The Role of Waste Management in Preparing for Future Pandemics

World Health Organization

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Points of Discussion

- Current status of WASH in HCFs
- Waste management and COVID-19
- Good Practice Examples
- Way Forward

Water, sanitation, and hygiene (WASH) services in health care facilities are shockingly poor

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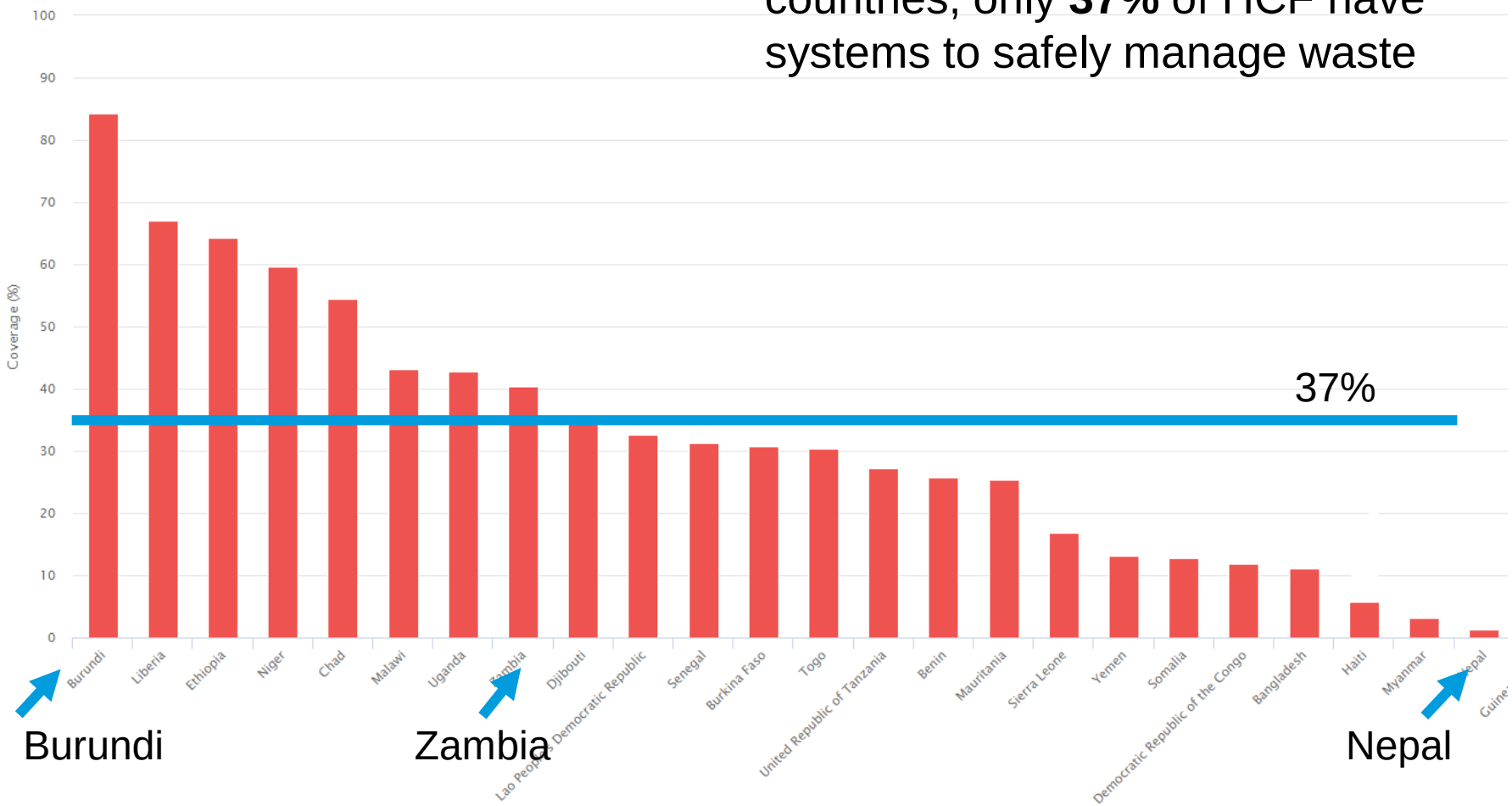
- 1 in 4 lack basic water
- 1 in 5 have no sanitation
- 42% lack hand hygiene at point of care
- 40% lack systems to segregate waste

(WHO/UNICEF, 2019 Global Baseline Report)

Safe management of health care waste is extremely low

On average, in least developing countries, only **37%** of HCF have systems to safely manage waste



WASH in Health Care Facilities Global Indicators

	WATER	SANITATION	HYGIENE	WASTE MANAGEMENT	ENVIRONMENTAL CLEANING
	Higher levels of service To be defined at national level	**Higher levels of service** To be defined at national level	**Higher levels of service** To be defined at national level	**Higher levels of service** To be defined at national level	**Higher levels of service** To be defined at national level
Basic service	Water is available from an improved source[6] on the premises.	Improved sanitation facilities[7] are usable, with at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities, and at least one toilet accessible for people with limited mobility.	Functional hand hygiene facilities (with water and soap and/or alcohol-based hand rub) are available at points of care, and within five metres of toilets.	Waste is safely segregated into at least three bins, and sharps and infectious waste are treated and disposed of safely.	Basic protocols for cleaning are available, and staff with cleaning responsibilities have all received training.

COVID 19 and Sources of waste

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- Waste from potentially infectious patients, staff caring for patients and working in laboratories
- Waste from medical laboratories
- Used personal protective equipment (PPE)
- Waste from Home care and Quarantine Centers
- Vaccination Waste

MISMANAGED COVID WASTE

The mismanaged plastic waste, consisting of personal protective equipment such as masks and gloves, vastly exceeded the capability of countries to process it properly

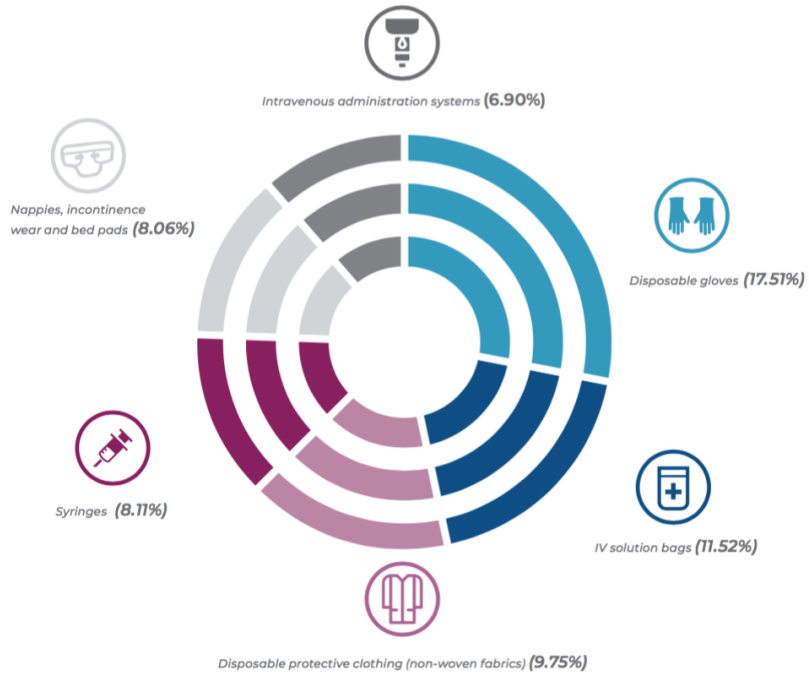
Since the beginning of the pandemic, an estimated 8.4m tonnes of plastic waste has been generated from 193 countries, according to the report

Plastic waste from the Covid-19 pandemic weighing 25,900 tonnes, equivalent to more than 2,000 double decker buses, has leaked into the ocean

The Guardian, 8th NOV 2021; , **Plastic waste release caused by COVID-19 and its fate in the global ocean, PNAS, https://www.pnas.org/content/118/47/e2111530118**

Gloves usage

- Gloves can often be used inappropriately
- Hand hygiene is the most critical intervention
- High volume – the pandemic increased use, created supply chain issues
- Labor concerns
- Environmental concerns
  - GHG
  - Chemicals of concern
  - Waste generation
- Opportunities for improvement



For one hospital in Europe, gloves represent 17.51% of their total plastic waste weight.

HCWH Europe; , **Measuring and reducing plastics in the healthcare sector,**

https://noharm-europe.org/documents/measuring-and-reducing-plastics-healthcare-sector

Waste from COVID-19 patients

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- Best practices for safely managing health care waste should be followed, including assigning responsibility and sufficient human and material resources to dispose of waste safely.
- There is no evidence that direct, unprotected human contact during the handling of health care waste has resulted in the transmission of the COVID-19 virus.
- All health care waste produced during the care of confirmed COVID-19 patients **is considered as infectious** (infectious, sharps and pathological waste) and should be collected safely in clearly marked lined containers and sharp boxes. Follow routine disinfection and cleaning protocols for waste bins.
- This waste should be treated, preferably on-site, and then safely disposed. If waste is moved off-site, it is critical to understand where and how it will be treated and disposed.

Prepare for extra waste generation

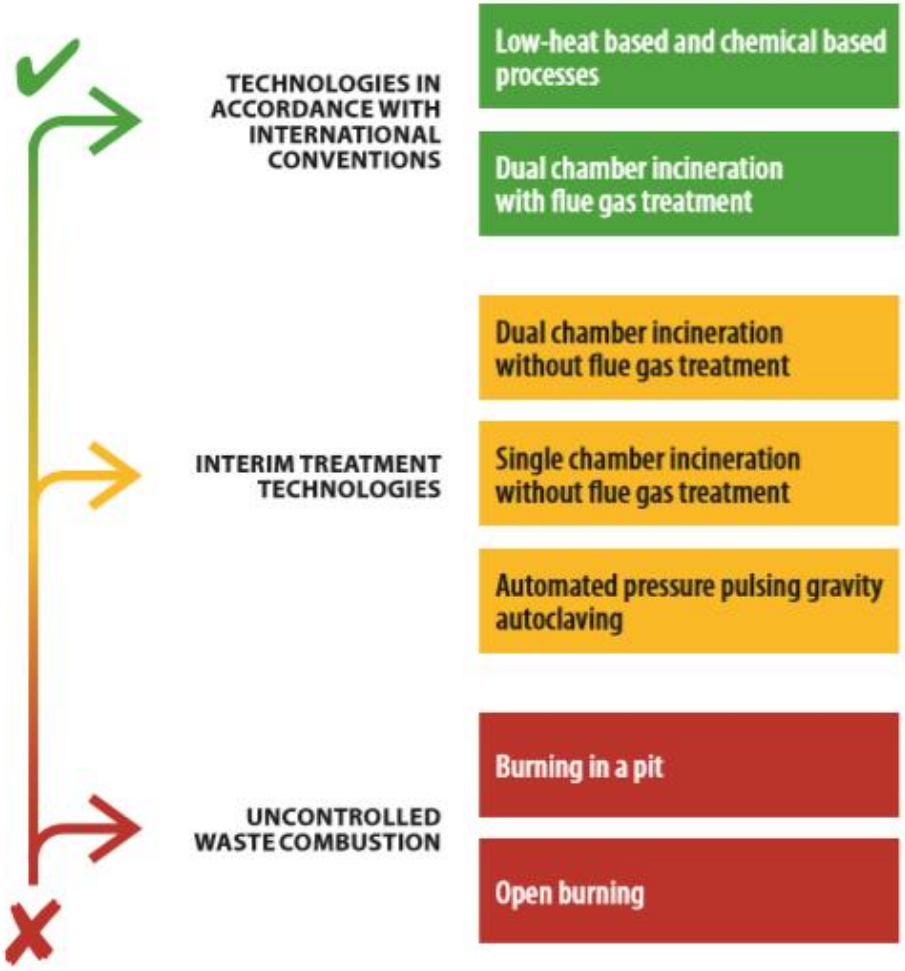
- Waste generated in **waiting areas of health care facilities or at home during home based** quarantine can be classified as **non-hazardous** and should be packed in strong black bags and closed properly before disposal by municipal waste services.

- It is important to **asses** the existing waste treatment capacity as the volume of waste during an outbreak will increase (mainly PPE) and additional treatment capacity might be needed.

Waste handlers:
- wear appropriate PPE (boots, long-sleeved gown, heavy-duty gloves, mask, and goggles or a face shield) and
- perform hand hygiene after removing it.

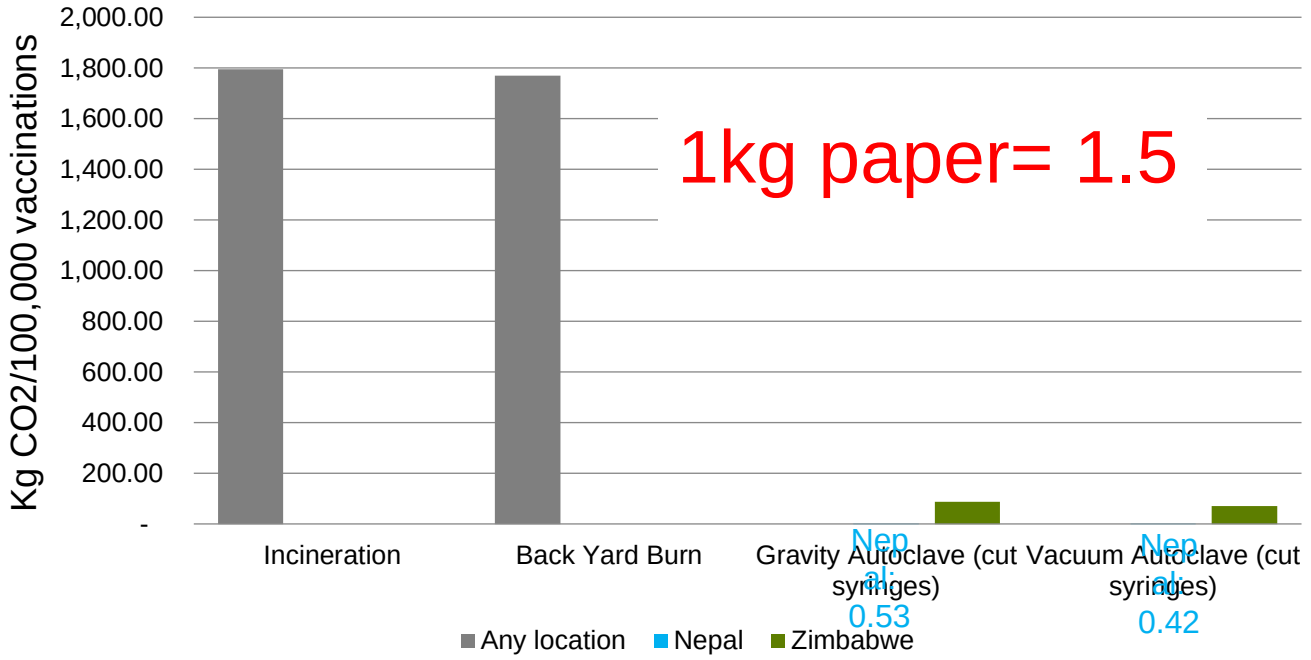
Note:
A surgical or even a cloth mask can protect
against splashes and also help prevent workers touching their faces (N95, FFP2 or 3 masks are not essential).

Heirarchy of waste treatment options



https://www.who.int/water_sanitation_health/publications/technologies-for-the-treatment-of-infectious-and-sharp-waste/en/

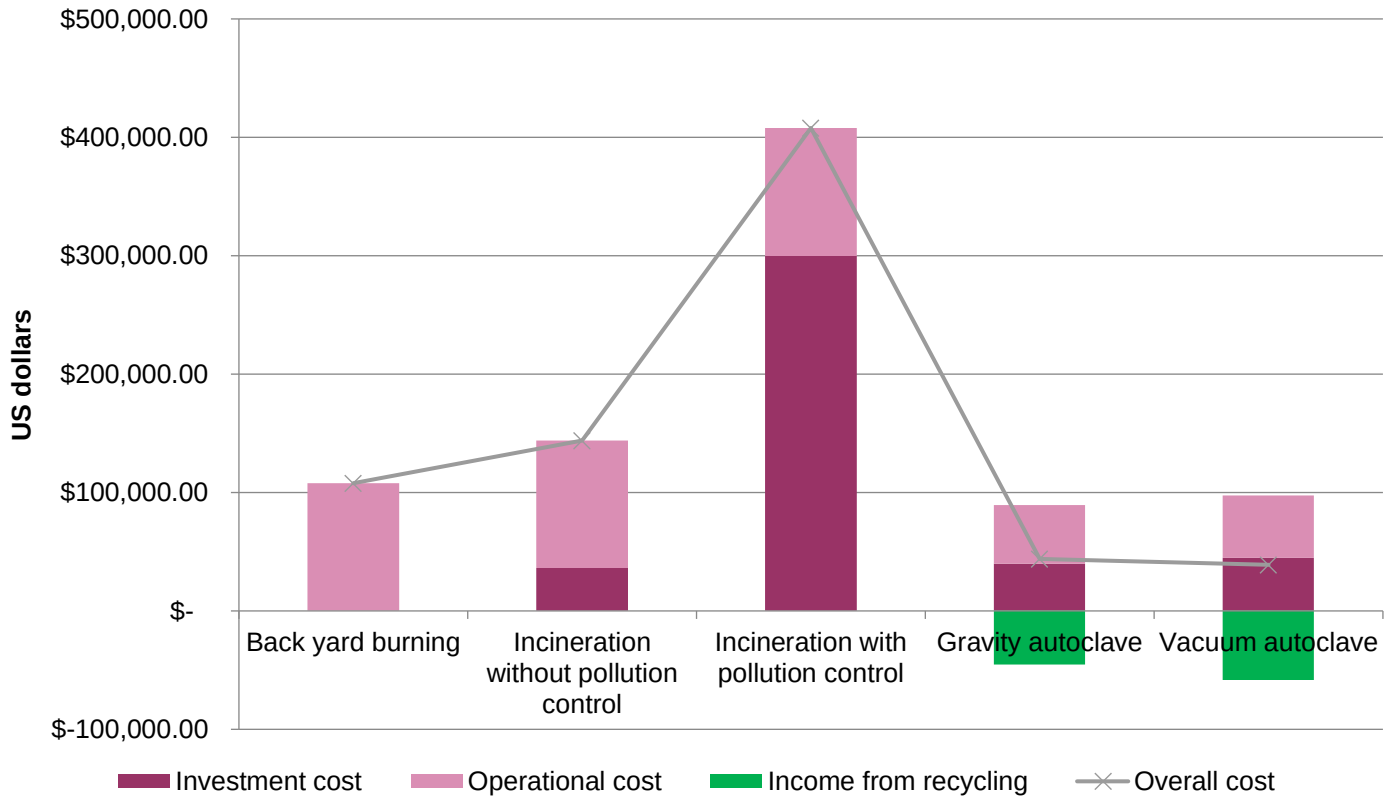
Carbon footprint- burn vs autoclaving



Note- Nepal mostly generates its power from hydroelectric sources, so the carbon footprint of grid electricity is very low in comparison to most countries. Zimbabwe is more typical for a low income country

Source: HCWH presentation, based on the findings of a study *Funded by a grant from the Bill and Melinda Gates Foundation through the Grand Challenges Initiative in Nepal*

Autoclaving is cheaper than incineration



Source: HCWH presentation

Good Practice Examples

Waste Management Plan

GAUTENG
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

Kuyasheshwa - "Gauteng working better"

PRINCIPLES FOR MANAGEMENT IN GAUTENG HOSPITALS

- No distinction between COVID-19 positive and negative patients, write "COVID-19" or "Coronavirus" on the cardboard box
- Identify alternative for temporary storage of the COVID-19 waste (e.g. sluice room)
- Storage must be separate from other HCRW
- Separate vehicle for collection of the COVID-19 isolation waste ONLY
- Collection of cardboard boxes from sluice room in a mattress liner
- ***Decontaminate surfaces and rooms with 0.05% sodium hypochlorite or biocide***

Health
zation

Climate-resilient health systems

Promoting healthy NDCs

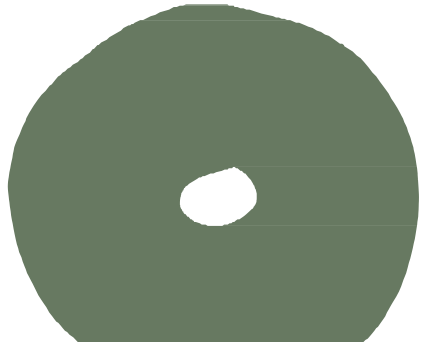
Health Leadership in Emissions Reduction

NHS

Delivering a 'Net Zero' National Health Service

Mobilizing health voices for climate action

[COP26 Health Programme]



COP26 Outcome – Glasgow Climate Pact

Right to health mentioned in the preamble;

CoVID-19 devastating effects;

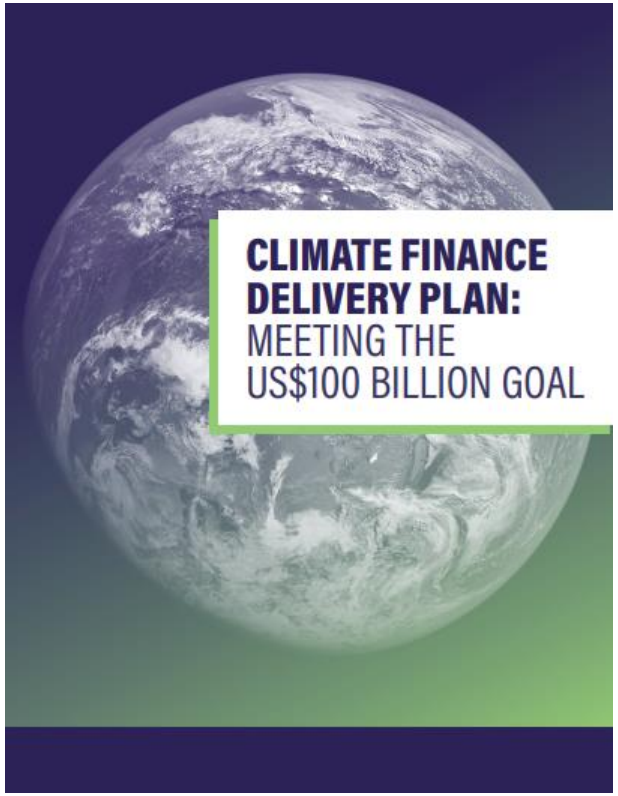
Achievements:

Revisiting emission-cutting plans next year to try to keep 1.5C° target reachable;

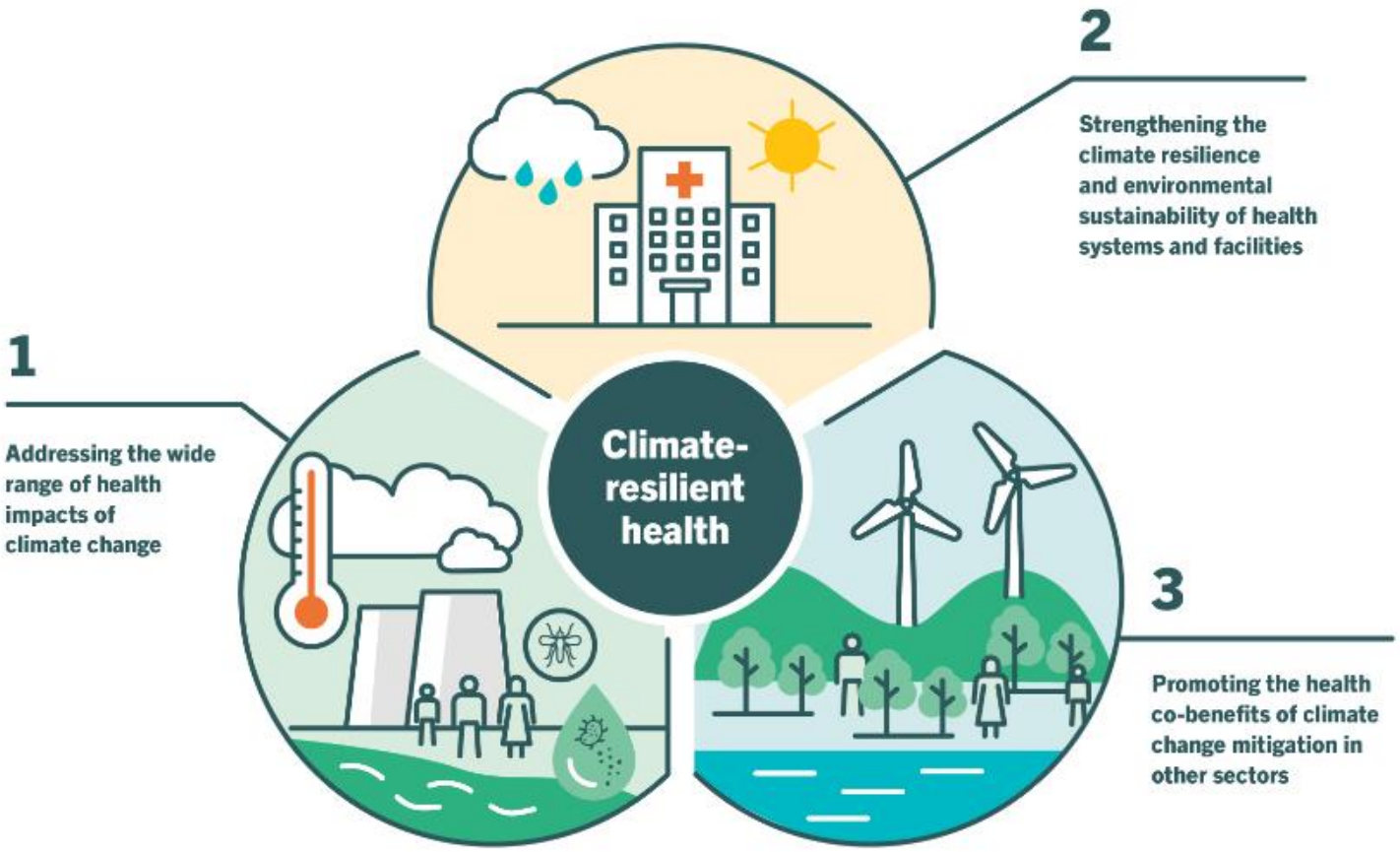
First ever inclusion of a commitment to limit coal use – “phase down” versus “phase out”;

Increased financial help for developing countries –

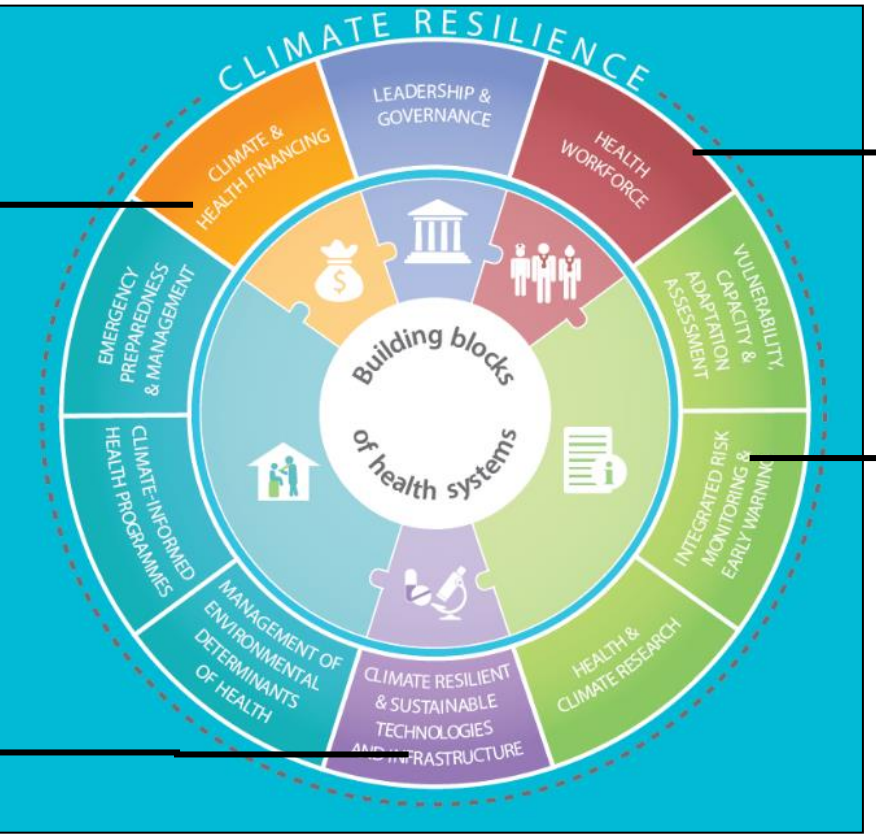
- developed countries urged to fully deliver USD 100 billion goal urgently and through 2025 – transparency in implementation of pledges;
- Concerns with regards to eligibility and access finance – enhance access taking into account the needs of developing country Parties specially vulnerable;



Climate change and health Programme



Strengthen health systems resilience to climate change



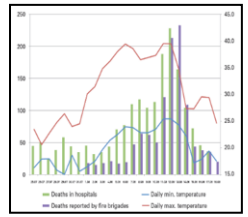
GREEN CLIMATE FUND

Health access to climate finance

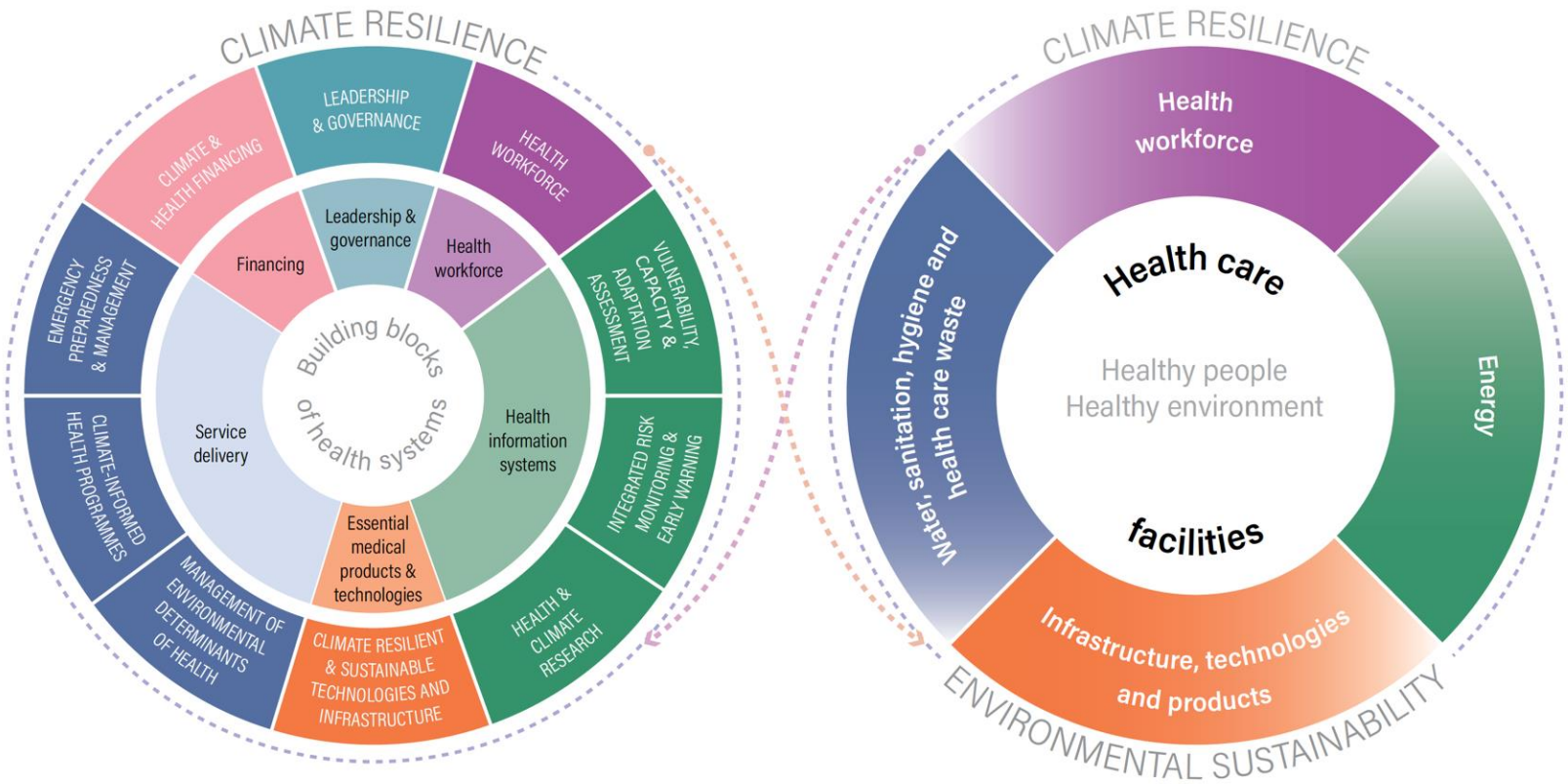
Health workers trained, engaged on climate

Resilient, sustainable health facilities

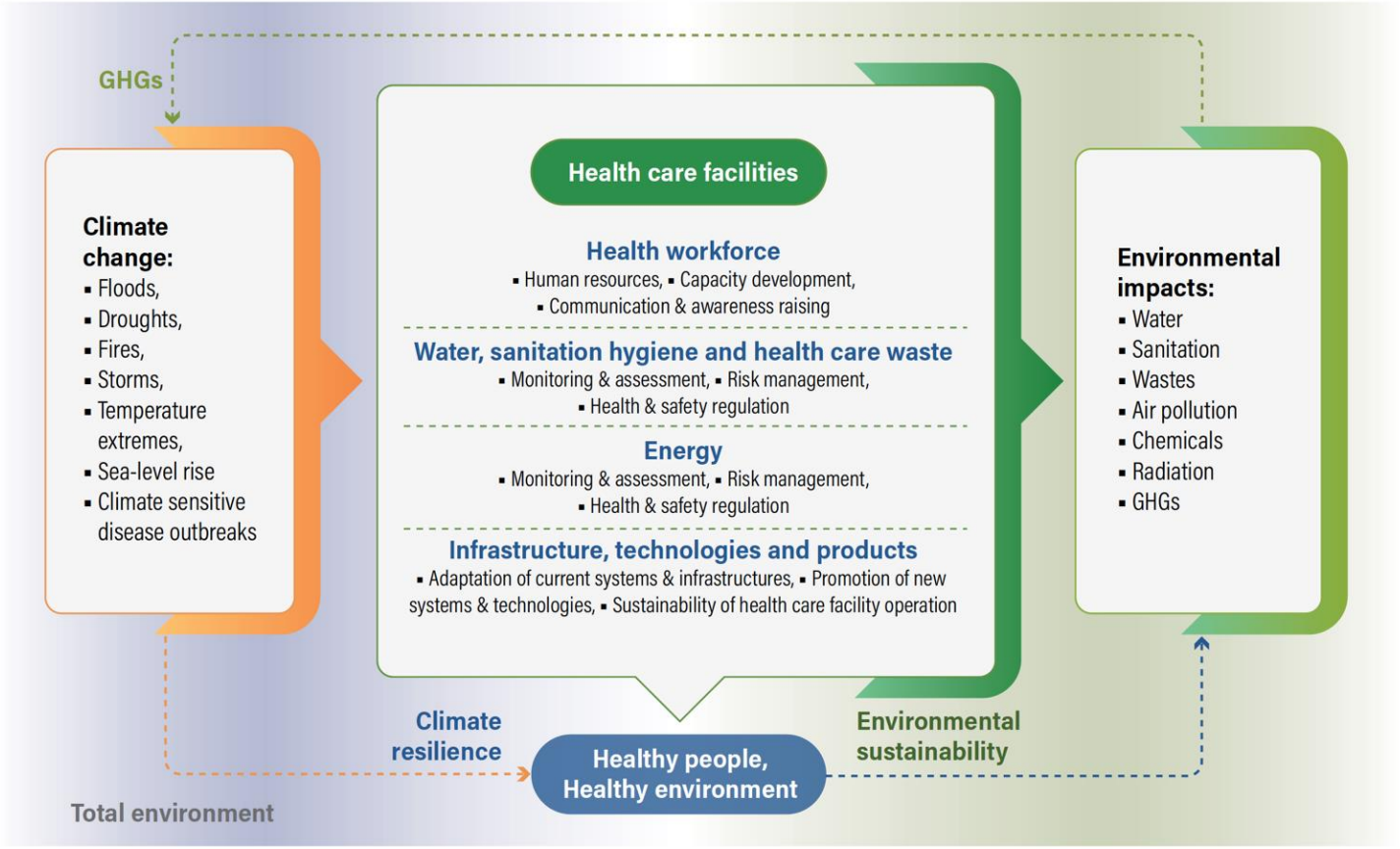
Climate informed surveillance systems



Climate resilience and environmental sustainability in health care facilities



Framework for building climate resilient and environmentally sustainable health care facilities



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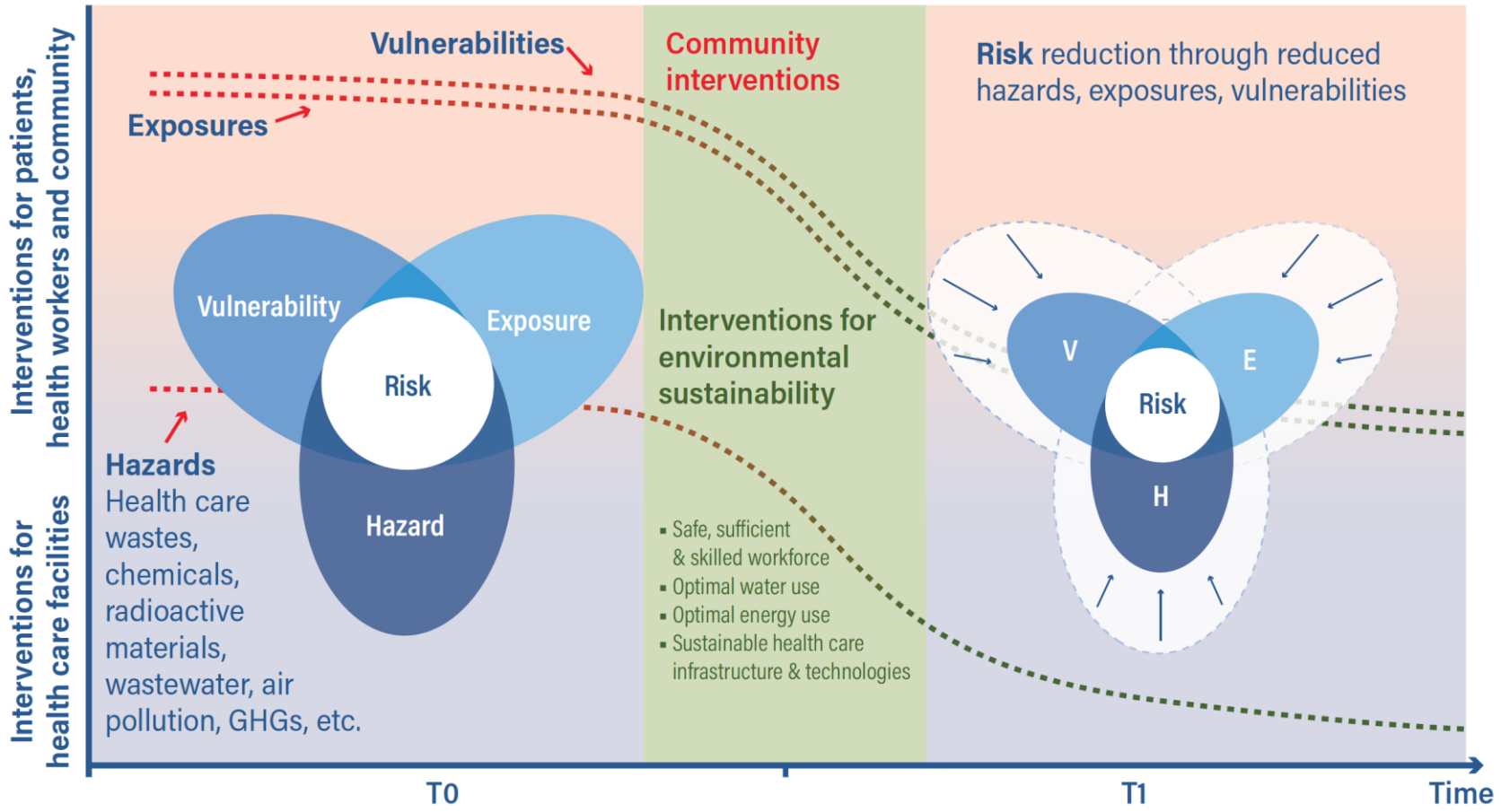
Risk Reduction in health care facilities



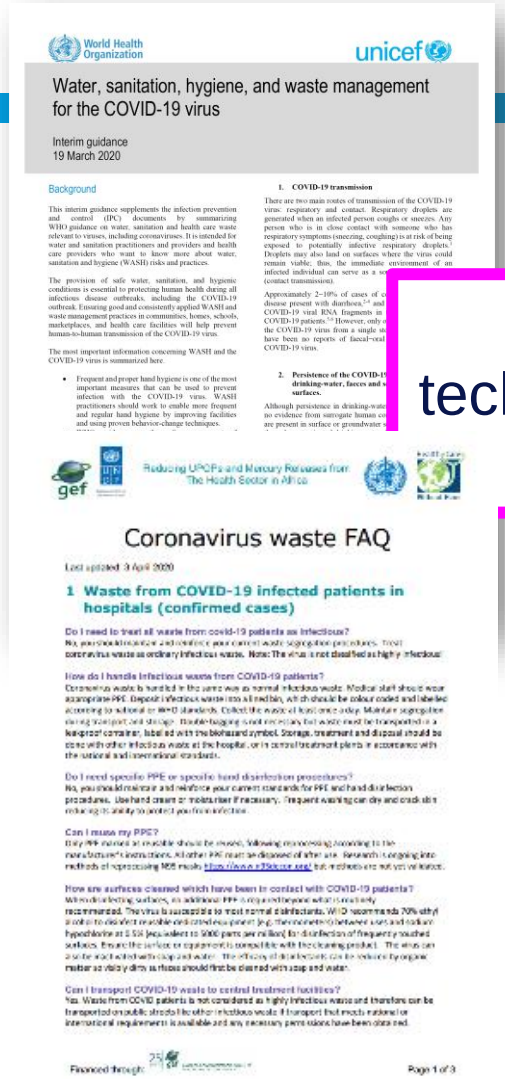
Build Back Green: WHO's Manifesto for a Healthy and Green COVID-19 Recovery

The pandemic is a reminder of the intimate and delicate relationship between people and planet. Any efforts to make our world safer are doomed to fail unless they address the critical interface between people and pathogens, and the existential threat of climate change, that is making our Earth less habitable.

WHO Director-General Dr Tedros Adhanom Ghebreyesus

https://www.who.int/news-room/feature-stories/detail/who-manifesto-for-a-healthy-recovery-from-covid-19

Key documents on waste in HCF


World Health Organization

unicef

Water, sanitation, hygiene, and waste management for the COVID-19 virus

Interim guidance
19 March 2020

Background

This interim guidance supplements the infection prevention and control (IPC) documents by summarizing WHO guidance on water, sanitation and health care waste relevant to viruses, including coronaviruses. It is intended for water and sanitation practitioners and providers and health care providers who want to know more about water, sanitation and hygiene (WASH) risks and practices.

The provision of safe water, sanitation, and hygienic conditions is essential to protecting human health during all infectious disease outbreaks, including the COVID-19 outbreak. Ensuring good and consistently applied WASH and waste management practices in communities, homes, schools, marketplaces, and health care facilities will help prevent human-to-human transmission of the COVID-19 virus.

The most important information concerning WASH and the COVID-19 virus is summarized here.

- Frequent and proper hand hygiene is one of the most important measures that can be used to prevent infection with the COVID-19 virus. WASH practitioners should work to enable more frequent and regular hand hygiene by improving facilities and using proven behavior-change techniques.

1. COVID-19 transmission

There are two main routes of transmission of the COVID-19 virus: respiratory and contact. Respiratory droplets are generated when an infected person coughs or sneezes. Any person who is in close contact with someone who has respiratory symptoms (sneezing, coughing) is at risk of being exposed to potentially infective respiratory droplets.[1] Droplets may also land on surfaces where the virus could remain viable; thus, the immediate environment of an infected individual can serve as a s
(contact transmission).

Approximately 2–10% of cases of c
disease present with diarrhoea,[2,3] and
COVID-19 viral RNA fragments in
COVID-19 patients.[3,4] However, only
the COVID-19 virus from a single
have been no reports of faecal-oral
COVID-19 virus.

2. Persistence of the COVID-19
drinking-water, faeces and
surfaces.

Although persistence in drinking-wate
no evidence from surrogate human co
are present in surface or groundwater

Financed through

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COVID-19 technical note and FAQs

Reducing UPOPs and Mercury Releases from The Health Sector in Africa

Coronavirus waste FAQ

Last updated: 3 April 2020

1 Waste from COVID-19 infected patients in hospitals (confirmed cases)

Do I need to treat all waste from covid-19 patients as infectious?
No, you should maintain and reinforce your current waste segregation procedures. Treat coronavirus waste as ordinary infectious waste. Note: The virus is not classified as highly infectious

How do I handle infectious waste from COVID-19 patients?
Coronavirus waste is handled in the same way as normal infectious waste. Medical staff should wear appropriate PPE. Deposit infectious waste into soft bodies, which should be colour coded and labelled according to national or WHO standards. Collect the waste at least once a day. Maintain segregation during transport and storage. Double-bagging is not necessary, but waste must be transported in a leak-proof container, labelled with the biohazard symbol. Storage, treatment and disposal should be done with other infectious waste at the hospital, or in central treatment plants in accordance with the national and international standards.

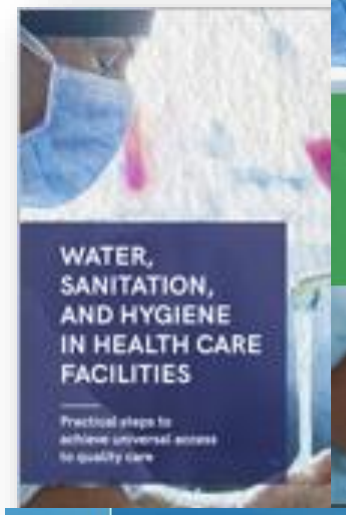
Do I need specific PPE or specific hand disinfection procedures?
No, you should maintain and reinforce your current standards for PPE and hand disinfection procedures. Use hand cream or moisturiser if necessary. Frequent washing can dry and crack skin reducing its ability to protect you from infection.

Can I reuse my PPE?
Only PPE marked as reusable should be reused, following reprocessing according to the manufacturer's instructions. All other PPE must be disposed of after use. Research is ongoing into methods of reprocessing N95 masks. However, these methods are not yet validated.

How are surfaces cleaned which have been in contact with COVID-19 patients?
When disinfecting surfaces, no additional PPE is required beyond what is routinely recommended. The virus is susceptible to most normal disinfectants. WHO recommends 70% ethyl alcohol to disinfect reusable medical equipment (e.g. thermometer) between uses and sodium hypochlorite at 0.5% (equivalent to 5000 parts per million) for disinfection of frequently touched surfaces. Ensure the surface or equipment is compatible with the cleaning product. The virus can also be inactivated with soap and water. The efficacy of disinfectants can be reduced by organic matter so visibly dirty surfaces should first be cleaned with soap and water.

Can I transport COVID-19 waste to central treatment facilities?
Yes. Waste from COVID patients is not considered as highly infectious waste and therefore can be transported on public roads like other infectious waste. If transport that meets national or international requirements is available and any necessary permissions have been obtained,

Baseline reports and practical actions



Thank you for your Attention