



# Independent Study | in Idaho

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**Psyc 473  
Blood and Airborne  
Pathogens:  
HIV/STDs/Hepatitis/TB**



The University of Idaho in statewide cooperation with  
Boise State University — Idaho State University — Lewis-Clark State College

# Course Guide

Independent  
Study | in Idaho

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## **Blood and Airborne Pathogens: HIV/STDs/Hepatitis/TB**

University of Idaho  
Three Semester-Hour Credits

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## **Psyc 473: Blood and Airborne Pathogens: HIV/STDs/Hepatitis/TB**

### **3 Semester-Hour Credits: U of I**

#### **Welcome!**

Whether you are a new or returning student, welcome to the Independent Study in Idaho (ISI) program. Below, you will find information pertinent to your course, including the course description, course materials, course objectives, as well as information about assignments, exams, and grading. If you have any questions or concerns, please contact the ISI office for clarification before beginning your course.

#### **Policies and Procedures**

Refer to the ISI website at [www.uidaho.edu/isi](http://www.uidaho.edu/isi) and select *Students* for the most current policies and procedures, including information on setting up accounts, student confidentiality, exams, proctors, transcripts, course exchanges, refunds, academic integrity, library resources, and disability support and other services.

#### **Course Description**

Overview of HIV/AIDS, TB, and other STDs; preparing counselors to work with clients to prevent these diseases or counsel clients who have acquired these diseases; making counselors examine issues related to human sexuality and biases about sexually related topics.

Prerequisite: Psyc 101 - *None, although it is strongly advised to have taken Psychology 100 before taking this class:*

*14 graded assignments, 2 exams. Available online only.*

Assignments and exams must be submitted consecutively, in the order outlined in the course; therefore, it depends on where you are in the course as to when specific items are due, including discussion topics, extra credit, and exams. Other than that, there is no limit on the number of assignments that can be submitted per week. *An instructor may take up to three weeks to grade so plan accordingly to meet personal deadlines.*

ALL assignments and exams must be submitted to receive a final grade for the course.

#### **Course Materials**

This area is rapidly changing and texts are often out of date by the time they are printed. Thus, all readings for this course will be selected from a variety of websites and Zoom videos that will be posted within the various lessons.

You may also download the following;

- [Practitioner's Handbook for Management of Sexually Transmitted Disease](#)
- [A Providers Introduction to Substance Abuse Treatment for Lesbian Gay, Bisexual and Transgender Individuals](#)
- [The NIDA Community-Based Outreach Model: A Manual to Reduce The Risk of HIV and Other Blood-Borne Infections in Drug Users](#)

#### **Course Delivery**

All ISI courses are delivered through Canvas, an online management system that hosts the course lessons and assignments, and other items that are essential to the course. Upon registration, the student will receive a *Registration Confirmation Email* with information on how to access ISI courses online.

## **Course Introduction**

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This course is designed to provide an overview of various blood, airborne, and other pathogens now encountered in a variety of clinical/counseling environments. Some bloodborne pathogens (BBPs) include: Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome (HIV/AIDS), sexually transmitted diseases (STDs), Hepatitis, and others. Various airborne pathogens (ABPs) include: Influenza, Tuberculosis, Measles, Chickenpox, Mumps, and Hantavirus among others. Finally, other pathogens emerging within the United States are vector related. Some of these diseases include West Nile virus, typhus, and others.

While they can occur amongst all humans, many of these diseases occur more frequently among individuals experiencing substance abuse, mental illness, homelessness, or who live in high poverty areas. Consequently, symptom recognition by first line clinicians and referral of clients to appropriate treatment is extremely important.

Finally, while the focus of this course will be identification of pathogens and potential risk factors associated with various diseases, it is also important to understand aspects of human sexuality, related lifestyles, and high-risk factors associated with these pathogens.

1. First, if you are using "Chrome" for this class you must do one of two things: Clear your cache or use Edge (Best Option). If you use Chrome, often you will not see the most recent information in BBL. Relatedly, if you are using Safari, you may have issues submitting some documents. Finally, DO NOT use the Google word processing program. Often after uploading the instructional staff cannot open the document. So, just use Edge or Firefox.
2. Second, Click on the schedule button in BBL. Within this section, you will find a list of topics that we will be examining, assignments you will need to complete and the exam dates.
3. Click on Lesson 1. Here you will find hyperlink button again. Once activated, you will find some general information about the topic plus various assignments.
4. Due Dates: There is a certain order for when assignments, exams, movie reviews are due. Look at the schedule and know when to submit items. THIS IS YOUR RESPONSIBILITY. Generally, work 10 hours per week or more on the class. Consider it lecture and some study time, but at your convenience.
5. All exams will be posted in Blackboard Learn. They are open book and note. However, they are stimulating and will take time to complete.
6. Assignment Topics. Throughout the semester, there will be assignments you will need to complete. Generally, they are designed to make you think about a topic. Check the schedule for the order of submission relative to the lessons.
7. Blackboard Learn. All exams and access to materials and various presentations I provide will be through Blackboard Learn. Note that BBL is usually updated on Friday evenings, so do not attempt to submit materials or take your exam during that time.

## **Lessons**

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**Assignment Papers:** You will be required to complete brief papers related to topics you will encounter throughout the course. All assignments will be posted through BBL. The papers will be of various lengths and assigned points depending on the assignment. All assignments will be in APA style using appropriate references as needed. Do not use on-line encyclopedias such as Wikipedia as a source. **NO MATERIAL MAY BE CUT AND PASTED FROM THE WEB. Total: 290 points**

**Movie Reaction Papers:** You will be required to rent, purchase, or borrow two movies that contains material related to individuals with HIV, AIDS, or other highly communicable diseases. Older examples might be Philadelphia or Outbreak. More recent movies might include Contagion. An alternative might be to watch movies related to sexual lifestyles. Two recent examples might be Milk or Moonlight. After watching each movie, you will be required to write a reaction paper related to your feelings about the movie, and your feelings about the sexual issues/lifestyles/others that were related to the topics in the movie. The point of this topic is to make you examine YOUR concept of sexuality and sexual lifestyles, and identity concepts that make you feel uneasy. **Total: 100 points (50 points each)**

**Exams:** There will be two exams given throughout the course of the semester. Each will be open book, open note, and open person exams. That is, you can use any information you wish to help you. Total: 200 points for exams. **Total: 200 points (100 points each)**

**Writing Papers:** You will be required to complete brief (1-2 pages) papers on various topics you will encounter throughout the course. Some of these papers may be related to materials, webinars, or websites identified by your instructor. All documents will be submitted through BBL and will be plagiarism checked. Directions will be provided for each topic to be submitted. **Total: 100 Points**

### **Study Hints:**

- Keep a copy of every assignment submitted.
- Complete all reading assignments.
- Set a schedule allowing for course completion one month before your personal deadline.
- Web pages and URL links in the World Wide Web are continuously changing. Contact your instructor if you find a broken Web page or URL.

Refer to the **Course Rules** in Canvas for further details on assignment requirements and submission.

## **Exams**

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- You must wait for grades and comments on assignments before taking subsequent exams.
- For your instructor's exam guidelines, refer to the **Course Rules** in Canvas.
- There will be two exams to examine and develop your knowledge of the material. Each exam will cover only the material for that section. Each exam is also open book and open note. That is, you can use any information you wish to help you. You will not be able to drop any questions.
- Each exam will only cover the material in each section. There is no comprehensive final.
- All exams are randomly generated. Thus, the exam you receive will not be the same as another students. To help you understand how I test, I will allow you to take the First Exam twice. The other exams you will only have one opportunity.
- Pharmacology exams are difficult. Many of the questions are integrative and will not be found directly from the text or the notes. So, make sure you are studying for them like you would study for any hard, in-class, non-open-book test. Do not expect to have time to look up things while taking

the exam or you will get a poor score. Essentially, open book exams allow you to do some minor checking, not trying to read and understand a concept. Generally, you should be studying at least one - two hours per night for this class.

- Total: 200 points (100 points per exam)

Refer to *Grading* for specific information on assignment/exam points and percentages.

## **Grading**

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Grading/Evaluation/Proficiency: There will be several requirements for this course.

At a minimum, all grades will be based on the following scale:

>90%=A

>80%=B

>70%=C

>60%=D

<60%=F

<b><u>Assignment</u></b>	<b><u>Points</u></b>
Assignment 1	10
Assignment 2	25
Assignment 3	10
Assignment 4	20
Assignment 5	30
Assignment 6	10
Assignment 7	15
Assignment 8	10
Assignment 9	10
Assignment 10	25
Assignment 11	15
Assignment 12	10
Movie Reaction Paper #1	50
<u>Movie Reaction Paper #2</u>	<u>50</u>
<b>Total of</b>	<b>290</b>

<b><u>Exam</u></b>	<b><u>Points</u></b>
Exam 1	100
<u>Exam 2</u>	<u>100</u>
<b>Total of</b>	<b>200</b>

**Total Points for Assignments and Exams is 490 points.**

The final course grade is issued after all assignments and exams have been graded.

Cheating and Plagiarism: If you cheat or plagiarize someone else's material and I catch you, you will receive an "F" grade for the class and be referred to the Dean of Student's Office. Copying and pasting material from the web and not citing that information is considered plagiarism. Canvas also has plagiarism checking capabilities. All materials are scanned for plagiarism by software in BBL. Submit your own work and do not even consider cheating in this class.

### **University Disability Support Services**

Reasonable accommodations are available for students who have documented temporary or permanent disabilities. "Students with disabilities needing accommodations to fully participate in this class should contact the Center for Disability Access and Resources (CDAR). All accommodations must be approved through CDAR prior to being implemented. To learn more about the accommodation process, visit CDAR's website at [www.uidaho.edu/cdar](http://www.uidaho.edu/cdar) or call 208-885-6307.

### **About the Course Developer**

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Dr. Meier became a faculty member in 1987. With a specialization in Applied Behavior Analysis, physiology, and addictive behavior, he was instrumental in developing the Psychology Department Addiction's program, later to become the U of I Psychology Addiction's Minor. He further was actively involved in developing the Idaho Student of Addictions Studies curriculum with other Idaho Universities. Simultaneously, he was actively engaged in creating interventions in high-risk populations with the Idaho Department of Health to address the HIV/AIDS epidemic in its early years.

With Sallie Gordon and Richard Reardon (Department Chairs), Dr. Meier helped expand the department's presence and Psychology major in Coeur d' Alene. Further, after receiving a grant from the State Board of Education and in collaboration with Richard Reardon, developed one of the first online distance learning majors at the University of Idaho that continues today. He then created a 2+2 program to create a seamless transfer program for Psychology majors attending community colleges across Idaho. Over his career, Dr. Meier received over three million dollars in grants and contracts. His mentees include eight practicing physicians, nine Ph.D. Clinical/Counseling Psychologists, and three Physical Therapists. He also received seven awards as a mentor for U of I Alumni Award for Excellence winners. Finally, he is a veteran, 25-year scout leader, 26-year ski patroller, and currently at the national level with the Benevolent and Protective Order of Elks.

Dr. Meier continues to consult with physicians and attorneys in the area of substance abuse and high-risk behavior. His current interests focus on addressing issues associated with vaping.

### **Contacting Your Instructor**

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Instructor contact information is posted on your Canvas site under *Course Rules*.



## Lesson 1

### HIV/AIDS Epidemiology in the United States

#### **Lesson Outcomes and Objectives**

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**Goal:** This section is designed to expose you to statistics related to HIV/AIDS in the United States. However, this is not an exercise just related to numbers, you need to understand what the numbers represent.

**Objectives:**

In this section you will learn about HIV epidemiology by reviewing a variety of websites and writing brief papers related to particular topics.

**Outcomes: After completing this lesson, you should understand/be able to:**

To understand the epidemiology of HIV/AIDS in the United States and how the population groups who are contracting HIV/AIDS today are changing.

#### **Reading Assignment**

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There are no required readings for this section except for what is listed in the Tasks section.

#### **Tasks**

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Adobe Reader: <https://acrobat.adobe.com/lu/en/acrobat/pdf-reader.html>.

Once you have Adobe installed, get completely out of the web site and double click on the following hyperlink: <https://www.cdc.gov/hiv/pdf/library/slidesets/cdc-aids-dot-maps-2008.pdf>.

Start with slide 1 and examine all 14 slides (Dot slides) [Note: Later year slides take some time to load].

NOTE: This PowerPoint takes awhile to load. You will need to advance the slides manually. To do so, click on the arrow buttons on the bottom of the slide.

#### **Overview**

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Since the introduction of HIV/AIDS into the United States, many individuals have died from the disease. Although recent statistics indicate AIDS in the United States is decreasing, these statistics may become a blip considering the new strains of HIV that are developing. Regardless, the statistics are powerful nonetheless. In addition, certain areas and population groups in the United States have more HIV/AIDS than others.

#### **Resources**

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You can also get other information by particular categories. I have enclosed the HIV/AIDS index page and another statistical web site for additional information you may desire. <http://www.cdc.gov/hiv/>

#### **Discussion Topic/Written Assignment One**

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Before beginning the first written assignment, refer to the *Course Rules* in Canvas for your instructor's assignment requirements.

- 1. Immediately after you review this information, write a brief paper (approximately ½ page) related to your reaction(s) to this slide set.** Remember, write the paper before you do anything else in this section. The link to submit the paper is located in the Assignments Submission Section

2. After completing the paper associated with the Dot slides, visit the following web site:  
<https://www.cdc.gov/hiv/library/slideSets/index.html>.  
Review the slides in the various data sets (especially related to race and sex). Which groups are increasing the fastest? Which are most interesting to you?
3. See Canvas for a brief PP (HIV Surveillance-Epidemiology of HIV infection (through 2017) that summarizes some of this data. Each slide has a narrative below the slide.
4. Once you have reviewed the slides, read the most recent related HIV/AIDS epidemiology under What's New on the right-hand side in the website. <http://www.cdc.gov/hiv>.  
MAKE SURE YOU CLICK ON "WHAT'S NEW." Look at all three documents in this section.

### **Discussion Topic/Written Assignment Two**

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1. Once you have completed reviewing the data you have just observed related to race and sex:
  - a. Think about the population groups currently at the greatest risk for HIV and AIDS. What did you find interesting?
  - b. What are the implications for the heterosexual population based on these statistics?
  - c. What are disparities among groups and subgroups for HIV?
  - d. Write a solid 1-2 page paper regarding these issues.
  - e. Submit your paper under Assignment 2 in the Assignments Submission section.
2. Below is a website containing HIV/AIDS and STD statistics for Idaho.
  - a. Review these statistics.
  - b. Look in the Idaho STD Stats button to obtain this information.
  - c. Then write a reaction paper comparing "National" statistics with Idaho statistics. That is, identify some differences. Why do you believe there are major differences between the two groups?  
<http://healthandwelfare.idaho.gov/Health/FamilyPlanningSTDHIV/Statistics/tabid/393/Default.aspx>

### **Discussion Topic/Written Assignment Three**

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1. Write a 1/2 - one-page reaction paper comparing "National" statistics with Idaho statistics.
2. Identify some differences.
3. Why do you believe there are major differences between the two groups?
4. Submit your paper under Assignment 3 in the Assignments Submission section.

## Epidemiology of HIV Infection through 2017

1. **(Slide presentation notes. For the accompanying charts, see the slide presentation in Canvas.)**
2. From 2010 through 2016, in the United States and 6 dependent areas, the number of diagnoses of HIV infection among female and male adults and adolescents decreased. In 2016, 40,012 adults and adolescents received a diagnosis of HIV infection; of these, 81% of diagnoses were among males and 19% were among females.
3. This slide presents the rates of diagnoses of HIV infection by age group among adults and adolescents in the United States from 2010 through 2016. Persons aged 25–34 years accounted for the highest rates of diagnoses of HIV infection each year; whereas, persons aged  $\geq 55$  years accounted for the lowest rates of diagnoses of HIV infection each year.  
From 2010 through 2016, rates of diagnoses of HIV infection increased among persons aged 25–34 years (+6%). Decreases were seen in rates among persons aged 13–24 years (-6%), 35–44 years (-26%), 45–54 years (-24%), and  $\geq 55$  years (-18%).
4. From 2010 through 2016, blacks/African Americans accounted for the largest percentage of diagnoses of HIV infections each year in the United States and 6 dependent areas. In 2016, 43% of diagnoses were among blacks/African Americans, 26% among Hispanics/Latinos, 25% among whites, 3% among persons of multiple races, 2% among Asians, and less than 1% each for American Indians/Alaska Natives and Native Hawaiians/other Pacific Islanders. For the first time in 2016, the proportion of diagnoses that were among Hispanics/Latinos was greater than the proportion of diagnoses that were among whites. Hispanics/Latinos can be of any race.
5. This slide presents the percentage distribution of adults and adolescents with diagnosed HIV infection from 2010 through 2016, by transmission category, for the United States and 6 dependent areas. The percentage of adults and adolescents with diagnosed HIV infection attributed to male-to-male sexual contact increased from 60% in 2010 to 66% in 2016. The percentages of diagnosed HIV infections attributed to injection drug use, male-to-male sexual contact and injection drug use, and heterosexual contact decreased from 2010 through 2016. The “Other” transmission category is not displayed as it comprises less than 1% of cases. The category includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified. Data have been statistically adjusted to account for missing transmission category. Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection. Slide 5
6. During 2016, there were 15,428 deaths of persons with diagnosed HIV infection. Of these, blacks/African Americans had the highest rate (16.9 deaths per 100,000 population) and accounted for approximately 44% of deaths of persons with diagnosed HIV infection. Hispanics/Latinos accounted for approximately 16% of deaths in 2016, with a rate of 4.3 per 100,000 population. Whites accounted for 33% of deaths, with a rate of 2.5 per 100,000 population.
  - Relatively few deaths occurred among persons of other races; the rate per 100,000 population of deaths was 14.0 for persons of multiple races, 2.1 for Native Hawaiians/other Pacific Islanders, 1.9 for American Indians/Alaska Natives, and 0.5 for Asians.
  - Deaths of persons with diagnosed HIV infection may be due to any cause (may or may not be HIV-related).

- The Asian category includes Asian/Pacific Islander legacy cases (cases that were diagnosed and reported under the pre-1997 Office of Management and Budget race/ethnicity classification system). Hispanics/Latinos can be of any race. The total includes one person whose race/ethnicity is unknown. Slide 6
7. At the end of 2016, 1,006,691 adults and adolescents were living with diagnosed HIV infection in the United States and 6 dependent areas. Among the 766,385 males living with diagnosed HIV infection, 36% were black/African American, 34% were white, and 24% were Hispanic/Latino. Approximately 4% were males of multiple races and approximately 1% were Asian. Less than 1% each were American Indian/Alaska Native and Native Hawaiian/other Pacific Islander. Among the 240,306 females living with diagnosed HIV infection, 58% were black/African American, 20% were Hispanic/Latino, and 16% were white. Approximately 4% were females of multiple races and approximately 1% were Asian. Less than 1% each were American Indian/Alaska Native and Native Hawaiian/other Pacific Islander. The Asian category includes Asian/Pacific Islander legacy cases (cases that were diagnosed and reported under the pre-1997 Office of Management and Budget race/ethnicity classification system). Hispanics/Latinos can be of any race. Unknown race/ethnicity is not displayed because it comprises less than 1% of cases. Persons living with diagnosed HIV infection are classified as adult or adolescent based on age at year-end 2016. Slide 7
8. This slide presents the percentage distribution of adults and adolescents living with diagnosed HIV infection by sex and transmission category at the end of 2016 in the United States and 6 dependent areas.
- Among the 766,385 male adults and adolescents living with diagnosed HIV infection at the end of 2016, 71% of infections were attributed to male-to-male sexual contact. Approximately 10% of infections were attributed to injection drug use, 10% to heterosexual contact, 7% to male-to-male sexual contact and injection, and 1% of males had infection attributed to perinatal exposure.
  - Among the 240,306 female adults and adolescents living with diagnosed HIV infection at the end of 2016, 76% of infections were attributed to heterosexual contact, 21% to injection drug use, and 2% of females had infection attributed to perinatal exposure.
  - The “Other” transmission category is not displayed as it comprises 1% or less of cases. The category includes hemophilia, blood transfusion, and risk factor not reported or not identified.
  - Data have been statistically adjusted to account for missing transmission category.
  - Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection.
  - Perinatal includes persons whose infections were attributed to perinatal transmission, but were aged 13 years and older at the end of 2016. Persons living with diagnosed HIV infection are classified as adult or adolescent based on age at year-end 2016.
9. This slide presents rates (per 100,000 population) of adults and adolescents living with diagnosed HIV infection at the end of 2016 in the United States and 6 dependent areas.
- Areas with the highest rates of persons living with diagnosed HIV infection at the end of 2016 were the District of Columbia (2,459.9), New York (759.7), Maryland (642.8), the U.S. Virgin Islands (625.0), and Florida (610.8).
    - The District of Columbia (i.e., Washington, DC) is a city; use caution when comparing the rate of persons living with diagnosed HIV infection in DC with the rates in states.

- Data are based on address of residence as of December 31, 2016 (i.e., most recent known address). Persons living with a diagnosis of HIV infection are classified as adult or adolescent based on age at year-end 2016. Slide 9
10. This slide presents rates (per 100,000 population) of children living with diagnosed HIV infection at the end of 2016 in the United States and 6 dependent areas.
- Areas with the highest rates of children living with diagnosed HIV infection at the end of 2016 were the District of Columbia (23.1), the U.S. Virgin Islands (15.5), Wyoming (8.8), Maryland (8.6), Rhode Island (7.5), and Vermont (7.3).
  - The District of Columbia (i.e., Washington, DC) is a city; use caution when comparing the rate of persons living with diagnosed HIV infection in DC with the rates in states.
  - Data are based on address of residence as of December 31, 2016 (i.e., most recent known address).
  - Persons living with a diagnosis of HIV infection are classified as children based on age at year-end 2016. Slide 10
11. The upper curve on the line graph represents the number of stage 3 (AIDS) classifications among adults and adolescents with diagnosed HIV infection in the United States and dependent areas, by year of classification from 1985 through 2016; the lower curve represents the number of deaths of adults and adolescents with diagnosed HIV infection ever classified with stage 3 (AIDS), by year of death from 1985 through 2016.
- The peak in stage 3 (AIDS) in 1993 can be associated with the expansion of the HIV surveillance case definition implemented in January 1993. The overall declines in stage 3 (AIDS) and deaths of persons with stage 3 (AIDS) are due in part to the success of highly active antiretroviral therapies, introduced in 1996.
  - In recent years, stage 3 (AIDS) classifications and deaths of persons with stage 3 (AIDS) have continued to decline.
  - Deaths of persons with stage 3 (AIDS) may be due to any cause (may not be HIV-related). Deaths of persons with stage 3 (AIDS) are classified as adult or adolescent based on age at death. Slide 11
12. During the early 1990s the numbers of HIV infections classified as stage 3 (AIDS) among whites, blacks/African Americans and Hispanics/Latinos increased, peaked during 1992–1993, and then decreased since that time. However, decreases were not consistent across races/ethnicities: stage 3 (AIDS) among blacks/African Americans surpassed whites for the first time in 1994 and has remained higher than all races/ethnicities since that time.
- The Asian category includes Asian/Pacific Islander legacy cases (cases that were diagnosed and reported under the pre-1997 Office of Management and Budget race/ethnicity classification system). Hispanics/Latinos can be of any race. Unknown race/ethnicity is not displayed because it comprises less than 1% of cases. Slide 12
13. The percentage distribution of HIV infections classified as stage 3 (AIDS) among racial/ethnic groups has changed since 1985. Among persons with infection classified as stage 3 (AIDS), the percentage that were white has decreased while the percentage that were black/African American and Hispanic/Latino has increased. 13
- Of persons with infection classified as stage 3 (AIDS) in the United States and dependent areas in 2016, 45% were black/African American, 24% were white, 24% were

Hispanic/Latino, 4% were persons of multiple races, 2% were Asian, and less than 1% each were American Indian/Alaska Native and Native Hawaiian/other Pacific Islander.

- The Asian category includes Asian/Pacific Islander legacy cases (cases that were diagnosed and reported under the pre-1997 Office of Management and Budget race/ethnicity classification system). Hispanics/Latinos can be of any race. Unknown race/ethnicity is not displayed because it comprises less than 1% of cases.

14. Despite decreases, the number of HIV infections classified as stage 3 (AIDS) among persons with infection attributed to male-to-male sexual contact continues to represent the highest number of stage 3 (AIDS) classifications each year. Stage 3 (AIDS) classifications among persons with HIV infection attributed to injection drug use peaked in 1993 and have continued to decline since then. Stage 3 (AIDS) classifications among persons with HIV infection attributed to heterosexual contact increased through the mid-1990s and then remained stable until classifications started to decrease in 2004. Stage 3 (AIDS) among persons with HIV infection attributed to heterosexual contact surpassed the number of those attributed to injection drug use for the first time in 2000 and have continued to account for the second highest number of infections classified as stage 3 (AIDS) annually since that time.

- Data have been statistically adjusted to account for missing transmission category.
- Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection. Slide 14.

15. The percentage distribution of HIV infections classified as stage 3 (AIDS) by transmission category has shifted since 1985. In 1985, male-to-male sexual contact accounted for approximately 65% of all stage 3 (AIDS) classifications; this percentage reached its lowest point in 1999 at 40%. Since then, the percentage among persons with HIV infection attributed to male-to-male sexual contact has increased and in 2016 this transmission category accounted for 55% of all infections classified as stage 3 (AIDS).

- The percentage of stage 3 (AIDS) classifications among persons with HIV infection attributed to injection drug use increased from 20% to 31% during 1985–1993 and decreased since that time, accounting for 9% in 2016.
- The percentage of stage 3 (AIDS) classifications among persons with HIV infection attributed to male-to-male sexual contact and injection drug use decreased from 9% in 1985 to 4% in 2016.
- The percentage of stage 3 (AIDS) classifications among persons with HIV infection attributed to heterosexual contact increased from 3% in 1985 to 30% in 2016.
- The remaining stage 3 (AIDS) classifications were among persons with HIV infection attributed to other transmission categories which include hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.
- Data have been statistically adjusted to account for missing transmission category.
- Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection. Slide 15

16. This slide presents increases in the number of adults and adolescents living with diagnosed HIV infection ever classified as stage 3 (AIDS) in the United States and dependent areas from 1993 through the end of 2016, by sex. The increase is due primarily to the widespread use of highly active antiretroviral therapy, introduced in 1996, which has delayed the progression of HIV infection to death. At the end of 2016, approximately 534,515 adults and adolescents were living with HIV

infection ever classified as stage 3 (AIDS); of these, 76% were male and 24% were female.

17. The number of adults and adolescents living with diagnosed HIV infection ever classified as stage 3 (AIDS) in the United States and dependent areas increased from 163,719 at year-end 1993 to 534,515 at year-end 2016. Increases in the number of persons living with infection ever classified as stage 3 (AIDS) occurred in all racial/ethnic groups.
  - From 1993 through 2016, the number of blacks/African Americans living with infection ever classified as stage 3 (AIDS) increased from 54,771 to 217,047. At the end of 1998, the number of blacks/African Americans living with infection ever classified as stage 3 (AIDS) exceeded the number of whites for the first time.
  - From 1993 through 2016, the number of whites living with infection ever classified as stage 3 (AIDS) increased from 72,915 to 156,316; the number of Hispanics/Latinos increased from 31,248 to 128,091; the number of persons of multiple races increased from 3,328 to 24,744; the number of Asians increased from 970 to 6,357; the number of American Indians/Alaska Natives increased from 404 to 1,488; and the number of Native Hawaiians/other Pacific Islanders increased from 73 to 431.
  - The Asian category includes Asian/Pacific Islander legacy cases (cases that were diagnosed and reported under the pre-1997 Office of Management and Budget race/ethnicity classification system).
  - Hispanics/Latinos can be of any race.
  - Unknown race/ethnicity is not displayed because it comprises less than 1% of cases.
  
18. In the United States and dependent areas, the rate of adults and adolescents living with diagnosed HIV infection ever classified as stage 3 (AIDS) was 195.2 per 100,000 population at the end of 2016. Areas with the highest rates were the District of Columbia (1,309.7), New York (440.7), U.S. Virgin Islands (346.0), Maryland (342.9), Florida (332.3), Puerto Rico (309.3), and Georgia (307.5).
  - The District of Columbia (i.e., Washington, DC) is a city; use caution when comparing the rate of persons living with infection ever classified as stage 3 (AIDS) in DC with the rates in states.
  - Data are based on address of residence as of December 31, 2016 (i.e., most recent known address).
  - Persons living with infection ever classified as stage 3 (AIDS) are classified as adult or adolescent based on age at end of 2016.
  
19. In the United States and dependent areas, the rate of children living with diagnosed HIV infection ever classified as stage 3 (AIDS) was 0.5 per 100,000 population at the end of 2016. Areas with the highest rate were the District of Columbia (7.4), the U.S. Virgin Islands (5.2), Guam (2.5), Delaware (1.4), and Maryland (1.3).
  - The District of Columbia (i.e., Washington, DC) is a city; use caution when comparing the rate of persons living with infection ever classified as stage 3 (AIDS) in DC with the rates in states.
  - Data are based on address of residence as of December 31, 2016 (i.e., most recent known address).
  - Persons living with infection ever classified as stage 3 (AIDS) are classified as children based on age at year-end 2016.

20. This slide presents the numbers and rates of diagnoses of HIV infection among male adults and adolescents in the United States in 2017.
- In 2017, the rate (per 100,000 population) of diagnoses of HIV infection among black/African American males (77.6) was nearly 8 times as high as the rate for whites (10.2) and more than 2 times as high as the rate for Hispanics/Latinos (36.4).
  - Relatively few diagnoses of HIV infection were among American Indian/Alaska Native, Asian, and Native Hawaiian/other Pacific Islander males, and males of multiple races; however, the rates for males of multiple races (32.5), Native Hawaiian/other Pacific Islander males (18.7), American Indian/Alaska Native males (17.4), and Asian males (11.1) were higher than that for white males.
  - Data for the year 2017 are considered preliminary and based on 6 months reporting delay.
21. This slide presents the numbers and rates of diagnoses of HIV infection among female adults and adolescents in the United States in 2017.
- In 2017, the rate (per 100,000 population) of diagnoses of HIV infection among black/African American females (24.9) was over 14 times as high as the rate for white females (1.7) and nearly 5 times as high as the rate for Hispanic/Latino females (5.0).
  - Relatively few diagnoses of HIV infection were among American Indian/Alaska Native, Asian, and Native Hawaiian/other Pacific Islander females, and females of multiple races; however, the rates for females of multiple races (6.4), Native Hawaiian/other Pacific Islander females (5.1), and American Indian/Alaska Native females (4.5) were all higher than that for white females. The rate among Asians was 1.4 in 2017.
  - Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Hispanics/Latinos can be of any race.
22. This slide presents percentages of diagnoses of HIV infection by age group for 2017 in the United States. Of the 38,182 diagnoses of HIV infection among adults and adolescents, 35% were among persons aged 25–34 years, 21% among persons aged 13–24 years, 19% among persons aged 35–44 years, 15% among persons aged 45–54 years, and 10% among persons aged ≥55 years. Data for the year 2017 are considered preliminary and based on 6 months reporting delay.
23. In 2017, of the 31,239 diagnoses of HIV infection among male adults and adolescents in the United States and 6 dependent areas, 39% were among blacks/African Americans, 28% among Hispanics/Latinos, 27% among whites, 3% among Asians, 2% among males of multiple races, 1% among American Indians/Alaska Natives, and less than 1% among Native Hawaiians/other Pacific Islanders.
- Of the 7,401 diagnoses among female adults and adolescents in 2017, 59% were among blacks/African Americans, 20% among whites, and 16% among Hispanics/Latinos. Approximately 2% each were among females of multiple races and Asians, 1% among American Indians/Alaska Natives, and less than 1% among Native Hawaiians/other Pacific Islanders.
  - Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Hispanics/Latinos can be of any race.
24. This slide presents a comparison of the rates of diagnoses of HIV infection between males and females by race/ethnicity in the United States. In 2017, blacks/African Americans accounted for the



highest rates of diagnoses of HIV infection for males (77.6 per 100,000 population) and for females (24.9 per 100,000 population). Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Hispanics/Latinos can be of any race.

25. In 2017, among adults and adolescents with diagnosed HIV infection in the United States and 6 dependent areas, 67% of all diagnosed infections were attributed to male-to-male sexual contact. Approximately 16% of all diagnosed infections were among females with infection attributed to heterosexual contact, 7% among males with infection attributed to heterosexual contact, 4% among males with infection attributed to injection drug use, and 3% among females with infection attributed to injection drug use. Approximately 3% of diagnosed infections were attributed to male-to-male sexual contact and injection drug use. The “Other” transmission category is not displayed as it comprises less than 1% of cases. The category includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified. Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Data have been statistically adjusted to account for missing transmission category. Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection.
26. In 2017, among male adults and adolescents with diagnosed HIV infection in the United States and 6 dependent areas, 82% of infections were attributed to male-to-male sexual contact, 9% to heterosexual contact, 4% to injection drug use, and 4% to male-to-male sexual contact *and* injection drug use. Among female adults and adolescents, 86% of diagnosed HIV infections were attributed to heterosexual contact and 14% were attributed to injection drug use. The “Other” transmission category is not displayed as it comprises less than 1% of cases. The category includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified. Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Data have been statistically adjusted to account for missing transmission category. Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection.
27. This slide presents the numbers and percentages of diagnoses of HIV infection in 2017 by transmission category, in the United States and 6 dependent areas. Of the 38,640 HIV infections diagnosed in 2017 among adults and adolescents, approximately 67% were attributed to male-to-male sexual contact. An additional 3% of diagnosed infections were attributed to male-to-male sexual contact *and* injection drug use. Injection drug use accounted for 6% of diagnosed HIV infection, and heterosexual contact accounted for 24%. The “Other” transmission category comprises less than 1% of cases. The category includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified. Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Data have been statistically adjusted to account for missing transmission category. Because column totals for numbers were calculated independently of the values for the subpopulations, the values in each column may not sum to the column total. Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection.
28. In 2017, approximately 25,748 diagnosed HIV infections in United States and 6 dependent areas were attributed to male-to-male sexual contact. Of these, 38% were among blacks/African Americans, 29% among Hispanics/Latinos, and 27% among whites. Approximately 3% were among Asians and 2% were among persons of multiple races. American Indians/Alaska Natives and Native Hawaiians/other Pacific Islanders each accounted for less than 1% of diagnosed infections. Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Data have been

statistically adjusted to account for missing transmission category. Because column totals for numbers were calculated independently of the values for the subpopulations, the values in each column may not sum to the column total. Hispanics/Latinos can be of any race.

29. In 2017, approximately 2,389 diagnosed HIV infections in the United States and 6 dependent areas were attributed to injection drug use. Overall, over one-third of diagnosed HIV infections attributed to injection drug use were among whites (42%). When separated by sex, 38% of males and 47% of females were white. Blacks/African Americans accounted for 31% of infections for males and 35% for females. Hispanics/Latinos accounted for 26% of infections for males and 14% for females. Persons of multiple races accounted for approximately 2% of diagnosed infections for males and 3% for females. American Indians/Alaska Natives accounted for approximately 1% for both males and females. Asians accounted for approximately 1% for both males and females. Native Hawaiians/other Pacific Islanders accounted for less than 1% for both males and females. Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Data have been statistically adjusted to account for missing transmission category. Because column totals for numbers were calculated independently of the values for the subpopulations, the values in each column may not sum to the column total. Hispanics/Latinos can be of any race.
30. In 2017, approximately 1,252 diagnosed HIV infections in the United States and 6 dependent areas were attributed to male-to-male sexual contact *and* injection drug use. The highest percentage of diagnosed HIV infections attributed to male-to-male sexual contact *and* injection drug use were among whites (50%). Approximately 23% were among Hispanics/Latinos, 21% among blacks/African Americans, 3% among males of multiple races, and 2% among American Indians/Alaska Natives. Asians and Native Hawaiians/other Pacific Islanders each accounted for approximately 1% or less of infections. Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Data have been statistically adjusted to account for missing transmission category. Because column totals for numbers were calculated independently of the values for the subpopulations, the values in each column may not sum to the column total. Hispanics/Latinos can be of any race.
31. In 2017, approximately 9,170 diagnosed HIV infections in the United States and 6 dependent areas were attributed to heterosexual contact. Overall, approximately two-thirds of diagnosed HIV infections attributed to heterosexual contact were among blacks/African Americans (62%). HIV infection attributed to heterosexual contact when separated by sex also shows approximately 61% of males and 63% of females with diagnosed infection were black/African American. Hispanics/Latinos accounted for 21% of infections for males and 17% for females. Whites accounted for 15% of infections for males and 16% for females. Persons of multiple races accounted for approximately 2% of diagnosed infections for males and females. Asians accounted for approximately 1% for males and 2% for females. American Indians/Alaska Natives accounted for less than 1% for males and 1% for females. Native Hawaiians/other Pacific Islanders accounted for less than 1% each for males and females. Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Data have been statistically adjusted to account for missing transmission category. Because column totals for numbers were calculated independently of the values for the subpopulations, the values in each column may not sum to the column total. Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection. Hispanics/Latinos can be of any race.
32. In the United States and 6 dependent areas, the rate of diagnoses of HIV infection among adults and adolescents was 14.0 per 100,000 population in 2017. The rate of diagnoses of HIV infection for

adults and adolescents ranged from zero per 100,000 in American Samoa, the Northern Mariana Islands, and the Republic of Palau to 53.6 per 100,000 in the District of Columbia. The District of Columbia (i.e., Washington, DC) is a city; use caution when comparing the HIV diagnosis rate in DC with the rates in states. Data for the year 2017 are considered preliminary and based on 6 months reporting delay.

33. The rate (per 100,000 population) of stage 3 (AIDS) classifications among adults and adolescents with HIV infection in 2017 for blacks/African Americans (24.9) was approximately 10 times as high as the rate for whites (2.5) and nearly 3 times as high as the rate for Hispanics/Latinos (8.5). Relatively few cases were diagnosed among Asians, American Indians/Alaska Natives, Native Hawaiians/other Pacific Islanders, and persons of multiple races, although the rates for persons of multiple races (14.2), Native Hawaiians/other Pacific Islanders (5.5), and American Indians/Alaska Natives (3.6) were higher than that for whites. The rate among Asians was 2.1 in 2017. The Asian category includes Asian/Pacific Islander legacy cases (cases that were diagnosed and reported under the pre-1997 Office of Management and Budget race/ethnicity classification system). Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Hispanics/Latinos can be of any race.
34. Of diagnoses of HIV infection classified as stage 3 (AIDS) in 2017 among male adults and adolescents, 73% of HIV infections were attributed to male-to-male sexual contact and 14% were attributed to heterosexual contact. Approximately 7% of HIV infections were attributed to injection drug use, 6% were attributed to male-to-male sexual contact *and* injection drug use, and 1% were attributed to other transmission categories. Most (81%) of the infections classified as stage 3 (AIDS) in 2017 among female adults and adolescents were attributed to heterosexual contact, approximately 17% were attributed to injection drug use, and 2% were attributed to other transmission categories. Data for the year 2017 are considered preliminary and based on 6 months reporting delay. Data have been statistically adjusted to account for missing transmission category. Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection. The "Other" category includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.
35. The rates (per 100,000 population) of stage 3 (AIDS) classifications in 2017 for persons (all ages) with diagnosed HIV infection are shown for each state, the District of Columbia, American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, the Republic of Palau, and the U.S. Virgin Islands. Areas with the highest rates of stage 3 (AIDS) in 2017 were the District of Columbia (21.2), Georgia (12.5), Louisiana (10.8), and Florida (10.4). The District of Columbia (i.e., Washington, DC) is a city; use caution when comparing the stage 3 (AIDS) rate in DC with the rates in states. Data for the year 2017 are considered preliminary and based on 6 months reporting delay.