

Healthcare in Focus

New South Wales and the COVID-19 pandemic from 2020 to 2022



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State Health Publication Number: (BHI) 230193
ISSN: 1838-6989 (print); 2204-9363 (online)

Suggested citation: Bureau of Health Information.
New South Wales and the COVID-19 pandemic from 2020 to 2022. Sydney (NSW); BHI: 2023.

Please note there is the potential for minor revisions of data in this report.
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Published May 2023

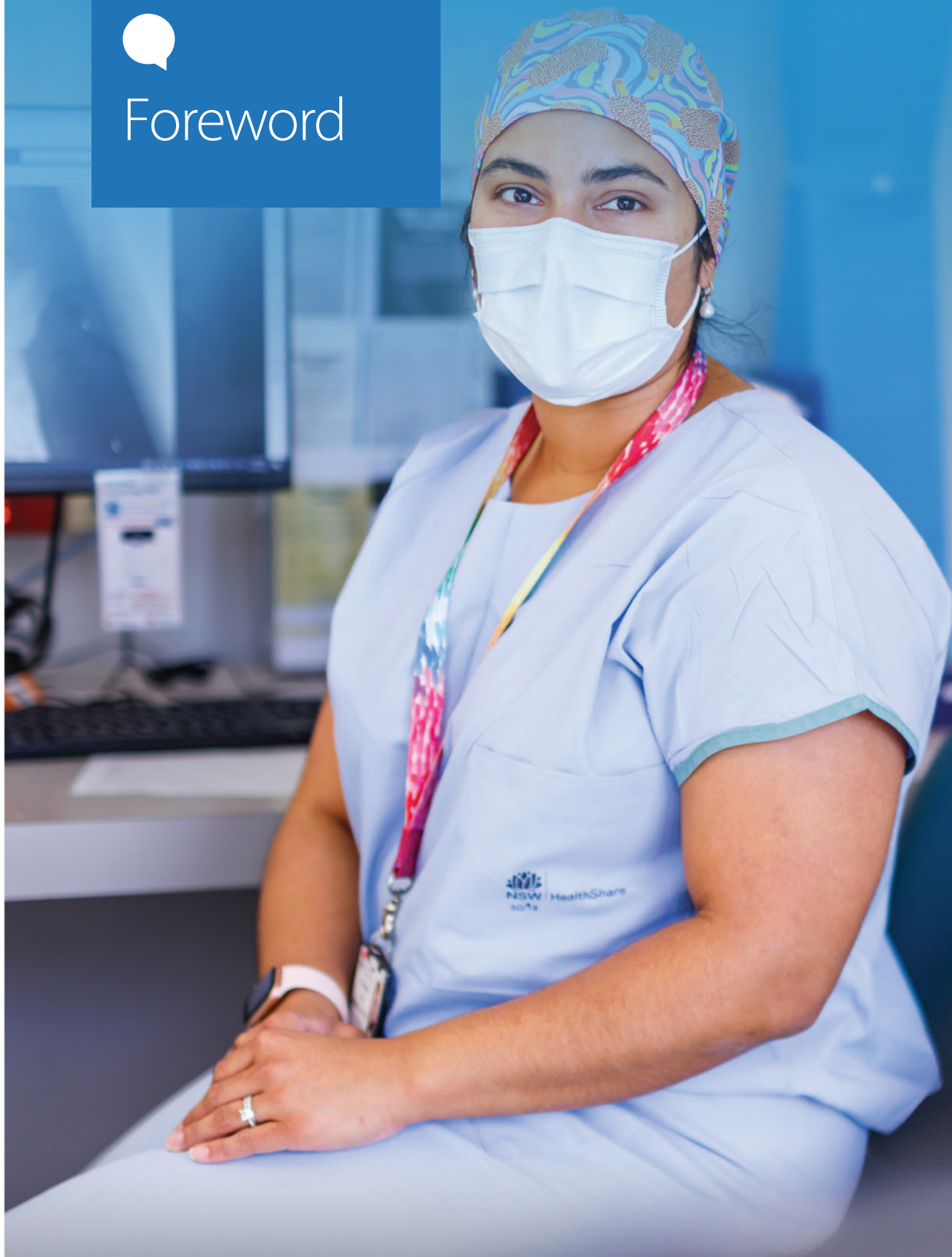
The conclusions in this report are those of BHI and no official endorsement by the NSW Minister for Health, the NSW Ministry of Health or any other NSW public health organisation is intended or should be inferred.

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Foreword



Since the pandemic's arrival in early 2020, the NSW healthcare system has confronted the major challenges of COVID-19.

This issue of the Bureau of Health Information's (BHI) annual *Healthcare in Focus* report reflects on the pandemic's effects on key aspects of public health system performance from 2020 to 2022.

While the impacts of the pandemic have been most apparent throughout this time, it should also be remembered that the period began with devastating bushfires and also featured heavy flooding that affected the delivery of healthcare in large parts of NSW.

Building on the insights presented in the past two issues of *Healthcare in Focus*, this report examines activity and performance, including patients' experiences, across multiple sectors of the healthcare system, focusing on ambulance services; emergency departments (EDs); admitted patients; elective, or planned, surgery; and virtual care. This issue also provides insights into outcomes including all-cause mortality and mortality within 30 days of admission.

For contextual purposes, many of the graphs in the report also present trends in activity and performance leading up to 2020, and it is striking to see the changes brought by the arrival of the pandemic and its successive waves. But we also see a health system that was already at or near record levels of activity in 2019; despite significant fluctuations in activity during the pandemic, it has continued to get busier.

Patients' voices are also presented in the report, with NSW Patient Survey Program feedback provided by thousands of people during the pandemic giving direct insights into their experiences. This includes virtual care, an area that grew rapidly during the pandemic as the health system adapted to patients' needs.

The report also includes feedback provided by patients transported to the ED by ambulance. The ratings of the care provided by paramedics was particularly high at a time when demand for ambulance services was at historic highs.

I would like to extend my condolences to those people who lost loved ones during the pandemic and acknowledge all of those seriously impacted during this time whether due to illness, isolation or the many other challenges of the period.

What has been reaffirmed throughout the pandemic is the dedication of the highly skilled healthcare professionals and support staff who have continued to provide essential healthcare services to the people of NSW.

Dr Diane Watson

Chief Executive

Summary

The COVID-19 pandemic had far-reaching impacts on the NSW public health system and the way care was delivered

This *Healthcare in Focus* report illustrates the major fluctuations in NSW healthcare system activity from 2020 to 2022, including for ambulance services, emergency departments (EDs), hospital admissions and elective surgery.

During this period, patients tended to wait longer to receive care than prior to the pandemic.

Patients' experiences of care had been improving leading up to 2020 and while ratings did decrease at times during the pandemic, they remained above mid-2019 levels despite the challenges posed by COVID-19.

The pandemic also prompted changes in how care was delivered, with the availability and uptake of virtual care (by phone or video call) accelerating during this time.

The report also provides insights into outcomes of care including patterns of hospital admissions and mortality.



Key findings

Ambulance

Demand for ambulance services increased between 2020 and 2022, following an upward trend that had begun before the pandemic. Measures of ambulance performance declined steadily from mid-2020. At the height of activity in 2022, patients transported to EDs rated their ambulance care highly.

Emergency department

ED attendances dropped in early 2020 before recovering to pre-pandemic levels in 2021 and 2022. Recovery of attendances was quicker among the most serious triage categories. Measures of ED performance progressively declined throughout 2021 and 2022. Patients' ratings of their ED experiences declined slightly, but nevertheless remained high.

Admitted patients

Numbers of admitted patient episodes of care fluctuated between 2020 and 2022. From early 2021 onwards, patients typically spent longer in hospital than they did prior to the pandemic. Admitted patients' overall ratings of care dropped slightly as hospitals adapted to the challenges of the pandemic.

Elective surgery

Successive suspensions of non-urgent and some semi-urgent elective surgeries resulted in sharp quarterly drops in the number of elective surgeries performed at several times between 2020 and 2022. The suspensions saw a backlog of patients on the waiting list in early 2020 that was largely cleared by mid-2021. It grew again with subsequent suspensions and fewer surgeries performed in late 2021 and early 2022.

Virtual care

There was a rapid and sustained increase in the use of virtual care during the pandemic. Hospital outpatients were very positive about their overall virtual care, and the more appointments they had, the more positive they were.

Hospital admissions and mortality outcomes

All-cause mortality in NSW was lower than expected in 2020, but higher than expected in the first half of 2022. Throughout the pandemic, hospital admissions for respiratory, cardiac diseases and stroke decreased, as did death within 30 days of admission.

About this report

This *Healthcare in Focus* report provides insights into the impact of the COVID-19 pandemic on the public healthcare system in NSW from 2020 to 2022. It examines activity, performance, experiences and outcomes across multiple sectors of the healthcare system and also highlights some key differences between rural and urban areas of NSW.

One of BHI's functions is to provide an annual report to the NSW Minister for Health and the NSW Parliament about the performance of the NSW public health system. This report fulfils that responsibility. It builds on **two previous Healthcare in Focus reports**, which examined the impact of the COVID-19 pandemic in 2020 and 2021.

This report provides transparency for the community as well as insights to support system management and improvement. It is important to understand healthcare system performance in the context of multiple waves of the pandemic, alongside a range of efforts to protect public health.

The report is structured as follows:

Setting the scene

- How the COVID-19 pandemic unfolded in NSW, including key dates and numbers of cases, hospitalisations and COVID-related deaths
- Context regarding people's perspectives on the health system during the pandemic, in NSW and other Australian jurisdictions.

Ambulance

- Ambulance activity and performance results from 2018 to 2022
- Emergency Department Patient Survey results (Ambulance module) for 2022–23.

Emergency department

- Emergency department (ED) activity and performance results from 2018 to 2022
- Emergency Department Patient Survey results from 2019–20 to 2021–22.

Admitted patients

- Admitted patient activity and performance results from 2018 to 2022
- Adult Admitted Patient Survey results from 2019 to 2022.

Elective surgery

- Elective surgery activity and performance results from 2018 to 2022.

Virtual care

- Non-admitted patient activity from 2019 to 2022
- Virtual Care Survey results for 2020 and 2021.

Hospital admissions and mortality outcomes

- Deaths from all causes from 2014 to 2022
- Admissions and deaths among patients admitted to NSW hospitals from 2018 to 2022 for selected clinical conditions.

Additional materials

The technical supplement for this report provides further details on data sources and analytic methods.

The technical supplement is available on the BHI website at bhi.nsw.gov.au/BHI_reports/healthcare_in_focus

Data included in this report

To produce this report, BHI used a range of data. These include:

- COVID-19 cases, hospitalisations and deaths in NSW provided by the COVID-19 Public Health Response Branch, NSW Health
- Australian Institute of Health Innovation and Consumers Health Forum of Australia (CHF) Australian Health Consumer Sentiment Survey 2021
- NSW Ambulance Computer-Aided Dispatch system
- NSW Health Emergency Department Data Collection, accessed via the Health Information Exchange (HIE)
- Emergency Department Patient Survey
- NSW Health Admitted Patient Data Collection, accessed via the HIE
- Adult Admitted Patient Survey
- Waiting List Collection On-line System
- Medicare Benefits Schedule (MBS)
- Non-Admitted Patient data collection, accessed via Enterprise Data Warehouse for Analysis Reporting and Decision Support (EDWARD)
- Virtual Care Survey
- NSW Ministry of Health, System Sustainability and Performance
- Linked Admitted Patient Data Collection and Registry of Birth Deaths and Marriages (RBDM), accessed via Secure Analytics for Population Health Research and Intelligence (SAPHaRI) platform.

Setting the scene

The COVID-19 pandemic saw far-reaching changes to people's lives as well as a large-scale response by the NSW public healthcare system.

In 2020, COVID-19 case numbers remained relatively low due to the introduction of public health restrictions (including stay-at-home orders), as well as policies such as border closures and quarantine. While case numbers saw modest spikes at some times in 2020 and early 2021, cases did not reach significant levels until later in the pandemic.

Public health restrictions were withdrawn and then re-introduced at several times as case numbers fluctuated through 2020 and 2021. Notably, the arrival of the Delta wave in mid-2021 led to the re-introduction of stay-at-home orders that were not eased until October of that year. This easing coincided with the arrival of the highly transmissible Omicron wave in November and COVID-19 cases escalated quickly, peaking at around 46,000 case per day in mid-January, compared with previous daily peaks of 27,235 in 2021 and 209 in 2020.

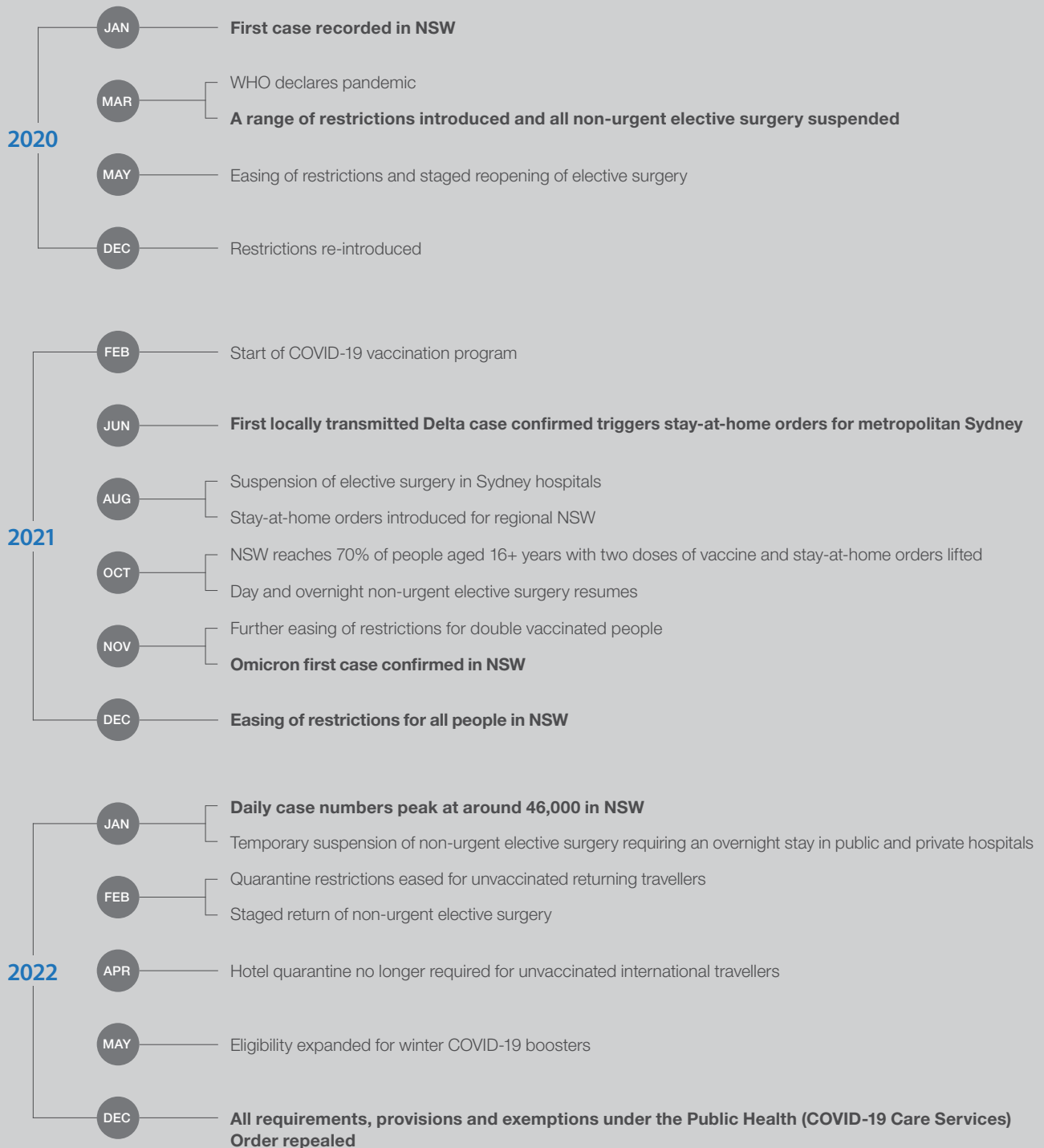
Meanwhile, the health system pivoted from early 2020 to manage the challenge of the virus. This resulted in wide-ranging changes to the way that care was delivered and services operated, including strict infection control protocols, the opening of COVID-19 testing clinics, and the introduction of visitor restrictions.

Elective surgery was especially affected, with non-urgent and some semi-urgent elective surgery being suspended at several times between 2020 and 2022 to preserve hospital services and protect patients and staff. The Federal Government's National Partnership Agreement on Private Hospitals and COVID-19 has increased public surgeries contracted to NSW private hospitals since 2020.

From February 2021, the NSW COVID-19 vaccination program was rolled out. In October of that year, 70% of the eligible NSW population were fully vaccinated, and by early 2022 that figure had risen to 94%.*

By the end of 2022, the NSW healthcare system continued to operate under COVID-19 conditions and was still dealing with issues arising from three years of the pandemic.

* Australian Immunisation Register, Australian Government Department of Health. Retrieved from: health.gov.au/resources/collections/covid-19-vaccination-vaccination-data (online resource).



COVID-19 cases, hospitalisations and deaths

While the first case of COVID-19 was recorded in NSW in January 2020, the enactment of Federal and State policies and public health restrictions including border closures, quarantine and stay-at-home orders meant that case numbers did not reach significant levels until late in 2021.

In 2020, there were 4,782 confirmed cases of COVID-19 in NSW. The arrival of the Delta and Omicron waves saw case numbers rise to 280,601 in 2021. Cases rose sharply from late 2021, reaching a peak in mid-January 2022. COVID-19 cases in 2022 dwarfed the previous two years, with around 3.4 million cases reported (Figure 1).

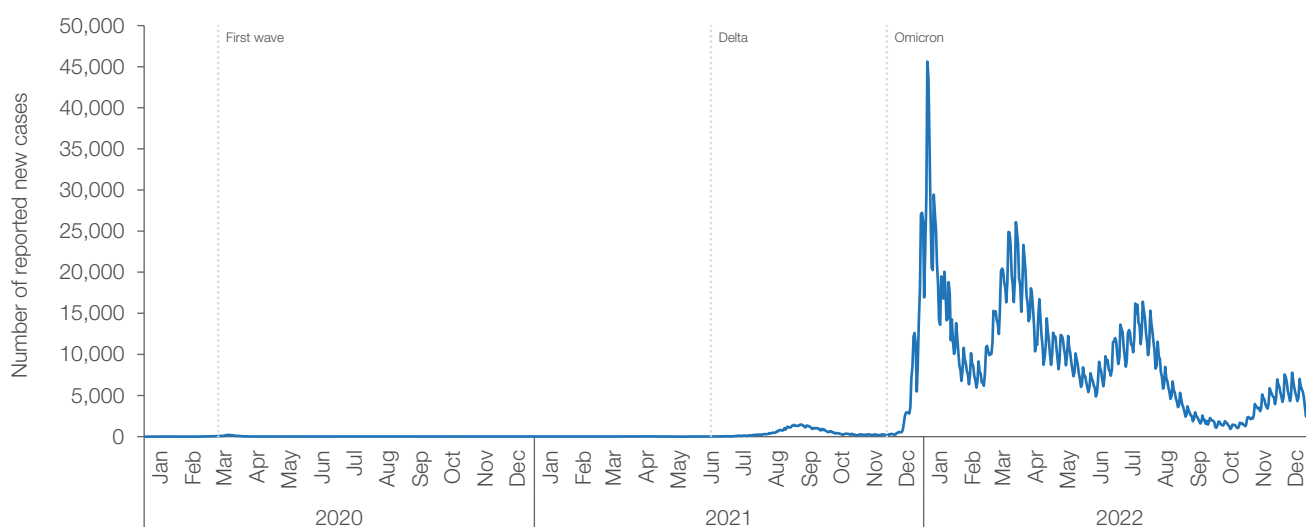
The majority of people who tested positive for COVID-19 throughout the pandemic received care in the community or at home. There was an increase

in hospitalisations for people with COVID-19 during the Delta wave from August 2021 to a peak in late September that year. Of patients hospitalised in 2021 with COVID-19, around one in ten received care in intensive care units (ICUs).

By the start of 2022, almost all eligible people in NSW (94%) were fully vaccinated against COVID-19.* Although higher case numbers saw more COVID-related hospitalisations in 2022, proportionally fewer people were admitted to ICUs for COVID-related disease when compared with previous years (Figure 2).

Rising case numbers from 2020 to 2022 also saw a rise in COVID-related deaths, with 5,310 people dying in 2022 (compared with 686 in 2021 and 54 in 2020) (Figure 3).

Figure 1 COVID-19 cases, NSW, January 2020 to December 2022†



* Australian Immunisation Register, Australian Government Department of Health. Retrieved from: health.gov.au/resources/collections/covid-19-vaccination-vaccination-data (online resource).

† Rapid antigen testing became widely available in early 2022 and requirements to report test results ceased in October 2022.

Figure 2 Number of patients with COVID-19 in hospital and in ICU, NSW, January 2020 to December 2022

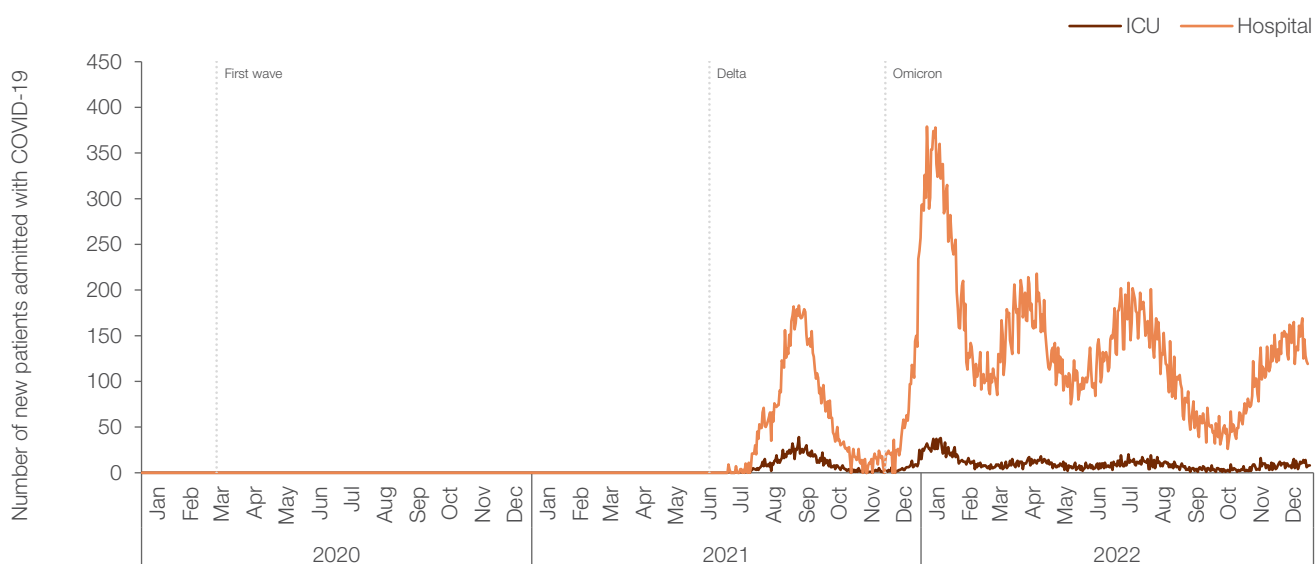
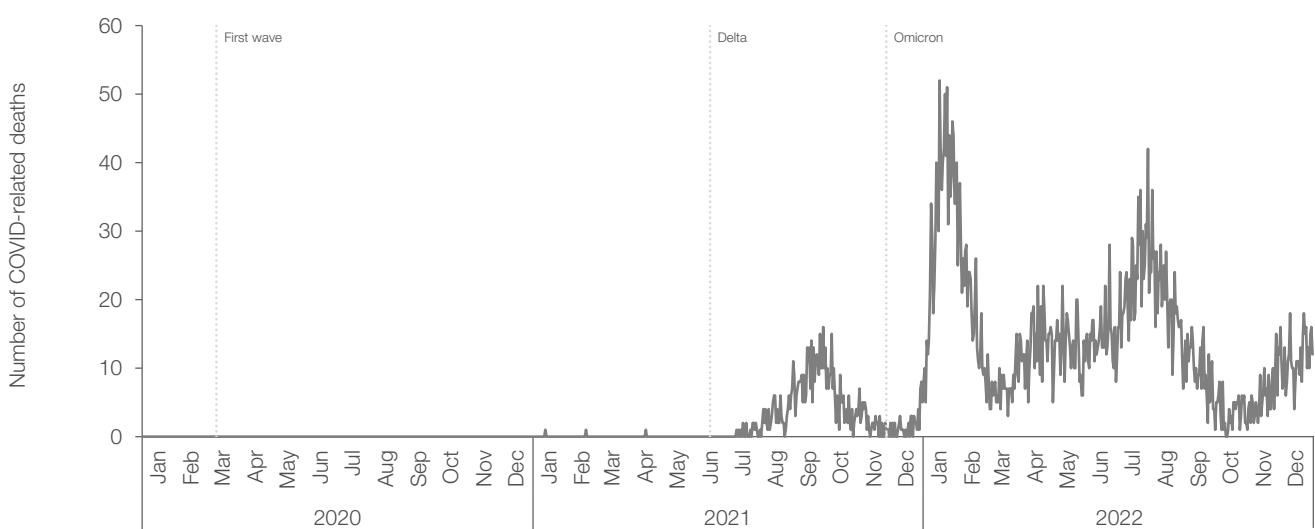


Figure 3 COVID-19-related deaths, NSW, January 2020 to December 2022



Source: COVID-19 Public Health Response Branch, NSW Ministry of Health. Data received 27 January 2023.

People's perspectives on healthcare services

This report focuses on the impact of the COVID-19 pandemic on the NSW healthcare system. However, to provide context, it is useful to look at the perspectives of people in NSW as compared with those in other jurisdictions.

The Australian Health Consumer Sentiment Survey 2021 provides a snapshot of peoples' perspectives of healthcare services across the country in October 2021, during the COVID-19 Delta outbreak. This includes overall perspectives of public hospital services which are particularly relevant to this *Healthcare in Focus* report.

Across the survey, NSW respondents tended to provide higher ratings than those from other states and territories.

Around six in 10 NSW survey respondents (63%) rated public hospital services as 'excellent' or 'very good', compared with 59% in other states and territories.

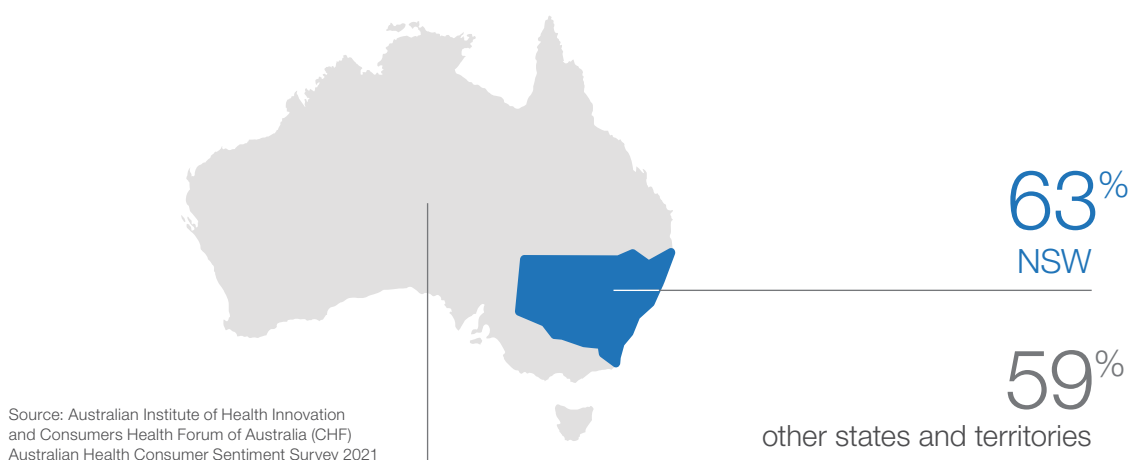
When asked whether their perception of Australia's healthcare services had changed since the beginning of the pandemic, almost eight in 10 NSW respondents (79%) said their confidence in the health system had 'stayed the same' or 'increased', compared with 77% in other states and territories.

The survey also provided insights into the experiences of people in rural and urban areas. Just over half of respondents from regional and remote NSW (51%) said they needed more doctors, nurses and health workers, compared with 52% of respondents from regional and remote areas in other states and territories.

Almost four in 10 NSW respondents (38%) said they had access to health services via phone or video consultations in the previous 12 months, compared with 37% in other states and territories.

Almost half of respondents from NSW reported using digital health technologies (46%), including telehealth, helplines, apps and websites. This was higher than that reported in other states and territories (43%).

People rating public hospital services as 'excellent' or 'very good'...



Source: Australian Institute of Health Innovation and Consumers Health Forum of Australia (CHF) Australian Health Consumer Sentiment Survey 2021

The featured comments on this page have been taken from the Adult Admitted Patient Survey 2022 and the Emergency Department Patient Survey 2021–22.

“ I am very grateful for the care I received especially knowing how very busy the hospital was at that time with COVID-19 and flu admissions. ”

“ Considering the pressure caused by COVID-19, I believe the hospital staff did an excellent job. ”

“ Not being able to have another support person other than my partner was hard... I understand there are regulations to follow, but having my children visit properly would have made my experience even better. ”

“ I had to visit the ED while I had COVID-19. I was very happy with the care I received despite having this virus. ”

“ I was given very good care despite staff clearly busy with COVID-19 related admissions. ”

“ My family found it very hard to get information about my care due to COVID-19 restrictions. ”



Ambulance



Key findings

NSW Ambulance delivers mobile health services and provides clinical care, rescue and retrieval services to people with emergency and medical health needs.



While the pandemic saw initial declines in ambulance activity in early 2020, ambulance responses reached new annual highs in 2021 and again in 2022



Much of the growth in ambulance activity occurred among emergency (P1) and highest priority (P1A) responses, especially in urban areas



Rising demand coincided with declining performance over the pandemic, with more patients waiting longer for an ambulance to arrive in 2022 than in previous years



Despite high demand and slower response times, most patients transported to an ED via ambulance were positive about their overall experiences



Further to this report, explore more activity and performance results in our [Data Portal](#) and [Healthcare Quarterly](#) reports

Ambulance activity

Emergency responses grew steadily throughout the pandemic

When COVID-19 reached NSW in early 2020, demand for ambulance services had been progressively rising since mid-2018 (Figure 4).

Despite fluctuations in activity during successive waves of the pandemic, this upward trend continued into 2022. The first COVID-19 wave initially coincided with a sizeable reduction in the number of ambulance responses in the April to June 2020 quarter as NSW introduced stay-at-home orders for the first time. However, the number of ambulance responses quickly returned to historically high levels in subsequent quarters as the pandemic continued.

From a record 1.26 million ambulance responses in 2019, activity dipped in 2020, before successive new records were set in 2021 (1.28 million) and 2022 (1.34 million).

Much of the increase in ambulance activity over the three years was driven by growth in ‘emergency – priority 1’ (P1) responses. The most rapid increase, however, was in the small cohort of highest priority (P1A) responses for patients with life-threatening conditions. While the total number of annual ambulance responses increased by 7% from 2019 to 2022, P1 and P1A responses increased by 22% and 67%, respectively.

Growth in overall ambulance activity throughout the pandemic was evident across both urban and rural locations (Figure 4). However, the increases in P1 and P1A responses were particularly evident in urban locations (Figures 5 and 6).

Figure 4 **Ambulance responses, all priority categories, NSW, urban and rural areas, January 2018 to December 2022**

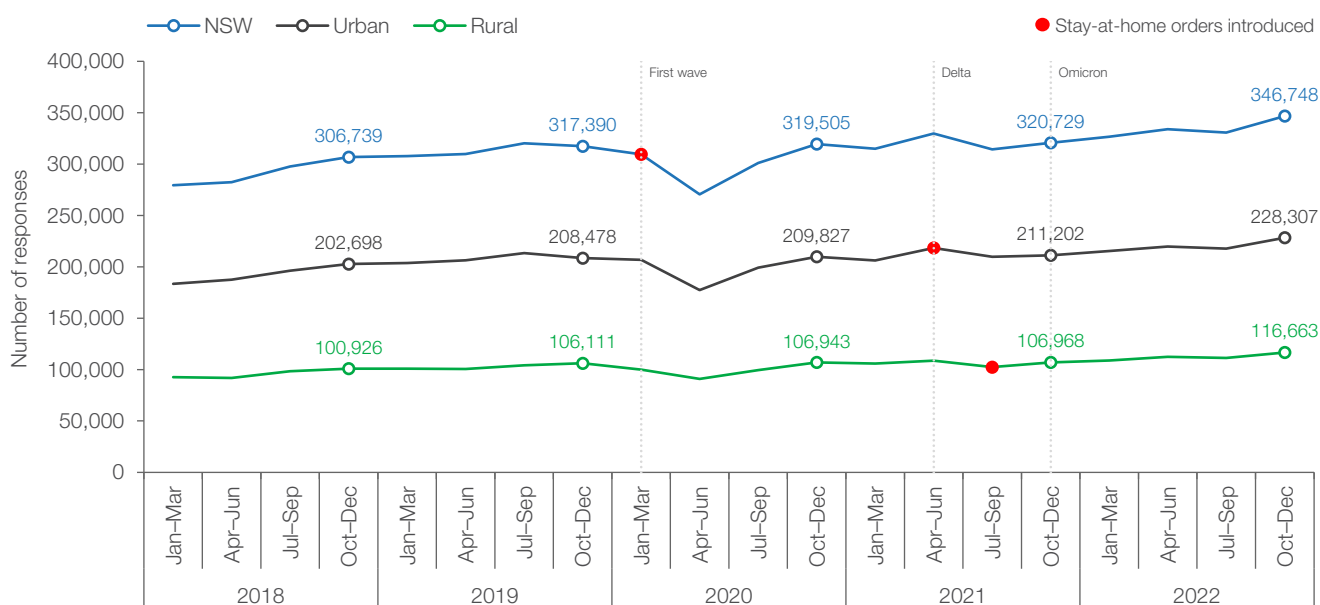


Figure 5 Ambulance responses, emergency priority (P1), NSW, urban and rural areas, January 2018 to December 2022

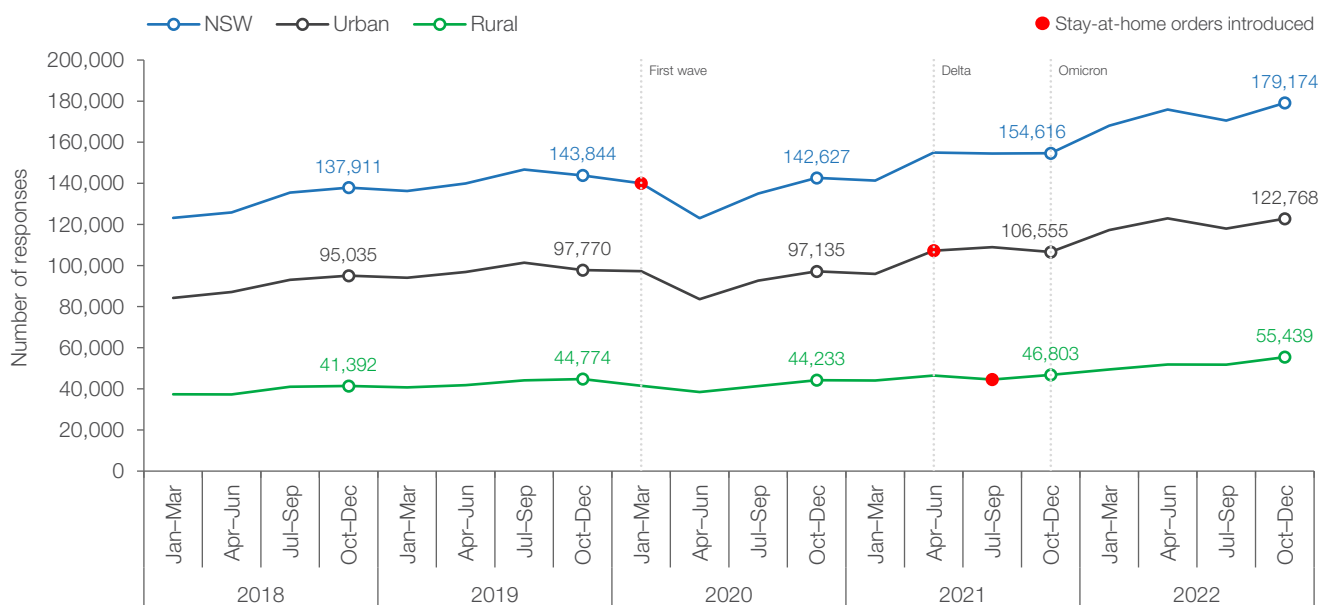
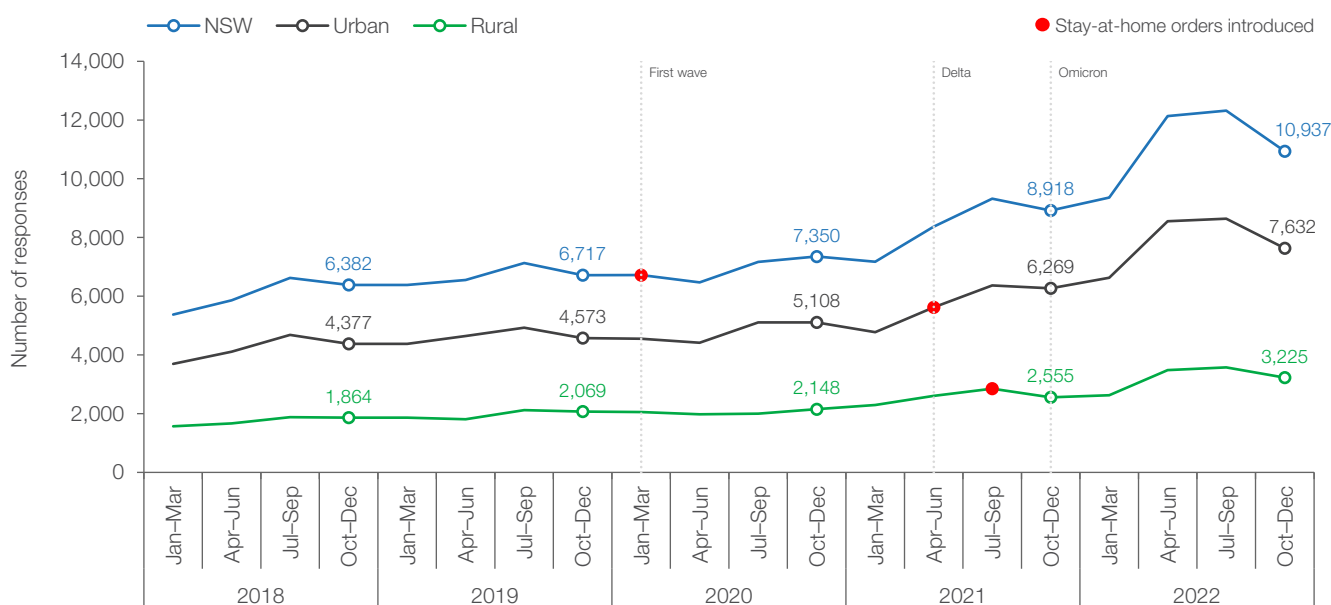


Figure 6 Ambulance responses, highest priority (P1A), NSW, urban and rural areas, January 2018 to December 2022



Note: Local areas are classified as 'urban' or 'rural' using ARIA+, which is the standard used by the Australian Bureau of Statistics (ABS). For more information, see the **technical supplement**.

Ambulance performance

Response times increased during the pandemic with indications of recovery in late 2022

The increase in ambulance responses throughout the COVID-19 pandemic coincided with a progressive decline in measures of ambulance performance. As a result, on average, patients waited longer for an ambulance to arrive at the end of 2022 than they did at the start of the pandemic.

There were 44,752 highest priority (P1A) responses to patients with life-threatening conditions in 2022, compared with 26,779 in 2019. The percentage of P1A responses reached within 10 minutes decreased steadily during the pandemic (Figure 7). Of all P1A responses in 2022, six in 10 (60%) were reached within 10 minutes, compared with 71% in 2019.

Across NSW, the percentage of emergency (P1) responses reached within 15 minutes decreased from mid-2020 to mid-2022 (Figure 8). In 2022, just 38% of the 693,666 P1 responses that year were reached within 15 minutes – 19 percentage points down from 2020 (57%) and eight percentage points lower than in 2021 (46%). The median P1 response time in the last quarter of 2022 was 14.5 minutes, up from 11.7 minutes during the same period in 2019 (Figure 9).

Due to factors including longer distances between incidents and hospitals in rural areas, the time it takes for paramedics to reach patients has traditionally been longer in those parts of NSW. However, during the pandemic, the decline in response performance for P1A and P1 cases was more notable in urban areas. In the case of P1 responses, the percentage of cases reached within 15 minutes in urban areas dropped below the result for rural areas in April to June 2021 (Figures 7 and 8).

Figure 7 Percentage of highest priority (P1A) response times within 10 minutes, NSW, urban and rural areas, January 2018 to December 2022

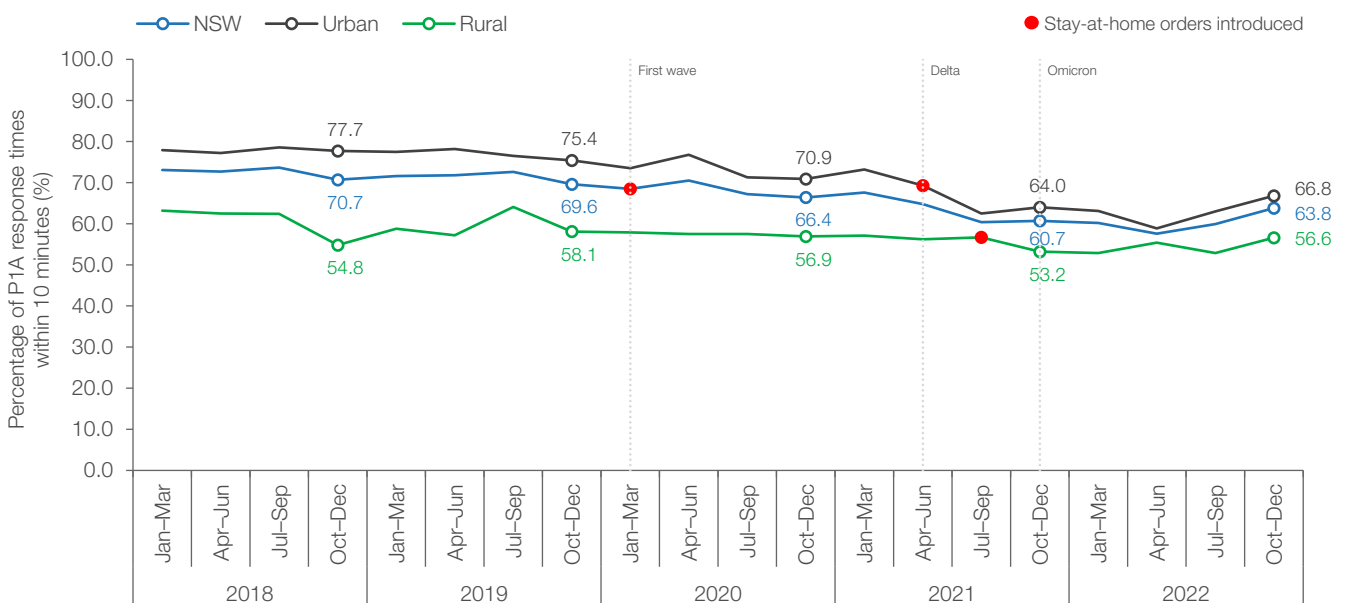


Figure 8 Percentage of emergency priority (P1) call to ambulance arrival times (CTAA) within 15 minutes, NSW, urban and rural areas, January 2018 to December 2022

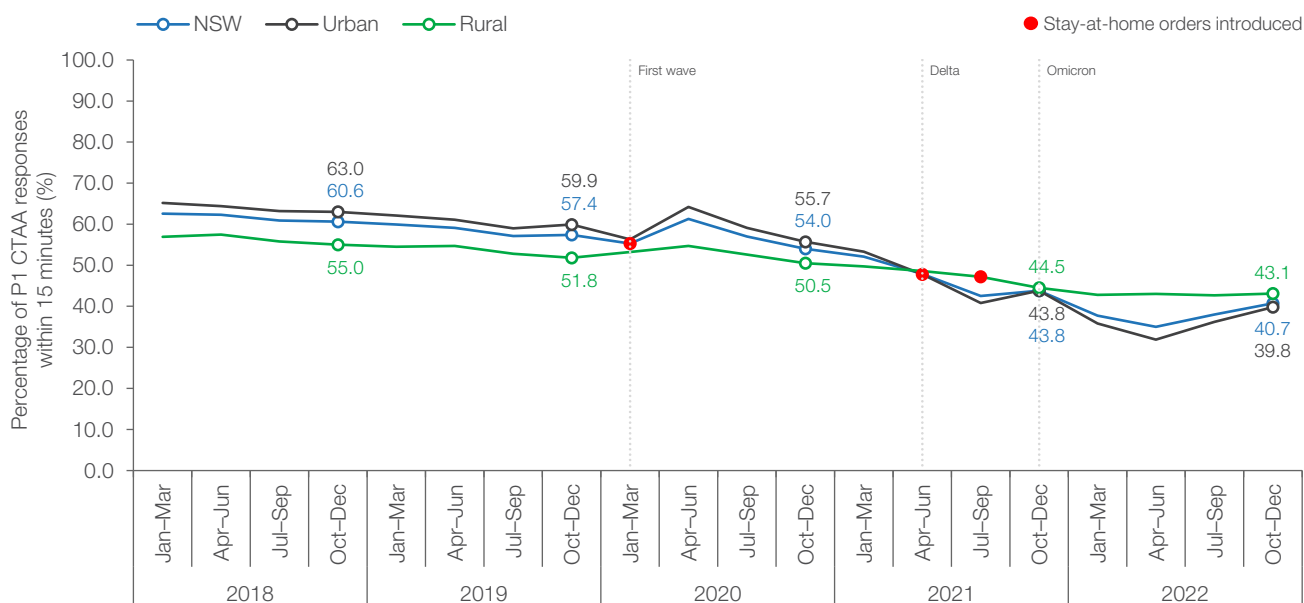
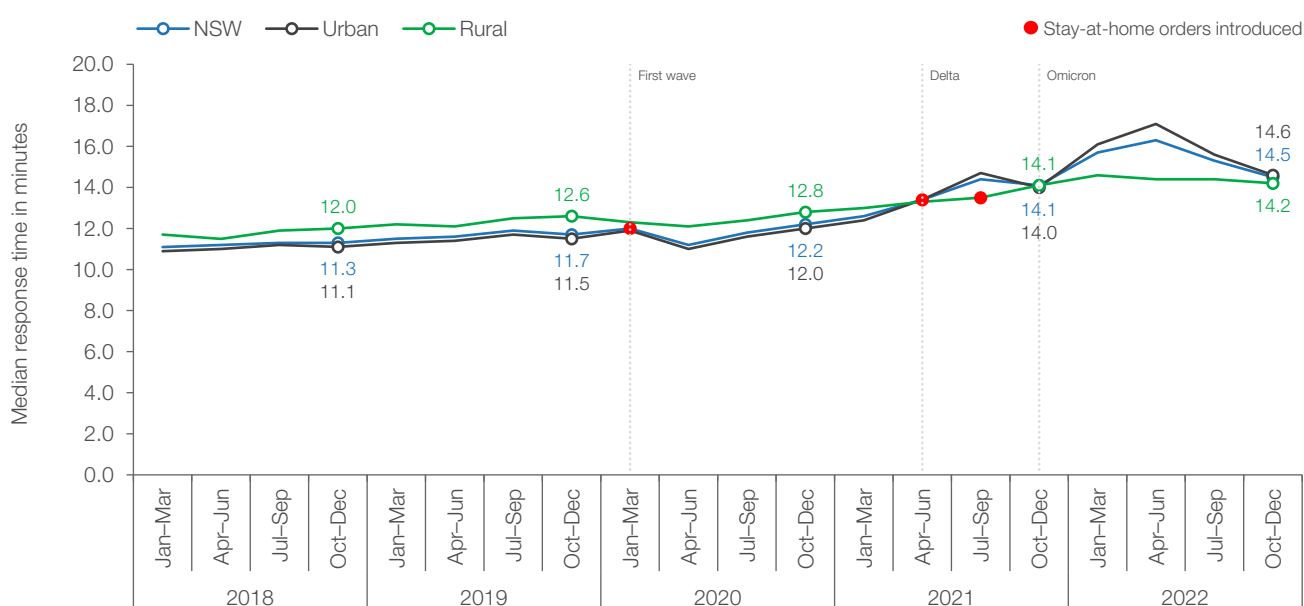


Figure 9 Median response times, emergency priority (P1), NSW, urban and rural areas, January 2018 to December 2022



Note: Local areas are classified as 'urban' or 'rural' using ARIA+, which is the standard used by ABS. For more information, see the [technical supplement](#).

Patients' experiences with NSW ambulance services

Patients were overwhelmingly positive about their ambulance experiences in the second half of 2022

To understand patients' experiences with NSW ambulance services during the COVID-19 pandemic, BHI introduced a module into the Emergency Department Patient Survey for people who arrived at 36 large urban or 41 large rural emergency departments (EDs) by ambulance between July and September 2022.

Despite increasing ambulance demand and growing response times in the three years to 2022, patients who were transported to an ED via ambulance were overwhelmingly positive about their overall experiences of care. When asked to rate the care they received from ambulance staff, almost all patients (98%) said it was 'very good' (88%) or 'good' (10%).

Around eight in 10 patients (81%) said the time they waited for an ambulance to arrive was 'about right'. However, 13% of patients said they waited 'slightly too long', while 6% said it was 'much too long' (Figure 10).

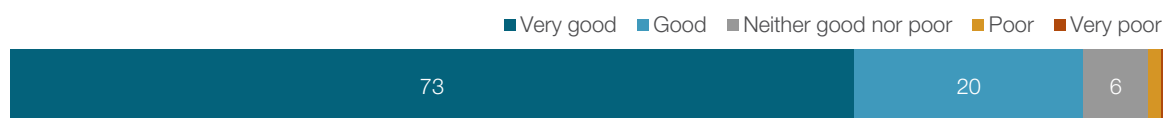
Patients were particularly positive about the interpersonal aspects of their care. Around nine in 10 patients (93%) said the way ambulance and ED staff worked together was 'very good' (73%) or 'good' (20%), and 94% said that they 'definitely' had confidence and trust in the ambulance staff who treated them (Figure 10).

Figure 10 **Percentage of patients in NSW, all response options, Emergency Department Patient Survey, patients who arrived via ambulance, July to September 2022**

a. Do you think the time you waited for the ambulance to arrive was...?



b. How would you rate how the ambulance staff and ED staff worked together?



c. Did you have confidence and trust in the ambulance staff treating you?



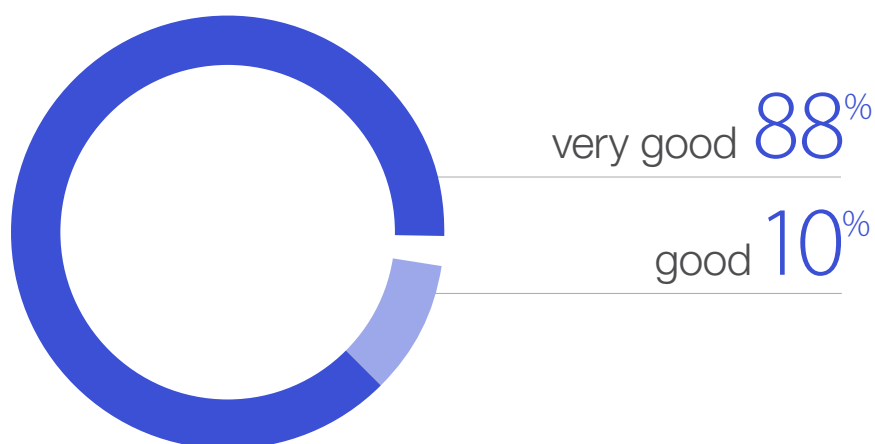
Patients also provided free-text comments about their experiences of ambulance services.

“ Engaging, caring and compassionate care from ambulance staff. They kept me up to date and spoke to me in an easy to understand manner, and were very friendly. ”

“ The ambulance staff were professional, courteous and kind. They made me feel safe. ”

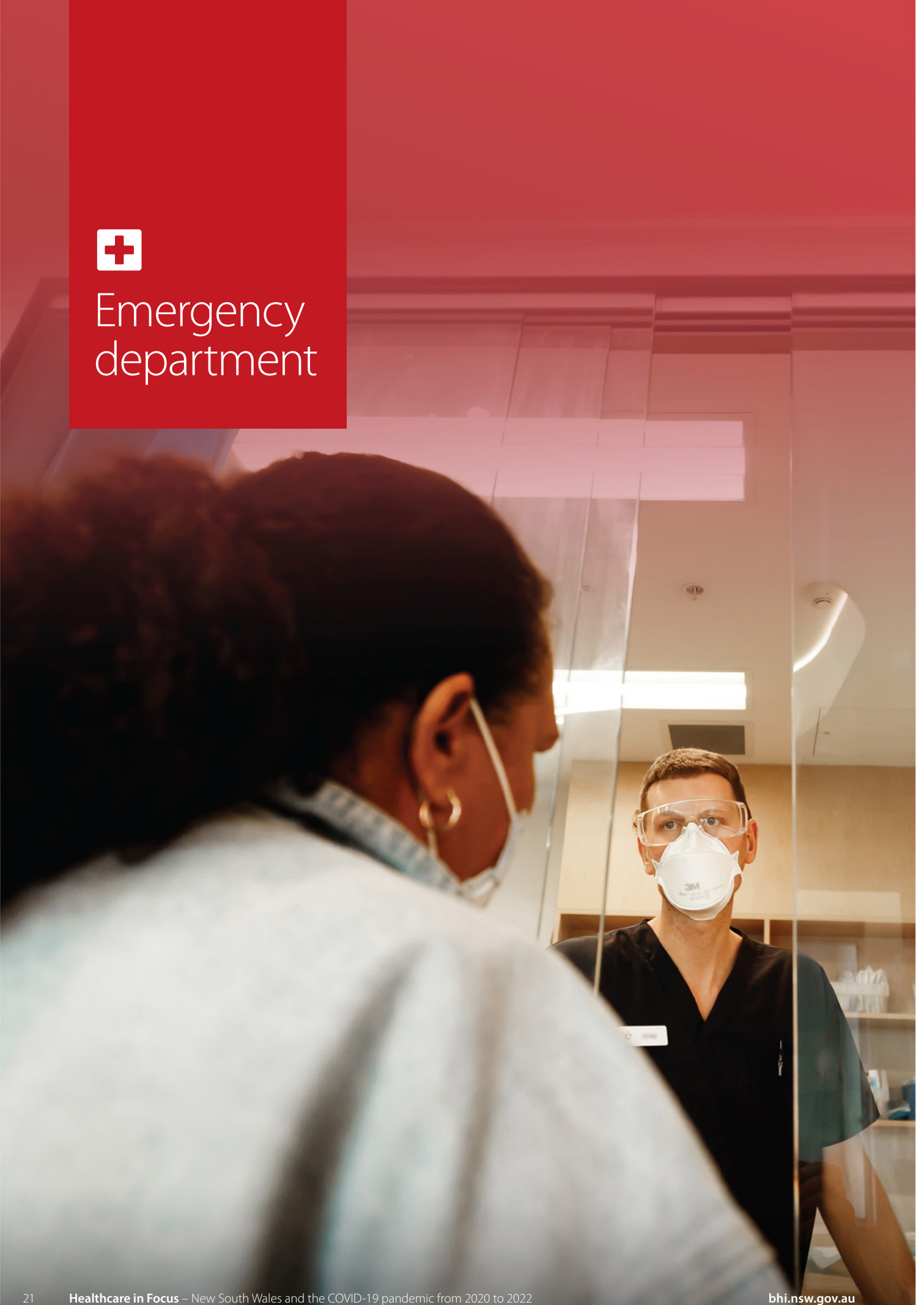
In July to September 2022

Overall, **98%** of patients rated their ambulance care as...





Emergency department



Key findings

NSW public hospital emergency departments (EDs) are open to everyone and provide specialised assessment and life-saving care for acutely unwell patients. EDs often act as an entry point to inpatient services.



The emergence of COVID-19 saw a temporary decline in ED attendances in early 2020, however activity quickly recovered to reach or exceed pre-pandemic levels in 2021 and 2022



With busier EDs and longer wait times, patients' ratings of their overall ED experiences fluctuated during the pandemic, but remained above mid-2019 levels



Measures of ED timeliness progressively declined throughout 2021 and 2022, with more patients waiting longer for their treatment to start



Shifts in ED demand during the pandemic were largely driven by increases in attendances in urban hospitals



Further to this report, explore more activity and performance results in our [Data Portal](#) and [Healthcare Quarterly](#) reports

Emergency department activity and performance

ED demand was high during the pandemic and patients waited longer for treatment

When COVID-19 reached NSW in early 2020, NSW public hospital EDs were experiencing unprecedented levels of activity, with attendances having climbed steadily since mid-2018.

This long-term trend was interrupted with the emergence of COVID-19. Initial stay-at-home orders in March 2020 resulted in a sharp decrease in ED attendances, reaching a five-year low in the April to June 2020 quarter. However, this proved to be temporary, with attendances rising steeply in the second half of 2020 to reach and in some quarters exceed pre-pandemic levels (Figure 11). During the pandemic, the number of attendances for the most serious triage categories 1 and 2 increased at a faster rate than other categories (data not shown).

Annually, there were 3.06 million ED attendances in NSW public hospitals in 2022, compared with 3.05 million in 2021, 2.88 million in 2020 and 3.05 million in 2019.

Shifts in ED attendances during the pandemic were largely driven by increases in attendances in urban hospitals, with smaller increases seen in rural hospitals (Figure 11).

While ED waiting times fluctuated during the pandemic – often corresponding with changes in activity – there was an increase in the time patients waited for their treatment to start and how long they spent in the ED between 2019 and 2022. This was particularly notable in urban hospitals (Figures 12 and 13).

Figure 11 ED attendances, NSW, urban and rural hospitals, January 2018 to December 2022

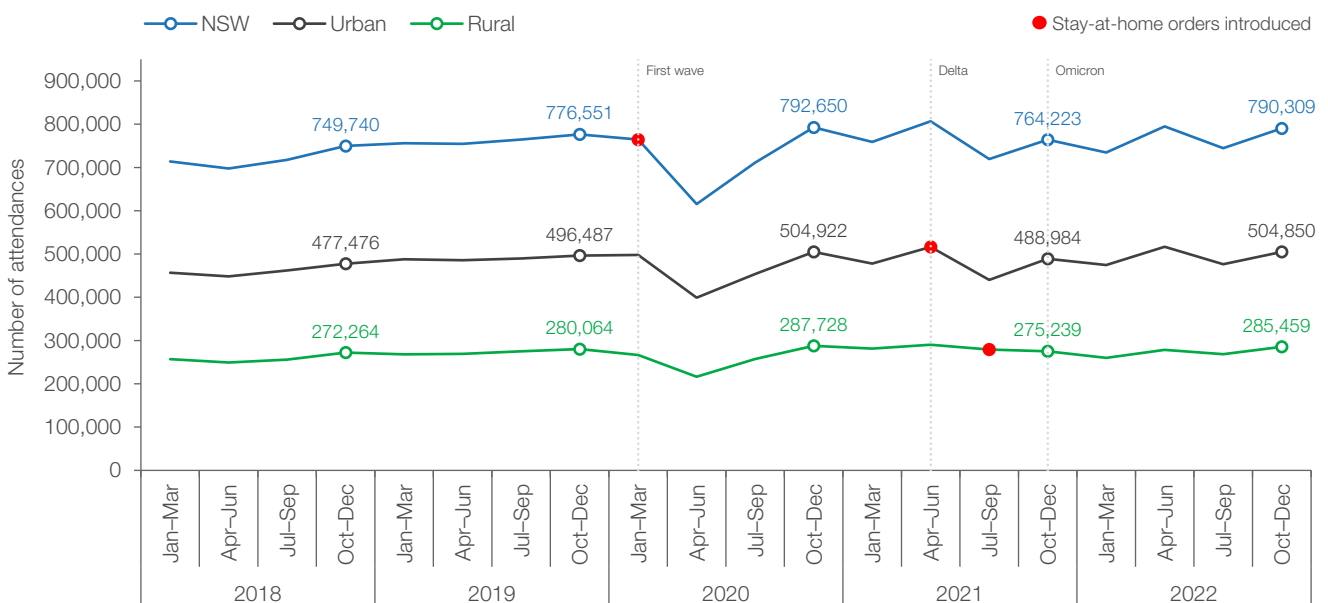


Figure 12 Percentage of patients whose treatment started on time, NSW, urban and rural EDs, January 2018 to December 2022

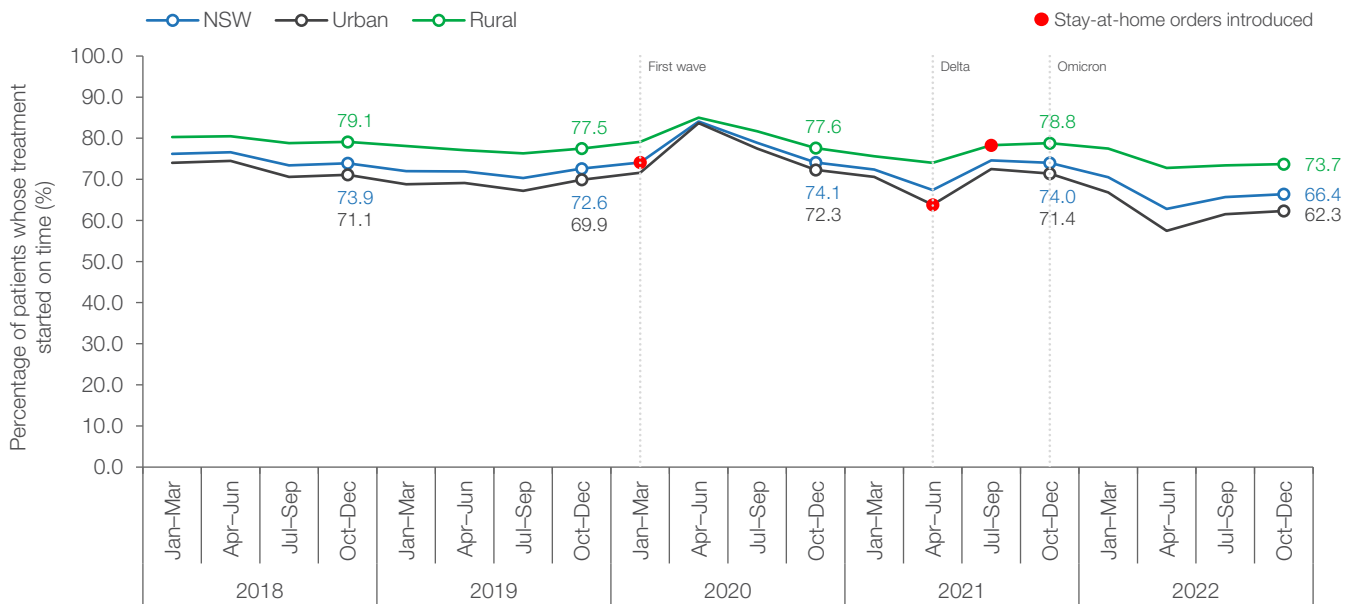
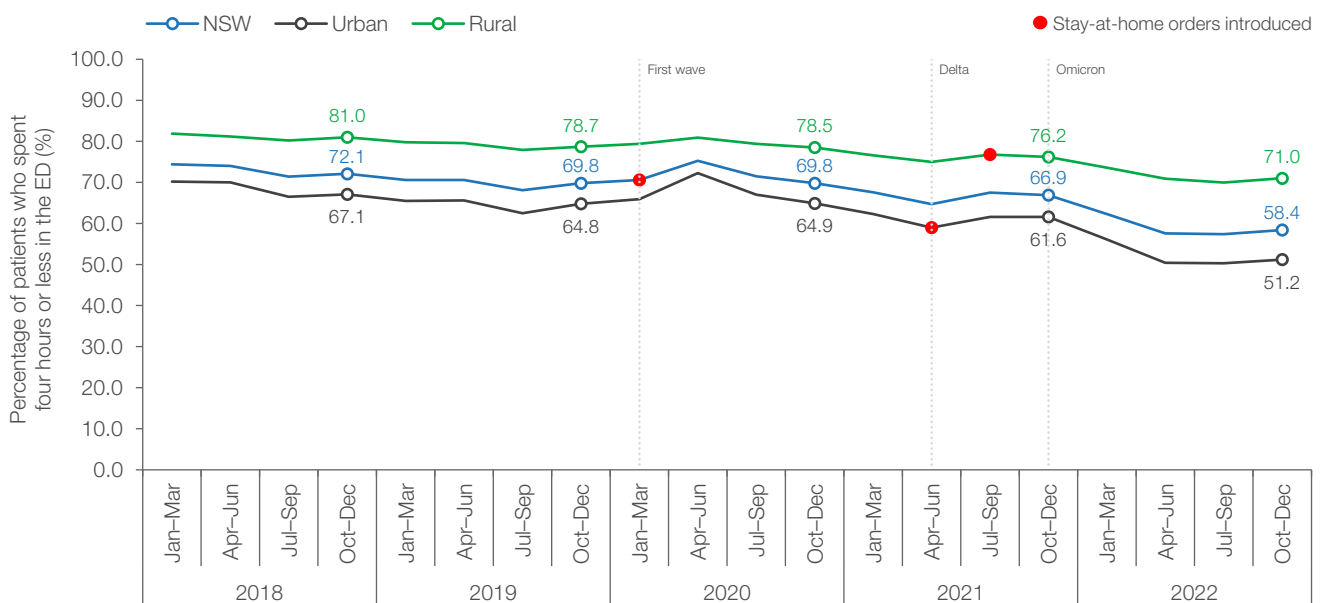


Figure 13 Percentage of patients who spent four hours or less in the ED, NSW, urban and rural hospitals, January 2018 to December 2022



Note: Hospitals are classified as 'urban' or 'rural' using ARIA+, which is the standard used by ABS. For more information, see the **technical supplement**.

Patients' experiences in emergency departments

Patients' ratings of their ED experiences fluctuated during the pandemic, but remained above mid-2019 levels

Since the arrival of COVID-19 in NSW, hospitals have adapted in multiple ways to maintain sufficient capacity as well as adopting additional preventative measures to ensure the safety of patients and staff. These changes may have affected patients' experiences of care.

Patients' overall ratings of their ED care were increasing prior to the pandemic and, despite the challenges brought on by COVID-19, ratings remained above mid-2019 levels through to mid-2022.

The upward trend in overall ratings prior to the pandemic continued in the early months of the first COVID-19 wave. However, as the pandemic progressed, some of these gains were lost by mid-2021. In late 2021, signs of improving patient experience waned with the emergence of the Omicron wave (Figure 14).

The pattern was similar, if less pronounced, for patients' ratings of how well health professionals worked together while ratings of whether staff explained things clearly was more stable over the period (Figures 15 and 16).

Patients attending both urban and rural hospital EDs gave similar ratings of their overall ED care; of how well ED health professionals worked together; and of how well health professionals explained things in a way they could understand (data not shown).

BHI's annual **Emergency Department Patient Survey** asks people who have recently attended one of 77 large NSW EDs to provide feedback about their experiences of care.

Figure 14 **Percentage of patients who rated their overall care in ED as 'very good', NSW, July 2019 to June 2022**

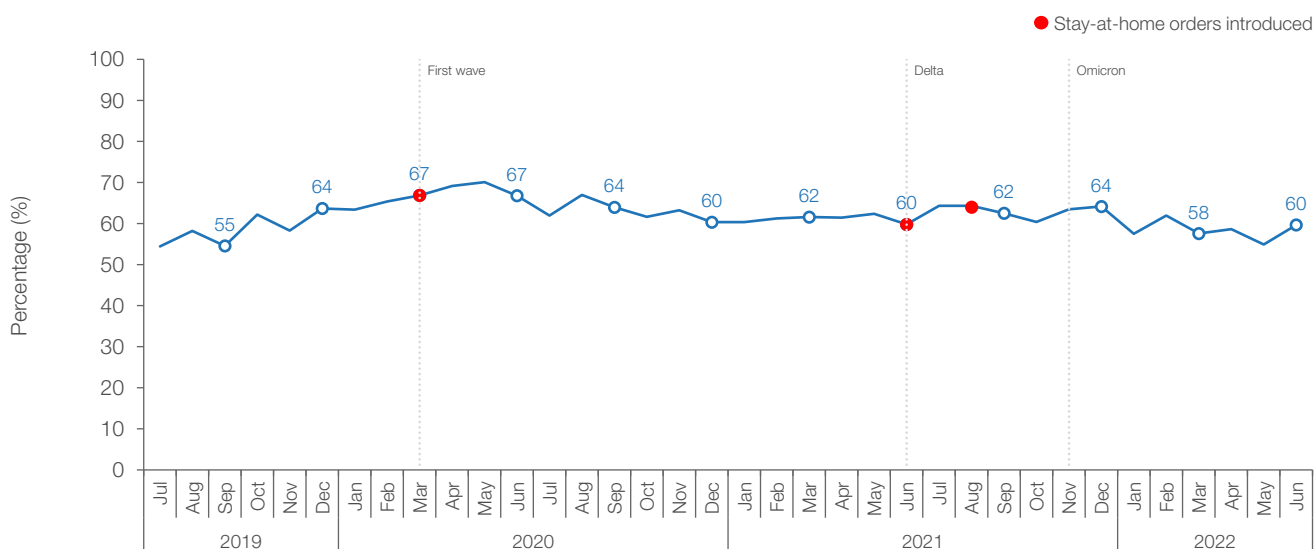


Figure 15 **Percentage of patients who rated how ED health professionals worked together as ‘very good’, NSW, July 2019 to June 2022**

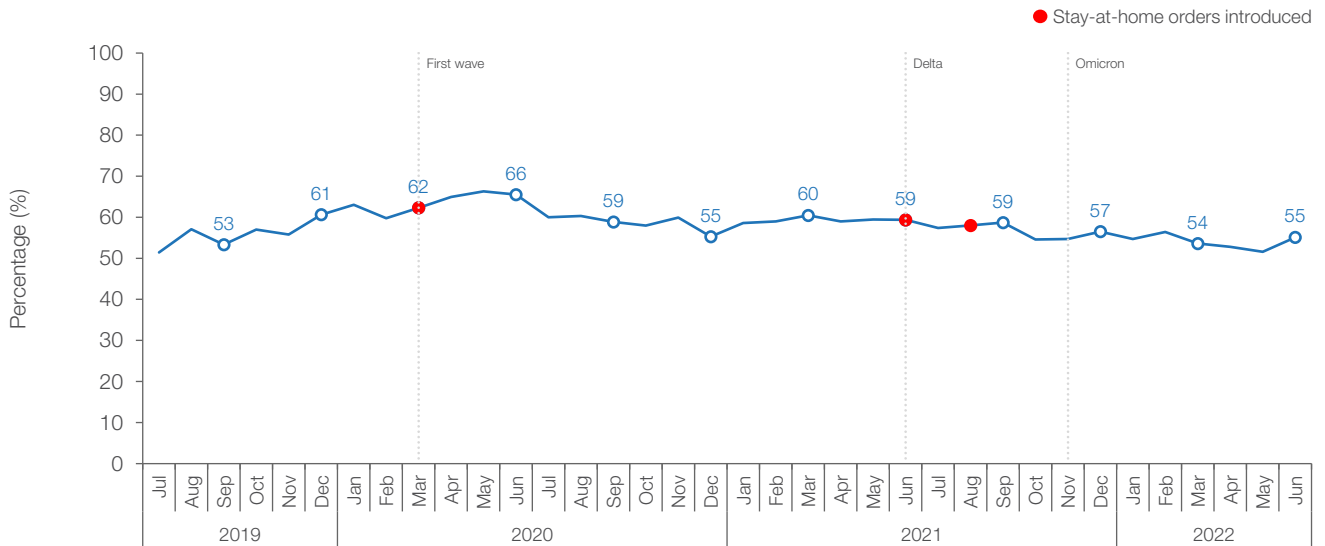
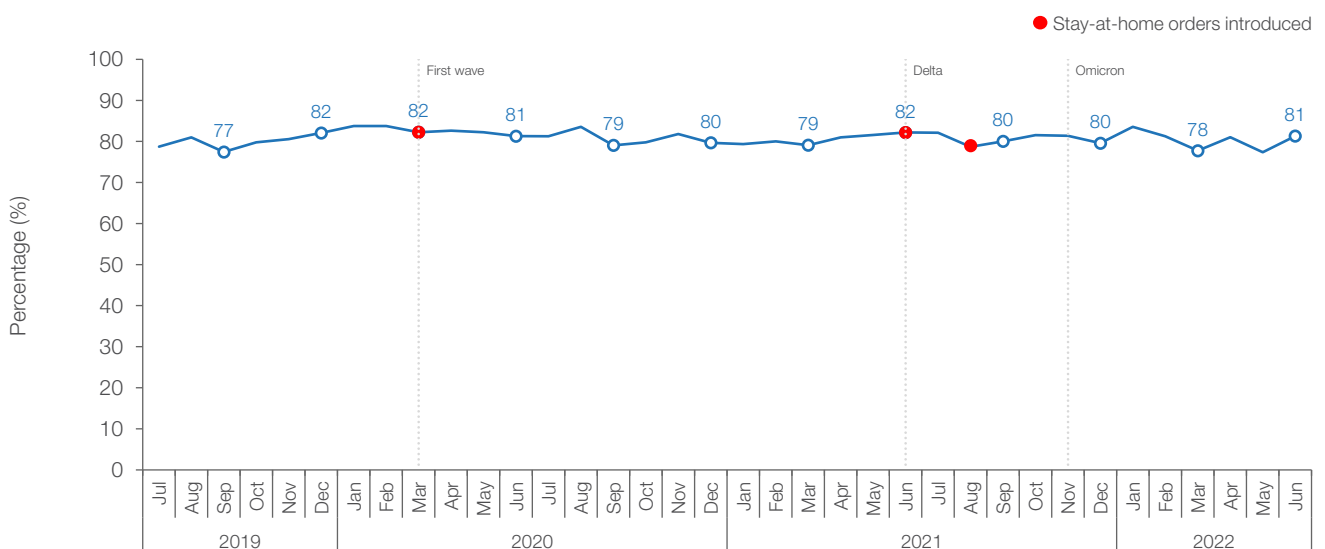


Figure 16 **Percentage of patients who said ED health professionals ‘always’ explained things in a way they could understand, NSW, July 2019 to June 2022**





Admitted patients



Key findings

People are admitted to hospital for a wide range of services, including medical and surgical care. Admissions can be acute (for immediate treatment) or non-acute (for rehabilitation, palliative care or other reasons). People may also be admitted for mental health-related reasons, which can be acute or non-acute.



Acute hospital admissions fluctuated throughout the pandemic, especially in urban hospitals



Average length of stay for acute care increased sharply during the Delta wave and remained longer throughout 2022



Admissions for respiratory conditions dropped sharply after the onset of COVID-19, and remained lower in 2022 than before the pandemic



Admitted patients' ratings of their experiences fluctuated during the pandemic, although ratings were generally positive



Further to this report, explore more activity results in our [Data Portal](#) and [Healthcare Quarterly](#) reports

Admitted patient activity

Patients spent longer in hospital, especially following the Delta wave

Numbers of acute admitted patient episodes in NSW public hospitals had been gradually increasing in the two years before COVID-19 arrived in NSW (Figure 17).

Mirroring the trend seen in ambulance and emergency department activity, there was a sharp decrease in the number of acute admitted patient episodes in the April to June 2020 quarter following the introduction of stay-at-home orders and suspension of non-urgent and some semi-urgent elective surgery. Activity rebounded in July to September 2020, remaining high until decreasing again during the Delta and Omicron waves (Figure 17).

Fluctuations in acute admitted patient episodes during the pandemic were more evident in urban hospitals, especially following the Delta and Omicron waves (Figure 17).

The average length of stay for acute overnight patients was relatively stable during the first COVID-19 wave. However, the emergence of Delta corresponded with a sharp increase in length of stay that persisted throughout the Omicron wave. This increase was greater in urban than in rural hospitals (Figure 18). As of December 2022, patients continued to spend longer in hospital than before the pandemic.

Non-acute admitted patient episodes trended downwards from the beginning of the pandemic until early 2022, before rising sharply to the end of the year. This was driven mostly by non-acute admissions to urban hospitals (Figure 19).

Figure 17 **Acute admitted patient episodes, NSW, urban and rural hospitals, January 2018 to December 2022**

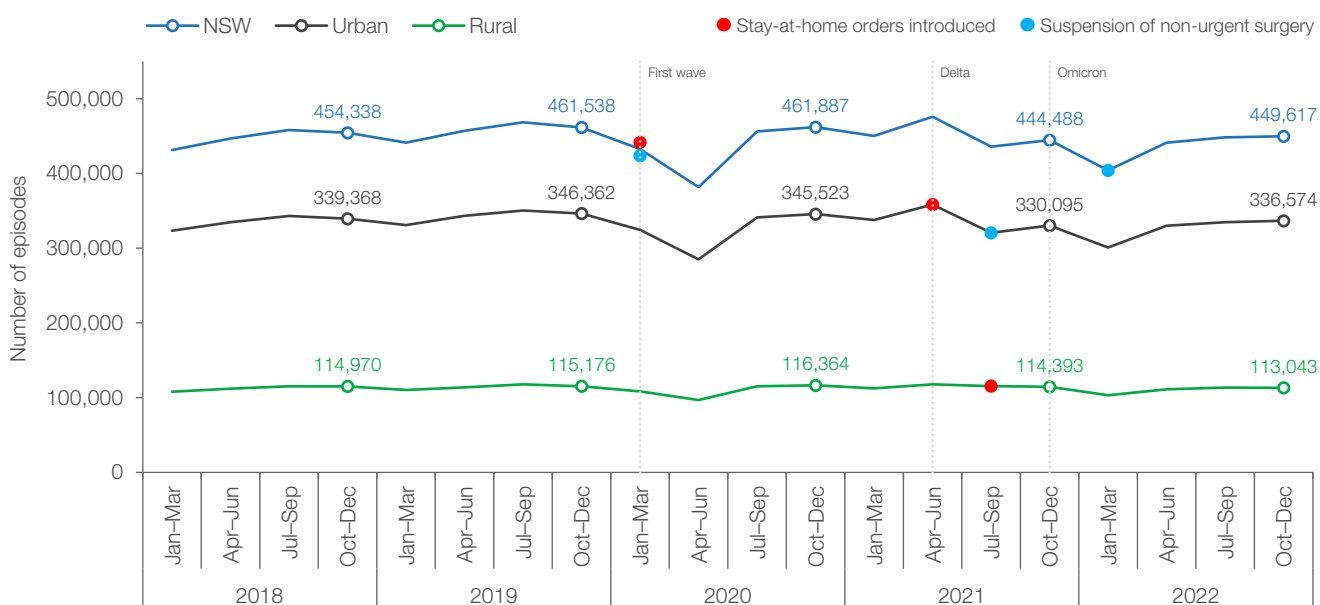


Figure 18 **Average length of stay, overnight acute admitted patient episodes, NSW, urban and rural hospitals, January 2018 to December 2022**

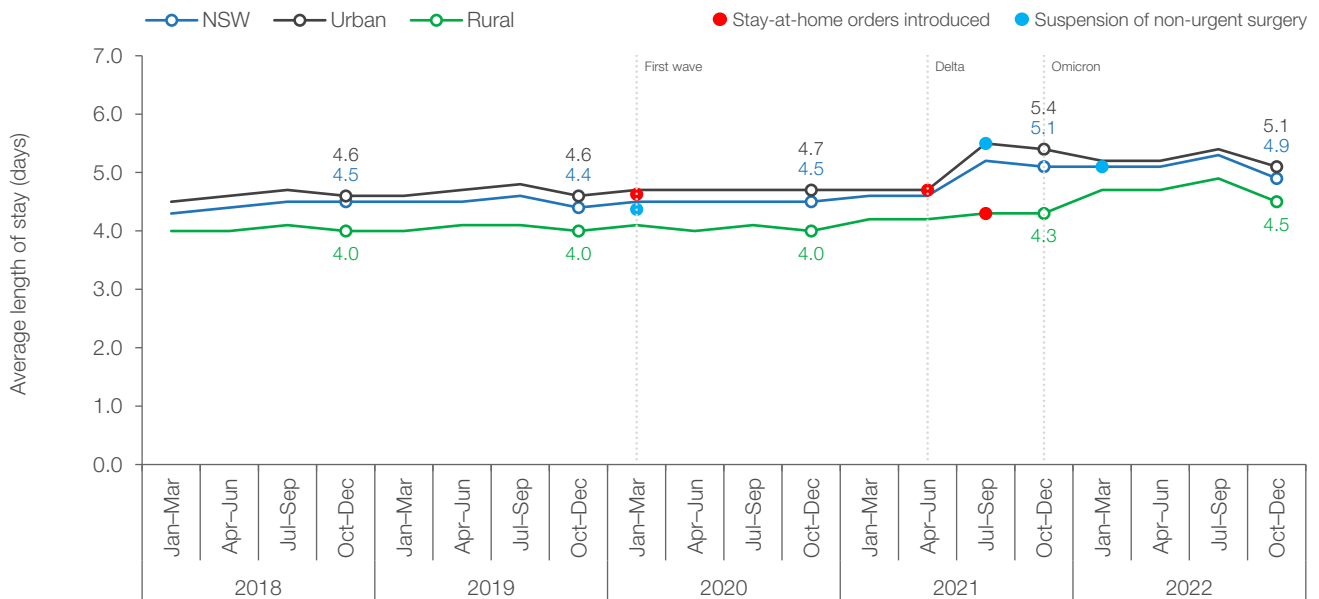
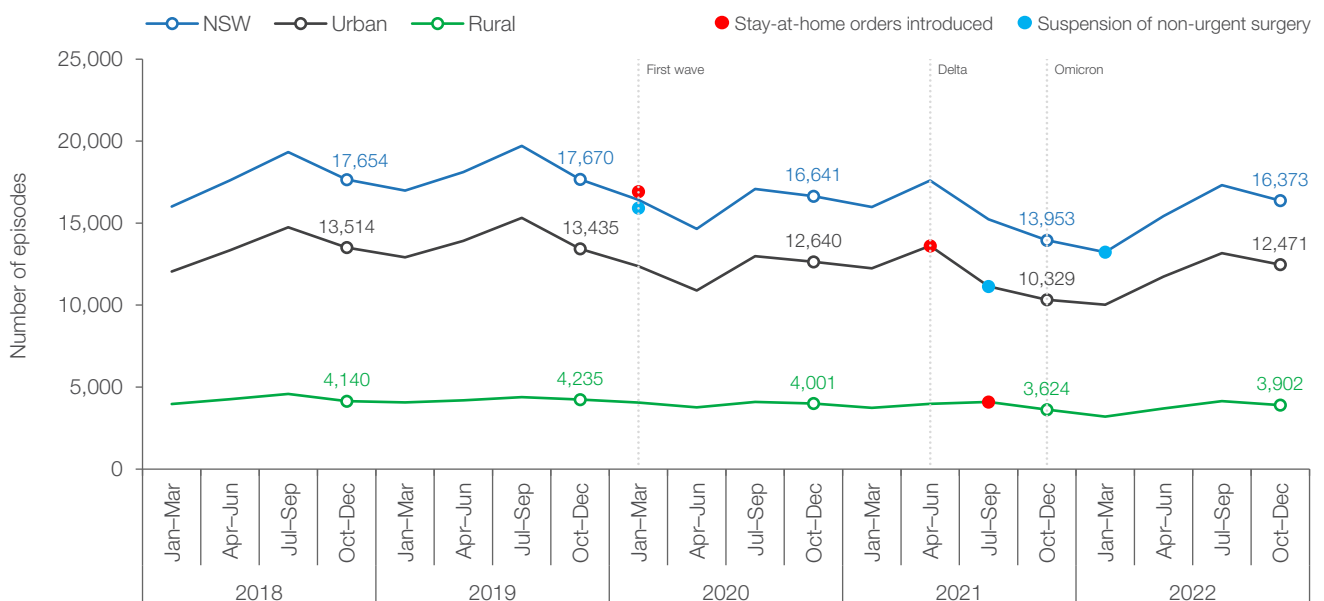


Figure 19 **Non-acute admitted patient episodes, NSW, urban and rural hospitals, January 2018 to December 2022**



Note: Hospitals are classified as 'urban' or 'rural' using ARIA+, which is the standard used by ABS. For more information, see the [technical supplement](#).

Admitted patient activity for selected clinical cohorts

Respiratory, mental health and injury admissions were down during the pandemic

The COVID-19 pandemic impacted admissions activity for a range of clinical conditions in different ways. Admissions for respiratory conditions (non-COVID), mental health-related conditions and injuries may have been expected to be among the most affected by the pandemic and the public health measures that accompanied it.

In a typical pre-pandemic year, admissions for respiratory conditions would peak in the winter months, corresponding with flu season. Following a bad flu season in 2019, admissions for respiratory system conditions decreased sharply during the first COVID-19 wave. This was followed by a progressive rise in respiratory admissions through to mid-2022. However, in late 2022, admissions for respiratory conditions remained below pre-pandemic levels (Figure 20).

Admissions for mental health-related conditions had been relatively stable from 2018 to 2019 before decreases occurred during each wave of the pandemic (Figure 21). However, this coincided with periods where overall hospital activity was down and should not be seen as evidence that fewer people needed mental health support at this time.

Admissions for injuries also decreased during the first COVID-19 wave in April to June 2020 as stay-at-home orders took effect, before returning to pre-pandemic levels throughout the remainder of 2020. This was followed by a decline in admissions for injuries during the Delta and Omicron waves as further public health orders were enacted. In 2022, admissions for injuries remained well below pre-pandemic levels (Figure 22).

Figure 20 **Admitted patient episodes, respiratory system, NSW, urban and rural hospitals, January 2018 to December 2022**

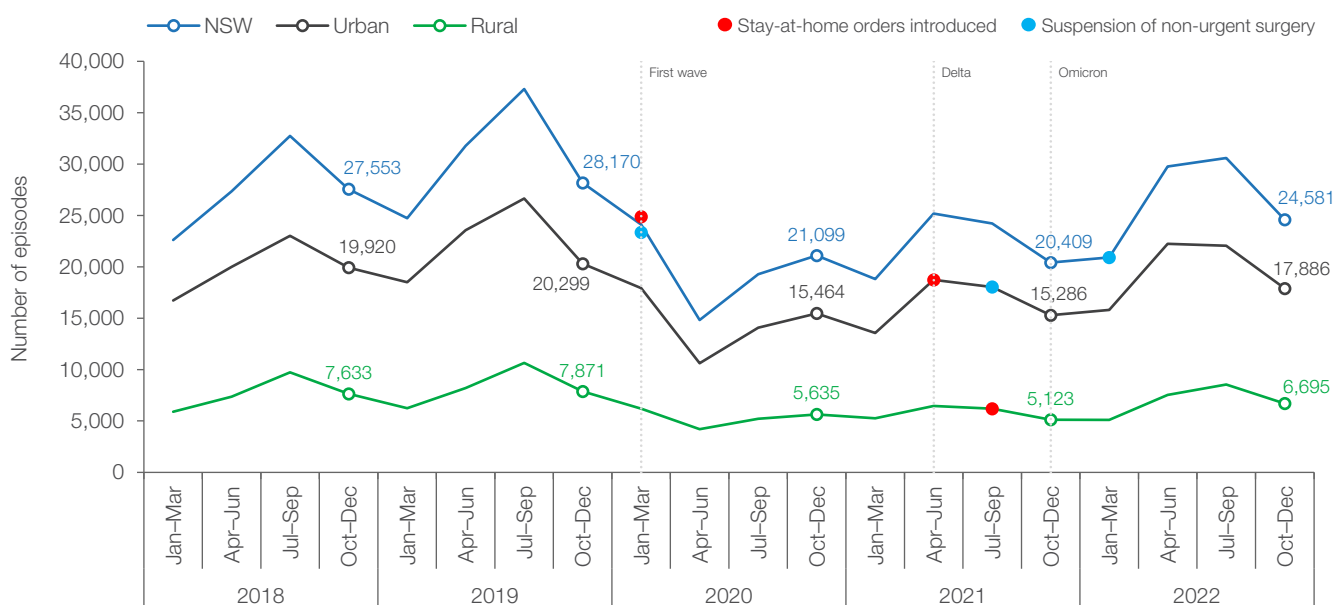


Figure 21 **Admitted patient episodes, mental health related-conditions, NSW, urban and rural hospitals, January 2018 to December 2022**

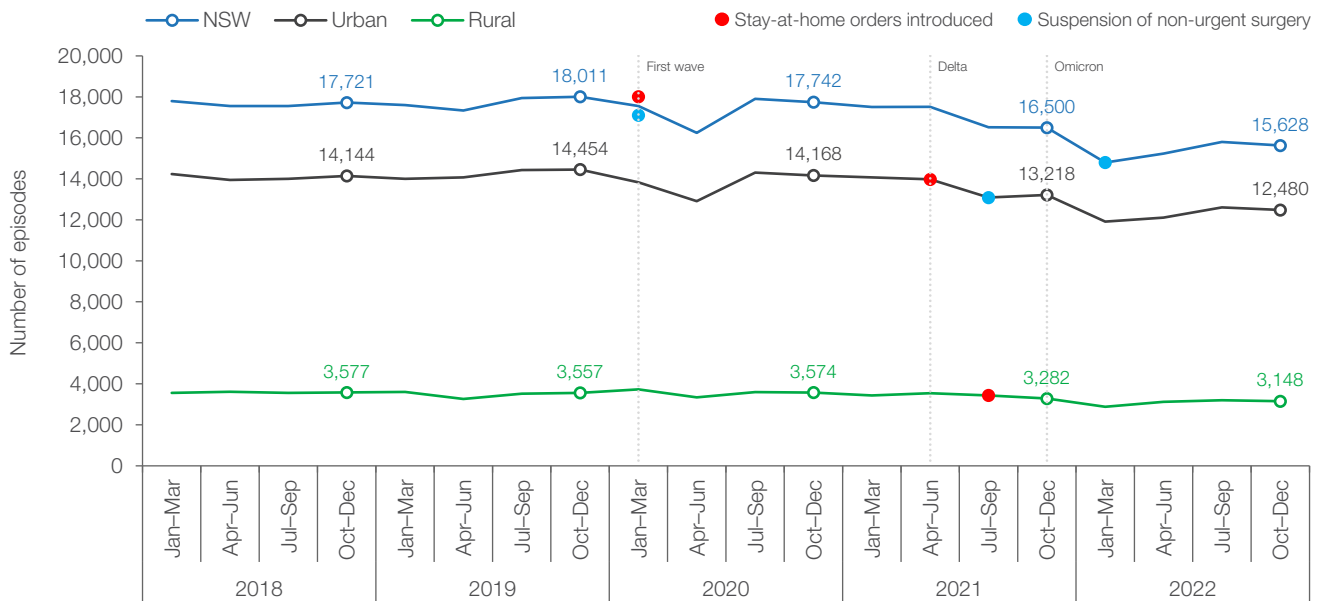
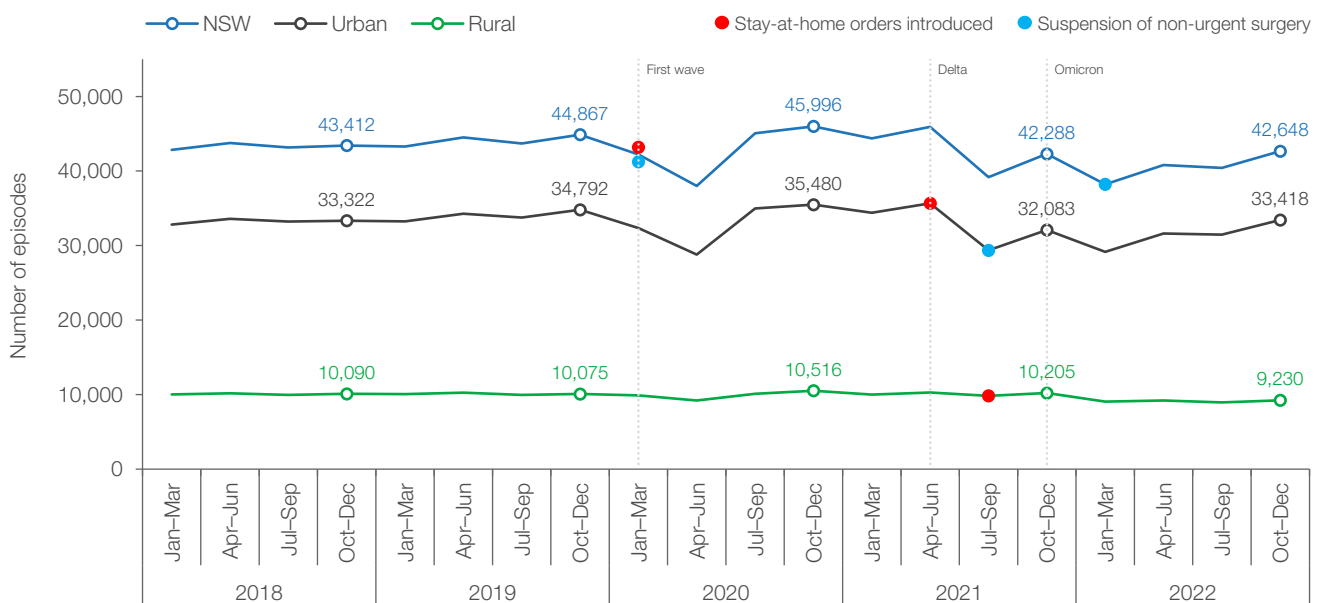


Figure 22 **Admitted patient episodes, injury, NSW, urban and rural hospitals, January 2018 to December 2022**



Note: Hospitals are classified as 'urban' or 'rural' using ARIA+, which is the standard used by ABS. For more information, see the **technical supplement**.

Admitted patients' experiences

Overall ratings of care decreased slightly during the pandemic

In response to the COVID-19 pandemic, NSW public hospitals introduced far-reaching changes to the way that care was delivered, including visitor restrictions. As time went on, hospital staff and patients needed to adapt to new ways of interacting to keep all people in hospitals safe. These changes may have influenced patients' experiences of inpatient care.

In the lead up to the pandemic in NSW, overall ratings of care among adults admitted to NSW public hospitals were increasing. As the pandemic continued, ratings dropped slightly and then remained stable before another decrease in early 2021. Overall ratings of care showed signs of recovery before a notable decrease in September 2021 (Figure 23).

The pattern was similar for patients' ratings of how well health professionals worked together and how well organised their care was. However, the decline from mid-2021 was more pronounced in the percentage of patients who rated their care as 'very well organised' (Figures 24 and 25).

In 2021, patients admitted to rural hospitals gave higher ratings for overall satisfaction and outcomes, timely and coordinated care, and a safe, comfortable environment compared with patients admitted to urban hospitals (see the BHI report **Snapshot – Adults admitted to hospital, Results from the 2021 patient survey**).

BHI's annual **Adult Admitted Patient Survey** asks people who were recently admitted to hospital to provide feedback about their experiences of care.

Figure 23 **Percentage of patients who rated their care overall as 'very good', NSW, July 2019 to June 2022**

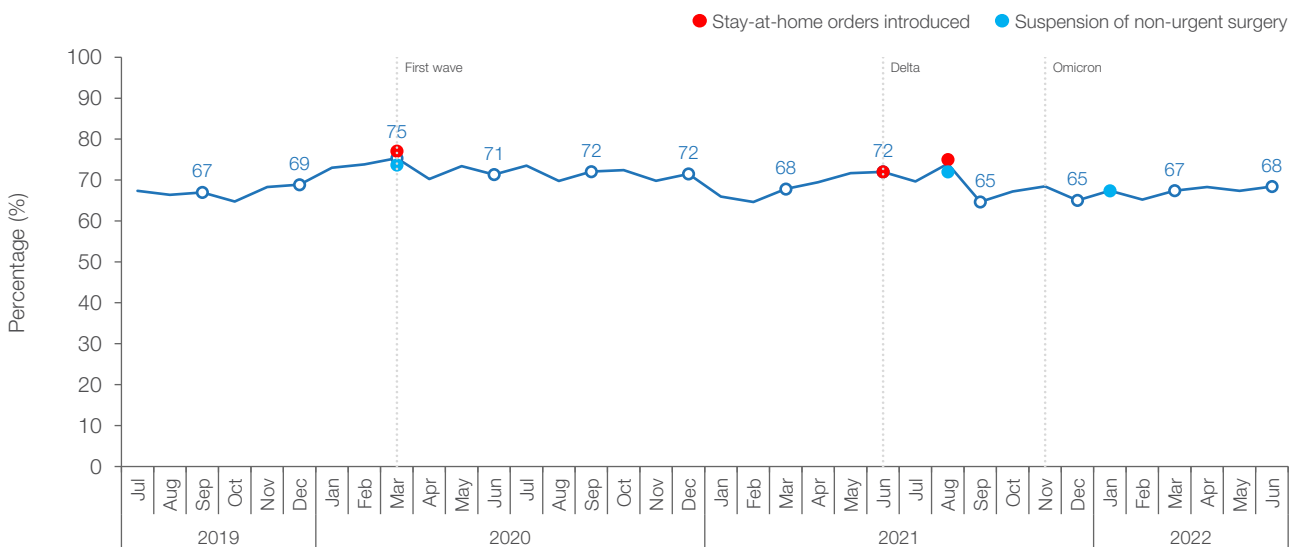


Figure 24 **Percentage of patients who rated how health professionals worked together as ‘very good’, NSW, July 2019 to June 2022**

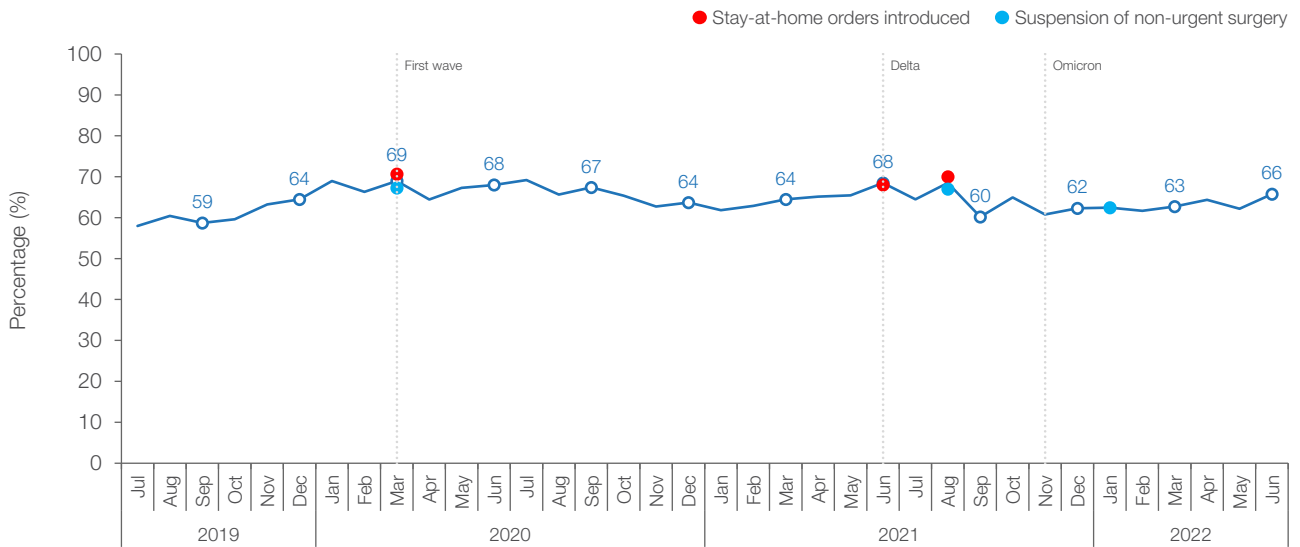
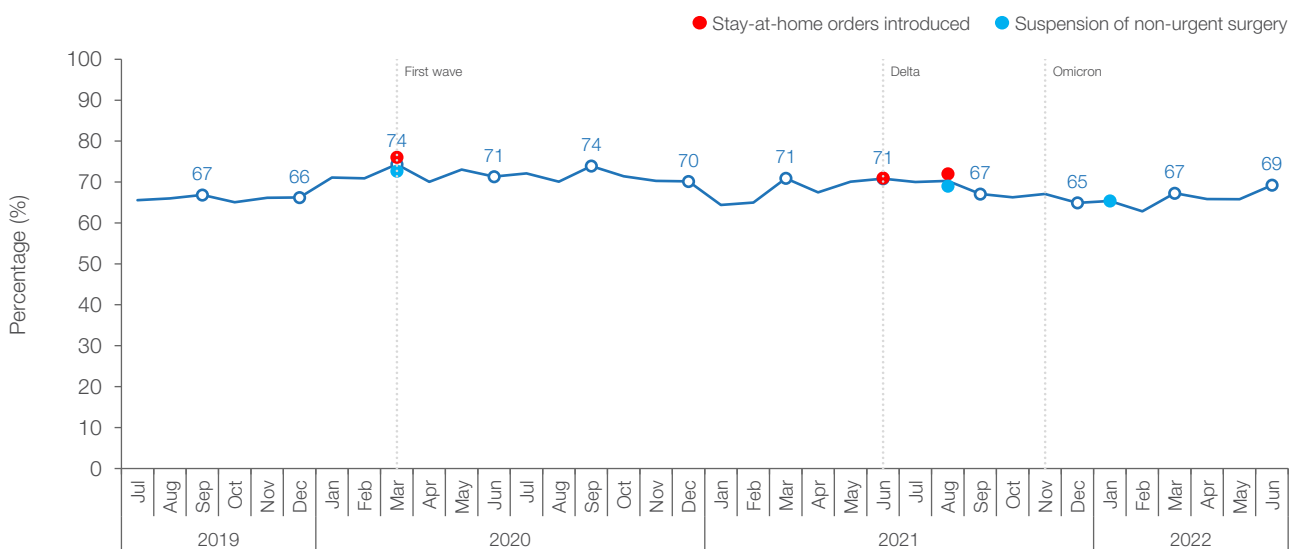


Figure 25 **Percentage of patients who rated their care as ‘very well organised’, NSW, July 2019 to June 2022**





Elective surgery



Key findings

Elective surgery is planned and can be booked in advance. Following specialist clinical assessment, patients are placed on a waiting list and given a clinical priority – urgent, semi-urgent or non-urgent – depending on the seriousness of their condition.



Fluctuations in elective surgery activity at different times between 2020 and 2022 were largely driven by the introduction and lifting of public health orders and suspensions of surgery, and efforts to manage backlogs



The elective surgery waiting list grew with the suspension of non-elective surgery in Sydney hospitals in early 2020. It returned close to pre-pandemic levels by mid-2021, then increased again with subsequent suspensions



The overall percentage of elective surgeries performed on time remained lower in 2020-22 than pre-pandemic levels, with non-urgent surgery most affected



This was marked by a sharp increase in the number of patients waiting longer than clinically recommended, especially across urban hospitals



Further to this report, explore more activity and performance results in our [Data Portal](#) and [Healthcare Quarterly](#) reports

Elective surgery activity and performance

Fewer elective (planned) surgeries were performed on time during the pandemic, with non-urgent surgery most affected

As NSW experienced successive COVID-19 waves, non-urgent and some semi-urgent elective surgeries were temporarily suspended several times – to help ensure sufficient hospital staffing and bed capacity – first in March 2020 (statewide) then again in August 2021 (metropolitan Sydney) and January 2022 (statewide). These suspensions resulted in sharp quarterly drops in the number of elective surgeries performed in the first half of 2020, late 2021 and early 2022, mainly in urban hospitals (Figure 26). Following each temporary suspension, hospitals worked to boost elective surgery numbers and address growing backlogs. NSW private hospitals assisted by doing 42,698 elective surgeries for public patients between 2020 and the end of 2022 (data not shown).

The number of elective surgeries performed in public hospitals was 232,390 in 2019 before the pandemic, compared with 213,731 in 2020, 213,512 in 2021 and 201,652 in 2022 (data not shown). The number of people added to the list was 267,589 in 2019 before the pandemic, compared with 245,220 in 2020, 245,097 in 2021 and 238,371 in 2022.

There were 88,044 patients on the elective surgery waiting list at the end of December 2019, compared with 99,300 at the end of December 2022 (Figure 29).

Following the suspension in early 2020, the percentage of surgeries performed on time dropped to 79.8% by July to September 2020. After recovering close to pre-pandemic levels in late 2021, it dropped again with the emergence of Omicron. By the end of 2022, the percentage of surgeries performed on time remained well below pre-pandemic levels (Figures 27 and 28).

The statewide suspension of non-urgent surgery in 2020 had a larger impact on rural hospitals while the metropolitan suspension of late 2021 had a larger impact on urban hospitals. In 2022, proportionally more elective surgeries were being performed on time in rural hospitals (Figure 27).

While on-time performance for non-urgent and semi-urgent surgeries declined markedly during the pandemic, the percentage of patients receiving urgent elective surgery on time remained above 98% through to the end of 2022 (Figure 28).

Figure 26 Elective surgeries performed, NSW, urban and rural hospitals, January 2018 to December 2022

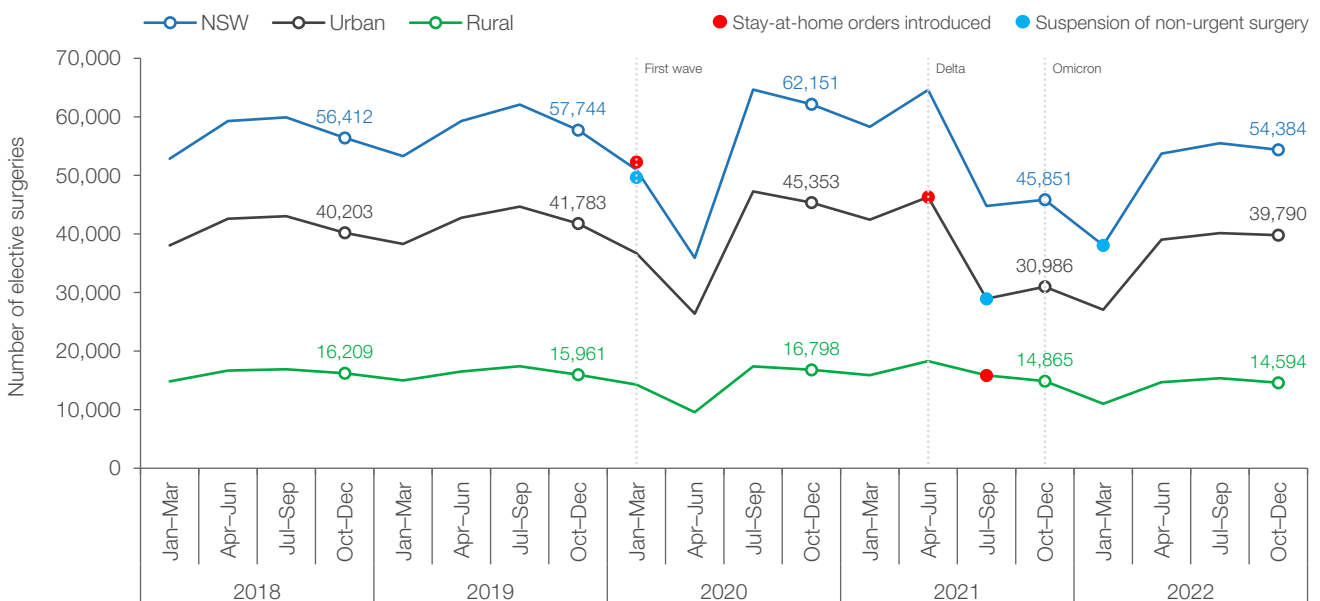


Figure 27 Percentage of elective surgeries performed on time, NSW, urban and rural hospitals, January 2018 to December 2022

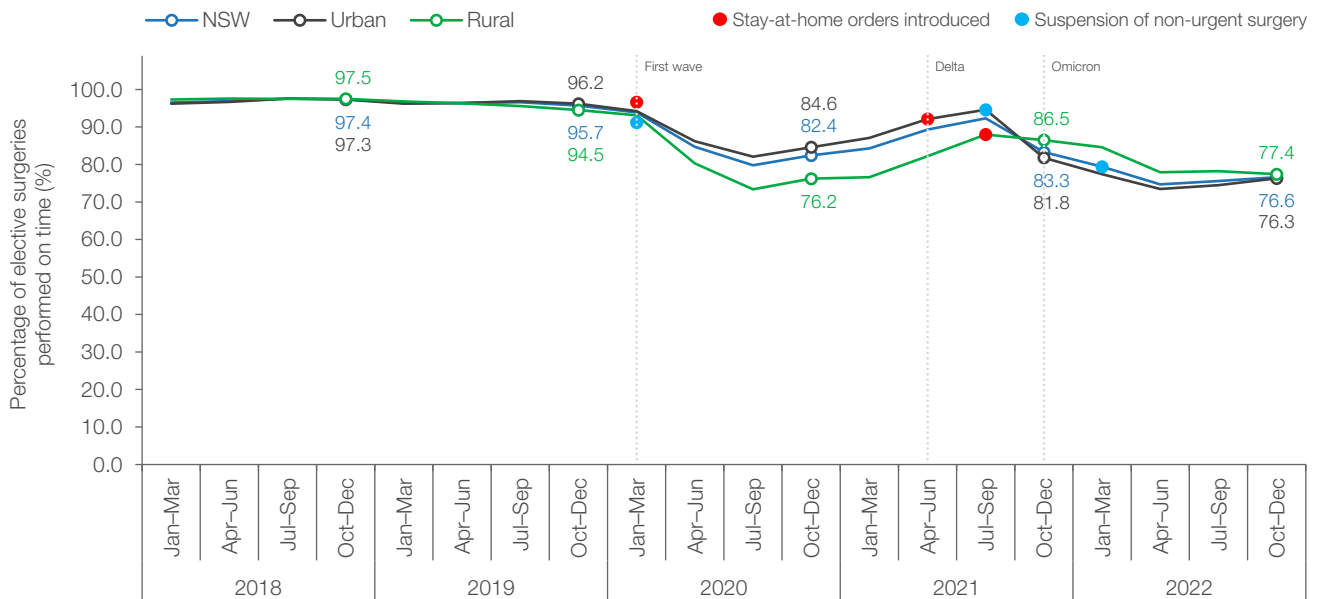
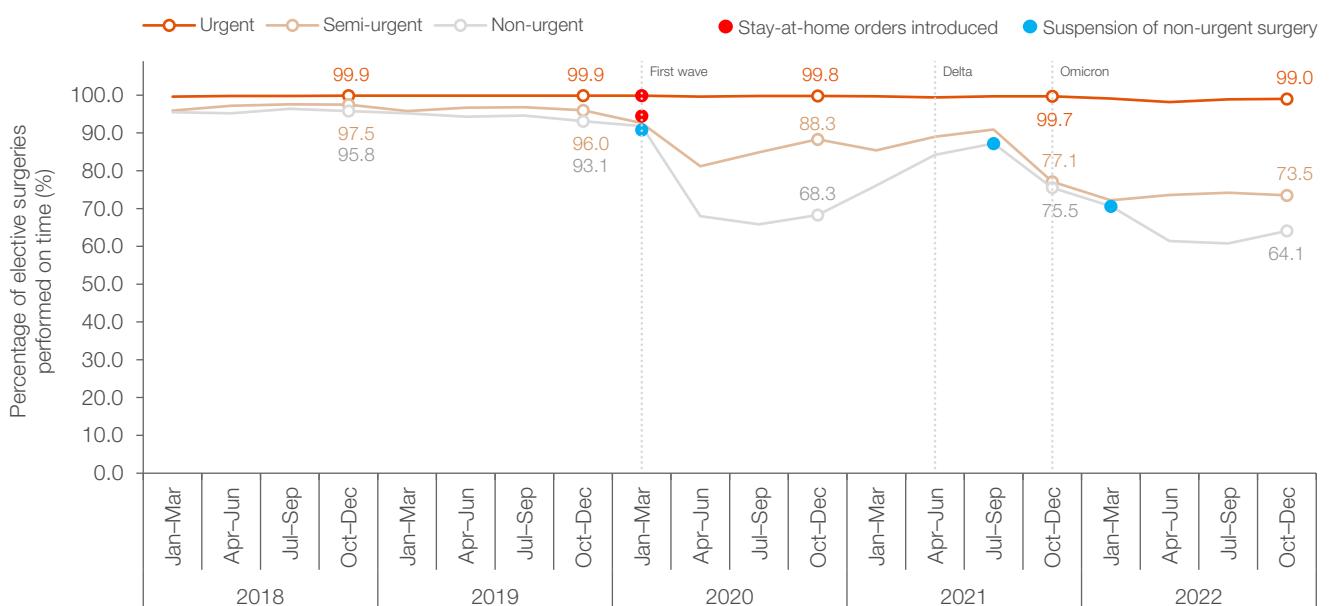


Figure 28 Percentage of elective surgeries performed on time, by urgency category, NSW, January 2018 to December 2022



Note: Hospitals are classified as 'urban' or 'rural' using ARIA+, which is the standard used by ABS. For more information, see the **technical supplement**.

Elective surgery waiting lists

The elective surgery waiting list grew during the pandemic and more patients waited longer than clinically recommended

The number of patients on the elective surgery waiting list in NSW gradually increased in the two years prior to the pandemic, reaching 88,044 at the end of 2019. With the onset of the first COVID-19 wave and the subsequent temporary suspension of non-urgent and some semi-urgent surgery, the list grew rapidly to a record 101,024 patients by the end of June 2020 (Figure 29).

Hospitals' extensive efforts to increase elective surgery capacity following the first COVID-19 wave, brought the list back down to pre-pandemic levels by mid-2021. Subsequent COVID-19 waves and further suspensions, primarily affecting Sydney hospitals, saw it rise again to more than 100,911 at the end of March 2022. The number of patients on the elective surgery waiting list decreased slightly to 99,300 by the end of 2022 (Figure 29).

The number of patients on the waiting list who had waited longer than clinically recommended peaked in early 2020 and again in early 2022. However, the 2022 peak was much higher, reaching a record 18,748 in mid-2022 compared with 10,563 in mid-2020. Subsequent efforts to reduce the overdue list saw it decrease to 17,074 by the end of 2022 (Figure 30).

While the effects of the pandemic and temporary elective surgery suspensions were evident in rural hospitals, the large variations in the overall and overdue lists from 2020 to 2022 were mainly seen in urban hospitals.



At the end of 2022

Of the **17,074** patients on the waiting list who had waited longer than clinically recommended...

Their surgery categories were:

Urgent: **36**
Semi-urgent: **5,626**
Non-urgent: **11,412**

The most common overdue procedures were:

Cataract extractions: **1,787**
Total knee replacements: **1,346**
Tonsillectomies: **813**

Figure 29 Patients on the waiting list ready for surgery at the end of the quarter, NSW, urban and rural hospitals, January 2018 to December 2022

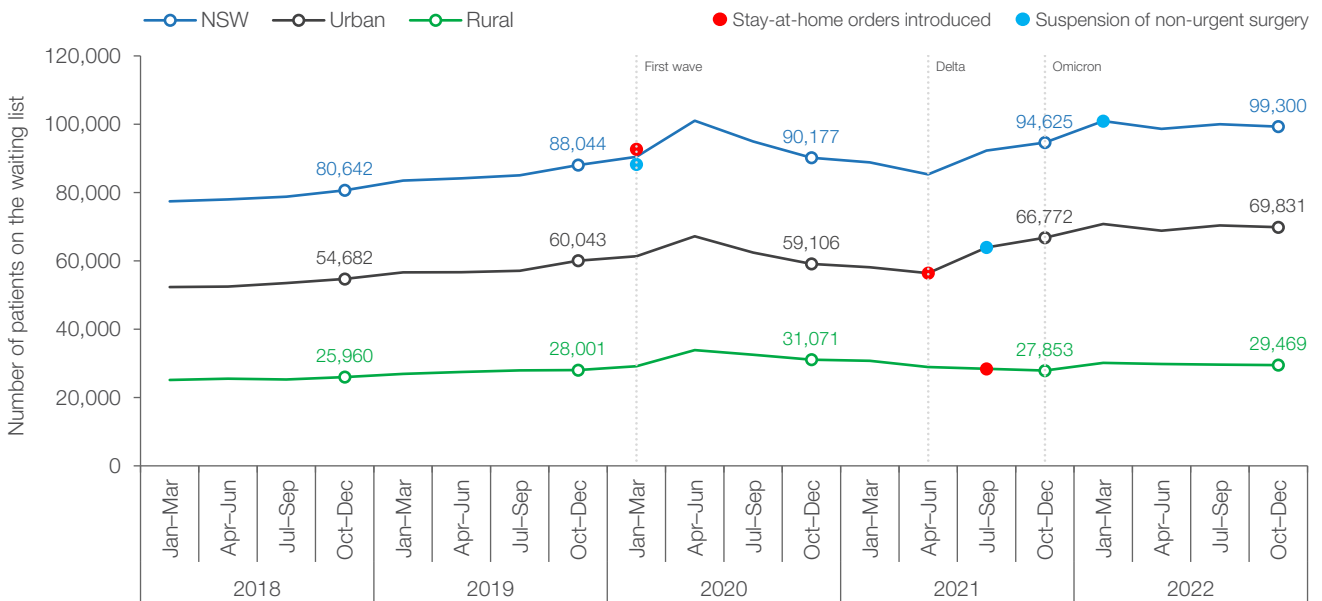
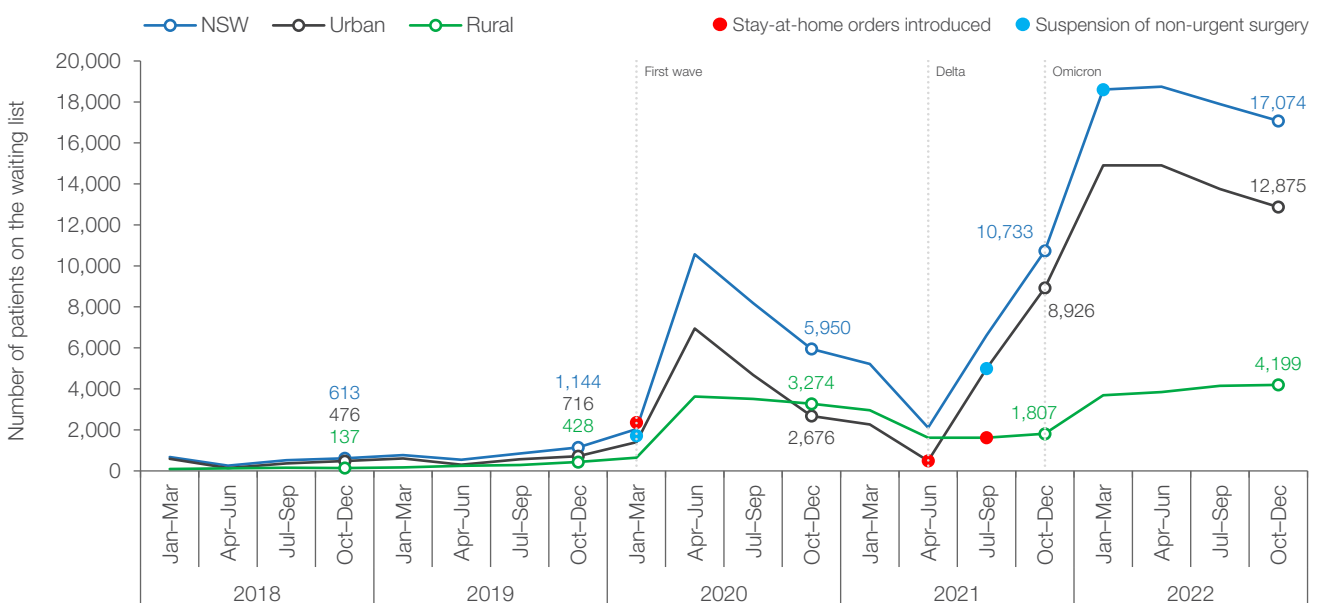


Figure 30 Patients on the waiting list ready for surgery at the end of the quarter who had waited longer than clinically recommended, NSW, urban and rural hospitals, January 2018 to December 2022



Note: Hospitals are classified as 'urban' or 'rural' using ARIA+, which is the standard used by ABS. For more information, see the **technical supplement**.



Virtual care



Health
South Eastern Sydney
Local Health District



Key findings

With the emergence of COVID-19, there was a rapid increase in the use of virtual healthcare technologies, such as telehealth (telephone) and videoconferencing (video calls).



Virtual care has become increasingly common in the delivery of outpatient and GP care in NSW over the past three years, both in urban and in rural areas



Outpatients of NSW public hospitals were positive about their experiences with virtual care in 2020 and 2021



The more virtual care appointments patients had in the previous 12 months, the more positive they were about their virtual care experiences



Patients consistently cited convenience and time savings as the most common benefits of virtual care. Many also said that they saved money and felt comfortable being in their own home/surroundings while receiving virtual care



Hospital outpatients who also received virtual GP care rated their experiences highly, with many saying that virtual care was an opportunity to coordinate their care between the GP and outpatient clinic

Virtual outpatient care

There was a rapid and sustained increase in the use of virtual care during the pandemic

The use of virtual care among hospital outpatients has expanded in recent years, with growth accelerating during the COVID-19 pandemic. Stay-at-home orders introduced in response to COVID-19 case increases resulted in many more patients receiving their outpatient care virtually, including via telephone or video call.

Numbers of overall outpatient appointments increased during the first COVID-19 wave in 2020 and again during the Delta wave in 2021, when they reached an all-time high. While there were increases in in-person appointments during these periods, virtual care increased at a faster rate (Figure 31). In 2021, in-person outpatient appointments had grown by 27% (from 12.5 million in 2019 to 15.9 million in 2021) while virtual outpatient appointments (telephone and video calls) had grown by 118% (from 1.7 million in 2019 to 3.7 million in 2021).

While the total number of outpatient appointments returned to pre-pandemic levels throughout 2022, virtual care appointments continued to represent a larger proportion of these services (Figure 31). In 2019, virtual care appointments comprised 12% of total annual outpatient services. This grew to 18% (of 20.1 million appointments) in 2021 before settling above pre-pandemic levels at 22% (of 14.2 million appointments) in 2022.

The shift towards increased use of virtual care technologies was seen among hospital outpatients in both rural and urban areas but was more pronounced in urban areas. Between 2019 and 2022, telephone appointments grew by 76% in urban areas, compared with 49% in rural areas. At the same time, video appointments in urban areas grew by 2035% (more than 20 times), compared with 260% (3.6 times) in rural areas (Figure 32).

Virtual care innovations during the pandemic

This chapter focuses on virtual care for public hospital outpatients, including that provided by GPs, given the ready availability of systematic data sources for in-depth reporting. It is important to recognise there was a wide range of virtual models of care introduced in response to the pandemic.

An example of this includes a program developed by NSW Health, Service NSW and Healthdirect Australia – introduced in December 2022 – which enables people to register their positive rapid antigen test (RAT) results, undertake screening surveys to self-assess their risk of serious disease and be connected to virtual care teams in local health districts (LHDs) or GPs in the community.

The intention of the program was to provide people with care information based on their self-risk assessment. Approximately 1.7 million positive RAT tests have been registered to date in NSW with the majority deemed low risk. The smaller proportion of people assessed as at increased risk are directed to relevant services including GP and respiratory clinic referrals, antiviral therapies and LHD-based virtual care services.

This program was supported by the NSW Influenza and COVID Care in the Community Hotline, established in September 2021, which provided support to almost 200,000 callers, with nurses triaging and providing advice to almost 60,000 symptomatic people.

Data source: NSW Ministry of Health, System Sustainability and Performance.

Figure 31 Number of outpatient service events, by contact mode, NSW, January 2019 to December 2022

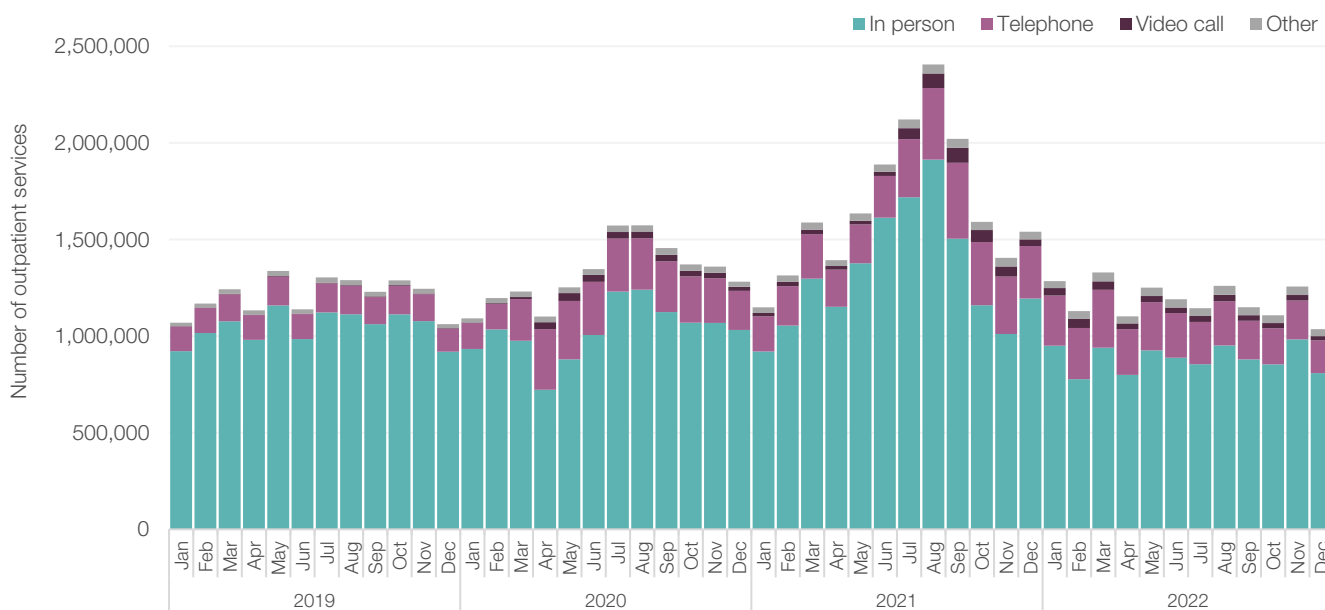


Figure 32 Number of virtual outpatient service events, by contact mode and patient location, NSW, 2019 to 2022



Source: NSW Ministry of Health, System Information and Analytics Branch. Non-admitted patient data collection. Data extracted 23 January 2023.

Patients' experiences of virtual care with public hospital outpatient clinics

Hospital outpatients were very positive about their virtual care experiences

During the pandemic, BHI invited people to provide feedback about their experiences of virtual care. This included the Virtual Care Survey which invited patients to provide feedback about their experiences of virtual care outpatient appointments with NSW public hospitals in 2020 and 2021.

Overall, hospital outpatients were very positive about their virtual care experiences. In 2020 and 2021, around nine in 10 patients (91%) rated the virtual outpatient care they received as 'very good' or 'good' and more than nine in 10 (94% in 2020 and 95% in 2021) said the virtual care they received helped them 'definitely' or 'to some extent' (Figure 33).

Patients consistently cited convenience and time savings as the two most common benefits of their virtual outpatient care. In 2021, around seven in 10 (73%) patients said the virtual outpatient care they received was convenient, while around six in 10 (61%) said it saved time.

A common finding across both survey years was that the more virtual outpatient care appointments a patient had, the more positive they were likely to be about their

overall experiences. While most patients were positive about their experiences in both survey years, around one-third (31%) said that their experiences were 'not as good' as in-person appointments. These people were more likely to have longstanding health conditions, live in urban areas and to have had fewer virtual care appointments (data not shown).

In general, after accounting for a range of factors, rural patients were slightly more positive about their experiences of virtual outpatient care than urban patients (see the BHI report **Patients' experiences of virtual care, Results from the 2021 survey of NSW public hospital outpatients**).

Visit the BHI website to see more patient survey results relating to virtual care experiences during the pandemic, including the **Virtual Care Survey**, **Adult Admitted Patient Survey** and **Outpatient Cancer Clinics Survey**. Patients' ratings of virtual care in these surveys were broadly similar to those for the Virtual Care Survey.

In the 2021 Virtual Care Survey

The more virtual outpatient care appointments patients had in the past year, the more positive their experiences



1-2 appointments

61%

of respondents said...



5+ appointments

80%

of respondents said...

overall, their virtual care was **'very good'**

Figure 33 Percentage of outpatients in NSW, all response options, Virtual Care Survey, 2021 and 2020

Overall, how would you rate the virtual care you received?



Did the care and treatment received through virtual care help you?



In the 2021 Virtual Care Survey

Patients said the top benefits of virtual outpatient care were...



Convenience



Feeling at ease in their own home/surroundings



Saving time



Saving money

Patients' experiences of virtual care with general practitioners

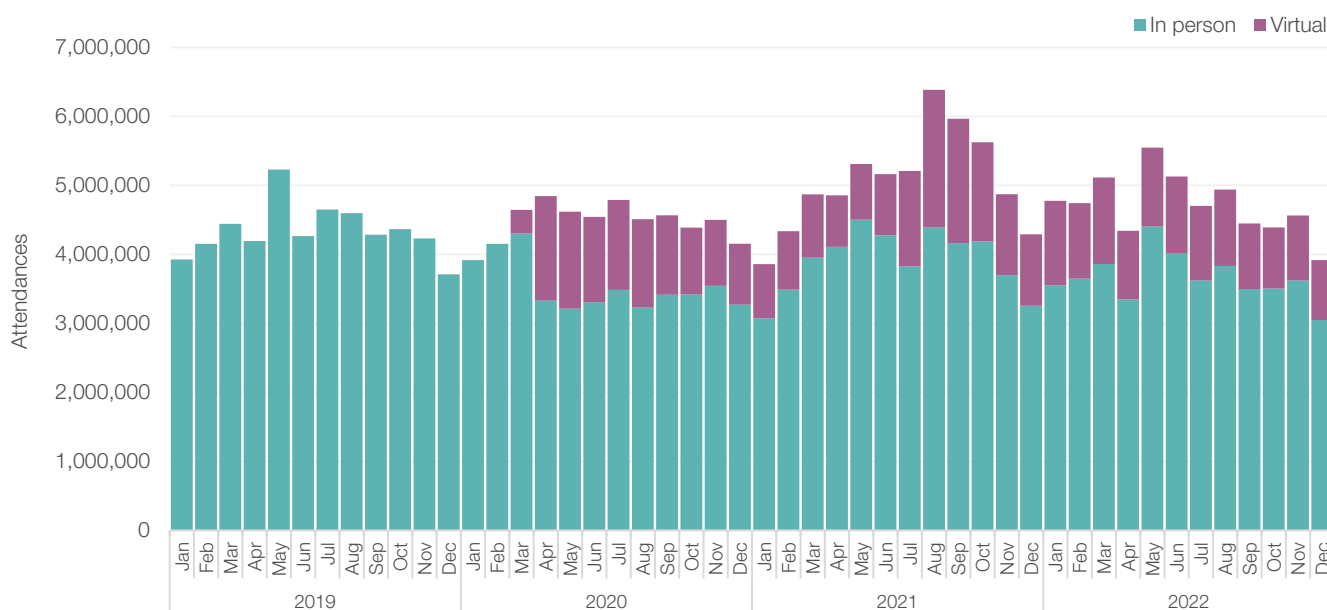
Outpatients provided high ratings of their virtual care experience with GPs

Over time, there have been shifts in how patients use and access GP services. There was a notable shift at the beginning of the COVID-19 pandemic in 2020, when the benefit of new Medicare subsidies for virtual care appointments combined with public health restrictions resulted in widespread adoption of virtual care GP services. Their use has remained high ever since (Figure 34).

In 2022, 22% of GP appointments were virtual care appointments, compared with 23% in 2021, 21% in 2020 and less than 1% in 2019 (data not shown).

In 2021, the Virtual Care Survey was expanded to include a module of questions about the experiences of NSW public hospital outpatients who also had a virtual care appointment with a GP. In 2021, around nine in 10 patients (92%) rated the virtual care they received from a GP as 'very good' (63%) or 'good' (29%), while almost nine in 10 (89%) said the opportunity to use virtual care helped ensure their care was well-coordinated between the GP and hospital outpatient clinic.

Figure 34 Medicare-subsidised GP attendances, by type of appointment, NSW, January 2019 to December 2022



Source: Australian Government Services Australia. Retrieved from: medicarestatistics.humanservices.gov.au/statistics/mbs_item.jsp (online resource). Data downloaded 6 March 2023.

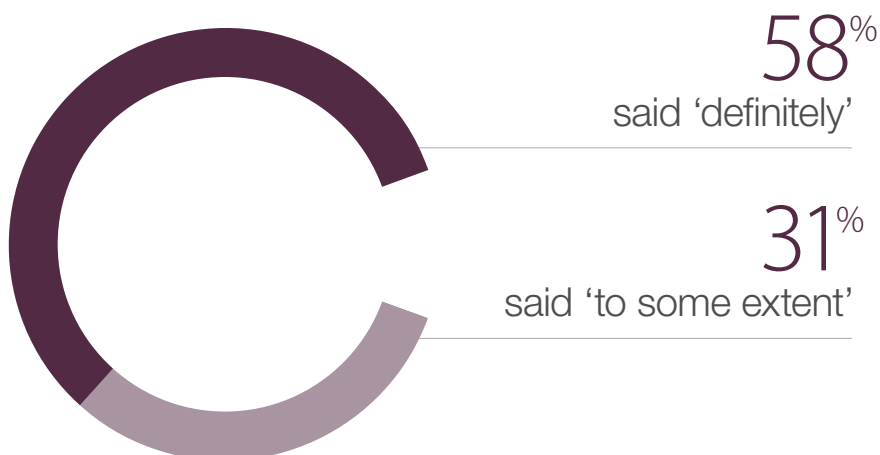
Patients' comments about their experiences with virtual care

“Ease and convenience of use and certainly a significant time saver in terms of not having to travel to hospital or health centre. The instructions for using the technology were clear and the connection good.”

“The best part was the feeling of safety during COVID-19. I didn't have to expose myself unnecessarily and endanger my elderly parents' health.”

In the 2021 Virtual Care Survey

89% of outpatients said using virtual care helped ensure their care was well-coordinated between the GP and hospital outpatient clinic





Hospital admissions and mortality outcomes



Key findings

The pandemic had wide-ranging effects on hospital admissions and deaths in NSW. While hospitals saw more admissions for COVID-19, they saw fewer admissions for other conditions. And while COVID-19 caused many deaths, public health measures may have prevented deaths from other causes.

We examined all-cause mortality during the pandemic to provide a more complete picture of overall impact in NSW. We also examined hospital admissions (public and private) and post-admission deaths (within 30 days) for six conditions considered amenable to positive outcomes with timely, high-quality care.



All-cause mortality in NSW was lower than expected in 2020, within the expected range throughout 2021, and higher than expected in the first half of 2022



Fewer people were admitted to hospital for acute myocardial infarction and congestive heart failure, and fewer died within 30 days of admission throughout the pandemic



Fewer people were admitted to hospital for pneumonia and chronic obstructive pulmonary disease throughout the pandemic and fewer died within 30 days of admission, particularly in winter months



Ischaemic stroke admissions and death within 30 days of admission decreased gradually throughout the pandemic. Haemorrhagic stroke admissions and deaths within 30 days of admission rose temporarily before decreasing thereafter

Examining admissions and mortality

Interpreting trends in all-cause mortality, admissions and post-admission deaths

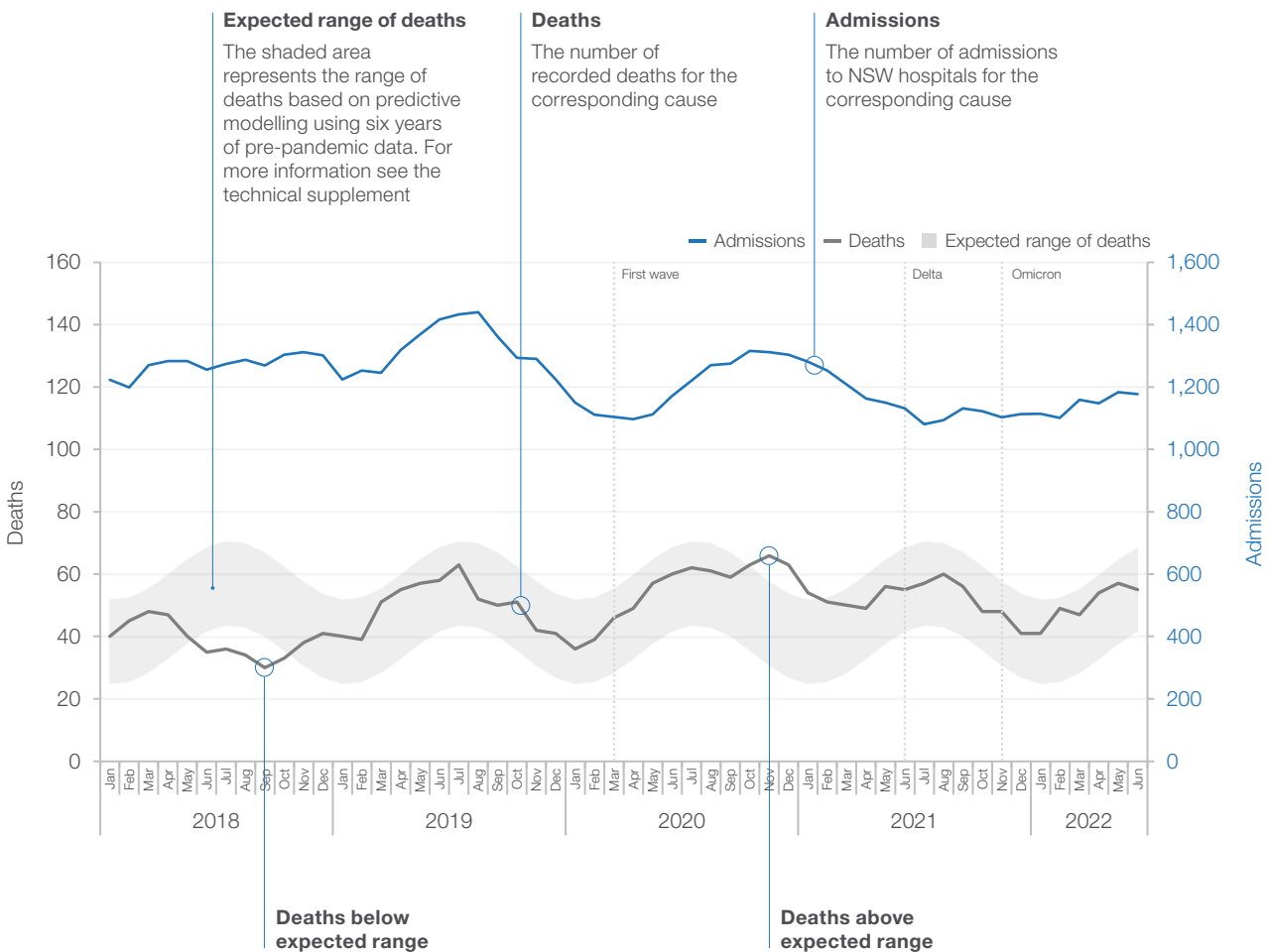
In this section we examine the impact of the pandemic through two distinct lenses:

- the potential effect of events during the pandemic on the number of deaths from any cause
- its effect on hospital admissions and post-admission deaths for conditions considered amenable to positive outcomes with timely, high-quality care.

All-cause mortality refers to death because of any disease, complication, event or accident. It is the result of a broad set of factors and is largely outside of the control of hospitals.

In contrast, post-admission death refers to death within a pre-defined period after admission to hospital. For patients with some conditions, it is heavily influenced by the timeliness and quality of hospital care.

How to interpret graphs in this chapter



All-cause mortality was lower than expected in 2020, but higher than expected in 2022

While it may be natural to focus on COVID-19 deaths during the pandemic, they provide an incomplete picture of the impact of events during the pandemic on mortality. Factors such as stay-at-home orders, vaccination and social distancing also caused behavioural changes that may have impacted the frequency of deaths during this time.

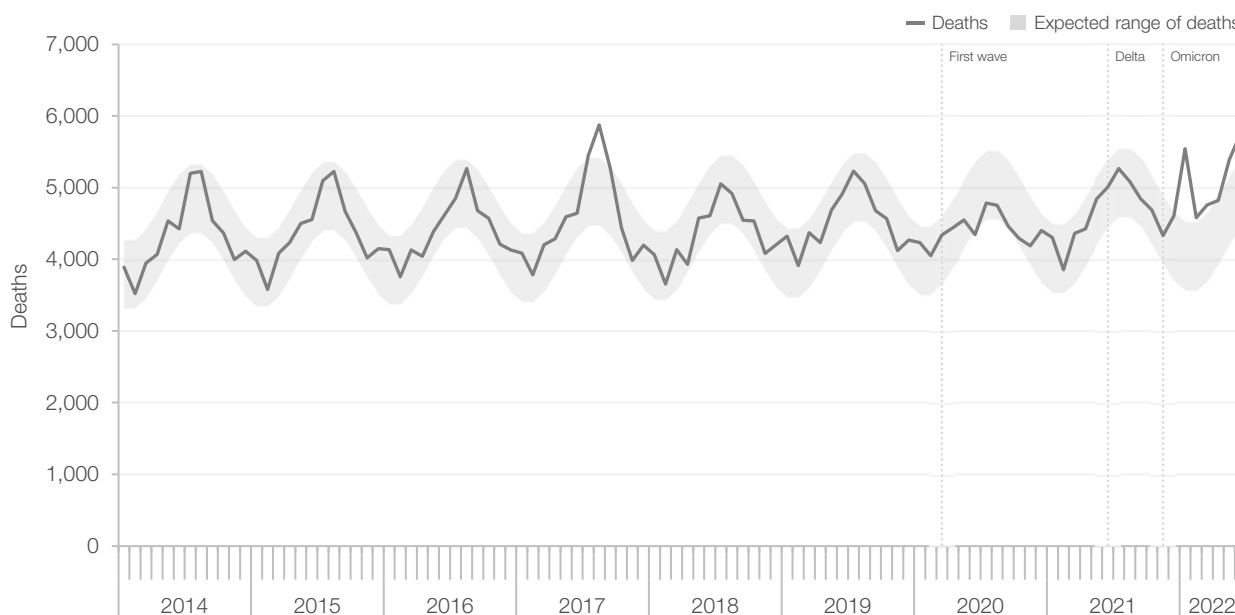
A more complete picture can be gained by examining trends in all-cause mortality before and during the pandemic. Deaths in NSW between 2014 and 2019 (before the pandemic) were used to predict an expected range of deaths for each month between January 2020 and June 2022 (during the pandemic). Actual deaths per month were then tracked over time to see where they deviated from the expected range.

Prior to the pandemic, the flu season in winter 2017 resulted in higher than expected mortality. In 2020, after the global pandemic was declared, the total number of deaths (from any cause) were in the lower part of the expected range, dipping below it for a single month in June 2020 (Figure 35).

In 2021, with the emergence of the Delta variant, the total number of deaths (from any cause) were within the expected range (Figure 35).

In late 2021, with the emergence of the Omicron variant, and the easing of public health restrictions, came a rise in the total number of deaths (from any cause, including COVID-19). In the first half of 2022, the number of deaths was at or above expected levels, but lower than during the short flu season in winter 2017 (Figure 35).

Figure 35 Deaths from all causes, by month, NSW, January 2014 to June 2022



Source: Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence. Data extracted 10 November 2022.

Pneumonia and chronic obstructive pulmonary disease

Admissions for pneumonia and chronic obstructive pulmonary disease declined during the pandemic, as did death within 30 days of admission

Prior to the pandemic, admissions to hospital for pneumonia and chronic obstructive pulmonary disease (COPD) were highly seasonal, with more occurring in winter and fewer in summer. With the arrival of the pandemic, monthly admissions declined and remained lower than in comparable months pre-pandemic. They were especially low in winter months when compared with pre-pandemic years (Figure 36 and 37).

While pneumonia admissions averaged 1,554 per month in years preceding the pandemic (2014–2019) (data not shown), they averaged 1,138 per month between January 2020 and June 2022. Likewise, COPD admissions averaged 1,632 per month before the pandemic and decreased to an average of 1,099 per month between January 2020 and June 2022.

Among the smaller number of people admitted for these conditions throughout the pandemic, there were fewer who died within 30 days. For patients admitted for pneumonia or COPD, the number of people who died was lower every month in 2020, 2021 and early 2022 than in comparable months pre-pandemic (Figure 36 and 37). None of these patients had a primary diagnosis of COVID-19.

From June to October 2020 and July to October 2021, deaths within 30 days of admission for pneumonia were below the expected range of deaths, based on six-year trends before the pandemic (Figure 36).

From June to August 2020 and September to November 2021, deaths within 30 days of admission for COPD were below the expected range of deaths, based on six-year trends before the pandemic (Figure 37).

Figure 36 Admissions and deaths within 30 days of admission for pneumonia, NSW, January 2018 to June 2022

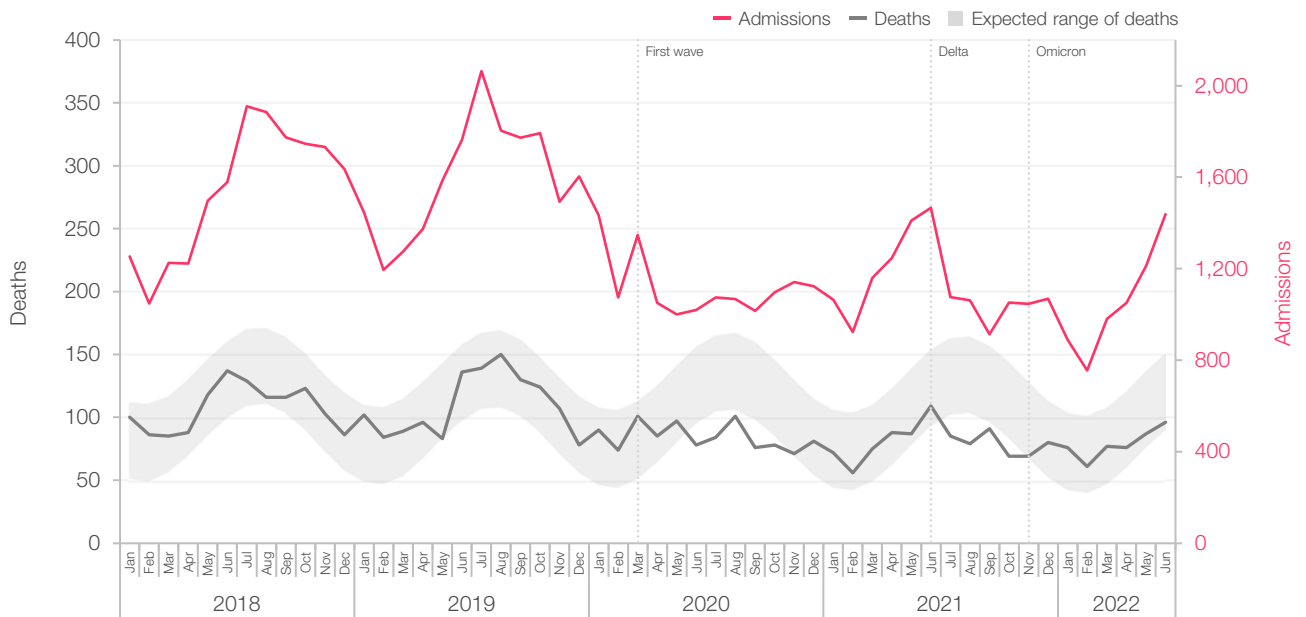
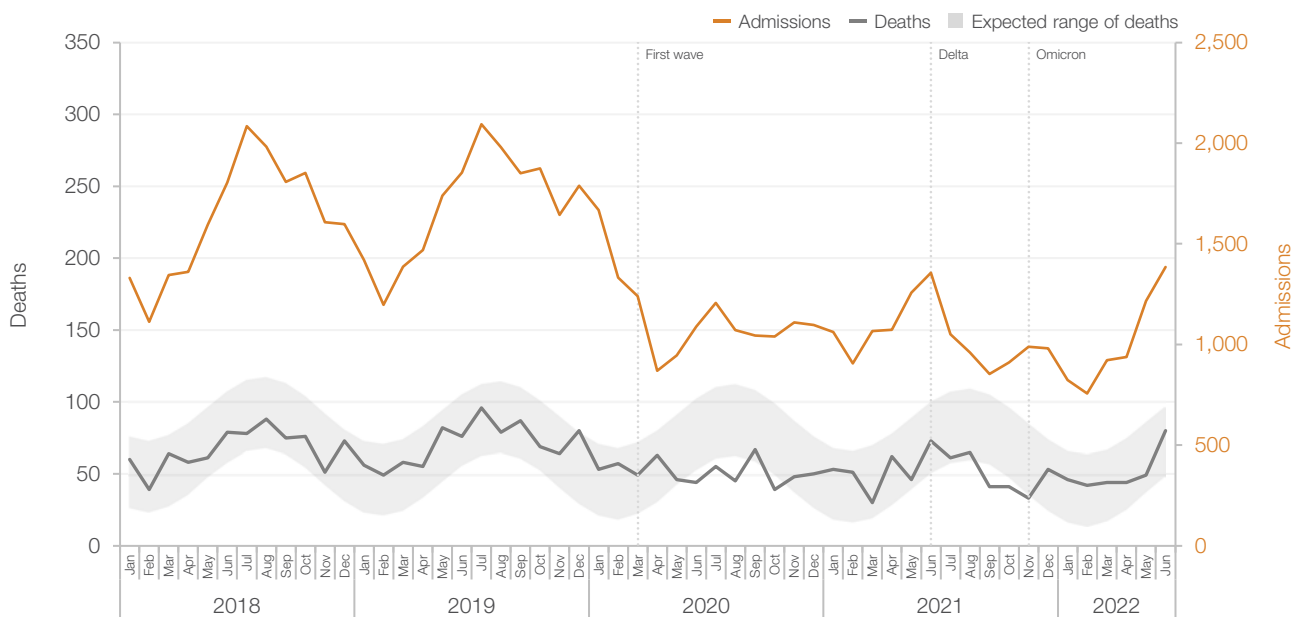


Figure 37 Admissions and deaths within 30 days of admission for COPD, NSW, January 2018 to June 2022



Source: Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence. Data extracted 10 November 2022.

Acute myocardial infarction and congestive heart failure

Fewer people were admitted for acute myocardial infarction and congestive heart failure and fewer died within 30 days of admission throughout the pandemic

Prior to the pandemic, admissions to hospital for acute myocardial infarction (AMI) varied each month, but annual trends were relatively stable in 2018 and 2019. With the arrival of the pandemic, monthly admissions declined in mid-2021, just after the emergence of the Delta variant. Admissions did not start to increase to pre-pandemic levels until mid-2022 (Figure 38).

Among the fewer people admitted for heart attack throughout the pandemic, there were fewer patients who died within 30 days of admission. More specifically, fewer people admitted for AMI died every month in 2020, 2021 and early 2022 than comparable months pre-pandemic. None of these patients had a primary diagnosis of COVID-19.

In July 2021 and March 2022, deaths within 30 days of admission for AMI were below the expected range, based on a six-year trend before the pandemic (Figure 38).

Admissions for congestive heart failure (CHF) are highly seasonal, typically peaking in July or August every year. Despite the emergence of the COVID-19, this pattern continued into 2020, only being disrupted with the emergence of the Delta variant, which saw a steep decrease in CHF admissions. Admissions did not increase toward pre-pandemic levels until mid-2022 (Figure 39).

Among the fewer people admitted for CHF throughout the pandemic, there were fewer patients who died within 30 days of admission, most particularly between 2021 and early 2022 after the emergence of the Delta variant. None of these patients had a primary diagnosis of COVID-19.

More specifically, fewer people admitted for CHF died in late 2020, 2021 and early 2022 than comparable months pre-pandemic. From July to October 2021, deaths within 30 days of admission for CHF were below the expected range of deaths, based on six-year trends before the pandemic (Figure 39).

Figure 38 Admissions and deaths within 30 days of admission for AMI, NSW, January 2018 to June 2022

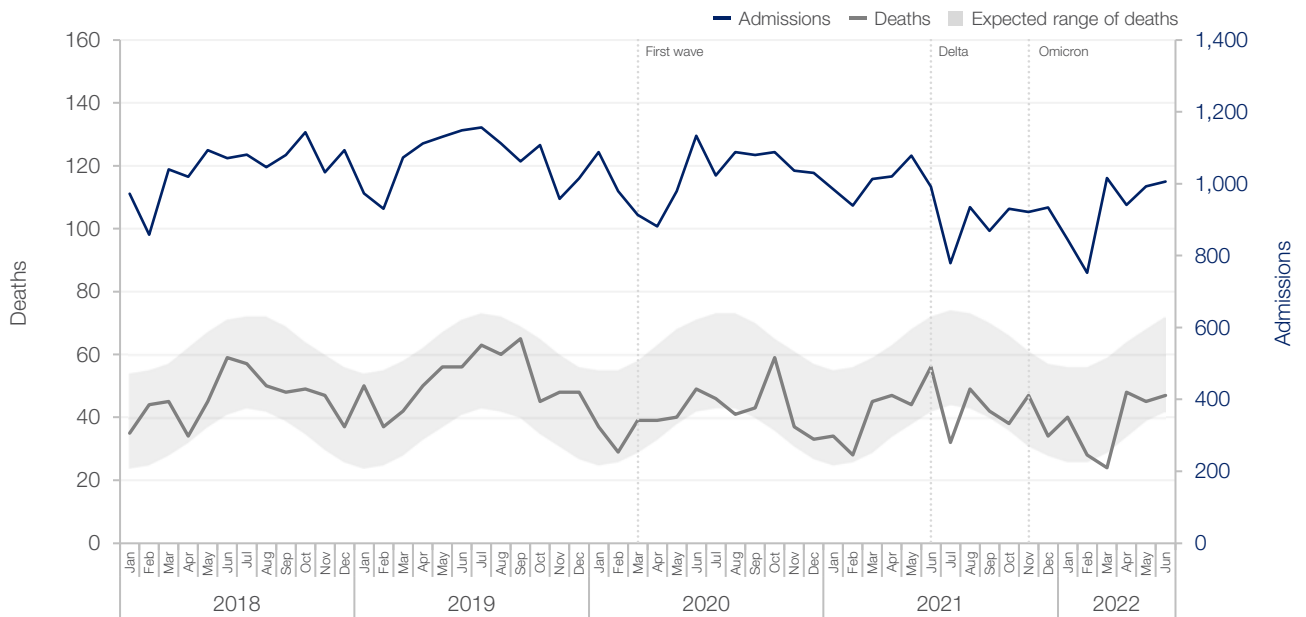
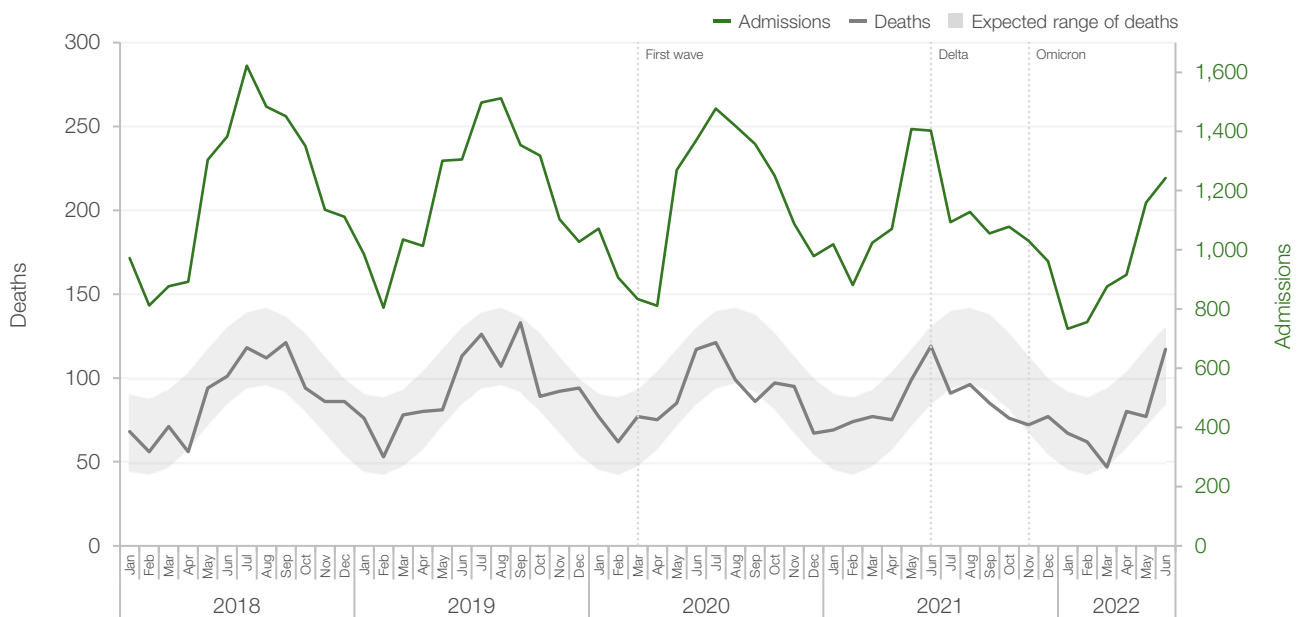


Figure 39 Admissions and deaths within 30 days of admission for CHF, NSW, January 2018 to June 2022



Source: Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence. Data extracted 10 November 2022.

Ischaemic stroke and haemorrhagic stroke

Admissions and post-admission deaths for ischaemic stroke and haemorrhagic stroke decreased gradually during the pandemic

Prior to the pandemic, admissions to hospital for ischaemic stroke trended slightly upward each year. The upward trend continued into the first half of 2020 before beginning a decline that continued throughout the Delta and Omicron waves.

Among those admitted for ischaemic stroke, the number of patients who died within 30 days decreased throughout the pandemic. Despite some monthly volatility, mortality within 30 days of admission for ischaemic stroke dropped in early 2020 and remained lower than pre-pandemic levels throughout 2020, 2021 and the first half of 2022 (Figure 40). None of these patients had a primary diagnosis of COVID-19.

Before the pandemic, admissions for haemorrhagic stroke trended slightly downward. The arrival of COVID-19 saw a slight uptick in admissions, followed by a progressive decrease throughout the Delta and Omicron waves. Post-admission deaths followed a similar pattern, with an uptick in mortality within 30 days of admission for haemorrhagic stroke occurring in mid-2020 and a decrease thereafter (Figure 41). None of these patients had a primary diagnosis of COVID-19.

Figure 40 Admissions and deaths within 30 days of admission for ischaemic stroke, NSW, January 2018 to June 2022

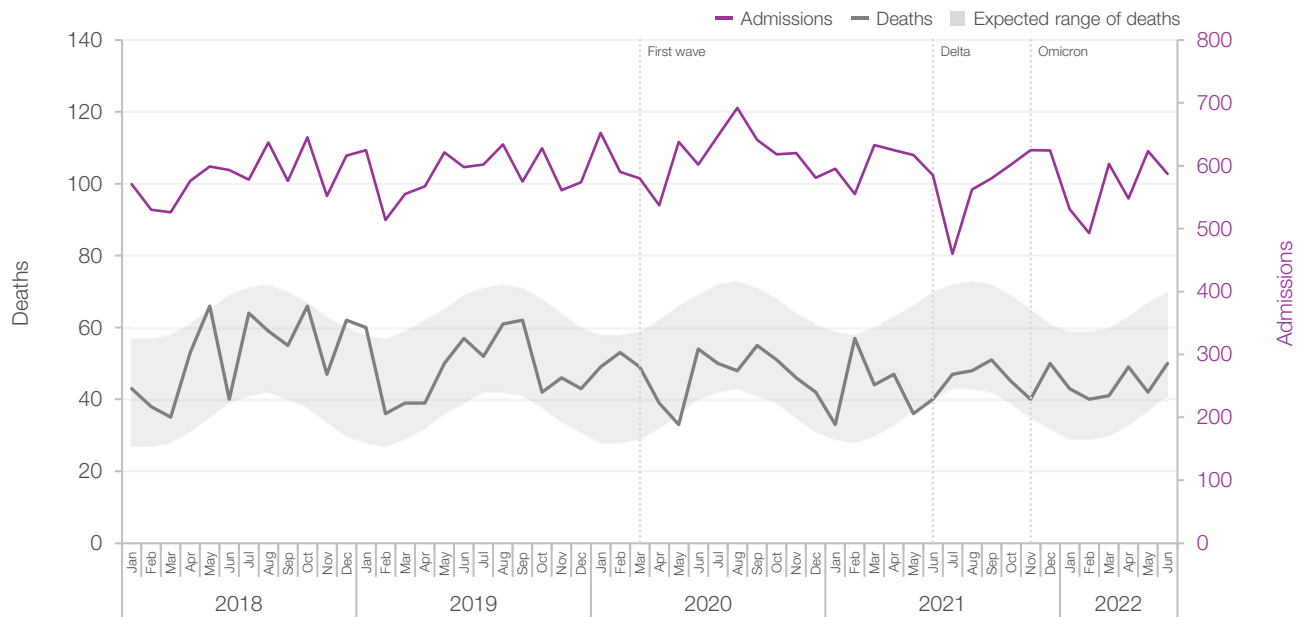
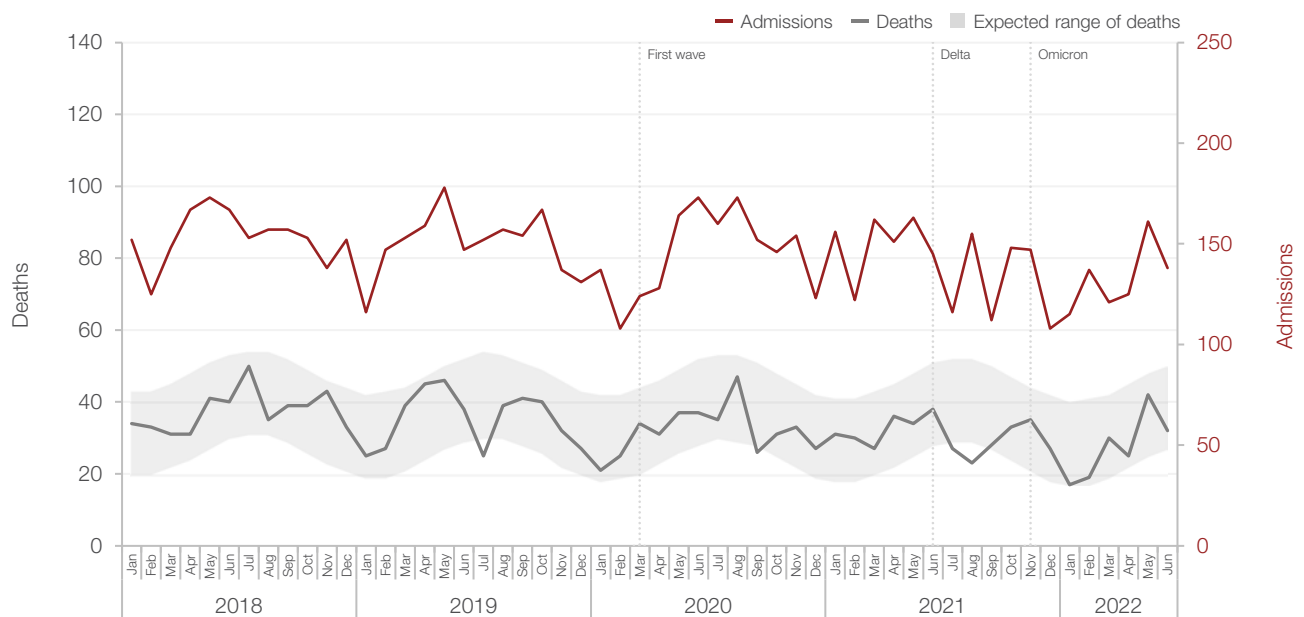


Figure 41 Admissions and deaths within 30 days of admission for haemorrhagic stroke, NSW, January 2018 to June 2022



Source: Hospital Performance Dataset, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence. Data extracted 10 November 2022.



Acknowledgments

The Bureau of Health Information (BHI) is the main source of information for the people of NSW about the performance of their public healthcare system.

We thank every person in the NSW Health system – including hospital and community services staff, statewide public health teams, NSW Health Pathology and the state health emergency operations response teams – for their ongoing efforts to manage the pandemic, deliver business as usual health services, and prepare for operational surge capacity if required.

BHI is led by Chief Executive Dr Diane Watson and overseen by an independent board chaired by Professor Carol Pollock.

We thank those associated with the Consumers Health Forum of Australia (CHF) who assisted with provision of data and insights for NSW from the 2021 Australian Health Consumer Sentiment Survey.

We acknowledge BHI's dedicated teams of analytics, research, corporate, design and communications professionals whose expertise made this report possible.

We thank all those in NSW Health who assisted with provision of data used by BHI to calculate performance measures in this report, including the COVID-19 Public Health Response Branch and the System Information and Analytics Branch.

BHI acknowledges and respects the Aboriginal people as the traditional custodians of the lands and waters of NSW and pays respect to Elders past, present and emerging.

About the Bureau of Health Information

The Bureau of Health Information (BHI) is a board-governed organisation that provides independent information about the performance of the NSW healthcare system.

BHI was established in 2009 and supports the accountability of the healthcare system by providing regular and detailed information to the community, government and healthcare professionals. This in turn supports quality improvement by highlighting how well the healthcare system is functioning and where there are opportunities to improve.

BHI manages the NSW Patient Survey Program, gathering information from patients about their experiences and outcomes of care in public hospitals and other healthcare facilities.

BHI publishes a range of reports and information products, including interactive tools, that provide objective, accurate and meaningful information about how the health system is performing.

BHI's work relies on the efforts of a wide range of healthcare, data and policy experts. All of our assessment efforts leverage the work of hospital coders, analysts, technicians and healthcare providers who gather, codify and supply data. Our public reporting of performance information is enabled and enhanced by the infrastructure, expertise and stewardship provided by colleagues from NSW Health and its pillar organisations.

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