

Launch webinar:

# WHO's updated guidelines for small drinking-water supplies and associated sanitary inspection tools

15.02.2024 / 14:00 – 15:30 CET / Online

## Questions & Answers

This section compiles participant questions received in the Q&A and chat boxes. In case written answers were provided during the webinar, they have been included here. In some cases, questions and/or answers have been combined, augmented and/or edited for clarity or to be more broadly applicable.

### Small water supply and public health context

**Could we categorize dug wells as small water supplies? This is very common in developing countries.** Indeed, point sources such as dug wells are commonly considered to be small water supplies. Dug wells are among the small water supplies for which SI packages have been developed by WHO (see Fig. A4.2 in Annex 4 of the Guidelines, and see the separate SI packages publication). Note that the Guidelines do not provide a strict definition for small supplies, but rather consider the common challenges faced by a broad range of small supplies.

**Some ten years ago the narrative around small community water supplies was about the lack of technical knowledge, experience and capacity to operate and maintain the systems. Today's discussions seem to show a shift to the need for regulatory frameworks and surveillance. How does this link to the previous focus and is this addressed in the guidelines?** The Guidelines acknowledge the challenges that small water suppliers commonly face, including issues related to capacity, and they recommend explicit policy and regulatory consideration to ensure that small suppliers receive the support and oversight needed to enable safe service delivery. An important element of supportive regulation is ensuring that small suppliers receive the training, guidance and practical tools needed to build capacity and support good practices, including water safety planning (e.g. see Sections 4.3.4 and 4.3.5 of the Guidelines).

**Public/environmental health may be the priority for the health sector but is not the priority for all stakeholders – e.g. gender, environment, social. How can these contrasting or even competing interests be balanced? How can we balance investments in water quality and those more focused on water quantity? How can public health authorities work together with water supply authorities to implement these guidelines?** While enabling the provision of safe water is a duty of governments, the Guidelines promote a risk-benefit approach. This means that setting health-based regulations should be done in the context of broader public health policy, including consideration of other exposure routes to contaminants of concern and consideration of environmental, social and economic factors. Investments in water are often part of political processes, motivated by a range of factors beyond disease burden. Chapter 2 of the Guidelines addresses the issue of assessing the enabling environment, which is key to identifying bottlenecks in WASH systems and opportunities to strengthen political prioritization and governance (including stakeholder coordination and collaboration). All of these upstream enablers are critical for resource allocation to small water supplies. Having said this, the Guidelines advise on maximizing public health benefit, even with scarce resources. For example, limited resources should not be unnecessarily diverted to standards for, and monitoring of, substances of minor importance to public health. The Guidelines emphasize progressive improvement through straightforward water safety planning or SI approaches. Many improvements can be immediately put in place, even with scarce resources.

Access to potable water supply in rural communities has remained a significant public health challenge in developing countries. Many communities still drink from the streams and rivers with open defecation and other contaminants. Cholera eradication in such communities is far from being achieved. **How may academic researchers be empowered to provide training and capacity building for such communities?** The Guidelines were developed to address these important concerns, acknowledging that small water supplies require explicit policy and regulatory consideration and support to overcome key challenges and associated impacts. The Guidelines also highlight the importance of taking a risk-based approach to addressing water quality risks (e.g. see Section 3.3.3 on defining water quality parameters). The sector will be well served as researchers and other stakeholders incorporate Guidelines messaging (i.e. the 6 core recommendations and associated practical implementation actions) and supporting tools (e.g. sanitary inspection packages) into their programmes of work. WHO is planning to develop a training package on the Guidelines, which could be a useful starting point for stakeholders to develop their own training programmes.

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## Sanitary inspections (SIs)

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**One of the challenges related to SIs we regularly face is the absence of standardized approaches. Lack of consistent SI methodologies and protocols across regions and agencies leads to inconsistencies and potentially missed risks.** Training is an important consideration. Authorities should consider the training needed to apply the SI packages. The users of the packages – whether water suppliers (or householders) or surveillance staff – must have sufficient knowledge to ensure consistent and accurate results. Authorities should therefore consider developing capacity-building programmes that can include training packages tailored to the local context as capacity and resources permit.

**Are there any issues you think SI training materials should highlight?** Annex 4 of the Guidelines addresses points that would be valuable to consider in SI trainings, including how SIs can support risk management practice and surveillance (these points are covered in more detail in Chapters 4 and 5), and how SIs can be adapted to national contexts as needed.

**How can SI packages support risk management and surveillance?** SIs are an important tool to support both risk management and surveillance, as noted above. See Fig. A4.1 in Annex 4 of the Guidelines for a simple graphic that shows the role of SIs in each of these activities, and see Chapters 4 and 5 for further details.

**The SI form on household practices only has one question on treatment. Is WHO planning to develop/support the development of SIs for household water treatment solutions to ensure continued, correct and effective use and management of these solutions?** WHO currently does not have any plans to work on this, but is aware that CAWST has worked on SI sheets for household water treatment. We welcome further exchanges on this. WHO resources on household water treatment and safe storage (HWTS) can be accessed [here](#), including a [toolkit for monitoring and evaluating HWTS](#).

**The slide on “Establishing requirements” - Guidance on when to use different risk management approaches and tools - shows a range of overlap between when SIs are the preferred option to WSPs (based on population served and what you call “management type”). Do the latest guidelines offer anything more concrete (e.g. a threshold population served) below which SIs may be optimal? This has important practical value, since smaller systems may currently feel somehow obligated to put in place WSPs that they are ill-equipped to produce or implement.** Table 4.1 of the Guidelines provides minimum recommendations for risk management according to management model. This table suggests that for household managed supplies, SIs may be a more appropriate risk-management approach. For community managed supplies, basic WSPs (e.g. developed using a simple template) to more comprehensive WSPs are recommended, according to capacity. And for professionally managed supplies, comprehensive WSPs are recommended. For development and ongoing implementation of these WSPs, SIs are a useful tool to support hazard identification and ongoing monitoring efforts. The recommendations in Table 4.1 are intended to support context-specific decisions on which water supply types and sizes will (and will not) have the capacity to implement WSPs. Where capacities are limited and even basic WSPs are considered infeasible, regular use of SIs (including management action) can serve as an interim risk management approach, as indicated in the table.

**Are SI forms available for mobile data collection? Are there any plans to link with platforms such as mWater, AKVO, ODK or KoboToolbox?** Currently, WHO's SI forms are [available in PDF and Word formats](#). We are not aware of digital SI forms for drinking-water and are interested in developing these mobile tools, pending available resources. There are [sanitation SI forms available on mWater](#). An important complement to the development of mobile tools is training and capacity development of the agencies responsible for their use, including to ensure that target data users are accessing the information and systematically using it to inform decisions and actions.

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## Water safety plans (WSPs)

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**Developing and implementing a WSP can be complex, involving multiple steps and stakeholders. This can be overwhelming for small water/systems providers or communities with limited resources. What do you recommend for such settings?** Table 4.1 of provides guidance on tailoring risk management approaches to the resources and capacities of small water suppliers. Also, Sections 4.3.4 and 4.3.5 cover training, guidance and tools that small suppliers need to implement WSPs. Please see [WHO resources on water safety planning](#) and [Water Safety Portal \(WSPortal\)](#) for many helpful resources on various aspects of water safety planning, including WSP development, implementation, training, advocacy and auditing. Two such resources for small supply WSPs that may be of interest are [A field guide to improving small drinking-water supplies: water safety planning for rural communities](#), which includes templates for developing the various elements of a WSP, and [Water safety planning for small community water supplies: step-by-step risk management guidance for drinking-water supplies in small communities](#).

**Who should pay for the implementation of the plan? The operator, the users or the State, bearing in mind that people in rural areas are poor?** The important question of financing WSPs – both in terms of implementation by small water suppliers and the support costs associated with WSP training and auditing – is addressed in Section 4.3.6 of the Guidelines. See also cases A3.38 and A3.39 in Annex 3 for case examples of financing improvements required to manage risks to small water supplies.

**Would it be possible to obtain a model WSP?** In Annex 3, case A3.36 highlights two WSP templates that vary according to water supplier capacity, both of which are available at the links provided in the source section of the case study. Additionally, the WHO publication [A field guide to improving small drinking-water supplies: water safety planning for rural communities](#) provides WSP templates for small water supplies. See also the question below on WSP templates used in South Australia.

**Are the generic plans for rainwater harvesting, borehole water, etc. used in South Australia available on the web?** Generic templates are available on the [SA Health website](#). These templates are currently being upgraded to make them easier to apply, so check back soon for improved versions.

**The WHO is promoting HWTS as an intermediate solution to have safe water at point of use. However, only few countries in Africa include HWTS in the WSPs. What would be your suggestion?** Indeed, Section 3.3.9 of the Guidelines addresses HWTS as one of the approaches for improving water safety and cites the related resources. To facilitate the inclusion of HWTS within a WSP, it is valuable to recognize HWTS as part of the water supply chain for which risks must be considered and managed. See Fig. 4.5 of the Guidelines for a graphic depicting this concept. Some organizations have developed resources to support the systematic integration of HWTS into the WSP process, e.g. those developed by CAWST that are available [here](#).

**To make risk assessments as robust as possible, key questions that may need addressing are: how good should the information be on which the assessment is based? How should risks be prioritized and controlled? Should risk only be evaluated by experts or should lay opinion be permitted? How should the perception of risk be incorporated?** These are valuable points. At the same time, the Guidelines make the case that data gaps should not deter action, and that water safety planning is a step-wise process with benefits to be realized from even partial implementation. As part of progressive improvement – a foundational principle of the Guidelines – risk assessments can be made more robust over time as resources and capacities allow.

**If there are threats to the water sources from commercial and productive activities of other countries, should they be visualized as threats to the security plans, or it is recommended to manage them as a national problem?** Indeed, drinking-water catchments may cross international borders, complicating the source water protection element of water safety planning. In such circumstances, it may be necessary for water safety planning to focus initially on contaminating activities that can be more readily controlled (i.e. those taking place domestically), while progressively working to address transboundary issues.

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## Implementation of the Guidelines, including stakeholder roles

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**What is the role of local authorities/government in service delivery from small water supply systems?** The critical role of government in supporting safe service delivery from small water supplies is central to the Guidelines. Chapter 2 addresses the role of government actors at different administrative levels in supporting the enabling environment for sustainable drinking-water service delivery (e.g. with respect to governance instruments, sustainable financing, capacity development). The other chapters address the role of government in the context of water quality regulation, water safety planning, water quality surveillance and the use of data to support decision-making.

**How to manage the different roles and responsibilities of stakeholders to avoid possible conflicts?** This important question is addressed in Chapter 2 of the Guidelines, in particular Section 2.3.2 on governance arrangements. It is also addressed in Chapter 5 as it relates to the importance of independent surveillance by an agency that is separate from the water supplier, and Chapter 6 as it relates to managing disincentives to data sharing.

**I see a lack of a multi-stakeholder approach as a recommendation. What would be the reason for this?** While multi-stakeholder collaboration is not one of the 6 core recommendations in the Guidelines, it is reflected in one of the 10 guiding principles presented in Box 1.1 (Strengthen systems), and related messaging is integrated throughout the publication. For example, Chapter 2 of the Guidelines addresses the important topic of stakeholder collaboration, including clear institutional arrangements and effective coordination mechanisms. Chapter 3 (Section 3.3.2) addresses the need for stakeholder collaboration to ensure source water protection, and Chapter 5 (Section 5.3.8) addresses the need for stakeholder collaboration to protect consumers in the event of water quality incidents. Some of the case studies in Annex 3 relate to stakeholder collaboration and overcoming institutional fragmentation, namely Case A3.3 and A3.4.

**What role can nurses play in this type of project?** [WASH FIT](#) provides guidance on improving WASH in health centres, building on the water safety planning concept promoted in the Guidelines. In Indonesia, for example, if a primary health centre does not have sanitation personnel, nurses can play an important role in monitoring the quality of drinking-water.

**The question of ownership is critical, especially when it comes to hand-over. What is being handed over and how can ownership be formalized to reduce neglect/damage to the systems as well as long term local maintenance instead of dependence on local government? We have not gotten this right. Do we need a memorandum of understanding, contracts, etc.? Also, how can these guidelines and tools be used to build up the business model for a community-managed small water supply from scratch?** Recommendation 3 of the Guidelines addresses moving toward more professionalized service provision (including through more sophisticated community management), which requires clear accountability frameworks, including clarity around ownership. There are emerging approaches to improved management models that regulators in some countries are applying. Some of these approaches are highlighted as case examples in the Guidelines, with further references cited in Chapter 3 for more information. We look forward to having more in-depth discussions on this.

**Could you share tips for how to ensure budget for treatment, facility management, water testing and surveillance? The most important limiting factor for carrying out technical inspections in small rural communities is the lack of financing. What is the experience with successful financing models?** The need for sustainable financing is addressed in Sections 2.3.3, 4.3.6 and 5.3.4 of the Guidelines. Annex 3 includes a case study on sustainable financing of regulatory activities that may be of interest, namely Case A3.46.

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## Continued WHO support for Guidelines implementation

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**What is WHO's plan for disseminating the guidelines and SI tools – e.g. in-person and/or on-line workshops? Will some virtual tools be developed to assist small systems and local related authorities?** WHO aims to hold a series of technical webinars throughout the year that will provide a more focused look at the SI tools and other aspects of the Guidelines. WHO is also planning to develop a training package on the Guidelines. Consideration will be given to in-person events, depending on resources and interest. We welcome further feedback; please send your comments to: [gdwq@who.int](mailto:gdwq@who.int). To keep informed about future events, [join our mailing list here](#).

**What strategy is WHO considering to obtain commitments from government authorities and what support is WHO planning to provide to implement these guidelines?** One approach to engage government authorities is through WHO's work with regulators, including through its [International Network of Drinking-water and Sanitation Regulators \(RegNet\)](#). WHO will continue to sensitize RegNet members, as well as regional regulators associations such as [East and Southern African Water and Sanitation \(ESAWAS\)](#) Regulators Association and [Asociación de Entes Reguladores de Agua y Saneamiento de las Américas \(ADERASA\)](#). WHO will also continue working with partners to sensitize government authorities and water supply agencies. As noted above, WHO will also provide support through convening a series of training events (webinars and possibly in-person) and developing training materials.

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## Water quality

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**How should water quality control be managed within this framework?** To ensure drinking-water quality, the Guidelines recommend WSP implementation by water suppliers, who have primary responsibility for drinking-water quality control. A key activity of water safety planning is operational monitoring, to ensure that control measures that are in place to achieve drinking-water safety continue to work as intended. WSPs are addressed in Chapter 4 of the Guidelines and in many case studies in Annex 3.

**Where can I find updated water quality regulations and safety standards?** There are multiple WHO publications that will be of interest, including the [Guidelines for drinking-water quality](#), which presents information on microbial, chemical, radiological and acceptability aspects of drinking-water (including guideline values) for consideration in regulations. Further, [Developing drinking-water quality regulations and standards](#) provides practical guidance on prioritizing parameters for regulations in the local context. Additionally, [A global overview of national regulations and standards for drinking-water quality](#) summarizes regulatory parameters and limits that are specified in regulations and standards in about 120 countries around the world.

**Any recommendations for simple and practical water quality testing in remote rural communities? How to select the most efficient portable water testing kits/equipment?** The Guidelines encourage considering the use of validated field test kits as an alternative to testing in a laboratory, particularly where human and financial resources are constrained and access to labs may be limited. See Section 3.3.6 of the Guidelines for further information. In addition, WHO is developing guidance on criteria that should be considered when selecting water quality field test kits. WHO has also evaluated a number of portable testing kits, please [visit this site](#) for more information.

**What do the Guidelines advise on emerging pollutants?** The Guidelines recommend a risk-based approach to managing drinking-water hazards. Recognizing the limited resources available to small water suppliers, the Guidelines highlight a set of key parameters to consider in regulations (see Tables 3.1 and 3.2). The Guidelines also highlight that countries should progressively consider additional regulatory parameters beyond this core set based on risks and capacities. This could include addressing emerging contaminants. Risks from drinking-water supply contaminants, including emerging contaminants, need to be considered in the context of all risks from the water supply, including the risk of not having adequate supplies of drinking-water.

**How does chlorination factor into the guidelines?** The Guidelines (e.g. Section 3.3.3) stress that microbial safety of drinking-water is paramount, and chlorine is identified as an important disinfectant that should be a priority water quality monitoring parameter where it is applied. See Tables 3.1 and 3.5 of the Guidelines for more guidance on chlorine residual monitoring.

**What recommendations would you offer to community systems (e.g. at schools) for removing arsenic and fluoride from groundwater? Also, what are low cost/low tech inline chlorine dosing systems for community boreholes and water points?** As highlighted in WHO's [Guidelines for drinking-water quality](#), a number of treatment technologies for small supplies are available, including coagulation and precipitation and adsorption. As noted immediately above, WHO has identified chlorine as an important disinfectant; however, WHO does not selectively issue recommendations on proprietary products<sup>1</sup>. For further details on managing arsenic in drinking-water, including through water treatment, see the UNICEF/WHO publication [Arsenic primer](#). In addition, further guidance will be available in the forthcoming WHO publication entitled Compendium of drinking-water systems and technologies from source to consumer.

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<sup>1</sup> WHO has evaluated the microbial performance of various household water treatment products based on the performance recommendations outlined [here](#). Additionally, WHO has [evaluated the performance of field test kits for E. coli](#), and is developing guidance on selection criteria for these field kits.



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## Emergency / humanitarian settings

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**Have the new guidelines considered emergency situations? Do you have recommendations for adapting these guidelines to small supplies in humanitarian crisis contexts where situations may be evolving?** Although the Guidelines do not explicitly cover emergencies and transient contexts, they provide a number of foundational principles which are relevant to such situations, including taking a risk-based approach, approaching WASH holistically and strengthening resilience. In addition, the [Guidelines for drinking-water quality](#) (Chapter 6) includes guidance for applying the Guidelines in specific circumstances, including emergencies and disasters.

**How appropriate are WSPs as an emergency response? Or should the focus be on water quality?** Emergency preparedness and response are a critical component of WSPs. The successful and sustained application of WSPs facilitates response planning for emergency scenarios, including those relating to climate variability and change, contamination events, natural disasters, conflict and disease outbreaks. By proactively identifying and addressing potential emergency-related threats, WSPs can help to minimize the risk of waterborne diseases and other health concerns that can arise during emergencies. As part of WSP emergency response planning, consideration should be given to rapid response measures related to water quality testing, treatment, and distribution of alternative safe drinking-water supplies. During the course of an event, in principle, the key WSP actions of system assessment, monitoring and management should be undertaken to identify and address priority risks. However, there has been limited experience in applying WSPs in emergencies and the approach needs to be tailored for such contexts. SIs can also be undertaken to support risk assessment in emergency contexts. See also [WHO/WEDC Technical Notes on WASH in Emergencies](#).

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## Resources and tools

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**Is there a list of the basic practical tools?** The [Sanitary inspection packages](#) publication is a highly useful tool to support risk management and surveillance, as are the individual SI packages in editable formats which are available [here](#). A [field guide to improving small drinking-water supplies: water safety planning for rural communities](#) includes templates for developing the various elements of a small supply WSP, and [A practical guide to auditing water safety plans](#) includes practical tools for auditing WSPs, including in the context of small water supplies. See also [WHO resources on water safety planning](#) and [Water Safety Portal \(WSPortal\)](#) for many helpful resources on various aspects of water safety planning, including WSP development, implementation, training, advocacy and auditing.

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## Other topics

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**The guidelines consider health-based regulations. What about environmental regulations? How are they positioned in the guideline?** Section 3.3.2 of the Guidelines address environmental regulations in the context of source water protection by relevant authorities, which is an important complement to water safety planning by drinking-water suppliers. Case A3.15 in Annex 3 provides an example of catchment protection initiatives.

**How to ensure adequate focus on the sustainability of source water?** The continued availability of source water is essential to sustainable service delivery and is an important consideration in water safety planning, which is the focus of Chapter 4 of the Guidelines. This should also be considered when reviewing service levels and trends, which is covered in Chapter 2.

**Are there any resources or reports available that provide comprehensive information on water issues in Fiji?** You may be able to find information from [WHO regional office for the Western Pacific](#). Related to WSPs in particular, the publication [Drinking water safety planning: a practical guide for Pacific Island countries](#) drew in part on experiences from Fiji and may be of interest.

**Regarding integrated disease surveillance, does WHO promote integrating water quality surveillance into already existing health related surveillance systems?** There should be a link between water quality surveillance and health-related surveillance, in particular waterborne disease surveillance. Box 5.1 in the Guidelines notes that a core drinking-water quality surveillance activity is to participate in waterborne disease outbreak investigations, response and reporting. As an example of integrated surveillance activities, in Indonesia, an SI is conducted if an alert from disease surveillance is received. See the WHO EURO publication [Surveillance and outbreak management of water-related infectious diseases associated with water-supply systems](#) for guidance on strengthening water-related infectious disease surveillance.