

# **Infection Control in the Physician's Office**

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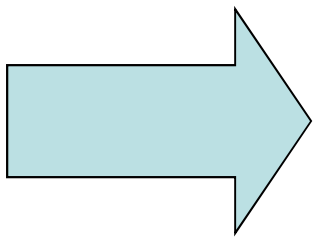


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# objective

- To educate and inform on current infection control practices necessary for an office practice



elevate the standard of practice

prevent the transmission of infection to patients, visitors, health care workers

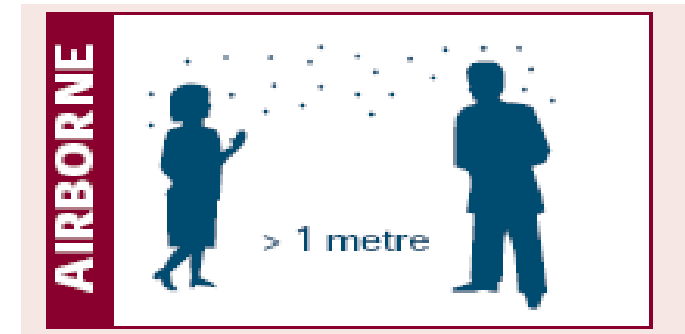
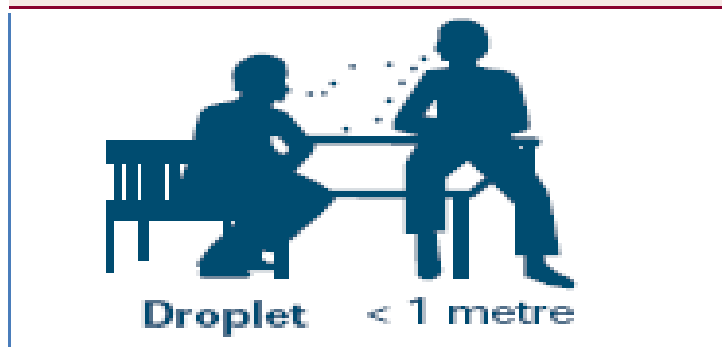
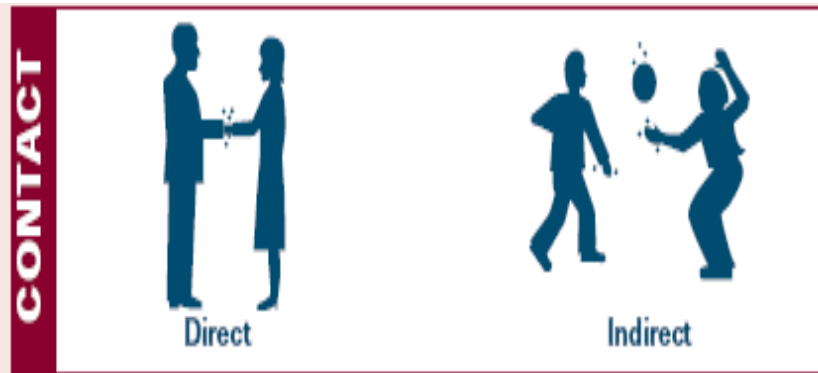
# AREA OF FOCUS

- PATIENT CARE
- HCW
- ENVIRONMENT

# PATIENT CARE

- Transmission of Organisms
- Standard Precautions/Routine Practices
  - Hand Hygiene
  - Personal Protective Equipment
  - Handling and Disposal of Sharps
  - Patient Appointments: Booking, Reception and Triage
- Transmission-Based Precautions
  - Airborne Transmission Precautions
  - Droplet Transmission Precautions
  - Contact Transmission Precautions
- Judicious use of Antibiotics/ Prevention of the Development of Antibiotic Resistant Organisms

# Transmission



# Standard Precautions

- The standards of practice that should be followed for the care of ALL patients at ALL times
- They are based on the premise that all patients are potentially infectious, even when asymptomatic



# Elements of Standard Precautions

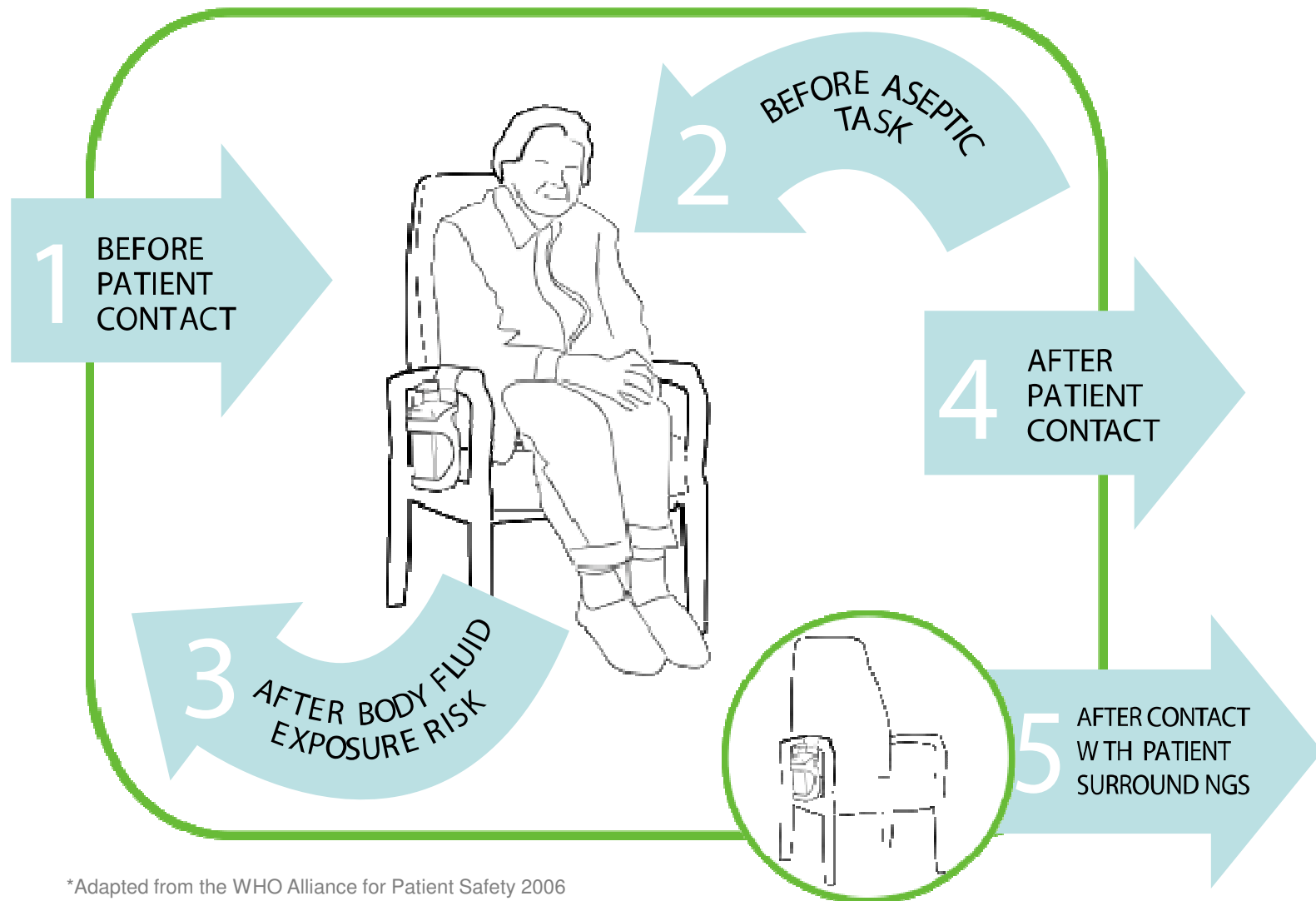
- Hand hygiene
- PPE
- Respiratory Hygiene/Cough Etiquette
- Safe injection practices
- Use of masks for insertion of catheters or injection of material into spinal or epidural spaces via lumbar puncture procedures

# HAND HYGIENE

- **SINGLE MOST IMPORTANT MEASURE FOR PREVENTING THE TRANSMISSION OF MICROORGANISMS**
- There is sufficient evidence that alcohol-based hand sanitizers are at least as good as and possibly superior to soap and water
- Except in cases where hands are visibly soiled or contaminated with body fluids or spores



# Your 5 moments for hand hygiene at the point of care\*



\*Adapted from the WHO Alliance for Patient Safety 2006

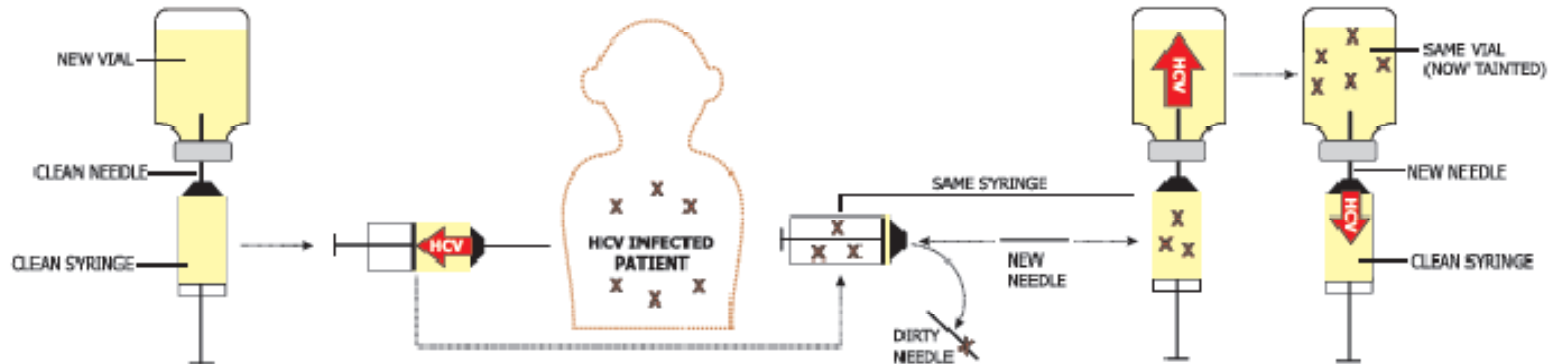
# PPE

- Personal protective equipment (PPE) are worn to protect the health care worker and to prevent the health care worker from becoming a vector.
- For routine practices, PPE are selected based on the anticipated exposure.
- PPE should not be reused between patients.

# SAFE INJECTION PRACTICES

- Healthcare providers (doctors, nurses, and anyone providing injections) should never reuse a needle or syringe.
- Use one needle for only one patient.
- Never put a used needle into a shared vial.
- Both needle and syringe must be discarded.
- It is never safe to change the needle and reuse the syringe - this practice can transmit disease.

Reuse of syringes can transmit infectious diseases. The syringe does not have to be used on multiple patients for this to occur.



CLEAN  
SYRINGE &  
NEEDLE

ADMINISTERED TO  
PATIENT WITH Hep C.  
**Backflow contaminates  
syringe with HCV**

Needle replaced  
but syringe is  
used. Vial gets  
contaminated

Clean syringe  
& needle used  
for another  
patient but  
contaminated  
vial is reused.  
Subsequent  
patients at risk  
for infections

- **A single-use vial**
  - should only be used for one patient, for one procedure, using a new, clean needle and new, clean syringe.
  - medication remaining in the vial at the end of the procedure must be discarded
- **A multi-dose vial**
  - is a bottle of liquid medication that contains more than one dose of medication and is approved by the FDA for use on multiple persons.
  - A new, clean needle and syringe should always be used to access the medication in a multi-dose vial.
  - The reuse of needles or syringes can result in contamination

# Recommendations

- Single-use vials be used whenever possible
- Multi-dose vials of medication be assigned to a single patient to reduce the risk of disease transmission.
  - Reusing a needle or syringe puts patients in danger of getting hepatitis C virus (HCV), hepatitis B virus (HBV), and HIV.
  - When it is discovered that reuse of a needle or syringe has occurred, patients who may have been affected should be notified.
- Healthcare providers should always adhere to Safe Injection Practices to prevent disease transmission from needles, syringes, or vials of medication.



**ONE NEEDLE,  
ONE SYRINGE,  
ONLY ONE TIME.**

Safe Injection Practices Coalition  
[www.ONEandONLYcampaign.org](http://www.ONEandONLYcampaign.org)

**1 Needle**

**1 Syringe**

**+ 1 Time**

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**0 Infections**

**About the One & Only Campaign**  
 The goal of the One & Only Campaign is to improve safe injection practices across healthcare settings. The practices within an organization are highly influenced by its culture or are an expression of its culture. Thus, through education, outreach, and grassroots initiatives, the One & Only Campaign will seek to influence the culture of patient safety. The One & Only Campaign is an education and awareness campaign aimed at both healthcare providers and the public to increase proper adherence to safe injection practices to prevent disease transmission from the misuse of needles, syringes, and medication vials in outpatient settings. While the campaign will be initially rolled out in targeted locations, the vision is to develop a concept that can be replicated nationwide. For more information, please visit: [www.ONEandONLYcampaign.org](http://www.ONEandONLYcampaign.org).

Coalition partners include the following organizations: Accreditation Association for Ambulatory Health Care (AAAACC), American Association of Nurse Anesthetists (AANA), Ambulatory Surgery Foundation, Association for Professionals in Infection Control and Epidemiology, Inc. (APIC), BD (Becton, Dickinson and Company), Centers for Disease Control and Prevention (CDC), CDC Foundation, HONORReform Foundation, Nebraska Medical Association (NMA), and Nevada State Medical Association (NSMA).

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**www.ONEandONLYcampaign.org**

A cotton swab is shown vertically, with its white, fuzzy tip pointing upwards. The background is a vibrant pink with a sunburst or radial pattern emanating from behind the swab. The text is overlaid on the lower half of the image.

**Can I use that  
when you're done?**

**You wouldn't share this with anyone.  
Your provider shouldn't share your syringe.**



**Some things should not be reused**

# Sharps Disposal

- Impermeable and puncture-proof needle disposal containers, or sharps containers, should be available in areas where injections are given.
- The containers should not be overfilled and should be out of reach of young children.
- Policies for disposal should be in place.
- Policies for management of needlestick injuries should be readily available and understood by employees

# Respiratory Hygiene/Cough Etiquette

1. Post signs in appropriate languages at all entrances.
2. Separate patients with respiratory illness from other patients.
3. Protect personnel from contact by installing a plexiglass barrier.
4. Place a box of surgical masks as close to entry as possible.
5. Provide masks to all patients with new onset respiratory symptoms.
6. Provide tissues to patients who cannot wear a mask.
7. Provide container for disposal of mask or tissue.

It is recommended that an alcohol-based hand sanitizer be widely available in the office setting such as:

- Outside the front door, or at the entry vestibule
- On the receptionist's desk
- In the waiting room in (out of reach of children)
- Outside exam room or within each exam room.

Itigil ang pagkalat ng mga mikrobyo na naghuhudlot ng sakit sa iyo at sa ibang mga tao!

# Takpan ang iyong Ubo



Takpan ng tiyu  
ang iyong bibig  
at iong kapag  
umuubo o  
bumabahing

o kaya  
umabot o bumahing  
sa itaas ng iyong  
manggas, hindi sa  
iyong mga kamay.



Ilagay sa tapinan ng basura  
ang iyong gnamit na tiyu.



# Linisin ang iyong mga Kamay

pagka-tapos umubo o bumabahing.



Hugasan ang mga  
kamay ng sabon at  
mainit-init na tubig

o kaya  
linisin ng de-  
alkohol na pan-  
linisin ng kamay.



Ministry of Health  
111 011  
Ministry of Education  
111 011  
Ministry of Science and Technology  
111 011



# Triage

Share the responsibility for infection control with your patients and consider the following:

- Triage patients by phone when they call to book an appointment by
- asking the following:
  - Do you have a fever and a cough or worsening shortness of breath?
  - Do you have diarrhea?
  - Do you have a new rash?
  - Have you been exposed to someone with chickenpox, shingles or measles in the past three weeks?
- Post a sign at your entrance requesting that patients presenting with symptoms of infection identify themselves to the receptionist.
- Make every effort to minimize contact in the waiting room with potentially infectious patients
- A respiratory etiquette program is recommended



# Transmission-based Precautions

- enhance your routine practices for certain pathogens or clinical presentations
- based on the mode of transmission and should be used in addition to routine practices

# Airborne Transmission

- organism enters the body through small droplets (less than five microns in diameter) or
- droplet nuclei inspired into the respiratory tract
- outbreaks have occurred where people have had no closer contact than sharing the same room air for short periods of time
  - respiratory tuberculosis,
  - chickenpox (active or in the incubation period),
  - measles

# Airborne Transmission Precautions

- Minimum standards of care
  1. Make every effort to see these patients at the end of the day
  2. Quickly triage the patient out of the common waiting areas
  3. Provide a surgical face mask for these patients to wear at all times
  4. Keep the door to the treatment/exam room closed and try to ensure that visitors and health care workers do not enter the room unless they are immune to the disease
  5. Post a sign on the closed door to notify staff                    T
  6. HCW entering the patient's room must wear an N95 or equivalent
  7. If possible allow for sufficient time for the air to exchange in the room and be free of droplet nuclei before using the room for another patient

# Droplet Transmission Precautions

- large droplets (greater than five microns in diameter) generated from the respiratory tract that are inoculated or directly deposited onto the mucous membranes of the eyes, nose or mouth of the new host.
- can be propelled a short distance (one metre) through the air during coughing or sneezing or during procedures that could generate aerosolization of respiratory secretions
- Eg. respiratory syncytial virus (RSV), influenza, parainfluenza, SARS

# Droplet Transmission Precautions

- Consider the Following:
  1. See these patients at the end of the day
  2. Quickly triage the patient out of the common waiting areas
  3. Encourage respiratory etiquette
  4. Post a sign at the entrance of the room to notify staff.
  5. Wear a surgical mask and eye protection when in direct contact
  6. If soiling is likely, wear gloves and a gown.
  7. At the end of the office visit, wipe all horizontal surfaces that have been in contact as well as equipment used

# Contact Transmission Precautions

- Direct contact - physical contact between the source and the susceptible host, or direct person-to-person contact.
- Indirect contact spread -host comes into contact with a contaminated intermediate object
- Eg. gastroenteritis or antibiotic-resistant organisms such as MRSA or VRE

# Contact Transmission Precautions

- Consider the following:
  1. Wear gloves for any patient contact and for contact with items touched by the patient.
  2. Wear a gown if soiling of clothing is likely.
  3. At the end of the office visit, wipe all horizontal surfaces that have been in contact with the patient, as well as equipment used

**STOP**

## Airborne Precautions



Wear N95 or equivalent respirator when entering room



Keep door closed!



Wash hands before entering and leaving room

**STOP**

## Droplet Precautions



Wear surgical face mask when entering room



Wash hands before entering and after exiting patient room



Wear eye protection when entering room

*Wipe medical equipment after use*

**STOP**

## Contact Precautions



Wear gown when entering room



Wear gloves when entering room



Wash hands before entering and leaving room

*Wipe medical equipment after use*



**STANDARD PRECAUTIONS:** Use with all patients:

- Hand hygiene
- Personal protective equipment (PPE)
- Safe handling and disposal of sharps



**TRANSMISSION-BASED PRECAUTIONS**



**Contact**

Patients with:

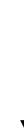
- MRSA, VRE
- GI infection  
(including *C. difficile*)
- Uncontained drainage



**Droplet**

For patients with:

- Colds
- RSV
- Pertussis
- Influenza
- SARS



**Airborne**

For patients with:

- TB
- Chickenpox
- Measles

# Prevention of the Development of Antibiotic-Resistant Organisms

- Although routine practices and contact precautions are important strategies in preventing the spread of antibiotic-resistant organisms, judicious antibiotic use is a critical measure to prevent their development.
- All antibiotic management should be evidence-based
- Physicians should resist the temptation to succumb to patient pressure.

# HEALTH CARE WORKERS

- Education
- Immunization of Personnel
- Personnel Health

# Education

- All employees at the time of orientation should receive and review information regarding infection control policies and procedures.
- Regularly scheduled educational sessions for all staff to ensure that the level of hand-washing and infection control awareness remain high.
- Policies for infection control should be written, readily available, and enforced.
- All staff members should be aware of and motivated to follow these policies

# Immunization of Personnel

<b>MMR</b>	<b>born after 1957 should have received 2 doses of vaccine, unless the person has had natural measles</b>
<b>Polio</b>	<b>This should be documented in employee records. If an employee has not been immunized, the person should receive inactivated poliovirus vaccine (series of 3 doses, at least 1 month between the first 2 doses and 4 months between the second and third doses).</b>
<b>Hepatitis B vaccine</b>	<b>Hepatitis vaccine should be offered free of charge and strongly recommended for any employee who might come in contact with blood.</b>
<b>Varicella Vaccine</b>	<b>Employees with no history of disease or vaccination and who lack detectable varicella antibody should be offered varicella vaccine. Or , vaccine can be offered to all employees with no history of infection.</b>
<b>Influenza Vaccine</b>	<b>Vaccine use should be promoted and offered free of charge yearly to all employees.</b>
<b>PERTUSSIS</b>	<b>Tdap may be given</b>
<b>Diphtheria/Tetanus</b>	<b>Diphtheria and tetanus immunization is recommended every 10 years.</b>
<b>Pneumococcal</b>	

# Work Restriction Policies for Employees

<b>INFECTION</b>	<b>RESTRICTION</b>	<b>LENGTH OF RESTRICTION</b>
<b>Conjunctivitis</b>	<b>Restrict from direct patient care</b>	<b>Until discharged resolved</b>
<b>Gastroenteritis</b>	<b>Restrict from direct patient care and food preparation</b>	<b>Until symptoms resolved</b>
<b>Hep A</b>	<b>Restrict from direct patient care</b>	<b>Until 1 week after onset of jaundice</b>
<b>Hep B</b>	<b>None</b>	
<b>Hep C</b>	<b>None</b>	
<b>Herpes simplex (orofacial)</b>	<b>Restrict from direct care of newborn infants</b>	<b>Until lesions dry</b>
<b>Measles</b>	<b>Exclude from office</b>	<b>Until 7d after onset of rash</b>
<b>Mumps</b>	<b>Exclude from office</b>	<b>Until 9d after onset of parotitis</b>

Bolyard EA, Tablan OC, Williams WW, Pearson ML, Shapiro CN, Deitchmann SD. Guideline for infection control in health care personnel, 1998. *Infect Control Hosp Epidemiol.* 1998;19:410–446

# Work Restriction Policies for Employees

<b>INFECTION</b>	<b>RESTRICTION</b>	<b>LENGTH OF RESTRICTION</b>
<b>Pediculosis</b>	<b>Restrict form direct patient contact</b>	<b>Until treated</b>
<b>Pertussis</b>	<b>Exclude from office</b>	<b>Until treated for 5 d</b>
<b>Rubella</b>	<b>Exclude from office</b>	<b>Until 5d after onset of rash</b>
<b>Staph skin infection</b>	<b>Restrict form direct patient care</b>	<b>Until treated for 24h</b>
<b>Group A strep</b>	<b>Restrict form direct patient care</b>	<b>Until treated for 24h</b>
<b>TB, active</b>	<b>Exclude from office</b>	<b>Until proven non infectious</b>
<b>Varicella</b>	<b>Exclude from office</b>	<b>Until lesions crusted</b>
<b>Zoster</b>	<b>If covered, restrict from care of immunocompromised patients If cannot be covered, restrict from patient care</b>	<b>Until lesions crusted</b>

Bolyard EA, Tablan OC, Williams WW, Pearson ML, Shapiro CN, Deitchmann SD. Guideline for infection control in health care personnel, 1998. *Infect Control Hosp Epidemiol.* 1998;19:410-446

# THE ENVIRONMENT

- General Housekeeping of the Office
- Waste Disposal
  - Materials and Practices
  - Spot Cleaning of Body Fluid Spills
  - Equipment and Material Maintenance Practices
- Medical Instruments
  - General Principles
  - Single-Use Medical Devices



# General Housekeeping of the Office

- Medical offices should be cleaned at the end of every day
- General housekeeping routines involve cleaning and disinfecting surfaces, toys and objects with a low-level disinfectant.
- Cleaning of body fluid spills requires special consideration.
- Try to keep the examining rooms in your office as minimally cluttered as possible.

# Office Design

- **Sinks**
  - Properly functioning sinks with adjacent soap dispensers and disposable towels should be conveniently located in all patient care areas.

# Waiting Areas

- Offer the opportunity for child-to-child interaction, and, unfortunately, child-to-child transmission of infectious agents.
- Can be compared with child care settings, where contamination of the environment and transmission of infectious agents occur at an increased rate compared with the home setting

# Waiting Areas

- Efforts should be made to limit transmission of infectious agents
  - avoidance of crowding
  - shortening waiting times
  - minimizing the sharing of toys.
- Infected children who are symptomatic should be segregated from well children as quickly as possible.
- There are no studies documenting the need for, or benefit of, separate waiting areas for well and ill children

# Toys

- Should be disposable or washable and of appropriate sizes and shapes to avoid aspiration or other injuries.
- Toys should be cleaned between use to avoid transfer of infectious agents
- Toys contaminated with body fluids should be removed until cleaned.
- Regular cleansing of toys at the end of each day decreases microbial contamination and eliminates organic material on the toy.

# Bug Magnet: Your Pediatrician's Waiting Room



- **Wash up.** Wash your baby's hands with soap and water or use hand sanitizer
- **Bring toys from home**

- **Computers:**
  - cover the keyboard with a cover to facilitate cleaning
  - Keyboard and mouse should be included in the routine cleaning protocol
- **Magazines/Books:** Throw out regularly

# Examination Rooms

- Equipment should be cleaned after each use.
- Contamination of the examining table can be a problem.
  - Cover the table with disposable paper or linen
  - Changed between patients
  - Where diaper changing has occurred, more thorough cleaning should be done to remove visible soil
    - Sanitize the surface - freshly prepared solution of 1:64 household bleach (1/4 cup diluted in 1 gallon of water) applied for 2 minutes, rinsed, and dried



# Rest Rooms

- Rest rooms for staff and patient use should be provided and cleaned daily and whenever visibly soiled.
- A diaper changing area should be provided in at least 1 rest room with disposable paper and a receptacle for soiled diapers and paper

# Air Flow

- Certain infections, including varicella, measles, and tuberculosis, are transmitted by the air-borne route.
- Unfortunately, the number of air exchanges in buildings that house outpatient facilities often is low, and the air is frequently recirculated.
- Physicians should be aware of air flow patterns to limit transmission of air-borne pathogens.

- The duration of time that airborne viruses remain in a room depends on air exchange rates
- Recommended air exchange rates depend on the stated use of a room.
- Recommended air exchange rate for a medical office examination room is 6 air changes per hour with 2 outside air exchanges per hour.

# Personal and Diagnostic Equipment

- The role of stethoscopes and other examining devices in transmitting infectious agents is unclear; however, stethoscopes can be contaminated with multi–drug-resistant bacteria.
- Wipe the bell and diaphragm of the stethoscope, the handle and body of otoscopes or ophthalmoscopes regularly and whenever they become soiled;
  - a paper towel with soap and water or an alcohol wipe is effective.
- Ear cures should be cleaned after each use

# **Equipment and Material Maintenance Practices**

## **Medication/Vaccination Refrigerator**

- Always keep vaccines refrigerated within the temperature range recommended
- Store vaccines on the middle shelf of the refrigerator.
- Never leave vaccines out of the refrigerator, except when preparing the syringe.
- Never prepare vaccine doses in advance of seeing the patient by prefilling or leaving syringes ready on the counter.

# Equipment and Material Maintenance Practices

- Check vaccine expiry dates regularly, and only order a one to three month supply
- Always check expiry date before use.
- Discard outdated medications. Designate an annual time to review medications in the refrigerator.
- Be Prepared! Keep ice packs in the freezer and cooler bags on hand to transport in the event of a power failure or fridge malfunction.

- All refrigerators used to store vaccines should be equipped with a maximum-minimum thermometer
- Temperatures should be recorded twice a day in a vaccine temperature logbook
- To avoid malfunction, defrost refrigerator as often as necessary, or when there is ice build up of one centimetre or more.
- Vaccines should be maintained in a working refrigerator and the temperature monitored during defrosting.

# Office Design/Renovations

- Before you lease or renovate, or even when designing the internal set up of your office, review the questions you asked yourself at the beginning
  - Am I serving a high risk population?
  - Do I need clean or soiled storage rooms?
  - Am I storing sterile supplies near, under or on surfaces that can get wet easily?
  - Do I need more closed cupboards to store medical equipment?



# Office Design/Renovations

- Are there sufficient freestanding hand hygiene facilities available (sinks and/or waterless product dispensers)?
- Are they in each examination room, washroom, laboratory area, medication preparation area, and soiled and clean utility room?
- Are the hand hygiene facilities conveniently located near the entrance to the room?
- Is the waiting room big enough so that potentially infectious patients can be segregated?
- Is the environment/furniture easy to clean?
- Is the garbage bin near the door?

# Disinfection

<b>Instrument</b>	<b>Level of disinfection</b>
Critical: enters tissue	Sterilize
Semicritical : contact mucous membranes but do not enter tissue, for example, laryngoscope	Sterilize or high level disinfection
Non critical :touch only intact skin, for example, stethoscopes or blood pressure cuffs	Detergent and water cleaning or low-level disinfection
Environmental surfaces: knobs, handles, carts, or table tops	Soap and water or low-level disinfection

## STANDARD PRECAUTIONS: Use with all patients:

- Hand hygiene
- Personal protective equipment (PPE)
- Safe handling and disposal of sharps



## TRANSMISSION-BASED PRECAUTIONS



### Contact

Patients with:

- MRSA, VRE
- GI infection (including *C. difficile*)
- Uncontained drainage



#### Patient Considerations

- Identify at triage
- Separate from other patients
- Post sign at entrance to room,

#### HCW\* Considerations

- Gloves for any contact
- Hand hygiene
- To prevent self-inoculation of MRSA, wear a surgical mask/do not touch your nose or face
- Gown, if soiling is likely
- Wipe equipment & surfaces with low-level disinfectant



### Droplet

For patients with:

- Colds
- RSV
- Pertussis
- Influenza
- SARS



#### Patient Considerations

- Identify at triage
- Surgical mask
- Triage into single room
- Respiratory etiquette

#### HCW\* Considerations

- Surgical face mask and eye protection for any contact
- Hand hygiene
- Wipe down equipment and surfaces with low-level disinfectant after patient leave



### Airborne

For patients with:

- TB
- Chickenpox
- Measles



#### Patient Considerations

- Identify at triage
- Surgical mask, unless health care workers immune (i.e., chickenpox, measles)
- Open window in room, if applicable

#### HCW\* Considerations

- Hand hygiene
- N95 patient suspected or (+)PTB
- No respirator for chickenpox/measles if HCW is immune
- If possible, exclude from care/contact w/ chickenpox/ measles if not immune, or wear N95 or equivalent respirators



# references

- CDC: *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings*, June 2007, Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007
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