“Sanitation prevents disease and promotes human dignity and well-being, making it the perfect expression of WHO’s definition of health, as expressed in its constitution, as “A state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity...

The guidelines recognize that safe sanitation systems underpin the mission of WHO, its strategic priorities and the core mission of ministries of health globally.”

WHO Director-General, Dr Tedros Adhanom Ghebreyesus, 1 October 2018
Why are new Guidelines needed?

- Evidence on sanitation shows less health impact than expected
- Ministries of Health role in sanitation has declined over the last 50 years
- Sanitation is critical to get out of response-mode (e.g. Cholera), to sustain progress and eliminate disease (e.g NTDs), and to combat AMR
- There is a lack of public health guidance on how to maximize health gains from sanitation systems (behavior change, technology, policy, planning & management, disease control)
# Guidelines Structure

<table>
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<th>Chapters</th>
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<td>Chapter 2: Recommendations and good practice actions</td>
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<td>Annex I: Sanitation system factsheets</td>
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<td>Annex II: Glossary of sanitation terms</td>
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</table>
Introduction Scope and Objectives
Chapter 1: INTRODUCTION

Objectives
➢ Maximise the health impacts of sanitation interventions
➢ Articulate the role of health sector in sanitation

Audiences
➢ Health and non-health actors involved in sanitation
➢ National and international organizations responsible for developing policies, standards or guidelines, and programmes on sanitation
Table 1.1 The health impact of unsafe sanitation

<table>
<thead>
<tr>
<th>Direct impact (infections)*</th>
<th>Sequelae (conditions caused by preceding infection)</th>
<th>Broader well-being</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faecal-oral infections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Diarrhoeas (incl. cholera)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Dysenteries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Poliomyelitis</td>
<td></td>
<td></td>
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<tr>
<td>• Typhoid</td>
<td></td>
<td></td>
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<tr>
<td>Helminth infections</td>
<td></td>
<td></td>
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<tr>
<td>• Ascariasis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Trichuriasis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hookworm infection</td>
<td></td>
<td></td>
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<tr>
<td>• Cysticercosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Schistosomiasis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Foodborne trematodes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insect vector diseases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(vectors breed in faeces or water contaminated with faeces)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Lymphatic filariasis</td>
<td></td>
<td></td>
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<tr>
<td>• West Nile Fever</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Trachoma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Stunting/ growth faltering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- related to repeated diarrhoea, helminth infections, environmental enteric dysfunction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Consequences of stunting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- obstructed labour, low birthweight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Impaired cognitive function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Pneumonia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- related to repeated diarrhoea in undernourished children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Anaemia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- related to hookworm infections</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Immediate:
- Anxiety (shame and embarrassment from open defecation and shared sanitation) and related consequences
- Sexual assault (and related consequences)
- Adverse birth outcomes (due to underuse of healthcare facilities with inadequate sanitation)

Long-term
- School absence
- Poverty
- Decreased economic productivity
- Anti-microbial resistance
A new F-diagram

GUIDELINES ON SANITATION AND HEALTH
Recommendations and Good Practice Actions
Chapter 2: RECOMMENDATIONS

Derived from comprehensive evidence review and wide expert, and end user input

1. Universal safe toilets that contain excreta
   • Entire community coverage with a minimum level of service
   • Using demand side and supply side approaches concurrently
   • Shared/public if necessary to reach everyone
   • All settings (schools, HCF, etc)
   • Equitable progress

2. Safe sanitation chain
   • Containment, transport, treatment, end use/disposal
   • Context specific technologies and services (i.e. technology agnostic)
   • Incremental improvement based on local level risk assessment (e.g. SSP)
   • Protection of sanitation workers

3. Sanitation as part of local services
   • Efficiency with other local services (solid waste, transport, etc).
   • Sustainability and health impacts through coordination with other interventions, water supply, hygiene, animal waste, child faeces

4. Role of the health sector
   • Increasing health sector engagement in core functions (but not taking on functions that are better done by others)
Define **government-led multi-sectoral sanitation policies**, planning processes and coordination

Ensure **health risk management is properly reflected in sanitation legislation, regulations and standards**

Sustain the engagement of the health sector in sanitation through **dedicated staffing and resourcing**, and through action on sanitation within health services

Undertake **local health-based risk assessment to prioritize Improvements** and manage system performance

**Enable marketing of sanitation services** and develop sanitation services and business models

**Management of special risks** (emergencies, outbreaks, HCF)

➤ "Chapter 4"
Implementation Guidance
Chapter 3: SAFE SANITATION SYSTEMS

What does safe mean?

Definitions for safe management

➢ Design & construction
➢ Operation & maintenance
➢ Incremental measures

GUIDELINES ON SANITATION AND HEALTH
Chapter 4:
ENABLING SAFE SANITATION SERVICE DELIVERY

➢ Government-led multi-sectoral sanitation *policies and planning*
➢ Health protective *legislation, regulations, standards, guidelines*
➢ *Roles and responsibilities* including the role of health authorities
➢ *Local level risk assessment* and delivering sanitation at the local level
➢ Developing sanitation services and *business models and the sanitation market*
➢ Management of *special risks* (emergencies, outbreaks, HCF)
Chapter 5: BEHAVIOUR CHANGE

➢ Understanding sanitation behaviours and determinants
➢ Approaches & intervention design
➢ Institutional responsibilities
➢ Monitoring & learning

Table 5.2: Stages in behavior change strategy design

- Documenting existing behaviour
  • Situation analysis
  • Surveys Nationally-representative data sets
  • Stakeholder and key informant engagement

- Understanding behavioural drivers
  • In-depth interviews
  • Direct observations
  • Interactive methods

- Developing the intervention
  • Engagement of relevant specialists and stakeholders
  • Content development and pre-testing
  • Definition of activities and protocols

- Testing intervention delivery
  • Behavioural trials/trials of improved practice
  • Pilot projects

- Implementation
  • Delivery of intervention at the desired scale
  • Regular review and adaptation
  • Evaluation

GUIDELINES ON SANITATION AND HEALTH
Technical Resources
Chapter 6. EXCRETA RELATED PATHOGENS

Table 6.1 Excreta-related pathogens (main source: Mandell, Bennett & Dolin, 2000)

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Health significance</th>
<th>Transmission pathways</th>
<th>Important animal source</th>
<th>Likely importance of sanitation for control</th>
<th>Concentration excreted in faeces</th>
<th>Duration of excretion</th>
<th>Additional references</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BACTERIA</strong></td>
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<tr>
<td>Campylobacter spp.</td>
<td>Most common bacterial</td>
<td>Predominantly food and water</td>
<td>Poultry and other</td>
<td>Low</td>
<td>106 – 109 / g</td>
<td>Up to 3 weeks</td>
<td></td>
</tr>
<tr>
<td><strong>VIRUSES</strong></td>
<td></td>
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<tr>
<td>Adenoviruses</td>
<td>A large group of distinct viruses</td>
<td>Person-to-person, through both</td>
<td>None – strict human</td>
<td>Low</td>
<td>10^13 / g (lower with)</td>
<td>Months after</td>
<td></td>
</tr>
<tr>
<td><strong>PROTOZOA</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Cryptosporidium spp.</td>
<td>One of the most common causes of diarrheic in</td>
<td>Person-to-person, and person, and them in a family</td>
<td>Of the two main species, C. parvum can infect multiple</td>
<td>High</td>
<td>—</td>
<td>—</td>
<td>Hunter &amp; Thompson, 2006</td>
</tr>
<tr>
<td><strong>HELMINTHS</strong></td>
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<tr>
<td>Ascaris lumbricoides (roundworm)</td>
<td>One of the most common human helminth infections globally. Largely asymptomatic. Can lead to bowel/ intestine obstruction, neurological damage</td>
<td>Via consumption of contaminated soil and food, and hand contamination</td>
<td>No (animal roundworm species not thought to be pathogenic to human)</td>
<td>High</td>
<td>10^9 eggs / g</td>
<td>While infection persists</td>
<td>Bethony et al., 2006</td>
</tr>
</tbody>
</table>
Annex 1.
SANITATION SYSTEM FACT SHEETS

➢ 11 system fact sheets covering applicability, design considerations and measures to protect public health
Additional resources:

SANITATION SYSTEM INSPECTION FORMS


- Inspection forms and management advice sheets
- Help us pilot and improve the forms!
Sanitation safety planning

Sanitation Safety Planning (SSP) is a step-by-step risk-based approach to assist in the implementation of local level risk assessment and management for the sanitation service chain - from containment, conveyance, treatment and end of use of disposal. SSP support the implementation of the WHO Guidelines on sanitation and Health and the WHO Guidelines for Safe Use of Wastewater, Excreta and Greywater. The SSP process coordinates stakeholders along the sanitation chain, and prioritizes improvements and system monitoring based on health risk.

Sanitation safety planning manual
Publication and downloading information

Further information
Sanitation safety planning in this MOOC

Watch a short overview of SSP in this MOOC
Download the video clip

See also
SANITATION SAFETY PLANNING

INTRODUCTION TO SSP
Our objectives today:

- Understand the SSP process, outputs and outcomes
- Appreciate how SSP can be applied in your locality
- Have a sufficient overview of the key SSP steps to select who should be involved in your future SSP
Our workshop objectives:

At the end of the workshop, you will have outlines for:

• steering committee membership
• specific SSP objectives
• SSP boundaries
• an appropriate SSP team
• threats and opportunities for SSP in your context, and
• a plan to help you finalise these.
What is SSP?

This workshop and the SSP manual focus on safe management of human waste.

So, for our purposes,

SSP is a risk-based management tool for safe sanitation product use/re-use.
What is SSP?

SSP is a tool to help reduce adverse health impact from the use of wastewater, excreta and greywater, while...

maximizing the benefits of their use in productive agriculture and aquaculture.
How do SSPs Work?

- Identify disease pathways and affected people
- Risk-based assessment
- Management strategies to reduce the highest risks

System assessment phase

Operational monitoring & management phase
SSP helps sanitation operators and the health sector to:

- **target limited resources to the highest risks through progressive improvements**
- **develop a multi-sector team approach to identify and manage health of at-risk people**
- **focus on simple operational monitoring and corrections**
SSP modules
SSP’s 6 Modules
Module 1: Prepare for SSP
(Where to do SSP; who to involve)

Outputs:
• Agreed priority areas, purpose, scope, boundaries and leadership for SSP
• A multi-disciplinary team representing the sanitation chain for development and implementation of SSP

SSP Manual pp 9 - 20
Module 2: Describe the sanitation system
(What is the system; who’s at risk?)

Outputs

• A map and description of the system
• Potential exposure groups
• An understanding of the waste stream constituents and waste related health hazards
• An understanding of the factors affecting the performance and vulnerability of the system
• A compilation of all other relevant technical, legal and regulatory information

SSP Manual pp 21 - 38
Module 3: Identify hazardous events, assess existing control measures and exposure risks (*How significant are the risks?*)

**Outputs**

- A risk assessment table
- Exposure groups and routes, existing control measures and their effectiveness
- A prioritized list of hazardous events to guide system improvements

SSP Manual pp 39 - 56
Module 4: Develop and implement an incremental improvement plan
(What needs to be improved?)

Output:

• An implemented plan with incremental improvements which protects all exposure groups along the sanitation chain

SSP Manual pp 57 - 68
Module 5: Monitor control measures and verify performance *(Is the system operating as planned?)*

**Outputs**
- Monitoring plans
- Independent assessment of performance

SSP Manual pages 69 - 84
Module 6: Develop supporting programmes and review plans
(How can we adapt to changes?)

Outputs:

• Supporting programmes and management procedures that improve implementation of the SSP outputs

• Up to date SSP outputs responding to internal and external changes

SSP Manual pages 85 - 90
The 2 key SSP outputs are:

1. Prioritized, incremental improvement plan
2. Operational monitoring plan for regular monitoring and periodic verification