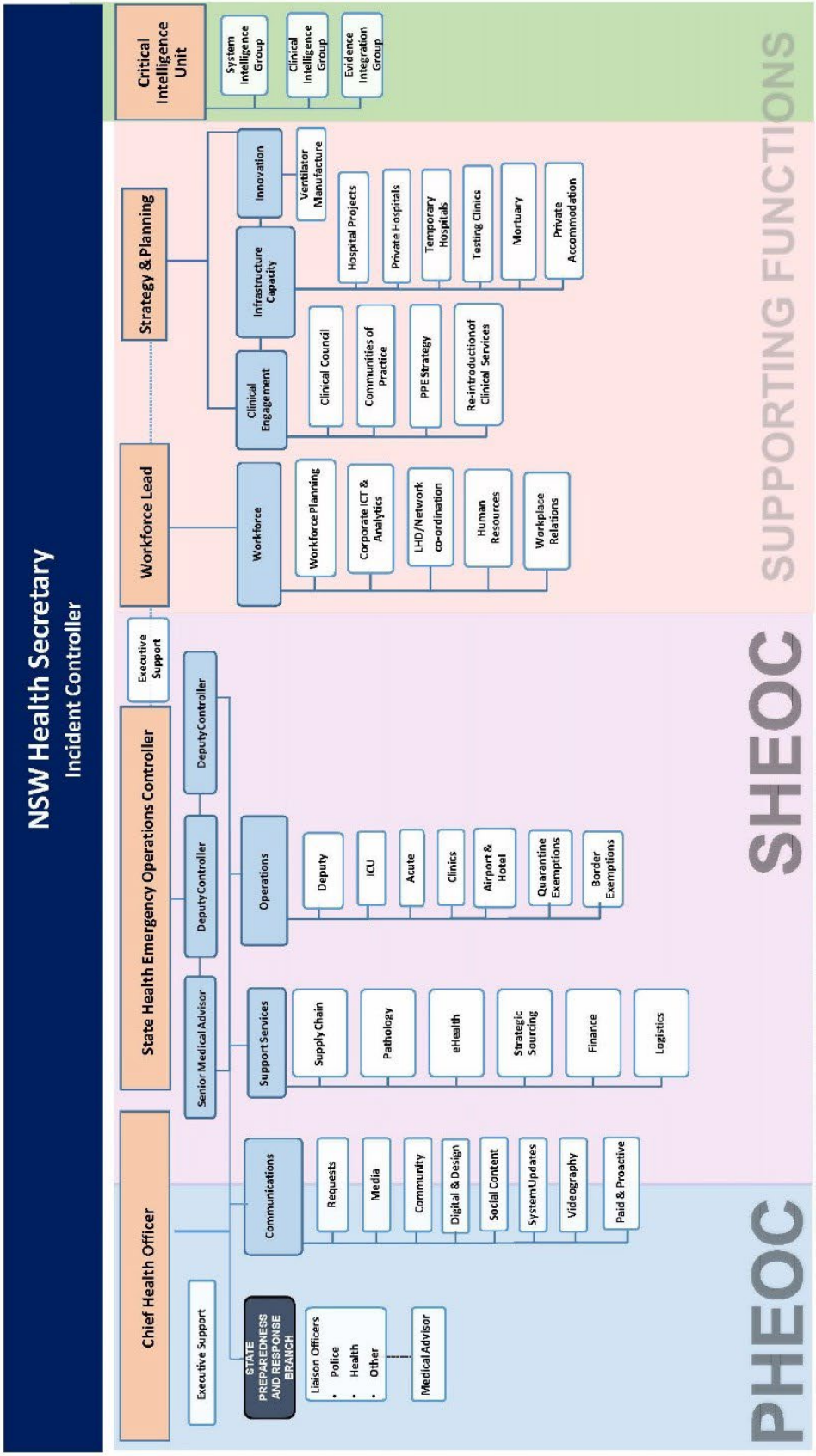
- Ensure strategic alignment between the Debrief's key deliverables and other relevant internal processes, including the Public Health After Action Review.

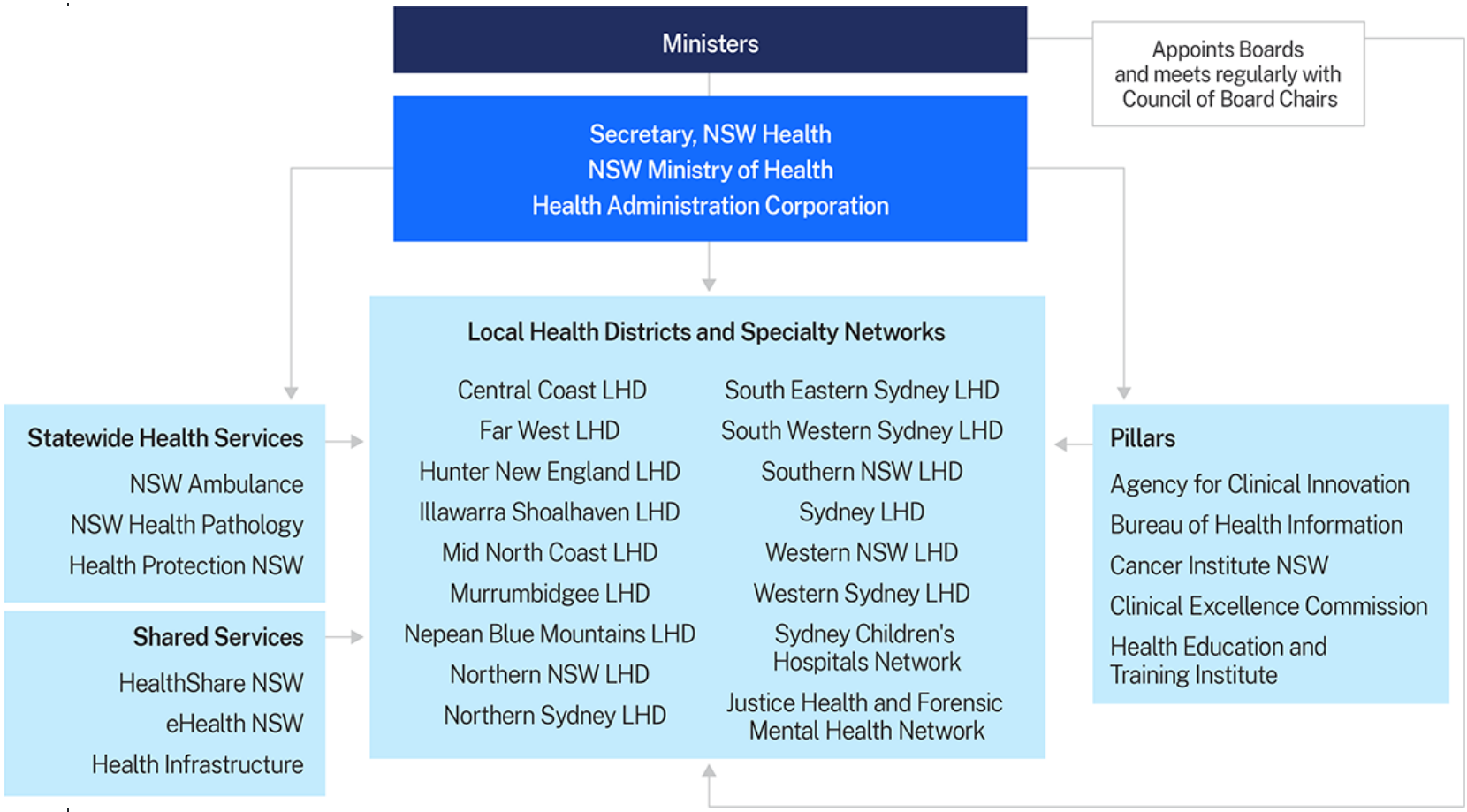
Secretariat and support
Secretariat support to the Convenor and Process Consultative Group will be provided by a small team of identified and designated personnel commissioned by the Office of the Secretary, NSW Health.

Parallel inputs
The Debrief will align with and be informed by concurrent public health review processes, including the After Action Review.
Other inputs will include, but not be limited to:

- PH WHO Incident Action Review
- Multicultural NSW's Delta MicroStrategy Pillar 5 Empowering Communities - Lessons Learned Report
- State Pandemic Plan
- NSW Human Influenza Pandemic Plan
- National Plan to Transition Australia's National COVID-19 Response
- Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)
- Other emergency plans.

Appendix B: Emergency management response structures within NSW Health, and NSW Health Organisational Structure




Ministers
Appoints Boards and meets regularly with Council of Board Chairs
Secretary, NSW Health
NSW Ministry of Health
Health Administration Corporation
Local Health Districts and Specialty Networks
Central Coast LHD
Far West LHD
Hunter New England LHD
Illawarra Shoalhaven LHD
Mid North Coast LHD
Murrumbidgee LHD
Nepean Blue Mountains LHD
Northern NSW LHD
Northern Sydney LHD
South Eastern Sydney LHD
South Western Sydney LHD
Southern NSW LHD
Sydney LHD
Western NSW LHD
Western Sydney LHD
Sydney Children's Hospitals Network
Justice Health and Forensic Mental Health Network
Statewide Health Services
NSW Ambulance
NSW Health Pathology
Health Protection NSW
Shared Services
HealthShare NSW
eHealth NSW
Health Infrastructure
Pillars
Agency for Clinical Innovation
Bureau of Health Information
Cancer Institute NSW
Clinical Excellence Commission
Health Education and Training Institute

Appendix C: Considerations for changes to the *Pandemic Plan*

Domain	Considerations for changes to the *Pandemic Plan*
Governance and Decision-making	• Establish a well-defined and communicated central governance structure for public health and operational responses (PHEOC/SHEOC) as well as the role of SEOCON and regional and local emergency structures to that enables collaborative decision-making • Establish structures and systems for strategic issue tracking, prioritisation and escalation where required, as well as enhance clinical and workforce input across existing NSW Health governance structures, such as the COVID-19 PMO, CIU, CoPs and Risk Escalation Panel • Formalise Aboriginal representation to embed a true partnership approach with Aboriginal stakeholders in decision-making processes, policy development and responses • Embed and grow the partnership with DCS as PIFAC, and reflect the importance of partnerships with other key partner agencies, such as DoE and DCJ • Better integrate NSW Health emergency plans with broader NSW Government plans, highlighting escalation points and pathways to enable earlier whole-of-government coordination in future responses • Clearly define what command and control means in the devolved system during emergency responses; who does what, when, why, and how. Ensure strong linkage between central and local structures; at a local level, consider specific challenges met by LHDs and government agencies on the ground. These include clarification of accountabilities and decision-making processes to support the effective and rapid operationalisation of local responses • Include clear roles and responsibilities for each Health agency (LHDs, Pillar organisations, Shared Services agencies) in an emergency environment. Clearly distinguish decision-makers and advisors • Describe risk and response escalation triggers to allow more strategic and tactical planning, including transitioning services from BAU to Response, and back again, as well as the level of response required (local, state or whole-of-government) and the impact of those on system governance and operations. Escalation triggers will need to be informed by Health's analysis of the extended impacts that consider the longevity of command and control structures in prolonged incidents, including potential triggers and escalations/de-escalation for transition back to BAU, or to evolved BAU settings • Provide a governance model for local partnerships with primary care and other community providers and community leaders to adopt and grow • Establish stronger, dedicated scenario and forward planning capability in BAU and during future public health emergencies • Enhance central and local preparedness activities that engage government and community partners, and maintain system preparedness

	• Enhance system preparedness for current health and other emergencies, including embedding the functions of System Preparedness Unit and organisation and activation of HSFACs across NSW Health • Improve communication and coordination between the Secretary, Incident Controller, SHEOC/PHEOC and SEOCON to enhance the operationalisation of PHOs across the health system and broader community, improve linkage between central and local emergency management structures, and facilitate the provision of timely whole-of-government supports to communities • Consider a sustainable rhythm for PHOs during emergency responses to enable operational considerations and systematic planning and actioning of PHOs • Ensure the appropriate authorisation of cross-agency representation in SHEOC, PHEOC and SEOCON, given the range of skill sets required and the speed of decision-making • Highlight the importance of community-based care and responses and the benefits of multidisciplinary approaches • Include key primary care and community partners on emergency management governance structures, particularly local ones • More detailed guidance in prolonged, high-scale emergency incidents for different parts of the health system, including how structures such as Incident Control Systems could support the response and workforce-related considerations (capacity, surge strategies, health, safety and wellbeing), noting the many unique challenges experienced by rural and regional areas • Enhance the sustainability of key system leaders and staff. Prolonged emergencies require NSW Health to contemplate handover arrangements or delegations that are fit for the circumstances, as is the case with other first response agencies, and recognise that the unrelenting demands associated with a prolonged emergency pose significant personal and system-wide risks. These also need to be regularly reviewed throughout an emergency response • Enhance and maintain system-wide capacity and capability in emergency management responses to ensure that all senior leaders in Health in Executive Bands 2, 3, and 4, or equivalent have completed relevant emergency management training and refresher training every 18 to 24 months, including Board Chairs and senior clinicians
System Impact	• Strengthen data collection on workforce, building in proactive and over-the-horizon planning, including scenario stress testing for workforce and operations and public health advice • Develop and integrate clear emergency procurement mechanisms, supply chain management, and disruption mitigation plans in Business Continuity and Disaster Recovery planning processes • Provide clear central direction on critical service priorities, and guidance on preparation, would assist with scaling of local responses

	• Provide clear guidance for each level of response would better support LHD decision-making on service models and priorities, access needs and public communications • Provide clear processes to guide decision-making around closure or deferral of services associated with PHOs or redeployment of staff • Provide LHDs with practical resources to guide local partnerships with diverse community groups to enhance BAU and support emergency responses • Include joint planning and clear definition of roles for all key stakeholders to improve emergency management coordination and governance, agility to effectively address emerging issues, and consistent application of new public health advice across the aged care sector
Communication and Engagement	• Outline the role of agencies, such as DCS, to provide data (for example, live and ongoing sentiment data) to inform messaging as incidents progress • Consider upfront and primary engagement with priority groups and vulnerable communities.
Community Impact	• Embed community-based responses within emergency planning structures to enhance equitable access to care and support across all LHDs and the communities through a whole-of-community approach • Outline the role and responsibilities of NGOs and contracted service providers within existing emergency structures and plans, and within service contracts
Workforce Impact	• Maintain and protect the ability to surge the public health and broader workforce - both centrally and locally - through relevant industrial instruments, partnerships and investment • Maintain and enhance long-term relationships with academic partners and NGOs to effectively leverage for surge workforces • Maintain the level and distribution of health protection, epidemiological, policy and strategy capability in the system • Consider how to ensure patient and staff health and safety concurrently
Data and Information	• Address governance and cultural blockages to the flow of information and data across NSW Health • Proactively identify and address key data gaps and challenges to data sharing, especially those relating to vulnerable populations, into and out of Health and between partner agencies

Appendix D: Consultation and focus session attendees

The table below outlines the consultations and focus sessions that were undertaken during the Debrief, as well as a summary of the stakeholders who attended them.

Consultation / focus session	Notes
Minister for Health	
Minister for Women, Regional Health, and Mental Health	
NSW Ministry of Health	
Secretary (current)	
Secretary (previous to 4 March 2022)	
Chief Health Officer and Deputy Secretary, Population and Public Health	
Deputy Secretary, Finance and Asset Management	
Deputy Secretary, Health System Strategy and Planning	
Deputy Secretary, Patient Experience and System Performance	
Deputy Secretary, People, Culture and Governance	
Centre for Aboriginal Health	
Mental Health Branch	
Nursing and Midwifery Office	
Deputy Controller, SHEOC and Executive Director, System Management	
Executive Director, Workforce Relations	
Local Health Districts and Specialty Health Networks	
Central Coast LHD	
Hunter New England LHD	
Illawarra Shoalhaven LHD	
Justice Health and Forensic Mental Health Network	
Mid North Coast LHD	
Murrumbidgee LHD	
Nepean Blue Mountains LHD	
Northern NSW LHD	
Northern Sydney LHD	
South Eastern Sydney LHD	
Southern NSW LHD	
St Vincent's Health Network	
Sydney LHD	
Sydney Children's Hospitals Network	
Western NSW LHD	
Western Sydney LHD	
Far West LHD	

Pillars	
Agency for Clinical Innovation	
Bureau of Health Information	
Cancer Institute NSW	
Clinical Excellence Commission	
Health Education and Training Institute	
Statewide health services	
NSW Ambulance	
NSW Health Pathology	
Shared services	
HealthShare NSW	
eHealth NSW	
Health Infrastructure	
Clinical Council and Communities of Practice	
NSW Health COVID-19 Clinical Council	Clinical Leads of COVID-19 Communities of Practice
Communities of Practice Focus Session – Admitted Care	Community of Practice members
Communities of Practice Focus Session – COVID-19 Care in the Communities	Community of Practice members
Community of Practice Focus Session – Pre-admission, Emergency and Critical Care	Community of Practice members
NSW Government Partner Agencies	
State Emergency Operations Controller (SEOCON) March 2020 – December 2021 and Deputy Commissioner, NSW Police	
Department of Premier and Cabinet	
Treasury	
Multicultural NSW	
Department of Communities and Justice	
Department of Customer Service	
Department of Education	
Primary Health Networks	3 PHNs from around NSW
Professional and Representative Bodies	
Royal Australian College of General Practitioners (NSW)	
Pharmaceutical Society of Australia (NSW Branch)	
Australian Salaried Medical Officers' Federation (NSW)	
Australian Medical Association (NSW)	
NSW Nurses and Midwives' Association	
Council of Presidents of Medical Colleges	
NSW Health Services Union	
Nursing and Midwifery Office	
NSW Health Services Association	

Business NSW	
Focus Sessions	
Aboriginal Health Session 1	3 Aboriginal Community Controlled Health Services
Aboriginal Health Session 2	NSW Aboriginal Health and Medical Research Council
Aged Care Session	Service providers
	Peak bodies
	Ministry of Health – Aged Care team
	Australian Government Department of Health
Borders and Exemptions Session	NSW Health staff
COVID-19 Program Management Office (NSW)	NSW Health staff
Directors of Nursing and Midwifery Forum	Directors of Nursing and Midwifery from across NSW
Private Hospitals, Elective Surgery and Deferred Services Session	NSW Health staff
COVID-19 Care in the Community Session	NSW Health staff
Patient Flow Portal Session	NSW Health staff
Public Health Data and Information Session	NSW Health staff
Disability Community Session	Disability care service providers
	Peak bodies
	Academics
	Centre for Disability Research and Policy at the University of Sydney
	Ministry of Health – Disability team
Genomics Session	NSW Health Pathology staff
Vaccine Rollout Session	NSW Health staff
Workforce Data Session	NSW Bureau of Health Information
	Ministry of Health – Workforce Planning and Talent Development Branch

Appendix E: Glossary

Acronym or abbreviation	Description
ACCHS	Aboriginal Community Controlled Health Service
ACI	NSW Agency for Clinical Innovation
AHPPC	Australian Health Protection Principal Committee
AIR	Australian Immunisation Register
AMS	Aboriginal Medical Services
ATAGI	Australian Technical Advisory Group on Immunisation
Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)	The *Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)* is an overview of the national approach and operational plan to address COVID-19 in Australia (published in February 2020)
BAU	Business as usual
BHI	Bureau of Health Information
CALD	Culturally and Linguistically Diverse
CCIC	COVID-19 Care in the Community
CEC	NSW Clinical Excellence Commission
CITH	Care in the Home
CIU	COVID-19 Critical Intelligence Unit
CoP	Community of Practice
COVID-19	Novel coronavirus (nCoV-19)
DCJ	NSW Department of Communities and Justice
DCS	NSW Department of Customer Service
Delta MicroStrategy or Delta Strategy	The *Delta MicroStrategy*, later renamed the Delta Strategy, is a comprehensive strategic response across government to suppress the Delta variant in high-risk locations by deploying interventions through community and business partnerships
DoE	NSW Department of Education
DPC	NSW Department of Premier and Cabinet
ED	Emergency Department

EMPLAN	The EMPLAN (*NSW State Emergency Management Plan*) is a strategic plan describing how NSW is to approach emergency management, including the governance, coordination, and agency roles and responsibilities. The EMPLAN is supported by functional area supporting plans, such as the NSW HEALTHPLAN, which details the type of response required for a health-related emergency
eMR	Electronic Medical Record
EOC	Emergency Operations Centre
Furlough	Unpaid leave
GPs	General Practitioners
H1N1 pandemic	The 2009 H1N1 swine flu pandemic
HETI	Health Education and Training Institute
HSFAC	Health Service Functional Area Coordinators
ICS	Incident Control System
ICT	Information and Communication Technology
ICU	Intensive Care Unit
IPC	Infection Prevention and Control
LEOC	Local Emergency Operations Centre
LGA	Local Government Area
LHD	Local Health District
MH-TRACE	MH-TRACE is a system used to provide a state-wide view of data demonstrating indicators of NSW's mental health service demand and care
MP	Member of Parliament
National Plan	The National Plan (*National Plan to transition Australia's COVID Response*) is a four-phase plan to move Australia through pre-vaccination to post-vaccination status, by focusing on suppression of community transition and prevention of serious illness. This plan was agreed to by National Cabinet on 2 July 2021
NCIMS	Notifiable Conditions Information System
NGO	Non-Government Organisation
NSW HEALTHPLAN	The NSW HEALTHPLAN (*New South Wales Health Services Functional Area Supporting Plan*) details the arrangements to be adopted by NSW Health to coordinate all of the health service resources available to the HSFAC for the prevention, preparation, response and recovery from the impact and effects of a health emergency, or an emergency where a State response is coordinated under the EMPLAN

NSW HIPP	The NSW HIPP (*NSW Human Influenza Pandemic Plan*) is a whole-of-government plan to coordinate a response across the NSW Government in the event of an influenza pandemic
NSW	New South Wales
OMT	Outbreak Management Team
Pandemic Plan	The Pandemic Plan (*NSW Health Influenza Pandemic Plan*) is a NSW Health plan that provides guidance on a range of response activities for NSW Health staff to prepare for, and manage, an influenza pandemic. The Pandemic Plan is a sub-plan to the NSW HIPP
PCG	Process Consultative Group
PCR	Polymerase Chain Reaction
PFP	Patient Flow Portal
PHEOC	Public Health Emergency Operations Centre
PHN	Primary Health Network
PHO	Public Health Order
PHU	Public Health Unit
PIFAC	Public Information Functional Area Coordinator
Pillar organisations	Refers to NSW Health Pillar organisations, which include ACI, BHI, Cancer Institute NSW, CEC and HETI
PMO	Program Management Office
PPE	Personal Protective Equipment
Public Health Response Debrief Report	The Centre for Epidemiology and Evidence's 2022 report *titled Reflections on the NSW COVID-19 public health response: the building blocks for a successful future pandemic response*, which aims to examine the public health response to the COVID-19 pandemic since January 2020
QARS	Quality Audit Reporting System
RACF	Residential Aged Care Facility
RAT	Rapid Antigen Test
REOC	Regional Emergency Operations Centre
rpaVirtual	RPA Virtual Hospital
SEIQR	Susceptible-Exposed-Infected-Quarantined-Removed – models the influence of quarantine and lockdown on disease spread
SEOC	State Emergency Operations Centre

SEOCON	State Emergency Operations Controller
Shared Services agencies	Refers to NSW Health's number of state-wide and specialist health services, which includes NSW Ambulance, Health Infrastructure NSW, HealthShare NSW, NSW Health Pathology, eHealth NSW and Health Protection NSW
SHEOC	State Health Emergency Operations Centre
SHN	Specialty Health Networks, specifically the Sydney Children's Hospitals Network and Justice Health and Forensic Mental Health Network
STEP	Short Term Escalation Plan
The Debrief	The NSW Health COVID-19 System Response Debrief
The Ministry	NSW Ministry of Health
The Response	The NSW Health system response to the COVID-19 pandemic from February 2020 to March 2022
VAM	Vaccination Administration Management System

Appendix F: References

AIHW (Australian Institute of Health and Welfare) (2022) *Mental health impact of COVID-19*, Australian Institute of Health and Welfare, Australian Government.

ANAO (Australian National Audit Office) (2022) *Australia's COVID-19 Vaccine Rollout*, ANAO, Australian Government.

ABS (Australian Bureau of Statistics) (2020) *Overseas Arrivals and Departures, Australia*, ABS, Australian Government, accessed 5 October 2022.

Australian Government and NSW Health (2020a) *New South Wales COVID-19 Vaccination Program Implementation Plan*, Australian Government and NSW Government.

BHI (2021) Patients' experiences of virtual care from NSW public hospitals: results from the 2020 outpatient survey, Bureau of Health Information, NSW Government.

BHI (2022a) Healthcare in Focus - New South Wales and the COVID-19 pandemic in 2021, Bureau of Health Information, Bureau of Health Information, NSW Government.

BHI (2022b) Healthcare Quarterly – January to March 2022, Bureau of Health Information, NSW Government.

BHI (2022c) Healthcare Quarterly – April to June 2022, Bureau of Health Information, NSW Government.

CEC (Clinical Excellence Commission) (2022) *COVID-19 Infection Prevention and Control Manual for acute and non-acute healthcare settings*, CEC, NSW Government.

Centre for Epidemiology and Evidence (2022) *Reflections on the NSW COVID-19 public health response: the building blocks for a successful future pandemic response*, Population and Public Health Division, NSW Ministry of Health.

CovidbaseAU (2022) *Australia COVID-19 Summary, CovidbaseAU, accessed 31 October 2022*

DCS (Department of Customer Service) (2022) *DCS Booster Insights Update*, DCS, NSW Government.

DoH (Department of Health and Aged Care) (2020) *National Review of Hotel Quarantine*, DoH, Australian Government.

DoH (2021a) *COVID-19 vaccination – Australia's COVID-19 vaccine national roll-out strategy*, DoH, Australian Government.

DoH (2021b) *Coronavirus (COVID-19) – Independent review of COVID-19 outbreaks in Australian Residential Aged Care Facilities*, DoH, Australian Government.

DoH (2022) *COVID-19 Vaccine Roll-out Jurisdictional Breakdowns (March 26 2022)*, DoH, Australian Government.

Department of Health and Ageing (2011) *Review of Australia's Health Sector Response to Pandemic (H1N1) 2009: Lessons Identified*, Australian Government of Australia.

Department of the Prime Minister and Cabinet (2021) National Review of Quarantine, Australian Government.

eHealth NSW (2021) *New virtual hospital provides care to 1000+ COVID positive children*, NSW Ministry of Health, NSW Government, accessed September 2022.

eHealth NSW (2022) *Vaccination Administration Management (VAM) system*, NSW Ministry of Health, NSW Government, accessed September 2022.

Fond G, Nemani K, Etchecopar-Etchart D, Loundou, A, Goff D, Lee S, Lancon C, Auquier P, Baumstarck K, Llorca P-M, Yon D, Boyer L, (2021) *Association Between Mental Health Disorders and Mortality Among Patients*

With COVID-19 in 7 Countries: A Systematic Review and Meta-analysis, JAMA Psychiatry. 2021;78(11):1208–1217. doi:10.1001/jamapsychiatry.2021.2274.

Kidd M R (2020) Five principles for pandemic preparedness: lessons from the Australian COVID-19 primary care response, British Journal of General Practice, https://doi.org/10.3399/bjgp20X710765

Li C, Sotomayor-Castillo C, Nahidi S, Kuznetsov S, Considine J, Curtis K, Fry M, Morgan D, Walker T, Burgess A, Carver H, Doyle B, Tran V, Varshney K, Shaban RZ. (2021) *Emergency clinicians' knowledge, preparedness and experiences of managing COVID-19 during the 2020 global pandemic in Australian healthcare settings*, Australasian Emergency Care, 24(3):186-196, https://doi.org/10.1016/j.auec.2021.03.008.

Multicultural NSW (2022) *Lessons learned from Pillar 5 of the NSW COVID-19 delta micro strategy - Final report*, prepared by Rooftop Social for Multicultural NSW, NSW Government (Sourced internally).

NSW Government (2018) *NSW Human Influenza Pandemic Plan, A Sub Plan of the NSW State Emergency Management Plan*, NSW Government.

NSW Government (2018) *NSW State Emergency Management Plan (EMPLAN)*, NSW Government.

NSW Government (2020a) *Government Gazette of the State of New South Wales Number 65*, NSW Government.

NSW Government (2020b) *Premier's Awards 2020 Winners*, NSW Government, accessed 13 October 2022.

NSW Government (2021c) *Premier's Awards 2021 Winners*, NSW Government, accessed 13 October 2022.

NSW Ministry of Health (NSW Health) (2014) *New South Wales Health Services Functional Area Supporting Plan (NSW HEALTHPLAN)*, NSW Ministry of Health, NSW Government.

NSW Health (2016) *NSW Health Influenza Pandemic Plan*, NSW Health, NSW Government.

NSW Health (NSW Ministry of Health) (2020a) *NSW researchers breakthrough on coronavirus*, NSW Ministry of Health, NSW Government.

NSW Health (2020b) *Residential aged care facility outbreak management*, NSW Ministry of Health, NSW Government.

NSW Health (2020c) *NSW Health Annual Report 2019-20*, NSW Ministry of Health, NSW Government.

NSW Health (2020d) *NSW Health Awards winners*, NSW Ministry of Health, NSW Government, accessed on 13 October 2022.

NSW Health (2021a) *NSW Health Annual Report 2020-21*, NSW Ministry of Health, NSW Government.

NSW Health (2021b) *Consumer and carer experience of NSW mental health services during the 2020 COVID-19 pandemic*, System Information and Analytics Branch, NSW Ministry of Health, NSW Government.

NSW Health (2021c) *NSW Health Awards 2021 winners*, NSW Ministry of Health, NSW Government, accessed on 13 October 2022.

NSW Health (2022a) *NSW Health Workforce Plan 2022-2032*, NSW Ministry of Health, NSW Government.

NSW Health (2022b) *NSW Virtual Care Strategy 2021-2026*, NSW Ministry of Health, NSW Government.

NSW Health (2022c) *NSW COVID-19 weekly data overview, Epidemiological week 12, ending 26 March 2022*, NSW Ministry of Health, NSW Government.

NSW Health Pathology (2020) *Compass Special COVID-19 edition – October 2020*, NSW Ministry of Health, NSW Government.

NSW Independent Flood Inquiry (2022) 2022 NSW Flood Inquiry, NSW Government, accessed September 2022.

Operation COVID Shield (2021) *Op COVID SHIELD National COVID Vaccine Campaign Plan*, Australian Government.

Parliament of Australia (2020a) *Media Release Wednesday 25 March 2020 Elective Surgery*, Parliament of Australia, Australian Government.

Parliament of Australia (2020b) *COVID-19: a chronology of state and territory government announcements (up until 30 June 2020)*, Australian Government.

Population Health Research Network (2021) *Linked data in the fight against COVID-19*, Population Health Research Network, accessed September 2022.

Regional Office for Europe (2020) *What strategies are countries using to expand health workforce surge capacity to treat COVID-19 patients?*, World Health Organization.

Royal Commission into Aged Care Quality and Safety (2021) *Final Report*, Australian Government.

Shergold P, Broadbent J, Marshall I, Varghese P (2022) *Fault Lines, An independent review into Australia's response to COVID-19*, Paul Ramsay Foundation, the Minderoo Foundation and the John and Myriam Wylie Foundation chaired by Peter Shergold AC.

SHEOC (State Health Emergency Operations Centre) (2020) *Introducing SHEOC Aged Care*, NSW Ministry of Health, NSW Government.

SHEOC (2022a) *SHEOC Operations Report 2020-2021*, NSW Ministry of Health, NSW Government.

SHEOC (2022b) *SHEOC Achievements Report 2021*, NSW Ministry of Health, NSW Government.

SLHD (Sydney Local Health District) (2021) Year in review 2020-21, SLHD, NSW Ministry of Health, NSW Government.

Smallwood N, Karimi L, Pascoe A, Bismark M, Putland M, Johnson D, Dharmage SC, Barson E, Atkin N, Long C, Ng I, Holland A, Munro J, Thevarajan I, Moore C, McGillion A, Willis K (2021) *Coping strategies adopted by Australian frontline health workers to address psychological distress during the COVID-19 pandemic*, General Hospital Psychiatry, Volume 72, 10.1016/j.genhosppsych.2021.08.008.

South Eastern NSW Primary Health Network (COORDINARE) (2021) *Local Aboriginal and Torres Strait Islander Vaccination Rates in South Eastern NSW Hit Eighty Percent Target*, COORDINARE, Australian Government, accessed September 2022.

Steering Committee for the International Year of Health and Care Workers (2021) *Joint Statement On WHO'S Estimates Of Health And Care Worker Deaths Due To Covid-19*, World Health Organization.

St Vincent's Hospital Sydney (2021) *Blueprint model of care to support vaccine hubs for people experiencing homelessness*, St Vincent's Hospital Network.

Sara G, Wu J, Uesi J, Jong N, Perkes, Knight K, O'Leary F, Trudgett C and Bowden M (2022) Growth in emergency department self-harm or suicidal ideation presentations in young people: Comparing trends before and since the COVID-19 first wave in New South Wales, Australia, *Australian & New Zealand Journal of Psychiatry*, https://doi.org/10.1177/00048674221082518.

The Lancet Rheumatology (2021) 'Too long to wait: the impact of OCVID-19 on elective surgery, *The Lancet Rheumatology*, Volume 3, Issue 2, https://doi.org/10.1016/S2665-9913(21)00001-1.

World Health Organization (2022) *Reveals that good IPC programs can reduce health care infections by 70%*, World Health Organization, accessed September 2022.

WPTD (Workforce Planning and Talent Development) (2022) *Workforce Insights (Internal data)*, WPTD, NSW Government.

Appendix G: Awards on COVID-19 response for NSW Health

Note: The following list is not exhaustive for all awards finalists and winners for the awards but focuses on award winners and finalists on their contribution to COVID-19 Response

Category	Awards	Award Winners/Finalists/Honourable Mention (For COVID-19 Response)
2020 NSW Health Awards	Collaborative Staff Member of the Year Award	**Finalists:** Dr John Ferguson- Hunter New England Local Health District Judy Kempton Webb, NSW Health Pathology
	Excellence in the Provision of Mental Health Services Award	**Finalist**: Mental Health in the Home: A New Approach in a Pandemic - Western NSW Local Health District
	Health Research and Innovation Award	**Finalist**: Unlocking the puzzle of COVID-19 transmissions - NSW Health Pathology
	Keeping People Healthy Award	**Winner:** An Extraordinary Response to the Global COVID-19 Pandemic - NSW Health Pathology **Finalists:** COVID Clinics: A Massive Drive-Through Response - Hunter New England Local Health District A Rapid Response for Vulnerable People During COVID-19 - Sydney Local Health District
	People and Culture Award	**Finalist:** We Need a Tiger Team: A Pandemic Innovation to Care for our Staff - Sydney Local Health District
	Transforming Patient Experience Award	**Finalist:** rpavirtual - A New Way of Caring- Sydney Local Health District
2020 NSW Premier's Awards	NSW Public Servant of the Year	**Winner:** Dr Kerry Chant NSW Ministry of Health, HEALTH
	Excellence in Digital Innovation	**Winner:** rpavirtual: a new way of caring Sydney Local Health District, HEALTH
	Putting the Customer at the Centre	**Winner:** NSW Health Pathology's new COVID-19 SMS Result Service NSW Health Pathology, HEALTH

2021 NSW Health Awards	Collaborative Staff Member of the Year Award	**Finalists:** NSW Health Pathology: Elizabeth Geddes South Western Sydney Local Health District: Dr Jonathan Williams
	Excellence in the Provision of Mental Health Services Award	**Finalist:** St Vincent's Hospital Sydney: This Way Up
	Health Research and Innovation Award	**Finalist:** Agency for Clinical Innovation: The COVID-19 Critical Intelligence Unit
	Keeping People Healthy Award (COVID Category)	**Winner (COVID category):** NSW Ministry of Health: State Health Emergency Operations Centre **Finalists (COVID category):** eHealth NSW: COVID-19 vaccination administration management solution NSW Health Pathology: COVID-19 response during testing times
	Patient Safety First Award	**Finalists:** Clinical Excellence Commission: Setting the gold standard in infection prevention and control during the pandemic NSW Health Pathology: Connecting clinicians and patients pathology test results in 'real time'
	People and Culture Award	**Finalists:** Illawarra Shoalhaven Local Health District: "SEED" an innovative and sustainable staff wellbeing program
	Secretary's award - Integrated value-based care award	**Winner:** NSW Health Pathology: Pathogen Genomics Finalists: **Finalist:** HealthShare NSW: Whole of Government approach to Personal Protective Equipment
	Transforming Patient Experience Award	**Finalists:** Illawarra Shoalhaven Local Health District: Enhanced care anywhere Western NSW Local Health District: Virtual Paediatric Feeding Pilot

2021 NSW Premier's Awards	NSW Public Servant of the Year	**Honourable Mention:** Professor Dominic Dwyer - NSW Health Pathology, HEALTH
	Excellence in Digital Innovation	**Winner:** COVID Safe Check-In App - Department of Customer Service, CUSTOMER SERVICE (in partnership with NSW Health) **Honourable Mention:** NSW Health's COVID-19 vaccination management systems - eHealth NSW, HEALTH
	Putting the Customer at the Centre	**Winner:** Welcome to the NSW Health Mass Vaccination Centre - Sydney Local Health District, HEALTH
	Recovery and Resilience	**Winner:** Hotel Quarantine Program - Department of Regional NSW, REGIONAL NSW (in partnership with NSW Police, NSW Health, Treasury) **Honourable Mention**: Honourable Mention: Emergency Services Project Team – Service NSW - Department of Customer Service, CUSTOMER SERVICE (in partnership with Resilience NSW, NSW Health, Treasury, Regional NSW, Destination NSW)

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