

Allied Health Media AudiologyOnline

If you are viewing this course as a recorded course after the live webinar, you can use the scroll bar at the bottom of the player window to pause and navigate the course.

Allied Health Media AudiologyOnline

This handout is for reference only. It may not include content identical to the powerpoint.

Any links included in the handout are current at the time of the live webinar, but are subject to change and may not be current at a later date..


Allied Health Media AudiologyOnline

HIV/AIDS Overview

Presenter: A.U. Bankaitis, PhD, FAAA

Moderator: Carolyn Smaka, AuD, Editor in Chief, AudiologyOnline

Allied Health Media	AudiologyOnline
<ul style="list-style-type: none"> • Technical Assistance: 800-753-2160 • CEU Total Access members can earn credit for this course <ul style="list-style-type: none"> ○ Must complete outcome measure with passing score (within 7 days for live webinar; within 30 days of registration for recorded/text/podcast formats) • Questions? Call 800-753-2160 or use Contact link on AudiologyOnline.com 	



HIV/AIDS Overview:
Catalyst for Change in Infection Control

A.U. Bankaitis, PhD, FAAA
Vice President
Oaktree Products
St. Louis, MO
Oaktree Products, Inc.
St. Louis, MO

Learning Outcomes

- **As a result of this Continuing Education Activity, participants will be able to:**
- **Identify at least two ways that HIV is transmitted**
- **Describe how HIV disables immune function**
- **Differentiate HIV-infection from AIDS based on accepted disease classification systems**

HIV AIDS

- human immunodeficiency virus
- acquired immunodeficiency syndrome

The diagram illustrates the progression of HIV. On the left, several spherical virus particles with spikes are shown. In the center, a stick figure represents a 'Person with HIV'. To the right of the figure is an equals sign, followed by two circles. The top circle is labeled 'severely compromised' and the bottom circle is labeled 'opportunistic infection'.

HIV-1 **HIV-2**

The diagram shows two globes. The left globe is labeled 'HIV-1' and has letters 'a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', and 'j' scattered around it. The right globe is labeled 'HIV-2' and has letters 'k' and 'l' scattered around it. Below the globes are three circles labeled 'Group M', 'Group O', and 'Group N'.

OBJECTIVES

- Milestone & Basic Statistics
- HIV Transmission, Prevention & Risk Factors
- HIV Mechanism & Disease Classification
- HIV's Influence on Patient Care

Initial Historical Milestones

- **MMWR June 5, 1981**
 - 5 cases *Pneumocystis carinii* pneumonia (PCP)
 - Kaposi’s sarcoma
 - Persistent Generalized Lymphadenopathy (PGL)
- **Increased demand for PENTAMIDINE**
- **Gay Related Immuno-Deficiency (GRID)**
- **Hemophilic involvement**
- **Acquired Immuno-Deficiency Syndrome (AIDS) coined** (July 1981) **International Committee of Viral Taxonomy names virus Human Immunodeficiency Virus**

Basic Statistics

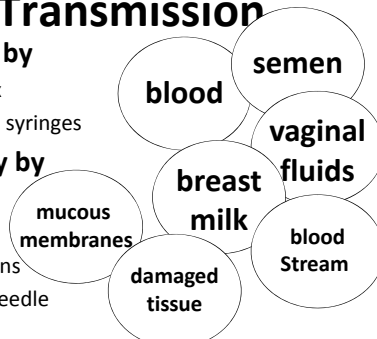
- **Worldwide**
 - ~40 million living with HIV
 - ~2.3 million newly infected/yr
- **United States**
 - ~1 million living with HIV
 - ~50,000 newly infected/year with 16% unaware of status



Joint United Nations Programme on HIV/AIDS (UNAIDS), 2014
CDC, 2014

HIV Transmission

- **Mainly spread by**
 - Unprotected sex
 - Sharing needles, syringes
- **Less commonly by**
 - Birth
 - Breast Feeding
 - Blood transfusions
 - Contaminated needle
 - Bite
 - Contact between broken skin or mucous membranes with HIV-infected blood or bodily fluids



HIV Prevention

- **Mainly spread by**
 - Unprotected sex
 - Sharing needles, syringes
- **Less comonly by**
 - Birth
 - Breast Feeding
 - Blood transfusions
 - Contaminated needle
 - Bite
 - Contact between broken skin or mucous membranes with HIV-infected blood or bodily fluids

condoms

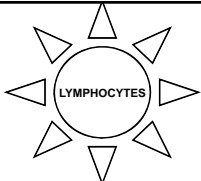
sexual partners

PEP

PrEP

sterile water

clean needles

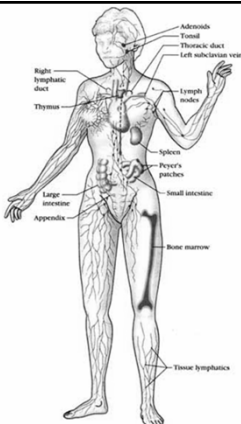


LYMPHOCYTES

Execute & manage all activities of the immune system

B-Cell

T-Cell



How immune system works

Classification System-HIV/AIDS

Adolescents & Adults

CD4 T-CELL COUNTS CATEGORY	CLINICAL CATEGORY A <small>(asymptomatic)</small>	CLINICAL CATEGORY B <small>(not A or B category)</small>	CLINICAL CATEGORY C <small>(AIDS indicator condition)</small>
1 ≥500/(mm ³)	A1	B1	C1
2 200-499/(mm ³)	A2	B2	C2
3 <200/(mm ³)	A3	B3	C3

CDC, 1993

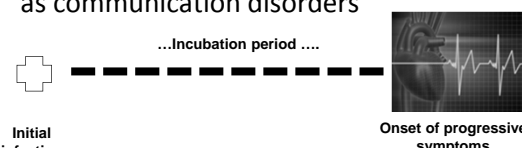
Classification System-HIV/AIDS Children

- Maternal HIV antibodies cross placenta
- Falsely HIV+ 9 to 18 months
- CD4+ t-cell count higher in infants

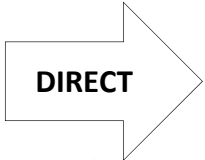
Immune category	<12 mths	1-5 yrs	6-12 yrs
1	>1500 μ L	>1000 μ L	>500 μ L
2	750-1499 μ L	500-999 μ L	200-499 μ L
3	<750 μ L	<500 μ L	<200 μ L

Course of Disease

- Initially, flu-like symptoms
- Incubation period 8 to 10 years
- Associated with peripheral & central nervous system symptoms that manifest as communication disorders

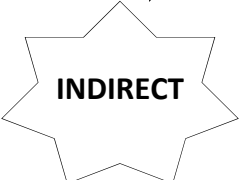


HIV/AIDS & Related Audiological Disorders



DIRECT

- Damages cell tissue
- Releases toxins
- Δ cell metabolism




INDIRECT

- Opportunistic infections
- Ototoxicity

Indirect Effects	
OPPORTUNISTIC INFECTION	EFFECT ON HEARING
Candidiasis	
Pneumocystic/Streptococcal Pneumonia	SNHL from Bacterial Meningitis Conductive HL from OM
Cytomegalovirus	SNHL
Cryptococcus infection	SNHL from Bacterial Meningitis
Toxoplasmosis	SNHL
Mycobacterium infections	Conductive HL from OM
Syphilis	SNHL
Staphylococcus aureus	Conductive HL from OM
Kaposi's sarcoma	
Herpes zoster	SNHL



Bankaitis, 1996

INDIRECT

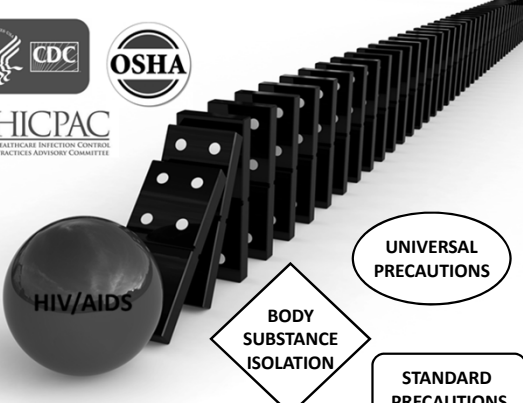


Ototoxicity

- FDA-approved and/or experimental anti-retrovirals
- Medications for opportunistic infections
- SNHL, tinnitus, vestibular/balance issues

HICPAC
HEALTHCARE INFECTION CONTROL
PRACTICES ADVISORY COMMITTEE



UNIVERSAL PRECAUTIONS

BODY SUBSTANCE ISOLATION

STANDARD PRECAUTIONS

CDC's Response to HIV/AIDS

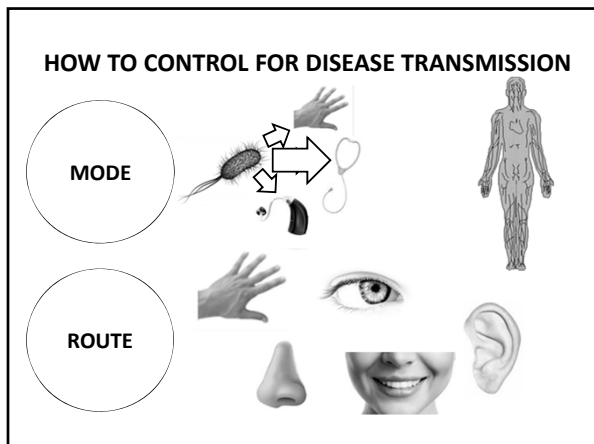
- 1983** • CDC Guideline for Isolation Precautions in Hospitals
- 1985** • CDC expanded blood & bodily fluid precautions to prevent HIV transmission
- 1987** • All blood treated as if infected with HIV
- 1991** • Two-tiers of precautions

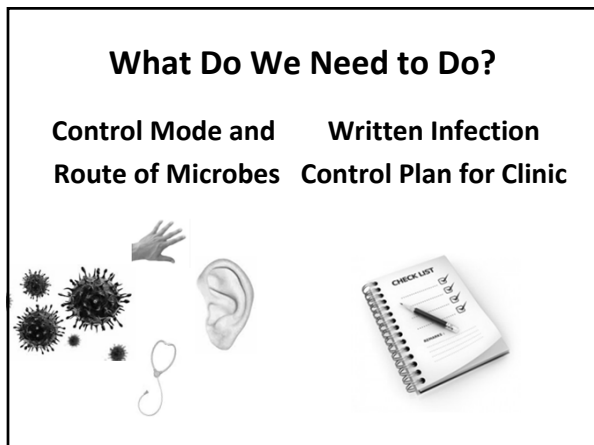
Standard Precautions

- Appropriate personal barriers
- Hand hygiene
- Disinfect touch and splash surfaces
- Sterilize critical instruments
- Dispose infectious waste

What Does This Have to do with Me?

- Contact with bodily fluids
- Multiple Contact with Multiple objects & patients
- Cross-contamination & Infections increases potential for disease transmission!





- HIV Take Home Points**
- Mainly spread through unprotected sex and/or intravenous drug use
 - Attacks CD4 T-Cells which compromises humoral and cell-mediated immunities
 - Associated with audiological disorders
 - Catalyst of change of infection control

