

the science of HIV/AIDS

HIV/AIDS in the United States *Myth or Fact?*

by

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RESOURCES

Free, online presentations, downloadable activities in PDF format, and annotated slide sets for classroom use are available at www.bioedonline.org or www.k8science.org.

CONTENT ADVISORY

See the following resources for additional information about HIV/AIDS and advice for discussing HIV/AIDS with students.

- National Institute of Allergy and Infectious Diseases, National Institutes of Health (NIH), offers resources on understanding HIV/AIDS: niaid.nih.gov/topics/hivaids/andaidsinfo.nih.gov.
- National Institute on Drug Abuse, NIH, offers facts about drug abuse and the link between it and HIV/AIDS: hiv.drugabuse.gov.
- The Centers for Disease Control and Prevention provides up-to-date information on HIV/AIDS prevention: cdc.gov/hiv/topics.

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SOURCE URLs

AMERICAN DENTAL EDUCATION ASSOCIATION

explorehealthcareers.org

BAYLOR COLLEGE OF MEDICINE

BIOED ONLINE TEACHER RESOURCES

bioedonline.org | k8science.org

BAYLOR-UT CENTER FOR AIDS RESEARCH

bcm.edu/cfar

MOLECULAR VIROLOGY AND MICROBIOLOGY

bcm.edu/molvir

DARTMOUTH COLLEGE

ELECTRON MICROSCOPE FACILITY

dartmouth.edu/~emlab/

THE HENRY J. KAISER FAMILY FOUNDATION

kff.org

JOURNAL OF NANOBIO TECHNOLOGY

jnanobiotechnology.com/content/3/1/6

NATIONAL INSTITUTES OF HEALTH

LIFEWORKS

science.education.nih.gov/lifeworks

NATIONAL CENTER FOR RESEARCH RESOURCES

ncrr.nih.gov

NATIONAL INSTITUTE OF ALLERGY AND
INFECTIOUS DISEASES

www.niaid.nih.gov

aidsinfo.nih.gov

NATIONAL INSTITUTE ON DRUG ABUSE

hiv.drugabuse.gov

NATIONAL LIBRARY OF MEDICINE

nlm.nih.gov/hmd

SCIENCE EDUCATION PARTNERSHIP AWARD

ncrrsepa.org

SUMANIS, INC.

ANIMATED TUTORIALS: MICROBIOLOGY

<http://sumanaisinc.com/webcontent/animation.html>

U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

HIV/AIDS PREVENTION

cdc.gov/hiv/topics

PUBLIC HEALTH IMAGE LIBRARY

phil.cdc.gov

U.S. CENTRAL INTELLIGENCE AGENCY

THE WORLD FACTBOOK

<https://www.cia.gov/library/publications/the-world-factbook/geos/us.html>

WELLCOME IMAGES

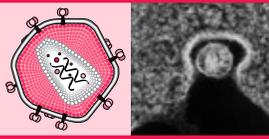
images.wellcome.ac.uk

WHAT IS PUBLIC HEALTH

whatispublichealth.org

WIKIMEDIA COMMONS

commons.wikimedia.org



INTRODUCTION

Microbial Challenges

Infectious diseases have plagued humans throughout history. Sometimes, they even have shaped history. Ancient plagues, the Black Death of the Middle Ages, and the “Spanish flu” pandemic of 1918 are but a few examples.

Epidemics and pandemics always have had major social and economic impacts on affected populations, but in our current interconnected world, the outcomes can be truly global. Consider the SARS outbreak of early 2003. This epidemic demonstrated that new infectious diseases are just a plane trip away, as the disease was spread rapidly to Canada, the U.S. and Europe by air travelers. Even though the SARS outbreak was relatively short-lived and geographically contained, fear inspired by the epidemic led to travel restrictions and the closing of schools, stores, factories and airports. The economic loss to Asian countries was estimated at \$18 billion.

The HIV/AIDS viral epidemic, particularly in Africa, illustrates the economic

For an emerging disease to become established, at least two events must occur: 1) the infectious agent has to be introduced into a vulnerable population, and 2) the agent has to have the ability to spread readily from person to person and cause disease. The infection also must be able to sustain itself within the population and continue to infect more people.

and social effects of a prolonged and widespread infection. The disproportionate loss of the most economically productive individuals within the population has reduced workforces and economic growth in many countries, especially those with high infection rates. This affects the health care, education, and political stability of these nations. In the southern regions of Africa, where the infection rate is highest, life

expectancy has plummeted in a single decade, from 62 years in 1990–95 to 48 years in 2000–05. By 2003, 12 million children under the age of 18 were orphaned by HIV/AIDS in this region.

Despite significant advances in infectious disease research and treatment, control and eradication of diseases are slowed by the following challenges.

- The emergence of new infectious diseases
- An increase in the incidence or geographical distribution of old infectious diseases
- The re-emergence of old infectious diseases
- The potential for intentional introduction of infectious agents by bioterrorists
- The increasing resistance of pathogens to current antimicrobial drugs
- Breakdowns in public health systems.

Baylor College of Medicine, Department of Molecular Virology and Microbiology, bcm.edu/molvir.

USING COOPERATIVE GROUPS IN THE CLASSROOM

Cooperative learning is a systematic way for students to work together in groups of two to four. It provides organized group interaction and enables students to share ideas and to learn from one another. Students in such an environment are more likely to take responsibility for their own learning. Cooperative groups enable the teacher to conduct hands-on investigations with fewer materials.

Organization is essential for cooperative learning to occur in a hands-on science classroom. Materials must be managed, investigations conducted, results recorded, and clean-up directed and carried out. Each student must have a specific role, or chaos may result.

The Teaming Up! model* provides an efficient system for cooperative learning. Four “jobs” entail specific duties. Students wear job badges that describe their

duties. Tasks are rotated within each group for different activities so that each student has a chance to experience all roles. For groups with fewer than four students, job assignments can be combined.

Once a model for learning is established in the classroom, students are able to conduct science activities in an organized and effective manner. Suggested job titles and duties follow.

Principal Investigator

- Reads the directions
- Asks the questions
- Checks the work

Maintenance Director

- Follows the safety rules
- Directs the cleanup
- Asks others to help

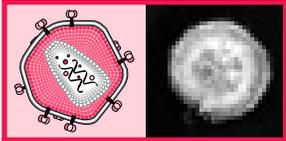
Reporter

- Records observations and results
- Explains the results
- Tells the teacher when the group is finished

Materials Manager

- Picks up the materials
- Uses the equipment
- Returns the materials

* Jones, R.M. 1990. *Teaming Up!* LaPorte, Texas: ITGROUP.



Myth or Fact?

When bad things happen, people naturally search for answers, explanations, and something or someone to blame. This can be helpful. If we know the cause of a tragedy, such as the HIV/AIDS pandemic, we can try to prevent it from happening again, or at least minimize its harmful effects. For example, knowledge of HIV's origins, and means of transmission has helped researchers to find effective treatments and preventative measures.

Unfortunately, the long process of discovery and development also has produced an abundance of misinformation that is very difficult to correct. Especially these days, when technology allows almost instantaneous global distribution of Internet content—both true and untrue—it can be difficult to tell reliable information from pure fabrication.

The initial discovery of AIDS in a group of homosexual men led to the belief that only homosexual men were at risk. But then, HIV/AIDS was found in intravenous drug users. Still later, HIV began to spread through minority groups and entire nations. Each new discovery led to new rumors and myths, some motivated by personal bias rather than an interest in the truth. Fear, denial, and misinformation have hindered education efforts and are partially responsible for the rapid worldwide spread of the virus. HIV/AIDS causes approximately 2 million deaths per year. More than 34 million persons were living with HIV/AIDS as of 2009.

Like many words, the term, myth, has many meanings. Historically, a myth is a legendary story, usually concerning a hero or event, used to communicate some societal rule or phenomenon of nature. In modern use, myth also means a false story that results from a misunderstanding or a deliberate attempt to mislead. Myths relating to HIV/AIDS are rooted in fear, lack of knowledge, and sometimes, intentional deception. Knowing the difference between HIV/AIDS facts and myths is literally a matter of life and death.

HIV/AIDS MYTHS

- AIDS is a punishment from God.
- An HIV diagnosis is a death sentence.
- HIV/AIDS was created for germ warfare.
- Only homosexual males and drug users are affected by HIV/AIDS.
- HIV/AIDS is no longer a problem in the United States.
- Women cannot give men HIV.
- You can get HIV from a kiss, a cough, a sneeze, tears, a toilet or shower, a swimming pool, a mosquito bite, contaminated ketchup bottles, or a hug.
- Drug companies are withholding an HIV/AIDS cure to make more money.
- HIV prevention does not work.
- You can tell if someone has HIV by his or her appearance.
- Since there are drugs to treat HIV/AIDS, people no longer have to

worry about being infected.

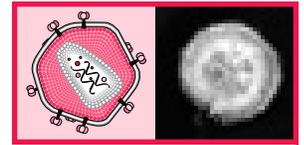
- HIV is the result of a government conspiracy to eliminate certain groups of people.
- If someone is taking HIV medications, they can't spread the virus to others.

HIV/AIDS FACTS

- Anyone can acquire HIV.
- HIV infections are preventable.
- HIV is transmitted through unprotected sex with a carrier of HIV.
- HIV is transmitted through contaminated blood transfusions and the sharing of needles among drug users.
- HIV can be transferred from mother to child during pregnancy and nursing.
- Though extremely rare, HIV can be transmitted accidentally to medical workers who are stuck with needles used with patients with HIV/AIDS.
- Modern drug therapies can hold HIV at bay indefinitely if administered consistently.
- For treatments to be effective, HIV patients must take all of their medications exactly as prescribed, always on time and without missing doses.
- Birth control pills do not protect against HIV infection. Condoms, when used properly, reduce the transmission of HIV. Abstinence is 100% effective in preventing sexually transmitted HIV.
- Researchers have not yet developed a vaccine to prevent HIV infection.
- HIV is not a death sentence.
- Education is the best way to prevent HIV/AIDS.

Overview

Students will use statistical tables of HIV/AIDS data to create presentations about HIV/AIDS in relation to the United States.



Aspergillus niger fungus. CDC \3965 Lucille K. Georg.

TIME

Setup: 15 minutes

Activity: 2–4 class periods

H I V / A I D S I N T H E United States

The Centers for Disease Control and Prevention (CDC) estimate that more than one million people in the United States are living with HIV. About one in five (21%) of these people are unaware of their HIV-positive status. It is not surprising, then, that each year, upwards of 56,000 more Americans become infected with HIV. And despite improved medications, more than 18,000 people in the U.S. die each year from AIDS-related causes.

The burdens of HIV/AIDS are not distributed equally across all segments of the U.S. population. Among racial/ethnic groups, African Americans face the highest rates of infection. Hispanics/Latinos also have a disproportionately large representation among the population of Americans living with HIV/AIDS.

Unfortunately, many young people do not understand how HIV is transmitted or treated. This lack of knowledge, when combined with alcohol and/or drug use, can be especially dangerous for adolescents, who are more likely to engage in high-risk behaviors, such as unprotected sex, when they are “under the influence.” Improving students’ basic knowledge, understanding of risks, and decision-making skills can help reduce rates of teen pregnancy and infection by STDs, including HIV. In this activity, students will discuss common misconceptions and truths about HIV/AIDS, and will examine authentic CDC data about the epidemic in our country.

MATERIALS

Per Team of Students (see Setup)

- Colored markers
- Rulers
- Poster paper
- Set of student sheets

SETUP

Select the CDC data tables you will use with your class. Please note, the first few pages of data tables cover the incidence of new HIV infections related to age, sex, and race/ethnicity. The last page specifically covers major transmission categories and includes statistical references on sexual transmission and injection drug use. You may choose to use or not use this page. Photocopy one set of the data tables you select and blank graphs for each student team. Have students work in teams of 2 to 4.

PROCEDURE

1. Announce to your students that they will be participating in a classroom HIV/AIDS research conference.
2. Divide the class into teams and provide each team with the HIV/AIDS data tables you have selected. The data describe the incidence of new HIV infections for the United States in the years 2006, 2009, and the prevalence of AIDS in the U.S. in the year 2007.
3. Challenge each team to review the data in the CDC tables and produce a graph, chart or some

Continued

SCIENCE EDUCATION CONTENT STANDARDS

Grades 5–8

Life Science

- Disease is a breakdown in structures or functions of an organism. Some diseases are the result of damage by infection by other organisms.
- A population consists of all individuals of a species that occur together at a given place and time.

Science in Personal and Social Perspectives

- Students should understand the risks associated with biological hazards (viruses and bacteria, for example), and with personal hazards (such as drinking).
- Individuals can use a systematic approach to thinking critically about risks and benefits.
- Important personal and social decisions are made based on perceptions of benefits and risks.

Grades 9–12

Life Science

- Behavioral biology has implications for humans, as it provides links to psychology, sociology and anthropology

Science in Personal and Social Perspectives

- Many diseases can be prevented or controlled.
- Personal goals, peer and social pressures, ethnic and religious beliefs, and understanding of biological consequences can all influence decisions about health practices.

History and Nature of Science

- Science distinguishes itself from other ways of knowing through the use of empirical standards, logical arguments, and skepticism, as scientists strive for the best possible explanations about the natural world.



MORE INFORMATION

See the following sources for additional information about HIV/AIDS and advice for discussing HIV/AIDS with students.

- National Institute of Allergy and Infectious Diseases, National Institutes of Health (NIH), offers resources on understanding HIV/AIDS: niaid.nih.gov/topics/hivaids/ and aidsinfo.nih.gov.
- National Institute on Drug Abuse, NIH, offers facts about drug abuse and the link between it and HIV/AIDS: hiv.drugabuse.gov.
- The Centers for Disease Control and Prevention provides up-to-date information on HIV/AIDS prevention: cdc.gov/hiv/topics.

DIFFERENT RESULTS

While sources of HIV/AIDS statistical information may not agree exactly, they do agree on trends. In many parts of the world, data collection has to rely on small samples, and the methods used for estimates may yield different results. However, whether the number of new HIV infections is 2.7 or 3.0 million, the trend is still tragic in its magnitude.

other document that illustrates the relationship between the data in two or more of the tables. Students should be careful to note whether a table is reporting data by percentage or raw number. Each team's goal is to create a presentation on the HIV/AIDS pandemic as it relates to the U.S. Presentations should explain students' observations clearly, in a way the entire class will be able to understand. If desired, the U.S. data can be related to worldwide numbers examined in the previous activity, "Mapping the Spread of HIV/AIDS."

4. Discuss different ways to interpret and present the data through tables, graphs, diagrams etc. For example, students might elect to use graphs in the form of bar charts, pie charts, scatter plots, etc. Also, allow students to be creative in their choices of media used to communicate their findings (e.g., posters, flip-charts, PowerPoint® presentations, artwork, video, etc.).
5. Help students understand how to read and compare the different tables. They will see the abbreviation, "N," used to refer to the total number of subjects represented in a table.

Because different statistical methods were used to derive information for the tables, some tables relating to the same topic have different "N" values. For example, in some tables, the numbers for Asian/Pacific Islander and American Indian/Alaska Native groups are too small to allow for accurate estimates. Consequently, totals for those racial/ethnic groups are not included in some tables, which

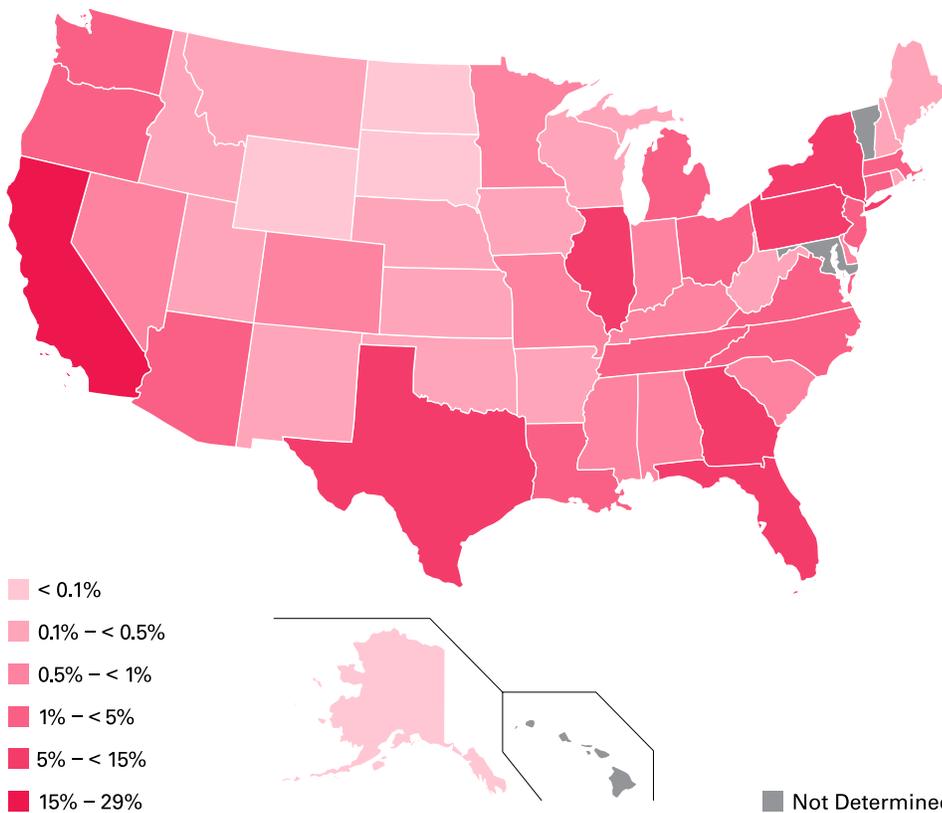
reduces the tables' "N" value.

The table presenting the incidence of new HIV infections presents data as a rate per 100,000. This means, as an example, that for each 100,000 Hispanic/Latino persons in the United States, 40 individuals acquired a new HIV infection in 2009. (Note: some tables present data as percentages rather than raw numbers.)

6. Conduct a class "HIV/AIDS Research Conference," during which students share their presentations, explain the data they used and present their conclusions.
7. Discuss each team's findings with the entire class. Some of the questions below may help to promote student responses and learning.
 - What do your data show?
 - Based on the data, which groups are at greatest risk for contracting HIV?
 - How do these totals relate to the population as a whole?
 - Are males or females more likely to become infected with HIV?
 - Is any age or racial/ethnic group untouched by HIV/AIDS?
 - Why are HIV and AIDS reported separately in the tables?
 - Is HIV transmission limited to homosexual contact?

Sample Conclusions

- The prevalence of HIV infection in the U.S. is well below that in some nations, but it is nevertheless a major health issue in our country.
- Although Black/African Americans make up only 13% of the total U.S. population, they accounted for a disproportionately high number (45%) of the new HIV infections in 2006.



U.S. HIV Infections 2007 – 50 States and the District of Columbia.

- While males are more likely than females to become infected with HIV, the increase in the rate of infection among Black/African American females is the highest for all racial/ethnic groups.
- HIV and AIDS are reported separately in the tables because a person infected with HIV may not have AIDS. Without diagnosis and consistent medical treatment, the virus, HIV, leads to the disease, AIDS. Due to improved HIV detection and treatment, and to the deadly effects of AIDS itself, the number of people living with HIV is much greater than the number living with AIDS.
- The infection rate (per 100,000 people) for Black/African

Americans is 7.5 times greater than the infection rate for white Americans. The rate of infection for Hispanic/Latino populations is 2.5 times greater than the rate for white Americans.

- Among all racial/ethnic groups in the U.S., Black/African American females currently are at greatest risk of becoming infected with HIV.
- Based on the final tables, homosexual activity still is the most common way for HIV to be transmitted. However, heterosexual contact and needle sharing among drug addicts also are major transmission routes.

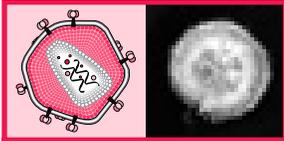
EXTENSIONS

- Talk with your students about the ways to prevent HIV infection. The U.S. Centers for Disease Control and Prevention provide explicit information on prevention measures. Your school or school district may have specific recommendations about how to discuss this topic with students (cdc.gov/hiv/topics).
- Invite a public health medical professional to visit your class. Have student teams present their findings again, and discuss the results with this guest.

TEACHING RESOURCES



Free, online presentations of each activity, downloadable activities in PDF format, and annotated slide sets for classroom use are available at www.bioedonline.org or www.k8science.org.



Statistics

2006: U.S. New HIV Infections Male-Female

Male	41,099	73%
Female	15,201	27%
TOTAL	N=56,300	100%

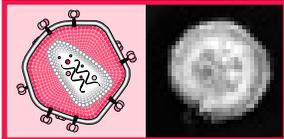
2006: U.S. New HIV Infections Age Group

13 – 29	19,142	34%
30 – 39	17,453	31%
40 – 49	14,075	25%
50 or older	5,630	10%
TOTAL	N=56,300	100%

2006: U.S. New HIV Infections Race-Ethnicity

American Indian/Alaskan Native	563	1%
Asian/Pacific Islander	1,126	2%
Black/African American	25,335	45%
Hispanic/Latino	9,571	17%
White	19,705	35%
TOTAL	N=56,300	100%

Source: U.S. Centers for Disease Control and Prevention



Statistics

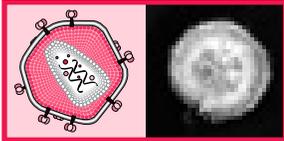
2006: U.S. New HIV Infections Male-Female/Age Group/Race-Ethnicity (N=54,220)*

Age Group	Black/ African American		Hispanic/Latino		White	
	Number	%	Number	%	Number	%
Male						
13 – 29	6,760	42	3,010	41	4,050	25
30 – 39	4,170	26	2,520	34	5,600	34
40 – 49	3,680	23	1,410	19	4,640	29
50 or older	1,510	9	480	6	1,980	12
Female						
13 – 29	2,810	32	820	36	1,050	32
30 – 39	2,670	30	720	31	1,060	32
40 – 49	2,360	27	440	19	840	25
50 or older	960	11	320	14	360	11

* Insufficient data for making predictions regarding American Indian/Alaskan Native and Asian/Pacific Islander groups.

2009: U.S. New HIV Infections Male-Female/Race-Ethnicity (per 100,000 people)

Male	Black/ African American	Hispanic/Latino	White
		104	40
Female	Black/ African American	Hispanic/Latino	White
		40	12



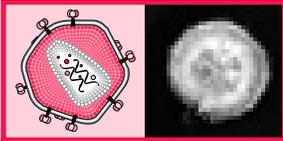
Statistics

2007: U.S. HIV Infections 50 States and District of Columbia

State	Number	%*	State	Number	%*
Alabama	529	0.9	Montana	92	0.2
Alaska	27	0.0*	Nebraska	78	0.1
Arizona	771	1.3	Nevada	369	0.6
Arkansas	206	0.3	New Hampshire	52	0.1
California	17,588	28.7	New Jersey	1,571	2.6
Colorado	382	0.6	New Mexico	92	0.2
Connecticut	932	1.5	New York	5,197	8.5
Delaware	480	0.8	North Carolina	1,746	2.8
D.C.	1,629	2.7	North Dakota	9	0.0
Florida	5,165	8.4	Ohio	852	1.4
Georgia	3,204	5.2	Oklahoma	199	0.3
Hawaii	NA	NA	Oregon	1,477	2.4
Idaho	39	0.1	Pennsylvania	3,694	6.0
Illinois	3,576	5.8	Rhode Island	130	0.2
Indiana	406	0.7	South Carolina	542	0.9
Iowa	93	0.2	South Dakota	17	0.0
Kansas	110	0.2	Tennessee	841	1.4
Kentucky	414	0.7	Texas	3,495	5.7
Louisiana	797	1.3	Utah	92	0.2
Maine	46	0.1	Vermont	ND	ND
Maryland	ND*	ND	Virginia	823	1.3
Massachusetts	777	1.3	Washington	620	1.0
Michigan	623	1.0	West Virginia	55	0.1
Minnesota	289	0.5	Wisconsin	220	0.4
Mississippi	471	0.8	Wyoming	15	0.0
Missouri	460	0.8			

*Note: 0.0% is less than or equal to 30 cases. ND = Not determined.

Source: Public data gathered by The Henry J. Kaiser Family Foundation



Statistics

2007: U.S. AIDS Cases 50 States and District of Columbia: Age at Diagnosis

Age at Time of Diagnosis	Estimated New AIDS Cases in 2007	Cumulative Number AIDS Cases Through 2007
Under 13	28	9,209
13 – 14	80	1,169
15 – 19	455	6,089
20 – 24	1,927	38,175
25 – 29	3,380	120,464
30 – 34	4,187	201,906
35 – 39	5,888	219,601
40 – 44	6,813	177,250
45 – 49	5,749	112,896
50 – 54	3,636	63,408
55 – 59	2,040	34,160
60 – 64	980	18,249
65 or older	800	18,853
TOTAL	35,963	1,021,429

2007: U.S. AIDS Cases Geographic Region

Region	AIDS Cases Diagnosed 2007*	Persons Living With AIDS 2007
Midwest	11%	11%
Northeast	25%	29%
South	46%	40%
West	17%	20%

* Percentages rounded off = 99%

MIDWEST

Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

NORTHEAST

Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

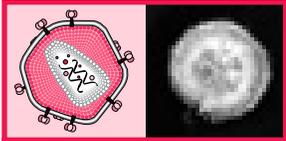
SOUTH

Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

WEST

Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Source: U.S. Centers for Disease Control and Prevention



Statistics

2007: U.S. AIDS Cases 50 States and District of Columbia: Race-Ethnicity

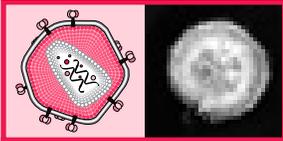
Race-Ethnicity	Estimated New AIDS Cases in 2007	Cumulative Number AIDS Cases Through 2007*
American Indian/Alaskan Native	158	3,492
Asian/Pacific Islander	551	8,232
Black/African American	17,507	426,003
Hispanic/Latino	6,921	169,138
White	10,407	404,465
Total Cases	35,544	1,011,330

* Totals may vary for same data set due to incomplete information.

2007: U.S. AIDS Cases Transmission Category: Children Age 13 or Younger at Diagnosis

Transmission Category	Estimated AIDS Cases in 2007	Cumulative Number AIDS Cases Through 2007
Perinatal*	24	8,434
Other: Blood transfusions or not known	4	775
Total Cases	28	9,209

* Perinatal means shortly before birth to shortly after (passed from mother to child).



Transmission Categories

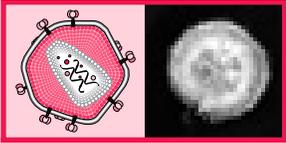
2006: U.S. New HIV Infections Transmission Category

Heterosexual Contact	31%
Male-Male Sexual Contact	53%
Injection Drug Use	12%
Male-Male Sexual Contact with Injection Drug Use	4%

2006: U.S. New HIV Infections Race-Ethnicity/Sex/Transmission Category

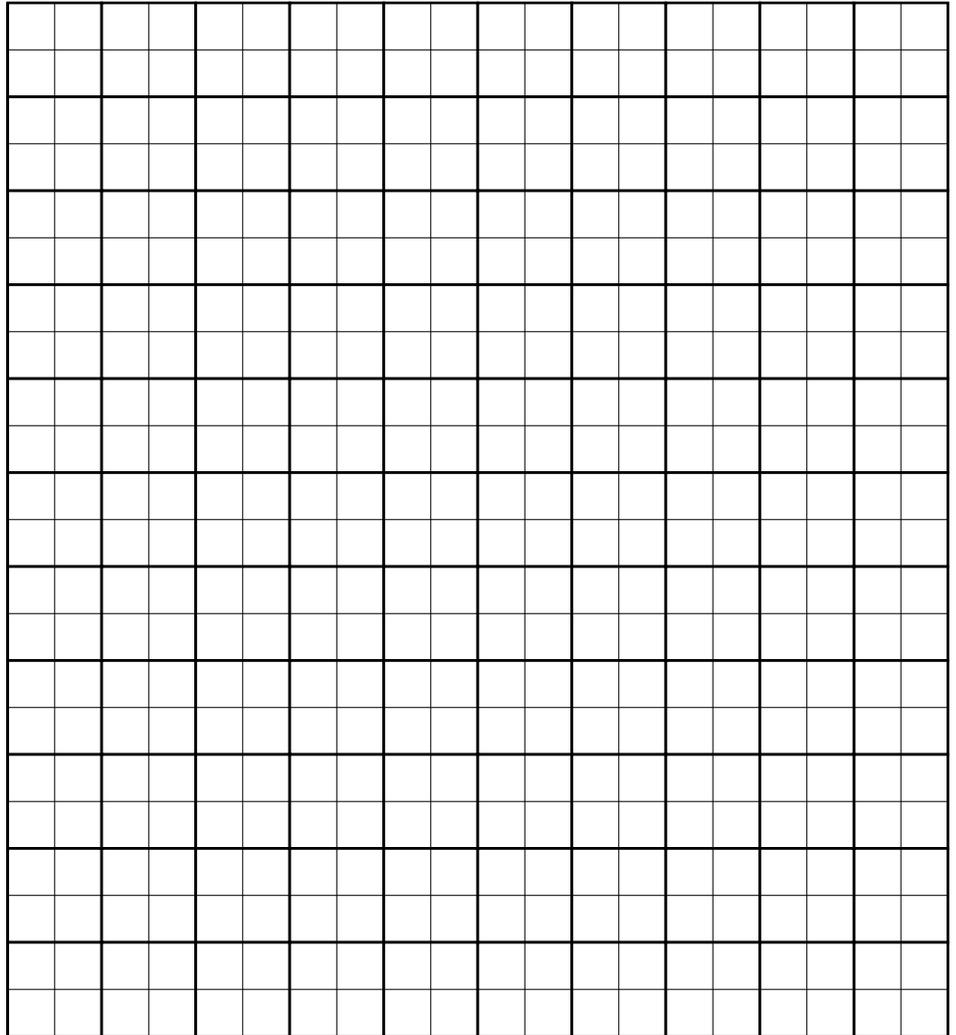
Transmission Category	Black/ African American		Hispanic/Latino		White	
	Number	%	Number	%	Number	%
Male						
Heterosexual Contact	3,290	20	970	14	990	6
Male-Male Sexual Contact	10,130	63	5,360	76	13,230	81
Injection Drug Use	2,010	12	730	10	1,010	6
Male-Male Sexual Contact with Injection Drug Use	690	4	360	5	1,050	6
Female						
Heterosexual Contact	7,340	83	1,910	83	2,310	70
Injection Drug Use	1,470	17	400	17	990	30

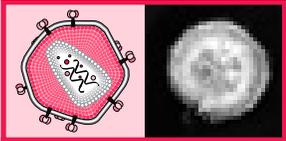
Source: U.S. Centers for Disease Control and Prevention



Bar Graph

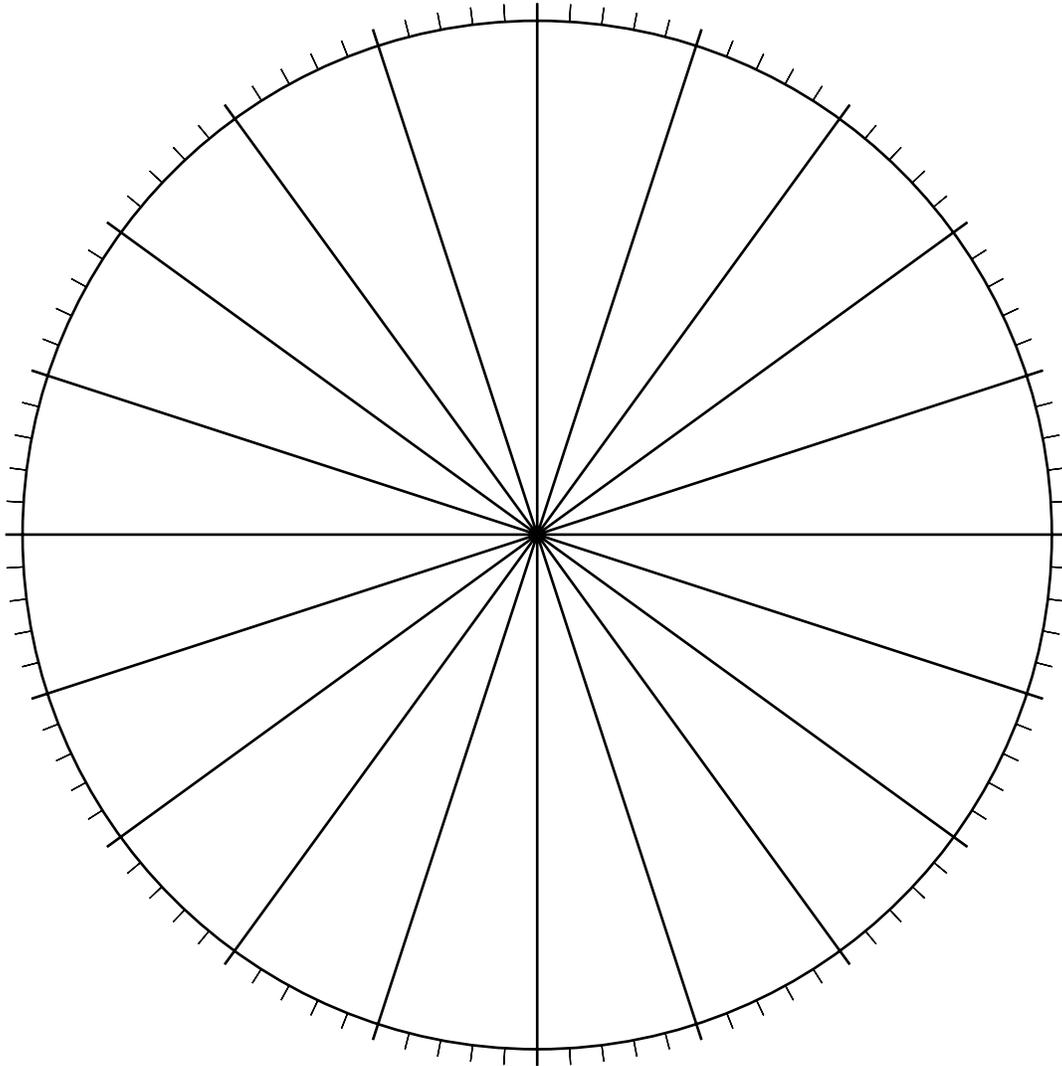
Each horizontal and vertical axis of the graph below has 20 divisions. The graph can be used to display numbers or percentages.

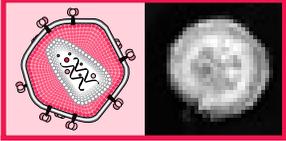




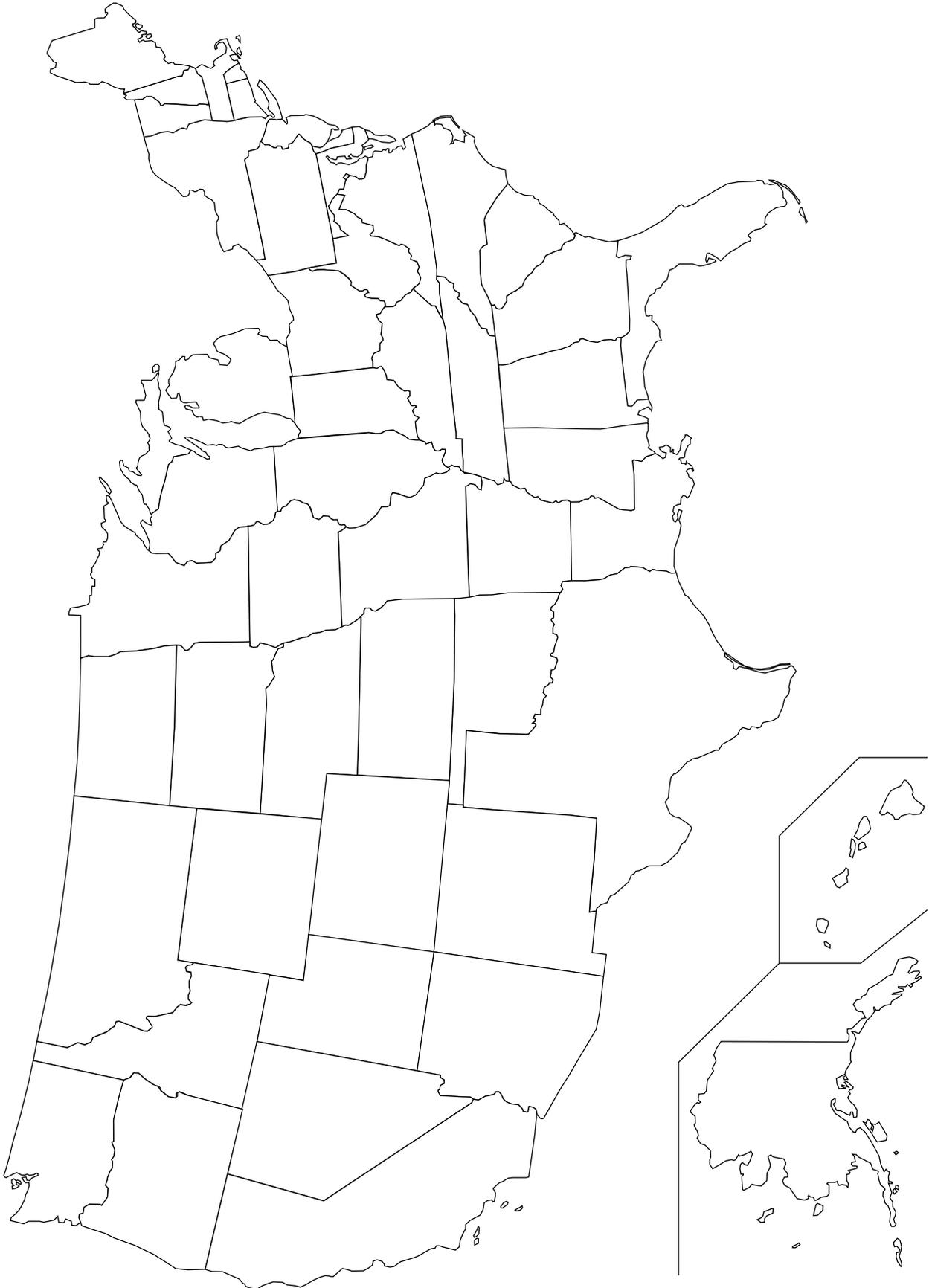
Pie Chart

The chart below has 20 large and 100 small divisions (100%). Color or shade one division for each percent you want to illustrate (for example, 15% = 15 small divisions).





United States Map



Source: Wikimedia Commons.