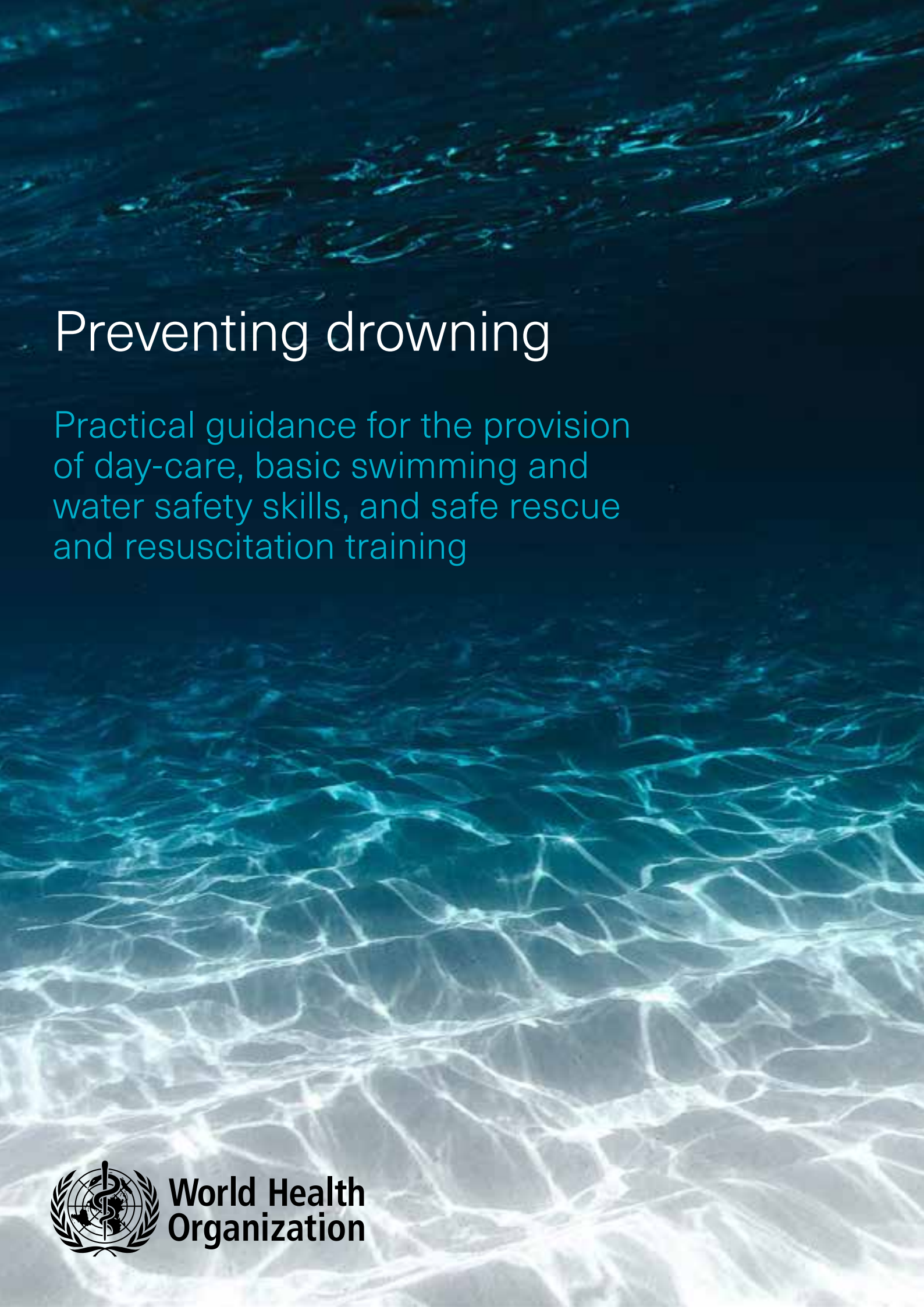

Preventing drowning

Practical guidance for the provision of day-care, basic swimming and water safety skills, and safe rescue and resuscitation training

World Health Organization

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Preventing drowning

Practical guidance for the provision of day-care, basic swimming and water safety skills, and safe rescue and resuscitation training

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Preventing drowning: practical guidance for the provision of day-care, basic swimming and water safety skills, and safe rescue and resuscitation training

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Abbreviations

CBCPC	community-based child protection committee
CIPRB	Centre for Injury Prevention, Health Development and Research, Bangladesh
CPR	cardiopulmonary resuscitation
CSI	community swimming instructors
ELDS	Early Learning and Development Standards
ERC	European Resuscitation Council
EYFS	Early Years Foundation Stage
HIV	human immunodeficiency virus
ILCOR	International Liaison Committee on Resuscitation
ILSF	International Lifesaving Federation
PRECISE	Prevention of Child Injuries through Social-intervention and Education
RDG	Recommendation Development Group
WHO	World Health Organization

Executive summary

The World Health Organization's *Global report on drowning: preventing a leading killer*, published in 2014, highlighted drowning as a serious public health threat. This follow-up resource provides practical guidance for three of the report's 10 evidence-based actions to prevent drowning (all of which are feasible in low-, middle- and high-income countries) and sets out how to implement these recommended interventions safely and effectively.

Intervention 1:
Teach basic swimming and water safety skills to school-age children aged 6 years and older.

Children should be screened for underlying health conditions that may place them at increased risk during lessons. Instructor-participant ratios should not exceed 1:5, and training should focus on basic water survival skills such as breathing, floating, and moving forward above developing skillful swimming strokes. Gaining parents' or guardians' verbal or written informed consent for children to participate is recommended, alongside safety assessments of lesson sites before each lesson (using a checklist), and annual safety audits of the programme itself for monitoring and quality assurance purposes. Practical guidance also includes recruiting local people already certified by a recognized training curriculum (or willing to be trained), and engaging with local authorities, schools, parents, local community groups and service providers to garner support for the programme. Strong safeguarding policies, procedures and measures must be present throughout the training cycle, involving the community in providing "good character" references for all instructors.

Intervention 2:
Provide community-based, supervised child-care for pre-school children to reduce drowning risk.

Day-care programmes can provide robust adult supervision in a safe and nurturing environment while parents are working, with trained caregivers and safe child-to-caregiver ratios that should not exceed 13:1. Programmes should have written procedures that explicitly state the age range of children to be cared for, and the hours and days of the week that they operate. Day-care

venues should be located no more than a 20-minute walk from participating children's homes. Ideally caregivers and assistants will be female, with as high a level of education as possible, and selected by a local committee comprising local authorities and residents. Day-care should provide a minimum of 1.2 square metres of space per participant (caregivers and children), be safely constructed (with closing doors operable only by adults) and allow for unobstructed supervision of children. It should offer a structured programme of age-appropriate physical and mental activities for children that draw from best practice in relation to early childhood development. Written guidelines must be established that clearly state the responsibilities of all involved in day-care programmes to protect children from abuse or neglect and report any suspicions to relevant authorities. A minimum of six unannounced annual inspections by a regional day-care centre supervisor should be made to monitor the quality of supervision and care.

Intervention 3:
Train bystanders in safe rescue and resuscitation.

Safe rescue and resuscitation training programmes should have a written document that specifies trainees' target age range and should use a maximum trainee-to-instructor ratio of 10:1 (or 5:1 when training in water). All safe rescue and resuscitation training programmes should use a structured curriculum based on relevant international guidance, and instructors should have age-appropriate education and be certified to teach the curriculum being used. The curriculum should stipulate that refresher training for resuscitation aspects of the training should take place at least every 12 months. In communities from which trainees will be drawn, safe rescue and resuscitation programmes should try to generate awareness and support for the training, set out when training will occur and how to participate, and address any sociocultural barriers. Safe rescue and resuscitation programme staff should build long-term relationships with local authorities and stakeholders to obtain support and assistance in facilitating training, and to ensure that training is sustainable in the long term. All safe rescue and resuscitation programmes should establish a monitoring system that allows for programme evaluation.

Global commitments made as part of the Sustainable Development Goals cannot be met as long as this preventable killer – particularly of children and young adults – is left largely unchecked. We urge all concerned to adopt the interventions set out in this resource and start to save lives and protect – without delay – those most vulnerable to drowning.

Introduction

The World Health Organization's *Global report on drowning: preventing a leading killer (1)*, published in 2014, highlighted drowning as a serious public health threat. Today, drowning claims the lives of over 230,000 people every year – the vast majority in low- and middle-income countries. This follow-up resource provides practical guidance for three of the report's 10 evidence-based actions to prevent drowning, all of which are feasible in low-, middle- and high-income countries. The three interventions dealt with in this publication were selected because they are a) delivered at community level, and b) have potential to cause harm if not implemented safely and effectively. They include:

- teaching basic swimming and water safety skills to school-age children;
- providing day-care for pre-school children;
- training bystanders in safe rescue and resuscitation.

Each of the three interventions has an established evidence base supporting its contribution to drowning prevention *(2, 3)*, and two of them – basic swimming and water safety skills, and day-care – have been the subject of a WHO guideline *(3)*. This practical guidance draws on this reviewed evidence base, as well as an extensive literature review that covered the safe rescue and resuscitation intervention. A 17-person Recommendation Development Group (RDG) was constituted to develop this resource, along with a roughly equivalent-sized External Review Group with collective expertise across the three interventions. A prioritization exercise within the RDG using a modified Delphi process led to the identification of key areas where it was felt that WHO should provide practical guidance for each intervention. Annex 1 briefly summarizes the rationale for each practical guidance statement. Annex 2 lists the institutional affiliation of all contributors.

This publication sets out how to implement these interventions safely and effectively. WHO recommends programme managers fully implement all practical guidance provided for each intervention, and that those tasked with approving or monitoring such programmes also ensure full adherence to the practical guidance in this resource.

Interventions

Teach school-age children basic swimming and water safety skills

Teaching basic swimming and water safety skills to school-age children aged 6 years and older reduces drowning risk. Basic swimming and water safety skills programmes should focus on acquiring basic water survival skills such as breathing, floating, and moving forward (above developing skillful swimming strokes).

This section provides practical guidance for the provision of basic swimming and water safety skills to children aged 6 years and older as a drowning prevention intervention. Programmes that provide these skills are referred to here as basic swimming and water safety skills programmes. They will most typically be implemented in low- and middle-income countries and predominantly, although not exclusively, within rural areas in these settings. The overarching objective of this practical guidance is to ensure that such programmes incorporate sound and effective risk-management practices, adhere to any and all relevant regulatory frameworks, and are implemented safely and effectively *(3)*.

Most basic swimming and water safety skills programmes assess (as a minimum) entering water and surfacing with the head above water; keeping the head above water for a minimum of 30 seconds (including by treading water); swimming in a controlled direction in any manner for at least 25 metres; self-rescue skills; and, in some programmes, cardiopulmonary resuscitation (CPR) *(4)*. In low- and middle-income countries lessons can be delivered in a variety of settings – some using sub-surface platforms in natural water bodies or in open water, such as oceans (see Practical guidance 11 for important considerations when using sub-surface platforms).

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Successful (often high-income country) basic swimming and water safety skills programmes are usually supported by government, reinforced by school curricula, certified by appropriate bodies, taught by trained and accredited instructors, evaluated for learning effectiveness, and tested for safety. To replicate these results in resource-poor settings with high drowning risk, such programmes should take account of the following practical guidance, which is split into pre-training, during training, and post-training phases. The practical guidance also addresses elements such as whom to target, how to select and recruit, and how to engage communities and other stakeholders to maximize the reach and impact of basic swimming and water safety skills training.

Practical guidance 1

Target school-age children aged 6 years and older with structured swimming and water safety skills lessons, especially those in rural communities who are regularly exposed to water.

Rationale

A key part of setting up a basic swimming and water safety skills programme is deciding whom to target. WHO recommends targeting school-age children aged 6 years and older. This is based on analysis of programmes such as SwimSafe in Bangladesh, Thailand and Viet Nam, which shows that children under the age of 6 years cannot achieve the required skills level within the curriculum timeframe, and that successful completion of the programme does not exceed 80% until 8 years of age *(2)*. Rural children are a particularly important target subgroup, as they are the most exposed to water and therefore have the highest risk of drowning *(5, 6, 7)*.

Note: It is important to note a distinction between high-income and low- and middle-income countries when considering the age at which WHO recommends starting basic swimming and water safety skills training. In high-income countries it has been shown that basic swimming and water safety skills can be taught to children under the age of 6 years, but this requires a number of other measures to be reliably put in place, such as fewer participants per instructor, warmer, controlled water, and a higher number of lessons. These measures may not be feasible in low- or middle-income settings – the settings with which this practical guidance is primarily concerned.

Implementation considerations

Targeting school-age children aged 6 years or older: The concept of "developmentally appropriate practices" can be useful when selecting participants for swimming and water safety skills programmes in low- and middle-income countries, and helping to decide if a child (aged 6 years or older) is suitable to enrol *(8)*. Developmentally appropriate practices involve looking not only at age as a factor for readiness for lessons, but also physical, cognitive, mental and social readiness, including the degree to which the child enjoys the water, the child's relative appreciation for risks associated with water, and the ability to follow directions and adhere to minimum safety rules (see Practical guidance 3 for gaining parental consent).

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Another good reason for targeting school-age children aged 6 years or older is that, in low- and middle-income countries, conditions such as malnutrition, birth injury with physical and/or mental disability, asthma and epilepsy before the age of 6 years are hard to screen for, placing at risk potential participants in swimming and water safety skills lessons if they have undetected conditions such as these (see Practical guidance 2 on screening children for underlying conditions) *(2)*.

Using a structured curriculum: Structured curricula offer a logical, step-by-step learning process that takes children from basic skills (e.g. minimizing the risk of inadvertently entering water, floating with support in the water, putting the face in the water and blowing bubbles etc.) to higher skills (e.g. swimming a minimum of 25 metres, rescuing others by throwing floating objects). Structured curricula also provide for testing at the end of the course and offer participants a certificate if they do well.

Teaching should be aimed at the needs of individual children, not the class as a group. Lesson plans should be flexible and curricula should be oriented toward successful learning rather than the rigid progression of skills teaching *(8)*. To reduce drowning, children need to learn how to stay afloat, keep breathing and swim a specified distance to safety (using any of the prescribed methods for achieving motion), not perfect particular swimming strokes (see Practical guidance 8 on using a structured curriculum).

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Prioritizing rural children: Studies show that in low- and middle-income countries, childhood drowning rates are higher in rural areas. In rural Bangladesh, the high level of water exposure contributes to the high rate of child drowning in children using natural water bodies for bathing and playing *(9)*, while a study in rural Thailand revealed that children aged 1–17 years are almost five times more likely to drown than their urban counterparts. This is generally attributed to higher exposure to aquatic environments in rural areas and higher-risk aquatic environments coupled with lower rates of swim skills *(6)*. This study emphasizes the need to prioritize swimming lessons for primary school children in rural areas where most drowning occurs, and to pre-empt the situation where children may attempt to learn by themselves or in an unsafe way.

Other at-risk sub-groups and the importance of local risk factors: It is worth noting that boys are more at risk than girls. A study examining risk factors for childhood drowning in rural regions of China noted that boys were over-represented in fatal drowning incidents, while a study of Latino children in the United States of America (USA) (itself a group at higher risk of drowning than white children) revealed that boys aged 5–14

were at particularly high risk of fatal drowning *(10)*. It is also true, however, that girls are often excluded from basic swimming and water safety skills lessons, placing certain populations at higher risk (female seaweed farmers are a good example of this). Basic swimming and water safety skills programmes should therefore endeavour to provide training to both sexes and take account of any cultural sensitivities that may influence how this is most effectively done.

Additionally, some minority ethnic populations are at increased risk of drowning *(10).* For example, drowning outcomes in the USA show pronounced health disparities in terms of race, gender, age, socioeconomic status and physical setting. African American, Native American and Latino children are at two to eight times greater risk of drowning resulting in death compared to their white counterparts. One study sought to estimate the effect of swimming lessons on skill acquisition improvement – critical for reducing the incidence of drowning and also for reducing the additional rate at which this occurs among certain populations. The intervention, tailored to the needs of Latino immigrant children aged 3–14 years, indicated that swimming lessons were the key predictor of skill acquisition improvement *(10)*. This suggests that it is paramount to analyse local risk factors as part of the development phase of a basic swimming and water safety skills programme, as no group should be at an avoidable disadvantage compared to others.

Basic swimming and water safety skills programmes should endeavour to provide training to both sexes and take account of any cultural sensitivities.

Practical guidance 2

Screen potential child participants targeted for basic swimming and water safety skills training for medical conditions or disability, and any necessary accommodations. Where possible this should be done by medically trained staff. Parents and guardians should be included in the screening process.

Rationale

Screening for disability can help obtain useful and accurate information about a child's sensory-motor, intellectual/cognitive, communication, and social-emotional skills, and how they function in their environment. This can help facilitate the decision on the child's enrolment in basic swimming and water safety skills lessons *(11).* Parents are key partners in the early intervention assessment and planning process and can provide a health and development history of the child.

Implementation considerations

Screening by trained staff: Evidence on childhood disability is woefully lacking *(12)*, but what is clear is that many children with disabilities in developing countries, particularly those with "mild to moderate" disabilities, are not identified until they reach school age *(11).* Some health conditions (such as heart disease), or as-yet undetected conditions, also pose a threat to potential swim-skills participants. The 10-Point Disability Screening Tool can help instructors, programme managers and medically trained staff to identify disability in children aged 2 years or older. If the answer to any of the following questions (adapted from the 10-Point Disability Screening Tool) is "yes", the child should undergo further clinical assessment:

1. Compared to other children, does the child have any serious delay in sitting, standing, or walking?
2. Compared to other children, does the child have difficulty seeing, either in the day or at night?
3. Does the child appear to have difficulty hearing?
4. When you tell the child to do something, does he/she struggle to understand what you are saying?
5. Does the child have difficulty in walking or moving his/her arms, or does he/she have weakness and/or stiffness in the arms or legs?
6. Does the child sometimes have seizures, become rigid, or lose consciousness?
7. Does the child struggle to learn to do things like other children his/her age?
8. Does the child struggle to speak? (Can he/she make himself/herself understood in words? Can he/she say any recognizable words?)
9. For 3–9-year-olds, ask: Is the child's speech in any way different from normal (i.e. not clear enough to be understood by people other than his/her immediate family)? For 2-year-olds ask: Can he/she name at least one object (e.g. an animal, a toy, a cup, a spoon)?
10. Is the child slower in any way than other children of his/her age? *(13)*

In addition to these questions, screening questions could also ask if the child has difficulty breathing.

Children with conditions or disability identified on the basis of screening should be managed as "higher risk" training

participants, and appropriate steps taken to ensure their safety during training, including adjusted instructor ratios, using additional accommodations such as helpers, and in some cases not providing them training, or providing them with classroom water safety training only. See Practical guidance 9 on the suggested instructor-participant ratio.

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Including parents and guardians in the screening process: Parents should be involved in the assessment and screening of their children for swimming and water safety skills programmes and should be provided with support to address any needs their child may have after an assessment *(11).* It is worth noting that sensitive personal medical data must be appropriately managed and protected.

Equipping other, non-medical staff to undertake screening: While identification and assessment of children with disabilities in high-income countries often involves teams of highly trained professionals, in low- and middle-income countries such comprehensive resources are often unavailable, making the screening questions described on the previous page particularly useful. In some countries, community workers are trained and supported by professionals where possible (such as through the use of outreach or mobile teams) to strengthen capacity and improve the quality of interventions, and play a part in early

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detection and assessment efforts *(11).* In the absence of health care practitioners, instructors can be trained to screen for conditions *(2).* Instructors must also look out (particularly in the first few lessons) for possible, unknown medical conditions, and know how to deal with any medical incidents (see Practical guidance 7 on developing an emergency action plan).

Practical guidance 3

Gain documented, verbal or written informed consent for children to participate in basic swimming and water safety skills lessons from parents or guardians.

Rationale

Informed, verbal or written consent from parents or guardians for children to participate in basic swimming and water safety skills lessons is vital, and in some places may be a legal requirement, as they need to be aware of the inherent risks involved in training and to agree that their child can participate. Their input is also critical to provide a health and development history of the child and to flag any cultural requirements that must be met by the programme. Gaining consent offers a chance to get community support for the programme and to ensure cultural norms are met.

Implementation considerations

Obtaining parents' or guardians' consent: Parents are the main source of knowledge for risk screening as they know most about their children's current illnesses and any prior episodes of seizures, asthma etc. *(2)*. They should therefore be invited to participate in any assessment or screening of their children for suitability to enrol in swim teaching programmes. In order for consent to be informed, parents or guardians should be aware of the risks inherent in such training, and receive information about the programme (schedules, timings, venues etc.), adapted for low literacy where appropriate. It is worth noting that there may be specific processes required for obtaining consent in different places.

Meeting cultural norms and gaining community buy-in: Often parental permission requires meeting cultural norms (e.g. same-sex instructors or classes; type of swim wear that must be used; or acceptance of their child learning to swim in a natural water body such as a pond). Providing such information also presents

an opportunity to engage with community members about the relevance of basic swimming and water safety skills training for drowning prevention in their community. In Zanzibar, using local trusted teachers or elders as recruiters – and community theatre to build awareness prior to recruitment – has helped garner community engagement.

Programme implementers should bear in mind the needs of minority ethnic groups who may need targeted messaging. One study of low-income Latino families in the USA recruited parents of young children to health education sessions through collaboration with neighbourhood community organizations. Parents attended an interactive health education seminar delivered in Spanish by trained health educators, followed by a 15-minute question-and-answer session *(10)*.

A systematic, checklist-based assessment of the training site before training is vital to ensure potential risks have been carefully considered.

Practical guidance 4

Perform a safety assessment using a checklist each time a swimming training site is used for a lesson, to ensure the site:

adheres to relevant regulatory frameworks;

is in clean, preferably clear, water;

is in shallow water of a known depth;

has secure, highly visible boundaries;

has known, low speed-flow characteristics if the training site is in open water where flow currents occur (e.g. tidal flows, possibility of rip currents, river flow etc.);

is free of sharp or blunt underwater objects, dangerous animals and microbial hazards as per WHO's recreational water quality guidelines; *(14)*

is at a safe temperature for basic swimming and water safety skills training.

Rationale

Teaching children basic swimming and water safety skills has inherent risks, with factors such as water depth, visibility, flow speed, and the presence of sharp objects, dangerous animals and microbes all having a direct and obvious impact on associated risks *(15, 16)*. A systematic, checklist-based assessment of the training site prior to training is vital to ensure

that any potential risks have been carefully considered, that any and all relevant regulatory frameworks are adhered to and that the suitability (or unsuitability) of the site has been comprehensively assessed. Potential training sites where risks cannot be managed must be rejected.

A checklist covering characteristics such as water depth, visibility, flow speed, water temperature, presence of underwater objects, dangerous animals or microbes etc. can be highly effective in assessing a potential basic swimming and water safety skills training location. Such lists are widely used in medical, aviation and other settings, as they prevent professionals having to rely solely on memory, and when properly used are known to reduce errors and improve effectiveness.

Implementation considerations

Choosing locations with clear water is preferable: Poor water visibility is a major safety concern – if a participant becomes submerged for any reason (i.e. has a seizure, falls, or loses consciousness etc.) they may not be visible if the water is not clear, making rescue difficult.

Ensuring depth of water is known and that there are secure, highly visible boundaries: Basic swimming and water safety skills training requires water to be sufficiently deep but not too deep, and the training area to have no abrupt changes in depth or steep gradients *(16)*. As a guide, the shortest child standing in the deepest area should only have water up to their upper chest area, remaining below the armpits. Sub-surface platforms can help provide a safe, firm and uniform depth, but if a semi-permanent physical structure is created at an open water site, consideration should be given to the potential risk of access outside class times (not least because the presence of such a platform may lead children to think the area is always safe) (see Practical guidance 11 on site safety audits).

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Unbounded water bodies such as lakes also require sub-surface platforms, as well as floating physical boundaries to ensure safe instructor-participant separation is not exceeded. Beaches require floating physical boundaries to contain participants, strategic site placement to avoid strong currents and other hazards, and attention to tidal conditions to ensure safe depth is not exceeded *(2)*. Above-ground, transportable pools must be filled with fresh water to a controllable depth *(1)*.

Ensuring the water has low speed-flow characteristics: Flowing water is a consideration for coastal beaches and rivers *(4)*. Instruction in coastal waters must consider tidal movements

and their impact on lesson safety (instructors should monitor the topography of the beach as the tide comes in and out, and adjust the training site accordingly), although instructors must be aware that this will mean the water depth is increasing. If the training site is in a river, care must be taken to ensure the flow rate is low enough to be safe. As a guide, the rate of flow should be no more than half the walking speed of an adult.

Eliminating microbial hazards: These can be a particular hazard in rural ponds, and the threat of schistosomiasis may be a significant barrier to implementing large-scale, freshwater swimming programmes in Africa *(2)*. Microbiological testing of water may not be available or practical but programme staff can draw upon local experience and awareness to avoid establishing training sites in areas known to be used for human or animal defecation etc.

In-ground and portable pools: The SwimSafe programme was developed for use in different water bodies, including in-ground pools, portable pools, ponds, reservoirs, lakes and beaches. In Thailand, SwimSafe is trialing the use of portable pools as a means of bringing basic swimming and water safety skills lessons to children aged 6–12 years in both urban and rural areas. The portable pools provide a low-tech, clean and safe

facility for the training – important for gaining family and community support *(17)*.

When the programme was modified for use in Viet Nam it was adapted to be a school-based initiative using portable pools, with school-teachers providing instruction *(18)*. Consultation with the local community garnered acceptance of training children to swim in portable, above ground pools rather than adapting local ponds (as in Bangladesh). As the portable pools could be located within school grounds, school-teachers could be recruited more easily as swimming instructors.

Portable pools provide a low-tech, clean and safe facility for training.

In Bangladesh, the Prevention of Child Injuries through Social-intervention and Education (PRECISE) programme, implemented in Bangladesh between 2006 and 2010, covered over 750 000 people in villages in rural Bangladesh. These children (aged 4–10 years) received training in the village pond which had been converted into a safe training site. Children in urban areas were taught in permanent and portable pools.

It is worth noting that the use of portable pools comes with associated costs, and therefore possibly limitations. These include:

- regular electricity for the filtration system;
- fencing and (likely) a pool attendant to control access;
- access to suitable pool chemicals and roofing to reduce chemical "burn off";
- a suitable porous base;
- access to and budgets for spare parts and repairs.

Practical guidance 5

Select and recruit local people (male and female), already certified for a recognized training curriculum (or willing to be trained), able to provide water rescue (both in-water and non-contact, or dry-water rescue), first aid and CPR, and experienced or trained in teaching and managing groups of children.

Rationale

Expert opinion suggests that instructors should be aged 18 years of age or older, be native speakers of the local language, and come from the local culture *(2)*. Ideally they should be

qualified swim instructors, lifeguards or coaches *(4)*, trained and certified in both swim teaching (including safe rescue, CPR, and first aid) and in maintaining concentration and discipline among groups of children. Where this is not the case, training must be provided. School teachers (both male and female) have some ideal characteristics *(2)*, but if recruited, care must be taken to ensure they are not already overworked and actively want to be instructors. Even where instructors are already qualified, training may still be required to familiarize them with the specific curriculum being used.

Implementation considerations

Selecting and recruiting local people, certified to teach a recognized curriculum: There are many examples of basic swimming and water safety skills programmes that successfully select and recruit trainee swim instructors from the local community and train them in a certified curriculum. In Bangladesh, community swimming instructors (CSIs) are selected from the community (approximately equal numbers of males and females); trained and certified in the SwimSafe curriculum, CPR and first aid; and trained to screen children for risk. In Thailand and Viet Nam, primary school teachers of both

sexes are trained and certified in SwimSafe, CPR and first aid. Medical screening of potential participants is done by the school nurse *(2)*.

The CSIs represent added value for communities as they deliver water safety messages not only to participants, but direct to community members, school groups and at community events. The participants themselves often become ambassadors for water safety, eager to pass on what they have learned to friends and family. CSIs are community youths (males and females) who are good swimmers, accepted by the community, willing to volunteer as instructors and have at least a secondary-level education. Community leaders support the selection of the CSIs.

Developing a cadre of "master trainers" is a good strategy. In Bangladesh, the Centre for Injury Prevention, Health Development and Research, Bangladesh (CIPRB) – in collaboration with the Bangladesh Swimming Federation and Royal Life Saving Society Australia – has developed a group of master trainers who deliver 5-day training courses to trainee instructors. After successfully receiving training, instructors travel to different districts and train more instructors at the district level.

In Zanzibar, the Aquatic Survival Programme, run by the Royal National Lifeboat Institution (RNLI) and The Panje Project (a local partner) provides children with the skills and knowledge they need to stay safe in and around the water. The Panje Project trains local young people – primarily aged 18 to 25 years – as basic swimming and water safety skills instructors and community educators. Over 1000 school teachers have been trained to deliver classroom-based water safety education. During these lessons children learn 10 water safety messages, through which they are taught to identify dangers and keep themselves and others safe. Basic swimming and water safety skills lessons are taught in the ocean in rural locations on Unguja Island and Pemba Island *(19)*.

Even where instructors are already qualified, training may still be required to familiarize them with the specific curriculum being used.

And in low- and middle-income countries where background checks are not robust or possible, community involvement in instructor selection may be useful to protect children from instructors who are potentially harmful to the children. "Good character" references and ongoing monitoring from community leaders may be the only alternative to the background screening system used in high-income countries *(2)*. Paedophilia, inappropriate disciplining and inappropriate touching are all concerns in basic swimming and water safety skills programmes and "good character" references should not be viewed as sufficient protection against these outcomes since many persons subsequently found to have engaged in these activities

have frequently been seen as respected in their societies. Accordingly, ongoing monitoring of instructors and keen awareness of the risk for paedophilia, inappropriate disciplining and inappropriate touching are important measures to ensure instructors are safe for the children.

Training in first aid and CPR: Since its inception in 2006, SwimSafe CSIs have received first responder training as part of basic training. In 2012, SwimSafe added a 2-day "first responder" training course to its basic training (adopted from the International Drowning Research Centre Bangladesh's first-responder programme, part of CIPRB), which is provided to 15 instructors at time. Training is supported by a user-friendly manual. Manekins are used for CPR training and practice. Before training, all trainee instructors are pre-tested. Instructors must perform all skills and all successful instructors receive a certificate as proof *(20)*.

Other useful instructor attributes: Some research suggests that practitioners such as swim instructors could benefit from four more instructional skills or attributes that can help them decide on what is developmentally appropriate for potential swim-skills participants (see Practical guidance 1 for more on developmentally appropriate practice). These are:

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- skills in developmental assessment – i.e. in evaluating a child's location along a developmental journey associated with the particular swim skill under consideration;
- skills in teaching/interacting with participants, including when they are in groups, and enabling learning-friendly situations;
- ability to adapt the level of difficulty of tasks to be learned (i.e., to make tasks easier or harder, depending upon the needs of participants, varying the learning conditions and methods as needed and ensuring individual-level feedback is provided);
- an appreciation that the goal of a basic swimming and water safety skills programme is survival, not swim-stroke development *(4)*.

Practical guidance 6

Engage with local authorities and stakeholders in basic swimming and water safety skills programmes, including schools, parents, local community groups and service providers etc., to gain insight and input on: safe, local training locations, credible candidates to be instructors, local water safety issues and attitudes to drowning, and funding for training programmes.

Rationale

Swimming programmes that are tailored to, and run by, the local community have increased chance of long-term success.

Partnerships between key stakeholders are central to the success of basic swimming and water safety skills programmes in every community in which they are introduced *(4)*. Partners can provide expertise, resources and funding to grow a basic swimming and water safety skills programme. Potential partners include, but are not limited to, national, regional and local government, schools, community pools, groups and clubs, charitable organizations, the media, and corporate partners *(4)*. Engaging local partners in the process of programme development increases local ownership and the chance of long-term success.

Implementation considerations

Engaging local community groups to strengthen sustainability: Swimming programmes that are tailored to, and run by, the local community have increased chance of long-term success, and collaboration between schools and the community in delivering basic swimming and water safety skills training is key to enhancing programme sustainability *(6)*. For example, the PRECISE programme in Bangladesh involves community leaders by forming village injury prevention committees and utilizing local resources to enhance the programme's sustainability *(4)*.

In the Swimsafe programme, a community-based child protection committee (CBCPC) is usually formed with the support of community leaders in the pond area. The committee provides support during the selection of community swimming instructors, children, ponds, and other activities. Communities themselves may provide access to ponds without any charge and help during pond modification. To raise awareness among the community of the importance of swimming, SwimSafe programme staff conduct a community meeting involving all parents of participating children, communities living around the pond, community leaders and CBCPC members and teachers.

Engaging schools: Schools are the preferred entry points for basic swimming and water safety skills training because: they can provide training venues with teachers already experienced in classroom management and who have credibility with parents; they may have on-site health staff; and (potentially) they have access to secure, access-controlled, fenced sites for pools *(2).* Those establishing a basic swimming and water safety skills programme should be aware that not all children attend school, and so make efforts to engage these children in the programmes wherever possible. School teachers can also take a lead in providing swimming instruction using natural sites, with the involvement of community members and local organizations *(6)*. Existing structures (e.g. student leader groups, afterschool clubs or parent-teacher groups) can also be harnessed to promote the importance and uptake of basic swimming and water safety skills lessons.

Parents are a critical stakeholder group, as some studies show that that parental swimming skill is related to their child's skill.

Engaging parents and guardians: Parents are a critical stakeholder group, as some studies show that that parental swimming skill is related to their child's skill *(6)* – those who can swim may have a more positive attitude toward swimming and be more likely to support or even assist their children in learning to swim. Research has found examples of children being eager to share with their families what they have learned and done in schools to prevent drowning, and of teachers involving parents with school-based education programmes by establishing parent-teacher groups, putting on assemblies and organizing termly events to include parents in programmes *(21)*.

Education should be provided for parents or guardians who do not swim in order to help them understand the importance of their children learning to swim, and of not letting them swim unsupervised or in unsafe areas. In addition, all guardians should ideally learn safe rescue techniques and emergency response skills (such as CPR) as recommended by the International Task Force on Open Water Drowning Prevention *(22)*.

To raise awareness among the children at the end of the swimming learning programme, all trained children participate in a swimming competition. Community leaders, government stakeholders and parents participate in the competition to encourage the children. This swimming competition encourages graduates of the SwimSafe programme to continue practicing their swimming skills and encourages other children to join the programme.

Programme providers can explore working with complementary partners, such as charities working in schools in the local area; make greater use of teachers training other teachers if rapid scale-up is planned; and involve existing community groups to create stronger networks, especially targeting out-of-school children *(23).* Programme providers and partners should all engage with parents as a critical stakeholder group, particularly mothers.

Practical guidance 7

Develop an emergency action plan that lays out the procedures to be followed in the event of any emergency during training (beyond standard operating procedures ensuring routine safe operation).

Rationale

A range of emergencies may occur during basic swimming and water safety skills programmes. These emergencies include, but are not limited to:

- a participant drowning (with either a fatal or a non-fatal outcome);
- a participant experiencing a medical emergency (e.g. asthma attack, epileptic seizure or blackout; falls, serious cuts etc.);
- a participant going missing;
- disorderly behaviour in or around the training area;
- a natural event (major storm, lightning, earthquake etc.), or other threat (fire, structural failure etc.) that may pose a risk for anyone involved in training.

Implementation considerations

All government or private bodies that have as their responsibility the supervision of young children –and who in the course of their programming intend to include basic swimming and water safety skills training – should develop a written emergency action plan that explicitly addresses the likely scenarios listed above, as well as all the relevant safety measures and appropriate supervision of all participants in the training programme *(24)*.

An emergency action plan sets out what needs to be done in specific types of emergency, who will respond, what each person's role will be during the response, and what equipment is required as part of the response *(25)*.

Programme providers must ensure that the emergency action plan is something that:

- is integrated into the training for swim instructors;
- is contained within a written document;
- includes procedures for monitoring and reporting whenever the plan is activated, including integration of this within ongoing training site monitoring and audit procedures (see Practical guidance 10 for more on incident reporting).

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Practical guidance 8

Use a structured curriculum to teach basic swimming and water safety skills, adapted to the local population and context, and covering basic swim skills, water safety, and basic rescue. Curricula must be safety tested and shown to enable (at a minimum) children's ability to swim 25 metres, and either tread water and/or otherwise maintain their airway above water using a suitable floating technique for a minimum of 30 seconds.

Rationale

In 2007, the International Lifesaving Federation's Position Statement for Swimming and Water Safety Education noted the rapidly growing evidence that a basic level of water safety knowledge, coupled with a basic level of swimming skill, is sufficient to prevent most drowning episodes *(26).* There is consensus among the water safety education community that teaching basic swimming and water safety skills together will shape positive water safety attitudes, perceptions and behaviour in aquatic environments *(27)*. Further, it is thought that swimming and water safety skills, taught to children at a young age (from the age of 6 years), can provide young adults with the skills required to safely enjoy the aquatic environment and potentially provide the rescue and resuscitation skills necessary to assist others in aquatic emergencies *(28)*.

Implementation considerations

Use a structured curriculum: In rural Bangladesh, where day-to-day exposure to water is high and the risk of unintentional immersion is always present, acquisition of basic swimming and 18 associated water competencies reduced fatal drowning among young children in a large cohort trial (SwimSafe) *(26)*. While programmes differ by setting, they generally consist of learning the minimum skills needed to survive an unexpected fall into deep water:

- Roll into water in which the participant is unable to stand, and surface with the head above water (where appropriate and safe to teach).
- Any action to keep the head above water for a period of time, including treading water, or using a suitable floating technique for a minimum of 30 seconds.
- Swimming in a controlled direction in any manner for a minimum of 25 metres.
- Self-rescue skills and CPR are included in some programmes *(4)*.

The Royal National Lifeboat Institution's Aquatic Survival Programme (ASP) is designed for low-resource settings and

teaches children aged 7–14 years how to save themselves and others in the water. The ASP has two modules. Module 1, on community awareness, aims to reduce risk by teaching 10 important water safety messages to young people and is delivered through a set of picture-based flashcards. The module and the flashcards have been translated into four languages – Arabic, Bangla, Khmer and Swahili – and adapted for different settings. Module 1 can be taught without the need to enter the water. Module 2, on self-survival and land-based rescue, requires access to a safe body of water.

Curricula should reflect each country's water environment and water use – different nations have different water environments.

The Swimsafe curriculum is structured, safety-tested, and shown to provide the ability for children to swim a minimum of 25 metres and tread water for a minimum of 30 seconds. The Swimsafe curriculum itself grew out of local studies into how children acquire swimming skills in Bangladesh, Thailand and Viet Nam. These were then ranked for safety and effectiveness. Following this, best practices were adapted in line with established swim training curricula *(1)*. The skills/competencies taught are:

3 breathing skills:

- Put face in water
- Submerge and blow bubbles
- Hold breath and exhale in submerged position

10 swimming skills:

- Walk in the water
- Walk with arm pulling
- Float in the water with support
- Float in the water without support
- Kick by holding support
- Push and glide without support
- Push and glide with kick
- Kick and pull with instructor or kickboard support
- Kick, arm pull and breathing
- Push, glide, kick and arm pull

2 survival competencies:

- Swim 25 metres using any recognizable stroke
- Float for a minimum of 30 seconds

3 elementary rescue techniques (note these are all non-contact techniques, designed to keep the rescuer out of the water and therefore significantly reduce risk):

- Be rescued with a pole
- Rescue others using pole and rope from edge of pond
- Rescue others by throwing floating objects

Use a curriculum that is adapted to the local population and setting: Curricula should reflect each country's water environment and water use – different nations have different water environments, from seas and oceans and large, deep inland lakes to narrow, shallow rivers and creeks. Collectively, these influence the circumstances and risk factors for drowning in each setting, and the curriculum used for basic swimming and water safety skills should reflect that. Water conditions also vary, including temperature, currents, and waves. Countries in which large, deep lakes and oceans pose the highest drowning risks might consider adopting more challenging requirements, i.e., longer times to keep the head above water (e.g., a minimum of 60 seconds), and a longer swim test (e.g., a minimum of 50 metres). Nations in which narrow, shallow rivers and creeks with warmer water pose the highest drowning risks might find

shorter water-treading tests (e.g., a minimum of 30 seconds) and swim tests (e.g., a minimum of 25 metres) are appropriate.

A written, structured curriculum for basic swimming and water safety skills training must also provide the basis for instructor training, monitoring, and assessing participants' successful completion. It is helpful for instructors to be provided with guidance detailing the purpose of each skill, the learning outcome from learning the skill and the "must sees". For example, for the distance swim, the purpose is to ensure the participants have the skill and endurance to swim to safety; the learning outcome is that, as a result of learning this skill, participants are able to move from deep water to a point of safety; and the "must see" is that participants are able to swim continuously the required distance.

Each setting is encouraged to adopt basic swimming and water safety skills and standards appropriate for their needs and circumstances. For example, a roll entry may be an appropriate disorienting entry skill in a swimming pool, but it may not be safe or practical in natural bodies of water. Additional self-rescue skills may be appropriate in basic swimming and water safety skills programmes – e.g. how to get out of the water. Age-appropriate CPR training may also be included. Programmes can be adapted at times to be delivered in locations such as a lake or river for special programmes *(4).*

Safe instructor-participant ratios for teaching school-age children basic swimming and water safety skills are a critical part of overall risk management.

Practical guidance 9

Specify a maximum instructor-participant ratio of 1:5. The ratio must be appropriate for the skills level of participants (especially children with medical conditions or disability) and for the water conditions.

Rationale

Safe instructor-participant ratios for teaching school-age children basic swimming and water safety skills are a critical part of overall risk management. Quite simply, an instructor can only be expected to closely supervise a limited number of participants and react to a potentially life-threatening event among these participants. The "optimal" instructor-participant ratio must be tailored to a range of factors, including participants' skills level, water conditions *(1)*, and the presence of children with conditions that may place them at increased risk of drowning during training (e.g. seizures or respiratory disorders. See Practical guidance 7 for more on action plans for emergency situations) *(1).*

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Implementation considerations

Implement a ratio of a maximum of 1:5: Swimsafe, the largest scale, best-studied and evaluated programme, indicates that instructor-participant ratios must not exceed 1:5 and may be lower (e.g. 1:1, 1:2, 1:3 or 1:4) depending on supervision needs, particularly with children aged 6–9 years *(2)*.

Ratio must match skills level of participants: Many – if not most – participants will be non-swimmers or swimmers with minimal skill. Safety conscious ratios of in-water instructors to participants need to be clearly set out before training commences and need to be venue specific. For example, ponds with no visibility need lower instructor-participant ratios, as will tidal or moving-water environments. Younger children need lower ratios than older children, etc.

Providers of basic swimming and water safety skills programmes will have to decide whether the instructor can or should be solely responsible for the safety of participants. Additional lifeguard supervision is always of benefit but may not always be possible. Regardless, instructors must exercise direct supervision over participants at all times, and participants must be within immediate reach and in direct view while in the water. Instructors must also exercise good judgement about when to introduce participants to deep water (See Practical guidance 1 for more on developmentally appropriate practice).

See page 6

Things to consider when evaluating the skills level of those taking part include:

- Do participants have the appropriate skills to advance to the next level of training?
- Do participants understand the activity to be performed?
- Is the activity appropriate for the physical ability of participants?
- Is the activity flexible to accommodate differences in levels of experience and skill?
- Does the activity allow direct visual observation of each participant at all times? *(4)*

Participants with disability: A child who has a disability can participate in basic swimming and water safety skills training if the appropriate support is available. Using flotation aids is one way to enable participants with disability and creates two opportunities: the learner can participate within a group, and the floatation aid provides any extra buoyancy that they may require. The flexible nature of the evaluation criteria (*any method that allows the participant to get to safety is acceptable*) makes it easy to accommodate individual participants' special needs *(4)*.

Robust incident-reporting mechanisms are an important part of overall risk management and are the bedrock of continuous quality improvement.

Whatever the instructor-participant ratio deemed to be most appropriate, instructors must actively ensure their participants are safe throughout their training. This active surveillance includes instructors doing the following:

- Outlining the safety rules before beginning any activity.
- Keeping participants in front of them and supervising them at all times.
- Performing regular head counts to avoid scenarios where children could go missing.
- Ensuring swimmers enter shallow water feet-first every time.
- Keeping a bouyancy aid available at all times.
- Using a signal system (e.g., whistle) that all children understand (e.g., 1 blast = "Attention: look at me". 2 blasts = "Everyone leave the water immediately").[a]
- When practicing skills, participants must swim into shallow water (and **not swim into deeper water**). For example, when teaching on a beach, practice should be done parallel to the shore or towards the beach, not into deeper water.

a Adapted from Survival swimming guide: Survival swimming in every Commonwealth nation. Broom, UK: Royal Lifesaving Society Commonwealth; 2016.

Other considerations: Instructors should check the current state of participants' well-being (e.g. their level of tiredness, physical stress symptoms, hypothermia etc.) at the **beginning and during every** lesson in a suitable manner and react accordingly. For example instructors can start every training session with a land-based activity and use this time to take stock of the well-being and status of participants before any activity is carried out in the water. Additionally, instructors should be prepared to adapt the lesson to respond to such situations. Also, the supervision of children that cannot finish a lesson or need a break must be guaranteed. Factors such as the instructor's own state (e.g. tiredness) and any changes in weather must also be constantly monitored.

Practical guidance 10

Ensure that incident-reporting mechanisms that capture important incidents (such as adverse effects on health, increase in risk, activation of emergency action plan etc.) are in place, for example: active surveillance for injury and other adverse effects among participants; up-to-date records for all participating children and their parents; and details on attendance, enrolment, graduation, failure or dropout, injury or other adverse outcome.

Rationale

Robust incident-reporting mechanisms are an important part of overall risk management and are the bedrock of continuous quality improvement and programme monitoring.

Implementation considerations

An appropriate (e.g. paper or electronic) system should be developed, with a clear understanding among all programme staff of individual responsibilities for filling out and updating relevant forms, and what events should trigger a record being established or updated. At a minimum the reporting system should contain data on the following:

- Qualifications and basic demographic information for all instructors.
- Basic demographic information on participants, including age, sex, name of child, name of parents and address.

- Results of water testing (if required and performed).
- Dates of enrolment and graduation for each participant.
- Final skill level obtained for each participant (e.g. pass/fail/drop out).
- Any adverse events (including injury) noted during training.
- Any circumstance leading to activation of the emergency action plan.

Practical guidance 11
Conduct site-safety audits regularly and ensure that monitoring is carried out for quality assurance purposes.

Rationale

Teaching basic swimming and water safety skills as a drowning prevention intervention has inherent risks and the only way to prevent or detect adverse events is to actively watch out for them. Additionally, quality assurance and continuous quality improvement should be at the heart of every basic swimming and water safety skills programme.

Implementation considerations

All basic swimming skills and water safety skills programmes should conduct site-safety audits and comprehensive monitoring so that the programme can be continually improved. Site-safety audits must be done regularly by a suitably qualified person (and lesson safety checks done prior to each lesson, see Practical guidance 4). At a minimum, site-safety audits must monitor the following elements.

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The training site: Safety audits should systematically and comprehensively assess the safety of the training site. Thisshould include water depth(s), water visibility, water quality, absence of microbial, physical and animal hazards. Audits can check that, for example:

- above-ground, transportable pools are filled with clean water to a controllable depth;
- ponds and reservoirs have fenced, sub-surface platforms to provide safe, uniform depths (see Practical guidance 4 for more on sub-surface platforms);

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- unbounded water bodies such as lakes have sub-surface

See page 12

platforms as well as physical boundaries to ensure safe instructor-participant separation is not exceeded, and are of a suitable water temperature for basic swimming and water safety skills training (see Practical guidance 4 for more on sub-surface platforms);

- beaches have highly visible floating boundaries, strong currents and other hazards are not present, and that there is attention to tidal conditions to ensure safe depth is not exceeded;
- there is no known risk of microbial threats such as giardia, cryptosporidium, e-coli and blue algae;
- boundaries are undamaged – in natural water bodies this may include scanning the area for hazards underfoot, checking currents, etc., or water testing, temperature checks, etc.

For example, Viet Nam's Swimming for Safety programme conducts annual site safety risk assessments in addition to daily checks. A full safety assessment is conducted every year and (in open water) after any significant weather event or obvious physical/environmental change.

Instructor-participant ratio: Numbers of instructors and participants are a factor in safety planning. Teaching activities must be monitored to ensure effective teaching and compliance with safety standards, including optimal instructor-participant ratios. Safety-conscious ratios of in-water instructors to participants need to be specified and venue specific (see Practical guidance 9 for more on instructor-participant ratios).

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Supervision and instructor attributes: The programme must make provision for routine monitoring of instructors, and this ongoing assessment must particularly address their supervision of participants and the overall safety of the manner in which they provide training. This ongoing monitoring should verify that instructors are constantly exercising direct supervision over participants at all times and never leave participants unattended. Monitoring should also ascertain that instructors are appropriately qualified, demonstrate skilled teaching, show the ability to effectively organize and control their participants and interact with children appropriately, and meet all relevant safeguarding requirements.

Availability of safety equipment and monitoring of incident reporting: This includes items such as first aid kits and rescue equipment, including buoyancy aids etc. They should always be available, and their availability should be an aspect routinely verified during safety audits.

Monitoring for quality assurance builds on the incident-reporting systems discussed in Practical guidance 10. Regular

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analysis and use of these data should be undertaken and presented in an annual or quarterly report. Where circumstances dictate (e.g., a declining pass rate, an increasing number of adverse events, etc.), steps should be taken to further understand and address the problem or problems.

Such monitoring also provides the opportunity to share learning with other organizations and publish findings in peer-reviewed journals, thereby contributing to the evidence base for drowning prevention and improving safety for all *(3)*.

Keeping children safe from abuse or harm is a fundamental requirement for any programme dealing with children.

Practical guidance 12

Ensure strong safeguarding policies, procedures and measures are incorporated throughout the training cycle, involving the community in providing "good character" references for potential instructors, and ongoing monitoring from community leaders.

Rationale

Keeping children safe from abuse or harm is a fundamental requirement for any programme dealing with children, including basic swimming and water safety skills programmes. However, in many low- and middle-income countries where the drowning burden is high, there are fewer formal structures and resources to assure that safeguarding children can be effectively implemented. Nevertheless, there are a number of good examples of how a safeguarding approach can be successfully integrated within basic swimming and water safety skills training programmes. These illustrate the importance of, and value in, cultivating close ties with the community and community leaders.

Implementation considerations

Involving the community: CIPRB has worked on child safeguarding since 2005 in different districts across Bangladesh, and since its inception it has developed and implemented child protection policies as a standard procedure and continues to expand its capacity in this area. In 2011 CIPRB developed a child protection policy manual with the financial and technical support of UNICEF Bangladesh (http://www.ciprb.org/swimsafe/). An important component of the safeguarding approach has been to involve the community in decision-making around key programme staff such as instructors.

Deploying a safeguarding policy: This should include:

- the process for reporting safeguarding concerns (for participants, instructors, staff and community members);
- the process for investigating safeguarding concerns, and a safeguarding lead responsible for ensuring this process is managed appropriately;
- the process for engaging with media (including ensuring informed consent from children and parents);
- training requirements for instructors and other volunteers (e.g. those recruiting who may be in schools).

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Ongoing monitoring of instructors: As mentioned in Practical guidance 5, paedophilia, inappropriate disciplining and inappropriate touching are all concerns in basic swimming and water safety skills training programmes, and "good character" references should not be viewed as sufficient protection against these outcomes (many persons found to have engaged in these activities were formerly respected in their societies). Accordingly, ongoing monitoring of instructors and keen awareness of the risk for paedophilia, inappropriate disciplining and inappropriate touching are important measures to ensure instructors are safe for the children.

Not qualifying instructors if there are any concerns: While training instructors there is an opportunity to observe and assess the style and appropriateness of interactions between potential instructors and participants. Part of the role of those involved in training instructors is to not qualify someone as an instructor if there are any safeguarding concerns.

See pages 29 and 30

Safeguarding is at the heart of all practical guidance: The safety audit process and the incident reporting systems outlined in Practical guidance 10 and Practical guidance 11 also provide opportunities to ensure child welfare is respected and protected at all times. Comprehensive safeguarding of children is not the sole purview of any single piece of practical guidance in this resource, but a fundamental objective best achieved through holistic and complementary implementation of all practical guidance provided.

Provide day-care for pre-school children

Community-based, supervised child care for pre-school children can reduce drowning risk through assuring constant adult supervision while also providing other health and educational benefits *(1)*. Most day-care provision (particularly in high-income countries) is characterized by a safe and nurturing environment, trained caregivers, safe child-to-caregiver ratios and robust supervision. Where possible, hours of operation should mirror the times at which parents and guardians are busiest and therefore less able to effectively supervise pre-school-age children.

Programmes should take account of the following practical guidance, which falls into six broad categories: target group selection, venue selection, programme design, recruitment and training of staff, managing risk, and community involvement.

Practical guidance 1

Day-care should have written procedures that explicitly state the age range of children to be cared for and require parents' informed consent. Child-to-caregiver ratios should not exceed one caregiver per maximum 13 children aged 1–4 years and one caregiver per every three children aged under 12 months.

Rationale

Child-care needs vary greatly with age, so it is important that day-care programmes clearly set out the age range of children for which they will care. Child-to-caregiver ratios are also a critical component of such programmes, as the safe adult supervision necessary to prevent drowning and otherwise assure child safety cannot be guaranteed beyond a certain number of children. Maintaining a reasonable child-to-caregiver ratio also protects caregivers themselves, exposing them to fewer potential cases of infectious disease among children in their care.

Child-staff ratios are important not just for supervision safety reasons, but also because they have been shown to affect the quality of services and child outcomes in early childhood education (see Practical guidance 4 on providing learning in day-care venues). With fewer children per teacher or staff member, adults face less stress and can have more frequent and meaningful interactions with learners. Smaller group sizes also seem to have a positive effect on staff-child and staff-parent relationships in middle- and high-income countries *(29).*

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Ensuring that these and other essential operating policies (e.g. opening hours, see Practical guidance 5) are available in a written format means they are clearly and transparently available to parents and guardians, funders, local authorities, and all key stakeholders.

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Implementation considerations

Age range: The age range for children targeted to receive day-care should be determined by the pattern of drowning in the local community. In most countries, children in child care are

pre-school age, though "school age" may differ from one community to another. In some communities, sending children under the age of 12 months to a day-care centre may be socially acceptable, but in others it may not. In such cases, sending children aged 1–4 years may be more appropriate *(2)*. To the extent possible, it is desirable that children from 12 months of age have access to day-care services since this is roughly the age at which they begin to walk and therefore become at risk for drowning in their home environment.

Child-to-caregiver ratio: Child-to-caregiver ratios can vary widely depending on context and in many countries the physical and staffing requirements for day-care centres may already be regulated, in which case these stipulations should be met *(1)*. In all cases, day-care venues must offer an acceptable ratio of children per trained caregiver, with one or two support staff. WHO recommends a ratio of one caregiver per maximum 13 children aged 1 to 4 years, and one caregiver per every three children aged under 12 months.

WHO recommends a ratio of one caregiver per maximum 13 children aged 1 to 4 years, and one caregiver per every three children aged under 12 months.

The village-based Anchal child-care programme in rural Bangladesh made child care available for pre-school children aged 9 months to 4 years, with two designated child caregivers per 25 children (one trained as the head caregiver, and one as her assistant). This provided a child-to-caregiver ratio of around 13. This child-care programme was associated with a significant reduction in drowning. It is worth noting that informed consent was obtained from all participants *(30)*.

Practical guidance 2

Day-care venues should be no more than a 20-minute walk from the child's home, along a route that is safe for children and their parents or guardians.

Rationale

Day-care provision is best when located very close to the community it serves. This makes it convenient (and therefore more likely to be used); tailored to local needs; and increases the likelihood that it is staffed by locally selected and trained caregivers who are known to, and trusted by, the community. It also helps to minimize the length of time parents and children need to get to day-care venues, thus saving parents' travel time and potentially reducing exposure to drowning and other hazards en route.

Implementation considerations

Saving women's time: Women are often charged with the dual responsibilities of child rearing and time-intensive domestic work, leaving them time-poor *(31)*. The peak time for drowning corresponds with parents' busiest times of the day – times when they need to be working and may be distracted and unable to supervise their children properly *(32)*. Day-care centres therefore need to be a convenient walking distance from home.

Minimizing exposure to drowning hazards en route: Drowning and other hazards en route to the day-care venue (e.g. busy roads and junctions) should be considered. Drowning hazards are prevalent in many low- and middle-income settings and a substantial majority of child drownings are known to occur very close to the home *(32)*. Wherever possible, the safest option is to situate the day-care directly within the village served. Where walking to the venue is required, the shortest safe route should be assessed and communicated to all families using the service.

Practical guidance 3

Day-care venues should provide a minimum of 1.2 square metres of space per participant (caregivers and children); be safely constructed for local conditions, with closing doors operable only by adults; have a means to regulate temperature; and allow for unobstructed supervision of children – including during toilet and handwashing breaks. They must be equipped with the basic materials to safely clean up and disinfect any body fluids that may put children or staff at risk of infection, such as vomit or diarrhoea.

Rationale

Around the world, day-care and early childhood development services are delivered in a diverse range of settings – diversity that presents a challenge in monitoring or proposing quality and standards. In the Dominican Republic and Trinidad and Tobago they are run in community technology centres, caregivers' homes, community centres or facilities attached to churches or schools, while in Namibia, formal centres, non-formal centres, and home-based programmes, including "backyard nurseries" are primarily provided by NGOs and local community organizations. In Arabic-speaking states, where the majority of day-care services are private, day-care venues tend to

implement more institutional programmes, while NGO and non-profit day-care is more commonly associated with non-formal settings *(33)*.

Implementation considerations

Minimum space per participant: A day-care centre should allow 1.2 square metres per participant (children and caregivers) and be large enough to comfortably accommodate the children and allow activities, including games. It should have good lighting and ventilation and be suitable for children in all types of weather. It should be clean (including a clean floor), with safe water and sanitation and facilities for breastfeeding mothers. If a community building is not available, a room large enough to comfortably accommodate the group in the house of a caregiver (and which meets the above criteria) could be used, reducing programme costs *(2)*. Access to safe outdoor space adjacent to the room for formal activities is beneficial. If there are water ponds, streams, lakes, rivers or wells nearby it is important that barriers reduce access risk for children.

Day-care should offer a structured programme of physical and mental activities for children that are age-appropriate.

Safe construction using local materials: Entrances and exits should be controlled using door barriers (made from locally available materials such as bamboo or timber), so that children, especially younger ones, cannot leave the room unaccompanied. Children should be visible or accompanied at all times, including during toilet and handwashing breaks *(2)*. A sleeping area should be considered and if children under 12 months are to be cared for, safe and sturdy cribs for each infant and a snug-fitting sheet for the mattress should be provided. Nothing else should be placed in the crib.

Basic clean up materials and procedures: Routine cleaning with detergent and warm water is the most useful and cost-effective method for removing germs from many surfaces in the child-care setting. It also removes dirt and grease from surfaces. Vigorous cleaning by hand physically reduces the numbers of germs from the surface (just as handwashing reduces the numbers of germs from the hands) but does not kill those germs that may remain on the surface *(34)*.

Any objects or surfaces that have been contaminated with infectious body fluids (e.g. vomit or diarrhoea) should receive an additional step, either sanitizing or disinfection, after cleaning. Sanitizing uses a chemical that kills or inactivates certain germs so that the spread of disease is unlikely, while disinfection uses a chemical that kills or inactivates virtually all germs. Cleaning, sanitizing and disinfectant products should be available, and staff trained to understand their differences and to know when each is required.

Practical guidance 4

Day-care should offer a structured programme of physical and mental activities for children that are age-appropriate and draw from best practice, particularly with regard to early childhood development.

Rationale

Providing structured activities that contribute to early childhood development is an important way to ensure that the benefits of a day-care programme extend beyond drowning prevention and benefit a range of other areas too. Children's experiences in their first few years of life have a major impact on their development. Day-care offers the chance to improve early childhood development by providing early years education that involves care (health, exercise, hygiene and feeding); stimulation (e.g., talking, singing and playing); responsiveness (e.g., early bonding, secure attachment, trust and sensitive communication); and safety (e.g., routines, and protection from violence, abuse, neglect, harm and environmental pollution) *(35)*.

Implementation considerations

Structured programmes that are age-appropriate: Children should be engaged in fun and interesting activities appropriate for their age while at a day-care centre, which should be sufficiently equipped with early learning materials and safe toys to stimulate physical, intellectual, linguistic, social and emotional development. Caregivers need support and training to be able to do this *(36)*. Best practice indicates that early childhood practitioners should be familiar with:

- each child as an individual;
- how children develop and learn;
- the social and cultural contexts in which children live.

Day-care programmes established primarily for drowning prevention have also found it possible to provide children with early childhood development stimulation, pre-school education, supplemental nutrition, and health messaging such as the importance of hand-washing and the use of latrines. The BASS programme in rural Bangladesh is a good example of this – a multi-intervention drowning prevention programme aimed at demonstrating sustainable, effective drowning interventions

that can be scaled up nationally. The interventions included Anchals (community crèches), and the SwimSafe programme (survival swimming).

However, even well-qualified teachers find it challenging to create (from scratch) a comprehensive curriculum that addresses all the required standards and important learning goals, and to design assessment methods and learning experiences. This task is even less realistic for caregivers in lower income settings with minimal experience of education. Hence, there is value in providing caregivers with a validated framework on the understanding they can make individual adaptations for the diversity of children they teach *(37)*.

The Early Years Foundation Stage (EYFS) is a widely accepted framework setting out the expected focus and outcomes of early years education and child-care provision, and spans pre-school settings and universal provision at primary school in the reception year *(38)*. The EYFS mainly uses games and play to teach children:

- communication and language;
- physical development;
- personal, social and emotional development;
- literacy;
- mathematics;
- understanding the world;
- expressive arts and design.

Practical guidance 5

The day-care provider should have a written document that clearly sets out the hours and days of the week during which day-care is available. This information should be complemented by procedures for dropping children off and picking them up from the day-care, and these aspects should be communicated clearly during engagement with local parents and stakeholders.

Rationale

Hours of operation and protocols for picking up and dropping off are, along with other aspects (e.g. age range of children cared for and caregiver ratios (see Practical guidance 1) core operational policies and procedures. Making sure they are

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written down provides an important basis for quality assurance and ensures that all staff can access the documentation whether for training, orientation, or ongoing work. Written documentation around these aspects also ensures they can be clearly and transparently made available to parents, funders, local authorities, and any key stakeholder. This provides a basis for clear engagement with the community and parents, enabling the basic operation of the day-care to be clearly explained.

Implementation considerations

Days of the week and hours of operation: Where possible, hours of operation should mirror the times at which parents and guardians are busiest, and therefore less able to effectively supervise pre-school-age children. For example, a study in Bangladesh found that children aged 1–5 years had a significantly increased risk of fatal injury between 9am and 1pm, during which time they tended to be supervised by older siblings because of parents working inside or outside the home *(39).* These findings were used to ensure hours of operation of day-care were structured to reduce this risk, with subsequent outcomes providing compelling evidence that community day-care could cost-effectively prevent drowning *(40).* Similar

surveys can determine highest risk times of drowning in other settings to ensure the hours of day-care operation are most likely to be an effective drowning prevention intervention.

Holidays, severe weather, and emergency closure: Day-care providers need to plan for and document how closures resulting from these events will be managed. In turn, these closures need to be communicated to parents in a timely manner so they can plan to provide supervision and care for their children.

Engaging with parents: Involving parents can build a better relationship with providers, promote quality improvement, and support children's learning and development. Parents can, and should be, engaged with the way the day-care is run, their child's development and progress, and be encouraged to participate in activities. Opportunities should be created for parents to be involved in designing programme policies, activities and materials. Particularly in areas where there may be ethnic diversity, a deep and ongoing engagement with parents can help ensure that all children's home cultures and languages are welcomed, honoured and celebrated.

Where possible, hours of operation should mirror the times at which parents and guardians are busiest.

Drop-off and pick-up policy: This is a critical step since it marks the point at which responsibility for the child passes between the parent or guardian and the day-care caregiver. The policies around this step should be written, clearly understood by all involved (including parents) and include details such as who has the authority to pick up a child from the programme (e.g. parents, guardians, neighbours), and how that is monitored.

Other policies to consider for a written document outlining the day-care's operation:

- **Open-door policy:** Parents and guardians should be allowed to make unannounced visits to the child-care provider any time during which care is offered.
- **Fees and payment arrangements:** Any payment requirement for things such as registration, materials, field trips, and other costs should be documented, along with whether these fees change based on age of the child etc.
- **Forms required for enrollment:** These may include registration forms, emergency contact information, permission for field trips, and medical records.
- **Alternate care and substitute caregivers:** A written policy should be in place detailing the substitutes or alternate care arrangement that will be made when the children's home caregiver cannot be present.
- **Food and nutrition:** Day-care providers may provide meals and snacks, or they may ask parents to pack food for their

children. If meals and snacks are provided, these should follow any national dietary guidelines that may be in place, and consideration should be given to specifying types of food that cannot be brought into the day-care (for example, many programmes are nut-free).

Allergies, immunizations and medication: Day-care policies around all these issues should be considered. Clear mechanisms should exist for parents informing day-care staff about allergies, immunization status and medication needs, as well as the resulting responsibilities of the day-care programme to ensure that these needs are catered for *(41)*.

Practical guidance 6

Caregivers and assistants should ideally be female and be selected by a local committee comprising local authorities and residents. Caregivers should have as high a level of education as possible and receive initial and ongoing training covering: child development, behaviour management, appropriate game play and structured learning activities, first aid, managing child safety risks including drowning, recognition and management of common childhood illnesses, and conveying health-promotion messages.

Rationale

Day-care programmes must ensure that caregivers and assistants are suitable for the role. Ensuring full advantage is taken of the day-care environment to contribute to children's development will be best served by caregivers who are intelligent, motivated and capable of being trained in the full range of skills that will allow them to provide safe, supportive and nurturing care for children *(42)*.

Implementation considerations

Involvement of a local committee: Involving local community bodies and committees can help ensure the best candidates are selected to become caregivers and assistants. It is likely that caregivers and assistants will be mothers and young women[b]

b All women selected should be made aware of the risks of (and ways to guard against) infection when working with groups of children, especially if they are pregnant.

from the local community. A local committee may select the caregivers using criteria such as educational status, keenness for the role, and ability to provide "good character" references in the absence of more robust background checks. Ethnic diversity may also be a consideration. For example, in Colombia, the Colombian Institute for Family Welfare targets members of indigenous communities for pre-primary training *(33)*.

As high a level of education as possible: Some studies from low- and middle-income countries show that higher programme quality and child outcomes correlate with better-educated and trained caregivers. Although the level of education and training varied in these studies, many of the teachers had received at least secondary education and many also participated in ongoing training once they started work in the field *(33)*.

Caregivers and assistants should ideally be female and be selected by a local committee comprising local authorities and residents.

Training in first aid: Day-care programmes must ensure there is a first aid kit accessible at all times with appropriate content for children, and that the day-care caregivers are trained in delivery of first aid. A written record must be kept of accidents or injuries and first aid treatment, and parents must be informed of any incidents and treatment as soon as possible *(42)*.

Training in appropriate game play and structured learning activities for children: The quality of children's early years education depends on practitioners having appropriate qualifications, training, skills and knowledge and a clear understanding of their roles and responsibilities. Training and accreditation can be implemented by governments at national, regional, and local level depending on the structure of the education system. More than 40 low- and middle-income countries have developed Early Learning and Development Standards (ELDS) that set out what children at particular ages are expected to know and be able to do *(43)*. These standards may be used to improve policies and programmes for young children, including caregiver preparation and practices.

In South-East Asia, for example, many countries including Lao PDR, Singapore, and Timor-Leste, have recently developed or revised their national early childhood care and education curricular frameworks. Suggested guidelines on teacher competencies make reference to training and approaches that are holistic, child-centred, developmentally appropriate, and with special attention towards valuing differences and diversity *(44)*. Viet Nam and the Philippines have developed in-country teacher standards with an emphasis on teaching approaches that cater to holistic (physical, socio-emotional, cognitive, language, moral-spiritual, cultural, and creative) development, reflecting national perspectives and culture *(45)*. And in Kenya, Uganda and Tanzania, pre-school teachers and caregivers are

continuously trained and supported in using locally sourced materials and appropriate language in their daily interactions with children *(46)*.

Managing risks for childhood drowning, recognition and management of common childhood illnesses, and conveying health-promotion messages: The culturally accepted and village-based Anchal child care programme in rural Bangladesh selected local village-based child-caregivers (called Anchal Ma, meaning "supervisor") and trained them in child safety and supervision; early childhood development activities and early learning; supplementary nutrition (including how to identify children with stunting according to their height and weight, and monitoring this on a regular basis); and health promotion and hygiene awareness (such as hand washing and latrine use). Other topics could be how to sneeze and blow the nose hygienically. The Anchal Mas were trained to perform early childhood development screening, immunization and breastfeeding reviews. Mothers accepted the Anchal Mas' enquiries about breastfeeding, and children with particular needs were highlighted to receive additional support. Additional training, certification and elder support for the Anchal Mas elevated their status and community capacity.

Practical guidance 7

Day-care centre operations should be subject to no less than six unannounced inspections per year by a suitably trained, regional day-care centre supervisor. Inspections should involve a written checklist to ascertain if procedures are being followed correctly, as well as interviews with children, caregivers, parents and local authorities.

Rationale

To ensure activities are carried out professionally and sustainably, regular supervision and monitoring of day-care by a trained supervisor is essential. Unannounced inspections ensure that supervisors are monitoring the real-world performance of the day-caregivers and other staff. The use of written checklists and interviews with a full range of stakeholders ensure inspections are comprehensive, do not miss important details and gather information from all relevant stakeholders. Such supervision is carried out in many low- and middle-income settings, including by civil society organizations in Mozambique *(47)*, and by pre-school principals or district and provincial supervisors in Viet Nam *(44)*.

Implementation considerations

Supervisors should be trained alongside caregivers on the day-care centre's activities and should receive further training on supervising and monitoring both caregivers and the physical environment of the centre (including equipment, protocols, training, evaluation and impact of the centre). One supervisor may cover many day-care centres. (The implementation considerations of this practical guidance do not cover monitoring caregivers' activities with children, which is the focus of Practical guidance 8.) The aims of supervision and monitoring of Practical guidance 7 and Practical guidance 8 are to improve caregiver performance, identify caregivers who are markedly above or below the normal level of quality, and ensure the centre is well maintained and fully functional *(2)*. The supervisor should use a structured checklist to monitor the following aspects:

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Written documentation/checklist: The following forms of written documentation should be verified during inspection visits:

- **Daily attendance register:** A daily attendance register serves many critical functions and should be present for signing

children in and out. The presence of this register and a verification of its completeness should be part of the monitoring.

- **Behaviour logs:** A brief record of children's behaviour throughout each day should be maintained. Such records should be sufficiently detailed that changes in a child's behaviour can be detected, noted, and discussed with parents.
- **Incident reporting logs:** A log should be maintained for recording any unusual incident. This record should at a minimum include the following details: date and time of incident, witnesses, and a narrative account of what happened.
- **Emergency preparedness plans:** A written emergency preparedness plan should be present, either as a separate document or part of other written policies and procedures. The inspection visit should verify that a plan is in place, that it is clearly understood by staff, and that it is updated and revised based on experience.

Child-to-caregiver ratios: A ratio of a maximum of 13 children (aged 1–4 years) to one caregiver is recommended. If the day-care provides care for infants under 12 months, it is recommended that no more than three infants are cared for per adult.

General physical state of the day-care and in particular any safety risks: Inspections should ensure the physical environment is safe, clean, and well maintained. Points to be verified include, but are not limited to, safety of cribs; covering of any electrical outlets; storage of medicines and cleaning/disinfection supplies in safe locations inaccessible to children; and self-closing doors operable only by adults (see Practical guidance 3).

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Interviews with children, caregivers, parents and local authorities: Supervisors should seek the views of families, young children, partners and stakeholders about the day-care provided. If a parent or prospective parent asks to see an inspector, the team should do all it can to accommodate such requests, within the constraints on their time. Inspectors will aim to talk with parents including those holding representative responsibilities, for example members of the centre's advisory board. These meetings may be in the form of one or more focus groups of parents or prospective parents. In addition, inspectors will gather the views of families via other means. This may include observing a range of activities and finding out from staff how they seek parents' views *(48)*.

Risk assessments should identify aspects of the environment that need to be checked on a regular basis, when and by whom those aspects will be checked, and how any risk will be removed or minimized *(42)*.

Practical guidance 8

The quality of supervision and care of children should be monitored during unannounced inspections by a regional day-care centre supervisor. This monitoring should make use of a written checklist that includes quality of play and structured activities, supervision of toilet and hygiene practices, and maintenance of order.

Unannounced inspections ensure that supervisors are monitoring the real-world performance of caregivers.

Rationale

In contrast to Practical guidance 7, where the focus of inspections is upon day-care operations, the focus of Practical guidance 8 is upon the quality of supervision provided by caregivers. While both areas of focus (day-care operations and quality of caregivers) can be accommodated within the same inspection visit, each is treated separately in this resource. With respect to the focus on caregiver quality, to ensure day-care provides all potential benefits, including those related to early childhood development, it is essential to monitor and assess the quality of supervision and structured activities for children. Unannounced inspections ensure that supervisors are monitoring the real-world performance of caregivers. Written checklists ensure this assessment is comprehensive and does not miss important details *(2).*

Implementation considerations

Practical guidance 8 focuses on the quality of interactions between caregivers and children. Supervisors should use a structured checklist to monitor the following aspects:

Quality of play and structured activities with children: Supervisors should observe the relationship between the caregiver and the children – each child should be valued and respected. Caregivers should ensure children have the option of being indoors or in supervised activities outside, as well as to relax and rest. Caregivers should demonstrate the ability to give children the opportunity to play at their own pace and to have fun. Supervisors should observe whether staff and caregivers are seen to listen to and engage with children and respond to their individual needs – including, for example, any apparent speech, language or communication needs. Caregivers should be encouraging children to share, help each other, respect others, and develop social behaviour appropriate to their stage of development *(49).*

Quality of physical environment: The physical environment should be warm, welcoming, friendly and child-centred, with sufficient furniture, play equipment and materials. These should be appropriate for purpose and help create an accessible and stimulating environment. Supervisors should verify play materials and equipment are safe and appropriate to the ages and developmental needs of those attending, including those with additional needs *(49)*.

Supervision of toilet and handwashing breaks: Supervisors should note if good hygiene is practised and promoted to minimize the spread of infection. Unless impracticable, toilet facilities for children should be designated solely for their own use, and where shared with others, children should be supervised when using them. The recommended ratio is one toilet and one wash hand basin per 10 children aged over 2 years. Toilet facilities should be accessible to children with a disability. Liquid soap, paper towels and covered waste disposal bins should be provided for children's use. Children should be instructed to wash their hands after going to the toilet.

Management of children and maintaining order: Supervisors should determine if positive strategies are used to establish

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acceptable patterns of behaviour and promote children's well-being, self-esteem and development.

Risk assessments should identify aspects of the environment that need to be checked on a regular basis, when and by whom those aspects will be checked, and how the risk will be removed or minimized *(42)*. A benefit of the systematic monitoring referred to in Practical guidance 7 and 8 is that evidence can be generated and published in the peer reviewed literature about how to design, implement, and evaluate child-care programmes. There is a need to increase government funding to implement quality programmes, generate political will, and move successful programmes to scale and the outputs of ongoing monitoring can be a great help in achieving this.

Practical guidance 9

Written guidelines must be established that clearly state the responsibilities of caregivers, assistants and supervisors to protect children from abuse or neglect and report any suspicions to relevant authorities. Day-care supervisors should in particular be trained to recognize signs and symptoms of children that have been abused or are neglected.

Rationale

Parents, guardians and caregivers have the responsibility to protect their children from physical, emotional and sexual harm, and neglect. Day-care settings are settings where abuse may be either detected or perpetrated. Day-care providers must therefore ensure that all staff receive training to help them understand their roles and responsibilities in this regard, including emergency evacuation procedures, safeguarding, child protection, and health and safety issues. Day-care providers must ensure the suitability of adults who have contact with children; promote good health; manage behaviour; and maintain records, policies and procedures.

Implementation considerations

Clear, written guidelines: Day-care providers must be alert to any issues of concern in the child's life at home or elsewhere and must have and implement a policy, and procedures, to safeguard children when necessary. The safeguarding policy and procedures must set out the action that must be taken

when there are safeguarding concerns about a child and list the statutory authorities to which such concerns must be reported. Guidelines, policy and procedures should be comprehensive and cover events such as an allegation being made against a member of staff, and the use of mobile phones and cameras in the day-care setting.

Caregivers must take lead responsibility for safeguarding children in every setting, and where possible be responsible for liaison with local statutory children's services agencies. They must provide support, advice and guidance to any other staff on an ongoing basis, and on any specific safeguarding issue as required.

Day-care staff suitability: In low- and middle-income countries where background checks are weak or non-existent, community involvement in caregiver selection may be useful in the interests of child protection ("good character" references and ongoing monitoring from community leaders may be the only alternative to the background screening system used in high-income countries) *(1)*.

Providers must train staff to understand the day-care centre's safeguarding procedures and ensure that they have up-to-date knowledge of safeguarding issues.

Recognition of signs and symptoms of abuse and neglect: Providers must train all staff to understand the day-care centre's safeguarding policy and procedures and ensure that they have up-to-date knowledge of safeguarding issues. Training by the provider must enable staff to identify signs of possible abuse and neglect at the earliest opportunity, and to respond in a timely and appropriate way. There are many signs of abuse and some of the common ones are listed below. (It is important that caregivers remember not to make assumptions as sometimes there are also other reasons why children may show some of these signs *(50)*.)

Physical

- Bruises in unusual places, or unexplained bruises
- Fractures not resulting from normal play accidents
- Burns, including an unusual pattern of burns
- Cuts, welts, or other marks in the shape of an object, like a belt or cord
- A child's explanation of what happened not matching the type of injury
- Repetitive injuries
- Pale or bluish skin
- Seizures/temporary muscle stiffness
- Loss of consciousness

These may lead the child to watch out for danger, not make friends, vomit, have siezures, act aggressively, be depressed.

Emotional

- Poor appetite
- Bed wetting or toilet accidents
- Failure to thrive

These may lead the child to be depressed, have low self-esteem, be emotionally unstable, have poor social skills, have problems with peers, become withdrawn.

Sexual

- Child has difficulty walking or sitting
- Stained or bloody underclothing
- Injuries to genitals

This may lead the child to have low self-esteem, be depressed, be withdrawn, act out sexual or seductive behaviour, masturbate excessively, run away.

Neglect

- Underweight
- Failure to thrive
- Developmental delays
- Speech problems
- Not dressed appropriately for the weather

This may lead the child to appear tired or hungry, have low self-esteem, be overly passive, become easily frustrated or angry, be dependent on the caregiver, be inattentive, impulsive or aggressive, have poor peer relationships *(50)*.

Caregivers must also look out for inappropriate behaviour displayed by other members of staff, or any other person working with the children, for example: inappropriate sexual comments; excessive one-to-one attention beyond the requirements of their usual role and responsibilities; or inappropriate sharing of images *(42)*.

Children with disabilities are at particular risk of violence for a number of reasons, including cultural prejudices and the increased demands that disability may place on their families *(51, 52)*. Children with disabilities are often perceived to be easy targets: powerlessness and social isolation may make it difficult for them to defend themselves and report abuse *(11)*.

Practical guidance 10

Day-caregivers must have written plans and procedures for controlling communicable disease risks to children and staff. These should stipulate that children with communicable diseases are not brought to day-care but are cared for at home. Caregivers and assistants should be trained in cleaning up and disinfecting any infectious body fluids that may pose a risk to children or staff, such as vomit or diarrhoea.

Rationale

Children in day-care or in pre-school education have a two to three times greater risk of acquiring infections than children who are not cared for in such centres. This impacts both on individual health and on the spread of diseases through the community *(53)*. Parents must be taught to keep sick children at home and day-caregivers should receive training to minimize exposures to children and themselves. These basic infection-control measures are implemented in low- and middle-income settings and benefit both children and caregivers *(2)*.

Implementation considerations

Clear, written guidelines for controlling communicable diseases: Written documentation allows for training of staff, quality assurance, and communicating with parents. The documentation should cover both the desirability of preventing infection transmission within the day-care setting, but also outline steps to manage any health risks that occur, such as disinfecting vomit or diarrhoea. Training workers, providing information for parents and involving health professionals and health administrators are necessary conditions for good infection prevention and control programmes *(53)*.

Sick-child policies: Some programmes can provide care for mildly sick children in a way that does not put other children at risk. However, many programmes do not offer child care for children who are sick, meaning parents must make other care arrangements when their child is ill. In such cases, a sick-child policy must be provided and explained clearly to parents prior to accepting the registration of their child for care.

Training to minimize transmission of communicable diseases: Direct contact, generally with the hands, is considered the principal means of transmission of the majority of paediatric infections *(54)*. Contamination of care workers' and children's

hands, and of objects and surfaces in the day-care centre, has been confirmed by several different studies *(53)* and associated with the incidence of diarrhoea *(55)*. Studies demonstrate increased frequency of respiratory disease and diarrhoea at day-care centres where handwashing is infrequent *(56, 57)*.

Simple, effective guidelines for reducing transmission of diseases include:

- appropriate hand washing in the following situations and whenever they are contaminated with bodily secretions (children and staff should wash their hands for at least 10 seconds with soap and running water): before handling, preparing or serving food; after using the bathroom or changing diapers; after helping a child to use the bathroom; before any activity related to food (even laying the table); before meals or snacks; after handling domestic animals;
- standardized routines for changing and disposal of used diapers, which should be displayed in a visible location close to the changing area;
- cleaning and disinfecting contaminated areas, surfaces and objects;

- noses being blown or cleaned with disposable tissues, which are disposed of in covered receptacles lined with plastic (hands should be washed after this procedure);
- parents informing the day-care centre if their child has an infection;
- day-care centre notifying relevant authorities of any infectious diseases *(53, 58, 59)*.

Practical guidance 11

Day-care staff and regional-level supervisory staff must engage with local authorities and stakeholders such as parents on a regular basis – including during their regular supervisory visits (see Practical guidance 7 and 8), and prior to day-care being established, in order to clearly explain the operating procedures, establish local committees for staff selection and recruitment etc.

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Rationale

Engaging the community is crucial for successful day-care centre implementation. Involving community leaders and elders such as local authority officials, school teachers, religious leaders and other informal, influential leaders provides opportunities for explaining the role of the day-care in preventing drowning, increasing awareness of drowning risks, and establishing committees that may be engaged in activities such as venue and caregiver selection and oversight of day-care activities *(2)*. Such effective parent participation can lead to a better fit between families' needs and the services provided, higher satisfaction with services, reduced costs (as long-term benefits emerge), better value for money and better relationships between those providing services and those using them.

Implementation considerations

Engaging local stakeholders: Day-care providers should ensure that the setting up, running, staffing, and review of their programmes is collaborative, and involves local authorities, parents, community groups, and children themselves. When establishing a day-care programme, information for the local community should be easy to understand, factual and jargon free. Day-care should be structured in a way that meets

children's and parents' needs (for example, it should be available at times when parents need day-care support the most) and should be well publicized.

Parent Caregiver Forums and other voluntary groups are useful ways to engage families. Parents should be invited and encouraged to attend regular meetings, moderated by the caregiver/s. During the meeting, parents may be reminded about the importance of keeping children in a day-care centre and learn about their children's development. During these meetings, parents can also be educated on issues such as the safety of their children, including drowning prevention, child nutrition and health and hygiene, including handwashing and latrine use *(2)*.

Local authorities and parents should work together to establish the aims of parent participation, to mark progress and build trust. To enable effective parental participation, local authorities should consider in particular the timing of events and meetings – for example, organizing them during the school day while children are at school and ensuring that parents have enough notice to allow them to arrange child care.

Engaging the community is crucial for successful day-care centre implementation.

Explaining operating procedures: Parents should be informed about how to access the day-care, and providers should include eligibility criteria for services where relevant, making it clear where information, advice and support can be sought, as well as how to make complaints about provision. Providers should be clear with parents about how decisions are made (e.g. about day-care curricula, or age ranges for eligibility), and who is accountable and responsible for them. Local authorities can be involved in planning and reviewing the programme.

Providers must demonstrate to parents that they will take all reasonable steps to ensure staff and children in their care are not exposed to risks, and how they manage risks *(42)*. Providers must determine where it is helpful to make written risk assessments in relation to specific issues, to inform staff practice, and to demonstrate how they are managing risks if asked by parents and/or caregivers or inspectors.

Providers must maintain records and obtain and share information (with parents, guardians and caregivers, other professionals working with the child, the police, social services or the childminder agency with which they are registered, as appropriate) to ensure the safe and efficient management of the setting, and to help ensure the needs of all children are met. Day-care providers must enable a regular two-way flow of information with parents and guardians, and between providers if a child is attending more than one setting. If requested, providers should incorporate parents' and guardians' comments into children's records.

Train bystanders in safe rescue and resuscitation

When someone starts to drown, survival is determined almost exclusively at the scene by how quickly the person is removed from the water and how swiftly proper resuscitation is performed *(2).* Safe rescue and resuscitation performed by bystanders (a friend, family member or stranger etc.) is a critical factor in determining life or death. This is true not only for the individual in trouble but also the rescuer, as bystander rescuers sometimes drown in the process *(60)*. Appropriate and tailored training can make a significant difference in the outcomes of bystander rescues – before, during and after the rescue process – and has been shown to be feasible in low- and middle-income countries *(61, 62, 63, 64).*

Practical guidance 1

Safe rescue and resuscitation training programmes should have a written document that specifies trainees' target age range. Current evidence and consensus would recommend that participants be of similar ages, and that training not be provided before the age of 10 years. The trainee-to-instructor ratio should also be explicitly stated, and not exceed 10 participants per instructor, or 5 participants per instructor when training takes place in water.

Rationale

Training lay people in basic lifesaving[c] increases the number of people willing to act in real emergencies *(65).* Ensuring training programmes have a written document that clearly identifies the age range of the target training group and the ratio of trainer to trainees is sound operational practice and mirrors practical guidance in this resource for swimming and basic water safety skills, and day-care.

Training adults and children separately enables communication to be tailored to the target group, and allows factors such as differences in age and weight – which impact trainees' proficiency in basic rescue and the ability to achieve and maintain the recommended chest compression depth – to be taken into account.

Rescuers of drowning children are frequently other children. In at least one rural low-income country context it has been shown that the mean age of rescuers was only 6 years older than the person being rescued, and that the vast majority of people rescued were under 7 years of age *(61, 66)*. Given this, there is a compelling case to begin training at the earliest age at which children are able to acquire and retain the necessary skills. While the age at which a child can start learning safe rescue and resuscitation techniques depends on physical ability and the protocol of rescue and resuscitation being taught, there is a general consensus that most children are physically able by the age of 12 years, and ongoing research suggests that in some instances such learning could happen earlier *(2).*

c This involves responders promoting adequate blood circulation in addition to enabling the passage of oxygen through the airway.

Implementation considerations

Training adults: Parents are often in situations where they may need to aid children and others. Unfortunately, it is not uncommon for parents and guardians to impulsively go to the aid of a drowning child, which can result in the drowning of the rescuer. It has previously been suggested that providing parents with personal life-saving skills is the most practical way to reduce such tragedies and evidence suggests that this type of training may be most useful if targeting female guardians *(60)*.

Adult groups that should be explicitly targeted include (among others) parents of young children, community leaders, owners of formal and informal water recreation areas, vessel operators, fisher folk, health workers, and staff such as emergency service dispatchers (trained EMS dispatchers are able to improve bystander cardiopulmonary resuscitation (CPR) and patient outcomes, and need to be taught simplified scripts for instructing bystanders in CPR) *(65)*.

Training in safe rescue and resuscitation for bystanders must use a recognized, structured curriculum that is available as a written document.

Training children: Both weight and age appear to influence how successfully children can be trained in safe rescue and resuscitation. While there is no clear evidence base to recommend a specific age or body weight at which to start training, the current consensus recommends that training not be provided prior to the age of 10 years. Indeed, WHO and other parties to the "Kids save lives" initiative recommend teaching resuscitation to school children from the age of 12 years, for 2 hours per year, as school children at a young age have a less inhibited approach to resuscitation training *(67)*. However, not every child will be able to achieve and maintain the recommended chest compression depth – achieving this may require greater exertion and training for some younger children and will probably be more easily achieved for children weighing more than 50 kg *(68)*.

Safe rescue and resuscitation programme providers must therefore tailor training to participants' characteristics *(60, 68).* Training should be based on age-appropriate topics, include regular reinforcement of key actions such as recognition and calling for help, and sequentially introduce more complex actions with increasing age and size. Training should be repeated at regular intervals over the school career. Brevity, diversity of format and attention to cost and efficiency will promote interest from children and schools. A framework outlining how training should be delivered can help educational establishments to coordinate, plan and implement such training *(69)*.

Ratio: WHO recommends a trainee-to-instructor ratio of no more than 10:1 for land-based training and a trainee-to-instructor ratio of 5:1 for water-based training, though some programmes suggest a lower ratio.

Practical guidance 2

All safe rescue and resuscitation training programmes should use a structured curriculum based on relevant international guidance that focuses on drowning-specific safe rescue, resuscitation, and referral to the nearest health facility as necessary.

Rationale

Training in safe rescue and resuscitation for bystanders must use a recognized, structured curriculum that is available as a written document. A structured, written curriculum will help ensure that all training meets as closely as possible relevant international guidance such as the International Liaison Committee on Resuscitation (ILCOR) treatment recommendations *(70)*, and countries' own guidelines on safe rescue and resuscitation – for example, resuscitation protocols must be suitable for the local culture as well as conform to established national protocols *(71–73)*.

Implementation considerations

See page 5

Safe rescue: Safe rescue can be taught during standalone safe rescue training, or as part of wider basic swimming skills training (discussed in the "Teach school-age children basic swimming and water safety skills" section of this guide). Many survival swim skills programmes include safe rescue as part of the training curriculum. For example, the International Lifesaving Federation (ILSF) recommends that basic aquatic survival skills training includes the ability to "rescue and be rescued by extending or grasping a rescue aid (e.g. a pole, bottle, rope etc.) and be guided to safety over a distance (i.e. 3 to 5 metres)" *(1)*. The SwimSafe programme teaches children safer rescue using non-contact, land-based "reach and throw" techniques. Children are not taught contact rescue techniques and are taught only to enter the water as a last resort *(64)*.

The safe rescue element of a curriculum should take account of the level of swimming skills that children have, and cover the following areas:

- Recognizing an emergency – e.g. quickly determining if the person is drowning.
- Determining the safest rescue options available.
- Calling for help from others, including local emergency services.
- Looking for a rescue aid and understanding what may be used as a rescue aid.

- Safe rescue techniques.
- Keeping sight of the casualty.
- Attempting verbal communication with the drowning person.
- Providing a flotation device – e.g. a life ring or a 2-litre plastic drink bottle or football.

Drowning-specific resuscitation: This must include training in both rescue breathing and chest compression as both are needed to prevent death when a drowning victim is unconscious and not breathing. Practical training for resuscitation skills should focus on basic technical skills and address the following:

- Ventilation (rate, duration, volume) and chest compressions (rate, depth, hands-off time). At the time of writing, guidelines developed by the European Resuscitation Council (ERC) are the most extensive and detailed and offer the best basis upon which to create locally adapted resuscitation content *(70, 74)*.
- Checking for dangers and taking appropriate action; assessing the level of consciousness; clearing and opening the airway; checking for the presence or absence of breathing; positioning of the casualty for rescue breathing; performing simulated rescue breathing on a resuscitation manikin; locating the compression point for chest compression and demonstrating effective CPR on a manikin placed on the floor; demonstrating the appropriate action for a casualty who vomits or regurgitates; placing the casualty in the recovery position; and frequently re-evaluating the situation *(4, 75, 76)*.
- How to contact emergency services; and the importance of early defibrillation *(1)*.
- Gender and socioeconomic status (e.g. men are not always allowed to touch women, and certain social or ethnic groups avoid contact); incorrect resuscitation techniques and unfounded fears of acquiring HIV or TB during mouth-to-mouth ventilation *(2)*.

Referral to nearest health facility where necessary: The curriculum should cover protocols for referring drowning victims to the nearest health facility where necessary. This should explore issues around how to access emergency services, equipment and resources where available; who is responsible for transporting a drowning casualty to hospital; and any concerns around the rescuer being asked to pay for any treatment – especially if the drowning victim and rescuer are not known to each other.

Resuscitation training should take account of the local health system, as training will inevitably be shaped by whatever

equipment is locally available. It is unlikely that automated external defibrillators will be publicly available in a low-resource setting, so training potential rescuers in their use is potentially of limited value.

An ethical dilemma is whether CPR should be taught in locations where there is no ambulance system, local nurse, doctor or hospital to provide further treatment for drowning casualties *(2)*. Another ethical issue to cover is when to stop CPR if the victim is not responding. Most CPR programmes in high-income countries assume CPR will continue until trained medical personnel arrive and make the decision to stop resuscitation. However, emergency medical services are not always present in rural areas, so guidance must be available.

One first responder programme in Bangladesh addressed this challenge by including a formal “cessation” step in its CPR protocol. In order to give it credibility in social and medico-legal terms, a working group of six Bangladeshi medical and surgical specialists mandated a combination of chest compressions and mouth-to-mouth ventilation as the preferred method of resuscitation. Specific cessation guidelines stated responders should consider stopping after 30 minutes if the resuscitator is physically exhausted, or if professional medical assistance

arrives *(7)*. The support of community leaders was gained to protect first responders if there was a threat of reprisal occurring after attempting resuscitation.

Physical materials required to conduct training: Training in low-resource settings can make use of locally sourced rescue equipment (such as plastic containers as buoyancy aids) *(1)*. Commercially available, low-fidelity manikins are appropriate for all levels of training on European Resuscitation Council courses. Trainers must know how to clean and sanitise the manikins after use, and how to store any cleansing products safely.

Training in low-resource settings can make use of locally sourced rescue equipment.

Proposed training timelines, schedules and sequencing: The optimal duration of instructor-led basic lifesaving training is likely to vary according to participants (i.e. whether they are children, adolescents or adults); the curriculum; the ratio of instructors to participants; the amount of hands-on training; and the use of end-of-course assessments. Most studies show that CPR skills decay within 3 to 6 months after initial training *(65)* so it is important to set out clearly the duration of training, what will be learned when, and when refresher training may be required.

Practical guidance 3

Trainers should have age-appropriate education and should have successfully completed a "train the trainer" course that certifies them to become a trainer for the safe rescue and resuscitation curriculum being taught.

Rationale

Safe rescue and resuscitation trainers need to be able to think logically, be adaptable to different environments and incidents, be able to convey concepts in an age-appropriate manner and have some understanding of human physiology. While there is insufficient evidence to stipulate a minimum level of educational attainment to be an effective trainer, some studies from low- and middle-income countries show that better-educated and trained instructors (those with at least a secondary education) improve programme quality when it comes to the provision of services such as day-care *(33)* and this may also be the case when it comes to the selection of safe rescue and resuscitation trainers.

The benefits of using people who have been trained and certified to teach the curriculum include: less reliance on health-care workers (which may reduce cost and scheduling difficulties); establishment of a long-term investment in a training cadre able

to train successive student groups; and good management of student groups, particularly children. Medical students have shown to be effective safe rescue and resuscitation trainers, and have effectively instructed school children in a number of studies *(77–79)*.

Implementation considerations

Individuals and groups (e.g. teachers, medical students, swim skills trainers, lifeguards etc.) with an appropriate level of education should be identified within the community. Consideration should be given to their demonstrated ability to learn new conceptual material, their motivation and commitment to provide training, as well as gender, ethnicity, and any sociocultural considerations that may be appropriate for the context.

They should then be provided with a "train the trainer" course that addresses how best to teach the material covered in the curriculum; how to manage different profiles of trainees (e.g. children of different ages, adults), how to examine and assess effective acquisition and competence of skills and knowledge by trainees, and how to ensure skills and knowledge are acquired in a safe manner *(33, 80)*.

Practical guidance 4

The safe rescue and resuscitation curriculum used should stipulate that refresher training for resuscitation aspects of the training take place at least every 12 months.

Rationale

There is evidence that frequent, short-burst retraining could potentially enhance basic lifesaving training and reduce skill decay.

CPR knowledge and skills are known to decay within 3 to 6 months of initial training *(65)*. Although more studies are needed, there is evidence that frequent, short-burst retraining could potentially enhance basic lifesaving training and reduce skill decay. Furthermore, in settings where individuals are more likely to encounter cardiac arrest (such as settings with high rates of drowning) it is recommended that even more frequent retraining be provided as evidence suggests that frequent training improves not only CPR skills, but also responder confidence and willingness to perform CPR *(65)*. Practical guidance 4 suggests a training interval of not less than 12 months, since some settings suggest annual refresher trainings *(81)*, and it seems unlikely in low- and middle-income settings that refresher training could be sustainably conducted more frequently than this.

Implementation considerations

Refresher training content and frequency should be included in the curriculum from the outset, with the intention of instilling in trainees the concept of “lifelong learning” when it comes to rescue and resuscitation skills. Advantage should also be taken of refresher training to ask trainees if they have had to perform a rescue and or resuscitation. Full information on such events should also be recorded in the monitoring system (see Practical guidance 5).

See page 67

Practical guidance 5

All safe rescue and resuscitation programmes should establish a monitoring system that allows for programme evaluation.

Rationale

Establishing a monitoring system is part of sound programme management and as such is a key part of all three drowning prevention interventions in this resource. Data gathered by such monitoring systems can also contribute to the emerging evidence base in the area of drowning prevention and provide insight into how best to address what is one of the world's most preventable causes of death *(2, 60)*.

Implementation considerations

The monitoring system should include (but not be limited to) the following elements.

- **Basic demographic information on trainees, their training/ refresher training dates and experiences (ensuring the privacy of such data).** Such information could directly inform evidence around optimum refresher training intervals and methods and should include:
  - Age, sex, area of residence when trained; dates of enrolment and date of graduation, skill level obtained.
  - Dates of training sessions, and details of the instructors providing training, including age, sex, name, address, and skills level.
  - Information on trainees' level of competency. This will require pre-determining objective criteria on which to judge trainees.
  - Details on any refresher training provided to trainees, including frequency, dates, and content of training.
- **Data on rescues performed and resuscitation provided** help to track the frequency with which these skills are required in the community and can provide a compelling argument for continuing the programme, expanding it or modifying it. Any rescues and/or (even unsuccessful) resuscitations performed should be comprehensively recorded as soon as possible so that all relevant details can be accurately captured and entered into the monitoring system.
- **Cost data** to assess the cost per trainee of safe rescue and resuscitation training. These data are useful for establishing

cost-effectiveness, and – combined with the above-mentioned data on rescues and resuscitations performed – can make a compelling case for continuing and expanding safe rescue and resuscitation programmes.

- **Qualitative (interviews, written accounts) and quantitative (survey-based) data** can elicit how people view the value of safe rescue and resuscitation training, or potential barriers. For example, programmes involving mouth-to-mouth resuscitation may fail in settings where cultural norms preclude ventilation being performed by men on women, and qualitative data may suggest ways of overcoming that barrier.
- **Data on methods used in training** (including surveys of trainees immediately post-training) can enable the identification of good practice. This could include activities such as train-the-trainer approaches or adapting training materials for low-educational settings in order to teach safe rescue and resuscitation to participants who may not be literate, or the use of low-cost manikins where necessary.
- **Impact measurement** may include data on how many children, adults and adolescents have received training and refresher training; data on how a programme has reached a wider population through train-the-trainer approaches; and number of rescues and resuscitations performed by those trained within the programme as mentioned above.
- **"Before and after" studies:** These quasi-experimental studies use matched controls (e.g. comparison communities) to determine whether the intervention was effective beyond the effects of general community programmes and trends. This approach requires a baseline study to have been conducted at the start of the programme.

Practical guidance 6

In communities from which trainees will be drawn, safe rescue and resuscitation programmes should try to generate awareness and support for the training, set out when training will occur and how to participate, and address any sociocultural barriers.

Rationale

Safe rescue and resuscitation skills among the general public remain modest in many countries, highlighting the need for new initiatives to increase public awareness of their relevance. Since

the outcome of a drowning process depends almost entirely on the skills of those at the scene, the success of this intervention relies on achieving as high a capacity as possible among all communities. This will only be possible through communities understanding the social benefit of safe rescue and resuscitation training. In low-literacy, low-resource settings (where drowning rates tend to be highest), generating such awareness and "buy in" can help counteract the substantial misinformation that often exists around dealing with a drowning event, and promote uptake (and correct use) of safe rescue and resuscitation training.

Implementation considerations

Generating community awareness and support: CPR training should be accessible and integrated into everyday settings to maximize its benefits. For example, initiatives carried out in public places such as hospitals, markets, or airline terminals have been shown to provide good opportunities to increase general awareness of the importance of bystander CPR in improving outcomes for those in need of it *(82)*.

A drowning prevention programme in a rural area of the Philippines engaged villagers in researching and choosing

suitable drowning prevention measures, including safe rescue and resuscitation training. The project – culturally appropriate and site-specific – identified local risks by reviewing drowning mortality records, holding key informant interviews, focus group discussions and community "walk-throughs" *(83)*.

Addressing sociocultural barriers: Cultural barriers such as the wearing of swimming costumes, the sex of the instructor, men giving women ventilation or placing their hands on women's chests for CPR in training sessions, as well as traditional and harmful methods of dealing with drowning such as forcibly pushing the stomach or rubbing the victim with salt or ashes, need to be addressed as they delay or prevent effective CPR (as may other cultural or religious beliefs). In the first responder programme in Bangladesh, a successful strategy to do this was the recruitment of credible authority figures to present information on common knowledge and practices current among laypeople that are harmful when used. Community leaders expressed willingness to protect the first responder in cases of potential reprisals after the first aid was given. Community leaders participated and took active roles to increase programme support in the community and give leadership support for responders.

Countries in which resuscitation has been integrated into educational programmes in schools report significantly higher resuscitation rates.

Times of training: Schedules for training should match the needs of the target audience. For example, if school children are the audience, programmes should run during school hours. If adults are the audience, then training sessions should be mindful of parents' busiest times of the day and try to ensure minimum disruption to their day by making training local, timely, clearly advertised, and as convenient as possible.

Practical guidance 7

Safe rescue and resuscitation programme staff should build long-term relationships with local authorities and stakeholders to obtain support and assistance in facilitating training, and to ensure that training is sustainable in the long term.

Rationale

Safe rescue and resuscitation training programmes depend on the support of a wide range of stakeholders – from community leaders and municipal, national and regional governments to teachers, health-care providers, lifesaving organizations, swimming clubs and the media. Other key partners include

resuscitation and first aid agencies, hospitals, ambulance services, police and firefighters, parents and school children. Support from these partners is necessary to assure human and financial resources for the programme over the long term.

Training school children in CPR is one particularly successful method for training a large and highly motivated population group *(84)*. School children and teachers are important "multipliers" in both private and public settings and as such, in the longer term, can help the proportion of trained individuals in society markedly increase, leading to an increase in the overall rate of lay resuscitation.

Implementation considerations

Schools and school children as multipliers: Given their power as multipliers, including resuscitation training in school programmes is a proven way to improve communities' capacity to perform safe rescue and resuscitation. Countries in which resuscitation has been integrated into educational programmes in schools report significantly higher resuscitation rates. Programme providers should liaise with school authorities at regional level, or with educational authorities at national level,

in order to make the case for schools as multipliers for the dissemination of safe rescue and resuscitation skills and knowledge, and for schools to consider hosting safe rescue and resuscitation as part of their curriculum where possible.

Community leaders: In settings where the SwimSafe programme has operated, it has systematically won the support of community leaders. An aspect of this community engagement has been for community leaders to explicitly recommend community volunteers to participate in the safe rescue and resuscitation training programme, and a commitment by community leaders to ask the community to avoid harmful practices and instead accept correct care from trained first responders.

Parents as first responders: Trained school children can often be a useful means by which family members also undertake safe rescue and resuscitation training. Pregnant women attending prenatal classes, or new mothers attending well-baby clinics are other potential stakeholders to target for training. Recruitment of pregnant women to undertake safe rescue and resuscitation training has been shown to be effectively accomplished through prenatal classes *(85)*.

Other high risk/high impact groups: In any setting, programme managers running safe rescue and resuscitation programmes should consider which individuals within their communities may most likely find themselves needing to be a first responder to a drowning event. Fisherfolk are obvious communities to target for recruitment efforts. Others include owners of formal or informal water recreation areas, vessel operators, particularly if water transport is an important part of the social fabric, surfers *(86)*, as well as police and health-care personnel. In all cases thought should be given to how most effectively to provide the training, bearing in mind the implementation considerations in Practical guidance 6 about making timing of classes etc. most amenable to the target group for training.

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Annex 1:
Nature of rationale(s) for practical guidance

Intervention: Teach school-age children basic swimming and water safety skills		
Practical guidance 1	Target school-age children aged 6 years and older with structured swimming and water safety skills lessons, especially those in rural communities who are regularly exposed to water. References: *2, 5, 6, 7, 8, 9, 10*	
		Nature of rationale(s) for practical guidance
	Target school-age children aged 6 years and older	– Case study – Expert consensus
	with structured swimming and water safety skills lessons	– Good practice statement
	especially those in rural communities who are regularly exposed to water.	– Review of evidence
Practical guidance 2	Screen potential child participants targeted for basic swimming and water safety skills training for medical conditions or disability, and any necessary accommodations. Where possible this should be done by medically trained staff. Parents and guardians should be included in the screening process. References: *2, 11, 12, 13*	
		Nature of rationale(s) for practical guidance
	Screen potential child participants targeted for basic swimming and water safety skills training for medical conditions or disability, and any necessary accommodations.	– Expert consensus
	Where possible this should be done by medically trained staff.	– Review of evidence
	Parents and guardians should be included in the screening process.	– Good practice statement

Practical guidance 3	Gain documented, verbal or written informed consent for children to participate in basic swimming and water safety skills lessons from parents or guardians.	
		Nature of rationale(s) for practical guidance
	Gain documented, verbal or written informed consent for children to participate in basic swimming and water safety skills lessons from parents or guardians. References: *2, 10*	– Good practice statement
Practical guidance 4	Perform a safety assessment using a checklist each time a swimming training site is used for a lesson, to ensure the site: – adheres to relevant regulatory frameworks; – is in clean, preferably clear, water; – is in shallow water of a known depth; – has secure, highly visible boundaries; – has known, low speed-flow characteristics if the training site is in open water where flow currents occur (e.g. tidal flows, possibility of rip currents, river flow etc.); – is free of sharp or blunt underwater objects, dangerous animals and microbial hazards as per WHO's recreational water quality guidelines; – is at a safe temperature for basic swimming and water safety skills training. References: *1, 2, 4, 14, 15, 16, 17, 18*	
		Nature of rationale(s) for practical guidance
	Perform a safety assessment using a checklist each time a swimming training site is used for a lesson to ensure the site:	– Expert consensus
	– adheres to relevant regulatory frameworks;	– Expert consensus – Good practice statement
	– is in clean, preferably clear, water;	– Good practice statement
	– is in shallow water of a known depth;	Case study
	– has secure, highly visible boundaries;	– Expert consensus

	– has known, low speed-flow characteristics if the training site is in open water where flow currents occur (e.g. tidal flows, possibility of rip currents, river flow etc.);	– Expert consensus – Case study
	– is free of sharp or blunt underwater objects, dangerous animals and microbial hazards as per WHO's recreational water quality guidelines; *(14)*	– Good practice statement
	– is at a safe temperature for basic swimming and water safety skills training.	– Good practice statement
Practical guidance 5	Select and recruit local people (male and female), already certified for a recognized training curriculum (or willing to be trained), able to provide water rescue (both in-water and non-contact, or dry water rescue), first aid and CPR, and experienced or trained in teaching and managing groups of children. References: *2, 4, 19, 20*	
		Nature of rationale(s) for practical guidance
	Select and recruit local people (male and female), already certified for a recognized training curriculum (or willing to be trained);	– Expert consensus
	able to provide water rescue (both in-water and non-contact, or dry water rescue), first aid and CPR,	– Expert consensus – Good practice statement – Case study
	experienced or trained in teaching and managing groups of children.	– Expert consensus

Practical guidance 6	Engage with local authorities and stakeholders, including schools, parents, local community groups and service providers etc, in basic swimming and water safety skills programmes to gain insight and input on: safe, local training locations, credible candidates to be instructors, local water safety issues and attitudes to drowning, and funding for training programmes. References: *2, 4, 6, 21, 22, 23*	
		Nature of rationale(s) for practical guidance
	Engage with local authorities and stakeholders, including schools, parents, local community groups and service providers etc, in basic swimming and water safety skills programmes to gain insight and input on:	– Expert consensus
	safe, local training locations,	– Good practice statement
	credible candidates to be instructors,	– Good practice statement
	local water safety issues and attitudes to drowning,	– Case study
	and funding for training programmes.	– Expert consensus
Practical guidance 7	Develop an emergency action plan that lays out the procedures to be followed in the event of any emergency during training (beyond standard operating procedures ensuring routine safe operation). References: *24, 25*	
		Nature of rationale(s) for practical guidance
	Develop an emergency action plan that lays out the procedures to be followed in the event of any emergency during training (beyond standard operating procedures ensuring routine safe operation).	– Expert consensus – Good practice statement

Practical guidance 8	Use a structured curriculum to teach basic swimming and water safety skills, adapted to the local population and context, and covering basic swim skills, water safety, and basic rescue. Curricula must be safety tested and shown to enable (at a minimum) children's ability to swim 25 metres, and either tread water and/or otherwise maintain their airway above water using a suitable floating technique for a minimum of 30 seconds. References: *1, 4, 26, 27, 28*	
		Nature of rationale(s) for practical guidance
	Use a structured curriculum to teach basic swimming and water safety skills, adapted to the local population and context, and covering basic swim skills, water safety, and basic rescue.	– Review of evidence – Expert consensus
	Curricula must be safety tested	– Good practice statement
	and shown to enable (at a minimum) children's ability to swim 25 metres, and either tread water and/or otherwise maintain their airway above water using a suitable floating technique for a minimum of 30 seconds.	– Review of evidence – Expert consensus
Practical guidance 9	Specify a maximum instructor-participant ratio of 1:5. The ratio must be appropriate for the skills level of participants (especially children with medical conditions or disability) and for the water conditions. References: *1, 2, 4*	
		Nature of rationale(s) for practical guidance
	Specify a maximum instructor-participant ratio of 1:5.	– Case study
	The ratio must be appropriate for the skills level of participants (especially children with medical conditions or disability)	– Expert consensus
	and for the water conditions.	– Good practice statement

Practical guidance 10	Ensure that incident-reporting mechanisms that capture important incidents (such as adverse effects on health, increase in risk, activation of emergency action plan etc.) are in place, for example: active surveillance for injury and other adverse effects among participants; up-to-date records for all participating children and their parents; and details on attendance, enrolment, graduation, failure or dropout, injury or other adverse outcome.	
		Nature of rationale(s) for practical guidance
	Ensure that incident-reporting mechanisms that capture important incidents (such as adverse effects on health, increase in risk, activation of emergency action plan etc.) are in place, for example: active surveillance for injury and other adverse effects among participants; up-to-date records for all participating children and their parents; and details on attendance, enrolment, graduation, failure or dropout, injury or other adverse outcome.	– Good practice statement
Practical guidance 11	Conduct site-safety audits regularly and ensure that monitoring is carried out for quality assurance purposes. Reference: *3*	
		Nature of rationale(s) for practical guidance
	Conduct site-safety audits regularly	– Good practice statement
	and ensure that monitoring is carried out for quality assurance purposes.	– Expert consensus
Practical guidance 12	Ensure strong safeguarding policies, procedures and measures are incorporated throughout the training cycle, involving the community in providing "good character" references for potential instructors, and ongoing monitoring from community leaders.	
		Nature of rationale(s) for practical guidance
	Ensure strong safeguarding policies, procedures and measures are incorporated throughout the training cycle,	– Good practice statement
	involving the community in providing "good character" references for potential instructors, and ongoing monitoring from community leaders.	– Expert consensus

Intervention: Provide day-care for pre-school children

Practical guidance 1	Day-care should have written procedures that explicitly state the age range of children to be cared for and require parents' informed consent. Child-to-caregiver ratios should not exceed one caregiver per maximum 13 children aged 1–4 years and one caregiver per every three children aged under 12 months. References: *1, 2, 29, 30*	
		Nature of rationale(s) for practical guidance
	Day-care should have written procedures that explicitly state the age range of children to be cared for and require parents' informed consent.	– Good practice statement
	Child-to-caregiver ratios should not exceed one caregiver per maximum 13 children aged 1–4 years and one caregiver per every three children aged under 12 months.	– Case study – Expert consensus
Practical guidance 2	Day-care venues should be no more than a 20-minute walk from the child's home, along a route that is safe for children and their parents or guardians. References: *31, 32*	
		Nature of rationale(s) for practical guidance
	Day-care venues should be no more than a 20-minute walk from the child's home,	– Expert consensus
	along a route that is safe for children and their parents or guardians.	– Good practice statement

Practical guidance 3	Day-care venues should provide a minimum of 1.2 square metres of space per participant (caregivers and children); be safely constructed for local conditions, with closing doors operable only by adults; have a means to regulate temperature; and allow for unobstructed supervision of children – including during toilet and handwashing breaks. They must be equipped with the basic materials to safely clean up and disinfect any body fluids that may put children or staff at risk of infection, such as vomit or diarrhoea. References: *2, 33, 34*	
		Nature of rationale(s) for practical guidance
	Day-care venues should provide a minimum of 1.2 square metres of space per participant (caregivers and children);	– Expert consensus
	be safely constructed for local conditions, with closing doors operable only by adults; have a means to regulate temperature; and allow for unobstructed supervision of children – including during toilet and handwashing breaks.	– Good practice statement
	They must be equipped with the basic materials to safely clean up and disinfect any body fluids that may put children or staff at risk of infection, such as vomit or diarrhoea.	– Case study – Expert consensus
Practical guidance 4	Day-care should offer a structured programme of physical and mental activities for children that are age appropriate and draw from best practice, particularly with regard to early childhood development. References: *35, 36, 37, 38*	
		Nature of rationale(s) for practical guidance
	Day-care should offer a structured programme of physical and mental activities for children	– Expert consensus – Case study
	that are age appropriate and draw from best practice	– Good practice statement
	particularly with regard to early childhood development.	– Review of evidence

Practical guidance 5	The day-care provider should have a written document that clearly sets out the hours and days of the week during which day-care is available. This information should be complemented by procedures for dropping children off and picking them up from the day-care, and these aspects should be communicated clearly during engagement with local parents and stakeholders. References: *39, 40, 41*	
		Nature of rationale(s) for practical guidance
	The day-care provider should have a written document that clearly sets out the hours and days of the week during which day-care is available.	– Case study
	This information should be complemented by procedures for dropping children off and picking them up from the day-care	– Expert consensus
	and these aspects should be communicated clearly during engagement with local parents and stakeholders.	– Good practice statement
Practical guidance 6	Caregivers and assistants should ideally be female and be selected by a local committee comprising local authorities and residents. Caregivers should have as high a level of education as possible and receive initial and ongoing training covering: child development, behaviour management, appropriate game play and structured learning activities, first aid, managing child safety risks including drowning, recognition and management of common childhood illnesses, and conveying health-promotion messages. References: *33, 42, 43, 44, 45, 46*	
		Nature of rationale(s) for practical guidance
	Caregivers and assistants should ideally be female	– Expert consensus
	and be selected by a local committee comprising local authorities and residents.	– Case study
	Caregivers should have as high a level of education as possible	– Review of evidence

	and receive initial and ongoing training covering: child development, behaviour management, appropriate game play and structured learning activities, first aid, managing child safety risks including drowning, recognition and management of common childhood illnesses, and conveying health-promotion messages.	– Expert consensus – Review of evidence
Practical guidance 7	Day-care centre operations should be subject to no less than six unannounced inspections per year by a suitably trained, regional day-care centre supervisor. Inspections should involve a written checklist to ascertain if procedures are being followed correctly, as well as interviews with children, caregivers, parents and local authorities. References: *2, 42, 44, 47, 48*	
		Nature of rationale(s) for practical guidance
	Day-care centre operations should be subject to no less than six unannounced inspections per year	– Expert consensus
	by a suitably trained, regional day-care centre supervisor.	– Case study
	Inspections should involve a written checklist to ascertain if procedures are being followed correctly,	– Good practice statement
	as well as interviews with children, caregivers, parents and local authorities.	– Expert consensus
Practical guidance 8	The quality of supervision and care of children should be monitored during unannounced inspections by a regional day-care centre supervisor. This monitoring should make use of a written checklist that includes quality of play and structured activities, supervision of toilet and hygiene practices, and maintenance of order. References: *2, 42, 49*	
		Nature of rationale(s) for practical guidance
	The quality of supervision and care of children should be monitored during unannounced inspections by a regional day-care centre supervisor.	– Expert consensus
	This monitoring should make use of a written checklist	– Good practice statement

	that includes quality of play and structured activities, supervision of toilet and hygiene practices, and maintenance of order.	– Case study
Practical guidance 9	Written guidelines must be established that clearly state the responsibilities of caregivers, assistants and supervisors to protect children from abuse or neglect and report any suspicions to relevant authorities. Day-care supervisors should in particular be trained to recognize signs and symptoms of children that have been abused or are neglected. References: *1, 11, 42, 50, 51, 52*	
		Nature of rationale(s) for practical guidance
	Written guidelines must be established that clearly state the responsibilities of caregivers, assistants and supervisors to protect children from abuse or neglect and report any suspicions to relevant authorities.	– Expert consensus
	Day-care supervisors should in particular be trained to recognize signs and symptoms of children that have been abused or are neglected.	– Review of evidence
Practical guidance 10	Day-caregivers must have written plans and procedures for controlling communicable disease risks to children and staff. These should stipulate that children with communicable diseases are not brought to day-care but are cared for at home. Caregivers and assistants should be trained in cleaning up and disinfecting any infectious body fluids that may pose a risk to children or staff, such as vomit or diarrhoea. References: *2, 53, 54, 55, 56, 57, 58, 59*	
		Nature of rationale(s) for practical guidance
	Day-caregivers must have written plans and procedures for controlling communicable disease risks to children and staff.	– Expert consensus
	These should stipulate that children with communicable diseases are not brought to day-care but are cared for at home.	– Good practice statement

	Caregivers and assistants should be trained in cleaning up and disinfecting any infectious body fluids that may pose a risk to children or staff, such as vomit or diarrhoea.	– Review of evidence
Practical guidance 11	Day-care staff and regional-level supervisory staff must engage with local authorities and stakeholders such as parents on a regular basis – including during their regular supervisory visits (see Recommendations 7 and 8), and prior to day-care being established, in order to clearly explain the operating procedures, establish local committees for staff selection and recruitment etc. References: *2, 42*	
		Nature of rationale(s) for practical guidance
	Day-care staff and regional-level supervisory staff must engage with local authorities and stakeholders such as parents on a regular basis – including during their regular supervisory visits (see Practical guidance 7 and 8), and prior to day-care being established, in order to clearly explain the operating procedures, establish local committees for staff selection and recruitment etc.	– Expert consensus

Intervention: Train bystanders in safe rescue and resuscitation

Practical guidance 1	Safe rescue and resuscitation training programmes should have a written document that specifies trainees' target age range. Current evidence and consensus would recommend that participants be of similar ages, and that training not be provided before the age of 10 years. The trainees-to-instructor ratio should also be explicitly stated, and not exceed 10 participants per instructor, or 5 participants per instructor when training takes place in water. References : *2, 60, 61, 65, 66, 67, 68, 69*	
		Nature of rationale(s) for practical guidance
	Safe rescue and resuscitation training programmes should have a written document that specifies trainees' target age range.	– Expert consensus
	Current evidence and consensus would recommend that participants be of similar ages, and that training not be provided before the age of 10 years.	– Expert consensus – Review of evidence
	The trainees-to-instructor ratio should also be explicitly stated, and not exceed 10 participants per instructor, or 5 participants per instructor when training takes place in water.	– Expert consensus
Practical guidance 2	All safe rescue and resuscitation training programmes should use a structured curriculum based on relevant international guidance that focuses on drowning-specific safe rescue, resuscitation, and referral to the nearest health facility as necessary. References : *1, 2, 4, 7, 64, 65, 70, 71, 72, 73, 74, 75, 76*	
		Nature of rationale(s) for practical guidance
	All safe rescue and resuscitation training programmes should use a structured curriculum based on relevant international guidance	– Expert consensus
	that focuses on drowning-specific safe rescue, resuscitation, and referral to the nearest health facility as necessary.	– Expert consensus – Review of evidence

Practical guidance 3	Trainers should have age-appropriate education and should have successfully completed a “train the trainer” course that certifies them to become a trainer for the safe rescue and resuscitation curriculum being taught. References : *33, 77, 78, 79, 80*	
		Nature of rationale(s) for practical guidance
	Trainers should have age-appropriate education and should have successfully completed a “train the trainer” course that certifies them to become a trainer for the safe rescue and resuscitation curriculum being taught.	– Expert consensus
Practical guidance 4	The safe rescue and resuscitation curriculum used should stipulate that refresher training for resuscitation aspects of the training take place at least every 12 months. References : *65, 81*	
		Nature of rationale(s) for practical guidance
	The safe rescue and resuscitation curriculum used should stipulate that refresher training for resuscitation aspects of the training take place at least every 12 months.	– Expert consensus
Practical guidance 5	All safe rescue and resuscitation programmes should establish a monitoring system that allows for programme evaluation. References : *2, 60*	
		Nature of rationale(s) for practical guidance
	All safe rescue and resuscitation programmes should establish a monitoring system that allows for programme evaluation.	– Good practice statement

Practical guidance 6	In communities from which trainees will be drawn, safe rescue and resuscitation programmes should try to generate awareness and support for the training, set out when training will occur and how to participate, and address any sociocultural barriers. References: *82, 83*	
		Nature of rationale(s) for practical guidance
	In communities from which trainees will be drawn, safe rescue and resuscitation programmes should try to generate awareness and support for the training, set out when training will occur and how to participate, and address any sociocultural barriers.	– Case study – Good practice statement
Practical guidance 7	Safe rescue and resuscitation programme staff should build long-term relationships with local authorities and stakeholders to obtain support and assistance in facilitating training, and to ensure that training is sustainable in the long term. References: *84, 85, 86*	
		Nature of rationale(s) for practical guidance
	Safe rescue and resuscitation programme staff should build long-term relationships with local authorities and stakeholders to obtain support and assistance in facilitating training, and to ensure that training is sustainable in the long term.	– Case study – Good practice statement

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