



Preventing the Drowning of Under-Fives in Aotearoa New Zealand

I ore te tuatara ka puta ki waho

A problem is solved by continuing to find solutions



Preface

Preventing the Drowning of Under-Fives in Aotearoa New Zealand was developed to describe the rationale and background to Water Safety New Zealand's (WSNZ) 'Under-Fives' policy and the development of drowning prevention and water safety initiatives for this cohort. The purpose of this document is to set out the policy objectives which will guide future, or expansion of existing, initiatives for the Under-Fives cohort and to outline a range of proposed initiatives. WSNZ is seeking awareness, alignment, and partnership with health and education ministries, agencies, and corporates to enable progression of the proposed initiatives and expansion plans.

Executive Summary

One of the leading causes of death for the Under-Fives in Aotearoa New Zealand is drowning. Most of these deaths occur in and around the home and are the result of inadequate supervision and unrestricted access to water. Aotearoa New Zealand has a comparatively high rate of Under-Fives drowning fatalities internationally and Maori are disproportionately affected.

Water Safety New Zealand (WSNZ) is seeking to eliminate preventable drowning for the under-five's cohort in Aotearoa New Zealand (i.e. achieve an annual under-five drowning toll of zero). The approach to drowning prevention for the Under-Fives is based on using human development theory to segment this cohort into three smaller sub-groups. The risk profile for each of these sub-groups shifts from the ages of zero to five years, and different initiatives are needed to address these different risks.

Babies - under 18 months

Biggest Risk– baths. Current initiative: The bathmat campaign undertaken in conjunction with Plunket. The aim of which is to increase drowning prevention knowledge of families at the point of key risk for pre-walking babies.

WSNZ is looking to expand this initiative by improving geographical coverage of current provider and recruiting new providers to reach priority, at risk groups. WSNZ is also seeking greater awareness and alignment with interventions for the Under-Fives by health and education agencies.

Toddlers - 18 months to three years

Biggest Risk - home pools and other bodies of water on the property. Current initiative: Eight ways marketing campaign which focuses on educating and raising awareness amongst parents and caregivers of the importance of eight key water safety points.

WSNZ is looking to expand this initiative by partnering with public health agencies and corporates on existing and new social marketing initiatives which would enable greater reach and recall.

Preschoolers- three to five years

Biggest Risk– home pools and bodies of water outside the property. Current initiative: Fencing of home pools legislation which provides that residential pools must have physical barriers that restrict access by unsupervised children under five years of age.

WSNZ is looking to expand this initiative by advocating at the local government level, and through a water hazard awareness campaign, for the greater use of barriers-around water races, effluent ponds and other water hazards commonly found in rural New Zealand.

WSNZ is also seeking to expand the delivery of foundational water skills education, as a precursor to learning Water Skills for Life. It is proposed that WSNZ advocate for having foundational water skills included as part of the ECE curriculum and encourage parents and caregivers to learn water safety education and techniques.

WSNZ will develop an Under-Fives Action Plan that includes the highest value-adding, feasible initiatives and that this plan be promoted to potential funders, delivery partners and collaborators. There is also scope to build some of these actions into the upcoming sector strategy, the pilot regional water safety strategies and WSNZ's *Kia Maanu, Kia Ora* strategy.

Background

Research shows that nine in every 100,000 New Zealand children will suffer a fatal unintentional injury and the risk of injury increases as they age. Most deaths from unintentional injury are amongst children under four years of age, and the leading causes of death for this age group are suffocation and drowning. Both drowning fatalities and hospitalisations are highest among those aged 0 to 4 years, with the rate of injury in this age group around five times higher than in children aged 5 to 9, and more than six times higher than in children aged 10 to 14. Preschoolers are particularly at risk of drowning in accidental immersion incidents (where the victim had no intention on entering the water for recreational purposes). Around one quarter of child accidental immersion fatalities involve preschoolers, (Safekids Aoteroa, 2015).

Most under five drowning incidents are a result of inadequate supervision. Twenty years ago, in 2000, the average rate for Under Fives drowning was 12 children per year. Of these, an average of eight drowned around the home environment which includes baths, pools, buckets, and other vessels. Ten years on, in 2010, the average rate had dropped to eight per year, with five of these occurring around the home. However, in 2011 the annual number of under-five drownings was again beginning to rise and there was a total of 12 under five drowning fatalities that year.

This led to the water safety and child safety sectors collaboratively devising initiatives which would have more impact on drowning prevention for the Under-Fives. These were:

- In 2010 a partnership between WSNZ and Plunket was established and the bathmat 'within arm's reach' campaign was established. WSNZ funded the delivery of non-slip bathmats printed with a water safety message to parents at the Core 4 Well Child Check.
- WSNZ also developed the *eight ways to keep babies and toddlers' safe campaign* in 2018 which is an information campaign focused on the older baby and toddler age group- 18 months to three years.

By 2019 the average number of under-five drownings per year had reduced to four, and two of these occurred in the home environment. The 2019 annual preschool drowning total was seven which was equal to 2017's the highest annual total recorded since 2011. Despite these fluctuating annual totals, the overall trend is downward. (Note the average has stagnated over the past 6 years) See figure 1 below.

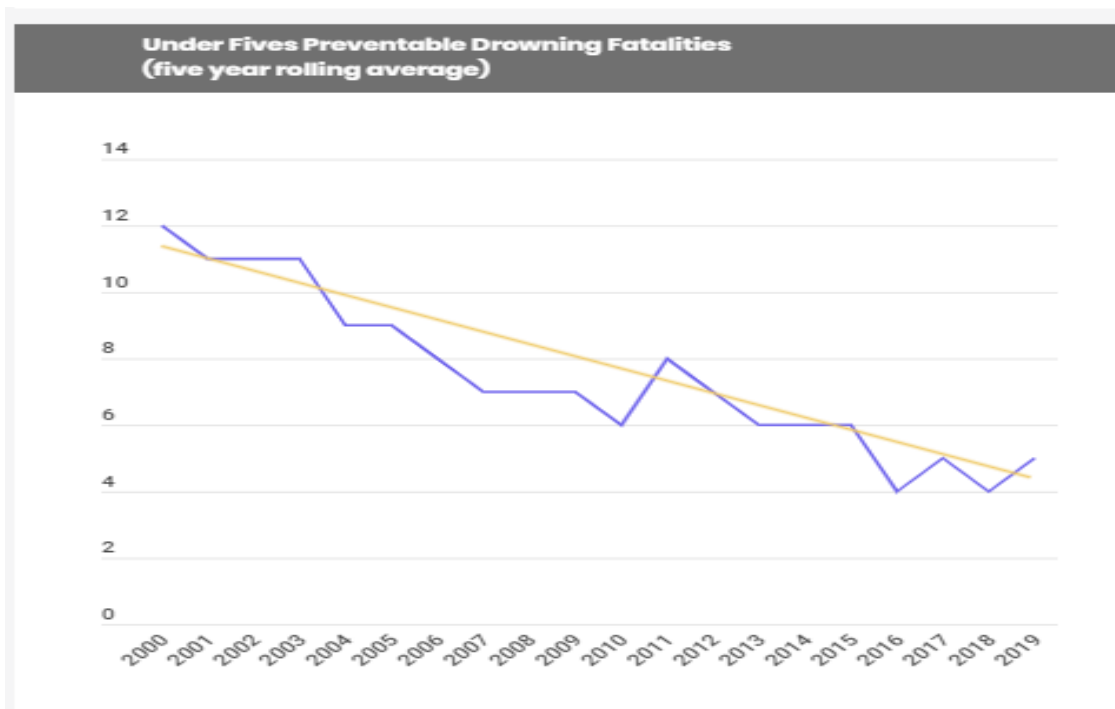


Figure 1 Under Fives Preventable Drowning Fatalities (five year rolling average) 2000-2019

In the Water Safety Sector Strategy 2020 launched in 2015, one of the stated drowning prevention targets was to reduce Under-Fives drownings to zero by 2020. The current trends in data suggest this goal is not likely to be reached in 2020 and further initiatives are required. (Water Safety New Zealand, 2015)

Maori under-five drowning

Under-five drowning is a significant issue for Māori. A third of all under five drowning fatalities over the last 10 years were tamariki Māori. This proportion is double the total Māori population share in New Zealand - 16.5% in 2018, (Stats NZ , 2020). Over this period under-five drowning fatalities were 10.5% of the total Māori drowning toll, compared to 6.9% for NZ as a whole – a proportion that was roughly half as large, figure 2.

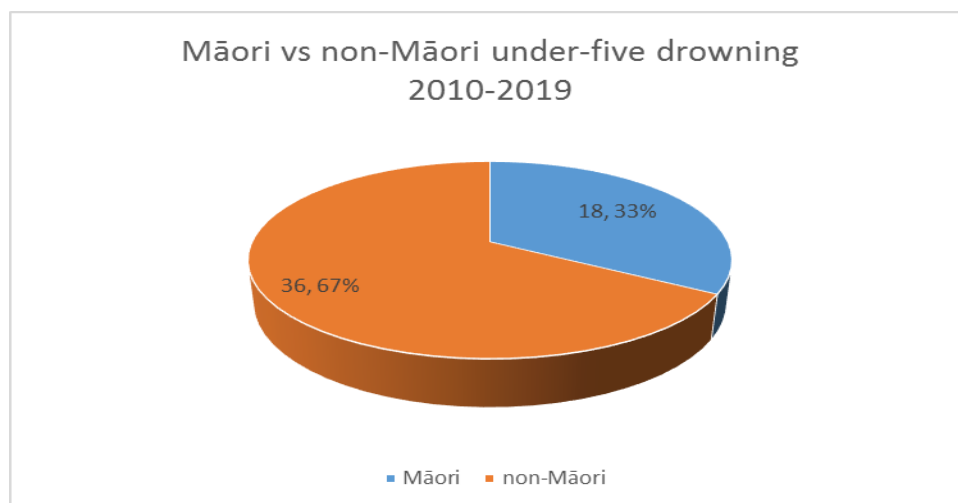


Figure 2 Maori vs Non-Maori Under Fives fatal drowning 2020-2019

Over 40% of all under-five hospitalisations over the last ten years were tamariki Māori and Māori under five hospitalisations accounted for over 30% of total Māori hospitalisations. This is in contrast to the 5-14-year age group, which made up 16% of all Māori hospitalisations. In comparison with other ethnicities in the under-five age group, during the same period, NZ Europeans made up 36% of total hospitalisations, Asians 4.8%, Pacific Peoples just over 8% and other 9%.

The drivers of the disproportionate drowning and hospitalisation rates of Māori Under-Fives are currently not clear and would benefit from greater research.

Globally, drowning is associated with poverty, so the relative socio-economic deprivation of Māori in Aotearoa is likely be one of the drivers of Māori under-five drowning. Ethnicity may also be a risk factor due to differences in swimming ability and experience in the water, lack of opportunities to learn to swim and lack of supervision in environments where at-risk population groups swim, (UNICEF, 2008). Therefore, there is scope to look beyond socio-economic factors to cultural factors in the analysis of Maori under-five drowning. A comparative analysis of research into indigenous children's drowning may also add value.

International Comparisons

Preventable drownings are a growing public health and safety issue in Aotearoa New Zealand. Our preventable drowning mortality and drowning related injury rate is one of the highest in the Organisation for Economic Co-Operation and Development (OECD), twice the rate of Australia and five times that of the United Kingdom. This is also the case with under-five drowning, with New Zealand's under-five drowning rate per 100,000 the highest in the OECD. Drowning is a leading cause of death amongst Under-Fives worldwide and the highest global drowning rates are among children aged 1-4 years. The risk profile for Under-Fives differs from country to country, however even in countries with vast coastlines such as New Zealand, Australia, Canada and Vietnam, most drowning happens inland. Whether that is in a bucket, bathtub, pond or pool, almost all water is a risk for drowning, especially where very young children are concerned, (WHO, 2014).

Sector Strategy

The Sector Strategy 2020 set out the water safety sectors plan to work collectively to achieve greater impact-working towards a vision where no one drowns. The joint goals agreed upon include to bring preschool drowning down to zero. In order to achieve this goal, the water safety sector, and the wider New Zealand community, needs to work together on both existing and new initiatives to deliver attitudinal and behavioral change and improve parents knowledge of water safety and the importance of active supervision, (Water Safety New Zealand, 2015). This will in turn drive a culture change where all New Zealanders, including our most vulnerable members of society, are safe in, on, and around the water. The following analysis of the ages, stages and different risk profiles of the Under-Fives guides the development of policy objectives and initiatives for this age group.

Analytical Approach

WSNZ's approach to drowning prevention for the Under-Fives is based on segmenting this cohort into three smaller sub-groups:

- *Babies* - under 18 months
- *Toddlers* - 18 months to three years; and
- *Preschoolers*- three to five years.

This approach is informed by human development theories that break the life cycle development down into stages. Influential human development theorist Erik Erikson maintained that within the span of a lifetime, individuals advance through a series of eight developmental stages each characterized by a unique psychological issue, but each stage also having a biological foundation in an individual's physical maturation and cognitive development.. Erikson's theories are widely used within the social sciences and other disciplines and remain fundamentally important for both informing psychosocial development and human development stages. Erikson's stages of early childhood are early infancy 1-1 ½, toddler 1 ½ to 3 years, and early childhood 3 to 6 years, (Erikson, 1982)

The risk profile for each sub-group within the under-five cohort is different and requires different initiatives to address these different risks. Drownbase data from the last 10 years (2010-2019) shows that children under the age of one most frequently drown within the home in the bath (33%) or other domestic locations such as buckets (16%). Once children reach the age of two years drownings no longer occur in the bath but outside the home, most frequently in pools, (28% for both two and three-year olds). 28% of two-year olds drown in ponds (frequently on the home property) and 42% of three-year olds drown in rivers. Over one third of four-year olds drown in home pools followed by other domestic locations, creeks, rivers, and streams (12% each).

The risk profile therefore shifts from the ages of zero to five years; from the bath to home pools and other bodies of water on the property for the age of two to three years; and to home pools and bodies of water outside the property for the four year age group.

These shifts in risk profile are likely due to the different developmental, motor, and cognitive skills stages of the different ages. Children grow and develop quite quickly from birth to five years and go from learning to sit unaided, to crawling, walking, running, and climbing. Children additionally progress from high dependency on parents and caregivers (i.e. newborn to one year) to wanting to have more autonomy and independence (the "I can do it myself" stages of the toddler and preschool years). This leads to young children venturing further from the supervision of parents and caregivers if not closely monitored and taking risks (such as squeezing through gaps in pool fences to explore the pool area or reaching into ponds or other bodies of water to retrieve lost toys).

Policy Objectives

WSNZ's overarching policy objective for the under-five cohort is to eliminate preventable drowning (i.e. the annual drowning toll is zero).

WSNZ's other policy objectives for the cohort are that:

- WSNZ encourages all parents and caregivers to always supervise young children actively when near any body of water.
- WSNZ encourages parents and caregivers to maintain a safe home environment through compliance with the Building (Pools) Amendment Act 2016 and through the elimination and/or isolation of other water hazards around the home (e.g. by emptying water vessels)
- WSNZ encourages all parents and caregivers to develop cardio-pulmonary resuscitation (CPR) skills for babies and young children.

- WSNZ encourages all parents and caregivers to practice water safe behaviours, both as an example to children and when supervising children

These objectives have applicability to all three of the under-five sub-groups. For each under-five sub-group WSNZ has identified policy objectives specific to their risk profile. These are outlined below along with a summary of current interventions for the sub-group and a brief description of the proposed new intervention. Expected challenges and likely risks for each intervention are also discussed.

Māori Objectives

WSNZ recently refreshed its Māori drowning prevention strategy - *Kia Maanu, Kia Ora* – which aims to develop more effective and sustainable drowning prevention interventions for Māori and make engagement with iwi and Māori part of WSNZ's way of working. How WSNZ's work on Māori Under-Fives drowning prevention can be better aligned with the objectives of the *Kia Maanu, Kia Ora* strategy needs greater exploration and is a priority.

Babies Under 18 Months

Policy Objectives

WSNZ encourages all parents and caregivers to maintain hand contact with children under the age of 18 months while in the bath or shower.

WSNZ encourages all parents and caregivers to empty the bath, containers (including buckets) and paddling pools of water after use. Moveable items (i.e. buckets and paddling pools) should be packed away out of reach.

Current Drowning Prevention Intervention

WSNZ's flagship initiative for babies under 18 months is the Bathmat campaign. WSNZ has entered into a National Infrastructure Program agreement with the Royal New Zealand Plunket Trust for the delivery of this initiative.

In return for guaranteed annual funding, non-slip bathmats printed with a water safety message are given to parents at the Core 4 (approximately 5 months) Well Child Check by their Well Child (Plunket) nurse. In 2019/20 it was agreed that Plunket would ensure 29,092 bathmats would be delivered to Parents enrolled with Plunket. The Well Child nurse additionally speaks to the parent or caregiver about water safety and reiterates the message on the bathmat, that is to *always supervise your child around water, always*. Water safety messages are reiterated at the next core check and a sticker is placed in their child's Well Child Tamariki Ora Health Book. Key water safety messages are additionally published on the Plunket website under the 'You & Your Child' section and advertised on posters placed around Plunket clinics.

In addition to bathmat delivery by Plunket, during 2019/20 6,500 bathmats were to be delivered to Māori families via Tamariki Ora providers under contract to regional District Health Board's (DHB's) and 1,992 to Safekids for distribution to families through their home safety workshops.

The aim of the bathmat campaign is threefold:

- to increase drowning prevention knowledge of families with newborn babies about the point of key drowning risk (i.e. the bath)
- To provide parents and caregivers with a useful tool for keeping young children from slipping in the bath or shower; and

- iii. To provide a visual reminder to parents and caregivers about keeping babies safe in the bath.

The bathmat campaign is a collaborative initiative designed to meet an identified need. The partnerships created through this initiative also provide a basis for future collaborations on drowning prevention for the Under-Fives.

Status of Current Drowning Prevention Intervention

The bathmat campaign is evaluated biennially through a telephone or online survey of bathmat recipients. The last evaluation (2019) showed that the campaign has a significant impact on parents' knowledge, attitudes, and behavior, specifically relating to active supervision of young children around water. The bathmat was also recognised by parents and caregivers as being a useful tool for keeping young children from slipping in the bath or shower.

Other key points from the survey were:

- The bathmat message has made people more aware of the threats water can pose to young children
- 77% of parent's and caregivers who said they used the bathmat recalled a version of its safety message
- 84% of those who received a bathmat changed their behavior as a result of the messaging on and associated with the bathmat, a dramatic lift from 53% in 2017
- Compared with those who have not used the bathmat, those that did use it have significantly higher changed awareness and behavior, (MMResearch, 2020).

Currently the bathmat initiative reaches just over 50% of all babies under 18 months. Around 58,000 babies are born every year, meaning there are about 84,000 babies under 18 months old in New Zealand at any given point. In 2018/19 the Bathmat initiative reached around 44,000 babies.

However, Plunket's 2019 annual report states that they see 85% of all newborns each year. 40% of these are European, 17% Māori, 20% Asian, 8% Pacific, 4% other and 11% unknown, (Plunket, 2019). Therefore, there is scope for the initiative to reach more families either through Plunket or other providers. The 15% that Plunket are not seeing need to be reached and expansion to other well child providers could enable this successful campaign to have even broader coverage.

A 2018 Listener article highlighted the fact that some areas such as Rotorua and the West Coast had been without Plunket services for a long time. That Plunket is not reaching some regions was reflected in the 2019 Bathmat Campaign Evaluation which showed that parents/caregivers were more likely to have received a bathmat in the Wellington/Wairarapa (96%) and Hawkes Bay/Manawatu/Whanganui regions (91%), and were less likely to have received one in South Northern (61%), and Central Northern (61%), and BoP/Lakes/Gisborne regions (60%), (MMResearch, 2020).

Plunket claims to provide well child services to approximately 80% of all Māori newborn babies (Plunket, 2020). It is unclear how many Māori babies receive a bathmat as in the 2019 bathmat campaign evaluation survey unfortunately only 8% of respondents were Māori, different methodologies and ways of ensuring evaluation reaches all ethnicities must be considered by both Plunket and WSNZ in future evaluations.. The remaining 20% of Māori families that do not enroll with Plunket can potentially be reached through other well child tamariki ora providers.

Through expansion to additional providers it is hoped that a greater focus on priority, at risk groups can be achieved. WSNZ is also seeking greater awareness and alignment with interventions for the Under-Fives by ACC, Ministry of Health, DHB's and other health and education agencies.

Challenges and risks.

The bathmat campaign is a safety promotion intervention which requires continuous and planned execution to remain effective. New parents continually need to be reached as part of their learning to safely care for their babies and toddlers. For the Bathmat initiative to continue to be successful:

- Plunket needs to maintain and improve its reach in its current areas of operation; and
- New delivery partners must be willing to come on board in order to make expansion a success.

Significant financial input is required to sustain the campaign nationwide. Currently a cash investment of \$150,000 per annum produces bathmats to reach just over 50% of all babies born annually.

- Expansion would require more financial investment from WSNZ or contributing partners.

As a result of the COVID-19 pandemic Plunket is looking at greater online delivery of its core services, including Well Child Checks. How this will impact on the delivery of the Bathmat initiative and its future expansion is yet to be determined.

Toddlers 18 Months to Three Years

Policy Objective

WSNZ encourages parents and caregivers to maintain a safe home environment through compliance with the Building (Pools) Amendment Act 2017 and through the elimination and/or isolation of other water hazards around the home (e.g. by emptying water vessels).

Current Drowning Prevention Interventions

WSNZ actively encourages active adult supervision through the *Eight ways to keep babies and toddlers' safe* campaign. This campaign includes and moves beyond the under 18 months age group to include toddlers aged 18 months to three years.

The focus of this campaign is on educating and raising awareness amongst parents and caregivers of the importance of the following:

- i. Constant active adult supervision always
- ii. If in a group, have an active adult supervision roster
- iii. Identify water hazards in and around the home
- iv. Use the water safety bathmat always
- v. Avoid distraction
- vi. Teach children water safety behavior
- vii. Use of lifejackets
- viii. Supporting children and giving them enjoyable and positive early experiences around water.

The above eight water safety messages are communicated to the public through social media campaigns, publication in print media and on the WSNZ website, (Water Safety New Zealand, 2020).

Status of Current Drowning Prevention Intervention

The objective of the *Eight Ways* social media campaign is to try and change the behaviour of parents and caregivers of babies and toddlers around water. It is thought by improving their knowledge about drowning risks, attitudes will change, and this will lead to a reduction in risk-taking behaviour (and therefore reduced drowning). Behaviour change is however a long-term strategy and requires continuous activity and reinforcing messages to be achieved. This means an ongoing and sustainable campaign is required in order to affect the long-term change sought.

Whilst the current social media campaigns are impactful and achieve a reasonably broad reach, the campaign would benefit from expansion. A recent campaign awareness survey of 252 parents undertaken by MMRResearch on behalf of WSNZ asked parents if they recalled seeing water safety messages on Facebook or Instagram. Topline results show that 27% recalled recently seeing messages about keeping young children safe around water, although only 10% recalled a message unprompted compared to 37% once prompted, (MMResearch, 2020). These results indicate that potentially many parents are missing out on seeing these water safety messages. The campaign may also benefit from the addition of a ninth point; *Caregivers need to be able to respond in an emergency*. This response includes not just having the ability to carry out cardiopulmonary resuscitation but being able to respond quickly and effectively if an emergency may arise.

Expansion requires collaboration with new partners. Partnering with public health agencies and corporates on existing and new social marketing initiatives would enable greater reach on a continual basis. There are co-production opportunities here – any new WSNZ campaign could support work with parents of toddlers already underway.

Challenges and Risks

The *Eight Ways* campaign is a marketing campaign which requires continuous and planned execution to remain effective. Parents and caregivers of toddlers continually need to be reached as part of their learning to safely care for their little ones around the home. Therefore, for this campaign to be an effective behaviour change campaign, it requires a mechanism which will constantly remind parents and caregivers to implement water safety strategies around the home.

Significant financial input is required to implement and sustain a social marketing campaign nationwide. In the recent report of the Water Safety Working Group established to provide advice on how the Government can support an effective, efficient water safety sector, recommendations were made about the development and delivery of social marketing campaigns to target high-risk groups. Under-Fives were identified as a high-risk group in the report, and it was recommended that \$1.455 million over 3 years be allocated for social marketing.

Preschoolers Three to Five Years

Policy Objectives

WSNZ encourages parents and caregivers to make themselves aware of water hazards around the home, in neighboring properties and at any place in the community that they are visiting with their child/children.

WSNZ encourages all land and business owners to consider the potential water hazards which pose a risk to young children present on their property, both existing and in development, and take steps to minimize and isolate those risks.

WSNZ encourages the reduced exposure to water hazards through strategic use of barriers

WSNZ encourages all parents and caregivers to instill water confidence and water safety awareness in their young children.

Current Drowning Prevention Interventions

Research shows that fencing reduces drowning of young children in home pools. The most at risk group for drowning in pools is the Under-Fives age group, who are mobile but lack understanding of the sinister nature of water and lack the ability to get themselves out of a pool should an accidental submersion occur (McDonald, Taylor, Carter, & Ward, 2003). A young child is by nature inquisitive and water offers exciting possibilities, (Geddis, 1984). Statistics from Queensland Australia have also showed that pool fencing has proven to be effective in reducing the rate of child drownings, where fencing policies are rigidly policed, (Milliner, Pearn, & Guard, 1980). The drowning of Under-Fives in New Zealand decreased dramatically after the Fencing of Swimming Pools Act was enacted in 1987. Before this pool fencing legislation was enacted, an average of 10 young children per year drowned in residential swimming pools.

New residential pool safety legislation for New Zealand came into effect on 1 January 2017. The Building (Pools) Amendment Act 2016 repealed the Fencing of Swimming Pools Act 1987 and included new provisions in the Building Act 2004. Under the Act all residential pools (including portable pools) that are filled or partly filled with water must have physical barriers that restrict access by unsupervised children under five years of age. This requirement applies to pools that can be filled with water to a depth of 400 mm or more (New Zealand Legislation , 2016).

The Act also provides for the mandatory inspections of swimming pools every three years by territorial authorities, and gives territorial authorities additional enforcement tools, including notices to fix.

WSNZ participated in the policy process around the new residential pools safety legislation and presented to the Select Committee considering the Bill. Information on fencing residential pools is provided on WSNZ website and this notes the drowning risk for the Under-Fives can be reduced by:

- always supervising children in or near a pool
- maintaining the fence and gate in good condition
- always making sure the gate to the pool is safely shut
- setting rules of behaviour around the pool and teaching your child water safety and swim and survive skills
- clearing away toys and flotation aids from the pool area when not in use
- never prop open the pool gate; and

- learn first aid and resuscitation.

WSNZ partners with Protector Aluminum (a pool fencing and gate specialist) in promoting water safety and compliance with pool fencing legislation around the home, the messages are:

- Make your home water safe by removing or isolating all potential water hazards
- Pool fencing/barriers are mandatory and must be inspected every three years. Local councils enforce this bylaw and issue infringements and/or fix notices where required
- Safety covers must be used as barriers for spa pools and hot tubs.

Proposed Drowning Prevention Interventions

The *Eight Ways* campaign and pool fencing compliance remains relevant for this age group, however, there is potential for new interventions to be developed that build on parents' and caregivers' learning from these 2 initiatives and the Bathmat campaign.

One is the extension of the pool fencing policy initiative to focus-on hazards outside of the home, those in neighboring properties and any place they are visiting with their child/children in the community. The other is an initiative to teach foundational water safety skills to the 3-5-years age group. This would support an easier transition for preschoolers to Water Skills for Life (WSFL) lessons in year one at school and equip parents and children with vital water safety knowledge and skills from an early age

Water Hazard Awareness and Policy Advocacy

A campaign raising awareness of water hazards in the community and the need to ensure risks to children are understood and addressed would build on the rationale behind the fencing of residential pools. The campaign would raise public awareness among landowners, the business community, and the general public of the need to assess and mitigate water hazards and the risk they pose to young children actively and regularly.

As part of this initiative, it is proposed that WSNZ undertake policy advocacy at the local government level to advocate for the development and implementation of policies, standards and building codes to reduce exposure to water hazards using barriers. This includes placing barriers strategically so access to water hazards is limited or more tightly controlled reduces exposure and drowning risk. The Building (Pools) Amendment Act 2016 currently covers pools and spas, however the coverage of fencing and barriers legislation needs to be extended to cover other hazards including but not limited to, water races, offal pits, irrigation dams, effluent and oxidation ponds.

A wide range of organisations from different sectors influence water safety and mitigate drowning risks. For example, DairyNZ and Work Safe both have guidelines to reduce the risks from effluent ponds and other farming and rural water hazards, but these are not enforced by any regulatory body. The recommended pond safety features include:

- **Fencing**-all ponds should be fenced off with a netting fence to prevent stock and children from accidentally falling into the pond; and
- **Escape ladders**- all ponds should have at least one permanently placed ladder or alternative escape means. (The DairyNZ website also states, "you can have a life buoy in the area too".)

These 'third party' guidelines could be built on and a consensus developed around what would be feasible to incorporate into any amendments to the legislative framework to reduce water safety hazards for children.

Foundational Water Safety Skills

Several studies have explored the age at which young children can learn and retain water safety skills. These studies have ascertained that very young children-from the age of around 2 years-can learn and retain some water safety skills, (Asher, Rivara, Vance, & Dunne, 1995; Brenner, Saluja, & Smith, 2010 & Olaisen, Flocke, & Love, 2018). Structured swim classes that help children (and their parents/caregivers) become familiar with and confident around water assist in setting the foundation for later swimming skills and aquatic safety, (Tozour, 2020). Studies have shown that swim lessons do have a protective effect against drowning for children aged 1-4 years and do not increase child's risk of drowning by making parents less vigilant, (Korioth, 2019; Brenner, et al., 2009; Brenner, Saluja, & Smith, 2010 and Weiss, 2010) however, the importance of active adult supervision at all times will remain a key water safety message that will continue to be delivered to parents through multiple channels (social marketing, direct messages from well child nurses etc.).

It is considered that foundational water skills program run as a precursor to Water Skills for Life (WSFL) would be a beneficial addition to the existing educational resources offered by WSNZ. It is proposed that engagement with Early Childhood Education (ECE) New Zealand and Kohanga Reo would be undertaken with the aim of having foundational water skills included as part of the ECE curriculum.

This program would require raising public awareness of the importance of familiarizing young children with water, at a community pool for example. There are numerous benefits to this including improving cognitive function, reducing the risk of drowning (in children aged 1 to 4), improving self-confidence, increasing child and parent/caregiver quality time, improving muscle development, coordination and balance, improving sleeping patterns and improving appetite, (Boyle, 2019).

Parents and caregivers would also be encouraged to learn water safety education and techniques, so they can play with their children in a safe aquatic environment. Early water safety learning experiences have the added benefit of improving parents and caregiver's awareness and confidence in child safety. The importance of not overestimating a child's abilities and supervising without distractions are likely to be the key early priorities of any program like this

Challenges/Risks

Water Hazard Awareness Campaign

Any proposal to change the regulation of water safety hazards, particularly one that has the potential to impose compliance costs, will need strong support from the sector, and buy-in from regulators and the public. This is particularly the case with advocating for mandatory barriers, which would impose new, and potentially significant, compliance costs on landowners.

This suggests that extensive engagement is needed before any feasible change proposals (and potential supporters for change) can be identified. Its only after a solid proposal has been developed could policy advocacy begin with central and/or local government.

Foundational Water Safety Skills

Having foundational water skills included as part of the ECE curriculum will also require WSNZ to undertake policy advocacy with key government organisations in the education sector. WSNZ aspires for WSFL to be the recognised standard for water safety education in primary schools, and there is a

parallel with what is proposed for foundational water safety skills. It may be that this ECE objective could be coupled with the planned advocacy around the expanded WSFL program.

It is not currently clear what the capacity is for the water safety sector to provide greater levels of foundational water safety skills. There are existing programs being provided, but better knowledge of any supply constraints is needed. There may be a training gap that has to be filled before increased numbers of foundational water safety skills programs can be delivered. In a similar vein, understanding how these foundational programs fit with the WSFL program is a key enabling task.

Next Steps

The following are the activity-based key actions that could be taken to improve drowning prevention for the Under-Fives in Aotearoa New Zealand.

Develop an Under-Fives Action Plan

This document outlines a range of initiatives that WSNZ and the water safety sector could pursue to reduce the preventable drowning of the Under-Fives. It is recognized that not all can be undertaken at once and that WSNZ needs to prioritise the highest value-adding, feasible initiatives for inclusion in an Under-Fives Action Plan. This plan can then be promoted to find funders, delivery partners and collaborators. There is also scope to build some of these actions into the upcoming sector strategy, the pilot regional water safety strategies and WSNZ's *Kia Maanu, Kia Ora* strategy.

Expand existing initiatives

WSNZ's current interventions aimed at reducing under-five drowning have been impactful but both would benefit from expanding to include segments of the community that they are currently not being reached.

- The Bathmat initiative needs to be expanded to ensure greater geographical coverage and a better focus on priority, at-risk groups.
- Expanding the *Eight ways* campaign to include a broader public health angle in order to identify potential collaborators for new social marketing campaigns.

Promotion to parents and caregivers

Improving the drowning outcomes for the Under-Fives requires parents and caregivers to change behaviours. To affect this co-production of outcomes, WSNZ needs to promote:

- active supervision as the primary way to ensure Under-Fives are water safe
- maintenance of safe home environments through the elimination and/or isolation of water hazards
- compliance with the Building (Pools) Amendment Act 2017
- the teaching of water confidence and water safety awareness to young children
- the uptake of training in CPR for babies and young children; and
- water safety education and techniques that improve parents and caregiver's awareness and confidence in child safety.

Behaviour change is a long-term strategy and requires ongoing reinforcing messages via social media and/or promotional activity, to be successful. For under-five drowning prevention there needs a social media campaign which will remind parents and caregivers to implement water safety changes and strategies around the home.

Undertake advocacy

To change current policy and legislative settings in the public sector to help reduce preventable drowning of the Under-Fives, WSNZ and stakeholders need to undertake policy advocacy:

- with key organisations in the education sector to have foundational water skills included as part of the ECE curriculum
- with key government organisations about addressing the disproportionate Māori Under-Fives drowning rate
- with landowners, the business community, and the public to build a consensus around feasible proposals for regulatory change regarding mandatory barriers to protect small children from water hazards; and
- at the local government level for the development and implementation of policies, standards and building codes to reduce exposure to water hazards using barriers.

Undertake research

The key area for new research in the Under-Fives drowning appears to be generating a better understanding of the drivers of the disproportionate drowning rate of tamariki Māori.

More information is needed to inform policy development, particularly about

- Plunket's gaps in current coverage areas and how to reach missing target groups
- the capacity of the water safety sector to provide greater levels of foundational water safety skill training
- how these foundational programs could be aligned with the WSFL program; and
- the technical issues around extending the coverage of The Building (Pools) Amendment Act 2017 to include other hazards.

Connect with Māori

WSNZ's Māori drowning prevention strategy - *Kia Maanu, Kia Ora* – is underpinned by an aspiration to improve relationships with Māori.

- How WSNZ's work on Māori Under-Fives drowning prevention can be informed by better relationships with iwi and Māori providers appears to be an area for further work; and
- More broadly, how the objectives of the *Kia Maanu, Kia Ora* strategy can inform more effective and sustainable drowning prevention interventions for tamariki Māori.

WSNZ's recent work with Kaupapa Māori providers has been driven by an aspiration to improve Māori connection to water at a spiritual as well as physical level. How strengthening this connection to water can improve drowning prevention for Māori Under-Fives needs greater exploration.

Relationships Building

In addition to working alongside existing partners on Under-Fives drowning prevention, new partnership and delivery collaborations will be needed:

- Tamariki Ora and other Māori organisations
- Pacific and Asian communities and Other target/high-risk groups
- Public health and health promotion organisations
- ECE sector; and

- Local and regional government.

Identify funding

The current funding environment looks challenging going forward, so proposals with clear benefit statements and strong buy-on from partners are most likely to be able to leverage funding. To this end WSNZ needs to find the resources to expand the reach of the Bathmat campaign and design and deliver new social marketing campaigns.

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