

# CHRONIC DISEASE PREVENTION – HEALTHY AGEING

NSW Evaluation of the Grey  
Medallion: A Water Safety  
and Lifesaving Skills Initiative  
for Older Australians



**ROYAL LIFE SAVING**  
NEW SOUTH WALES



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Royal Life Saving is a public benevolent institution (PBI) dedicated to reducing drowning and turning everyday people into everyday community lifesavers. We achieve this through: advocacy, education, training, health promotion, aquatic risk management, community development, research, sport, leadership and participation and international networks.

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# NSW EVALUATION OF THE GREY MEDALLION: A WATER SAFETY AND LIFESAVING SKILLS INITIATIVE FOR OLDER AUSTRALIA

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## EXECUTIVE SUMMARY

### Background

Over the last fifteen years 1,517 people have drowned in New South Wales (NSW), including 423 people aged 60 years and over. People in this demographic are overrepresented in drowning statistics, with only slow progress made in reducing the drowning rate among older people. The slow progress in this demographic has, in part, been influenced by Australia's ageing population.

Increasing age is associated with reduced muscle mass, strength and physical endurance, reduced coordination and balance, reduced flexibility and mobility, reduced cardiovascular and respiratory function and reduced bone strength. However, regular exercise is known to have many benefits for older people. Swimming in particular is often ideally suited to older people as it is low impact.

Royal Life Saving's Grey Medallion program is a water safety and lifesaving skills initiative for older adults, aiming to encourage healthy, independent and active lifestyles. It has four key components: Water Safety Knowledge, Resuscitation and Emergency Care, Aquatic Exercise and Personal Survival and Lifesaving Skills. Royal Life Saving Society NSW acknowledges the financial and other support from COORDINARE – South Eastern NSW PHN under the Primary Health Networks Programme - an Australian Government initiative.

The program was funded as part of continued efforts to "promote healthy and active ageing to residents to enable them to stay well and remain living in their communities as they age". This study aimed to gather demographic and behavioural information for a group of older Australians, identify any changes in health status as a result of the Grey Medallion program and evaluate the program by gathering feedback from participants and facilities.

### Methods

The Grey Medallion program was advertised to local residents aged 60 years and over within the SENSW PHN area. The program was fully funded, with no cost to participants. The first course began in May 2017, with the last course commencing in April 2018. The delivery of the Grey Medallion program is flexible, with aquatic facilities free to administer the program in the way that best suited their needs.

All participants completed paper surveys before and after the program, referred to as 'pre-course' and 'post-course' surveys. The pre-course survey consisted of demographic questions, aquatic experience questions (e.g. previous attendance at a lifesaving or first aid course, participation in aquatic activities, swimming ability and water safety knowledge) and health-related questions (e.g. medical conditions, regular medications, self-reported health measures). The post-course survey repeated some of the aquatic experience and health-related questions but also included questions related to feedback on the program.

Staff members from all facilities completed a facility survey, which was administered over the phone. It consisted of background questions related to prior experience running the Grey Medallion program and any other programs targeting older people, benefits of running the program and any difficulties encountered, feedback on the content and structure of the program, future interest in the program and general suggestions for improvement.



## Results and Discussion

### Participants

A total of 140 pre-course participant surveys were collected and 111 post-course surveys, with both pre-course and post-course surveys available for 109 participants. The majority of people who participated in the Grey Medallion program were female (75.7%), commonly aged under 70 years (65.7%) and either retired or pensioners (77.9%). Approximately two thirds (69.3%) of participants looked after or cared for children, including those aged under five years. A quarter (24.3%) of participants had previously attended a lifesaving course and more than half (60.7%) previously attended a first aid course. Just over a third of participants undertook aquatic activity 2-3 times a week over the last 6 months (35.0%), most commonly at a public swimming pool (60.0%).

Participants reported a range of medical conditions, with cardiovascular (e.g. hypertension and arrhythmias) and musculoskeletal conditions (e.g. arthritis) the most commonly reported. The benefits of aquatic exercise are apparent to both conditions, with a low impact form of exercise suitable for most people, particularly those who may be prevented from partaking in high impact activities due to conditions such as arthritis. Similarly, a range of regular medicines were reported, with antihypertensives (used to treat hypertension) and lipid lowering medicines (used to treat hyperlipidaemia) the most commonly recorded.

The health measures of overall health, quality of life, physical health, mental health, social health and usual social activities and roles all recorded decreases in the number of 'excellent' responses among participants following completion of the program but increases in the number of 'very good' responses. The quality of life, mental health, social health and usual social activities questions also recorded increases in the number of 'good' responses. Given the relatively short nature of this program, it would be unrealistic to expect considerable improvements in physical, mental or social health but monitoring any changes is important nonetheless.

An increase of 6.5% was recorded in the number of participants who could 'completely' carry out everyday physical activities after completing the program, while the proportion of participants who rated their pain as '0' or '1' out of 10 increased from 36.7% before the program, to 42.2% after the program. The increase in the number of participants who were able to 'completely' carry out everyday physical activities, along with the increase in those experiencing no or minimal pain, will assist in ongoing efforts to promote health and active ageing among older people in South East NSW.

The majority of participants were considering participating in more aquatic activities after completing the program (85.6%) and encouragingly, most were motivated to increase their efforts to improve their health and wellbeing (79.3%). The combined proportion of those rating their swimming ability a '6' to '10' out of 10 before the program was 41.3%, increasing to 56.0% of participants once they had finished the program. Similarly, 55.0% of participants described their water safety knowledge as either above average or excellent after the program, compared to only 12.8% beforehand.

Participants evaluated all aspects of the Grey Medallion program, with positive feedback received regarding all areas, particularly the instructor, water safety education sessions and resuscitation and emergency care sessions. This feedback will be considered, with adjustments made to the program where necessary, in order to ensure maximal acceptability to the target demographic. The impact of the program on participants' confidence levels was also evaluated, with the majority of people stating they felt either a little or a lot more confident in areas such as aquatic exercise, water safety knowledge, supervising children, personal survival, resuscitation and lifesaving.

### Facilities

All 12 participating centres were surveyed regarding the implementation of the Grey Medallion program at their facility. For most of the participating centres, this was their first experience running the Grey Medallion program, however, the majority already ran programs targeting older people, such as aqua aerobics classes.

Program facilitators perceived there to be numerous benefits to participants, including physical, mental and social benefits. In addition to providing increased value to their centre's existing patrons, the program also allowed facilities to increase their patronage by attracting new visitors. Facilities who ran the program believed they were providing a valuable service to the local community and highlighted the importance of engaging with older people in the community. Challenges encountered by the centres ranged from difficulties in recruiting and retaining participants, to problems finding suitable instructors and scheduling the sessions.

## NEXT STEPS

### Drowning data

Between 1 July 2002 and 30 June 2017 (a period of 15 financial years), 1,517 people drowned in NSW, including 423 people aged 60 years and over. Males accounted for 71.6% of drowning deaths over this time, with the largest number of drowning deaths occurring among people aged 60-64 years (25.8%). Rivers, creeks and streams were the leading location for drowning among this demographic, accounting for 27.2% of deaths. Almost half of incidents occurred in major cities (45.2%), while more than three quarters of those who drowned were not visitors to the location of the incident (77.3%).

Among those aged 60 years and over who drowned, more than half (53.4%) were known to have a pre-existing medical condition. Alcohol was known to be present in almost a fifth of drowning cases (19.6%) and drugs (mainly prescription medicines) were known to be present in 27.9% of cases. Falls accounted for the largest number of drowning deaths among people aged 60 years and over (21.0%). Among this demographic, people who drowned after falling into water were more likely to be older, have a pre-existing medical condition and more likely to have consumed alcohol and/or drugs (mainly prescription medicines).

The prevalence of multiple medical conditions and regular medications among this demographic highlights the importance of raising awareness of medical comorbidities, including their potential impact on drowning risk among older people. It is crucial that drowning prevention messages for older people include a focus on pre-existing medical conditions, including the importance of regular check-ups with a doctor and taking prescribed medication as directed. With an increased life expectancy, older people are likely to experience more chronic health conditions, over a longer period of time, justifying appropriate interventions to increase the number of healthy years lived.

### Conclusion

The Royal Life Saving Grey Medallion program was well received by the communities of South East NSW. Participants gained valuable water safety knowledge, as well as skills in resuscitation and emergency care, aquatic exercise, personal survival and lifesaving. The Grey Medallion aims to encourage healthy and active lifestyles among older people, with the majority of participants in this program motivated to increase their efforts to improve their health and wellbeing after completing the program. Programs aimed at encouraging healthy and active lifestyles among older people are vital in the context of Australia's ageing population. In addition to physical health, mental and social wellbeing are also vital for this demographic if they are to live independently and enjoy quality, rather than just quantity, of life.

### Promotion of healthy and active ageing

- Highlight the benefits of aquatic activities, including the low impact nature of water-based activities for those with mobility difficulties and pre-existing injuries or physical limitations
- Encourage aquatic centres to either advertise the programs they currently offer for older people, or to develop and introduce such programs

### Drowning prevention and water safety

- Continue to promote Royal Life Saving's drowning prevention programs to older people, including those particularly relevant to grandparents caring for young children
- Encourage older people to refresh their aquatic skills by enrolling in adult learn to swim classes and lifesaving courses
- Develop and promote a communication strategy that 'alerts' older people to the effects of medical conditions and medications on their ability and skills in the water
- Continue to advocate through traditional and social media, the drowning risk factors among older people and strategies to reduce this risk
  - Build partnerships with groups engaging with older people (e.g. COTA) to assist in the communication of drowning prevention messages to this at-risk cohort

### Grey Medallion program – design and implementation

- Develop ways of communicating and engaging with older people who are not regular visitors to their local aquatic centre, including improved advertising strategies
- Explore ways of targeting and encouraging participation in the Grey Medallion
  - In particular target older males to enrol to increase participation numbers, given increased drowning risk among males
- Consider all suggested improvements to the Grey Medallion program, including any necessary changes to program content and structure, to ensure maximal acceptability to the target demographic
- Conduct participant and facility evaluations for any future Grey Medallion courses to continue to gather feedback on the program from those involved





## BACKGROUND

Over the last fifteen years 1,517 people have drowned in New South Wales (NSW), including 423 people aged 60 years and over (1). Drowning deaths among this demographic accounted for 27.9% of fatalities during this time period, despite making up only 19.7% of the total NSW population (2). The Royal Life Saving National Drowning Report 2017 evaluated progress in drowning reduction across several age groups against the goals of the Australian Water Safety Strategy (AWSS) 2016-2020. Although some progress has been achieved in reducing the drowning rate among people aged 65 years and older nationally, this progress has been markedly less than that achieved among younger age groups (3).

The slow progress in this demographic has likely been impacted by Australia's ageing population. Sustained low fertility rates and an increasing life expectancy are common to most developed countries like Australia, meaning that the proportion of older people among the broader Australian population is increasing (2).

Increasing age is associated with reduced muscle mass, strength and physical endurance, reduced coordination and balance, reduced flexibility and mobility, reduced cardiovascular and respiratory function and reduced bone strength, as well as an increase in body fat levels, blood pressure, susceptibility to mood disorders (e.g. anxiety, depression) and risk of disease (e.g. cardiovascular disease, stroke) (4).

Conversely, regular exercise is known to have many benefits for older people, including improvements in muscle mass, bone density, heart and lung function, joint health and body fat levels (4). Although many types of exercise are beneficial for older people, swimming is uniquely suited to this demographic as it is low impact (5).

In response to these challenges, Royal Life Saving's Grey Medallion program was developed in 2008. It is a water safety and lifesaving skills initiative for older adults, aiming to encourage a healthy, independent and active lifestyle (6). It is designed to give participants the knowledge and skills needed to participate in aquatic activities safely (6).

The program has four key components:

- Water safety knowledge, including:
  - Australian drowning statistics
  - Identifying hazards in aquatic locations
  - Safe practices for aquatic activities
  - Drowning awareness campaigns
  - Individuals' role in drowning prevention
- Resuscitation and emergency care, including:
  - Recognising an emergency
  - Understanding resuscitation and when it's required
  - DRSABCD action plan
  - Aftercare
- Aquatic exercise, including:
  - Water movement skills
  - Gentle exercise
  - Correct swimming techniques
  - Exercise to improve endurance and fitness levels
- Personal survival and lifesaving skills, including:
  - Safe entries and exits
  - Survival techniques and strategies
  - Rescue principles
  - Non-swimming rescues

Royal Life Saving Society – NSW received funding from the NSW Government to implement a fall prevention initiative in South East (SE) NSW, working in partnership with Coorinaire and the SENSW Primary Health Network (PHN) and targeting older Australians living in the region. Almost a fifth of residents in this region are aged over 65 years (7). The proportion of residents aged over 65 years in SENSW is higher than the NSW (15.5%) and Australian (14.7%) averages (8). By 2031, the number of older people living in the region is expected to increase by 73%, when compared to 2011 (8).

SENSW has a relatively high proportion of residents classified as 'low socioeconomic status', including 48% of residents in the Illawarra Shoalhaven area and 39% in Southern NSW (7). In addition, the region has a higher prevalence of a number of lifestyle risk factors when compared to the NSW and Australian averages. These risk factors include obesity, smoking, high risk alcohol consumption and inadequate fruit intake (7). The average prevalence for circulatory system disorders, musculoskeletal conditions, respiratory conditions and mental and behavioural disorders is also higher than the NSW and Australian averages (7). Royal Life Saving Society NSW acknowledges the financial and other support from COORDINARE – South Eastern NSW PHN under the Primary Health Networks Programme - an Australian Government initiative. The program was funded as part of continued efforts to "promote healthy and active ageing to residents to enable them to stay well and remain living in their communities as they age" (8).

## AIMS

This study aimed to:

- Gather demographic and behavioural information for a group of older Australians, including:
  - Existing water safety knowledge and swimming ability
  - Aquatic behaviour (e.g. frequency of aquatic activities, locations visited and activities undertaken)
  - Health status (e.g. medical conditions, regular medications)
- Identify changes in participant's self-reported:
  - Knowledge of water safety, emergency care actions and drowning prevention strategies
  - Physical, mental and social health status, including quality of life, satisfaction with social relationships, ability to carry out everyday physical activities, emotional wellbeing, fatigue and pain
- Evaluate the Grey Medallion program by gathering participant feedback related to the:
  - Venue, instructor and material provided
  - Individual sessions (e.g. water safety education sessions, resuscitation and emergency care sessions, aquatic exercise sessions, personal survival skills sessions)
- Evaluate the Grey Medallion program by gathering facility feedback related to the:
  - Content and structure of the program
  - Benefits gained from running the program
  - Difficulties encountered in running the program



## METHODS

### Grey Medallion program

#### Selection of participants

The Grey Medallion program was advertised to local residents aged 60 years and over within the SENSW PHN area. This region includes 12 Local Government Areas (LGAs): Wollongong, Shellharbour, Kiama, Shoalhaven, Jervis Bay, Eurobodalla, Bega Valley, Snowy Monaro, Queanbeyan Palerang, Goulburn Mulwaree, Yass Valley and Upper Lachlan Shire (7).

Participants could respond to the advertisement by contacting their nearest participating aquatic centre and booking a place within one of the courses. Local newspapers also ran stories promoting the program, as well as local councils advertising the program on their websites. The program was fully funded, with no cost to participants. The first course began in May 2017, with the last course commencing in April 2018.

#### Program delivery

The delivery of the Grey Medallion program is flexible, with aquatic facilities free to administer the program in the way that best suited their needs. Examples of delivery schedules used by the participating centres included:

- 1 session per week for 4 weeks (2 hours per session)
- 1 session per week for 6 weeks (1.5 hours per session)
- 1 session per week for 6 weeks (2 hours per session)
- 1 session per week for 10 weeks (1 hour per session)
- 2 sessions per week for 2 weeks (2 hours per session)
- 2 sessions per week for 4 weeks (up to 2 hours per session)
- 2 sessions delivered 2 weeks apart (4 hours per session)
- 2 consecutive days (4 hours per session)

The program was delivered at 12 aquatic centres within the region:

- Beaton Park Leisure Centre – Gwynneville
- McKeon's Swimming – Unanderra
- Oak Flats Pool
- Kiama Leisure Centre
- Bay & Basin Leisure Centre – Vincentia
- Bomaderry Aquatic Centre
- Ulladulla Leisure Centre
- Sapphire Swim Centre – Pambula
- Cooma Pool
- Bungendore Swimming Pool
- Q-One Aquatic Centre - Queanbeyan Aquatic Centre
- Moss Vale Aquatic Centre

#### Participant survey development and data collection

All participants completed surveys before beginning the program and after completing the program, referred to as 'pre-course' and 'post-course' surveys. The content for the pre-course and post-course participation surveys were developed by researchers from Royal Life Saving and formatted in a word document for paper based distribution to the course participants in their first and last sessions.

The pre-course survey consisted of demographic questions (e.g. sex, age, employment status), aquatic experience questions (e.g. previous attendance at a lifesaving or first aid course, participation in aquatic activities, swimming ability and water safety knowledge) and health-related questions (e.g. medical conditions, regular medications, self-reported health measures). The self-reported health status questions were obtained from the PROMIS (Patient Reported Outcome Measurement Information System) and included questions related to physical health, mental health, quality of life, social life, daily activities, fatigue and pain.

The post-course survey repeated the questions related to self-reported health measures and aquatic experience but also included questions related to feedback on the program. The full pre-course and post-course surveys can be found in Appendix 1 and Appendix 2.

#### Facility survey development and data collection

Staff members from all facilities completed a facility survey after completing the program at their aquatic facility. The content was developed by researchers from Royal Life Saving and modified from a previously used questionnaire. The survey was administered over the phone, with responses noted as facility staff spoke of their experience.

The facility survey consisted of background questions related to prior experience running the Grey Medallion program and any other programs targeting older people, benefits of running the program and any difficulties encountered, feedback on the content and structure of the program, future interest in the program and general suggestions for improvement. The full facility survey can be found in Appendix 3.

### Data analysis

In addition to formatting the surveys for paper based distribution, the pre and post participation surveys were also formatted online. The paper based surveys were collected by the course instructor and sent to Royal Life Saving, where data were entered online in Survey Monkey for ease of analysis. Data were then exported to SPSS for data cleaning, coding and analysis.

In situations where a respondent marked two options (rather than a single one), or placed a tick or cross between two values (rather than clearly marking a single one), the lower of the two values was taken, whether this was lower numerically or a lower value response. Where necessary, spelling was corrected for recorded medical conditions or regular medications. Additionally, medical conditions and medications were coded into major therapeutic categories to allow for data analysis and comparison, with the most commonly occurring categories presented in the Results section of this report. This was done with the assistance of information available from NPS Medicinewise (9).

### Drowning data

All unintentional drowning deaths which occurred in NSW between 1 July 2002 and 30 June 2017 among people aged 60 years and over were included. All cases where drowning was either the primary, or a contributory cause of death were included. Intentional drowning deaths, or those known to be from natural causes were excluded.

Information regarding drowning deaths was collected from State and Territory Coronial Offices, the National Coronial Information System (NCIS) and media reports. It has been collated and analysed by the Royal Life Saving Society – Australia in the National Fatal Drowning Database. Royal Life Saving uses a media monitoring service (both electronic and print media) all year round to identify drowning deaths reported in the media. The information is then corroborated with information from the NCIS, police and Royal Life Saving State and Territory Member Organisations.

The remoteness classification was defined by the Australian Standard Geographical Classification – Remoteness Area (ASGC-RA) system (10) and included major cities, inner regional, outer regional, remote and very remote. In cases where the remoteness classification was unknown, this was entered as 'unknown'.

The distance between the incident and residential postcode was determined using Google Maps (11). A distance of less than 100km was considered 'not a visitor', more than 100km but within the same state was 'visitor - intrastate', a different state was 'visitor - interstate' and an overseas residential postcode as 'visitor – overseas'. In cases where the incident or resident postcode was unknown, this was entered as 'unknown'.

The time of drowning was coded into four bands: early morning (12:01am to 6am), morning (6:01am to 12pm), afternoon (12:01pm to 6pm) and evening (6:01pm to 12am).

A Blood Alcohol Concentration (BAC) greater than or equal to 0.05 (0.05 grams of alcohol per 100 millilitres of blood) was considered relevant and contributory to the drowning death.

# RESULTS

A total of 140 pre-course participant surveys were collected and 111 post-course surveys, with pre-course and post-course surveys available for 109 participants. It should be noted that at least one aquatic facility did not return surveys from their participants and as such, these were not included in the analysis.

## Pre-course participant surveys

### Demographics

#### Sex

The majority of people who participated in the Grey Medallion program were female, accounting for 75.7% of all participants (Figure 1).

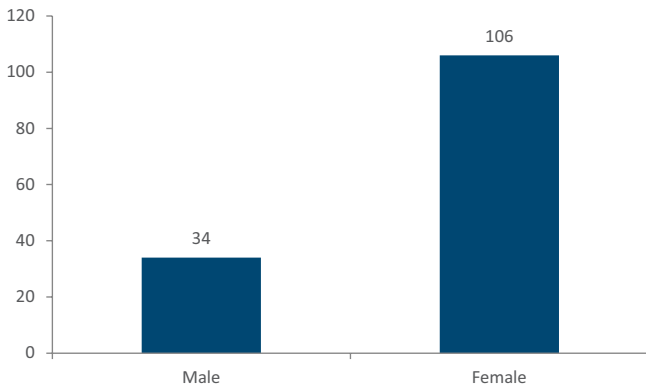


Figure 1: Grey Medallion course participants by sex, N=140

#### Age

Participants were commonly aged under 70 years, with 35.0% aged 65-69 years and a further 30.7% aged below 65 years (Figure 2).

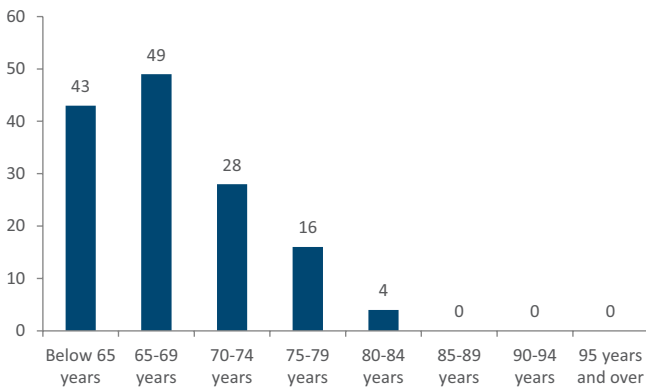


Figure 2: Grey Medallion course participants by age, N=140

### Employment status

More than three quarters of participants were either retired or pensioners (77.9%), with no participants reporting they were in full time employment (Figure 3).

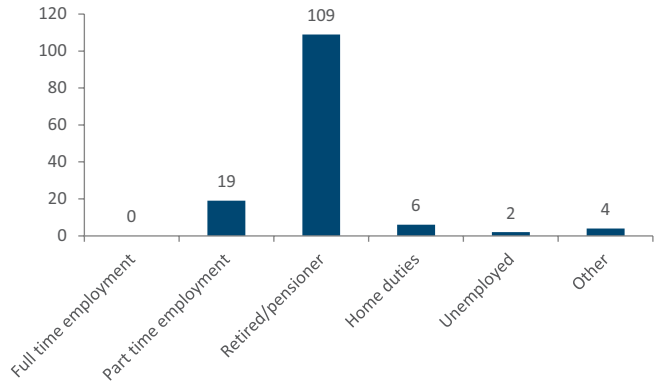


Figure 3: Grey Medallion course participants by employment status, N=140

### Supervision of children

Approximately two thirds of participants looked after or cared for children (69.3%), for example grandparents minding their grandchildren (Figure 4).

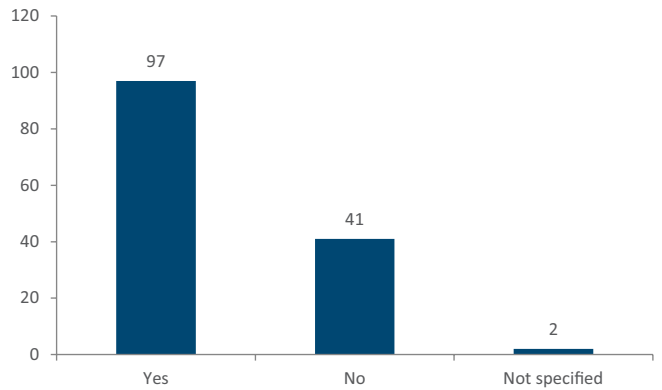


Figure 4: Grey Medallion course participants by looking after or caring for children, N=140

Of those who looked after or cared for children, 72.2% were minding children under five years of age (Figure 5).

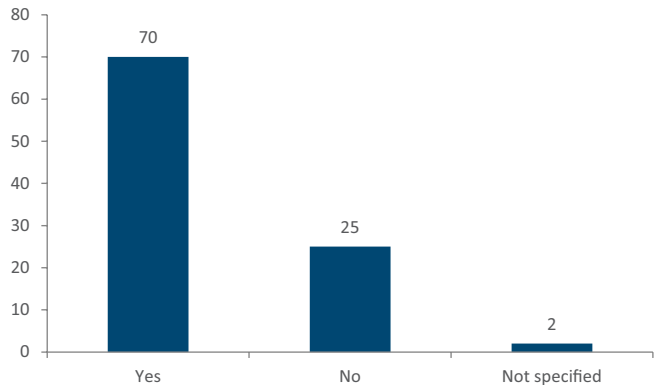


Figure 5: Grey Medallion course participants by looking after or caring for children under five years, n=97

## Previous experience, ability and knowledge

### Previous lifesaving and first aid courses

Almost a quarter of participants had attended a lifesaving course previously (24.3%) (Figure 6). Of these, people reported previously attending a course anywhere from 1 to 63 years ago.

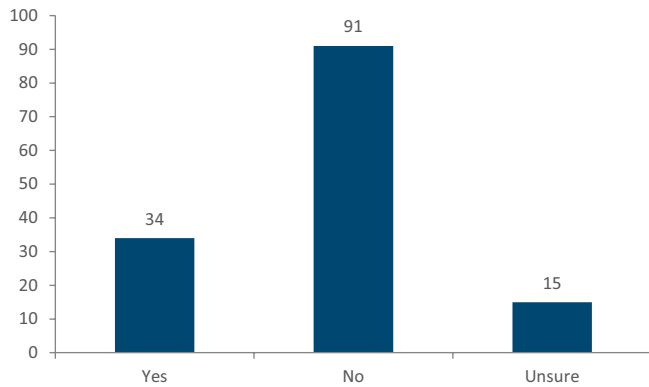


Figure 6: Grey Medallion course participants by previous participation in a lifesaving course, N=140

More than half of participants had previously attended a first aid or resuscitation course (60.7%) (Figure 7). Of these, people reported previously attending a course anywhere from 6 months to 55 years ago.

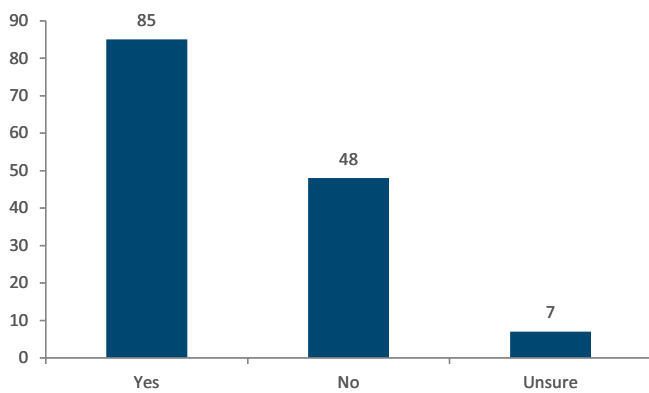


Figure 7: Grey Medallion course participants by previous participation in a first aid/resuscitation course, N=140

### Aquatic activity, including locations and activities

Just over a third of participants undertook aquatic activity 2-3 times a week over the last 6 months (35.0%). Other responses from participants ranged from everyday participation to never participating in aquatic activities (Figure 8).

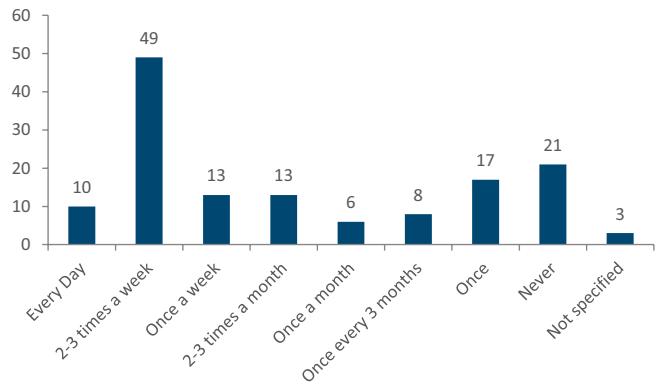


Figure 8: Grey Medallion course participants by frequency of aquatic activities, N=140

The most common location for aquatic activities was a public swimming pool, with 60.0% of all participants reporting that they had visited in the last 6 months. Other commonly visited aquatic locations included the beach, home swimming pools, and oceans and harbours (Figure 9). It should be noted that participants could select more than one response for this question.

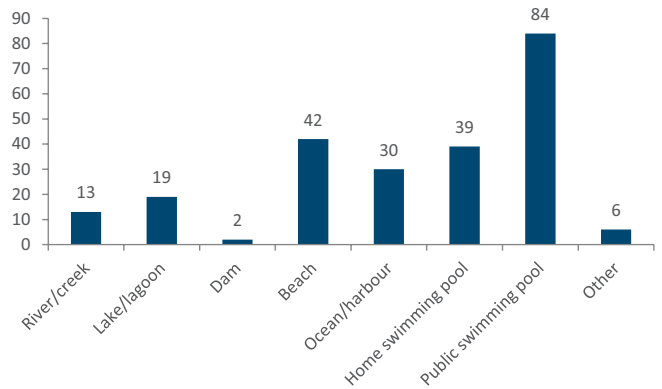


Figure 9: Grey Medallion course participants by aquatic locations visited

The most common aquatic activity undertaken was recreational swimming (including wading in water), with 51.4% of all participants having undertaken this activity in the last 6 months. Other common aquatic activities included lap swimming, aqua aerobics and boating (Figure 10). Other specified activities included kayaking and stand up paddle boarding. It should be noted that participants could select more than one response for this question.

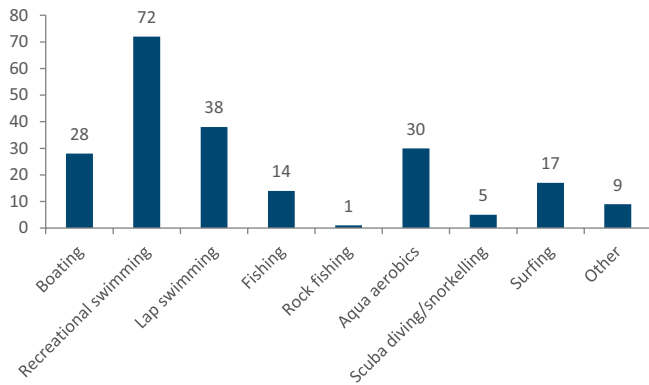


Figure 10: Grey Medallion course participants by aquatic activities undertaken

### Swimming ability

Prior to completing the program, participants most commonly rated their swimming ability as a '5' out of 10 (20.0%), followed by a '7' (15.0%) and a '3' (13.6%). It should be noted that this was a self-reported measure, rather than having been objectively tested.

### Water safety knowledge

Prior to completing the program, more than half of participants described their water safety knowledge as average (59.3%), with a further 29.3% describing their knowledge as poor or below average. It should be noted that this was a self-reported measure, rather than an objective measurement.

## Medical history

### Medical conditions

Participants reported a range of medical conditions, with cardiovascular (e.g. hypertension and arrhythmias) and musculoskeletal conditions (e.g. arthritis) the most commonly reported. Sixty-two participants (44.3%) either specified they had no medical conditions, or left the question blank. Other commonly reported medical conditions included diabetes, respiratory conditions (e.g. asthma) and hyperlipidaemia (Figure 11). Other identified medical conditions included osteoporosis, kidney conditions, neurological conditions, gastric reflux, hearing impairments, depression and anxiety.

It should be noted that this was a free text response and participants could note as many medical conditions as they wished. Additionally, only the most commonly reported medical conditions were coded, as shown in Figure 11.

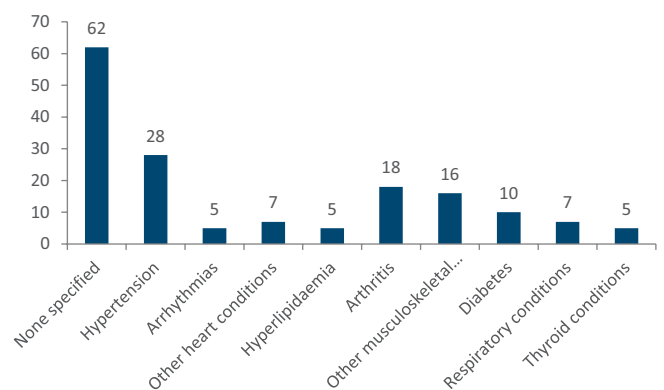


Figure 11: Grey Medallion course participants by medical conditions



## Medications

Participants reported a range of regular medications, with antihypertensives (used to treat hypertension) and lipid lowering medicines (used to treat hyperlipidaemia) the most commonly reported. Forty-three participants (30.7%) either specified no regular medicines, or left the question blank. Other commonly reported medicines included analgesics (e.g. paracetamol and NSAIDs, or Non-Steroidal Anti-Inflammatory Drugs), antithrombotics (e.g. antiplatelet drugs and anticoagulants) and medicines for gastric reflux (e.g. PPIs, or Proton Pump Inhibitors) (Figure 12). Other identified medicines included corticosteroids, antibiotics and medicines for osteoporosis.

It should be noted that this was a free text response and participants could note as many regular medications as they wished. Additionally, only the most commonly reported medicines were coded, as shown in Figure 12.

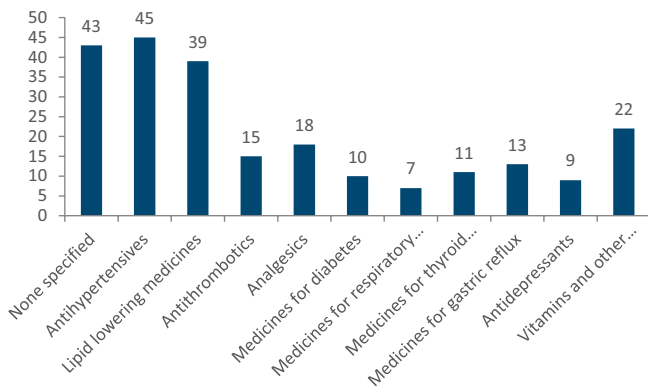


Figure 12: Grey Medallion course participants by regular medications

## Health measures

Participants were asked to rate their health before completing the program in the following areas:

- Health overall – More than three quarters of participants reported their overall health as either very good (40.7%) or good (36.4%).
- Quality of life – Participants most commonly described their quality of life as very good (45.0%). An additional 47.9% of participants reported either excellent (22.9%) or good (25.0%) quality of life.
- Physical health – Three quarters of participants reported their physical health as either good (40.7%) or very good (35.0%).
- Mental health (including mood and ability to think) – Participants most commonly described their mental health as very good (38.6%). An additional 53.6% of participants reported either excellent (28.6%) or good (25.0%) mental health.
- Social health (satisfaction with social activities and relationships) – Two thirds of participants reported their satisfaction with social activities and relationships to be either excellent (22.9%) or very good (44.3%).
- Usual social activities and roles (including activities at home, at work and in the community) – Almost half of participants described their ability to carry out their usual social activities and roles as very good (47.9%). A further 24.3% reported their ability to carry out such activities was excellent.
- Everyday physical activities (such as walking, climbing stairs, carrying groceries or moving a chair) – More than two thirds of participants could completely carry out everyday physical activities (68.6%), while a further 21.4% could mostly carry out such activities.
- Emotional problems (such as feeling anxious, depressed or irritable) – More than a third of participants were rarely bothered by emotional problems in the past 7 days (35.7%), while a further 28.6% were never bothered by such feelings.
- Fatigue – More than half of participants rated their fatigue as mild (53.6%). A further 38.6% of participants reported no fatigue (15.7%) or moderate fatigue (22.9%).
- Pain – Just over half of participants rated their pain as a '0' (18.6%), '1' (15.7%) or '2' (20.0%) on a scale from 0, which represented no pain, to 10, which represented the worst pain imaginable.

## Post-course participant surveys

### Changes in aquatic activity

The majority of participants were considering participating in more aquatic activities after completing the program (85.6%) (Figure 13).

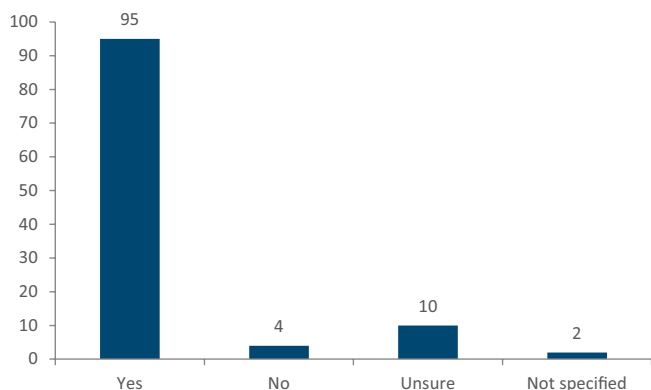


Figure 13: Grey Medallion course participants by consideration of participation in more aquatic activities, N=111

The most common planned aquatic activity was aqua aerobics, with 60.4% of all participants planning to undertake this activity after completing the program. Other commonly planned activities included recreational swimming and lap swimming (Figure 14). Other specified activities included canoeing and kayaking. It should be noted that participants could select more than one response for this question.

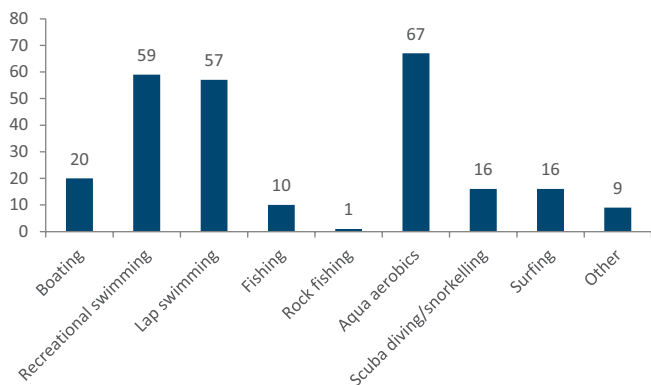


Figure 14: Grey Medallion course participants by aquatic activities planned

### Program evaluation

#### Venue, Material and Instructor

Almost three quarters of participants rated the venue (73.0%) and material provided (73.9%) as a '5' (excellent). The instructor of the program was rated as a '5' (excellent) by 87.4% of participants (Figure 15).

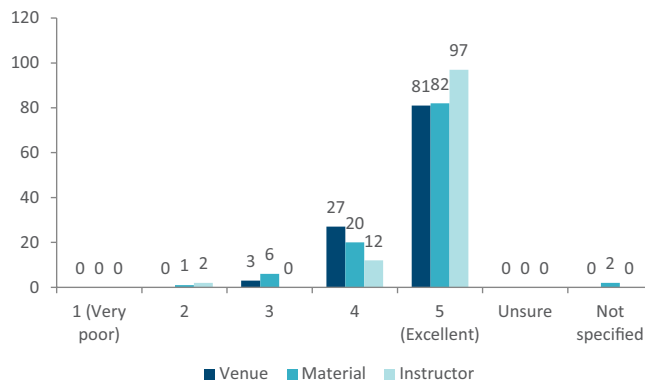


Figure 15: Grey Medallion course participants by rating of Venue, Material and Instructor, N=111

#### Pre-course information, Introduction session and Water safety education sessions

Just under half of participants rated the pre-course information as a '5' (excellent) (46.8%), with a further 34.2% rating the information as a '4'. The introduction session and water safety education sessions were rated as a '5' (excellent) by 61.3% and 81.1% of participants respectively (Figure 16).

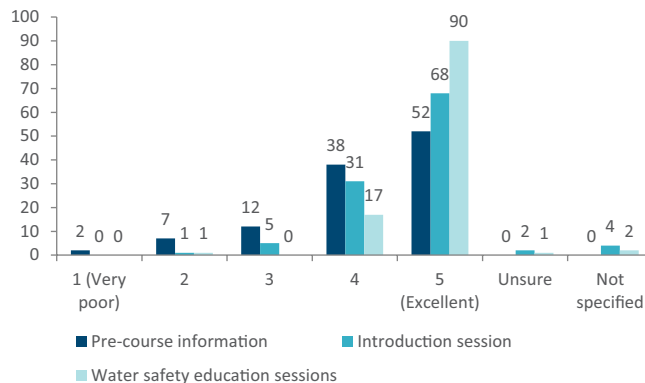


Figure 16: Grey Medallion course participants by rating of Pre-course information, Introduction sessions and Water safety education sessions, N=111

### Resuscitation and emergency care sessions, Aquatic exercise sessions and Personal survival skills sessions

The resuscitation and emergency care sessions (81.1%), aquatic exercise sessions (73.0%) and personal survival skills sessions (71.2%) were all rated as a '5' (excellent) by a majority of participants (Figure 17).

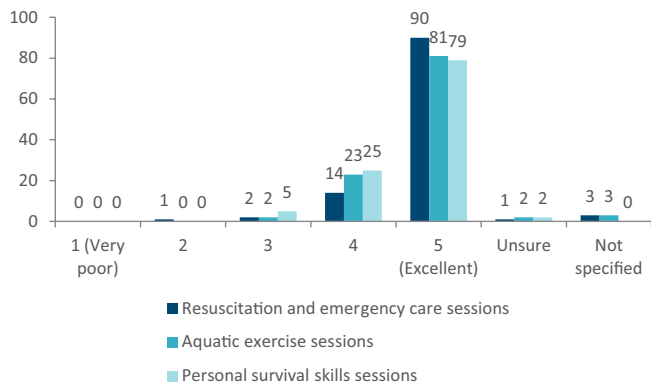


Figure 17: Grey Medallion course participants by Resuscitation and emergency care sessions, Aquatic exercise sessions and Personal survival skills sessions, N=111

### Undertaking resuscitation, Personal survival skills and Lifesaving skills

More than two thirds of participants felt a lot more confident about personal survival skills after completing the program (70.3%). The proportion of participants who felt a lot more confident and a little bit more confident about undertaking resuscitation and lifesaving skills was similar (Figure 19).

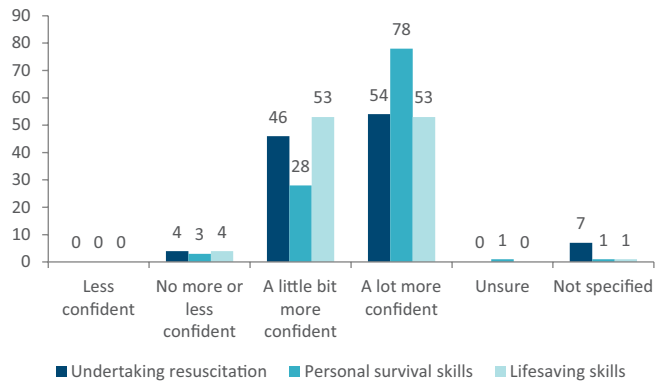


Figure 19: Grey Medallion course participants by changes in confidence related to Undertaking resuscitation, Personal survival skills and Lifesaving skills, N=111

### Changes in confidence

#### Aquatic exercise, Water safety knowledge and Supervision of children

A majority of participants felt a lot more confident about aquatic exercise (66.7%), water safety knowledge (76.6%) and supervising children (78.4%) after completing the program (Figure 18).

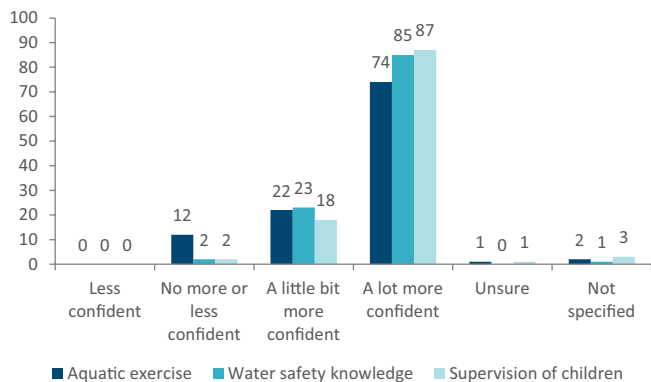


Figure 18: Grey Medallion course participants by changes in confidence related to Aquatic exercise, Water safety knowledge and Supervision of children, N=111

### Changes in motivation

The majority of participants reported that the Grey Medallion program had motivated them to increase their efforts to improve their health and wellbeing (79.3%) (Figure 20).

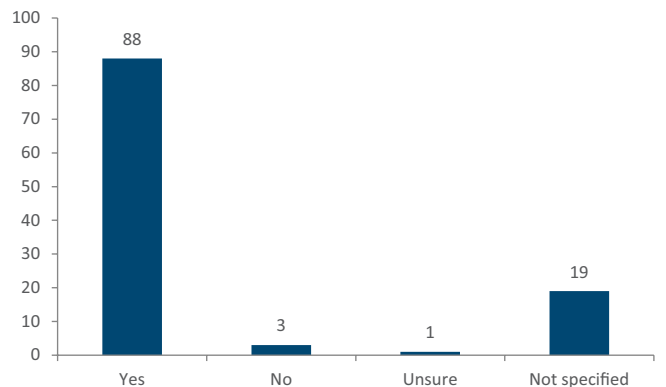


Figure 20: Grey Medallion course participants by influence on motivation to improve health and wellbeing, N=111

## Comparison between pre-course and post-course participant surveys

### Ability and knowledge

#### Swimming ability

Comparing swimming ability among participants before and after the program, there were increases in the number of participants rating their ability as a '6', '7', '8', '9' and '10' out of 10. The combined proportion of those rating their ability a '6' to '10' before the program was 41.3%, increasing to 56.0% of participants once they had finished the program (Figure 21).

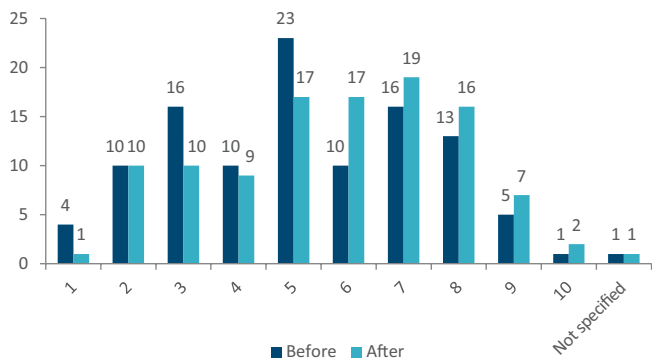


Figure 21: Grey Medallion course participants by swimming ability, before and after the program, N=109

#### Water safety knowledge

Decreases in the number of participants rating their water safety knowledge as poor, below average and average were recorded, while increases were recorded for above average and excellent. Following completion of the program, 55.0% of participants described their water safety knowledge as either above average or excellent, compared to only 12.8% beforehand (Figure 22).

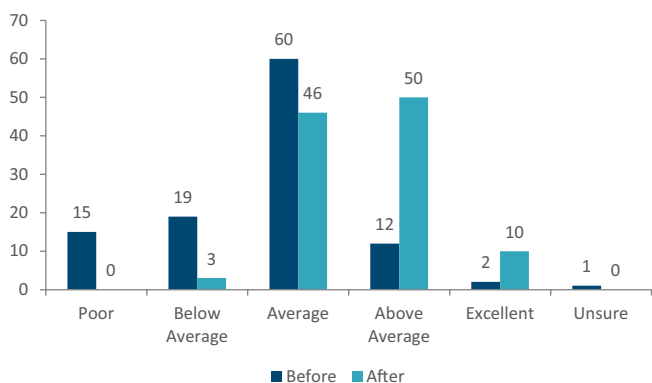


Figure 22: Grey Medallion course participants by water safety knowledge, before and after the program, N=109

### Health measures

The health measures of overall health, quality of life, physical health, mental health (including mood and ability to think), social health (satisfaction with social activities and relationships) and usual social activities and roles (including activities at home, at work and in the community) all recorded decreases in the number of excellent responses among participants but increases in the number of very good responses. Quality of life, mental health, social health and usual social activities also recorded increases in the number of good responses (Figure 23, Figure 24, Figure 25, Figure 26, Figure 27 and Figure 28).

#### Overall health

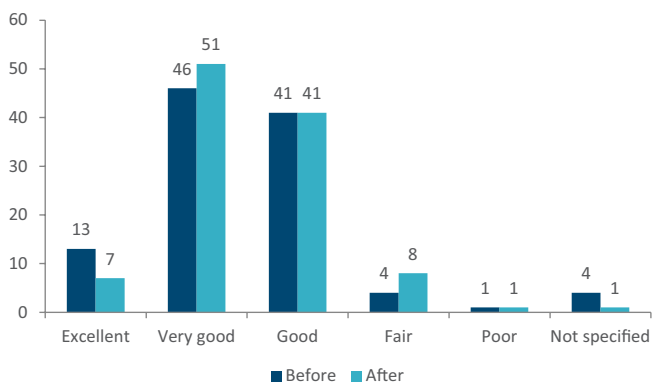


Figure 23: Grey Medallion course participants by overall health, before and after the program, N=109

#### Quality of life

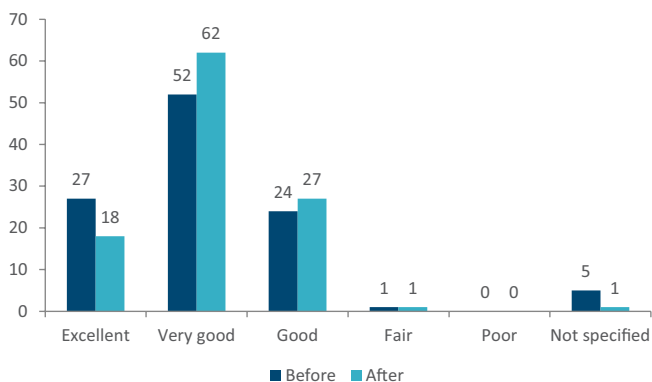


Figure 24: Grey Medallion course participants by quality of life, before and after the program, N=109

### Physical health

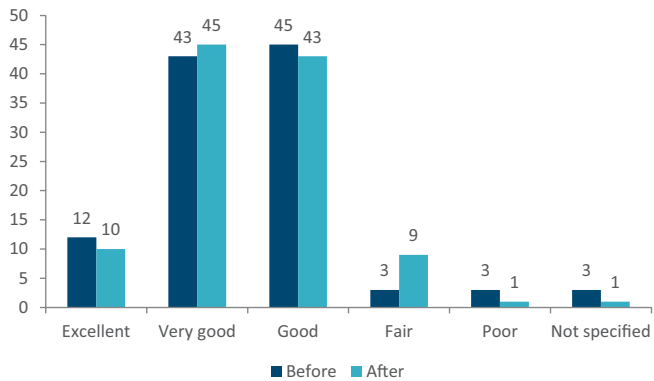


Figure 25: Grey Medallion course participants by physical health, before and after the program, N=109

### Usual social activities and roles

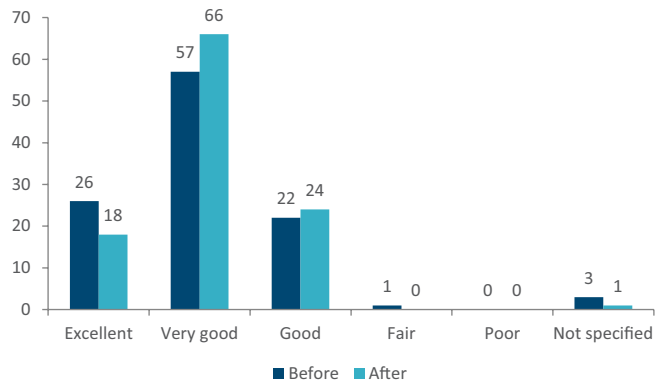


Figure 28: Grey Medallion course participants by ability to carry out usual social activities and roles, before and after the program, N=109

### Mental health

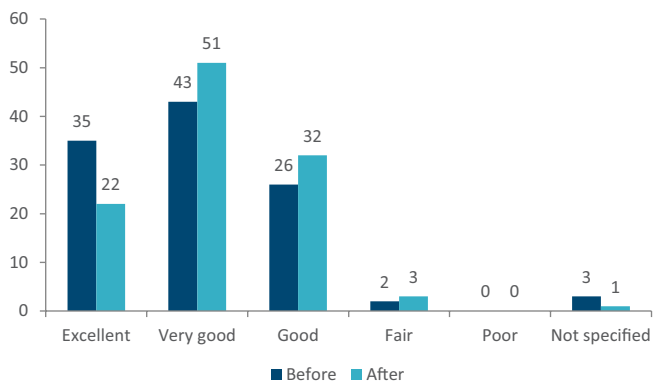


Figure 26: Grey Medallion course participants by mental health, before and after the program, N=109

An increase of 6.5% was recorded in the number of participants who could completely carry out everyday physical activities after completing the program (Figure 29).

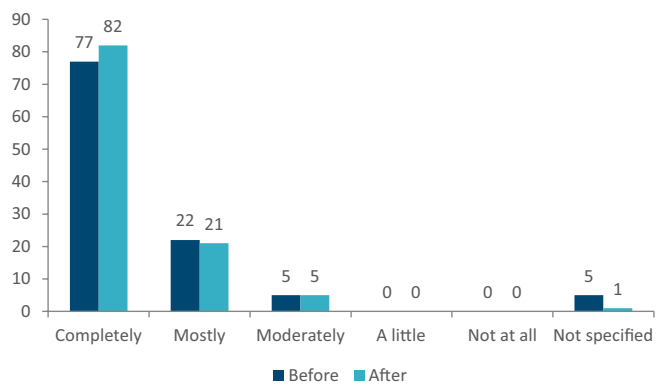


Figure 29: Grey Medallion course participants by ability to carry out everyday physical activities, before and after the program, N=109

### Social health

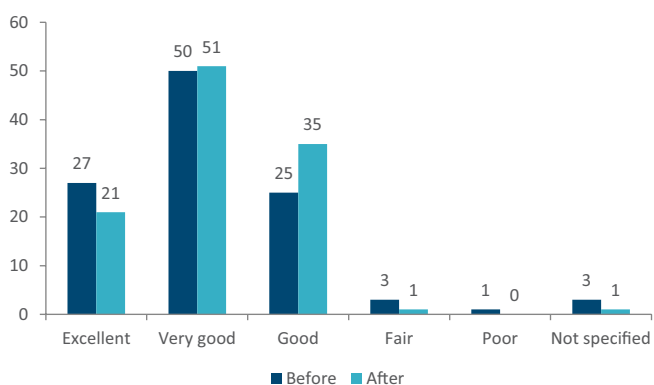


Figure 27: Grey Medallion course participants by satisfaction with social activities and relationships, before and after the program, N=109

A 36.7% decrease was recorded in the number of participants who reported never being bothered by emotional problems but a corresponding increase was observed in those reporting they were only rarely (19.5%) or sometimes (25.9%) bothered by feeling anxious, depressed or irritable (Figure 30).

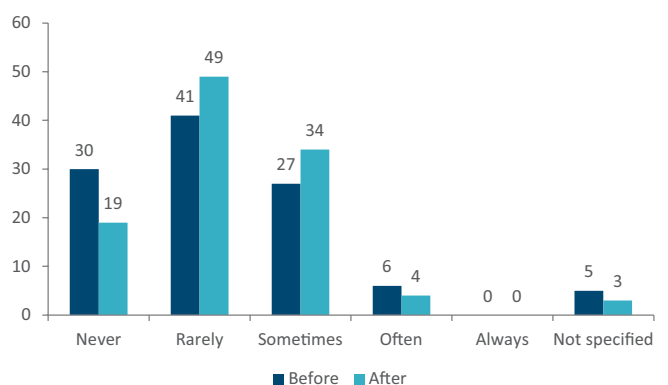


Figure 30: Grey Medallion course participants by frequency of emotional problems, before and after the program, N=109

The number of participants who rated their fatigue as none decreased by 31.3%, while a 12.9% increase was recorded in the number of participants reporting mild fatigue (Figure 31).

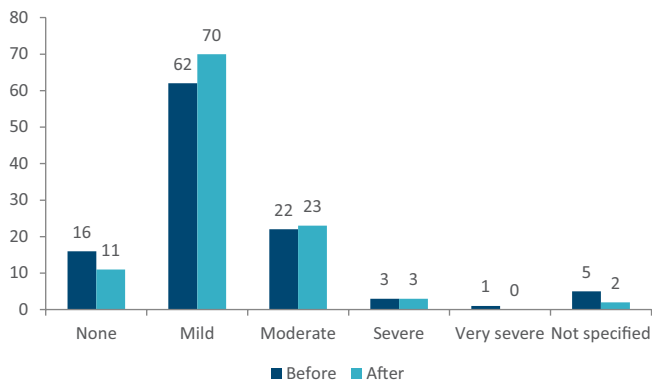


Figure 31: Grey Medallion course participants by fatigue level, before and after the program, N=109

The proportion of participants rating who rated their pain as '0' or '1' out of 10 increased from 36.7% before the program, to 42.2% after the program (Figure 32).

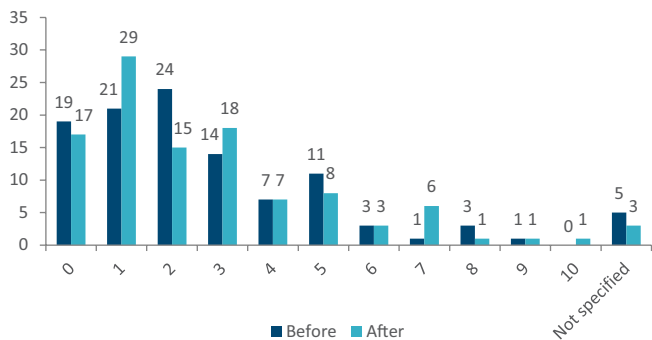


Figure 32: Grey Medallion course participants by pain level, before and after the program, N=109

## Facility surveys

All 12 participating centres were surveyed regarding the implementation of the Grey Medallion program at their facility.

### Prior experience with the Grey Medallion and other programs targeting older people

#### Previous experience of running Grey Medallion

For most of the participating centres (75.0%), this was their first experience running the Grey Medallion program, while a few (N=3) noted that their facilities had run the program before. Among those who had run a program before, it was commonly several years ago.

#### Previous experience of running other programs targeting older people

The majority of participating centres already ran programs targeting older people (75.0%), such as adult swimming lessons and aqua aerobics classes. A couple (n=2) reported that their facilities did not run regular programs targeting older people, while one reported such programs were only available at designated times of the year, such as during a Seniors festival.

### Benefits of running program

The facilities identified a number of benefits of running the program including:

- Increased patronage at their facilities, as well as a flow on effect to other family members (e.g. engaging grandchildren in swimming lessons)
- Raising awareness of different programs offered at facilities (e.g. adult swimming lessons and aqua aerobics)
- Providing a valuable service to the local community and strengthening community relationships
- Engagement of older people in the local community, particularly through raising awareness of aquatic activity and water safety
- 'Value add' for exiting patrons who regularly visit the facility
- Maximising the use of the facility

### Difficulties encountered in running program

The facilities identified a number of difficulties faced by the centres including:

- Recruitment of participants, possibly related to a decrease in advertising and the time of the year
- Lack of effective communication between the centre and local council
- Short timeframes to organise and complete the program
- Challenges setting the schedule for the program and timing clashes (e.g. running a program in school holidays which meant some participants could not attend due to grandparent responsibilities)
- Lack of effective communication regarding the requirements for running the program (e.g. equipment needed such as lifejackets)
- Finding suitably trained and available instructors
- Retaining participants either due to a lack of ongoing interest, lack of perceived value or unforeseen changes in individual circumstances

## Perceived benefits of program for participants

The respondents identified a number of perceived benefits for the participants including:

- Increased knowledge, skills and fitness through suitable, low impact exercise (e.g. increased exercise options for participants with pre-existing injuries)
- Health improvements (e.g. improved physical and mental health)
- Increased confidence in the water, leading to increased participation in aquatic activities
- Increased confidence regarding looking after grandchildren around water
- Increased social activity and general enjoyment (e.g. a group of participants meeting at the centre for a coffee and chat)
- Gaining lifesaving skills, which have the potential to have a significant impact on someone's life
- Interest for further knowledge and training (e.g. participants enrolling in a First Aid course following the completion of the program)

## Program content and structure

The content and structure of the program was well received, with instructors reporting the program flowed well, was relevant for the target demographic and allowed for group discussion, which participants enjoyed.

Most survey respondents thought the program was a good length and the delivery schedule they used worked well. Several respondents who believed the time worked well regarding the delivery of the content suggested the time length would not need to be any longer than they had organised, or perhaps could have been run over a shorter period of time and been just as effective. A few instructors believed the delivery schedule used by their facility was too long and would be better delivered over a slightly shorter timeframe. It was also suggested this may help attendance, with some participants unable to commit to attending the program over a long period.

Both positive and negative feedback was received regarding the resources. Positive feedback suggested the resources were well suited, with instructors noting that participants were engaged throughout the program. However, negative feedback was also received regarding the resources, with comments indicating the different elements of the program were not linked sufficiently (e.g. PowerPoint presentation, handbook for participants and the guide for instructors). Some instructors found parts of the program difficult to teach due to this lack of consistency.

## Future interest in the program and recommendations

When the instructors were asked if they would consider running a Grey Medallion program at their centre again in the future, all indicated 'yes' they would. Some instructors provided additional feedback regarding running the program again in the future, such as:

- Additional advertising to assist with enrolment in the program and attract greater interest
- The importance of funding for the program, believing participants would not have the capacity to pay for the program
- How worthwhile the program was to participants, particularly patrons of the facility
- The importance of planning ahead when scheduling the program to ensure it could be run through the warmer months (particularly important for outdoor pools)
- Interest in running the program multiple times through the year

Similarly, when asked if they would recommend the program to other facilities, all indicated 'yes' they would.

## Improvements, changes or suggestions for improvement

A number of suggestions were made in relation to improving the program for future courses, including:

- Potential need to change the name of the program to assist in attracting interest and increasing enrolment
- Improvement in advertising to highlight the nature of the program (emphasis placed on imagery used to advertise the program to the target demographic)
- Synchronisation of resources (e.g. PowerPoint presentation, handbook for participants and the guide for instructors) to better facilitate teaching the program
- Creation of video resources to assist in teaching the program, demonstrate important water safety concepts and increase participant understanding
- Creation of follow-up resources, which could be given to participants for further information to read through in their own time
- Ability to tailor sections of the program to suit individual lifestyles (e.g. commonly visited aquatic locations and frequently undertaken aquatic activities)

## Drowning data

Between 1 July 2002 and 30 June 2017 (a period of 15 financial years), 1,517 people drowned in NSW, including 423 people aged 60 years and over.

### Demographics

#### Financial year

The number of people aged 60 years and over who drowned in NSW over the last 15 years ranged from a low of 17 in 2006/07, to a high of 37 in 2010/11 (Figure 33).

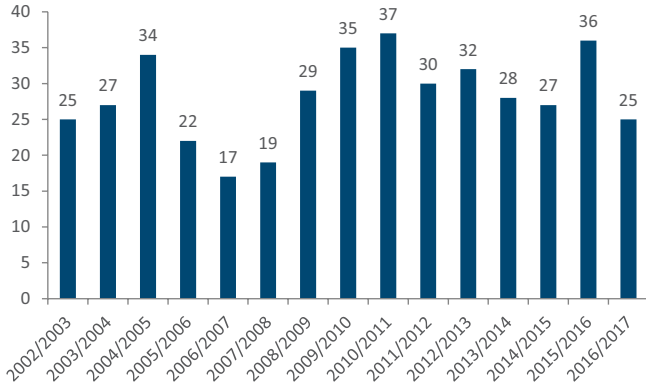


Figure 33: Drowning deaths among people aged 60 years and over by financial year, 2002/03-2016/17

#### Sex

Males accounted for 71.6% of drowning deaths over this time, with females accounting for the remaining 28.4% of deaths (Figure 34).

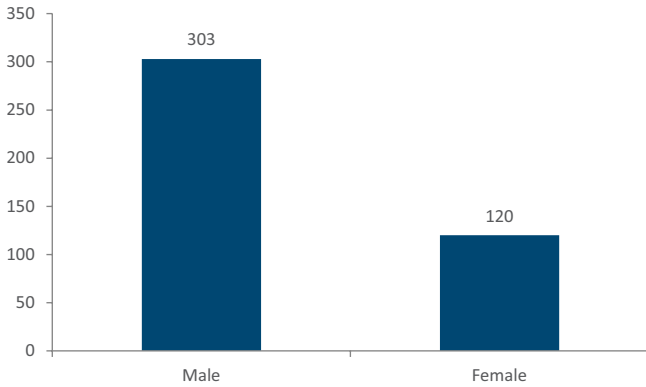


Figure 34: Drowning deaths among people aged 60 years and over by sex, 2002/03-2016/17

#### Age

The largest number of drowning deaths occurred among people aged 60-64 years (25.8%), followed by people aged 65-69 years (21.0%) and 70-74 years (17.7%). Overall, the number of recorded drowning deaths decreased as age increased (Figure 35).

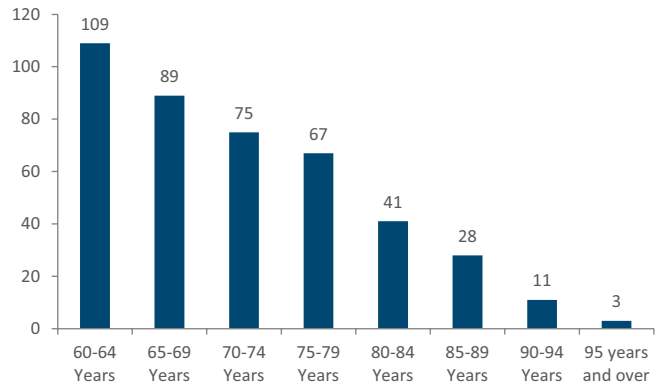


Figure 35: Drowning deaths among people aged 60 years and over by age, 2002/03-2016/17

### Time of incident

#### Season

The highest number of drowning deaths occurred during Summer (33.8%), followed by Autumn (25.8%) and Spring (21.7%) (Figure 36).

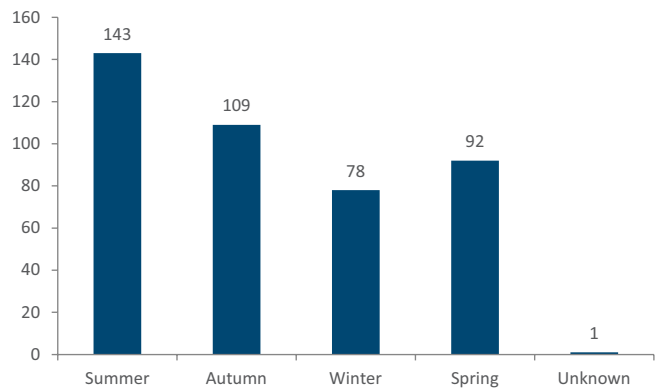


Figure 36: Drowning deaths among people aged 60 years and over by season, 2002/03-2016/17



### Day of the week

Drowning deaths peaked in the middle of the week on Wednesdays (16.8%) and Thursdays (16.8%) (Figure 37).

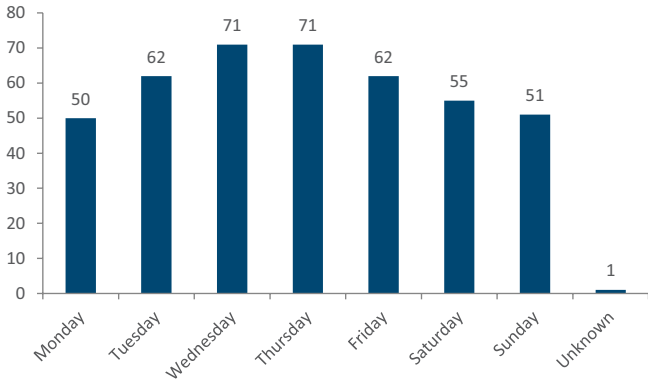


Figure 37: Drowning deaths among people aged 60 years and over by day of the week, 2002/03-2016/17

### Time

The most common time for drowning was during the afternoon, between the hours of 12:01pm and 6pm (34.3%), followed by the morning (31.4%) (Figure 38).

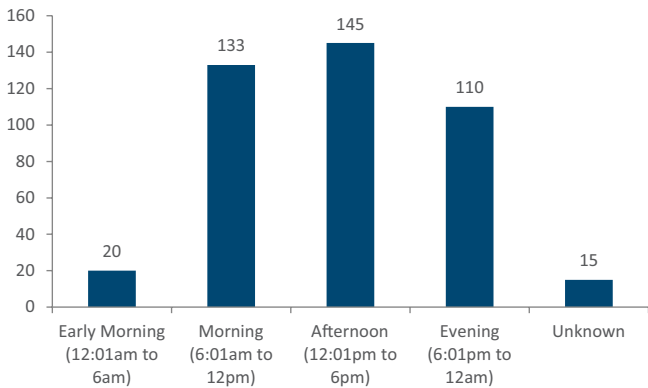


Figure 38: Drowning deaths among people aged 60 years and over by time, 2002/03-2016/17

### Location and activity

#### Location of incident

Rivers, creeks and streams were the leading location for drowning among this demographic, accounting for 27.2% of deaths. This was followed by drowning deaths at beaches (17.5%) and in swimming pools (16.1%) (Figure 39).

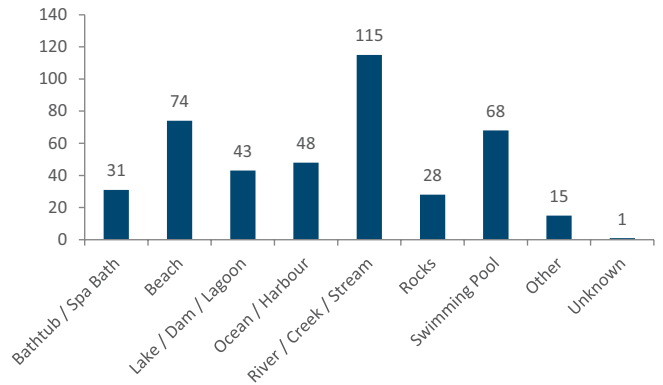


Figure 39: Drowning deaths among people aged 60 years and over by location of incident, 2002/03-2016/17

#### Remoteness classification of incident

Almost half of all incidents occurred in major cities (45.2%), with a further 36.2% of incidents occurring in inner regional areas (Figure 40).

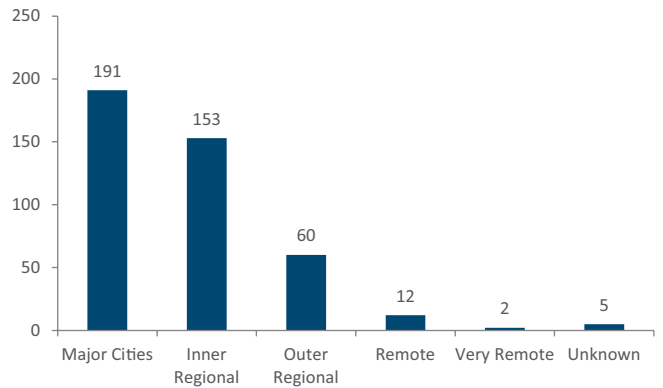


Figure 40: Drowning deaths among people aged 60 years and over by remoteness classification of incident, 2002/03-2016/17

**Visitor status**

More than three quarters of those who drowned were not visitors to the location of the incident (77.3%). A further 10.2% were intrastate visitors (Figure 41).

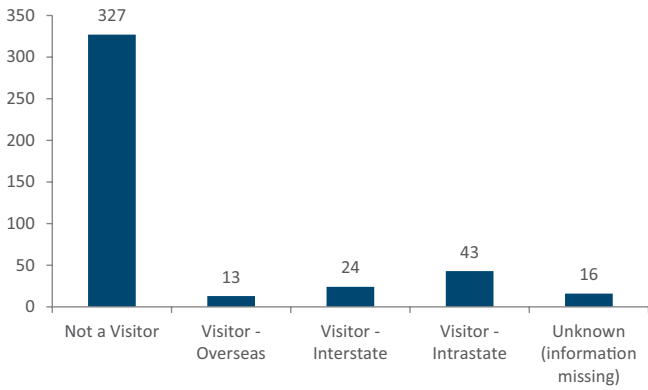


Figure 41: Drowning deaths among people aged 60 years and over by visitor status, 2002/03-2016/17

**Activity**

Falls accounted for the largest number of drowning deaths among people aged 60 years and over (21.0%). Swimming and recreating was the second most common activity being undertaken prior to drowning (18.0%). In a further 16.1% of cases the activity prior to drowning was unknown, suggesting the incident was unwitnessed and the person who drowned was alone at the time (Figure 42).

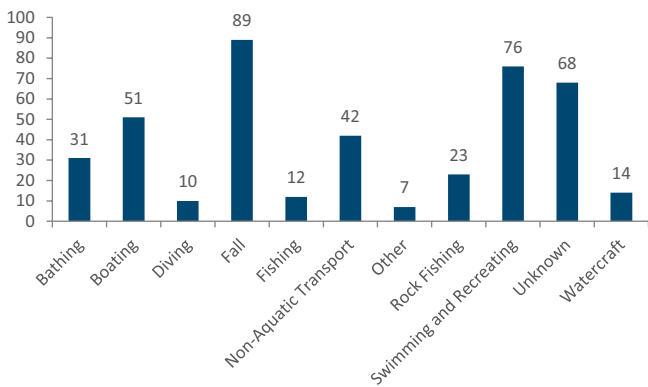


Figure 42: Drowning deaths among people aged 60 years and over by activity prior to drowning, 2002/03-2016/17

**Risk factors**

**Pre-existing medical conditions**

Among those aged 60 years and over who drowned, more than half (53.4%) were known to have a pre-existing medical condition (Figure 43). Commonly recorded medical conditions included cardiac conditions (e.g. ischaemic heart disease, hypertension) and dementia (e.g. Alzheimer’s disease).

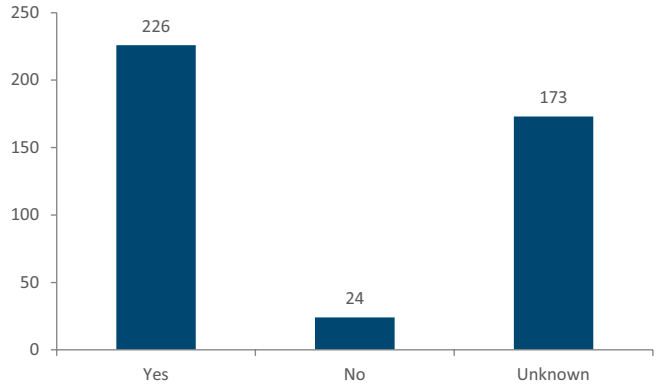


Figure 43: Drowning deaths among people aged 60 years and over by presence of pre-existing medical condition, 2002/03-2016/17

**Alcohol consumption**

Alcohol was known to be present in almost a fifth of drowning cases (19.6%). However, this information was not available in 44.4% of cases (Figure 44). In more than half of the cases where alcohol was known to be present (65.1%), alcohol was deemed contributory to the drowning (i.e. Blood Alcohol Concentration, or BAC, was greater than or equal to 0.05%).

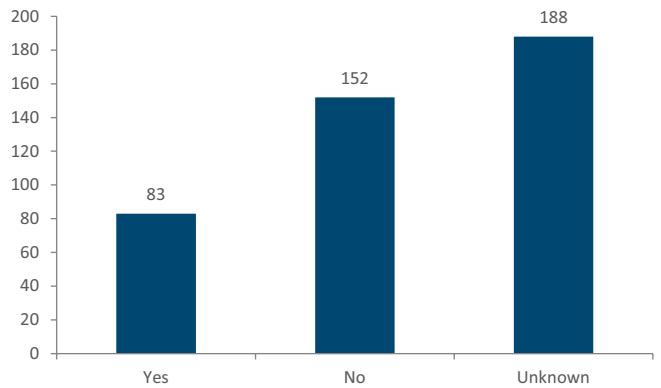


Figure 44: Drowning deaths among people aged 60 years and over by presence of alcohol, 2002/03-2016/17

**Drug consumption**

Drugs were known to be present in more than a quarter of cases (27.9%). However, this information was not available in 46.3% of cases (Figure 45). In the vast majority of cases where drugs were known to be present (93.3%), the drugs involved were legal substances, such as prescription medicines.

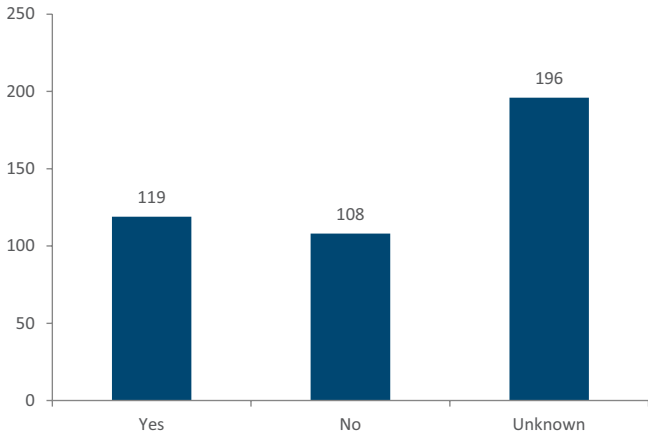


Figure 45: Drowning deaths among people aged 60 years and over by presence of drugs, 2002/03-2016/17

**Falls into water**

Between 1 July 2002 and 30 June 2017, 89 people aged 60 years and over drowned in NSW as a result of an unexpected fall into water.

**Sex**

Males accounted for more drowning deaths related to falls than females, however this proportion was only just over half of incidents (56.2%) (Figure 46).

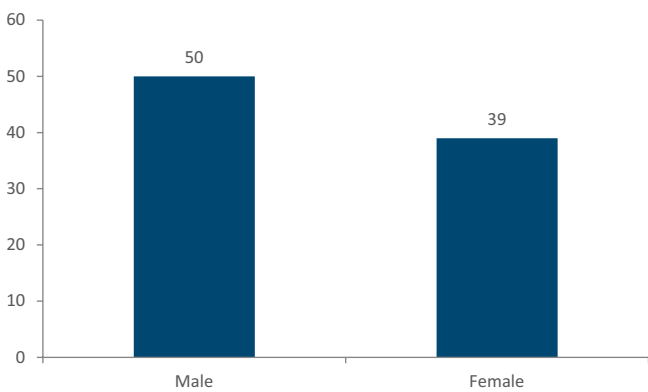


Figure 46: Drowning deaths among people who fell into water aged 60 years and over by sex, 2002/03-2016/17

**Age**

The largest number of drowning deaths related to falls occurred among people aged 80-84 years, accounting for a fifth of incidents (20.2%) (Figure 47).

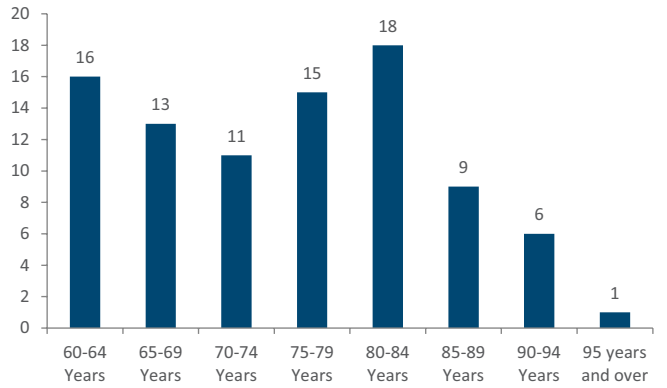


Figure 47: Drowning deaths among people who fell into water aged 60 years and over by age, 2002/03-2016/17

**Location**

The leading locations for falls into water were rivers, creeks and streams (33.7%) and swimming pools (33.7%) (Figure 48).

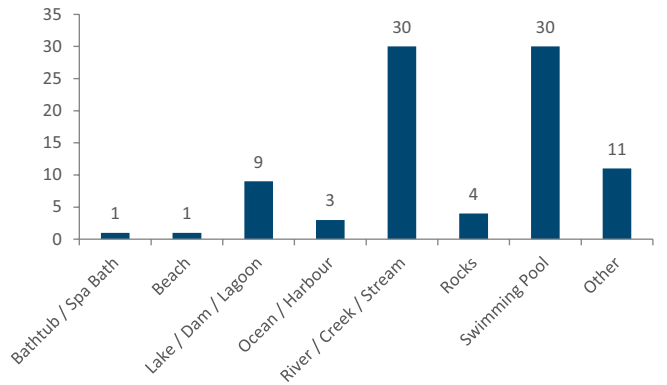


Figure 48: Drowning deaths among people who fell into water aged 60 years and over by location of incident, 2002/03-2016/17

**Remoteness classification**

More than half of drowning deaths related to falls into water occurred in major cities (60.7%), with a further 27.0% occurring in inner regional areas (Figure 49).

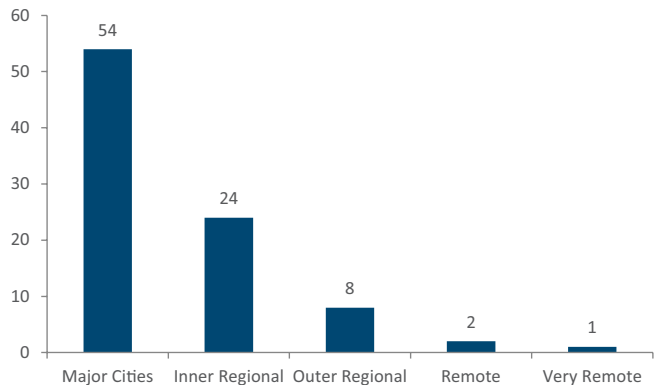


Figure 49: Drowning deaths among people who fell into water aged 60 years and over by remoteness classification of incident, 2002/03-2016/17

**Visitor status**

The vast majority of people who fell into water were not visitors to the location of the fall (93.3%) (Figure 50).

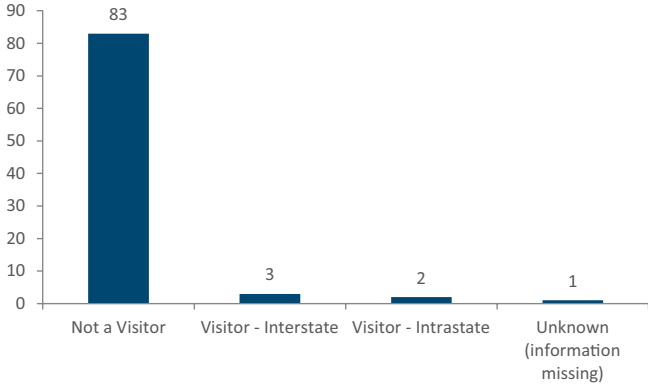


Figure 50: Drowning deaths among people who fell into water aged 60 years and over by visitor status, 2002/03-2016/17

**Pre-existing medical conditions**

Among those aged 60 years and over who drowned after falling into water, two thirds had a pre-existing medical condition (69.7%) (Figure 51).

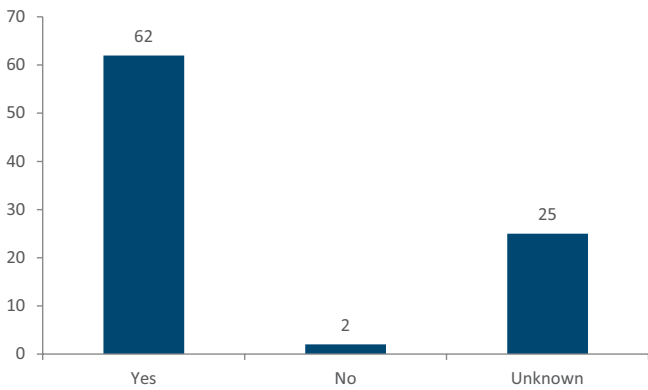


Figure 51: Drowning deaths among people who fell into water aged 60 years and over by presence of pre-existing medical condition, 2002/03-2016/17

**Alcohol consumption**

Alcohol was known to be present in almost a quarter of drowning deaths related to a fall into water (22.5%) (Figure 52).

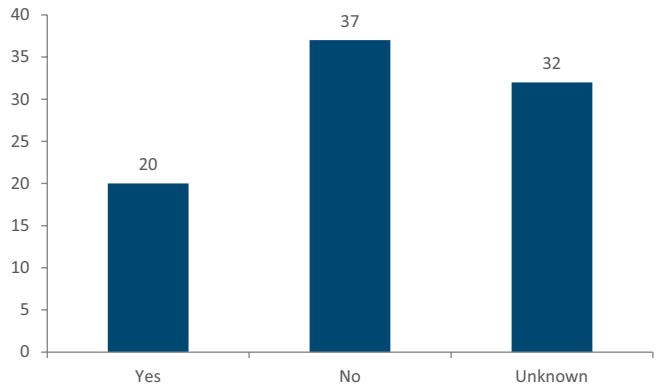


Figure 52: Drowning deaths among people who fell into water aged 60 years and over by presence of alcohol, 2002/03-2016/17

**Drug consumption**

Drugs were known to be present in almost half of drowning cases resulting from a fall into water (42.7%) (Figure 53).

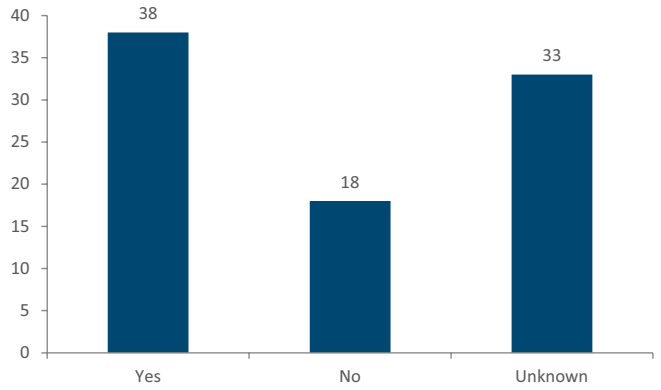


Figure 53: Drowning deaths among people who fell into water aged 60 years and over by presence of drugs, 2002/03-2016/17



## DISCUSSION

### Pre-course participant surveys

The majority of Grey Medallion participants were female. Although the program is not targeted specifically to one sex, it was unfortunate not to attract more males to the program, especially seeing as males are known to drown at a higher rate than females in this demographic. Anecdotally, course instructors commented on the relatively small number of male participants in their programs and the difficulties in enrolling this group. It would be worth investigating ways to increase male participation prior to any future program rollout.

More than half of participants were aged under 70 years, with 80-84 years the oldest age category represented. Approximately three quarters of participants were either retired or pensioners, with no participants stating that they were in full time employment. Given the demographic being targeted this finding is unsurprising but it is useful information to consider when scheduling similar programs and deciding on appropriate content.

Just under a quarter of participants had previously completed a lifesaving course and approximately half had previously completed a first aid or resuscitation course. For a large number of participants who had previously gained knowledge and skills related to lifesaving and administering first aid, it is likely this knowledge has been lost over time, highlighting the importance of the Grey Medallion program in not only teaching new skills but also acting as a refresher course for experienced participants.

Two thirds of participants reported that they looked after children, including many who cared for children under five years of age. It is vital that this demographic understands the importance of adult supervision of young children at all times around water. The marketing of any future Grey Medallion programs should further emphasise the aspects of the program which are relevant to grandparents, particularly in relation to taking children to aquatic locations, or water-based activities.

The majority of participants had engaged in aquatic activity in the six months prior to beginning the Grey Medallion program, with public swimming pools the leading location for water-based fitness and recreation in this demographic. Royal Life Saving recommends public pools as an ideal location for older people to test their skills in a controlled environment, particularly for those who may not have been swimming for a long period of time. This study suggests such advice is being followed and reinforces the value of local aquatic centres to the community.

A large variety of medical conditions were recorded, with high numbers of cardiovascular and musculoskeletal conditions found in this population. The benefits of aquatic exercise are apparent to both conditions, with a low impact form of exercise suitable for most people, particularly those who may be prevented from partaking in high impact activities due to conditions such as arthritis. Similarly, a large variety of medications were listed, including prescription medicines, over the counter (OTC) medicines and complementary medicines. These commonly included antihypertensives, lipid lowering medicines and analgesics.

Some participants recorded regular medications but no medical conditions, whether this was done by writing 'no', or simply leaving the medical conditions question blank. Although this occurred for a variety of medications, it most commonly occurred in relation to medicines used to treat hypertension (high blood pressure) or hyperlipidaemia (high cholesterol). Hypertension and hyperlipidemia often do not display any noticeable symptoms (12, 13), meaning people may forget the condition, or deem it less significant than other ailments which may materially impact their daily lives.

High blood pressure and high cholesterol are two of the most common medical conditions among the general Australian population. The prevalence of uncontrolled or unmanaged high blood pressure increases with age, with 41.5% of people aged 65-74 years and 46.9% of people aged 75 years and over affected (14). The prevalence of high cholesterol is highest among 55-64 years olds (47.8%), with 37.2% of 65-74 year olds and 25.5% of those aged 75 years and over affected (15).

It is also possible that people are not aware of why they are taking their regular medications. That is, they know their doctor has prescribed the medicine and they know they need to take it as directed but they perhaps have difficulty remembering what each medicine is designed to treat.

## Post-course participant surveys

Encouragingly, most participants expressed an interest in participating in more aquatic activities after completing the program, particularly aqua aerobics and swimming. Additionally, the majority reported that the Grey Medallion had motivated them to increase efforts to improve their health and wellbeing, an important goal for all age groups.

Participants were asked to evaluate all aspects of the program content and delivery, with positive feedback received regarding all areas, especially the instructor, water safety education sessions and resuscitation and emergency care sessions. This feedback will be considered, with adjustments made to the program where necessary, in order to ensure maximal acceptability to the target demographic.

The impact of the program on participant's confidence levels was also evaluated, with the majority of people stating they felt either a little or a lot more confident in areas such as aquatic exercise, water safety knowledge, supervising children, personal survival, resuscitation and lifesaving. As older people retire from full time employment they gain free time, which may not have been previously available to them. It is at this stage that many people either take up new aquatic activities, or return to activities they have not participated in for some time. Whether new to an aquatic activity, or simply returning, safety is vital. By providing participants with the knowledge and skills they need to stay safe around the water, they gain confidence to look after themselves, as well as those in their care.

## Comparison between pre-course and post-course participant surveys

Participants self-rated their swimming ability from very low ('cannot swim') to very high ('expert swimmer'). There was an increase in the number of participants who rated their ability either a '6' or above after completing the program, showing the effect of the program on both improving swimming technique and confidence. Increases in water safety knowledge were also observed, with the program covering aspects such as entries and exits, survival and rescue techniques, water safety signs, aquatic hazards and supervision of children around water. It is worth noting that these measures were self-reported and therefore, may be different to an independent assessment conducted by a trained assessor.

Interestingly, for most of the health measures investigated there was a decrease in the number of participants who selected the most favourable response (excellent), coupled with an increase in the number of participants selecting the second and third most favourable responses (very good and good). If this program is run again in similar circumstances to this, it would be worth investigating this finding further. For example, it may be that participants were more realistic when completing the post-course survey. Given the relatively short nature of this program, it would be unrealistic to expect considerable improvements in physical, mental or social health but monitoring any changes is important nonetheless.

This program was funded as part of ongoing efforts to "promote healthy and active ageing" among the residents of South East NSW (8). The increase in the number of participants who were able to completely carry out everyday physical activities after the program, along with the increase in those experiencing no or minimal pain, will assist in such an endeavor. In the context of a rapidly ageing population, keeping older people active and able to go about their daily lives without significant pain is an objective worth pursuing.

In considering the generalisability of this evaluation, it is possible that participants in this program are inherently different to those who chose not to participate, as indicated in previous research studies (16). This phenomenon is known as volunteer bias and it relates to volunteers often being healthier and fitter than non-volunteers (16). The likelihood of volunteer bias should be considered when interpreting the results of this study and in particular, their applicability and transferability to the general target population.

## Facility surveys

The facility surveys captured the thoughts and experiences of those administering the program, including feedback regarding the content and structure of the program. For most aquatic centres this was the first time running the Grey Medallion program, although the majority already ran other programs targeting this demographic, such as adult swimming lessons and aqua aerobics classes.

Facilitators perceived there to be numerous benefits to participants, including physical, mental and social benefits. However, there were also benefits to the centre running the program. In addition to providing increased value to their centre's existing patrons, the program also allowed facilities to increase their patronage by attracting new visitors. Facilities who ran the program believed they were providing a valuable service to the local community and highlighted the importance of engaging with older people in the community.

Although the benefits of the program to both individual participants and participating facilities are clear, there were also challenges associated with implementing the Grey Medallion program. Challenges encountered by the centres ranged from difficulties in recruiting and retaining participants, to problems finding suitable instructors and scheduling the sessions. In order to counter some of these challenges, respondents made several suggestions regarding improvements to the program. If this program were to be run again in the future, these recommendations would need to be taken into consideration in order to better facilitate implementation.

## Drowning data

Over the last 15 years, an average of 28 people aged 60 years and over drowned each year in NSW. The majority of deaths occurred among males, while the number of recorded drowning deaths decreased as age increased. Drowning incidents among older people occurred in all aquatic locations, with the largest number occurring in rivers, creeks and streams. Deaths commonly occurred as a result of unexpected falls into water. Drowning deaths among older people peaked midweek, whereas a spike in other age groups is often seen on the weekend (3).

Interestingly, despite rivers, creeks and streams being the most common location for drowning deaths, they were not the most frequented locations when participants were surveyed about visiting aquatic locations. Participants were more likely to have visited a public swimming pool, the beach, a home swimming pool or the ocean, than rivers and creeks. Further research on this disconnect would be beneficial.

The split between males and females approached an even division among those who drowned after falling into water. The leading age group for drowning among those who fell into water was an older cohort. This cohort also had a higher proportion of people who had a pre-existing medical condition (69.7%) than the overall group of older people who drowned (53.4%). Similarly, a higher proportion of drowning deaths related to a fall into water were known to involve alcohol and/or drugs. A more detailed discussion of such risk factors within the Grey Medallion would be useful in this demographic, particularly for those who may have previously experienced a fall.

Previous research has examined the role of pre-existing medical conditions in drowning deaths among older people, finding several pre-existing medical conditions were overrepresented among those who drowned, compared to the prevalence in the general population (17). Falls into water were commonly associated with dementia, while cardiovascular disease was often observed among drowning deaths while swimming (17). It is crucial that drowning prevention messages for older people include a focus on pre-existing medical conditions, including the importance of regular check-ups with a doctor and taking prescribed medication as directed.

## Recruitment and review

The Grey Medallion program was successfully implemented across South East NSW. Despite positive feedback from both participants and instructors, recruitment proved challenging, particularly with regard to enrolling males in the program. This may have been related to a number of factors including marketing materials and the advertising strategy, availability of facilities and instructors, weather at the particular time of year and scheduling clashes. Any future rollout of the program should consider these variables and seek to ensure changes are made where necessary. As discussed above, a review of the program may also be necessary to ensure it is suitable for participants, instructors and facilities.



## LIMITATIONS

### Survey administration and analysis

- Not all participants completed both surveys. In some cases participants only completed a pre-course survey, likely because they did not complete the program and were therefore, not present at the last session. Other participants did not complete a post-course survey, likely due to an administrative error. These gaps in survey completion should be considered when interpreting the results of this evaluation.
- As the surveys were completed on paper, individual's handwriting needed to be interpreted and entered into the computer-based program Survey Monkey. In a handful of cases this proved challenging where responses were provided in free text. The researchers interpreted and coded responses wherever possible. Similarly, spelling of responses was interpreted and corrected as required, particularly in relation to the questions requiring the names of medical conditions and medications.
- Participants were asked to record their name on the pre-course and post-course surveys for the purposes of survey matching and data analysis. However, it is possible that some participants were then reluctant to provide accurate responses to the more sensitive health questions (e.g. emotional problems), if they were worried about such information being identifiable, despite assurances of confidentiality.

### Drowning data

- A proportion of drowning cases (18.0%) within this report were open (ie. case still under investigation) and as such, a number of variables remain unknown until the case is closed following the completion of any coronial investigation. It should be noted there may be a higher number of unknown variables among cases in regional/rural areas or more recent years where a larger proportion of cases may still be under investigation.
- Amongst cases which were closed, some were still missing information, either because the information was unknown or it was not made available electronically. In such cases, variables were entered as 'unknown', limiting the completeness of the data.

## CONCLUSION

The Royal Life Saving Grey Medallion program was well received by the communities of South East NSW. Participants gained valuable water safety knowledge, as well as skills in resuscitation and emergency care, aquatic exercise, personal survival and lifesaving. Many older people either take up new aquatic activities, or return to previously enjoyed activities upon retirement from full time employment. This is an ideal time to provide them with the knowledge and skills they need to stay safe around the water.

The Grey Medallion aims to encourage healthy and active lifestyles among older people, with the majority of participants in this program motivated to increase their efforts to improve their health and wellbeing after completing the program. Programs aimed at encouraging healthy and active lifestyles among older people are vital in the context of Australia's ageing population. In addition to physical health, mental and social wellbeing are also vital for this demographic if they are to live independently and enjoy quality, rather than just quantity, of life.

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## APPENDICES

### Appendix 1 – Pre-course Survey

#### Grey Medallion participant survey (pre-course)

As part of the Grey Medallion program, Royal Life Saving is evaluating the impact of the course on participant's health and wellbeing. By completing a short survey before the course, and another after the course, we will be able to see if there were any changes in the physical, emotional and mental health of participants. Your responses will assist our research on healthy ageing and water safety, ultimately helping us to save lives.

This is the pre-course survey. It should take you approximately 5-10 minutes to complete. Please try to answer as many of the questions as possible. **All the information that you provide is strictly confidential.** Once you have completed the survey please return it to the instructor.

Thank you from Royal Life Saving

- 1) Name: \_\_\_\_\_
- 2) Course location: \_\_\_\_\_
- 3) Sex:  
 Male       Female
- 4) Age:  
 Below 65 years       65-69 years       70-74 years       75-79 years  
 80-84 years       85-89 years       90-94 years       95 years and over
- 5) Employment status:  
 Full time employment       Part time employment       Retired/pensioner  
 Home duties       Unemployed       Other
- 6) Have you attended a lifesaving course previously?  Yes  No  Unsure  
If yes, how long ago did you last attend a course (approximately)? \_\_\_\_\_ years
- 7) Have you attended a first aid/resuscitation course previously?  Yes  No  Unsure  
If yes, how long ago did you last attend a course (approximately)? \_\_\_\_\_ years
- 8) In the last six months, how often have you undertaken aquatic activity? (tick most appropriate)  
 Every day       2-3 times a week       Once a week  
 2-3 times a month       Once a month       Once every 3 months  
 Once       Never

9) If you have participated in aquatic activities, which of the following locations have you visited in the last six months? (tick all that are relevant)

- River/creek       Lake/lagoon       Dam       Beach  
 Ocean/harbour       Home swimming pool       Public swimming pool  
 Other (please specify): \_\_\_\_\_

10) If you have participated in aquatic activities, which of the following activities have you undertaken in the last six months? (tick all that are relevant)

- Boating       Recreational swimming (includes wading in water)  
 Lap swimming       Fishing       Rock fishing       Aqua aerobics  
 Scuba diving/snorkelling       Surfing  
 Other (please specify): \_\_\_\_\_

11) How would you rate your swimming ability? (where '1' means cannot swim and '10' means expert swimmer)

- 1    2    3    4    5    6    7    8    9    10

12) How would you describe your water safety knowledge? (tick most appropriate)

- Poor       Below average       Average  
 Above average       Excellent       Unsure

13) Do you look after or care for any children?     Yes  No

If yes, are any of the children under 5 years of age?     Yes  No

14) Do you suffer from any medical conditions? If so, please specify:

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15) Do you take any regular medications (including prescription and non-prescription medicines)? If so, please specify:

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16) Please respond to each item by marking on box per row

	Excellent	Very good	Good	Fair	Poor
In general, would you say your health is:	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, would you say your quality of life is:	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, how would you rate your physical health?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, how would you rate your mental health, including your mood and ability to think?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, how would you rate your satisfaction with your social activities and relationships?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, please rate how well you carry out your usual social activities and roles (this includes activities at home, at work and in your community and responsibilities as a parent, child, spouse, employee, friend etc)	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

17)

	Completely	Mostly	Moderately	A little	Not at all
To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

18) In the past 7 days...

	Never	Rarely	Sometimes	Often	Always
How often have you been bothered by emotional problems such as feeling anxious, depressed or irritable?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

19)

	None	Mild	Moderate	Severe	Very severe
How would you rate your fatigue on average?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

20)

How would you rate your pain on average?	<input type="checkbox"/> 0 <b>No pain</b>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 <b>Worst imaginable pain</b>
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Thank you completing the survey. **All the information that you provide is strictly confidential.** If you have any questions or need further information, please contact Kimberley Noffs (Health Promotion Coordinator) on (02) 9634 3700.

### Grey Medallion participant survey (post-course)

As part of the Grey Medallion program, Royal Life Saving is evaluating the impact of the course on participant's health and wellbeing. By completing a short survey before the course, and another after the course, we will be able to see if there were any changes in the physical, emotional and mental health of participants. Your responses will assist our research on healthy ageing and water safety, ultimately helping us to save lives.

This is post-course survey. It should take you approximately 5-10 minutes to complete. Please try to answer as many of the questions as possible. **All the information that you provide is strictly confidential.** Once you have completed the survey please return it to the instructor.

Thank you from Royal Life Saving

1) Name: \_\_\_\_\_

2) Course location: \_\_\_\_\_

3) How would you rate your swimming ability? (where '1' means cannot swim and '10' means expert swimmer)

1      2      3      4      5      6      7      8      9      10

4) How would you describe your water safety knowledge? (tick most appropriate)

Poor                       Below average                       Average  
 Above average                       Excellent                       Unsure

5) Now that you have completed the program, are you considering participating in more aquatic activities?     Yes                       No                       Unsure

6) If yes, what activities are you planning to undertake? (tick all that are relevant)

Boating                       Recreational swimming (includes wading in water)  
 Lap swimming                       Fishing                       Rock fishing     Aqua aerobics  
 Scuba diving/snorkelling                       Surfing  
 Other (please specify): \_\_\_\_\_



7) How would you rate the following?

	<b>1 Very poor</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5 Excellent</b>	<b>Unsure</b>
Venue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instructor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pre-course information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Introduction session	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water safety educations sessions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resuscitation and emergency care sessions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aquatic exercise sessions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personal survival skills sessions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8) Do you feel? (more or less confident)

	Less confident	No more or less confident	A little bit more confident	A lot more confident	Unsure
Aquatic exercise	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
Water safety knowledge	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
Supervision of children in your care	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
Undertaking resuscitation	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
Personal survival skills (including entry into and exits from water)	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
Lifesaving skills	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

9) Has the Grey Medallion course motivated you to increase your efforts to improve your health and wellbeing?  Yes  No  Unsure

10) Please respond to each item by marking on box per row

	Excellent	Very good	Good	Fair	Poor
In general, would you say your health is:	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, would you say your quality of life is:	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, how would you rate your physical health?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, how would you rate your mental health, including your mood and ability to think?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, how would you rate your satisfaction with your social activities and relationships?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
In general, please rate how well you carry out your usual social activities and roles (this includes activities at home, at work and in your community and responsibilities as a parent, child, spouse, employee, friend etc)	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

11)

	Completely	Mostly	Moderately	A little	Not at all
To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

12) In the past 7 days...

	Never	Rarely	Sometimes	Often	Always
How often have you been bothered by emotional problems such as feeling anxious, depressed or irritable?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

13)

	None	Mild	Moderate	Severe	Very severe
How would you rate your fatigue on average?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

14)

How would you rate your pain on average?	<input type="checkbox"/> 0 <b>No pain</b>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10 <b>Worst imaginable pain</b>
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Thank you completing the survey. **All the information that you provide is strictly confidential.** If you have any questions or need further information, please contact Kimberley Noffs (Health Promotion Coordinator) on (02) 9634 3700.

### Grey Medallion 2018 - Facility Feedback Survey

1. Is this the first Grey Medallion course your facility has run? (Tick one appropriate answer)  
YES  NO
  
2. Prior to conducting the Grey Medallion, did your centre already run programs targeting older people? i.e. Aqua, Learn to Swim  
YES  NO
  
3. What were the benefits of running Grey Medallion program at your facility? (Tick all applicable answers)  
 Increased patronage  
 Attracting new visitors  
 Providing service for the community  
 Maximising use of facility  
 Engaging older people  
 Community relationships  
 Other \_\_\_\_\_  
\_\_\_\_\_
  
4. What were the difficulties, if any, your centre faced along the way?  
 Setting program dates  
 Finding suitable instructors  
 Recruiting participants  
 Retaining participants  
 Tailoring program to meet participant needs  
 Other \_\_\_\_\_  
\_\_\_\_\_
  
5. In your opinion, what were the benefits of the program for participants?  
 New knowledge and skills  
 Increased confidence  
 Social  
 Health (physical/mental)  
 General enjoyment  
 Other \_\_\_\_\_  
\_\_\_\_\_
  
6. What are your thoughts on program content and structure? Was the program too long or too short?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
7. Would your centre consider running a Grey Medallion program again in the future?  
YES  NO
  
8. Would you recommend other facilities run a Grey Medallion program?  
YES  NO

## Grey Medallion 2018 - Facility Feedback Survey

9. Please share any improvements, changes or suggestions you have that you feel could help to improve the Grey Medallion program?

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10. Any other general feedback

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**FOR MORE INFORMATION**

Call **02 9634 3700**

Email **nsw@royalnsw.com.au**

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