

Standard Precautions:

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Definition and Objective

Standard Precautions are the **minimum infection prevention practices** that apply to all patient care, regardless of suspected or confirmed infection status of the patient, in any setting where health care is Delivered.

Objective:

To break the chain of transmission using standard precautions at all times.



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Standard Precautions

Standard Precautions are-

- Basic level of IPC
- Applied to all patients in any healthcare settings

Elements for **Standard Precaution(WHO)**as per

1. Hand hygiene
2. Respiratory hygiene and cough etiquette
3. Personal protective equipment (PPE) according to risk
4. Safe injection practices, sharps management and injury prevention
5. Safe handling, cleaning and disinfection of patient care equipment
6. Environmental cleaning and safe linen
7. waste management



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COVID 19 specific Standard precaution

- **Health-care workers caring for patient under investigation for COVID-19 should implement standard infection control precautions.**
- These include
 - basic hand hygiene,
 - use of personal protective equipment,
 - respiratory hygiene and etiquettes,
 - environmental disinfection



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Hand Hygiene



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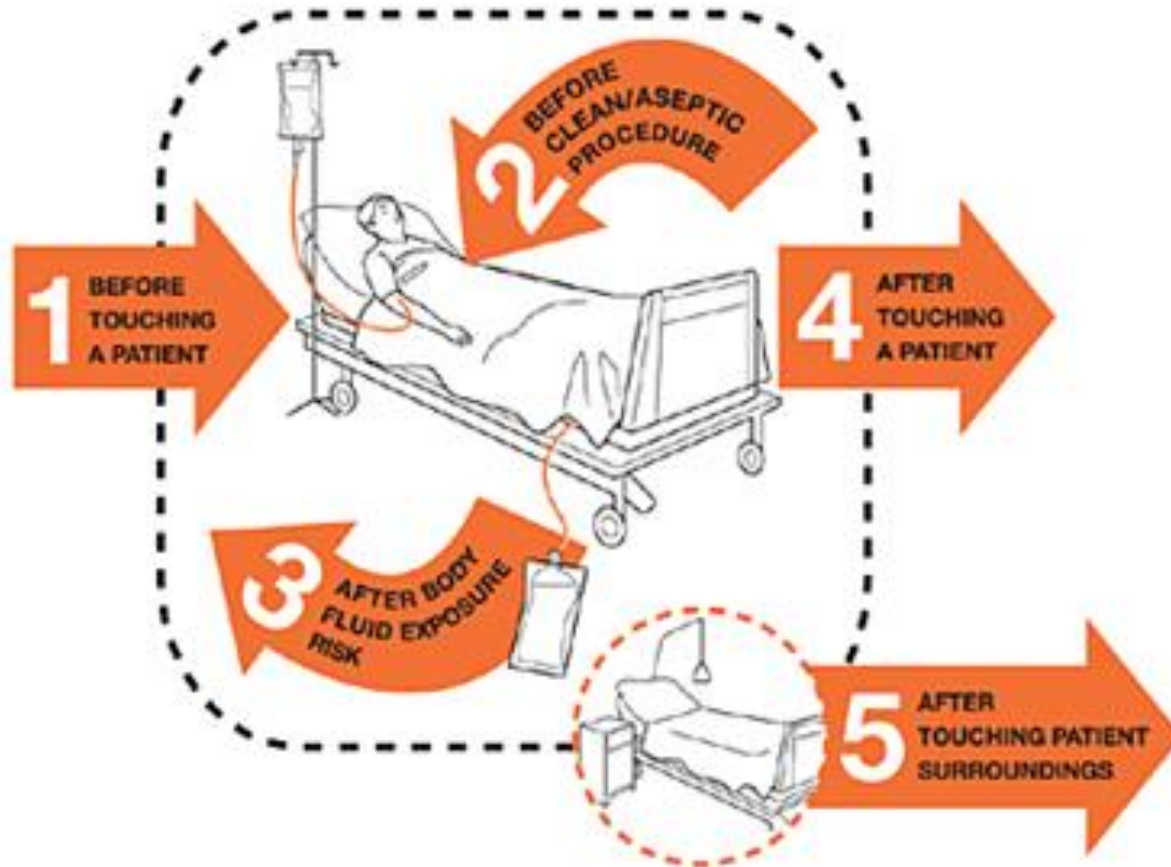


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Definitions

- Hand hygiene
 - Performing handwashing, antiseptic handwash, alcohol-based handrub, surgical hand hygiene/antiseptis
- Handwashing
 - Washing hands with plain soap and water
- Antiseptic handwash
 - Washing hands with water and soap or other detergents containing an antiseptic agent
- Alcohol-based handrub
 - Rubbing hands with an alcohol-containing preparation
- Surgical hand hygiene/antiseptis
 - Handwashing and using an alcohol-based handrub before operations by surgical personnel

WHO recommended 5 critical moments, hand hygiene



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When to perform hand hygiene

Immediately	Before	Between	After
Upon Arriving at work	Direct contact with patient	Procedures on the same patient where soiling is likely	Contact with patient
	Putting on gloves for clinical and invasive procedures (e.g Administering IV injections)		Removing gloves
	Medicine preparations		Removing other PPEs
	Preparing, handling, or eating food		Contact with blood, body fluids, secretions, excretions, and wounds
	Feeding a patient		Contact with items or surfaces known or likely to be contaminated



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Methods of hand hygiene

- Materials used for hand hygiene
 - Soap and water
 - Alcohol-based hand sanitizer
- **Remember:**
 1. Perform hand wash with soap when your hands are **visibly dirty or soiled or contaminated with body fluids**
 2. Alcohol-based hand sanitizer can be used, **if your hands are NOT visibly soiled** or contaminated
 3. Keep finger nails short (less than $\frac{1}{4}$ inch long)
 4. Finger ring is recommended to remove while handling patient



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Hand Washing with soap and water

- Remove any jewelries (watch, ring, bracelet, bala etc.) and false nail before hand washing.
- Wet hands with clean, running water
- Apply soap so that it can produce enough foam
- Rub hands together following the steps for at least 60 seconds
- Rinse with clean water
- Dry with disposable towel or air dry



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Duration of the entire procedure: 40-60 seconds



Wet hands with water;



Apply enough soap to cover all hand surfaces;



Rub hands palm to palm;



Right palm over left dorsum with interlaced fingers and vice versa;



Palm to palm with fingers interlaced;



Backs of fingers to opposing palms with fingers interlocked;



Rotational rubbing of left thumb clasped in right palm and vice versa;



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Rinse hands with water;



Dry hands thoroughly with a single use towel;



Use towel to turn off faucet;



Your hands are now safe.



World Health
Organization

Patient Safety
A Global Alliance for Safer Health Care



STEP 1
Rub palms together.



STEP 2
Rub the back of both hands.



STEP 3
Interlace fingers and rub hands together.



STEP 4
Interlock fingers and rub the back of fingers of both hands



STEP 5
Rub thumb in a rotating manner followed by the area between index finger and thumb for both hands.



STEP 6
Rub fingertips on palm for both hands.



STEP 7
Rub both wrists in a rotating manner. Rinse and dry thoroughly.

Hand washing with soap and water



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Alcohol-based Hand Rubs




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RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

 Duration of the entire procedure: 20-30 seconds



1a Apply a palmful of the product in a cupped hand, covering all surfaces;



2 Rub hands palm to palm;



3 Right palm over left dorsum with interlaced fingers and vice versa;



4 Palm to palm with fingers interlaced;



5 Backs of fingers to opposing palms with fingers interlocked;



6 Rotational rubbing of left thumb clasped in right palm and vice versa;



7 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



8 Once dry, your hands are safe.

Respiratory hygiene and cough etiquette

Person with respiratory signs and symptoms are recommended to apply measures given below---

- Cover nose and mouth when coughing/sneezing with tissue or mask
- Dispose of used tissues and masks
- And perform hand hygiene after contact with respiratory secretions
- In case of sudden episode, use upper arm during coughing and sneezing
- Turn your head away from people/patients or food while sneezing or coughing

In healthcare facilities following precautions to be maintained-

- Place acute febrile respiratory symptomatic patients at least 1 meter away from others in common waiting areas, if possible
- Post visual alerts at the entrance to health-care facilities instructing persons with respiratory symptoms to practice hygiene/cough etiquette
- Consider making hand hygiene resources, tissues and masks available in common areas and areas used for the evaluation of patients with respiratory illnesses



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Do NOT touch the



T Zone !

mucous
membranes
of your eyes,
nose or mouth

আউটডোরে
একজন হাঁচি
দিচ্ছে

**Give him a mask.
Approach from the
back**



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রুগীদেরকে
Cough etiquette
শিক্ষা দিতে হবে

রুগীকে ব্যবহার বিধি
শিখিয়ে দিতে হবে



WRONG



No gap please!

**NOT
BLACK BIN**



**YES .
YELLOW BIN**



Respiratory protective device

- Respiratory protective devices are of 2 types.
 - Mask: Disposable, Reusable
 - Respirator: N95, PAPR
- When correctly used, would protect from aerosol/droplet borne and also air-borne infection.



Use of mask in the work settings

- 1. Hospital settings:
 - Screening Area: All Health care provider would use **Disposable Triple layer surgical mask** while interacting with patients.
 - Isolation ward:
 - All patients kept in the isolation wards must wear **Disposable Triple layer surgical mask** .
 - Medical and nursing staff involved in clinical care in isolation facilities would require **Disposable Triple layer surgical mask along with other PPE**. Staffs involved in aerosol generating procedure like suction, intubation, nebulization etc. **use N95 Respirator**.
 - During sample collection: **use N95 Respirator**.
 - Laboratory: **use N95 Respirator**.

- 2. During handling of dead bodies: **Disposable Triple layer surgical mask** along with other infection control measures.
- 3. Ambulance staff: **Disposable Triple layer surgical mask**.
- 4. Health care providers in community settings: **Disposable Triple layer surgical mask**
- 5. Security personnel: Working in an infected area should use **Disposable Triple layer surgical mask** .
- 6. For general Public: No need for use of mask. Erroneous use of masks, continuous use of a mask for longer than 6 hours or repeated use of mask may actually increase the risk of infection further.

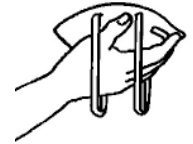
- 7. Suspected/ probable/ confirmed case should use: **Disposable Triple layer surgical mask.**
- 8. Family members of such cases should use: **Disposable Triple layer surgical mask.**

সার্জিক্যাল মাস্ক পরিধানের নিয়ম

- রঞ্জিন (নীল) দিকটা বাইরে এবং সাদা দিকটা ভিতরের দিকে থাকবে
- মাস্কের উপরের দিকে অবস্থিত পাতলা স্ট্রিপটি নাকের হাড়ের উপর চেপে বসিয়ে দিতে হবে
- এর পর মাস্কটিকে নীচের দিকে টেনে নাক, মুখ এবং খুতনি পূর্ণভাবে ঢাকতে হবে

Wearing of the Respirator & seal-checking procedures

1) Hold the respirator in one hand, with the nose piece at the fingertips and let the head straps hang loosely in front of the respirator



2) Place respirator under the chin, with the nosepiece up. While holding the respirator with one hand, pull the top strap over your head, resting it at the top back of your head. Pull the bottom strap over your head, and place it around your neck, below your ears.



3) Using both hands, mold the nose piece to the shape of your nose by pushing inward with your fingertips. Note that pinching the molding piece with 1 hand will likely result in less effective respirator fit.



4) **Seal-check:** cover respirator completely w/ both hands, and exhale sharply. If air blows on your face or eyes, readjust the respirator according to Steps 3 & 4. Do not use respirators until you pass the seal-check (no leakage).



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Use of Gloves



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When to change?

- Change gloves between patient care and procedure of another patient
- Change between procedure in the same patients if infectious materials in different areas
- Change gloves whenever break
- Remove after use, before touching non-contaminated items and surfaces, and before going to another patient
- Dispose in the designated place



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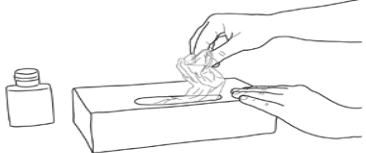
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When the hand hygiene indication occurs before a contact requiring glove use, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water.

I. HOW TO DON GLOVES:



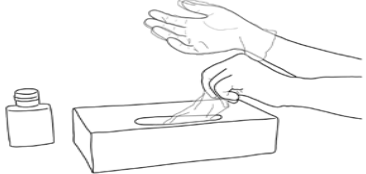
1. Take out a glove from its original box



2. Touch only a restricted surface of the glove corresponding to the wrist (at the top edge of the cuff)



3. Don the first glove



4. Take the second glove with the bare hand and touch only a restricted surface of glove corresponding to the wrist



5. To avoid touching the skin of the forearm with the gloved hand, turn the external surface of the glove to be donned on the folded fingers of the gloved hand, thus permitting to glove the second hand

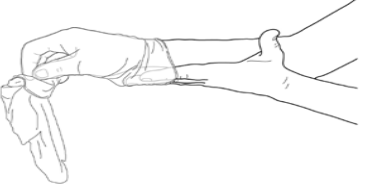


6. Once gloved, hands should not touch anything else that is not defined by indications and conditions for glove use

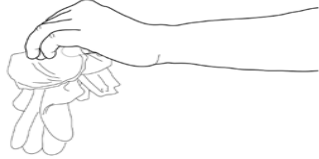
II. HOW TO REMOVE GLOVES:



1. Pinch one glove at the wrist level to remove it, without touching the skin of the forearm, and peel away from the hand, thus allowing the glove to turn inside out



2. Hold the removed glove in the gloved hand and slide the fingers of the ungloved hand inside between the glove and the wrist. Remove the second glove by rolling it down the hand and fold into the first glove



3. Discard the removed gloves

4. Then, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water

Personal Protective Equipment



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Personal Protective Equipment

- **Personal protective equipment** - Specialized clothing or equipment worn by a healthcare worker to protect from a hazard.



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Principles

- Donning
 - Must be donned correctly in proper order before entry into the patient care area and not be later modified while in the patient care area.



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Principle

- Doffing
 - The removal of used PPE is a high-risk process that requires a structured procedure, and a designated area for removal to ensure protection
 - PPE must be removed slowly and deliberately in the correct sequence to reduce the possibility of self-contamination



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PPE Storage and Donning Area

- This is an area outside the patient room (e.g., a nearby vacant patient room, a marked area in the hallway outside the patient room) .
- Do not store potentially contaminated equipment, used PPE, or waste removed from the patient's room in this area.



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PPE removal area

- This is an area in proximity to the patient's room (e.g., anteroom or adjacent vacant patient room that is separate from the clean area) where healthcare workers leaving the patient's room can doff and discard their PPE.
- Stock gloves in a clean section of the PPE removal area accessible to the healthcare worker while doffing.
- In the PPE removal area, provide supplies for disinfection of PPE and for performing hand hygiene and space to remove PPE, including a place for sitting that can be easily cleaned and disinfected.
- Provide leak-proof infectious waste containers for discarding used PPE.
- Perform frequent environmental cleaning and disinfection of the PPE removal area, including upon completion of doffing procedure by healthcare workers.



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Commonly used PPEs

- Gloves
- Gown/ water proof apron
- Hair cover/ cap
- Mask (surgical/ N95 particulate respirator)
- Boots/ shoe cover
- Goggles
- Face shield



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Full Personal Protective Equipment



→ Hair cover (Cap)

→ Eye wear (goggles)

→ Mask

→ Gown

→ Apron

→ Gloves

→ Shoe covers



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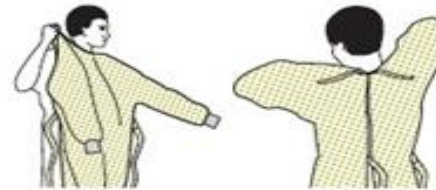
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SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



PPE kits



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After Handling of patients

- Decontaminate gloves with soap-water /70% alcohol
- Remove PPEs and either Discard or For re-useable PPE, clean and disinfect according to the manufacturer's reprocessing instructions
- Hand wash



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Environmental Infection Control

- Working surfaces and equipment
- Textiles and laundry



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Decontamination of Environmental Surfaces/ Isolation Unit/ Ward

- Wipe/ scrub bed rails, furniture, walls, toilet and other contaminated items, floor with a clean cloth soaked with disinfectant cleaning solution



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Decontamination of reusable items

- Fold linens, keeping the soiled portions inside
- Keep used linens in bags/container
- Autoclave first, then send to laundry
- If autoclave not available, soak **linen** in detergent or soap-water for 30 minutes.
- Soak other used items in 0.5% chlorine solution (e.g. chlotech) for 10 minutes immediately after use and then wash with soap and clean water for reuse



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Disinfectants

- Soap, detergent,
- 0.5%-1% sodium hypochlorite solution, (Chlotech)
- 70% ethanol



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Preparation of commonly used chemical disinfectants

□ 70% alcohol

- Add 70 ml absolute ethanol (95%) to 30 ml water for preparation of 100 ml of 70% alcohol



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❑ Hypochlorite solution

- Hypochlorite solution (which contains 0.5%-1 % chlorine concentration), a disinfectant that is used to disinfect:
 - Excreta
 - Bodies
 - Spills of blood/body fluids
 - Vehicles and tires



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- Hypochlorite solution (which contains 0.05% chlorine concentration) which is used to disinfect:
 - Surfaces
 - Medical equipment
 - Bedding
 - Reusable protective clothing before it is laundered
 - Rinsing gloves between contact with different patients (if new gloves are not available)
 - Rinsing gloves, aprons, boots before leaving a patient's room
 - Disinfecting contaminated waste before disposal



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Preparation of hypochlorite solution:

❑ Using Liquid Bleach

- Chlorine in liquid bleach comes in different concentrations. Any concentration can be used to make a dilute chlorine solution by applying the following formula:

$$[(\% \text{ chlorine in liquid bleach}) / (\% \text{ chlorine desired})] - 1 = \text{Total parts of water for each part bleach}^\dagger$$

- Example: To make a 0.5% chlorine solution from 5.25%[†] bleach:
$$[(5\%) / (0.5\%)] - 1 = 10 - 1 = 9 \text{ parts water for each part bleach}$$
- Therefore, add 1 part 5.25% bleach to 9 parts water to make a 0.5% chlorine solution.

Note:

- “Parts” can be used for any unit of measure (e.g. ounce, litre or gallon) or any container used for measuring, such as a pitcher.



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❑ Using Bleach Powder

- If using bleach powder, calculate the amount of bleach to be mixed with each litre of water by using the following formula:
$$[(\% \text{ chlorine desired}) / (\% \text{ chlorine in bleach powder})] \times 1\,000 = \text{Grams of bleach powder for each litre of water}$$
- Example: To make a 0.5% chlorine solution from calcium hypochlorite (bleach) powder containing 35% active chlorine:
$$[(0.5\%) / (35\%)] \times 1\,000 = 0.0143 \times 1\,000 = 14.3$$
- Therefore, dissolve 14.3 grams of calcium hypochlorite (bleach) powder in each litre of water used to make a 0.5% chlorine solution.



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Precaution during preparation of hypochlorite solution:

- chlorine solutions gradually lose strength, and freshly diluted solutions must therefore be prepared daily;
- clear water should be used because organic matter destroys chlorine;
- 1:10 hypochlorite solution is caustic. Avoid direct contact with skin and eyes;
- hypochlorite solutions give off chlorine. Prepare them in a well ventilated area;
- use plastic containers for mixing and storing hypochlorite solutions as metal containers are corroded rapidly and also affect the hypochlorite



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Waste Management

Type of waste	Example	Color coded bin
General	Left over meals, administrative rubbish, and paper, sweeping	Black
Clinical waste without sharp objects	Materials used during handling of patients like gloves, mask, contaminated swab etc	Yellow
Clinical waste with sharp objects	Needles	Red
Recyclable	Saline kits	Green



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Waste Disposal

- Autoclave/ Disinfection
- Incineration/ Landfill

Questions????



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