



The economic and social  
value of St John Ambulance  
Australia (NSW)

November 2022

# The economic and social value of St John NSW

St John Ambulance Australia NSW (St John NSW) is dedicated to saving lives and building community resilience. The organisation:

Fosters a culture of volunteering



**2,719**

Members volunteered with St John in 2021



**319,000**

Hours spent volunteering each year

Provides essential health services at events



**27,000**

Patients treated at events each year



**2,400**

High acuity patients avoid hospital each year

Offers training and employment opportunities...



**37,000**

Students complete a certificate for the first time each year across 30 NSW training locations



**462**

Volunteers join St John each year and gain valuable skills and experience

...to enhance the safety of the community...



**1 in 3**

St John volunteers administered CPR outside of their role with St John



**1 in 6**

Students administered CPR in the community

...and support the community in times of crisis



**23,500**

Hours to support the 2019-20 bushfire crisis

**438**

Critical patients received treatment at evacuation centres, in addition to more than 1,000 patients who received first aid and mental health support



**515,000**

Hours to support the COVID-19 pandemic

**64**

Locations state-wide were supported by St John, including screening, testing and vaccination clinics

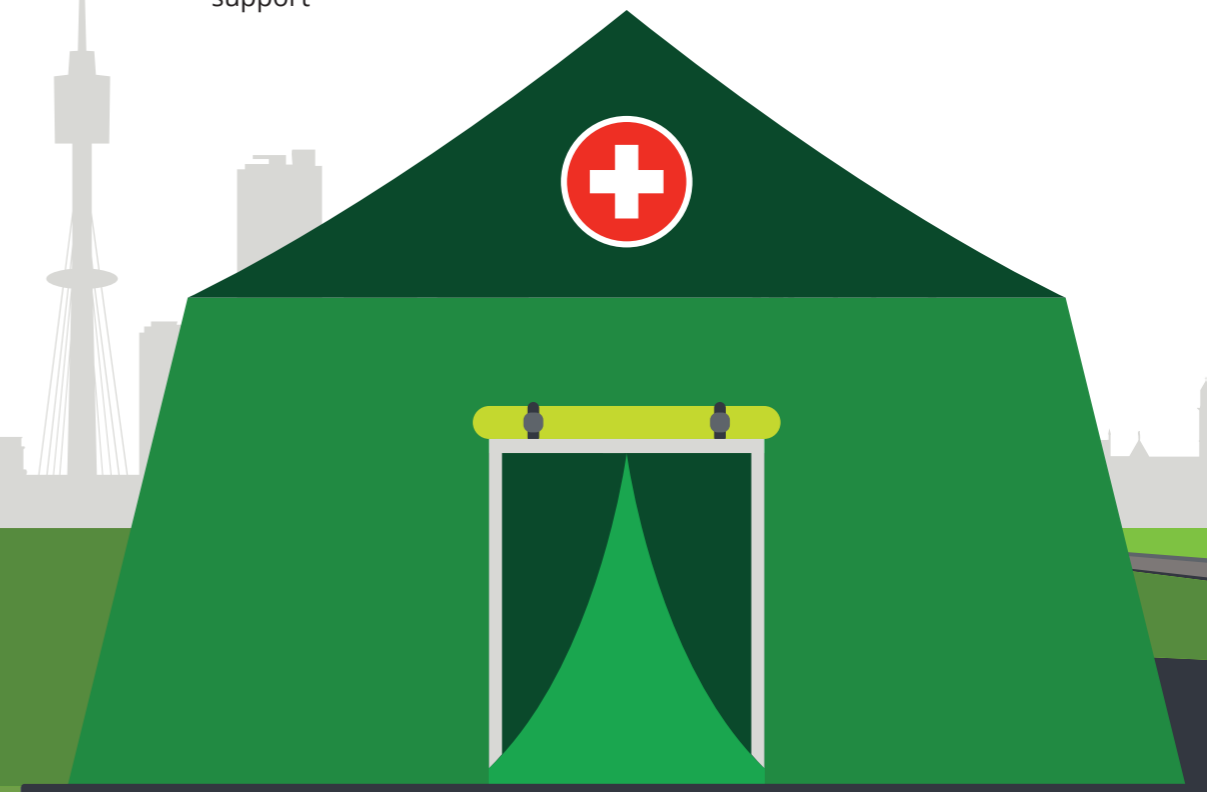


**6,700**

Hours to support the 2022 flood crisis

**14**

Locations across northern NSW were supported by St John volunteers



For every \$1.00 invested into St John NSW, a return of \$3.18 is achieved for the NSW community

Note: All figures are annual averages pre-COVID-19, unless stated otherwise.



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# Executive summary

## About St John NSW

St John Ambulance Australia (NSW) (St John NSW) is a registered charity and profit-for-purpose organisation, dedicated to saving lives and building community resilience. As a leader in health and safety, St John NSW trains thousands of Australians, equipping people with the confidence, skills and knowledge to respond to a medical emergency in their community.

The organisation also works alongside emergency services when state crises strike, and provides health and medical services at major events and workplaces across the state. As a certified Social Trader organisation, St John NSW also invests in social impact programs that help improve community outcomes.

St John NSW has provided over 130 years of service to the Australian community. It was founded in 1883 to assist with providing essential medical services to communities across the country, which at the time were not readily available. Today, St John Ambulance provides first aid, healthcare and support services in more than 40 countries around the world, supporting communities and contributing to improved health outcomes. In Australia, St John Ambulance operates in every state and territory under a federated structure.

Within NSW, the organisation has a wide geographical footprint, with operations situated as far north as Tweed Valley and as far south as Albury on the Victorian border. Its services are delivered by more than 2,700 members across 72 divisions, with each division representing a cohort of local volunteers who represent their communities.

St John NSW offers coverage across the state to ensure a high proportion of the population can benefit from increased access to essential services, whether that be as part of a coordinated response by St John or by local volunteers who assist as bystanders in an emergency.

## Estimating the economic and social value of St John NSW

Through its event health services, first aid training program and wide range of community and health services, St John NSW generates significant economic and social benefits for the NSW community each year.

Deloitte Access Economics was engaged to estimate the economic and social value of St John to the NSW community. This study involved identifying the various ways in which St John generates

benefits for the community, a survey of St John volunteers and students, consultation with volunteers and the development of suitable approaches to estimate the value of St John NSW's community services.

The social and economic value of St John NSW has been estimated using a cost-benefit analysis (CBA) approach. For a given policy or investment, a CBA compares the total estimated costs to the community and economy with the total estimated benefits. In this way, a CBA determines whether the benefits outweigh the costs, and if so, to what extent.

The CBA compares the incremental costs and benefits associated with the services and operations of St John NSW over a 15-year period, from 2017 to 2031. This period reflects five years of historic operations and 10 years of forecast activities and outcomes. The forecasts over the period of analysis have been established by drawing on data and evidence available from the historic five-year period.

St John's economic and social value is estimated from four sources of benefits, which demonstrate the scope of its impact in the community. These include:

- Event health services
- Bystander cardiopulmonary resuscitation (CPR)
- Improved employment outcomes
- Avoided emergency department (ED) admissions.

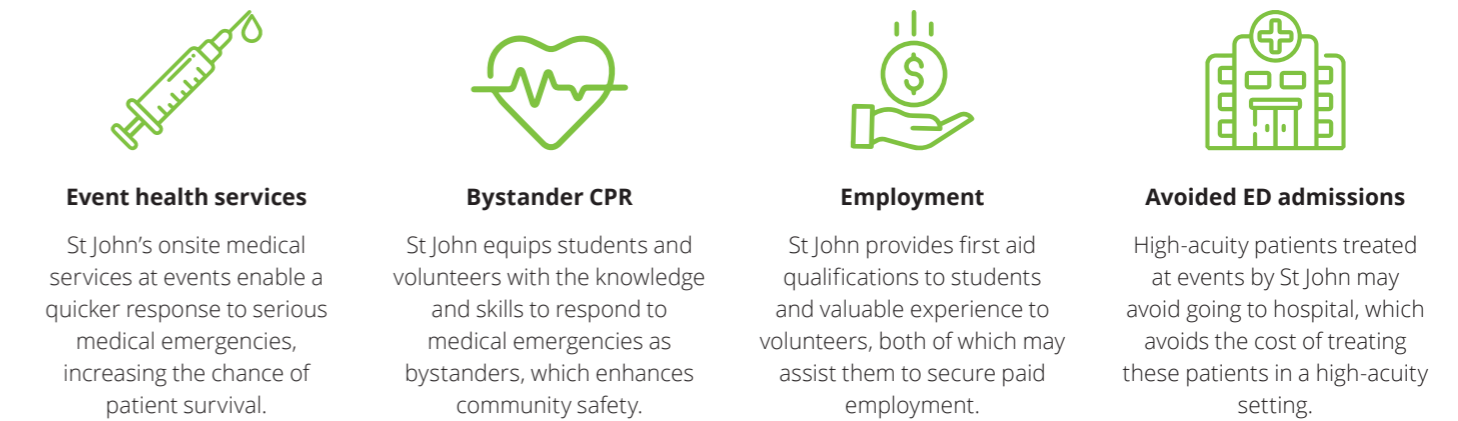
A brief description of each of the benefits is presented in Figure A.

In delivering its event health services, first aid training and other community and health services, St John NSW incurs a variety of costs. Three main sources of costs are estimated, which include:

- Operating expenditure
- Capital expenditure
- Value of volunteering time.

A brief description of each of the costs is presented in Figure B.

Figure A: Summary of economic and social benefits



Source: Deloitte Access Economics.

Figure B: Summary of estimated costs



Source: Deloitte Access Economics.

In undertaking the CBA, the estimated benefits and costs of St John NSW's services and operations are compared to calculate a net benefit and benefit-cost ratio (BCR).

### Total economic and social value of St John NSW

The economic and social value of St John NSW is expressed primarily through two main metrics: the net present value (total benefits less total costs, over a period of time) and the benefit-cost ratio (BCR); total benefits divided by total costs, also over a period of time. Over the 15-year period of analysis, it is estimated that St John NSW will generate a total net benefit to the NSW community of \$1.4 billion. St John's services and operations across NSW yield a BCR of 3.18. This means that for every \$1.00 invested into St John NSW, a return of \$3.18 is achieved (see Table A).

**Table A: Summary of cost-benefit analysis outcomes (present value terms)**

Cost-benefit analysis outcome	\$ million
<b>Benefits</b>	<b>\$2,000.2</b>
<b>Benefit 1 - Event health services</b>	<b>\$527.3</b>
Responding to out-of-hospital cardiac arrest (OHCA) incidents at public events	\$58.6
Responding to other incidents at public events	\$468.8
<b>Benefit 2 - Bystander CPR</b>	<b>\$468.3</b>
CPR training for students	\$151.8
Off-duty volunteer bystander response to OHCA	\$316.4
<b>Benefit 3 - Improved employment outcomes</b>	<b>\$986.5</b>
Employment from involvement with St John	\$52.6
Employment from CPR qualification	\$933.9
<b>Benefit 4 - Avoided emergency department admissions</b>	<b>\$18.1</b>
Avoided emergency department admissions	\$18.1
<b>Costs</b>	<b>\$628.1</b>
Cost 1 - Capital expenditure	\$23.8
Cost 2 - Operating expenditure	\$393.9
Cost 3 - Value of volunteer time	\$210.4
<b>Net benefits</b>	<b>\$1,372.1</b>
<b>BCR</b>	<b>3.18</b>

Notes: Numbers may not add exactly to totals due to rounding.  
Source: Deloitte Access Economics.

The total net benefit of St John NSW to the NSW community is \$1.4 billion over 15 years, including the last 5 years and the future 10-year period.

Although the benefits of St John are measured across four main sources, the results of the analysis illustrate that St John generates significant economic and social benefits through two primary avenues: by providing lifesaving medical services to the community and equipping people with the skills to do so (benefits 1, 2 and 4) and by providing people with skills and experience that enables them to gain and maintain employment (benefit 3).

Benefit 3 reflects the employment benefits for students and volunteers as a result of training provided by St John or the skills and experience acquired as a volunteer. This benefit accounts for 49% of the total benefits, or \$986.5 million in present value terms. The significant value of this benefit is underpinned by the number of students who receive an employment benefit following completion of a first aid course. St John provides first aid and CPR certification to around 37,000 new students each year on average, of which 17% are estimated to gain paid employment as a result of their new qualifications and skills, based on a survey of St John members and students. For many of these students, completion of a first aid or CPR course may be an employment requirement or a desirable qualification for a job application.

Overall, this analysis demonstrates the substantial economic and social value St John NSW generates for the NSW community. However, the value of St John NSW extends beyond that which can be quantified. St John NSW is equipped to rapidly deploy

For every \$1.00 invested into St John NSW, a return of \$3.18 is achieved.

volunteers who are trained in medical services in times of crisis. Severe emergency events in recent years, including the bushfires in Australia's Black Summer of 2019-20, the COVID-19 pandemic and the 2022 floods in NSW, have prompted an increase in the demand for emergency services. St John's service delivery has evolved to meet community needs to respond to these events and to prepare for future crises.

Crisis events, while more frequent in recent years,<sup>1</sup> are difficult to predict. Consequently, the benefits of emergency service delivery are difficult to quantify in a cost-benefit analysis framework. As a key community medical partner for NSW Health in responding to state emergency situations, the St John NSW green uniform is a symbol of hope and comfort in uncertain times. Its value includes the knowledge and experience of over a century of community support operations which benefits the NSW community now and will continue to do so in generations to come.





# 1 Background



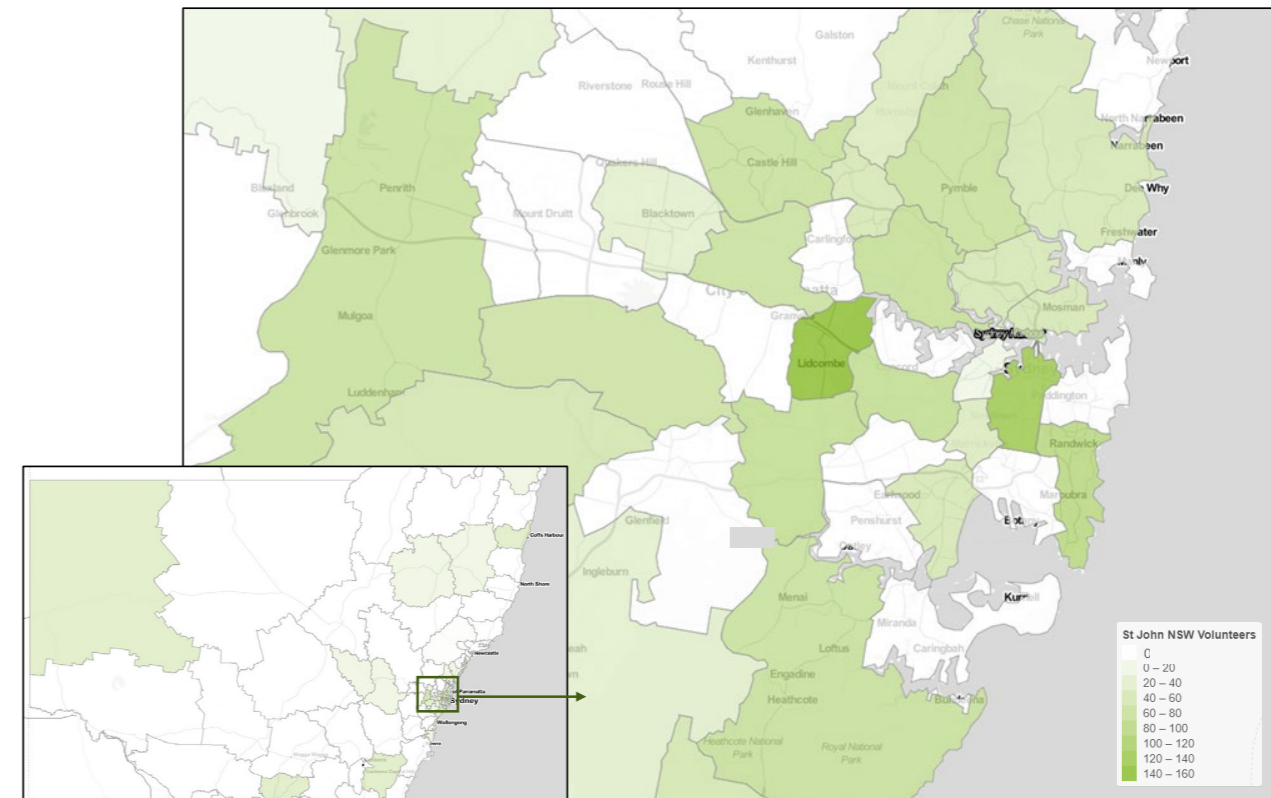
The timely deployment of medical services is crucial to preventing the loss of life and promoting public safety. While trained medical personnel are integral to this effort, members of the community can also play an important role in delivering a rapid response in an emergency. St John NSW enhances the health and safety of the community through both pathways, mobilising trained volunteers and medical personnel and educating the NSW community in first aid and CPR.

## 1.1. St John's presence in NSW

St John Ambulance (NSW) (St John NSW) is a registered charity and profit-for-purpose organisation focused on building community resilience and saving lives. As a major provider of first aid and essential medical services in NSW, St John NSW trains thousands of Australians in first aid each year, equipping people with the knowledge and skills to respond to a medical emergency in their community. The organisation also provides public health and medical services at workplaces, events and public areas across the state.

St John has a wide geographical footprint in NSW, with operations situated as far west as Broken Hill, as far north as Tweed Valley and as far south as Albury (see Figure 1.1). Its operations are delivered by more than 2,700 members across 72 divisions, with each division representing a group of volunteers who support their local communities.

Figure 1.1: Geographical distribution of St John NSW volunteers



Source: Deloitte Access Economics analysis of St John data.

The majority of St John volunteers (65%) are based in the Sydney metropolitan area. In the metropolitan regions where St John has a presence, on average a person would never be more than 300m from a St John volunteer.<sup>2</sup>

Across NSW, in areas where St John has a presence (both metropolitan and regional divisions), it is estimated that there are approximately 6.8 volunteers per km<sup>2</sup>. In higher density metropolitan regions, it is estimated that there are as many as 54 volunteers per km<sup>2</sup>.<sup>3</sup>

St John's wide coverage across NSW ensures that a high proportion of the population can benefit from increased access to essential medical and crisis response services, whether that be as part of a coordinated response delivered by St John or by local volunteers who assist as bystanders during an emergency.

### 1.2. Services provided by St John NSW

St John provides a range of services to the NSW community. Its major service offerings include event health services, first aid training, emergency response, various community programs and the supply of first aid kits and defibrillators.

#### 1.2.1. Event health services

St John NSW has been providing first aid services across NSW for over 130 years. Prior to the pandemic, St John attended an average of more than 5,000 events per year across the state, with involvement from over 2,400 volunteers.<sup>4</sup> This included sporting events, music festivals and other major cultural and community events.

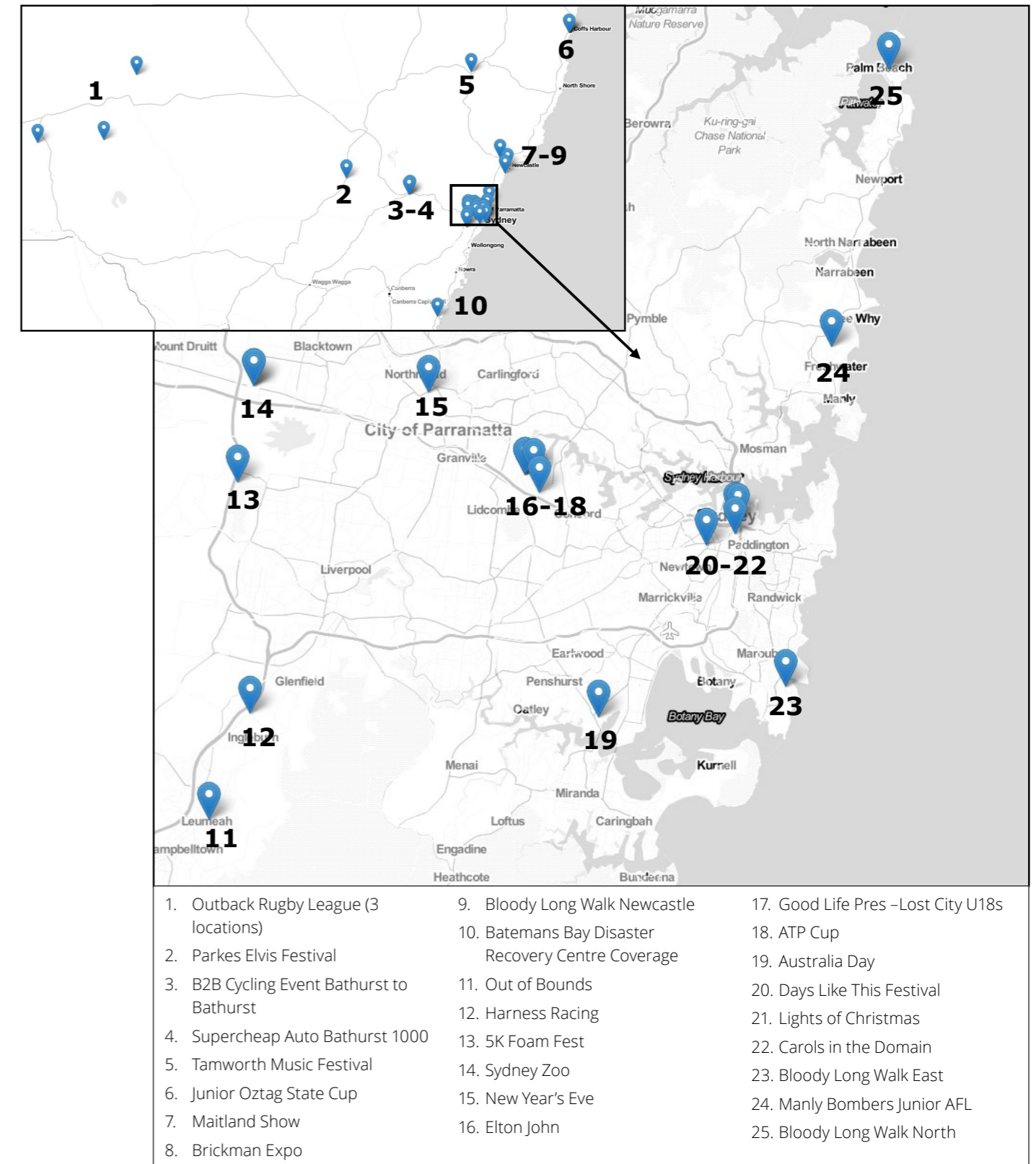
In 2019, 2,450 volunteers provided more than 270,000 hours to the community and treated over 14,500 patients.<sup>5</sup> While fewer events were held in 2020 as a consequence of COVID-19, St John upheld its strong presence at public events in 2020 with 2,400 volunteers providing more than 150,000 hours to the community and treating over 4,300 patients.<sup>6</sup>

Even though the majority of major events occur in metropolitan Sydney, St John's activities are undertaken widely across NSW. In 2020, major events attended by St John occurred as far west as Broken Hill. St John's presence at major events also extended over 1,000 kilometres along the NSW coastline from Tweed Valley to Albury (see Figure 1.2).

Major events increase the risk of medical emergencies, which may be either as a result of an accident or injury, or other medical cause.<sup>7</sup> In either case, onsite emergency care is crucial to providing patients with timely medical care prior to the arrival of ambulance services and can significantly affect survival outcomes for acute patients. In addition, onsite emergency care can effectively attend to minor injuries and conditions, relieving pressure on the healthcare system.

The patient pathways for these events, and an example of St John's support at events is demonstrated in Figure 1.3 and in the Case Study: St John's presence at Groovin the Moo.

Figure 1.2: Map of major events attended by St John members in 2020



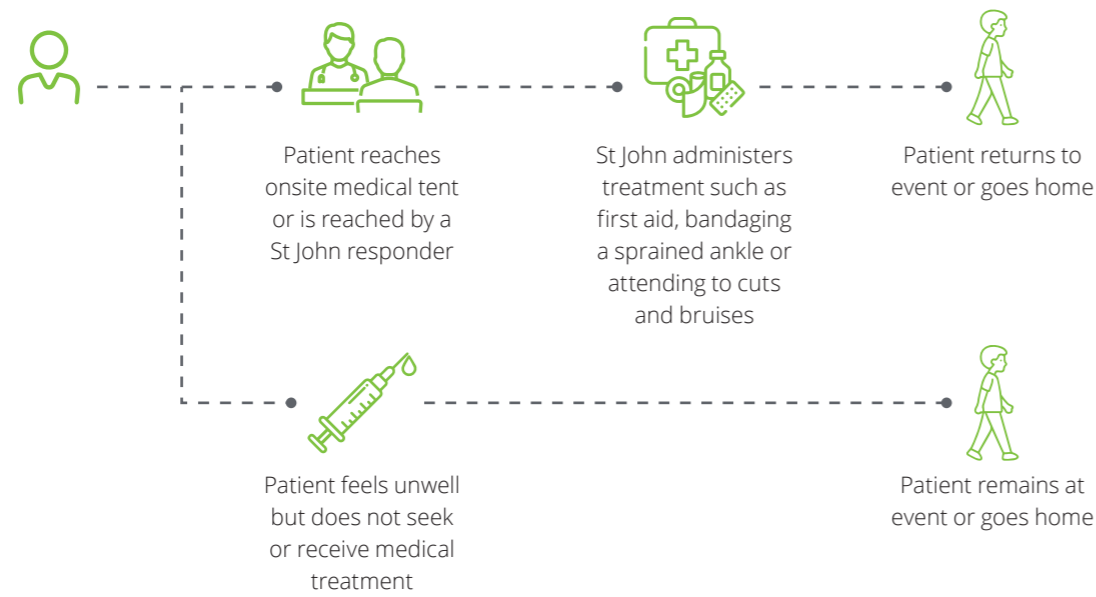
Source: Deloitte Access Economics analysis of St John data.

Figure 1.3: Presentations and patient pathways

**Incident type**

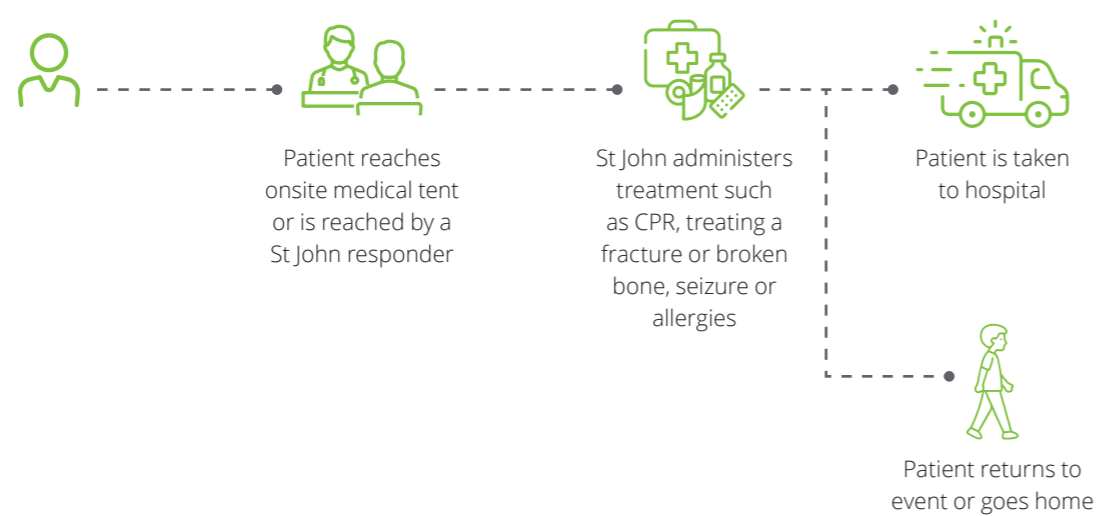
**Minor presentation**

– this may include mild dehydration, mild allergic reactions, headaches and minor injuries such as sprains, cuts, abrasions and simple fractures



**Major presentation**

– these presentations may be event specific or exacerbations of pre-existing medical conditions. Serious event-specific presentations include drug and alcohol toxicity, sexual assault, assault or falls with serious injury



**Case Study: St John's presence at Groovin the Moo**

St John NSW has provided emergency services at Groovin the Moo annually since the music festival commenced in 2005. The event is an all-ages music festival (ages 15 years and over) held in Maitland, NSW and five other regional locations around Australia. Up to 20,000 people attend the music festival in NSW each year.<sup>8</sup>

In 2019, more than 300 patients were treated at Groovin the Moo for a range of major and minor injuries.<sup>9</sup> St John deployed 72 responders, including the following:

- A Critical Care Team staffed by a consultant, Senior ED Registrar, and experienced critical care nurses
- Two Bicycle Emergency Response Teams
- Three Medical Emergency Response Teams
- An Internal Patient Transport Team for hospital transfers
- A Mental Health Team staffed by mental health consultants.

Additionally, an onsite Advanced Care Medical Centre was set up with a similar flow to an emergency department. The service included:

- 20 sub-acute treatment chairs
- Nine acute beds with cardiac monitoring capabilities
- Two resuscitation bays, staffed by a critical care team and led by a specialist anaesthetist with the ability to initiate procedures such as pre-hospital anaesthesia and invasive cooling
- A range of equipment, including oxygen, defibrillators, ventilators, blood analysis equipment and an ultrasound machine.

**1.2.2. First aid training**

Providing first aid training to the NSW community is also a core part St John's business, with the organisation training over 56,000 students in 2019.<sup>10</sup> St John's first aid training program is one of the largest in NSW, and is provided to schools, workplaces and other community organisations to equip the community with the knowledge to perform life-saving skills in an emergency.

St John also provides a range of mental health training to a range of organisations. For example, in June 2020, St John provided mental health training to over 1,000 volunteer firefighters. This course taught volunteers how to provide support to their colleagues and friends experiencing depression or anxiety, and how to assist them in a mental health crisis.<sup>11</sup> In addition, St John offers other training courses that prepare students for a variety of emergency scenarios (see Table 1.1).

**With one of the largest first aid training programs in NSW, St John NSW trained over 56,000 students in first aid and CPR in 2019.**



**Table 1.1: Training courses offered by St John NSW**

Types of training	Description
First Aid (in-person or virtual)	This course aims to provide participants with the knowledge, skills and confidence to assist an unwell or injured person until emergency help arrives. Participants learn the Danger, Response, Send, Airway, Breathing, CPR, Defibrillation (DRSABCD) action plan as well as resuscitation, asthma, anaphylaxis and the management of various injuries and illnesses.
CPR (in-person or virtual)	Participants learn how to perform CPR on a person who is unconscious and not breathing normally. The course aims to provide participants with the knowledge and confidence to perform CPR on an adult, child and infant, to describe alternative methods for delivering rescue breaths and how to manage an incident of drowning. St John also offers advanced courses where participants learn how to use specialised resuscitation equipment.
Asthma and Anaphylaxis	Participants learn to recognise and respond to an asthmatic or anaphylactic emergency. The course also teaches participants to respond to such incidents using inhalers and adrenaline auto-injectors.
Mental Health and Crisis Support (in-person or virtual)	Participants learn how to recognise situations where people may be in imminent mental health crisis, and to minimise any safety concerns and plan accordingly to access required support services.
Workplace Mental Health for Managers	The course aims to provide workplace managers and supervisors with the knowledge and skills to assist employees with a mental illness or those returning to work after a mental health crisis.
Occupational First Aid	The course aims to equip students for emergencies in a high-risk work environment and provide the necessary skills for a first aid room (a room suited to address hazards specific to the workplace).
Low Voltage Rescue	Participants learn essential safety measures and how to rescue, revive and provide further care to an injured person following an electrical accident.
Provide Pain Management	Participants learn how to safely administer pain medication in the event of an accident.

Source: St John NSW.

### 1.2.3. Other community programs

Transport-related injuries, collisions and falls are common causes of major paediatric trauma in 11–15 year-olds in Australia, which primarily occur in settings outside the home and school (for example on roads, streets and highways, in recreation areas, and in athletics and sports areas).<sup>12, 13</sup> This suggests that illnesses and injuries in young people commonly take place in areas where bystanders, such as peers, may be present and able to offer first aid.

First Aid in Schools is a free in-school program that aims to equip children in primary school aged 7 to 12 years with vital life-saving skills. The full program contains eight modules, which teach children how to recognise and respond to an emergency, undertake CPR in the event of an emergency and attend to incidences of burns, bites and stings, asthma, allergies and anaphylaxis.

Additionally, the St John NSW Youth Program helps volunteers as young as 8 years old develop leadership skills, engage in the delivery of community first aid services and earn proficiency badges. Youth volunteers learn first aid, communication, teamwork and leadership skills. They may also attend a variety of first aid duties at low-risk events under the supervision of adult volunteers.

### 1.2.4. Supply of first aid kits and defibrillators

St John not only equips students and volunteers with the skills to

perform CPR as a bystander (see section 1.2.2), it also supplies the community with defibrillators and first aid kits. In 2021, St John sold 1,417 defibrillators to workplaces and public places in the community.

Although it is not mandatory for workplaces and other public venues to install defibrillators in NSW, SafeWork NSW recommends workplaces consider defibrillators as equipment that may be necessary to improve workplace safety. For example, SafeWork NSW first aid equipment and facilities guidelines suggest that a defibrillator may be provided to reduce the risk of fatality from cardiac arrest where there is a risk to workers from electrocution, a delay in the arrival of ambulance services or where there are large numbers of members of the public at the workplace.<sup>14</sup>

St John's supply of defibrillators plays an important role in the community to enable effective bystander response to out-of-hospital cardiac arrest (OHCA) cases. Early recognition, CPR and defibrillation are key out-of-hospital links in the 'chain-of-survival'. These events need to occur in rapid succession to maximise the chance of survival from an OHCA incident. In addition, OHCA patients are more likely to survive if a bystander performs defibrillation prior to ambulance arrival. For OHCA incidents in 2019 in which a bystander used an automated external defibrillator (AED), 52% survived to hospital discharge, compared to 30% of patients where an AED was not used.<sup>15</sup>





## 2

# Responding to large-scale crises >>>

Severe emergency events in recent years, including Australia's Black Summer of 2019-20, the COVID-19 pandemic and the 2022 floods in NSW, have prompted an increase in the demand for emergency services. St John NSW has played a critical role in supporting emergency services in their frontline efforts during times of crisis

### 2.1. Australia's Black Summer response

As a participating organisation in the NSW HEALTHPLAN (NSW Health's disaster management plan), St John NSW is available to provide assistance to NSW Health and other emergency service agencies during crisis events, such as bushfires or extreme weather conditions. St John NSW provides emergency management and logistical support, skilled volunteers and staff, as well as medical equipment to support the State Health Services Functional Area Coordinator (HSFAC).<sup>16</sup>

St John NSW volunteers were on the frontline of the 2019-20 bushfires and provided critical resources to support emergency services as well as direct assistance to impacted communities. More than 400 skilled volunteers were deployed, dedicating more than 23,500 hours to the crisis response. Additionally, St John provided transport for people located in hard-to-access areas.

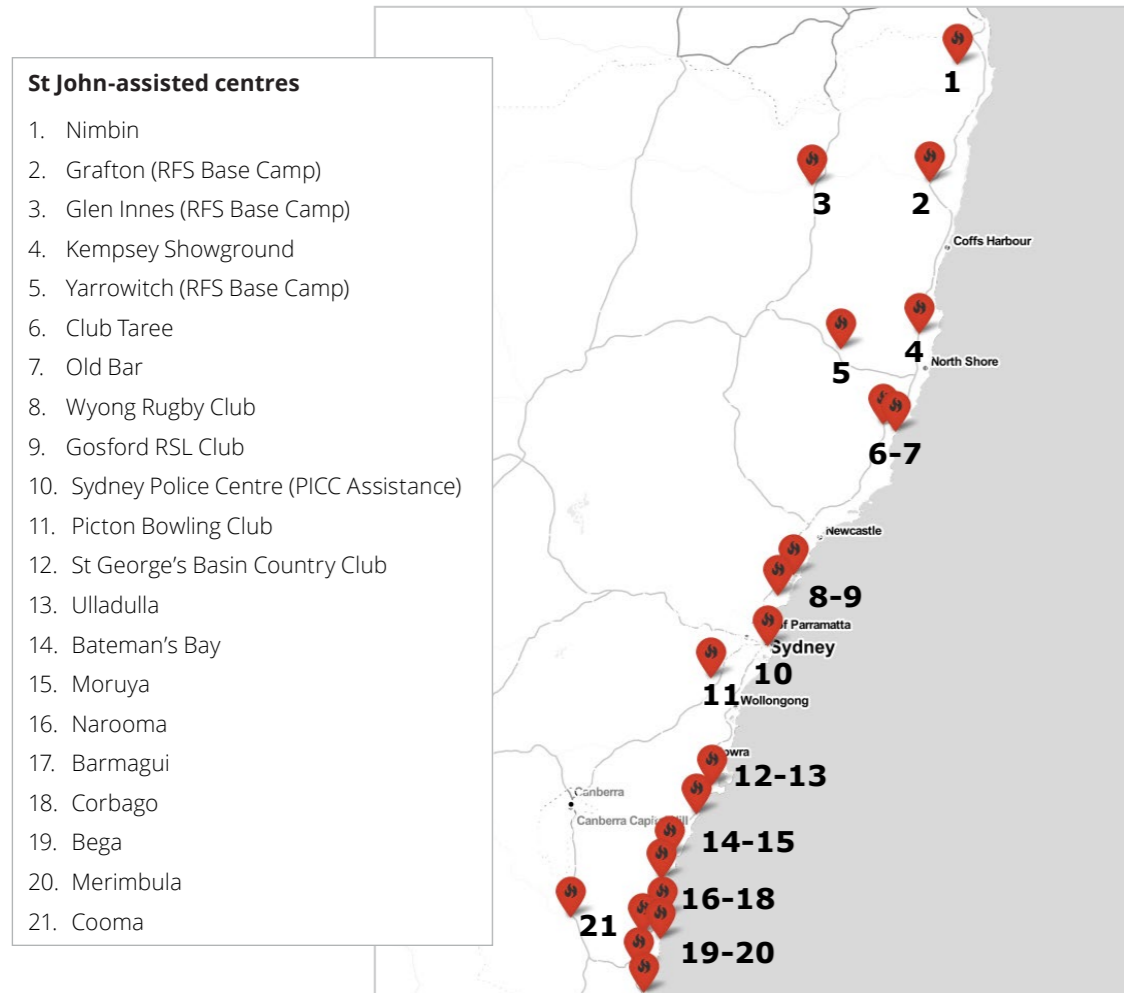
St John volunteers treated 438 critical patients during the crisis. Volunteers attended 33 emergency centres in total, including 26 evacuation centres, Rural Fire Service (RFS) base camps, and the NSW Police Public Information and Inquiry Centre (PIIC) (see Figure 2.1).<sup>17</sup> These centres accommodated up to 4,000 evacuees across NSW at the peak of the crisis. A range of treatments was provided at evacuation centres, including community health checks and mental health services, cardiac arrest response, smoke inhalation care, burn management and laceration and wound care.

St John NSW provided response teams to support SES responders, RFS personnel and other emergency service providers. As well as ensuring emergency response teams were medically attended to, St John volunteers provided mental health support to reduce the impact of burnout felt by other emergency service providers.

St John volunteers helped to staff the 24-hour telephone line at the PIIC. This phonenumber assisted callers separated from their families during the crisis to contact family members. Phone services at the PIIC also enabled residents of local areas to receive timely updates about the crisis, including information on when and how to evacuate.<sup>18</sup> These services were critical to evacuees, as regular telecommunications infrastructure was heavily affected by the fires.

**St John volunteers dedicated more than 23,500 hours to the 2019-20 bushfires response, providing treatment to 438 critical patients.**

Figure 2.1: Provision of bushfire emergency services and support by St John NSW



Source: Deloitte Access Economics analysis of St John NSW data.

### Case Study: Frontline response to the bushfire crisis

On New Year's Eve of 2019, the coastal tourist town of Bateman's Bay was ablaze. St John NSW emergency responders were among the first to arrive on the scene, providing critical first aid and medical support.

Volunteers battled smoke-intensive 40-degree conditions with no air conditioning, and only a small generator to power operations. Many patients were treated for breathing-related illnesses caused or triggered by smoke inhalation. Of the patients treated, approximately 25% of injuries occurred from patients battling to save their homes, escaping the blaze or running back to make sure their neighbours were safe – many of whom were treated for burns and lacerations.

Nearby medical centres and hospitals were overwhelmed and faced capacity constraints. St John volunteers triaged evacuation centre patients, transferring only the most critical cases to hospital and treating the majority of patients onsite. According to St John volunteers, approximately one in four evacuees who were treated by St John avoided hospitalisation.

St John volunteers worked day and night to look after the patients in their care. This involved providing first aid treatment and ensuring patients received their medication for pre-existing conditions, which may have been left behind as they fled their homes.

A significant volume of St John's support was to aid community members' mental health. Many evacuees had watched the fire burn from across the bay in fear that their homes were ablaze, feeling helpless and fearing they had lost everything they owned. St John NSW first responders, medical practitioners and mental health experts worked tirelessly to provide significant medical and psychological support and comfort to community members.



## 2.2. COVID-19 response

The COVID-19 pandemic immediately followed the 2019-20 bushfire crisis. St John NSW played a key role throughout the pandemic, rapidly deploying resources to testing clinics in hot spot community areas to respond to outbreaks and providing screening services across the state. St John also worked alongside NSW Health and the Federal Government's healthcare providers to expedite the vaccination roll-out.

The services provided by St John NSW included:

- **Sydney quarantine hotels** – Temperature screening services at quarantine hotels across Sydney, covering 20 to 25 hotels each day, seven days a week
- **COVID testing clinics** – Support at drive-through clinics by registering, recording information and providing the public with information to aid the public health response
- **Sydney International Airport** – St John provided a COVID testing clinic for incoming international passengers and administered a COVID surveillance testing program for all airport workers

- **Courier service and patient transport** – St John couriered swab samples and also provided patient transport services where required

- **Vaccination hubs** – St John partnered with several Local Health Districts to fast-track the establishment of vaccination clinics to support the community roll-out of vaccines. St John also partnered with Sonic Healthcare at clinics across Sydney, performing several roles including queue management and marshalling, reception and check-in, vaccinations, and post-vaccination observation.

St John NSW members provided more than 515,000 hours of frontline support toward the COVID-19 response, at over 64 locations state-wide (see Figure 1.5). This included:

- 185,000 hours of COVID-19 screening
- 143,000 hours of vaccination services
- 130,000 hours of testing services
- 20,000 hours of patient transportation
- 20,000 hours of logistics, rapid antigen testing, and COVID-19 community care.

### Case Study: Partnering with NSW Health and Emergency Service Partners

At the height of the COVID-19 pandemic, St John NSW received a request from NSW Health to assist with the rapid set-up of a community vaccination clinic in the Local Government Area of Fairfield in Western Sydney. As a result of a strong collaboration between St John NSW and NSW Health – as well as supporting organisations including Fairfield City Council, Rural Fire Service (RFS) and State Emergency Service (SES) – the clinic was open within four days.

St John NSW teams managed a range of duties including marshalling, administration support, language translation and patient observation post-vaccination. At its peak, the clinic was administering approximately 2,500 vaccines each day, 7 days per week. On average, around 10 St John NSW staff members were rostered daily for 11.5-hour shifts to work alongside NSW Health team members. Lead staff were responsible for supervising and training vaccination staff, supporting with identifying bottlenecks in the vaccination process, and assisting with clinic vaccination requirements.

A key challenge for the clinic was the limitation of onsite vaccine storage. NSW Health issued a staffing request to St John NSW to provide a team leader for cold chain – a staff member who would ensure a minimum of 240 vaccine doses would be ready ahead of the clinic opening each day, allowing vaccines to be administered quickly in the morning rush. The St John NSW team leader managed between 5 and 10 nursing staff daily whose primary responsibility it was to draw up vaccines, ensure adequate doses and that aseptic techniques were being followed.

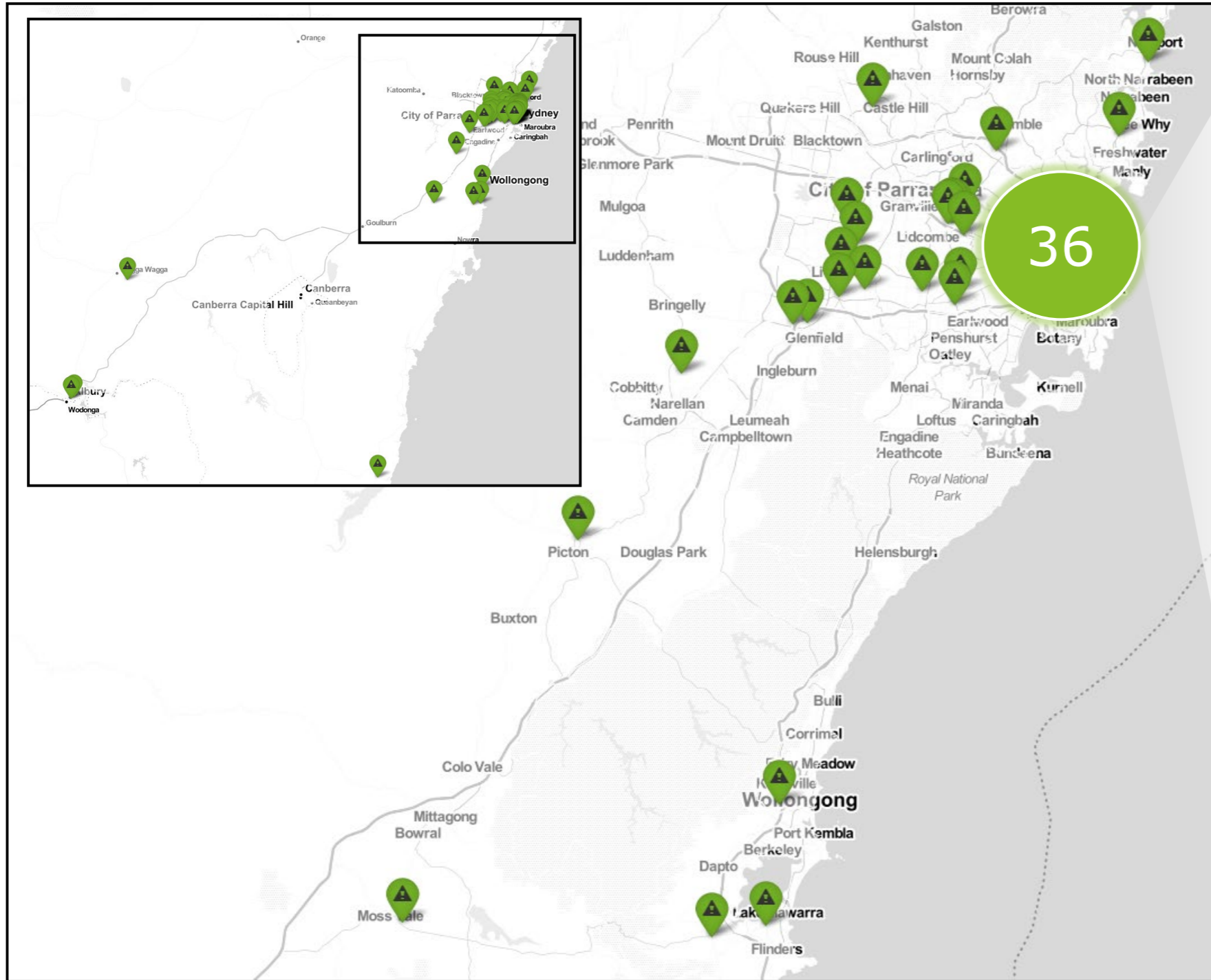
St John NSW Deployment Lead, Erica Kaldas, said:

"Working in the clinic was such a positive experience. Our teams were trained to not just support the roll-out of the vaccines, but also to help people feel comfortable and supported while waiting in line or filling out their details. The level of care our teams provided was just so wonderful to witness, and we could see how grateful the community was for that."

More than 25,000 hours of St John staffing and close to 90,000 vaccines were administered while the clinic was in operation.



Figure 2.2: COVID-19 testing and screening services



Source: Deloitte Access Economics analysis of St John NSW data.

### 2.3. NSW flood response

In 2022, St John NSW played an important role in providing medical support to residents and emergency service workers on the frontline of the NSW flood response. St John also provided critical resources to expand the state's emergency services capacity, with volunteers assisting the police and the NSW State Emergency Service in rescuing and relocating stranded people and pets. St John NSW teams were also on standby across the state, monitoring their local areas and remaining ready to respond.

St John volunteers were deployed across several locations, including at evacuation and recovery centres in Evans Head, Lennox Head, Lismore, Mullumbimby and Southern Cross University. In total, St John's flood response consisted of over 600 member shifts and 6,700 duty hours. A significant proportion of volunteer hours specific to the flood response were spent at the RFS Base Camp in Wollongbah (24%), Southern Cross University Evacuation and Recovery Centre (22%) and the PIIC (17%).

#### Response to the NSW flood crisis: Kerry's story

Following a week of continuous rain, a low pressure system swept through the Lismore region, bringing torrential rain and causing the nearby river systems to overflow. On the evening of Tuesday 1 March, a casual St John trainer in the Northern Rivers area, Kerry, received a call from her local division in Lismore to assist the SES with its response supporting local residents affected by severe flooding.

Kerry drove from her home in Evans Head to Lismore, but she was unable to pass through Woodburn, a town submerged under water 34 kilometres south of Lismore. Recognising her St John uniform, representatives from the police, the SES and ambulance services asked Kerry if she could assist the flood response by working on SES and police rescue boats. She used her St John training to provide first aid and help rescue 500 local residents and their pets who were stranded on the rooftops of their homes.

Initially, these residents were relocated to a makeshift evacuation centre on higher ground in Woodburn. However, a few hours after the initial evacuation, the evacuation centre was submerged underwater. Kerry and the team of SES, police and ambulance service providers transported evacuees at Woodburn to multiple evacuation centres in Evans Head. The small coastal town east of Woodburn was also struggling with floods limiting access to food suppliers.

Overwhelmed and under resourced, two local paramedics at Evans Head supplied Kerry with a defibrillator and an oxygen kit to provide support in the event of an emergency. She worked through the night to evacuate local residents and assist the emergency effort. Kerry's volunteer experience highlights how St John-trained volunteers were able to respond rapidly and assist communities affected by the flood crisis.





3

## Measuring the benefits



Through its event health services, first aid training program and other community and health services, St John generates significant economic and social benefits for the NSW community each year.

Deloitte Access Economics was engaged to estimate the economic and social value of St John to the NSW community. This study involved identifying the various ways in which St John generates benefits for the community, a survey of St John volunteers and students, consultation with volunteers and the development of suitable approaches to estimate the value of St John NSW's community services. A cost-benefit analysis (CBA) approach was used for this purpose, which involves estimating both the benefits and costs of St John's community services (see Appendix A for a summary of the CBA approach).

St John provides a range of first aid and essential medical services to the community. Its economic and social value is estimated

from four sources of benefits, which demonstrate the scope of its impact in the community. These include:

1. Event health services
2. Bystander cardiopulmonary resuscitation (CPR)
3. Improved employment outcomes
4. Avoided emergency department (ED) admissions.

A brief description of each of the benefits is presented in Figure 3.1. The following sections discuss each of the benefits, along with the key data inputs and assumptions that have been used in estimating their value.

Figure 3.1: Summary of economic and social benefits



**Event health services**

St John's onsite medical services at events enable a quicker response to serious medical emergencies, increasing the chance of patient survival.



**Bystander CPR**

St John equips students and volunteers with the knowledge and skills to respond to medical emergencies as bystanders, which enhances community safety.



**Employment**

St John provides first aid qualifications to students and valuable experience to volunteers, both of which may assist them to secure paid employment.



**Avoided ED admissions**

High-acuity patients treated at events by St John may avoid going to hospital, which avoids the cost of treating these patients in a high-acuity setting.

Source: Deloitte Access Economics.

St John NSW attended around 5,000 events each year prior to the COVID-19 pandemic, providing treatment to around 27,000 patients.

### 3.1. Benefit 1: Event health services

#### 3.1.1. Summary

St John provides onsite medical services at a wide range of events across NSW each year. Where large gatherings of people are concerned, event organisers are required to ensure high public safety standards and minimise the risk of serious injury or harm to event attendees. The presence of onsite event health services can reduce the response time in the event of a serious medical emergency.

Prior to the COVID-19 pandemic, St John attended around 5,000 events across NSW annually, treating around 27,000 patients at public events each year. These patients present with conditions that range in their level of acuity. Although the majority of patients treated are considered 'not urgent' and could be treated either at home or return to the event following treatment with St John, some patients require urgent care for serious medical conditions that, if untreated, could affect their quality of life or even result in mortality. Following treatment by St John, these high-acuity patients may be transferred to hospital either by NSW Ambulance or by their own means of transport.

Patients that are transferred to hospital receive treatment for their conditions in an alternative setting, and it is therefore difficult to attribute the health benefits of treating these patients entirely to St John. However, St John's onsite presence means that a patient who suffers a medical emergency is treated more quickly than if an ambulance service were called by a bystander. For high-acuity patients who require timely access to treatment, an improved response time can significantly improve the chance of survival.

The improved chance of survival from St John's quicker response to serious medical emergencies that occur at events is estimated for two groups of patients:

- Cardiac arrest patients – for cardiac arrest cases that occur at events, the response time is critical and can significantly impact survival outcomes
- All other high-acuity cases – for all other high-acuity cases that occur at events, an improved response time can reduce the risk of mortality.

#### 3.1.2. Key inputs and assumptions

##### 3.1.2.1. Number of patients transferred to hospital

Between 2017 and 2019, around 1,100 patients per year were transferred to hospital from events either by NSW Ambulance or by their own means of transport.<sup>19</sup> These patients are assumed to represent high-acuity patients since they require treatment in a hospital setting, and therefore the time taken to respond to these patients is expected to result in improved health outcomes.

Based on a representative sample of 15 events between 2017 and 2021, it is assumed that less than 1% of patients across all events are cardiac arrest patients (around 20 per year, based on a pre-COVID-19 average).<sup>20</sup> The number of patients treated by St John decreased significantly in 2020 and 2021 due to the cancellation of events as a result of the COVID-19 pandemic, with total events more than halving in 2020 compared to 2019 events to around 1,700 events each year.<sup>21</sup>

Year-to-date event data suggests that in 2022, the total number of events – and therefore the volume of patients treated at events – is likely to be at least as high as the years prior to the pandemic given pent up demand from both event organisers and attendees as a result of the many cancelled events over the last two years. As a result, the number of patients treated in 2022 is estimated according to a three-year pre-COVID-19 average (2017 to 2019).

Although the number of future high-acuity patients treated at events is difficult to accurately forecast, it is reasonable to assume that the number of patients treated will increase over time. As the NSW population grows, so will the number of people who attend events, and hence, the number of people who will need to be treated at events. Therefore, it has been assumed that the number of high-acuity patients treated will increase over time in line with NSW population growth forecasts, which are sourced from Deloitte Access Economics' Business Outlook.<sup>22</sup>

##### 3.1.2.2. Response time and survival rate for an out-of-hospital cardiac arrest incident

Based on data provided by St John for the 2019 Sydney City to Surf event, St John volunteers had an average response time of 6 minutes and 53 seconds across all patients treated. According to the NSW Cardiac Arrest Registry, the median response time in 2019 for priority one emergency medical service-treated events was 8 minutes.<sup>23</sup> Therefore, it is assumed that patients who experience OHCA at events will on average receive treatment one minute and seven seconds faster when St John volunteers are onsite and able to provide treatment prior to the arrival of an ambulance service.

Controlling for other factors, studies have revealed that survival rates improve by between 10%<sup>24</sup> and 24%<sup>25</sup> for every one-minute reduction in the time taken to respond to a cardiac arrest incident. This analysis uses the more conservative estimate of a 10% improvement in survival rates to estimate the value of this benefit.

##### 3.1.2.3. Response time and survival rates for all other high-acuity cases

A response time of 8 minutes for medical emergencies is considered best practice across several Australian and international jurisdictions, with the proportion of priority one (or equivalent) cases meeting this standard reported as a key performance indicator for ambulance services in NSW as well as South Australia, Canada and the UK.

A study of more than 100,000 emergency service responses over one year in Canada estimated the reduced risk of mortality for patients with a response time of less than or equal to 7 minutes and 59 seconds compared to patients with a response time greater than or equal to 8 minutes.<sup>26</sup> Patients with a response time of less than or equal to 7 minutes and 59 seconds have a 0.7% lower risk of mortality than patients with a response time of greater than 8 minutes.<sup>27</sup> Therefore, the analysis assumes that all other high-acuity cases responded to by St John will realise a 0.7% reduction in the risk of mortality.

##### 3.1.2.4. Life expectancy for out-of-hospital cardiac arrest patients

An important aspect of quantifying this benefit relates to an OHCA patient's life expectancy following a cardiac arrest. Literature in this field presents significant variation in estimates of life expectancy following the survival of a cardiac arrest, with the mean survival ranging between six years<sup>28</sup> and 16 years.<sup>29</sup> This analysis uses a life expectancy of 11.9 years for OHCA patients, in line with findings from a recent Australian study, which evaluated the long-term survival outcomes following OHCA events.<sup>30</sup>

##### 3.1.2.5. Value of a statistical life year and life

The value of a statistical life year (VSLY) is used to estimate the economic value of an OHCA patient's remaining years of life. The analysis uses a value of \$230,319 for the value of a statistical life year, which is based on an estimated value of society's willingness to pay for a reduction in the risk of physical harm published by the Department of the Prime Minister and Cabinet, adjusted to 2022 dollars.<sup>31</sup>

For cardiac arrest patients, the VSLY needs to be considered against the associated costs of care and treatment following the survival of a cardiac arrest. A 2015 study undertaken in England involving 69 patients who suffered a cardiac arrest calculated the related cost of a quality adjusted life year (QALY) gained.<sup>32</sup> In 2022 Australian dollars, this equates to \$37,629;<sup>33</sup> this includes the total costs incurred during and post patients' hospital treatment. Therefore, the net VSLY for cardiac arrest patients is estimated at \$192,690 in 2022 dollars (i.e. \$230,319 value of a statistical life year less \$37,629 in costs incurred during and after hospital treatment).

For all other high acuity cases, the value of a statistical life (VSL) is used to estimate the economic value of a patient's life. The VSL differs from the VSLY because it estimates the value society places on reducing the risk of dying, whereas the VSLY relates to reducing the risk of physical harm. The analysis uses a value of \$5.3 million for the VSL, also published by the Department of the Prime Minister and Cabinet and adjusted to 2022 dollars.<sup>34</sup>

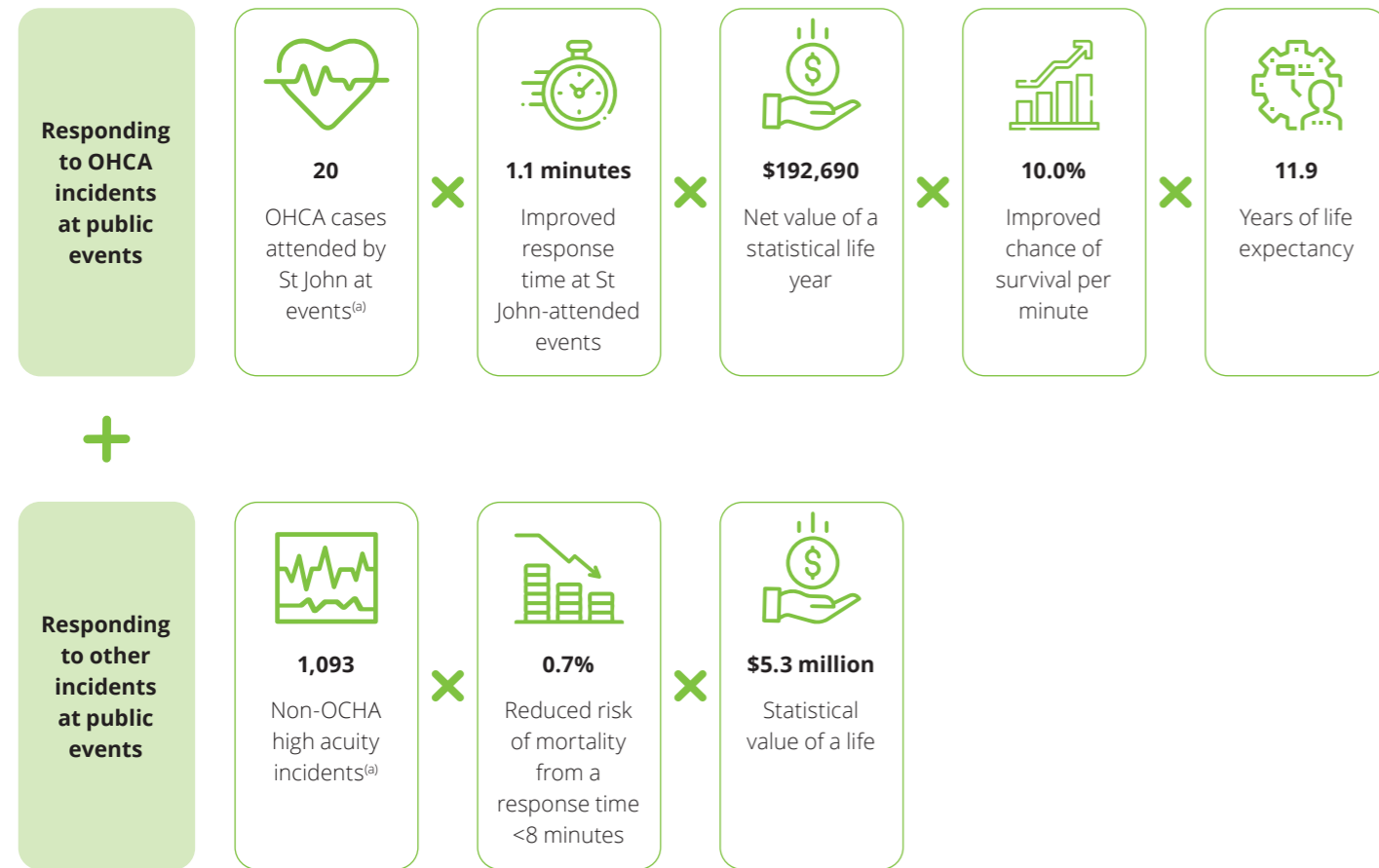
##### 3.2.3. Estimated value

The benefit of St John's event health services is estimated as the sum of the benefits realised from the quicker response time for the two groups of patients: cardiac arrest patients and all other high acuity patients. Although out-of-hospital cardiac arrest patients represent a relatively small share of cases (see section 3.1.2.1), the benefit per patient from the quicker response time is high compared to non-OHCA high-acuity cases given the significant impact that an improved response time has on cardiac arrest survival rates (see section 2.1.2.2).

Over the period of analysis, it is estimated that St John's treatment of high-acuity patients at events will generate a net benefit of \$527.3 million in present value terms. Figure 3.2 illustrates the approach used to estimate this benefit.



Figure 3.2: Estimation of Benefit 1 – Event health services



Notes: (a) Estimated OHCA and non-OCHA high-acuity incidents vary over time; however, the pre-COVID-19 averages are presented for simplicity.

Source: Deloitte Access Economics.

### 3.2. Benefit 2: Bystander CPR

#### 3.2.1. Summary

First aid and CPR training enhances community safety by educating the public in critical life-saving skills. Research suggests that out-of-hospital cardiac arrest patients who receive CPR from a bystander are more likely to survive compared to a scenario where CPR was not attempted prior to the arrival of emergency medical services.<sup>35</sup>

In 2019, St John trained over 56,000 people in first aid and CPR.<sup>36</sup> As one of the largest providers of first aid training in NSW, St John plays an important role in educating members of the public with life-saving skills that enable them to respond to an out-of-hospital cardiac arrest case in the community. This is supported by the findings of the St John NSW survey, which found that 11% of St John students have administered CPR in the community.<sup>37</sup>

St John also provides its volunteers with additional training and education opportunities, which range from basic first aid and CPR to advanced medical support. The knowledge and experience that volunteers gain from their involvement with St John enables them to more effectively apply their life-saving skills in the community. This is also supported by the findings of the survey, which found that 34% of St John volunteers had performed CPR outside of their role with St John.<sup>38</sup>

The benefits associated with training students and volunteers are estimated in different ways. This recognises that St John volunteers are highly skilled and experienced in their roles, and more likely to have real-life experience in responding to medical emergencies during their time on volunteer duty. The depth of first aid and CPR experience is therefore greater for St John volunteers relative to students who have completed a first aid course with St John. While people who complete a CPR course are capable of responding to a medical emergency, St John volunteers are likely more capable and confident, and therefore are more likely to put their hand up to respond to an emergency and provide assistance as a bystander.<sup>39</sup>

The provision of first aid and CPR training forms a critical part of protecting the community. Without bystanders equipped with CPR knowledge and skills, many people who experience out-of-hospital cardiac arrest in the community may face serious injuries and others may lose their lives. Therefore, the value of St John's first aid and CPR training program is estimated by measuring the benefit to the NSW community of having a higher proportion of the population equipped with CPR skills, and from the presence of St John's highly skilled and experienced volunteers who assist their communities by responding to medical emergencies.

#### 3.2.2. Key inputs and assumptions

##### 3.2.2.1. Number of first aid students

First aid courses offered by St John contain training in CPR, which can equip participants to save a person's life in an emergency situation. Only the first instance of an individual completing a first aid certificate is considered. That is, if an individual completes a number of first aid courses, only completion of the first certificate is considered in the analysis. This reflects the fact that successive

completions of first aid and CPR training likely result in a person maintaining their competency or level of skill in this area, rather than acquiring new skills that allow them to assist in a wider variety of emergencies.

Excluding the impact of COVID-19 (which resulted in a lower number of new first aid participants), an average of 39,372 individuals per year are estimated to have completed first aid training for the first time between 2017 and 2019. Of these, 94% (or, 37,010) were commercial students, with the remainder of first aid courses completed by volunteers.

In 2022, it is assumed that the number of new students will return to the pre-COVID-19 average of 37,010. Beyond 2022, the number of students who complete first aid and CPR training for the first time is forecast to increase over time in line with NSW population growth forecasts, sourced from Deloitte Access Economics' Business Outlook.

In the absence of St John, some students would still obtain first aid and CPR qualifications from other providers. The findings from the survey indicate that 48% of students have only received CPR training through St John, while 52% of respondents also received training from other providers. This proportion (48%) is used as a proxy to reflect the share of students who would not have completed CPR training in the absence of St John. As such, the benefits of first aid and CPR training provided by St John are only applied to 48% of students who completed the training, as it is assumed that the remaining 52% of students would have received CPR training from alternative providers in the base case.

##### 3.2.2.2. Estimated hours of life saved by each new first aid student

A study by Groeneveld et al (2005) considered the costs and health benefits of alternative resuscitation training strategies for adult laypersons; that is, those without professional first responder occupations. The study found that each CPR qualification may be associated with 2.7 quality-adjusted hours of life saved.<sup>40</sup> In other words, for each additional person who completes CPR training, an average of 2.7 hours of life is expected to be saved in the future.

This estimate reflects the fact that many people who complete CPR training may never be required to perform it. However, some people will encounter a life-threatening emergency in which their CPR training enables them to render care that saves a person's life. Therefore, this study applies an assumption that for each student that completes CPR training for the first time with St John, 2.7 hours of life is saved in the future.

The findings from the St John NSW survey support the assumption that some people who complete CPR training with St John will encounter a life-threatening emergency in the community, in which their training enables them to provide care. About one in six students (15%) indicated they had encountered a medical emergency in which they had been able to use their skills to administer CPR.

One in six students who completed CPR training encountered a medical emergency and administered CPR.

### 3.2.2.3. Number of volunteers who may perform CPR as a bystander

St John volunteers have a unique combination of knowledge and experience that enables them to more effectively apply their life-saving skills in the community. The survey found that one in three volunteers (34%) had performed CPR at an out-of-hospital cardiac arrest incident outside of their role with St John. This assumption is used in the analysis to estimate the number of volunteers who have responded to an out-of-hospital cardiac arrest incident as a bystander.

Volunteers with greater experience are more likely to have encountered an out-of-hospital cardiac arrest incident. For example, 60% of volunteers with more than 20 years of experience had performed CPR outside of their role with St John, compared to 11% of volunteers with less than one year of experience.<sup>41</sup> To account for the range of experiences, an adjustment was made by taking a weighted average of the CPR performance rate according to the number of years volunteers had been a member with St John.

Between 2017 and 2019, an average of 462 volunteers joined St John each year. In 2020, new recruits almost doubled to 904, followed by 795 in 2021. The significant increase in volume of new volunteers during this period reflects the increase in demand for emergency services during the bushfire crisis of 2019-2020 as well as the COVID-19 pandemic.

For 2022, the number of new volunteers is forecast to reset at the pre-COVID-19 average (462). While the estimated number of new volunteers is still high in 2022, the removal of vaccine mandates and hotel quarantine requirements in NSW and the increased availability of at-home COVID-19 Rapid-Antigen Tests have significantly reduced the demand for additional health staff to support the pandemic response.

The view that the number of new volunteers will return to pre-pandemic levels is consistent with St John patient estimates (see section 2.1.2.1) and forecast operating costs for volunteer training expenses in 2022 (estimated at \$641,000, comparable to the three-year pre-COVID-19 average of \$629,000 in real terms).<sup>42</sup> The number of new volunteers is forecast to then increase over time in line with NSW population growth forecasts, sourced from Deloitte Access Economics' Business Outlook.

One in three volunteers encountered a medical emergency and administered CPR outside of their role with St John NSW.

### 3.2.2.4. Increased chance of survival with bystander CPR

When a St John volunteer provides CPR to an out-of-hospital cardiac arrest patient as a bystander, the risk of mortality is significantly reduced. In 2019, 12% of NSW patients who received bystander CPR prior to ambulance arrival survived to hospital, compared to 6% of patients who did not receive bystander CPR.<sup>43</sup> Therefore, it is estimated that OHCA patients who receive CPR from a bystander have a 6% increased chance of survival. A 2015 study undertaken in Sweden reported a similar finding, estimating the 30-day survival rate of an OHCA incident was 6.5% higher for patients who received bystander CPR.<sup>44</sup>

### 3.2.2.5. Value of out-of-hospital cardiac arrest lives saved

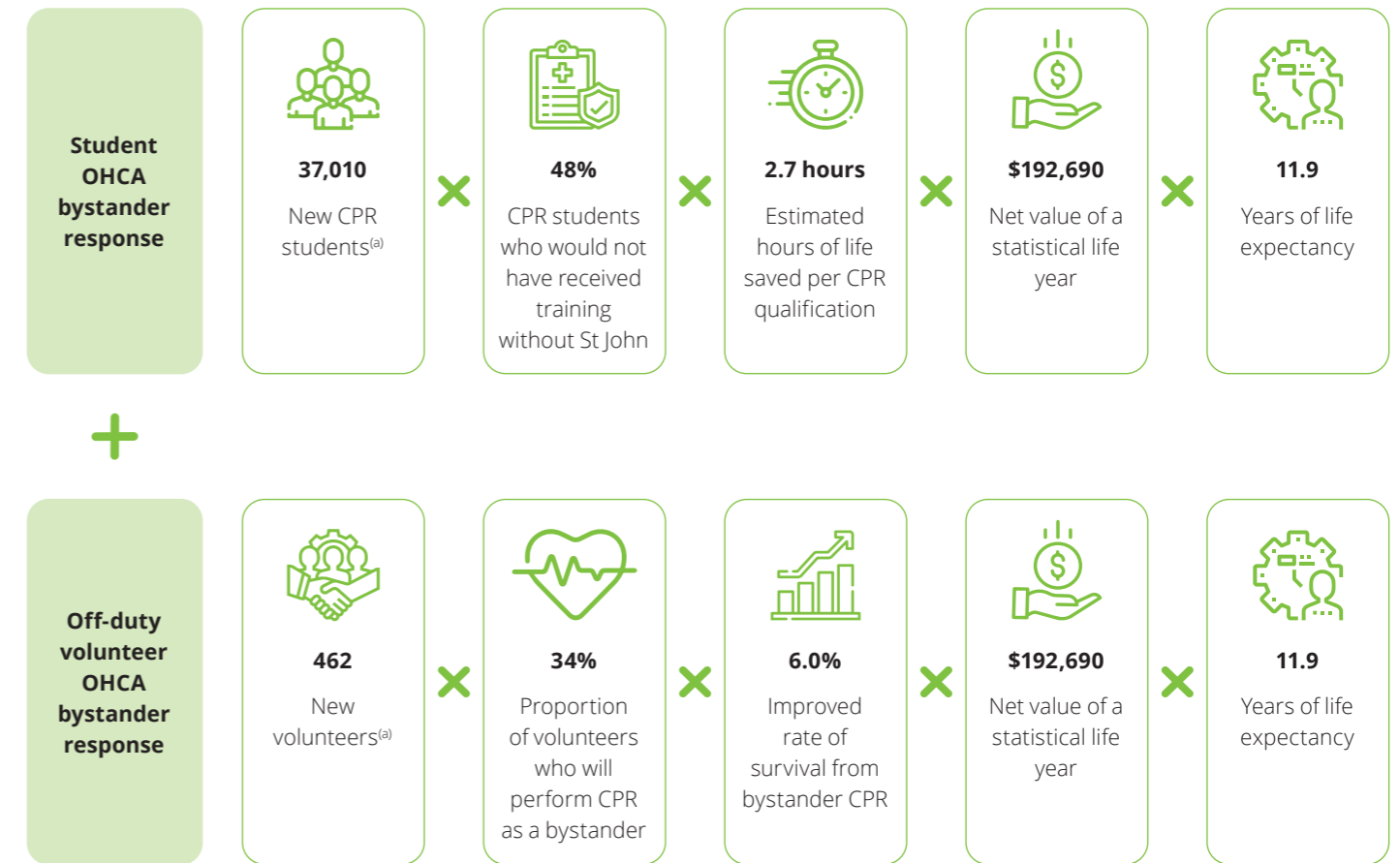
The approach used to estimate the value of lives saved for OHCA patients is consistent with the approach used to estimate the net value of a statistical life year of an OHCA patient treated at an event (see section 3.1.2.5). The net value of a statistical life year for cardiac arrest patients is estimated at \$192,690 in 2022 dollars (i.e. \$230,319 value of a statistical life year less \$37,629 in costs incurred during and after hospital treatment), and this is applied to a life expectancy of 11.9 years (see section 3.1.2.4).

### 3.2.3. Estimated value

The benefit of St John's first aid and CPR training is estimated as the sum of the benefits from students and off-duty volunteers responding to out-of-hospital cardiac arrest incidents as bystanders. This approach recognises that volunteers are highly skilled and experienced, and are therefore more likely to respond to an emergency and provide assistance as a bystander. However, all students who complete a CPR course acquire skills that may enable them to respond to a medical emergency in the community.

Over the period of analysis, it is estimated that St John's role in enabling bystander response to OHCA incidents will generate a net benefit of \$468.3 million in present value terms. Figure 3.3 illustrates the approach used to estimate this benefit.

Figure 3.3: Estimation of Benefit 2 – Bystander CPR



Notes: (a) Estimated new volunteers and students vary over time; however, the pre-COVID-19 averages are presented for simplicity.

Source: Deloitte Access Economics.

56% of volunteers believed their skills and experience acquired from volunteer roles with St John NSW assisted them to gain employment.

### 3.3. Benefit 3: Improved employment outcomes

#### 3.3.1. Summary

Completing a first aid course can reasonably be expected to assist some students find employment. For example, a first aid certificate may lead to a student gaining employment in a role that requires responsibility for safety in the workplace. First aid qualifications are often relevant for roles in the education, hospitality, sport and recreation and medical industries, and certificate holders may receive a higher wage because of their qualification. For some roles within these industries, it may be either a requirement or a recommendation for workers to hold a first aid qualification, or there may be a requirement for one member of staff on premises to hold a qualification.

Volunteers acquire skills and experience as part of their role with St John that extends beyond first aid training, and these skills are valuable to employers across a range of workplaces. For example, the findings from the St John NSW survey indicate that the majority of volunteers currently work in healthcare services (55%), with others working across business, education and training (15%). In addition to a high level of skill and experience in administering first aid and CPR, volunteers are trained to respond calmly in high-pressure situations, work collaboratively in team environments and meaningfully contribute to their community.

The value of the employment benefits for both students and volunteers is reflected in the increased income they receive as a result of their training or experience with St John. It follows that the value of the benefits to students and volunteers largely depend on whether a person was previously employed or unemployed, whereby unemployed persons receive a larger benefit from finding employment compared to those who were already employed and earning an income.

A person who was already employed receives the additional income gained from their new role as a benefit. However, for unemployed persons there is an opportunity cost from entering employment, which largely reflects forgone leisure time. Therefore, a person who was previously unemployed receives a benefit equal to their new income less a 'reservation wage', which is the minimum wage required for a new employee to participate in the labour market, and therefore reflects the value that a person places on their leisure time.

#### 3.3.2. Key inputs and assumptions

##### 3.3.2.1. Number of volunteers who gain employment

The number of volunteers who gain employment are estimated from the base of new volunteers who join St John each year (see

section 3.2.2.3). In the St John NSW survey, volunteers indicated that their skills and experience as a volunteer have assisted them to gain employment, with 56% believing their skills and experience in volunteer roles with St John had assisted them at least to some extent to secure paid employment.<sup>45</sup>

The analysis weighted responses based on the extent to which a volunteer's skills and experience had contributed to them securing employment, with increasing weighting for those who indicated their skills and experience had assisted them 'to some extent', 'to a large extent' or 'to a very large extent'. Using this approach, an assumption was derived that 20% of volunteers will secure paid employment as a result of the skills and experience acquired from their role with St John.

The proportion of volunteers who were previously unemployed or employed prior to securing employment is estimated using NSW underemployment forecasts, sourced from Deloitte Access Economics' Business Outlook and validated against historical underemployment estimates from the Australian Bureau of Statistics.

##### 3.3.2.2. Increased earnings for volunteers

St John volunteers acquire a broad range of employment-related skills, including first aid and CPR, leadership, teamwork, communication and training skills. As a result, volunteers may find employment across a variety of industries.

Given the variety of roles that volunteers may secure, average weekly earnings across all industries is used to estimate the value of this benefit. The average income of an individual is estimated at \$1,378.70 per week in 2022 dollars, which reflects average weekly earnings for all employees – including full-time, part-time and casual workers – or annualised earnings of \$73,456.30.<sup>46</sup>

The value of increased earnings for volunteers who gain employment is different for those who were previously unemployed compared to those who were employed. For previously unemployed volunteers, a reservation wage is applied (see section 3.2.1), which is the minimum wage required for a new employee to participate in the labour market, and therefore reflects the value that a person places on their leisure time. The reservation wage is estimated at \$42,527 in 2022 dollars, based on a survey of Australian employees.<sup>47</sup> Therefore, the value of employment benefits to previously unemployed volunteers is estimated at \$30,929 (\$73,456.30 annual earnings less a reservation wage of \$42,527).

For previously employed volunteers who secure employment, there is a cost associated with changing jobs. It is assumed that to

43% of students who completed first aid training with St John NSW believed their training assisted them to gain employment.

move jobs, employees would have to receive additional earnings of at least 9% of their current wage plus \$6,000 (or \$6,817 in 2022 dollars), based on a survey of Australian employees.<sup>48</sup> These assumptions are used as a conservative approach to estimating the increase in earnings realised by previously employed volunteers who secure new employment as a result of their role with St John.

##### 3.3.2.3. Number of students who gain employment

The number of students who completed first aid training was used as a basis to estimate the number of students who gain employment as a result of their first aid or CPR qualification (see section 3.2.2.1). Consistent with the approach used to estimate the benefits of bystander CPR (Benefit 2), the benefits are only applied to the 48% of students who indicated that they had only received CPR training through St John; it is assumed that the remaining 52% of students would have received CPR training from alternative providers in the base case.

The findings from the St John NSW survey indicate that a significant proportion of students who complete first aid training with St John find that their qualifications and skills assist them to gain employment, with 43% believing their training had assisted them at least to some extent to secure paid employment.

The analysis weighted responses based on the extent to which a student's qualification had contributed to them securing employment, with increasing weighting for those who indicated their training had assisted them 'to some extent', 'to a large extent' or 'to a very large extent'. Using this approach, an assumption was derived that 17% of students who complete a first aid qualification with St John will secure paid employment as a result of the new qualifications and skills they have acquired.

The approach used to estimate the proportion of volunteers who were previously unemployed or employed prior to securing employment is also applied to students (see section 3.3.2.1). This involves using NSW underemployment forecasts sourced from Deloitte Access Economics' Business Outlook.

##### 3.3.2.4. Increased earnings for students

The approach used to measure the value of increased earnings for previously unemployed volunteers is applied to previously unemployed students (see section 3.3.2.2). This involves taking the difference between the average annual earnings and the reservation wage, which equates to \$30,929 (\$73,456.30 annual earnings less a reservation wage of \$42,527).

For previously employed students who secure employment, it is expected that first aid qualifications provided by St John will enable them to receive a higher wage. There is limited research available from which to estimate a wage premium for a first aid or CPR qualification. However, a recent study found that the median annual earnings of direct care workers with credentials was \$4,200 USD higher than workers without credentials, of which responding to an emergency situation was a component.<sup>49</sup> This equates to \$6,455 AUD in 2022 dollars and represents an increase of 8.8% of an employee's average annual earnings in Australia.

This wage premium is used to estimate the increase in earnings realised by previously employed students who secure new employment as a result of the qualifications and skills acquired from their training. Other estimates of credential-related labour market wage premiums range from 6.2% to 18.0%.<sup>50,51</sup>

##### 3.3.2.5. Average tenure of employment

For students and volunteers that do secure employment as a result of their training or involvement with St John, it is reasonable to assume that they would remain in their role for a period of time until either their employment ends or they decide to pursue other opportunities. Analysis by McCrindle (2019) suggests that the average tenure of employment for employees in Australia is 2.9 years.<sup>52</sup> The analysis therefore assumes that students and volunteers who secure employment as a result of their training or involvement with St John will remain in their role for 2.9 years.

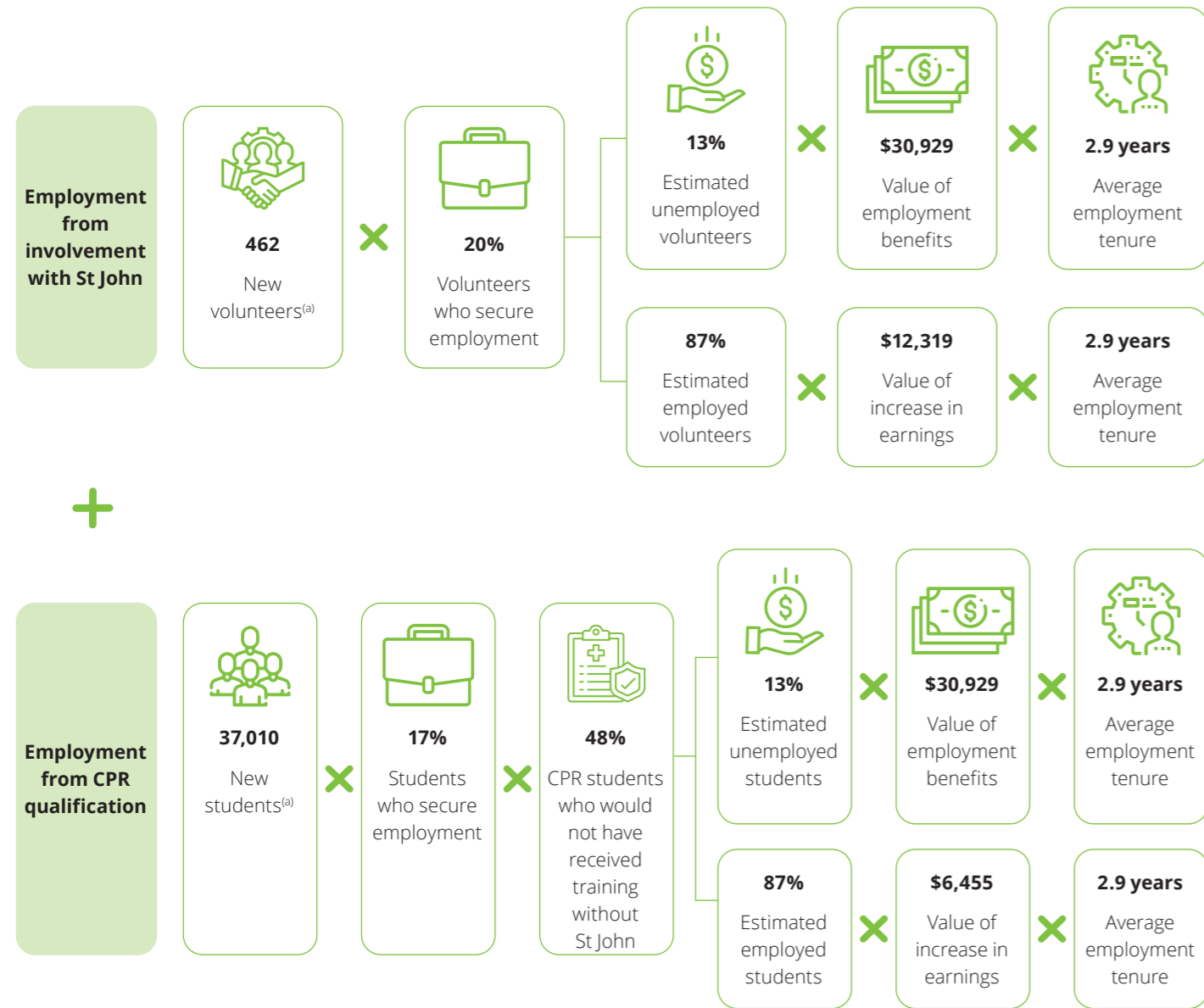
It is also unlikely that a student or volunteer would secure employment immediately following the completion of their training or commencement as a volunteer with St John. To account for this, the analysis assumes that students and volunteers will commence their employment in the year following the year in which they either complete their training or commence as a volunteer with St John.

#### 3.3.3. Estimated value

The value of employment benefits attributable to St John is the sum of the increase in welfare realised by both students and volunteers. Students and volunteers who were already employed and secure new employment as a result of St John receive the additional income gained from their new role as a benefit. Those who were previously unemployed receive a benefit equal to their new income less a reservation wage, which reflects the value that a person places on their leisure time.

Over the period of analysis, it is estimated that St John's role in assisting students and volunteers to gain employment will generate a net benefit of \$986.5 million in present value terms. Figure 3.4 illustrates the approach used to estimate this benefit.

Figure 3.4: Estimation of Benefit 3 – Improved employment outcomes



Notes: (a) Estimated new volunteers and students vary over time; however, the pre-COVID-19 averages are presented for simplicity.  
Source: Deloitte Access Economics.

**3.4. Benefit 4: Avoided emergency department admissions**

**3.4.1. Summary**

Benefit 1 measures St John's provision of onsite medical treatment to high-acuity patients at events. While some of these patients are transferred to hospital for further treatment, a proportion of high-acuity patients treated onsite avoid going to hospital, either returning to the event itself or directly to their homes. For these patients, there is an avoided cost of treatment in a high-acuity setting, such as an emergency department. These benefits accrue to the health system, whereby there is a reduced cost of treatment as a result of St John providing treatment to patients in a lower-cost setting.

**3.4.2. Key inputs and assumptions**

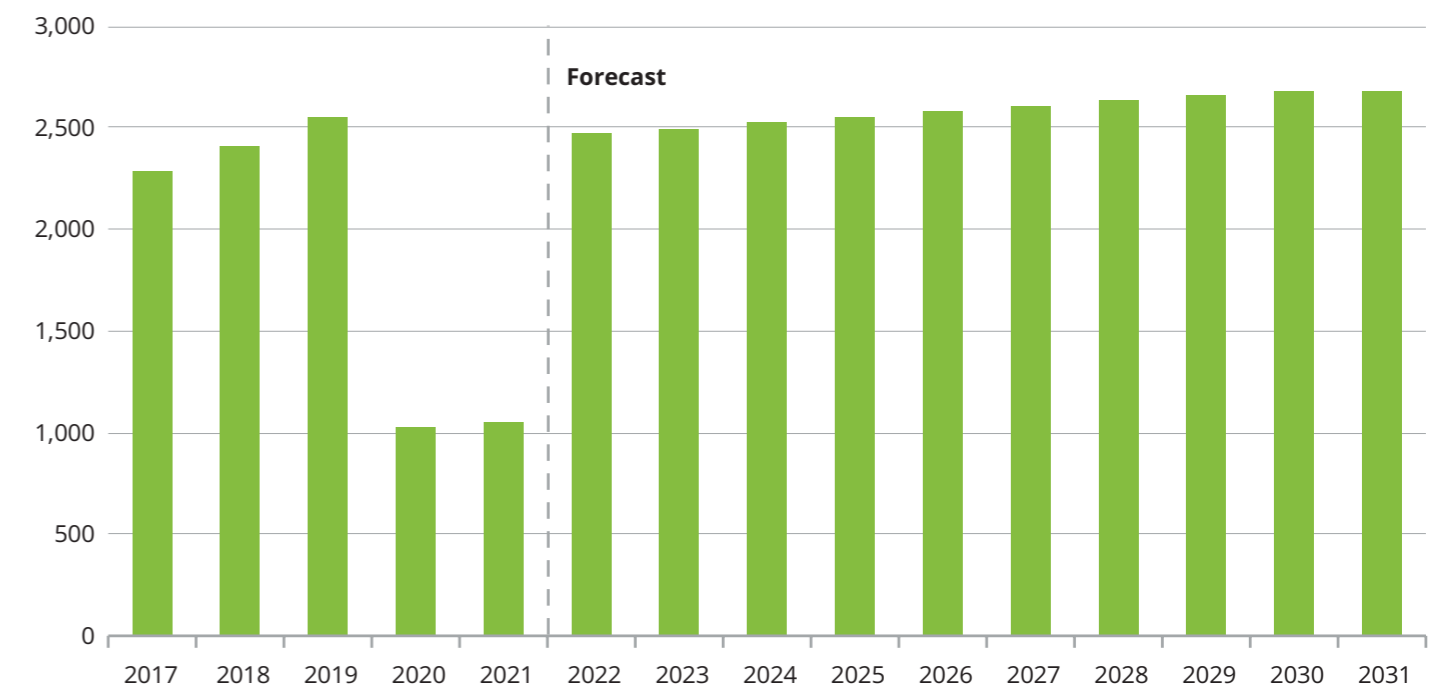
**3.4.2.1. High-acuity patients who avoid going to hospital**

Prior to the COVID-19 pandemic, it is estimated that St John treated around 27,000 patients at public events each year on average. The majority of these patients present with low-acuity medical conditions, and are therefore unlikely to require treatment in a

hospital setting in the absence of St John. Patients with acute conditions are more likely to require urgent care from St John, and while many of these patients are ultimately taken to hospital for further treatment, those who avoid doing so are likely to have required treatment in a higher-cost setting in the absence of St John.

St John collects patient activity data for the annual NSW Easter show, which details the description of the treated condition and the outcome of the treatment; for example, ambulance transport to hospital, St John Advanced Care Medical Centre, returned home or returned to the event. Based on five years of patient data for this event and validating it against similar data for the 2019 Sydney City to Surf event, it is estimated that 31% of acute patients either returned home or to the event.<sup>53</sup> This is likely a conservative estimate; for comparison, another study of a Canadian music festival found that 51% of highly-acute patients – defined by the Triage Acuity Scale (TAS) – prevented a visit to hospital from the presence of event health services.<sup>54</sup>

Chart 3.1: High-acuity patients who avoid going to hospital



Source: Deloitte analysis of St John NSW data.

### 3.4.2.2. Avoided cost of treatment

The value of avoided hospitalisations is estimated as the difference between the NSW average cost of an admitted acute separation in the emergency department (\$857 in 2022 dollars), and the average cost for St John to treat a patient onsite at an event (\$225 in 2022 dollars). The average cost of an admitted acute separation in the emergency department is based on the average cost of treating an Australasian Triage Scale (ATS) category 3 condition in the emergency department, as reported by the Independent Hospital Pricing Authority in FY2018,<sup>55</sup> the most recent data available at the triage category level.

It is assumed that the most highly acute patients – those that require immediate simultaneous assessment and treatment (ATS category 1) or assessment and treatment within 10 minutes (ATS category 2) will be transferred to hospital. Generally, less than 1% of patients at events are considered category 1 or 2 critical patients.<sup>56</sup> Category 3 patients require assessment and treatment within 30 minutes, and conditions are described as ‘potentially life-threatening’ or ‘there is potential for adverse outcomes if time-critical treatment is not commenced within 30 minutes.’ The Australasian College for Emergency Medicine guidelines provide indicative conditions of each ATS category.<sup>57</sup> Indicative conditions for ATS category 3 emergencies include:

- Seizures
- Moderate blood loss
- Moderate shortness of breath
- Head injury
- Moderate limb injury
- Non-cardiac chest pain.

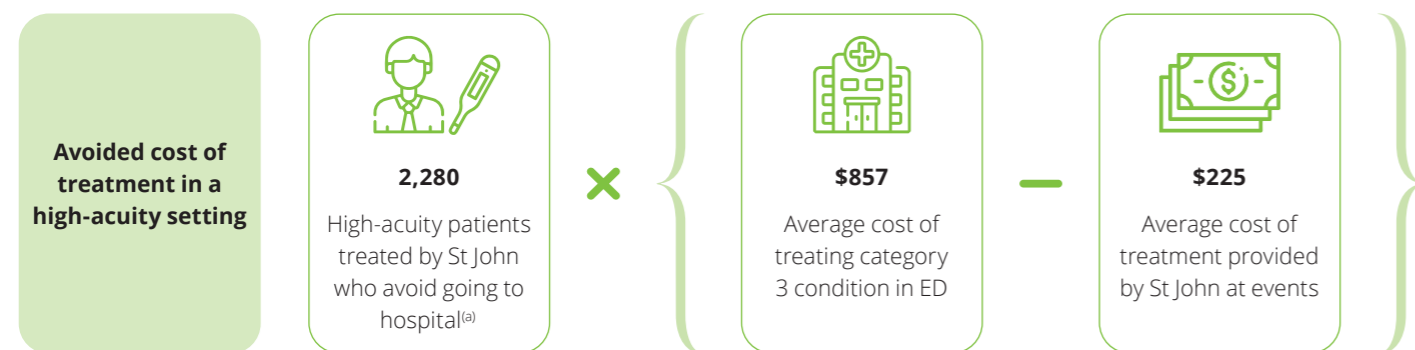
These conditions broadly align with the acute injuries identified in St John’s patient activity data (see endnote 53). Conditions of ATS categories 4 and 5 include minor head injury with no loss of consciousness, and minimal pain with no high-risk features – conditions similar to those that align with ‘non-acute’ conditions identified in St John’s patient activity data. In most cases, these patients are expected to be able to return home or to the event in the absence of St John, without the need for an emergency department admission.

### 3.4.3. Estimated value

The benefit of avoided hospitalisations as a result of St John is estimated as the difference between the cost of treating those patients in an acute admitted setting and the lower cost of St John providing treatment onsite at events. This is estimated only for acute patients who avoid going to hospital, either by returning to the event itself or to their homes.

Over the period of analysis, it is estimated that avoided emergency department admissions as a result of St John will generate a net benefit of \$18.1 million in present value terms. Figure 3.5 illustrates the approach used to estimate this benefit.

Figure 3.5: Estimation of Benefit 4 – Avoided emergency department admissions



Notes: (a) Estimated high-acuity patients vary over time; however, the pre-COVID-19 average is presented for simplicity.  
Source: Deloitte Access Economics.





4

## Estimating the costs



This analysis considers the costs required to deliver St John’s operations, including operating expenditure, capital expenditure and the value of time committed by volunteers.

In delivering its event health services, first aid training and other community and health services, St John NSW incurs a variety of costs. Three main sources of costs are estimated, which include:

- Operating expenditure
- Capital expenditure
- Value of volunteering time.

A brief description of each of the costs is presented in Figure 4.1.

Figure 4.1: Summary of estimated costs



**Operating expenditure**

The ongoing operating expenditure associated with the delivery of St John NSW services and operations.



**Capital expenditure**

The capital expenditure associated with supporting St John NSW services and operations.



**Value of volunteering time**

The opportunity cost of members’ time spent training and volunteering at events.

Source: Deloitte Access Economics.

These costs are discussed in the following sections, along with the approach that has been used to estimate their value.

**4.1. Cost 1: Operating expenditure**

St John NSW incurs operating expenditure to enable the delivery of its services and operations. Total operating expenses for the period 2017 to 2021 were collected from St John’s annual financial reports. The operating expenses represent the largest proportion (65%) of total costs incurred from 2017 to 2021, totalling \$140.4 million in 2022 dollars across the period.<sup>58</sup>

From 2017 to 2021, total operating costs averaged \$28.1 million per year. The main expense items relate to salaries and wages and distribution expenses (including storing, transporting and packing equipment expenses). Together, these expense items account for 73% of total operating costs over the period.

In the three years to 2019, total operating costs increased by 4.7% on average per annum.<sup>59</sup>

Operating costs increased significantly in 2020 and 2021 as a result of St John’s role in responding to the COVID-19 pandemic. However, St John expects that in future years, growth in operating expenses will return to pre-COVID-19 levels, and this is supported by its estimates of total operating costs for 2022, which reflect a reduction from 2021 levels.

Therefore, the analysis assumes that operating costs will continue to increase beyond 2022 at a rate of 4.7% per year. This suggests that over time, as St John NSW continues to grow both in terms of the number of members and the breadth of its services and operations, it is expected that the ongoing operating expenses associated with the running of the organisation will also continue to increase. Over the period of analysis, total operating expenses are estimated at \$393.9 million in present value terms, or an average of \$26.2 million each year.

#### 4.2. Cost 2: Capital expenditure

Compared to operating expenditure, total capital expenditure incurred by St John NSW is relatively small, accounting for only 2% of total costs incurred from 2017 to 2021 with a total value of \$4.6 million in 2022 dollars over the period.<sup>60</sup>

Total capital expenditure averaged \$910,300 per year between 2017 and 2021. For St John, capital expenditure generally relates to the purchase of equipment, motor vehicles and buildings. This includes the purchase and repair of medical equipment – such as first aid kits, oxygen and defibrillators – ambulances and support vehicles, and upgrading technology software and hardware. It also includes the refurbishment of buildings, land and leasehold improvements.

Total capital expenditure tends to vary from year to year according to the needs of St John's asset renewal program, and so it is difficult to estimate a historic rate of increase. St John provided forecasts of capital expenditure for the period 2022 to 2026, which reflects average annual growth of 8.3% over the period, enabling it to meet its short-term asset renewal objectives. Beyond 2026, St John expects the growth in its capital expenditure program to more closely align with its growth in operating expenses.

Therefore, beyond 2026, capital expenditure is forecast to increase at a rate of 4.7% per year. Over the period of analysis, total capital expenditure is estimated at \$23.8 million in present value terms, or an average of \$1.6 million per year.

#### 4.3. Cost 3: Value of volunteer time

Volunteers are fundamental to St John's operations, with its onsite event health services primarily delivered by volunteer teams. Although the time spent by volunteers working at events is a key input into delivering the benefits from St John's event health services (see section 3.1), it represents an opportunity cost on members' time. The time spent by a member to volunteer for St John comes at the cost of the next best use of that member's time, and therefore the value of volunteer hours are estimated as an input cost associated with the delivery of St John's services.

The main source of volunteer time is 'duty hours', which involves St John members working onsite at events and providing first aid training in the community. In 2020, more than 2,400 volunteers spent 150,000 hours on duty delivering St John's core services. St John members also spent an additional 130,000 hours supporting the response to crisis events, including the COVID-19 pandemic and the 2019-20 bushfires.<sup>61</sup>

In addition to time spent on duty, volunteers are also required to undertake regular training to remain qualified to perform their role. At a minimum, volunteers are required to renew their first aid and CPR certifications annually. In addition, St John offers its members further training to enhance soft skills, which include youth and team leadership programs, and other technical skills, such as radio communication. The time spent by volunteers in training directly impacts their ability to perform their role on duty, and so these hours are also considered in the analysis. In 2019, St John volunteers undertook around 60,000 hours of training to enable them to perform their roles on duty. The remaining time spent by volunteers involves attending meetings and other administrative work, which contributes to the organisation's operations.

Volunteer hours decreased significantly in 2020 and 2021 as a result of the COVID-19 pandemic, which reduced the number of events serviced by St John compared to previous years. However, it is expected that 2022 will see a return to pre-COVID-19 activity levels, and so volunteer hours for 2022 are estimated using a three-year pre-COVID-19 average (2017-2019).

It is difficult to forecast the number of volunteer hours in future years. Even during the pandemic, St John's services and operations have continued to grow, as reflected in the annual increase in the organisation's operating costs of 42% and 30% in 2020 and 2021 respectively. St John's growth beyond 2022 will be underpinned by a greater number of volunteers to deliver its services to the community, and this is expected to increase along with the financial costs of St John's services. Therefore, consistent with the approach used to forecast St John's operating costs, the analysis assumes that volunteer hours will increase beyond 2022 at a rate of 4.7% per year.

An average hourly wage of \$47.72 is used to capture the opportunity cost of each hour of volunteering. This reflects an average full-time wage for employees across all industries of \$1,813.50 per week<sup>62</sup> in 2022 dollars,<sup>63</sup> and a full-time working week of 38 hours.<sup>64,65</sup> This approach reflects the opportunity cost of members' time by estimating the income that may have been earned if they spent their time working in paid employment, rather than volunteering for St John.





5

## Total economic and social value



### 5.1 Summary of cost-benefit analysis outcomes

Over the 15-year period of analysis, it is estimated that St John NSW will generate a total net benefit to the NSW community of \$1.4 billion (total benefits less total costs). In addition, St John's services and operations across NSW yield a benefit-cost ratio (BCR) of 3.18. This means that for every \$1.00 invested into St John NSW, a return of \$3.18 is achieved. Table 5.1 summarises the benefits and costs estimated in the analysis in present value terms.

Table 5.1: Summary of cost-benefit analysis outcomes (present value terms)

Cost-benefit analysis outcome	\$ million
<b>Benefits</b>	<b>\$2,000.2</b>
<b>Benefit 1 - Event health services</b>	<b>\$527.3</b>
Responding to out-of-hospital cardiac arrest (OHCA) incidents at public events	\$58.6
Responding to other incidents at public events	\$468.8
<b>Benefit 2 - Bystander CPR</b>	<b>\$468.3</b>
CPR training for students	\$151.8
Off-duty volunteer bystander response to OHCA	\$316.4
<b>Benefit 3 - Improved employment outcomes</b>	<b>\$986.5</b>
Employment from involvement with St John	\$52.6
Employment from CPR qualification	\$933.9
<b>Benefit 4 - Avoided emergency department admissions</b>	<b>\$18.1</b>
Avoided emergency department admissions	\$18.1
<b>Costs</b>	<b>\$628.1</b>
Cost 1 - Capital expenditure	\$23.8
Cost 2 - Operating expenditure	\$393.9
Cost 3 - Value of volunteer time	\$210.4
<b>Net benefits</b>	<b>\$1,372.1</b>
<b>BCR</b>	<b>3.18</b>

Notes: Numbers may not add exactly to totals due to rounding.  
Source: Deloitte Access Economics.

The total net benefit of St John NSW to the NSW community is \$1.4 billion over the 15-year period of analysis.



## For every \$1.00 invested into St John NSW, a return of \$3.18 is achieved.

Although the benefits of St John are measured across four main sources, the results of the analysis illustrate that St John generates significant economic and social benefits through two primary avenues: by providing lifesaving medical services to the community and equipping people with the skills to do so (benefits 1, 2 and 4) and by providing people with skills and experience that enables them to gain and maintain employment (benefit 3).

Benefit 3 reflects the employment benefits for students and volunteers as a result of training provided by St John or the skills and experience acquired as a volunteer. This benefit accounts for 49% of the total benefits, or \$986.5 million in present value terms. The significant value of this benefit is underpinned by the number of students who receive an employment benefit following completion of a first aid course. St John provides first aid and CPR certification to around 37,000 new students each year on average (see section 3.2.2.1). For many of these students, completion of a first aid or CPR course may be an employment requirement or a desirable qualification for a job application. Hence, the proportion of students who secure paid employment as a result of their new qualifications and skills is relatively high at 17%.

### 5.2. Sensitivity testing

The CBA results presented in section 5.1 are based on a range of assumptions, which are summarised in chapters 2 and 3. These assumptions have been developed based on available literature, the St John NSW survey and feedback from St John. Changes in any of the assumptions would impact the results of the CBA, including the net benefit and the BCR. Recognising this, two sensitivity tests were undertaken by varying the key assumptions in the analysis. This allows the relative impact that these assumptions have on the BCR to be evaluated. The two sensitivity tests undertaken include:

- Varying the discount rate
- Varying the increased earnings for first aid students.

The results of these sensitivity tests are discussed below.

#### 5.2.1. Test 1: Varying the discount rate

Future benefits and costs estimated in this analysis are discounted at the rate of 7.0% per annum to derive their present values (see Appendix A). This aligns with guidance published by the Department of the Prime Minister and Cabinet on the use of CBA for policy proposals.<sup>66</sup>

A sensitivity test is undertaken to investigate the relative impact of the discount rate on the net benefit and the BCR, which includes testing both a lower (4.0%) and a higher (10.0%) discount rate. Applying either a lower or a higher discount rate does not significantly impact the BCR (see Table 5.2).

Table 5.2: Sensitivity test 1 - Varying the discount rate (present value terms, \$ million)

Sensitivity	Low 4% discount rate	Base 7% discount rate	High 10% discount rate
Benefits	\$2,165.4	\$2,000.2	\$1,864.8
Costs	\$684.2	\$628.1	\$582.3
<b>NPV</b>	<b>\$1,481.2</b>	<b>\$1,372.1</b>	<b>\$1,282.5</b>
<b>BCR</b>	<b>3.16</b>	<b>3.18</b>	<b>3.20</b>

Notes: Numbers may not add exactly to totals due to rounding.  
Source: Deloitte Access Economics.

#### 5.2.2. Test 2: Varying the increased earnings for first aid students

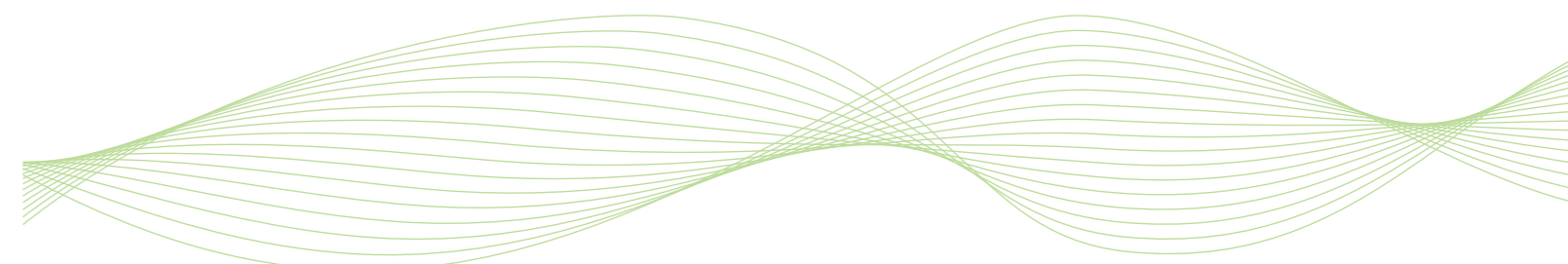
The value of increased earnings for students who secure employment is a key assumption that underpins the employment benefits generated by St John's first aid training program. The wage premium for students who complete a first aid or CPR qualification is estimated at \$6,455 per year (or 8.8% of average annual ordinary full-time earnings in this study), which is based on a study of certification premiums for direct care workers in the United States.<sup>67</sup> Other estimates of credential-related labour market wage premiums range from 6.2% to 18.0%.<sup>68, 69</sup>

A sensitivity test is undertaken to investigate the impact on the BCR of varying the wage premium for students who complete a first aid or CPR qualification, with alternative wage premiums sourced from the literature used as the lower and upper values. As shown in Table 5.3, reducing the wage premium for students to 6.2% causes the BCR to decrease to 2.93, while increasing the wage premium to 18% causes the BCR to increase to 4.09.

Table 5.3: Sensitivity test 2 - Varying the increased earnings for first aid students (present value terms, \$ million)

Sensitivity	Low 6.2% premium	Base 8.8% premium	High 18.0% premium
Benefits	\$1,840.0	\$2,000.2	\$2,570.6
Costs	\$628.1	\$628.1	\$628.1
<b>NPV</b>	<b>\$1,211.9</b>	<b>\$1,372.1</b>	<b>\$1,942.5</b>
<b>BCR</b>	<b>2.93</b>	<b>3.18</b>	<b>4.09</b>

Notes: Numbers may not add exactly to totals due to rounding.  
Source: Deloitte Access Economics.





## Appendix A Methodology



### About cost-benefit analysis

The basis of a CBA is simple: for a given policy, investment proposal – or, in this case service - it compares the total estimated costs to the community and economy with the total estimated benefits. As such, a CBA determines whether the benefits outweigh the costs, and if so, to what extent.

### When to undertake a cost-benefit analysis

CBAs are often undertaken to support government and commercial decisions regarding investment. For example, CBAs are the preferred economic assessment tool under NSW Treasury's Asset Management Policy

CBAs assists decision-making by giving consideration to mechanisms which minimise the cost of a project, entity or society more broadly for a given investment, while maximising the benefits.

The rationale for using a CBA as a decision-making tool is strong, given that public funds come at a significant cost to the economy (through taxes collected by local, state, and Commonwealth governments), and private funds can be invested into various other opportunities. Therefore, understanding the net benefits generated from a particular investment is of significant value

### The logic of cost-benefit analysis

In undertaking a CBA, the total estimated benefits of a policy, investment or service are compared with the total estimated costs in a discounted cash flow (DCF) framework, to determine whether the benefits exceed the costs in present value terms. The net benefit (discounted benefits over discounted costs) is expressed in the form of a ratio, referred to as the benefit-cost ratio (BCR).

A BCR greater than one indicates that gross benefits related to the policy, investment or service are greater than gross costs, suggesting value in undertaking the investment (or for every \$1.00 of investment, a return greater than \$1.00 is achieved). The reverse is true if the BCR is below one. However, not all benefits are quantifiable under a CBA framework. In many cases, significant, non-quantifiable benefits are relevant and must be taken into account when investment decisions are made. As such, a CBA should not be the sole tool used to support decision-making.

Nonetheless, a CBA provides a robust framework for analysing information in a logical and consistent manner. It can assist governments and private entities to determine if a policy or investment efficiently achieves a stated objective. This can assist decision-makers to optimise the level of funding allocated to an initiative, or to adjust the scope of the initiative to help deliver the highest net return.

### Approach to undertaking this cost-benefit analysis

#### Summary of approach

This CBA compares the incremental costs and benefits associated with the services and operations of St John between a 'base case' and a 'project case' scenario over a 15-year assessment period, from 2017 to 2031. Five key steps have been taken to prepare this CBA:

1. Scenario definition
2. Assessment period definition
3. Benefit specification and estimation
4. Cost specification and estimation
5. Discounted cash flow (DCF) modelling.

#### Scenario definition

##### Base case

Defining a counterfactual scenario, or base case, is a critical component of a CBA. The benefits and costs are measured as the incremental change from the base case. This ensures that only the benefits and costs that can be reasonably attributed to the investment are included in the analysis.

For this analysis, the base case is defined as a scenario in which the services and operations of St John NSW are entirely non-existent. This base case ensures that the full value derived from St John NSW's services and operations is captured in the analysis.

##### Project case

The project case of a CBA reflects a scenario where the economic benefits and costs associated with an investment are realised. This analysis defines the project case as the status quo; that is, a scenario in which St John NSW operates in its current capacity in NSW, providing first aid training, essential medical and crisis response services to the community.

##### Assessment period definition

The period of analysis for this CBA is defined as a timeframe of 15 years, from 2017 to 2031. This period reflects five years of historic operations and 10 years of forecast activities and outcomes. The forecasts over the period of analysis have been established by drawing on data and evidence available from the historic five-year period.

### Benefit specification and estimation

The specification of benefits in a CBA involves identifying the impacts of the investment or service that result in positive or desirable outcomes. To be included within the CBA framework, the benefits must be measurable; that is, it must be possible to attribute each benefit with a meaningful measure of economic value.

For the purposes of this analysis, four sources of benefits have been measured:

1. Event health services
2. Bystander cardiopulmonary resuscitation (CPR)
3. Improved Employment outcomes
4. Avoided ED emergency department (ED) admissions.

Chapter 2 provides a description of each of the benefits, along with the key data inputs and assumptions that have been used in estimating their value.

### Cost specification and estimation

The specification of costs in a CBA should take into account all financial costs (both upfront costs and lifecycle operating and maintenance costs), as well any impacts of the investment that produce negative or undesirable spill-overs. The costs describe what has to be given up in order to implement the investment or service. A useful way of looking at the spill-over costs is to identify the individuals or groups within the community that would be worse off as a result of the investment or service. Importantly, all costs that are incurred in achieving the benefits must be captured within a CBA.

This analysis considers three sources of costs:

1. Capital costs
2. Operating costs
3. Value of volunteer time.

These costs are described in Chapter 3, along with the approach that has been applied in estimating their value.

### Discounted cash flow modelling

Discounted cash flow (DCF) modelling is undertaken to estimate the present values of future costs and benefits. The discounting of future costs and benefits to derive present values reflects the time value of money and uncertainty of future cash flows, and the fact that people generally attribute a higher value to consumption today than to consumption in the future. The BCR is calculated by dividing the total present value of benefits by the total present value of costs.

Future benefits and costs are discounted at the rate of 7.0% per annum to derive their present values. This aligns with guidance published by the Department of the Prime Minister and Cabinet on the use of CBA for policy proposals.<sup>70</sup> As the analysis also considers five years of historical benefits and costs, which occur during the period 2017 to 2021, these benefits and costs are converted to present values by adjusting them to 2022 dollars.

### Member survey

In undertaking this study, Deloitte Access Economics developed and fielded an online survey of St John NSW members and students, referred to as the 'St John NSW survey'. The purpose of the survey was to collect data that could be used to inform a range of assumptions required to undertake the analysis. The survey was targeted at topics that relate directly to the costs and benefits estimated as part of the CBA.

In total, 574 completed survey responses were received from members and students across NSW. This included responses from 317 volunteers, 124 employees and 133 students. Where the findings from the survey have been used to inform assumptions in the analysis, this has been identified and referenced within the report.

## Limitation of our work



### General use restriction

This report is prepared solely for the use of St John Ambulance (NSW). This report is not intended to and should not be used or relied upon by anyone else and we accept no duty of care to any other person or entity. The report has been prepared for the purpose of estimating the economic and social value of St John NSW. You should not refer to or use our name or the advice for any other purpose.

# Endnotes

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60. Similar to operating costs, historic capital costs have been adjusted to 2022 dollars.
61. St John NSW 2020 Impact Report. Note: hours spent to support the COVID-19 response were partially funded by Government support.
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