INFECTION CONTROL
FOR HAND HYGIENE

Continuing Education
Description:
This seminar introduces you to the three elements of hand hygiene including handwashing, hand antisepsis and skin care, in accordance with the CDC Guidelines. You will also learn how using the proper infection control protocols and hand hygiene products can help prevent disease transmission.

Objectives:
• Gain a thorough understanding of proper hand hygiene methods and indications
• Learn strategies to minimize skin irritation & dryness
• Understand how to choose appropriate hand hygiene products
• Learn effective hand hygiene application techniques

What are the CDC Guidelines?
• Consolidated recommendations for preventing & controlling infectious diseases
• Strategies designed to protect patients & health care workers
• Guidelines only, not government regulations

CDC Guidelines for Infection Control in Dental Health Settings, 2003 http://www.cdc.gov/oralHealth/infectioncontrol/guidelines/index.htm

Standard Precautions to Prevent Disease Transmission Include:
• Handwashing
• Use of Personal Protective Equipment (PPE)
• Cleaning & decontamination of patient care equipment with PPE
• Cleaning/disinfection of environmental surfaces
• Injury prevention

Self-Reported Reasons for Lack of Effective Hand Hygiene Compliance:
• Handwashing agents cause skin irritation, dryness (irritant contact dermatitis)
• Lack of:
  – Awareness of principles
  – Soaps, paper towels, sinks
  – Understaffing & insufficient time
• Inconvenient location
• Wearing gloves as substitute for handwashing
• Hands don’t look dirty
• Perceived low risk of cross-infection

Enemies to Skin Health: Frequent or Prolonged Handwashing
• Destroys the protective function of the stratum corneum (the top layer of the epidermis)
• Dissolving and rinsing off the skin’s natural oils.*
• Result can be irritant contact dermatitis (ICD)

* Risks resulting from skin contact – determination, evaluation, measures. TRGS 401. BAuA. 2006 May.

Prerequisites for Effective Hand Hygiene
• Clean, short nails, intact skin, no artificial nails, minimal jewelry, no infections on hands

3 Elements of Hand Hygiene (Non-Surgical Dental)
• Handwashing (cleansing)
• Hand antisepsis (disinfection)
• Skin care
Hand Hygiene Element #1

“Handwashing is the single most important measure health care personnel (HCP) can take to prevent the transmission of infectious diseases in health care settings.”
- Molinari J, Harte J, Practical Infection Control In Dentistry, 2010: 125

Indications for Handwashing with Soap & Water:
- When hands are visibly dirty or contaminated with infectious material or visibly soiled with blood/other body fluids
- Before & after eating
- After using the restroom

Hand Soap Options

- **Plain Soap**
  Detergents that do not contain antimicrobial agents or contain low concentrations of antimicrobial agents that are effective solely as preservatives

- **Antimicrobial Soap**
  Soap (i.e., detergent) containing an antiseptic agent
  - Antiseptic agent – Antimicrobial substances that are applied to the skin to reduce the number of microbial/transient flora (alcohols, chlorhexidine, chlorine, hexachlorophene, iodine, PCMX, triclosan, etc.)

Do’s of Handwashing
- Wash hands when visibly soiled. If not visibly soiled, alcohol-based hand rub is adequate. Hand wash should last at least 15 seconds.
- Use lukewarm water
- Use only soaps/lotion products made for healthcare professionals
- If using a scrub brush, it is recommended not to scrub too vigorously
- Rinse & dry hands well

CDC, MMWR 2003; 52 (No. RR-16): [15]

How Can Soap & Water Lead to Skin Irritation?

Frequent contact with water (handwashing, etc.)  Skin’s ability to protect itself becomes impaired  Epidermis becomes more permeable  Harmful substances are able to penetrate the skin more deeply  Irritant contact dermatitis (ICD) can develop

Choosing a Hand Soap

Factors to consider:
- Skin integrity after repeated use
- Ease of lathering
- Scent
- Consistency (i.e., “feel”)
- Acceptance of product by health care personnel
- Accessibility of product

- Dispenser systems
- Cost per use
- Compatibility with soaps, alcohol-based hand rubs, gloves and lotions

CDC, MMWR 2002; 51 (No. RR-16): [33]

Suggestion: If using alcohol-based hand rub regularly, wash with plain soap to remove debris.

CDC, MMWR 2002; 51 (No. RR-16): [33]
Hand Hygiene Element #2 - Hand Antisepsis

- Goal: Reduce the number of viable microorganisms on hands
- Use either antiseptic handwash or antiseptic hand rub

CDC, MMWR 2002; 51 (No. RR-16): [3]

Hand Antisepsis Indications
- Before treating each patient (e.g., before glove placement)
- After treating each patient (e.g., after glove removal)
- Bare hand contact of inanimate objects likely to be contaminated by blood or saliva
- Leaving the dental operatory or dental laboratory

Molinari J, Harte J, Practical Infection Control In Dentistry, 2010: 128

Hand Antisepsis Options
Antiseptic Wash
- Water & antimicrobial soap (chlorhexidine, iodine and iodophors, chloroxylenol, triclosan)

Alcohol-based hand rub (ABHR)
- 60%-95% ethanol or isopropanol
- Drying effect of alcohol can be reduced or eliminated by adding 1% to 3% glycerol or other emollients

CDC, MMWR 2003; 52 (No. RR-17): [15]

Why Alcohol-Based Hand Rub?

- Like soap & water, alcohol dissolves natural skin oils.
- The difference: These oils are rubbed back into the hands during the hand rub process rather than washed away with soap & water.

GOOD
Regular Soap

BETTER
Antimicrobial Soap

BEST
Alcohol-based hand rub (foam or gel)

- Kills more effectively & more quickly than handwashing with soap & water
- Is less damaging to skin than soap & water, resulting in less dryness & irritation
- Is easy to use: requires less time than handwashing with soap & water
- Bottles/dispensers can be placed at the point of care so they are more accessible
- Have not been shown to cause allergic reactions
- Allows the protective function of the skin to be maintained

CDC, MMWR 2002; 51 (No. RR-16): [11-19]
Kill Rates: Comparing Antimicrobial Agents

Alcohol has a higher kill rate than other antimicrobial agents.

- **Antiseptic hand rub with ethanol**, isopropanol and n-propanol (alcohol)
  - Strongest kill rate*

- **Antiseptic handwash with triclosan** (most antimicrobial soaps)
  - Lower kill rate than alcohol*

- **Antiseptic handwash with chlorhexidine gluconate (CHG)**
  - Lower kill rate than alcohol*

- **Handwash with non-antimicrobial soap**
  - Lowest kill rate*


Choosing a Hand Antiseptic

Factors to consider:
- Contains skin-conditioning agent
- Skin integrity after repeated use
- Product effectiveness
- Acceptance of product by health care personnel
- Potential irritants/allergens in active ingredients
- Compatibility with lotions used in the dental office
- Scent
- Dispenser/delivery systems
- Cost per use

If hands are not visibly soiled, using an alcohol-based hand rub is adequate. -CDC, MMWR 2002; 51 (No. RR-16): [1-45]

Alcohol-based Hand Rub Example

Sterillium® Comfort Gel™ Hand Antiseptic

Scientifically proven hand sanitizer that moisturizes:
- Kills >99.999% of a broad range of nosocomial pathogens within 15 seconds
- Significantly increases skin hydration after only one week of product usage compared to untreated skin
- Is non-irritating
- Is compatible with CHG and latex

Gaps in Coverage

Areas frequently missed during hand antisepsis*:
- Fingertips
- Thumbs
- Under the nails
- Between the fingers
- Cuticles

Key: Follow proper application technique to optimize hand hygiene (Hand Care Application Guide, IMS-406)

Hand Lotion Indications:
• Beginning & end of work day
• After breaks
• When required or desired

Choosing a Hand Lotion
• You should use only medical approved hand lotions
• Other lotions may:
  - Make hand hygiene less effective
  - Cause breakdown of latex gloves
  - Become contaminated with bacteria if dispensers are refilled

• Petroleum-based lotion formulations can weaken latex gloves and increase permeability.
  - Lotions containing petroleum or other oil emollients should only be used at the end of the work day.

- CDC, MMWR 2003; 52 (No. RR-17): [16]

Hand Lotion Example
Hand Essentials™ Skin Repair Cream
• Contains Olivamine® to deliver vital nutrients to skin (amino acids, antioxidants, vitamins, MSM)
• Scientifically proven to moisturize & repair damaged skin
• Compatible with CHG & latex
• Helps restore and maintain the skin’s natural moisture balance
• Contains dimethicone to provide a breathable moisture barrier – prevents chapped or dry skin caused by handwashing
Hand Hygiene for Oral Surgical Procedures

Hand Hygiene Recommendations for Oral Surgical Procedures

- Use combination surgical hand antisepsis & sterile surgeon’s gloves
- Use antimicrobial soap & water or plain soap & water, followed by an alcohol rub that contains an antimicrobial agent with persistent activity
- Persistent activity – Prolonged activity that prevents or inhibits proliferation or survival of microorganisms after application

Choosing a Surgical Hand Antiseptic

- Use antimicrobial agents that:
  - Reduce microorganisms on intact skin
  - Are non-irritating
  - Feature broad spectrum of activity
  - Are fast-acting
  - Feature a persistent antimicrobial effect

Indications:

Before donning sterile surgeon’s gloves for oral surgical procedures including:

- Biopsy
- Periodontal surgery
- Apical surgery
- Implant surgery
- Surgical extraction of teeth

- Molinari J, Harte J, Practical Infection Control In Dentistry, 2010: 131

Addressing Skin Irritations

- Use lotions when indicated or needed.
- Use ABHR, as it helps the skin regenerate.*  **  ***
- Do not stop using ABHR if you experience a burning sensation. Can usually be traced to existing damage on hands, not the use of ABHR

Strategies to Improve Compliance

- Education
- Make hand hygiene possible, easy, convenient
- Make alcohol-based hand rub available
- Patient education
- Reminders in the workplace
- Change in hand hygiene product
- Promote skin care for workers’ hands

- Molinari J, Harte J, Practical Infection Control In Dentistry, 2010: 131


For dental support in the U.S.
1-800-HU-FRIEDY
1-800-483-7433

24-Hour Customer Service Fax
1-800-729-1299

For dental support in Europe

Phone
011-49-6224-97000

Fax
011-49-6224-970097

www.hu-friedy.com