



World Health
Organization

WHO Guidelines for Small Drinking-water Supplies

Water New Zealand Conference & Expo, Hamilton, 19-21 September 2018

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Overview



Credit: Allison Kwesell/World Bank

- ◆ Update on the development of WHO's Guidelines for Small Drinking-water Supplies
- ◆ Seek support for Guideline revision activities

WHO Guidelines for Drinking-water Quality



A flagship normative publication of WHO

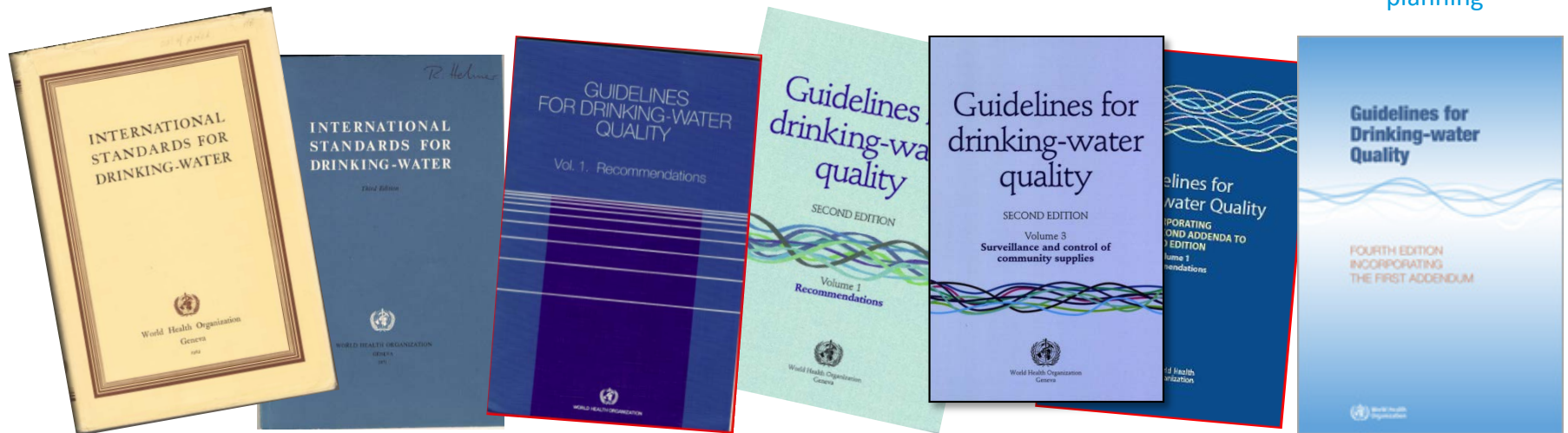
1950s – 60s
Sampling, analysis and laboratory focus

1970s – 80s
Evidence base for chemicals

1990s – 2000s
Effective regulation and management

1970s – 80-s
Implementation support focused on rural areas

2000s
Framework for Safe Drinking-water, including water safety planning



WHO International Standards for Drinking-water, 1st Edition, 1958

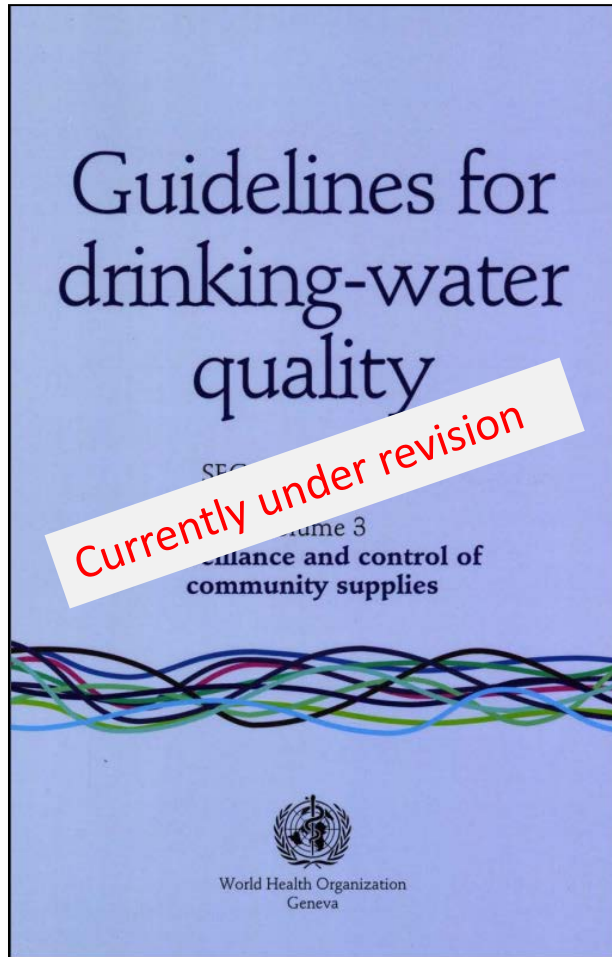
“Immediate and wide recognition as essential aids to the improvement of water quality and treatment”

Guidelines for Drinking-water Quality, 4th Edition, including 1st Addendum, 2017

Demand for the document is among the highest and most sustained of all WHO publications

Guidance for “Community” water supplies

Guidelines for Drinking-water Quality: Surveillance & Control of Community Supplies (Volume 3)



- ◆ First published in 1985; revised in 1997
- ◆ Developed in recognition of the unique and common challenges faced by small (community) water supplies, including:
 - appropriate regulatory oversight
 - adequate resources for operations / maintenance & investment
 - geographic remoteness
 - sufficient resources & technical capacity

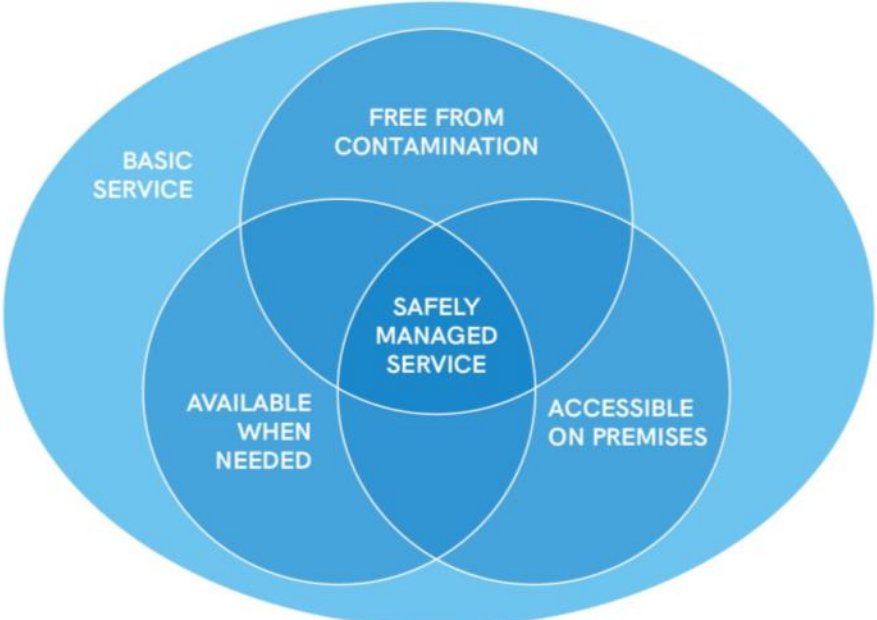
Guidelines for Small Drinking-water supplies



**What are the
key drivers for
revision?**

Sustainable Development Agenda

TARGET 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking-water for all

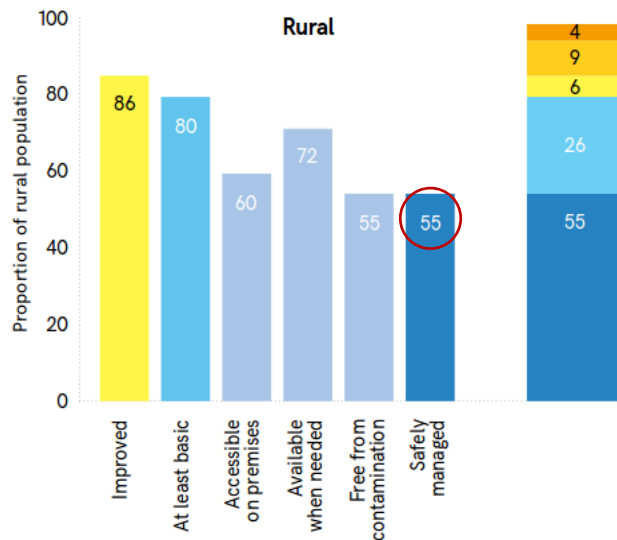
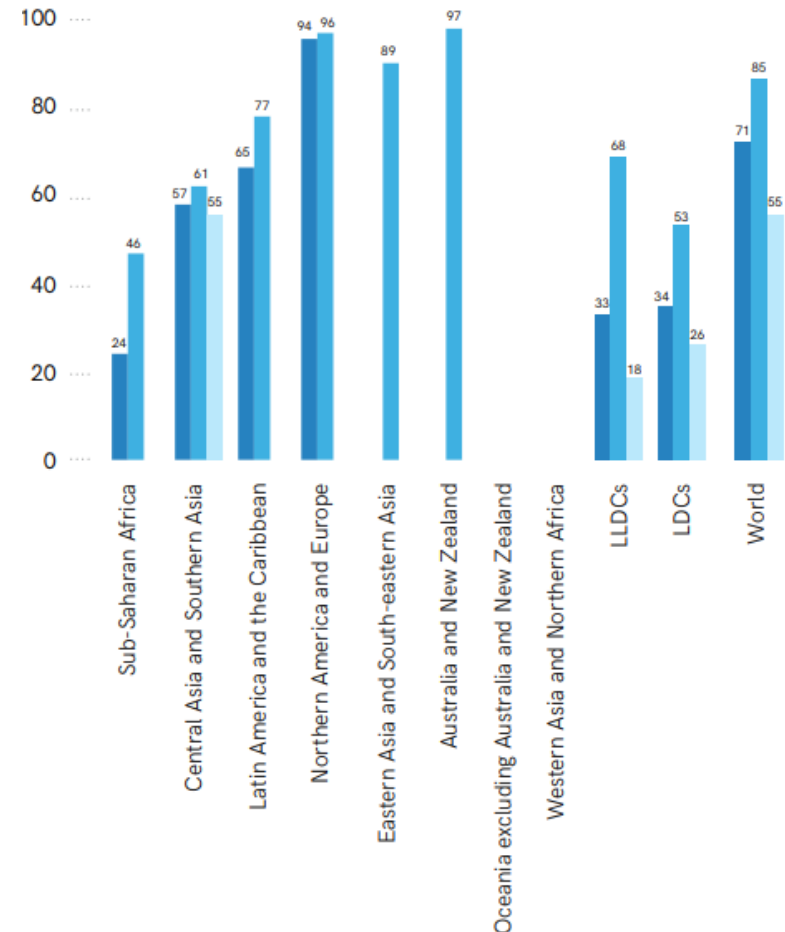
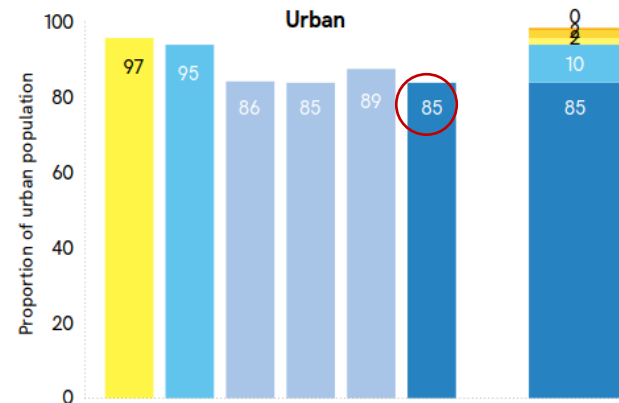
SERVICE LEVEL	DEFINITION
SAFELY MANAGED	Drinking water from an improved water source that is located on premises, available when needed and free from faecal and priority chemical contamination
BASIC	
LIMITED	
UNIMPROVED	
SURFACE WATER	

Large gaps exist between coverage of safely managed services in large and small systems



71% of the global population used safely managed drinking-water services in 2015

4 out of 8 SDG regions had estimates for safely managed drinking-water in 2015



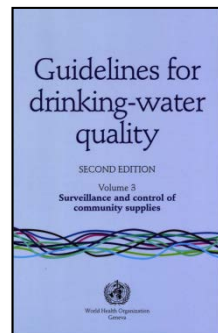
Lack of data on safely managed services!

Key drivers for revision



- ◆ Many of the previously mentioned challenges of small systems remain relevant today
- ◆ Need to integrate Framework for Safe Drinking-water (introduced together with WSPs in 2004 edition of the GDWQ)
 - Health-based targets
 - Risk assessment / management (water safety plans; sanitary inspections)
 - Independent surveillance
- ◆ Wealth of additional experience and evidence

Current structure of the Guidelines



Guidelines for Small Drinking-water Supplies

AIM:

Provides the overarching policy framework for managing small water supplies

TARGET AUDIENCE:

Decision makers, planners, managers at various government levels

Small Drinking-water Supplies: A Guide to Field Work

Supports field-level surveillance activities (WSPs, SIs and water quality testing)

Field workers undertaking water quality surveillance activities

Guidelines for Small Drinking-water supplies



What input is needed to further the development of the Guidelines?

Key update areas for small system Guidelines



- ◆ Achievable log reduction values for water treatment technologies
- ◆ Linking with overall human rights criteria (service level indicators)
- ◆ Sanitary inspections/WSPs
- ◆ Tailor the guidance for the diverse typologies of small water supply systems
- ◆ Integrating the Framework for Safe Drinking-water and emphasizing risk-based assessment and management, including surveillance

Log reduction tables

Current LRV table in GDWQ

Treatment process	Enteric pathogen group	Minimum removal (LRV)	Maximum removal (LRV)	Notes
Pretreatment				
Roughing filters	Bacteria	0.2	2.3	Depends on filter medium, coagulant
Storage reservoirs	Bacteria	0.7	2.2	Residence time > 40 days
	Protozoa	1.4	2.3	Residence time 160 days

Proposed example LRV table

Treatment process	Enteric pathogen group	Likely LRV value	Minimum removal LRV	Maximum removal LRV	Rating	Notes
Ceramic filter	Bacteria	2	0.7	3.6	Protective	No silver
	Virus	0.5	0.1	1.2	Not protective	
	Protozoa	4	2.5	5.6	Highly protective	

Conventional Presentation with statistical bounds

Note: Likely, Min and Max are specific values determined statistically

- Literature review assessing effectiveness of treatment technologies used in small water supply systems
- Intend to include summary table of effectiveness of treatment technologies in this guideline, similar to the Guidelines for Drinking-water Quality (GDWQ)
- Need to determine what is the optimal presentation format.

Service level indicators

Updating to align with framework of the Human Right to Water and Sanitation

available and sufficient quantity
for personal and domestic uses

Sufficient

affordable and prices
should not prevent
access to users

Affordable

Safe

free of all organic and
chemical contaminants
that can cause ill health



Accessible

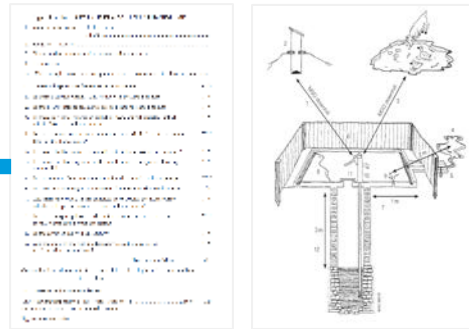
accessible within or in
the immediate vicinity
of the household,
workplace and
educational or health
institutions...

Acceptable

of acceptable color,
odor and taste and
water

Revised Sanitary Inspection (SI) Forms

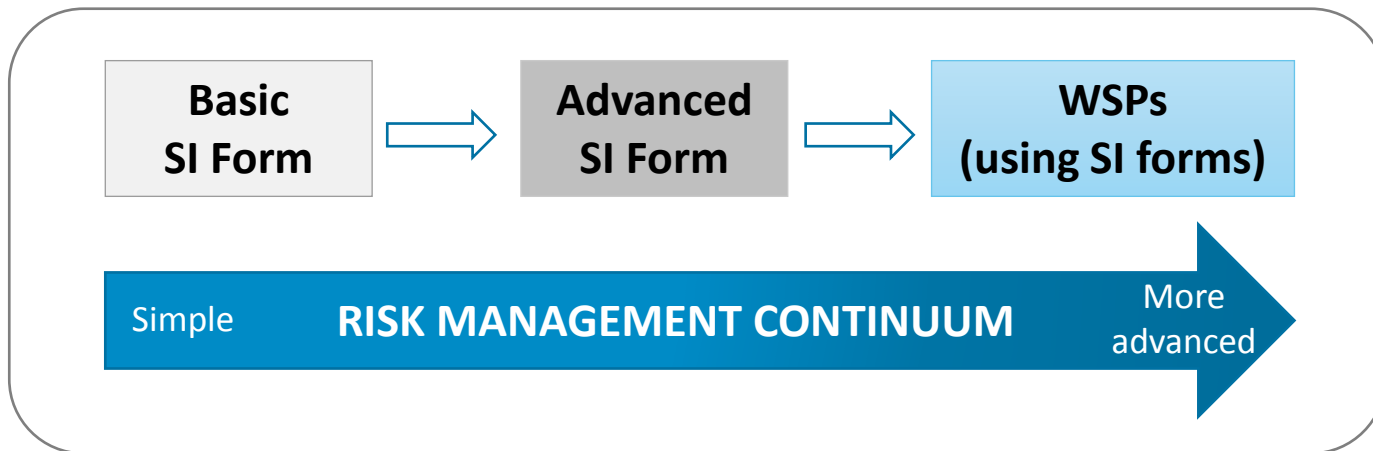
GDWQ Vol. 3 (1997)



Basic SI form
(Simple Yes or No)

OR

Advanced SI form
(Qualitative risk assessment)



Management aspects

- Captures the wealth of practitioner experience including on WSPs
- Tailor the guidance for the diverse typologies of small water supply systems

		Management type		
		Self supply	Community managed	Professional management entity (public / private)
System type	Point source	?	?	?
	Private supply	?	?	?

Surveillance



- ◆ Include sanitary inspections and institutional and community aspects
- ◆ Consider not only drinking-water quality, but also all aspects of water-supply services that influence health
- ◆ Support incremental improvements in the surveillance system
 - Progress the surveillance programme over time as resources and capacities permit
 - Set realistic goals for progressive improvement, addressing highest priority items first, i.e. risk-based surveillance
 - Tailor surveillance activities (water quality testing, auditing water safety plans, or undertaking sanitary inspections to system type

Revision process: Next steps



Thank you!

For more information, visit:

http://www.who.int/entity/water_sanitation_health/water-quality