

**COUNTY OF LOS ANGELES  
DEPARTMENT OF PUBLIC  
HEALTH  
COMMUNITY HEALTH SERVICES**

**Infection Control**



# Objectives

By the end of this module, you'll be able to:

1. Identify the chain of infection
2. Determine indications for handwashing (when to wash)
3. Identify Standard Precautions for infection control in healthcare settings
4. Apply common control measures to prevent the risks of aerosol transmissible diseases in medical practices
5. Identify specific control measures applicable to airborne infectious diseases, such as tuberculosis



# Introduction

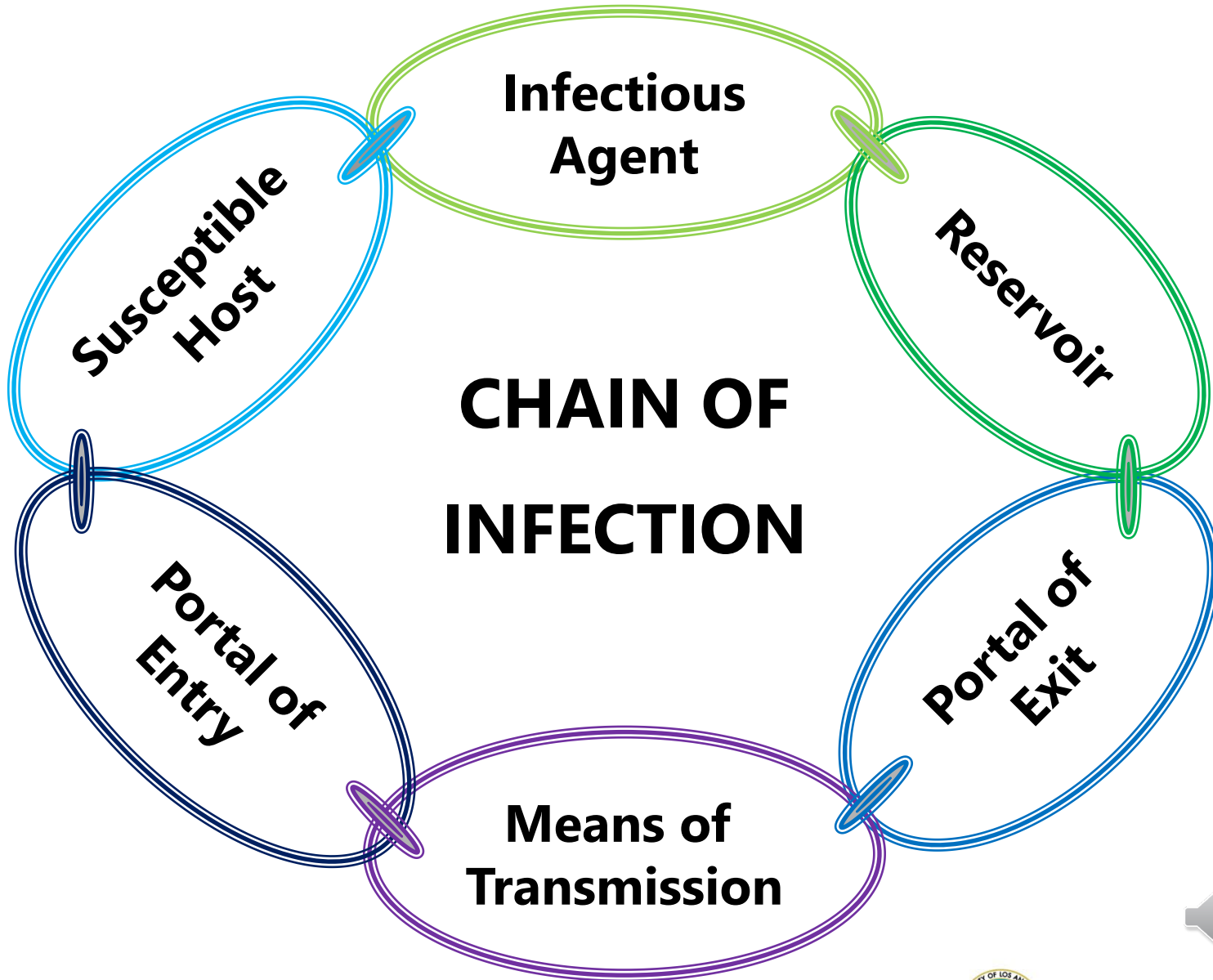
Infection control prevents:

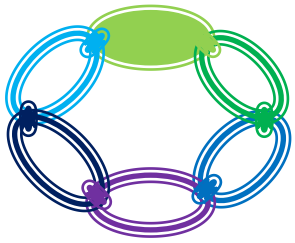
- Nosocomial infections (i.e. hospital/clinic acquired)

AND

- Spread of infection among staff and visitors





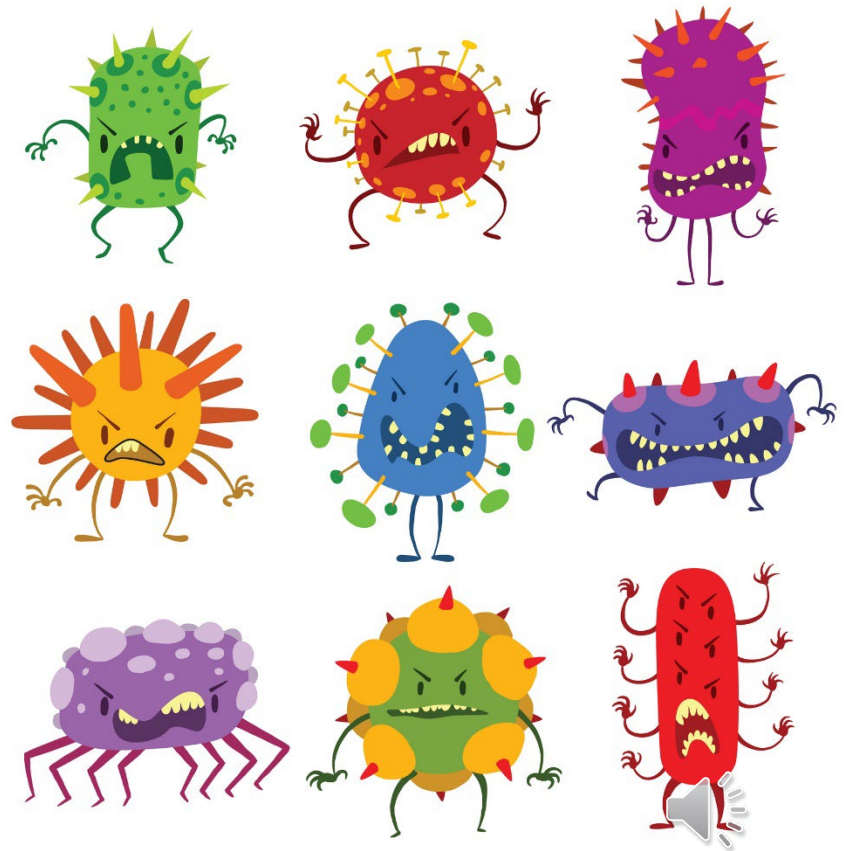


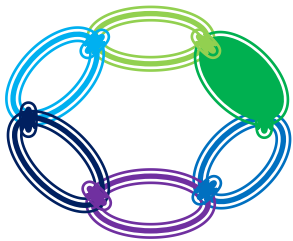
# Infectious Agent

**Organisms capable of causing infection or infectious disease**

Examples:

- Viruses
- Bacteria
- Fungi
- Protozoa
- Helminths





# Reservoir

**Where an infectious agent lives and can be transmitted to a susceptible host**

Examples:

- Person
- Animal
- Insects
- Soil

In healthcare:

- Patients
- Healthcare workers
- Equipment
- Healthcare facilities





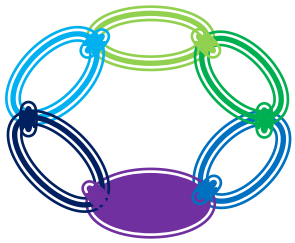
# Portal of Exit

**Any path an infectious agent takes to leave reservoir**

Examples include body fluids:

- Excretions (feces, urine, sweat)
- Secretions (tears, saliva, mucus)
- Blood





# Means of Transmission

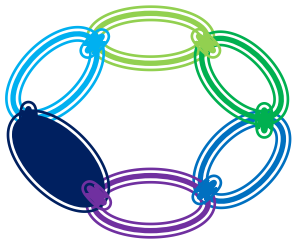
**Medium/mechanism  
an infectious agent  
uses to move from  
reservoir to host**

Examples:

- Contact
- Ingestion
- Air
- Vector







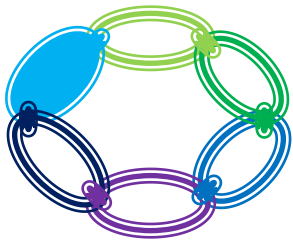
# Portal of Entry

**Any path an infectious agent takes to enter susceptible host**

Examples include any body opening:

- Nose
- Mouth
- Sex organs
- Broken skin
- Eyes
- Ears
- Anus
- Placenta





# Susceptible Host

## Person or animal with insufficient resistance to pathogenic organism

Factors that affect susceptibility include:

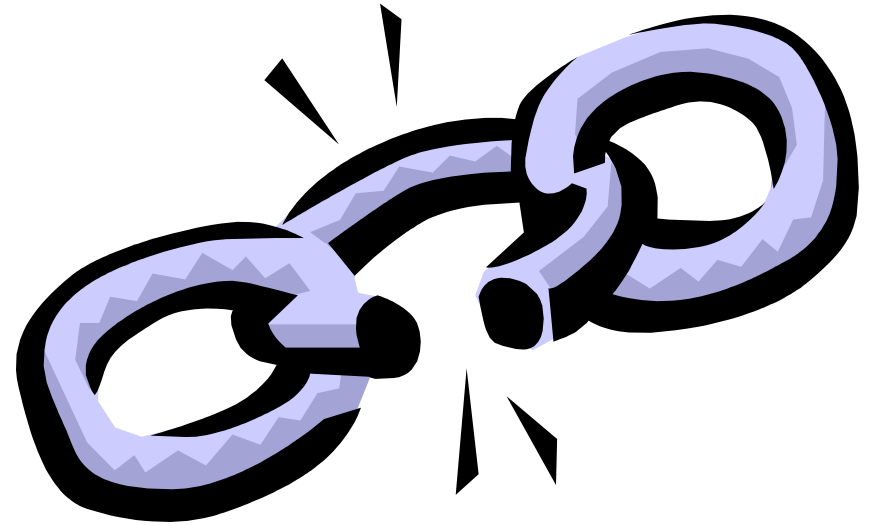
- Age
- Underlying disease and resistance
- Treatments with antimicrobials or other immunosuppressive agents
- Length of exposure
- Dose of infectious agent



# Breaking the Chain

## How do we break the chain of infection?

1. Wash your hands/hand hygiene
2. Use body substance precautions
3. Place patients with suspected airborne illness in isolation
4. Stay home when ill



# DPH Hand Hygiene Policy

## **Subject:**

- Hand hygiene in healthcare settings—DPH Policy No. 325

## **Purpose:**

- To promote hand hygiene practices that reduce the transmission of pathogenic organisms to patients and personnel in healthcare settings

## **Scope:**

- Applies to all healthcare workers who provide direct patient care, have contact with patient care supplies, equipment, or food, and laboratory and select pharmacy staff



# Hand Hygiene

**Hand hygiene is the most important measure in reducing the spread of microorganisms:**

- From person to person
- From person to environment

Hand hygiene includes

- Washing your hands
- Using antimicrobial agents



# Hand Hygiene Practices

- Nails
  - No artificial nails (acrylics)
  - Natural nails must be short and clean
  - Nail polish must be in good condition
- Rings
  - Rings with stones is discouraged
  - Bands are allowed if cleaned



# How to Wash Hands

**Use paper towels** to turn on faucet if sink has no foot or elbow controls available

- Avoid hot water because it dries up the skin



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# How to Wash Hands

**Scrub vigorously** with soap and running water for at least 15-20 seconds. Include areas between fingers and around nails





# How to Wash Hands

**Rinse** thoroughly



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# How to Wash Hands

**Dry hands with paper towels** and use towels to turn off water if no foot or elbow controls available



# How to Wash Hands

**Discard used towels** in covered, lined trash container



# Indications for Handwashing

You MUST wash your hands...

- When arriving and leaving work
- Between each contact with patient
- Before and after using disposable gloves
- When hands are dirty
- After handling contaminated equipment or other soiled items
- After using the toilet
- Before eating



# Rule of Thumb

When in doubt—  
**WASH!**



# Body Substance Precautions

- Precautions with **any** moist body substance
- **All patients** require body substance precautions, whether or not they have a diagnosis of infectious disease
- DPH CHS Exposure Control Plan, CHS Policy No. 722



# Body Substance Precautions vs. Universal Precautions

## Body Substance

Any moist body substance:

- Blood
- Body fluids
- Feces
- Urine
- Emesis
- Sputum
- Drainage from wounds
- Oral and nasal secretions

## Universal

Only blood and body fluids containing visible:

- Blood
- Semen
- Vaginal secretions
- Tissues
- Cerebrospinal fluid
- Peritoneal fluid
- Pericardial fluid
- Amniotic fluid



# Standard Precautions for Infection Control

- Hand hygiene
- Respiratory hygiene/cough etiquette
- Barrier protective equipment if splashing/sprays are anticipated
- Proper patient placement (where potential for disease transmission is minimized)
- Proper use and handling of patient care equipment
- Proper environmental cleaning and disinfection
- Proper handling of linen
- Adhere to Bloodborne Pathogens Standard
- Safe injection practices

CDC: 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings  
<http://www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html>





# Transmission-based Precautions:

## CONTACT

In addition to Standard Precautions:

- Personal Protective Equipment
  - Examples: Gown and Gloves
- Prevent direct or indirect contact with patients and environment
  - Examples: MRSA, *C. difficile*, Norovirus, other GI pathogens, RSV



The infographic is a yellow rectangular poster with rounded corners. At the top, it features two red octagonal signs with the word "STOP" in white. Between these signs, the text "CONTACT PRECAUTIONS" is written in large, bold, black letters, and "EVERYONE MUST:" is written in bold, red letters below it. The poster is divided into four sections, each with an icon and text. The first section shows a hand being washed with soap and water, with the text "Clean their hands, including before entering and when leaving the room." The second section shows a pair of blue gloves, with the text "Put on gloves before room entry. Discard gloves before room exit." The third section shows a blue gown, with the text "Put on gown before room entry. Discard gown before room exit." and "Do not wear the same gown and gloves for the care of more than one person." The fourth section shows a stethoscope, with the text "Use dedicated or disposable equipment. Clean and disinfect reusable equipment before use on another person." At the bottom right, there are logos for the CDC and the U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. A small speaker icon is also present at the bottom right.

**STOP** **CONTACT PRECAUTIONS** **STOP**  
**EVERYONE MUST:**

 Clean their hands, including before entering and when leaving the room.

**PROVIDERS AND STAFF MUST ALSO:**

 Put on gloves before room entry. Discard gloves before room exit.

 Put on gown before room entry. Discard gown before room exit.  
**Do not wear the same gown and gloves for the care of more than one person.**

 Use dedicated or disposable equipment. Clean and disinfect reusable equipment before use on another person.

 U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention



# Transmission-based Precautions:

## DROPLET

In addition to Standard Precautions:

- Wear surgical or procedure mask within 6 feet of patient
- Single room preferred; consult IC/PH if cohort
- Mask patient if transport necessary, follow respiratory hygiene/cough etiquette
- Eye protection (face shield/goggles) if splashing, spraying anticipated
- No special air handling or ventilation required



**STOP** **DROPLET PRECAUTIONS** **STOP**

**EVERYONE MUST:**

-  Clean their hands, including before entering and when leaving the room.
-  Make sure their eyes, nose and mouth are fully covered before room entry.
- or
-  Remove face protection before room exit.

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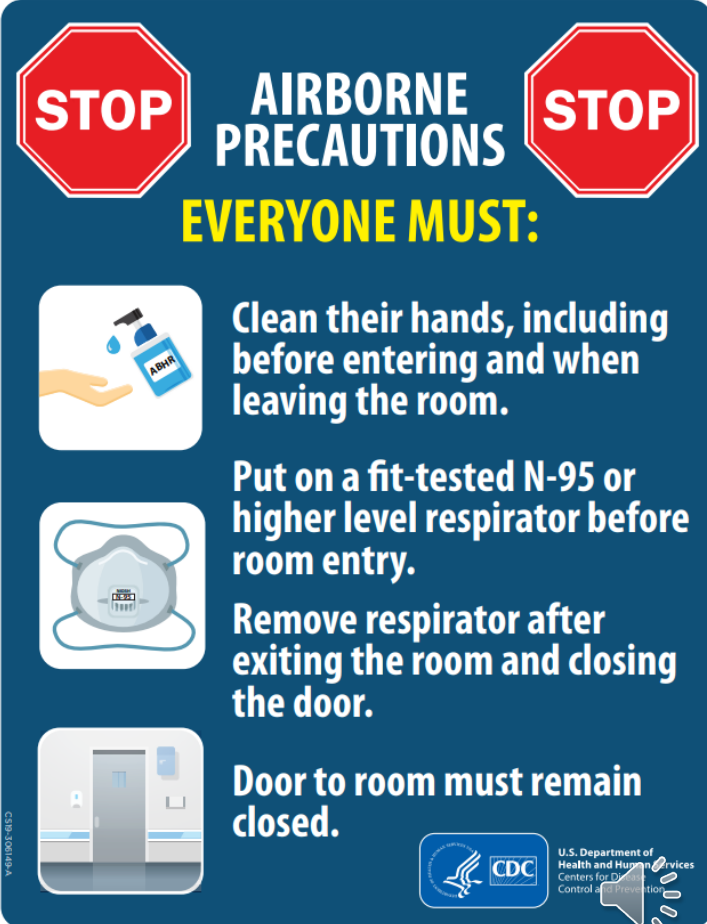


# Transmission-based Precautions:

## AIRBORNE




In addition to Standard Precautions:

- Airborne Infection Isolation Room (AIIR) if available
- Don N95 respirator prior to entering room and discard or store in paper bag after exit
- Higher level respirators for aerosol-generating procedure
- Check seal of respirator and hand hygiene before and after don/doff
- Patient wears a face mask during transport
- Alert others if patients need to be transferred




**STOP** AIRBORNE PRECAUTIONS **STOP**

**EVERYONE MUST:**

-  Clean their hands, including before entering and when leaving the room.
-  Put on a fit-tested N-95 or higher level respirator before room entry.
-  Remove respirator after exiting the room and closing the door.

Door to room must remain closed.

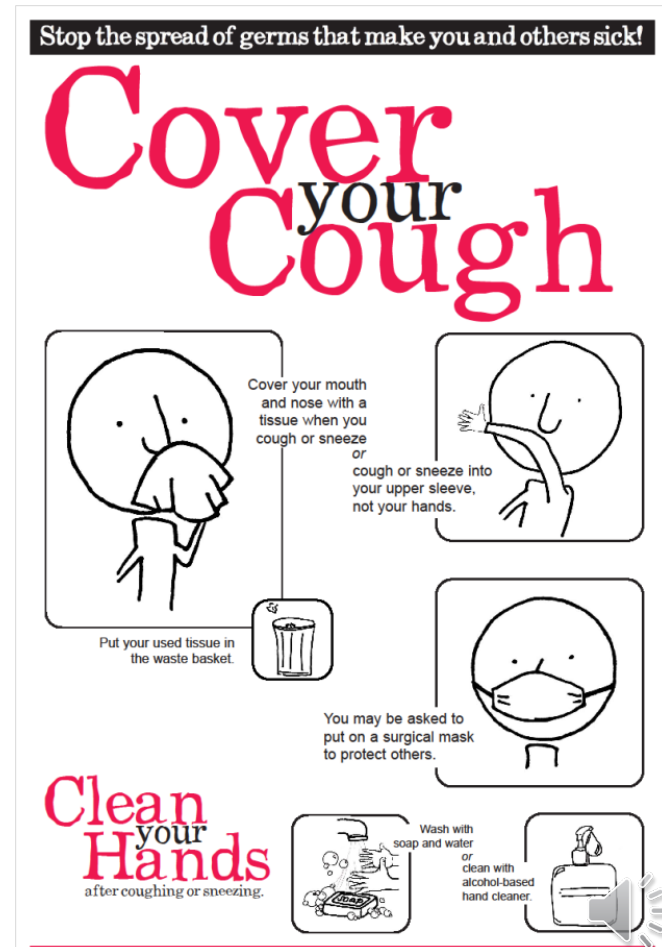
 U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

CDC-101019A



# Infection Control 24/7

- Hand hygiene
- Respiratory hygiene and cough etiquette
  - Cover your cough
  - Use tissue and dispose properly



# Patient Isolation in Public Health Centers

## Patients with an appointment:

- Licensed clinic staff must review patient record before each clinic visit
- Clinic staff should alert business office staff of known infectious patients
- All new TB III and TB V patients **MUST** be masked during all clinic visits until the TB physician deems the patient non-infectious



# Patient Isolation in Public Health Centers (cont.)

- If you encounter a patient/visitor with symptoms consistent with an aerosol transmissible disease (ATD) such as coughing, you **MUST** notify licensed staff
- Licensed staff will evaluate, mask, and place patient in an airborne infection isolation room (AIIR) as appropriate
- At health centers without AIIRs, patients with potential ATD will be masked, placed outside the facility, and assessed by a licensed nurse



# Reporting Exposure Incidents

- **Immediately** report incidents to your supervisor
- **Immediately** notify employees who had significant exposures of the date, time, and nature of the exposure
- Area Medical Director (AMD) must report exposure incidents to the DPH employee health clinician within **72 hours**



# Employee Post Exposure Evaluation

- Provide post-exposure medical evaluation to all exposed employees as soon as feasible.
- Physician or other licensed health care professional who knows about the specific disease, including appropriate vaccination, prophylaxis and treatment will conduct evaluation





# Vaccinations for HCWs

- Protect patients, yourself, and other HCWs
- CDC recommends and Cal-OSHA requires employers to offer:
  - Measles, mumps, rubella (MMR)\*
  - Varicella\*
  - Tdap (Pertussis)
  - Seasonal influenza vaccine yearly
  - Hepatitis B\*



\*For those who are not vaccinated or immune



# Employee Illness

- If you're sick, **stay home**
- If you get ill while at work, inform your supervisor



# Infection Control Procedure Resources

- Medical Director/Quality Improvement
  - Policy No. QID-302 – Standard Precautions For the Prevention Of Infections,  
<http://intranet.laph.local/ph/PDFs/PolicyProcedures/QID/QID-302.pdf>
- Nursing Administration
- CHS Administration
  - Policy No.921, Infection Control Practices
  - Policy No. 922, Exposure Control Plan





# Infection Control References

- CDC Healthcare Infection Control Practices Advisory Committee (HICPAC)
- 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings  
<http://www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html>
- Guideline for Hand Hygiene in Healthcare Settings
  - *MMWR 2002; vol. 51, no. RR-16*  
<http://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf>
- California Code of Regulations, Title 8, Aerosol Transmissible Diseases, Section 5199, Subchapter 7
- County of Los Angeles Department of Public Health (2011). *Hand Hygiene in Healthcare Settings*. Policy no. 325  
<http://intranet.laph.local/ph/PDFs/PolicyProcedures/PublicHealth/300/325.pdf>





# Infection Control References (Cont.)

- County of Los Angeles Department of Public Health (2011). *Standard Precautions for the Prevention of Infections*. Policy no. QID-302  
<http://intranet.laph.local/ph/PDFs/PolicyProcedures/QID/QID-302.pdf>
- County of Los Angeles Department of Public Health, Community Health Services (2011). *Aerosol Transmissible Diseases Exposure Control Plan*. Policy no. 910  
[http://intranet.laph.local/ph/PDFs/PolicyProcedures/CHSProcedureManual/900/POLICY\\_910.pdf](http://intranet.laph.local/ph/PDFs/PolicyProcedures/CHSProcedureManual/900/POLICY_910.pdf)
- County of Los Angeles Department of Public Health, Community Health Services (2011). *Employee Exposure to Blood or Body Fluids*. Policy no. 702  
[http://intranet.laph.local/ph/PDFs/PolicyProcedures/CHSProcedureManual/700/POLICY\\_702\\_20110613175302.pdf](http://intranet.laph.local/ph/PDFs/PolicyProcedures/CHSProcedureManual/700/POLICY_702_20110613175302.pdf)

