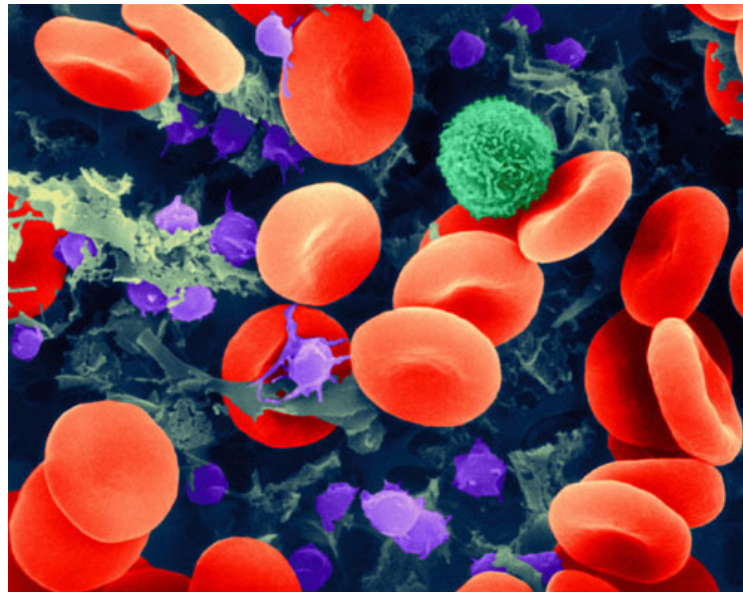


Unit 1: Introduction to Infectious Diseases

Instructional Activities for Adults



PKIDs' Infectious Disease Workshop

Made possible by grants from the Northwest Health Foundation,
the Children's Vaccine Program at PATH and PKIDs.

PKIDs' Infectious Disease Workshop

©PKIDs 2004

Acknowledgements

Producing this workshop has been a dream of ours since PKIDs' inception in 1996. It has been more than two years since we began work on this project, and many people helped us reach our goal. It's not done, because it is by nature a living document that will evolve as science makes strides in the research of infectious diseases, but it's a great beginning.

There are people who've helped us whose names are not on this printed list. That omission is not deliberate, but rather from our own clumsiness in losing important pieces of paper, and we apologize.

Without the funding and support of the Northwest Health Foundation and the Children's Vaccine Program at PATH (Program for Appropriate Technology in Health), this would have been an impossible task. Dr. Katherine Vaughn, PKIDs' Medical Director and Dr. Karen Steingart, scientific advisor to PKIDs, provided excellent guidance through their editorial oversight and knowledgeable contributions to the Infectious Disease Workshop.

On PKIDs' staff are three individuals without whom this publication would never have been finished—Franji Mayes, Mylei Basich and Christine Kukka, all of whom gave their very best to ensure this workshop is accurate and user-friendly.

We are indebted to the following individuals who cheerfully gave us hours of their time and access to their resources: the American Society for Microbiology; Kathy A. Bobula, Ph.D., Coordinator, Early Childhood Education, Clark College, Vancouver, Wash.; Claudia Bratt, elementary school teacher, Truman Elementary, Vancouver, Wash.; Sue Campbell, Early Childhood Educator, Kindercare; many wonderful and helpful people at the Centers for Disease Control and Prevention, Atlanta, Georgia; Rachel Coyle, Case Aide and Residential Care Staff Lead, Jonathan's Place; Tammy Dunn, Early Childhood Director, Portland Christian Schools, Portland, Oregon; Bruce Gellin, M.D., Director of the National Vaccine Program Office in the Office of the Assistant Secretary for Health, Department of Health and Human Services; Shannon Harrison, M.D., Internal Medicine and Infectious Diseases, Teton Hospital, Jackson, Wyoming; the Immunization Action Coalition; Brad Jensen, M.D., Southwest Washington Medical Center Pathology Department; Edgar Marcuse, M.D., Professor of Pediatrics, University of Washington and Director of Medical Services, Seattle Children's Hospital and Regional Medical Center; Zack Mittge, law student, University of Oregon; the National Network for Immunization Information; Paul Offit, M.D., Chief, Section of Infectious Diseases and the Henle Professor of Immunologic and Infectious Diseases at The Children's Hospital of Philadelphia; Carol Porter, Red Cross health room volunteer, Garland Independent School District, Garland, Texas; Sarah Theberge, Curriculum Instructor, Early Childhood Education, Clark College, Vancouver, Wash.; James Whorton, Ph.D., Professor, Department of Medical History and Ethics, University of Washington School of Medicine.

We thank the following for providing nonprofit rates for their microscopic images: Dennis Kunkel Microscopy, Inc., and Science Photo Library/Photo Researchers, Inc.
(Cover photo: Dennis Kunkel Microscopy, Inc./www.denniskunkel.com.)

Additional funding for this project provided by PKIDs (Parents of Kids with Infectious Diseases).

Table of Contents

Introduction	5
1. Making a Reference Notebook.....	6
Visual aids — <i>click here to link to the visual aids in PDF</i>	
2. Transmission Modes Quiz	8
3. Infectious Disease Word Jumble.....	10
Handout	11
Bibliography	12
Additional Activities and Resources	16

Warning: This section contains certain disease-related images/terms that may not be suitable for young children.

To navigate this document, use the bookmarks to the left or select an item on this page.

Click here to go back to the PKIDs' IDW website.

This publication contains the opinions and ideas of its authors. It is intended to provide helpful and informative material on the subject matter covered. Any information obtained from this workshop is not to be construed as medical or legal advice. If the reader requires personal assistance or advice, a competent professional should be consulted.

The authors specifically disclaim any responsibility for any liability, loss, or risk, personal or otherwise, which is incurred as a consequence, directly or indirectly, of the use and application of any of the contents of this workshop.

Introduction

PKIDs (Parents of Kids with Infectious Diseases) is a national nonprofit agency whose mission is to educate the public about infectious diseases, the methods of prevention and transmission, and the latest advances in medicine; to eliminate the social stigma borne by the infected; and to assist the families of the children living with hepatitis, HIV/AIDS, or other chronic, viral infectious diseases with emotional, financial and informational support.

Remaining true to our mission, we have designed the *Infectious Disease Workshop (IDW)*, an educational tool for people of all ages and with all levels of understanding about infectious diseases. In this workshop, you will learn about bacteria and viruses, how to prevent infections, and how to eliminate the social stigma that too often accompanies diseases such as HIV or hepatitis C.

We hope that both instructors and participants come away from this workshop feeling comfortable with their new level of education on infectious diseases.

The IDW is designed to “train-the-trainer,” providing instructors not only with background materials but also with age-appropriate activities for the participants. Instructors do not need to be professional educators to use these materials. They were designed with both educators and laypersons in mind.

The IDW is comprised of a master Instructor’s Background Text, which is divided into six units: Introduction to Infectious Diseases, Disease Prevention, Sports and Infectious Disease, Stigma and Infectious Disease, Civil Rights and Infectious Disease, and Bioterrorism and Infectious Disease.

For each unit, instructors will find fun and helpful activities for participants in five age groups: 2 to 6 years of age, 6 to 9 years of age, 9 to 12 years of age, 13 to 18 years of age and adults.

We welcome any questions, comments, or feedback you may have about the IDW or any other issue relating to infectious diseases in children.

PKIDs
P.O. Box 5666
Vancouver, WA 98668
VOICE: (360) 695-0293 or toll-free 877-557-5437
FAX: (360) 695-6941
EMAIL: pkids@pkids.org
WEBSITE: www.pkids.org

INTRODUCTION TO INFECTIOUS DISEASES

Making a Reference Notebook

LEVEL

Adult

OBJECTIVE

- Participants will summarize main characteristics of several prominent infectious diseases.
- Participants will compare and contrast this information.

MATERIALS

- One spiral-bound notebook, or section of a binder and loose-leaf paper, for each participant.
- PKIDs' Infectious Diseases visual aids — *click here to link to the visual aids in PDF.*

PREP

1. Set up .pdf visual aids (included) for participants to view during lecture.
2. Prepare lecture (e.g., highlight desired portions of text) using specific disease information from the PKIDs' IDW Instructor Background Text.
3. List the Assessment questions on the board/overhead.

INSTRUCTIONAL COMPONENTS

1. Instruct participants to prepare their notebooks.
 - a. On the first page of their notebook, they should write down the questions that need to be answered about each disease. (See the “Assessment” section for these questions.)
 - b. It would probably be best if a new page of notes is started for each disease.
2. Work through each disease.
3. At the end of the lecture, have participants answer the follow-up questions (written or verbal format, as instructor determines).

ASSESSMENT

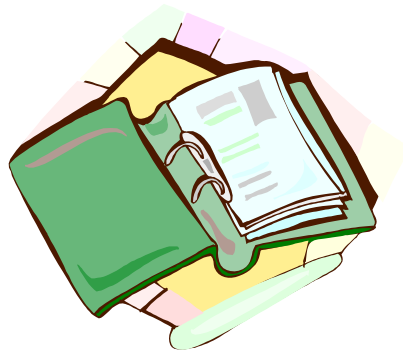
For each disease, the following questions should be answered/addressed:

1. **Name** of disease.
2. Is pathogen that causes this disease a **virus or bacteria**?
3. List one **historical fact** about this disease [optional] (e.g., where it was first discovered).
4. How **prevalent/common** is this disease?
5. How is this disease **transmitted**?
6. What are the major **symptoms** of this disease?
7. Is this disease **vaccine-preventable**?

Follow-up questions for the end of the lecture:

1. Which pathogen type is more common: virus or bacteria? Hypothesize why.
2. How many diseases can be prevented with vaccines? (____ out of ____)

3. How many diseases cause few or no symptoms when they are contracted? (___ out of ___)
4. How can you tell if a person has one of these infectious diseases if they show no symptoms? (you can't)



TRANSMISSION MODES QUIZ

LEVEL

Adult

OBJECTIVE

Participants will identify various methods of infectious disease transmission.

MATERIALS

Each participant needs a piece of notebook paper and pencil.

PREP

None

INSTRUCTIONAL COMPONENTS

1. Read participants the “Transmission” section from *Unit 2: Disease Prevention* of the IDW *Instructor’s Background Text*. Instruct participants to take brief notes on the five types of disease transmission:
 - a. Contact (direct and indirect)
 - b. Droplet
 - c. Airborne
 - d. Common vehicle
 - e. Vectorborne
2. Instruct participants to label the following scenarios with the correct mode of transmission and briefly explain why they selected that mode. (Answers are in parentheses.)

ASSESSMENT

1. A rabid bat bites a human, infecting him with rabies. (Vectorborne transmission—the bat acts as the vector, or carrier, of the disease.)
2. You contract the flu after your friend, who has the flu, sneezes on you. (Droplet transmission—you inhale the sneezed droplets containing the influenza virus.)
3. A woman cleaning her garage is infected with hantavirus. (Airborne transmission—the virus, which is present in deer mouse feces, is stirred up in the dust.)
4. One child contracts scabies after play-wrestling with another child infected with the scabies parasite. (Direct contact transmission—skin-to-skin contact was required to transmit the disease.)
5. A person contracts herpes type 1 by kissing another person who is infected with herpes. (Direct contact—skin-to-skin.)
6. You and your friends take a trip to the beach and stay overnight. You discover you’ve forgotten your razor. There’s no way you’re going out without shaving, so you borrow your friend’s razor. You nick yourself slightly while shaving, but don’t think much of it. Unfortunately, some of your friend’s dried blood was on the razor, even though you couldn’t see it. Your friend has hepatitis B, and you are not vaccinated. (Indirect contact transmission—contaminated body fluids transmitted to and from a shared object.)

7. You decide to give IV drugs a try and contract hepatitis C from the previous user's needles. (Indirect contact transmission—germs transmitted to and from a shared object.)
8. You have a friend who never washes her hands and is infected with hepatitis A. She fixes a salad for you and your family and you all contract hepatitis A. (Common vehicle transmission—germs transmitted to and from a shared object.)
9. One person contracts genital warts and HIV by having sex with another person who is infected with these diseases. They were probably not using a condom. (Direct contact transmission.)
10. A person with active tuberculosis disease passes through the room you are in. You then contract tuberculosis. (Airborne transmission—particles that travel significant distance through the air.)
11. You contract the West Nile virus after being bitten by a mosquito carrying the virus. (Vectorborne transmission—the mosquito is the vector, or carrier, of the disease.)
12. After a family reunion, several members of your family get sick after eating burgers contaminated with *E. coli* O157:H7. Apparently the contaminated burgers weren't fully cooked. (Common vehicle transmission.)

INFECTIOUS DISEASE WORD JUMBLE

LEVEL

Adult

OBJECTIVE

Participants will identify infectious disease terminology.

MATERIALS

One copy of the word jumble handout (included) per participant.

PREP

None

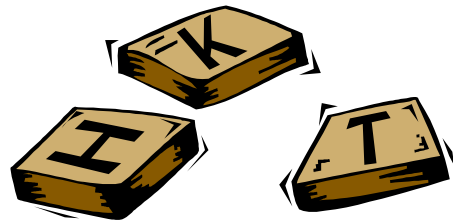
INSTRUCTIONAL COMPONENTS

Allow participants time to unscramble the terms provided.

ASSESSMENT

Answer Key:

1. Virus
2. Sex
3. Herpes
4. Disease
5. Germs
6. Hepatitis
7. AIDS
8. Transmission
9. Immunization
10. Bacteria
11. Fungus
12. Bloodborne



Infectious Disease Word Jumble

Unscramble each word and write it on the line.

1. irvus _____

2. xse _____

3. rehps _____

4. iedssae _____

5. sgmer _____

6. ahiespitt _____

7. adsi _____

8. srmintnsiasi _____

9. uzniamomnti _____

10. etirbca _____

11. gfun _____

12. noobdlber _____



Bibliography

About.com: European History
europeanhistory.about.com

All the Virology on the Web
www.virology.net

Ambroise Paré Hospital
www.hap.be

American Museum of Natural History
www.amnh.org

American Society for Microbiology
www.asmtusa.org, www.washup.org

The Annie E. Casey Foundation
www.aecf.org

BBC Learning
www.bbc.co.uk/learning

Bayer Corporation, North American Pharmaceutical Division
www.bayerpharma-na.com

Baylor College of Medicine
www.bcm.tmc.edu

Brown, John. “*What the Heck Is a Virus?*” The University of Kansas.
www.ku.edu

Centers for Disease Control and Prevention
www.cdc.gov

The College of Physicians of Philadelphia
www.collphyphil.org

The Dorset Page: *Was Dr. Jenner the True Inventor of the Vaccine?*
www.thedorsetpage.com

The Foundation of Bacteriology: Virtual Museum of Bacteria
www.bacteriamuseum.org

The Genealogical Society of Santa Cruz County. Newsletter. September/October 1997.

Historical Records of Tisbury, Massachusetts
www.vineyard.net

How Stuff Works: *How Do Antibiotics Work?*
www.howstuffworks.com

Immunization Action Coalition
www.immunize.org

Infoplease.com: *Bacteria That Cause Food-Borne Illness*
www.infoplease.com

Johns Hopkins Infectious Diseases
www.hopkins-id.org

Jensen, Brad, M.D., Southwest Washington Medical Center Pathology Department

Kenyon College Academic Projects
www2.kenyon.edu/projects

Marcuse, Ed, M.D., Professor of Pediatrics, University of Washington and Director of Medical Services, Seattle Children's Hospital and Regional Medical Center

MicrobeLibrary.org
www.microbelibrary.org

National Institute of Allergy and Infectious Diseases
www.niaid.nih.gov

National Maritime Museum: *Health in the 17th Century*
www.nmm.ac.uk

New York Department of Health on Communicable Diseases
www.health.state.ny.us

The Nobel Foundation
www.nobel.se

Offit, Paul, M.D., Chief, Section of Infectious Diseases and the Henle Professor of Immunologic and Infectious Diseases at The Children's Hospital of Philadelphia

Palm Beach Atlantic University
www.pba.edu

Rice University. “Paré, Ambroise.”
es.rice.edu

San Diego Natural History Museum: *Epidemic – the Natural History of Disease*
www.sdnhm.org

South Bend (IN) Area Genealogical Society. *Ancestors West*. SSBCGS, Vol 20, No 1, Fall 1993.

St. Louis Community College: *Highlights in the History of Microbiology*
www.stlcc.cc.mo.us

Strange Science. “*Ambroise Paré*.”
www.strangescience.net

Thinkquest: *Hidden Killers, Deadly Viruses*
www.thinkquest.org

Tulane University: *The Big Picture Book of Viruses*
www.tulane.edu

University of California Museum of Paleontology. “*Antony van Leeuwenhoek*.”
www.ucmp.berkeley.edu

University of Edinburgh: The Microbial World
helios.bto.ed.ac.uk

University of Rochester Medical Center
www.urmc.rochester.edu

University of South Carolina: *Edward Jenner and the Discovery of the Vaccine*
www.sc.edu

University of Wisconsin-Madison Department of Bacteriology
www.bact.wisc.edu

USDA Food Safety and Inspection Service
www.fsis.usda.gov

Venes, Donald, M.D., M.S.J. *Taber’s Cyclopedic Medical Dictionary*. 19th ed. Philadelphia: F.A. Davis Company, 2001.

The World Book Medical Encyclopedia. Rush-Presbyterian-St. Lukes Medical Center. World Book Inc. 1994

World Health Organization
www.who.int

Additional Activities and Resources for Teachers, Students, and Parents

Clayman, Charles, et al. *American Medical Association Family Medical Guide*. 3rd ed. New York: Random House, 1994.

This excellent guide to general health contains information on diseases, various disease prevention methods and new medical technologies as well as self-diagnostic symptom charts and helpful photos and diagrams.

Great Minds of Medicine: Infectious Diseases. Videotape. With Dr. Karl Johnson. Unapix, 1997.

As seen on public television.

The Centers for Disease Control and Prevention. *Emerging Infectious Diseases (EID): Comprehensive Collection from 1995 to 2002 with Accurate and Detailed Information on Dozens of Serious Virus and Bacteria Illnesses*. CD-ROM. 1st ed. Atlanta: The National Center for Infectious Diseases, 2002.

Contains over 20,000 pages of information on numerous infectious diseases as well as information on bioterrorism and vaccines.

Strauss, James, et al. *Viruses and Human Disease*. 1st ed. San Diego: Academic Press, 2001. Discusses the nature of viruses, how they function, and the diseases they cause.