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Topic of Presentation: WASH and Health in times of COVID
WASH and Health in times of COVID-19

CSE webinar 7 July 2020

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Team lead – sanitation and wastewater

World Health Organization
Latest figures (6 July 2020)
https://covid19.who.int/

Globally, as of 11:01am CEST, 6 July 2020, there have been 11,301,850 confirmed cases of COVID-19, including 531,866 deaths, reported to WHO.
WASH is vital to COVID-19 response and recovery

UN-Wide plan: 6.7 billion USD

WHO Strategic Response (April 2020) and Operational Guidance (May 2020)

- 8 pillars: WASH integral to Pillar 6 (infection prevention and control), as well as Pillar 2 (risk communication) and Pillar 7 (case management)
- **5 Key WASH recommendations in country planning guidelines**
  - Continuation of essential WASH services during outbreak
  - Provision and O&M of hand hygiene facilities in public spaces
  - Provision of hygiene supplies in vulnerable households
  - Provision and monitoring of WASH in health care facilities
  - Community engagement for hygiene behavior change
Hand hygiene for all initiative

Launched June 2020

• Aim:
  Ensure all people in all settings (health care facilities, schools, workplaces, public places, camps, homes) have access and practice regular hand hygiene

• Co-led by WHO and UNICEF with support from 10 core partners

• Global focus on four main areas to support country actions and investments
Key WASH-COVID takeaways

1. **Hand hygiene**: Frequent and effective hand hygiene is one of the most important prevention measures. Hand hygiene at the right time.

2. **Environmental hygiene**: Effective inactivation on surfaces can be achieved within 1 minute using common disinfectants.

3. **Water and sanitation**: Existing WHO guidance on the safe management of drinking-water and sanitation services applies; water disinfection and wastewater treatment can reduce viruses.

4. **WASH investments**: Should be fundamental to all country preparedness and response plans.

5. **Co-benefits**: Many will be realized through good WASH, including preventing millions of deaths each year caused by other infectious diseases.
Basics on COVID-19 virus

- Enveloped virus, surrounded by weak lipid membrane
- Relatively fragile in the environment and will become inactivated much faster than non-enveloped human enteric viruses (e.g. norovirus, rotavirus, hepatitis A virus)
- Detection of COVID-19 RNA fragments indicate that the virus is not infectious
- Approximately 2−27% of those with confirmed COVID-19 have diarrhoea and several studies have found COVID-19 RNA fragments in fecal matter during illness and after recovery.
- Three studies have detected infectious COVID-19 virus in feces, however other studies have not found infectious COVID-19 virus in feces. Shed virus is rapidly inactivated during transit through the colon.
- **Risk of transmission of COVID-19 virus from the faeces of an infected person appears to be low.**
## Survival of human coronaviruses, including COVID-19 virus

### Median half-life survival of infectious COVID-19 on surfaces is 1.2 hours

<table>
<thead>
<tr>
<th>Media</th>
<th>Temp (°C)</th>
<th>Time</th>
<th>Removal</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dechlorinated tap water</td>
<td>20</td>
<td>2 days</td>
<td>None surviving</td>
<td>Wang et al, J Virol Methods, 2005</td>
</tr>
<tr>
<td>Dechlorinated tap water</td>
<td>23</td>
<td>8-12 days</td>
<td>99.9%</td>
<td>Gundy et al Food Environ Virol, 2009</td>
</tr>
<tr>
<td>Hospital wastewater</td>
<td>20</td>
<td>2 days</td>
<td>None surviving</td>
<td>Wang et al, J Virol Methods, 2005</td>
</tr>
<tr>
<td>Wastewater</td>
<td>23</td>
<td>2-4 days</td>
<td>99.9 %</td>
<td>Gundy et al Food Environ Virol, 2009</td>
</tr>
<tr>
<td>Baby faeces</td>
<td>20</td>
<td>3 hours*</td>
<td>None surviving</td>
<td>Lai, et al., Clinical Infectious Disease, 2005</td>
</tr>
<tr>
<td>Adult faeces</td>
<td>20</td>
<td>1 day</td>
<td>None surviving</td>
<td>Lai, et al., Clinical Infectious Disease, 2005</td>
</tr>
<tr>
<td>Cotton gown</td>
<td>20</td>
<td>5 min- 24 hours**</td>
<td>None surviving</td>
<td>Lai, et al., Clinical Infectious Disease, 2005</td>
</tr>
<tr>
<td>Various surfaces (review of 22 studies + two studies on SARS-CoV-2)</td>
<td>Average 20</td>
<td>2 hours-9 days</td>
<td>None surviving</td>
<td>Kampf, et al., Journal of Hospital Infection, 2020; Dorelman, et al., NEJM, 2020; Chin et al., Lancet Microbe, 2020</td>
</tr>
</tbody>
</table>

*Quicker die off attributed to lower pH in baby feces (pH 6-7).
**Quicker die off when there is a lower initial concentration of the virus.
Presence of COVID-19 virus in water and wastewater

• Infectious COVID-19 virus has not been detected in drinking-water supplies.
• Infectious COVID-19 virus has not been detected in untreated or treated sewage.
• In most cases RNA fragments are not detected in treated sewage but small amounts have been detected in partially treated sewage.
• Main take-aways:
  - Very low risk in drinking-water supplies and low risk of transmission via sanitation services for users and workers.
  - Existing technical guidance on sanitation applies.
  - Wastewater surveillance may serve as complimentary measure to testing and contact tracing.
Surveillance of COVID-19 virus in wastewater

- Research is rapidly progressing in many countries to test the hypothesis
- Similar methods have been successfully used in the polio eradication programme
- Further research and capacity building is needed on:
  - sampling and analytical methods (particularly for settings with low-sewerage coverage)
  - modelling and interpretation of data
  - data use for actionable decisions to compliment established public health surveillance
  - Most promising use case is 3-7 day early warning

- Caution is needed to:
  - Prevent misunderstanding of COVID infection risk in faecal waste (very low)
  - Ensure WASH service providers are not diverted from essential tasks
  - Engage Health surveillance partners from the beginning
## More detail on Sanitation and Health

### GUIDELINES ON SANITATION AND HEALTH

[Image: World Health Organization logo]

### More detail on Sanitation and Health

**INTRODUCTION, SCOPE AND OBJECTIVES**

Chapter 1: Introduction

**RECOMMENDATIONS AND ACTIONS**

Chapter 2: Recommendations and good practice actions

**IMPLEMENTATION GUIDANCE**

Chapter 3: Safe sanitation systems  
Chapter 4: Enabling safe sanitation service delivery  
Chapter 5: Sanitation behaviour change

**TECHNICAL RESOURCES**

Chapter 6: Microbial aspects  
Chapter 7: Methods  
Chapter 8: Evidence on the effectiveness and implementation of sanitation interventions  
Chapter 9: Research needs  
Annex I: Sanitation system factsheets  
Annex II: Glossary of sanitation terms

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 service 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** (norms, health policies, surveillance, promotion and monitoring) but not taking on functions that are better done by others

**GUIDELINES ON SANITATION AND HEALTH**
Supporting resources


Technical resources - https://www.who.int/water_sanitation_health/sanitation-waste/sanitation/technical-resources/en/


WASH and COVID: What you can do?

- Advocate for inclusion of WASH in country COVID-19 plans - WASH in HCF and schools, hand hygiene in public settings, emphasise WASH service providers as «essential»

- Install hand hygiene facilities and encourage systematic use planning for long term hygiene improvements

- Make rapid WASH improvements in health care facilities, especially where COVID-19 patients are/will be treated

- Strengthen support to water and sanitation workers and hygiene promoters (protective gear, training, hand hygiene at work and home)

- Ensure continuity of water and sanitation services - back-up supplies and contingency plans for disinfection chemicals, fecal indicator and chlorine testing equipment
Engage - provide coordinated response to country needs

Align - reduce fragmentation through aligning operational and financial strategies

Account - An SDG 6 action platform and an annual high-level moment

Accelerate – five accelerators:

1. Financing
2. Data & information
3. Capacity development
4. Innovation
5. Governance
Key resources


Hand Hygiene for All Initiative: https://www.who.int/water_sanitation_health/publications/hand-hygiene-for-all/en/


Thank you

www.who.int
https://covid19.who.int/
Hand hygiene facility options

- Ideal materials (in order of effectiveness)
  
  Water and soap or ABHR
  Ash
  Water alone

- Water does not need to be drinking-water quality

- Water quantity: 0.5-2 l/person

- Local breweries, pharmacies, etc. encouraged to make ABHR

- Design considerations:
  
  Tap can be turned off with arm or foot
  Size and quantity appropriate for type & number of users
  Grey water should be captured and emptied
  Easy to repair and parts can be sourced locally

- Hygiene promoters should be considered «essential service providers» given free movement and necessary protection

Soapy water HH station in Cox’s Bazaar