



The Before School Swimming and Water Safety Pilot Program

An innovative approach to provide Victorian
primary school children with swimming and water
safety education



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Background

In Victoria, drowning is a leading cause of mortality and morbidity in children aged 0-14 years (Life Saving Victoria [LSV], 2014). While multiple strategies have been developed and implemented to address drowning in the 0-4 age group, recent trends indicate that the numbers of drowning deaths are increasing in children aged 5-14 years (LSV, 2011). In the period 2006-2011 there was a 68% increase in the five year average drowning rate in children aged 5 – 14 years and therefore strategies are now required to address drowning deaths in this age group. One of the challenges associated with this age group (5-14 years) is that there is a lack of empirical evidence regarding the drowning risk and protective factors.

The Royal Life Saving Society – Australia (RLSSA) believes that in order to prevent drowning, every Australian child must have basic swimming and water safety skills and knowledge of how to be safe when they are in, on, or around the water (The Royal Life Saving Society – Australia [RLSSA], 2012). However, research conducted by Life Saving Victoria (LSV) with teachers of Year 6 primary school children revealed that school teachers estimated 60% of Victorian children leave primary school unable to continuously swim 50 metres (Birch and Matthews, 2013). The study also identified barriers for schools participating in swimming and water safety programs, which included the cost of swim programs; crowded curriculum; a high demand on classroom time to attend; transport costs associated with students commuting between school and aquatic facilities; a lack of qualified swim teachers in regional areas; and cultural barriers for culturally and linguistically diverse (CALD) students.

Life Saving Victoria has subsequently investigated the feasibility of establishing a Before School Swimming and Water Safety Program that would provide swimming and water safety education before school and/or through outside school hours care programs. The Before School Swimming and Water Safety Program focuses on the development of water safety skills and knowledge, especially 'survival swimming' which includes preparing a child for unexpected entry into the water. This is in contrast to the content and focus of existing 'learn to swim' programs which focus on correct stroke techniques over a particular distance.

A pilot of the Before School Swimming and Water Safety Program was conducted in regional Victoria where the drowning rate per head of population is almost twice that of people living in major cities (LSV, 2014). The following report outlines the results of the evaluation of the pilot Program.

Aims

The aim of the Before School Swimming and Water Safety Pilot Program was to teach key water safety and survival swimming skills to children in Year 5 and 6 and empower them to recreate safely and confidently in, on, or around the water. In the long-term, the ultimate goal is to reduce the number of aquatic related drowning deaths of children in Victoria. Specific objectives of the pilot Program were to:

- 1) Enhance the personal resilience of Victorian students by increasing their swimming skills and water safety knowledge.
- 2) Determine the feasibility of the Before School Swimming and Water Safety Program delivered by qualified swim teachers, in partnership with Victorian schools and community aquatic facilities.
- 3) Determine a cost effective model for presentation to Government to ensure sustainability of the Before School Swimming and Water Safety Program.

Methodology

Program Methodology

Pilot location

There was a recognised need to address swimming and water safety in regional and low socio economic areas. The Greater Shepparton region was selected for the pilot study based on the combination of a high number of drowning incidents (14) having occurred in this area between 2002 and 2012 (Life Saving Victoria, personal communication, July 2015) and because several schools in the region are located in areas of high relative socioeconomic disadvantage (Australian Bureau of Statistics, 2013). The pilot Program was conducted at Aquamoves Lakeside Shepparton, the Greater Shepparton City Council's premier aquatic recreational facility. Two primary schools located in this region were selected to participate in the Program.

One school was located in close proximity (within 5km) to the Aquamoves facility and this school completed a 10-day intensive Program. Parents were required to drop their children at the facility each day at 8:00 AM and a bus returned them to school by 9:30 AM. The second school was located a greater distance from Aquamoves (within 40km) and because of the geographic location these students took part in the Program once per week for 10 weeks. Given the school's distance from Aquamoves, families had the option of either dropping their children at Aquamoves at 8:00 AM or dropping them at school where they would commute by bus, departing from the school at 7:15 AM. As part of this option, one parent volunteered to assist the school teacher with program and travel supervision. The bus returned the students to school by 10:00 AM. As part of both programs, a free breakfast was provided to the students after each lesson. Life Saving Victoria secured a Program sponsor in My Yummy Lunchbox, a Melbourne family owned company that provided breakfast bars and flavoured milk for all students.

Program structure

The 'Lifesaving in Schools' program formed the lesson structure, or curriculum, for the Program. This was developed by the Education Services Department at LSV and comprises 10 lesson plans, each with a low, intermediate and high level skills outline. The curriculum is derived from the RLSSA (2011) National Swim and Survive program (Low = Active Award 2 / Intermediate = Active Award 3 / High = Active Award 4) and aligns with AusVELS (Victorian Curriculum and Assessment Authority). With a continued emphasis on why, where and how children drown, the curriculum shifts the focus from 'learn to swim' implying correct stroke techniques over a particular distance, to 'survival swimming'. Survival swimming incorporates aspects of water safety and lifesaving skills, self-awareness, good decision-making and leadership, all aimed at building a student's personal resilience, further supporting the direction of the school curriculum.

Each lesson has a major survival swimming skill focus aimed at enhancing the child's personal safety, including floating and treading water, rescue strategies, movement skills, lifejacket use and CPR, and each lesson built on skills that were introduced in the previous lesson. The final lesson was completely scenario based, with students practicing all skills and knowledge learnt throughout the Program in real life scenarios that were relevant and engaging.

Overall, the curriculum aims to prepare a child for emergency scenarios in water as well as unintentional entry into water, specifically open water environments. The overall skill benchmark was the achievement of the Victorian Water Safety Certificate, a State Government initiative. The Certificate reflects the level of skill recommended by the swimming and water safety industry for students exiting primary school, and aligns with Swim and Survive Active Award 4.

Evaluation methodology

Following school and parent consent and prior to beginning the Program, participating students completed a validated and reliable self-report survey, which comprised closed-ended questions designed to examine swimming ability, water safety knowledge, and exposure to aquatic environments. Students completed the same survey at the conclusion of their Program in order to measure any change in self-reported estimates of their swimming ability and water safety knowledge.

Practical skills tests were conducted pre- and post-Program. Skill tests included assessment of: distance (using any swimming stroke up to 300m); swim technique (25m on front, 25m on back); ability to float in deep water (up to 2 minutes); swim through a submerged hoop; and dive technique.

Qualitative feedback was obtained from all those involved including students, parents, school teachers, swim teachers and the bus driver to determine the impact of the Program on students, their families and the community. A feedback book was kept at the pool and participants were encouraged to record any feedback related to the program. Surveys were provided to parents and swim teachers at the end of each Program to gain their feedback on the Program. In addition, focus group sessions were held with the aquatic facility management and swim teacher leaders as well as school teachers. One-on-one interviews were conducted with the Program coordinator (school teacher) for each school.



Results

In total, 68 students completed the Program and 86% achieved the Victorian Water Safety Certificate. Feedback was received from 32 parents, all eight swim teachers who were involved with the swimming instruction, and 12 school teachers (six from each school) including a detailed interview with the Program coordinator for each school.

Enhancing personal resilience

Changes in swimming and water safety skills and knowledge

Across both schools, 89% of students improved in at least one of the practical skills tests. Over half (56%) of students swam further at the end of the Program compared to when they began. The proportion of students who could swim 50 metres continuously (the minimum distance recommended by RLSSA [2010]) increased slightly from 82% to 88% pre- and post-Program (Figure 1). The proportion that could swim 100 metres or more using any stroke increased from 56% to 86%.

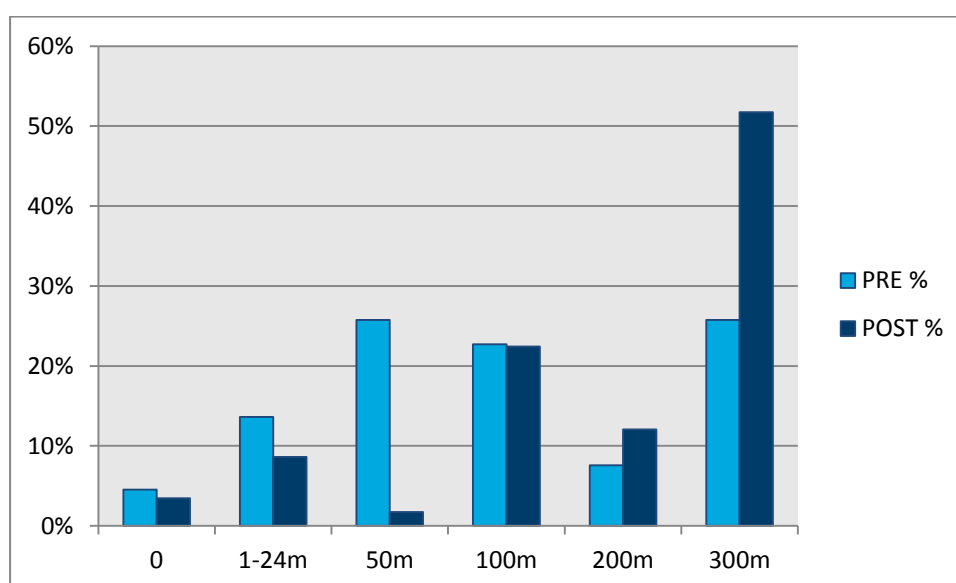


Figure 1 Maximum distance children could swim (metres), pre- vs. post-Program

The proportion of students that could float for over 2 minutes (the minimum recommended length) increased from 69% to 84%. The proportion able to perform a hands-first dive entry increased from 70% to 89%. There were also improvements in student's swim technique on their front, and to a lesser extent, on their back.

Students were asked eight water safety questions, and the average correct response rate increased marginally from 79% to 82%. Some questions saw greater improvement than others. For example, the proportion who believed that *'freestyle is the best stroke to do over a long distance if you have to swim with your clothes on'* decreased from 64% to 50%, and the proportion who believed a safe place to swim at the beach is between the red and yellow flags, increased from 87% to 97%.



Building resilience

The Program is believed to have contributed to building students' personal resilience by increasing their swimming and water safety skills and knowledge as well as providing a good opportunity for them to learn valuable skills in being responsible for themselves. One parent valued the fact their child *'had to be organised to get herself to school on time. This was good to help her take responsibility for herself and [her] organisation'*. Another said, *'my child was always up and ready before me. I found this experience a very positive thing in our lives'* and another parent found it *'surprising [my child] has coped very well, and may be even a bit happier'*.

Parents demonstrated the strength of community through the Program by volunteering their time to assist school teachers (e.g. signing up for rosters to assist in changing rooms and with class management). The community contribution of resources to the Program was also demonstrated by the parents who offered to make breakfast for the students each week, which could be a valuable aspect of future Programs.

Feasibility of the Before School Swimming and Water Safety Program

General Program feedback

According to parents, the Program had a clear positive impact on the students involved across both schools. Every parent would recommend the Program to other families, including the students who commuted 40 minutes each way every Friday for 10 weeks. Parents rated every aspect of the Program as either very good or good, including the early start time (59% very good and 41% good). The highest rated aspects were the transport to/from the facility (94% very good), the facility itself (91%) and the swim teachers (90%).

Teachers at one school preferred the Before School Swimming and Water Safety Program to their usual swimming program, which focuses on water familiarisation. They felt the Shepparton facility was better than the local outdoor pool (where they usually have lessons) for its deeper pool and rapid river, which facilitated the learning of valuable skills (e.g. the difficulty of swimming against a rip current). The local facility is older, in need of repair, shallow and expensive. In this low socioeconomic area, many families can't afford entry, or don't see the benefits of swimming and for this reason children often swim in the channels, which can be very dangerous.



Impact on students

Despite the early mornings, students provided positive feedback to their parents, swim teachers and school teachers. Every parent said their child enjoyed the Program, particularly the variety of survival swimming skills and water safety activities (e.g. rescue skills and CPR). Parents valued the inclusion of these personal survival skill activities in the Program, many of whom would like to see it continue and expand. One parent commented that, *'the Program should be available in all schools/swimming clubs. Aside from swimming, [it] exposes the children to other safety aspects that are not taught in swimming lessons'*. These opinions were echoed by other parents; for example, *'I really think this Program is beneficial and I would do it all again for all 3 of my children'* and, *'I would encourage everyone to participate in this Program as my son has benefited by learning life skills'*.



The swim teachers involved shared the sentiments of parents, with all agreeing the students enjoyed the Program and learned a lot. They felt the lesson plans and activities were different and fun, rather than prescriptive and focusing on technique. Outside observers including patrons and other staff told the swim teachers that they too thought it was a fantastic and unique program.

School teachers at both schools also observed positive changes in the students that participated in the Program. The school teachers that attended saw substantial improvements in students' confidence in the water and the positive impacts of this on their lives. For example, one student swam one lap in the first week and completed 12 laps at the end of the Program as a result of a huge gain in confidence and using the survival swimming techniques he learnt. In addition, school teachers felt their students seemed more engaged when they arrived at school and got straight on with their school work.

Impacts on families

Whilst the majority of parents did not experience any difficulties with the timing of the Program, a number of parents and children from the school located furthest from the facility found the early start times challenging. One parent knew of other families who didn't participate because of the early start. On the other hand, those who did participate said that although families needed to wake up earlier and be more organised the night before, this was a relatively minor adjustment to the routine and was *'worth it as they are learning great safety skills as well as swimming'*. One parent from this school felt the *'early mornings are so-so, but [the Program is] rewarding because my child really enjoys it and has more confidence in [the] pool and is learning a lot'*. Other parents commented that *'at least before school doesn't impact on after school activities. Once he got going every week he enjoyed it and was glad he went'* and, *'given it was a 10 week program, it wasn't forever and really not that hard'*.

Impacts on schools

From the school teachers' perspective, the Program was successful and caused minimal impact on their school day. Every teacher from both schools would recommend the Program to other schools due to the benefits of learning swimming and water safety skills, and both schools would run it again if funding was available. The school teachers reported that it was less disruptive to school time than the usual swimming program. Note that not every student in each class participated, and those who did participate would arrive after the school day began. School teachers felt that if the whole class participated this would be easier but the interruption was no more than the usual swimming program as far as children coming to class late.

Teachers of one school saw no issues or negative impact of the Program on their school routine, aside from a few students being tired by the end of the day. For this reason Friday was ideal, and other students could also finish off other work and the teacher could catch up on marking until the students returned from the pool. The bus service was reliable, arriving early each morning. Even the bus driver observed some benefits of the Program, noticing *'a big change in the kids' attitudes and confidence in and around the pool.*

Box 1 Program review - School teacher/Program coordinator (School 1)

Overall, the Program coordinator felt the program content was good, particularly the focus on rescue and lifesaving skills rather than the usual focus on stroke technique, and that the students had fun while they learned.

Challenges

Each day, an estimated 25-30 out of the 33 registered students attended, with about 10 children being either late or not turning up. Some parents were unable to drop their children at the facility some days and they missed their lesson; however the bus to school made the program easier for families.

From a school perspective, whilst it was disruptive to the class for the students to arrive at 9:30 am it was no more disruptive than the school's typical swim program, and in fact they prefer the timing of the before school program. Supervision was a challenge as they needed two teachers (a male teacher and female teacher to assist in the change rooms) to attend every day, which the school could not spare, so a female swim teacher stepped in to assist each day. Smaller schools in particular may struggle with these issues.

Benefits

Overall, the program was worthwhile and the feedback from parents and students was positive. Being a funded program, there were more students from lower socioeconomic backgrounds than usually attend swimming lessons, which was an excellent opportunity to access this at-risk group, who may otherwise miss out.

The program was unique in that it taught useful water safety and lifesaving skills in addition to water familiarisation. The students in the Shepparton area have so much access to water in the Goulburn Valley, including the Murray River and Goulburn River, and this program provided them with the skills to behave safely in and around water and respond appropriately to dangerous situations.

Impacts on facilities

Swim teachers all provided positive feedback on the Program and they would all recommend it to other aquatic facilities. Half (50%) rated the time of day as 'very good' and a further 38% rated it as 'good'. Seven of the eight swim teachers said they would participate in a program like this again. The swim teacher who was 'unsure' after the 10 day intensive Program felt that *'10 days straight was hard on my own children'*, but she would participate in the weekly Program.

The swim teachers made minor suggested changes to the Program content; mainly that they felt too much emphasis was placed on rescues and a greater focus was required on swimming skills.

'I found the program very rewarding from start to finish. So organised and professional. I hope there are many more [programs] to follow, hoping we are the leaders in water safety. I really enjoyed being part of it.'

- Swim teacher

Barriers to participation

Not all students participated in the Program. Teachers at one of the schools felt that many of the students who needed to participate did not attend. They felt this may have been due to factors such as a lack of family support (parents not prepared to get up earlier in the morning), juggling early

morning dairy farm work, parents not reading or being shown the information or because swimming and water safety was not a priority for some families.

Box 2 Excerpt from speech- School Captain (School 2)

'On behalf of the Year 5/6 students, I would like to thank Life Saving Victoria for funding this 10 week program and for selecting our college which has enabled the students an opportunity of a lifetime. We have learnt valuable swimming and lifesaving skills that can be applied in channels, dams, rivers and the ocean. We are now confident what to do when a boat capsizes and how to save the life of someone who is in trouble in the water.

I highly recommend this program to continue as it not only teaches the students to swim correctly but also teacher CPR, what the coloured flags are at the beach and good decision making skills when near water'.

Cost evaluation

The cost evaluation focused on two areas; the cost per student to conduct the Program and the willingness of parents to pay for the Program.

Cost per student

The total cost per student to participate in a 10 lesson Program varied from \$127 to \$217 (or \$12.70 - \$21.70 per lesson) based on three factors: the proximity of the school to the facility, the need for transport one-way (facility to school) or two-way (school to facility and return), and the ability of the school to provide a school teacher for supervision in-kind or at a cost to the program (

Actual cost
 Expected cost

Figure 2).

School close to facility (within 5km of the facility)			School distant from facility (within 50km of the facility)			
Transport			Transport			
one-way			one-way			
two-way			two-way			
Supervision	in-kind	\$127	\$140	in-kind	\$144	\$175
	funded	\$168	\$182	funded	\$186	\$217

Actual cost
 Expected cost

Figure 2 Cost per student estimates of the Before School Swimming and Water Safety Program

The overall cost of this program was less than that reported nationally, \$32.77 per person (RLSSA and AUSTSWIM, 2010), indicating the cost effectiveness of the Program. Targeting one-way transport, particularly for schools further away from the facility and seeking in-kind supervision from school teachers each lesson is the most cost effective method of Program delivery.

Willingness to pay

Willingness to pay for the Program per student varied from between \$40 to \$50 (parents) to \$60 to \$80 (swim teachers) as evidenced by:

- Parents were asked what they would be willing to pay for each lesson of the Program, including bus transport. Most would be willing to pay \$4-\$5 (39%), followed by \$9-\$10 (29%) and \$6-\$8 (13%).
- Swim teachers felt \$6-\$8 would be an appropriate cost per student charge for each lesson (38%), followed by \$1-\$3 (25%).
- One of the schools normal swim program is a water familiarisation program, which comes out of school fees and fits within the \$6-\$8 per lesson range; however, it is only four lessons as opposed to ten.

These observations demonstrates that the need to subsidise the cost per student for this Program (\$127-\$217) is significantly above what the majority of parents would be willing to pay (\$40-\$50); a difference of approximately \$90-\$160. This supports the need for funding to subsidise these programs.

To further support this, a number of parents, swim teachers and school teachers stressed that such programs need to be either very cheap or at no cost to enable access for all, particularly those arguably most in need of swimming and water safety skills and knowledge (i.e. low socio-economic status and CALD families). One parent demonstrated the value of running the Program at no cost by saying, *'I can't thank you enough for providing this opportunity for my kids. Being a single mother of 4, I would not have been able to pay for this Program. It has made them better swimmers and more confident in the water. I think it's great they have the skills to not only save themselves but also someone else if necessary'*.

For this reason, every school teacher would like to offer the Program again to their students, even if it wasn't funded or subsidised. However, they know that a number of families wouldn't take it up if they had to pay, but school teachers felt they *'could make it work because of the value of it'*.



Discussion and Recommendations

The Before School Swimming and Water Safety Program enhanced the personal resilience of participating students by increasing their swimming skills and water safety knowledge. In addition, they learned valuable lifelong personal survival skills, became more confident to recreate safely in and around water and learned to be organised and take responsibility for themselves. Furthermore, an increase in community resilience was demonstrated by parents volunteering to assist each day. This demonstrates the way government and the community can contribute resources to ensure the success of such programs.

Based on the unanimous support for the Program from all stakeholders, the pilot Program was a success. This was due to effective partnerships between LSV, Aquamoves Lakeside Shepparton and the schools. The students enjoyed the lessons and their parents were grateful for the opportunity and would like to see it expand or continue so their other children can participate. School teachers and coordinators also understood the benefits of the Program on their students and would also like their school to be involved in future. The swim teachers provided positive feedback and recognised the significant value of the Program.

The early mornings were no issue for the school close by, and although they were a minor impedance for the school further away, all those involved recognised that the benefits of participation far outweighed this inconvenience. In addition to gaining swimming and water safety skills and knowledge, many students developed new friendships, became more organised and displayed more energy, increased happiness and improved focus at school.

A factor that needed consideration for the Program was the provision of breakfast for the participating students. If the Program were to expand, it would be beneficial to seek further support for this component of the program, particularly if future programs target schools and families in low socio-economic areas, where the provision of breakfast to children may already be limited.

The Program was an excellent example of the value in establishing strong partnerships, with LSV taking a collaborative approach to the Program's rollout, delivery and evaluation. Besides the funding supporters and the facility, key aquatic agencies and clubs (School Sport Victoria, Swimming Victoria, Kyabram Swimming Club) came on board to offer their support by way of merchandise for the children (towels, goggles, caps and bags), all with an aim to encourage ongoing participation in aquatic recreation and swimming as a sport.

The cost evaluation demonstrated that there is a cost benefit to conducting programs before school, when transport is one-way and supervision is provided in-kind, particularly for schools located further away from a facility. A disparity existed between the cost per student to attend the Program and the amount parents would be willing to pay for their child to participate. This combined with the need to make this vital Program accessible for all highlights a preference to seek sources to subsidise it.

The recommendations listed below are based on the evaluation of the Before School Swimming and Water Safety Program pilot.

- 1) To improve the resilience of the Victorian community, swimming and water safety education should be mandatory in the school curriculum. This is supported by the Victorian Coroner's recommendation '*that swimming and water safety education should be a compulsory skill taught within the primary school curriculum to all Victorian children*'.
- 2) Investigate appropriate cost subsidies. For example, funding to enable access for all families and incentives such as open water program subsidies, i.e. LSV Open Water Learning Experience (OWLE) program.
- 3) Develop and implement an online student swimming capability database to track student swimming capability state-wide, provide a platform to continuously monitor and evaluate any interventions and identify best practice delivery models.
- 4) Conduct further pilot Programs with schools in metropolitan Melbourne to determine any variation in feasibility between metropolitan and regional schools.
- 5) Investigate the feasibility of incorporating the Program into existing before school programs.
- 6) Establish a working group with key stakeholders to:
 - a. review and refine the 'Lifesaving in Schools' curriculum and make it readily available for all schools to access, and
 - b. investigate methods to incorporate theoretical components of risk identification, behaviour modification and basic survival skills into the curriculum.
- 7) Develop targeted 'Lifesaving in Schools' professional development sessions for swim teachers and school teachers, highlighting the need to focus on survival swimming skills.
- 8) Improve promotion of the Program to encourage students of all abilities and backgrounds to participate. This includes highlighting the unique content of the Program, that it focuses on personal survival skills to prepare a child for emergency scenarios in water as well as unintentional entry into water.
- 9) Prioritise participation of students from low socio-economic and CALD backgrounds.



Conclusions

The Before School Swimming and Water Safety Program pilot has demonstrated a successful model of delivering key water safety and survival swimming skills to children in Years 5 and 6 and empower them to recreate safely and confidently in, on or around water. The program was successful in enhancing the personal resilience of Victorian students by increasing their swimming skills and water safety knowledge. The support for the Program from all areas and the positive changes observed in the students demonstrate the feasibility of the program, delivered by qualified swim teachers, in partnership with Victorian schools and community aquatic facilities. In addition, the Program was successful in addressing issues previously identified including the high cost of swim programs, crowded school curriculums and high demand on classroom time to attend traditional learn to swim lessons.



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