

Sexually Transmissible Diseases (STDs)

Day 4: Epidemiology

Grades 9 and 10, Lesson #27

Time Needed

One class period

Student Learning Objectives:

To be able to...

1. Cite at least 2 reasons curable STDs have not been eradicated.
2. Cite at least 2 reasons the rates of STDs are increasing.
3. Name at least one hotline or agency available in the student's own community to help with STDs.

Agenda:

1. Explain the lesson's purpose.
 2. Have students present oral Field Trip Reports on "STDs: Tests and Treatment." Hand out, read aloud, and discuss the STD Resource List.
 3. Define "epidemiology" and discuss the concept.
 4. Do the "Epi (pronounced "eppy") Exercise (using Epidemiology Cards and Transparencies) to dramatize the spread of STDs and the vulnerability of persons who share sexual touch.
 5. Discuss individuals' ethical responsibilities and the role of Public Health epidemiologists. Summarize the lesson.
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Materials Needed:

Student Materials:

- *STD Resource List** (1 copy per student)

Classroom materials, equipment:

- *Epidemiology Transparency 1: The Spread of Chlamydia***
- *Epidemiology Transparency 2: The Spread of HIV***
- *Epidemiology Cards for Round 1* (on colored paper, 3 copies of each page, cut into a total of 30 “Cards”)
- *Epidemiology Cards for Round 2* (different color, same instruction as above)
- Scissors

* If you live outside King County, WA, compile a local STD Resource List (Activity 2) before photocopying. We have provided a master.

Alternatively, **FLASH transparencies are available as PowerPoint files on the **FLASH** website: www.metrokc.gov/health/famplan/FLASH

Activities

1. Explain the lesson's purpose:

Today we'll take a look at where people can get help with STDs and how, if they don't, STDs might actually spread through a high school.

2. Have students share their oral field trip reports on "Sexually Transmitted Diseases (STDs): Testing and Treatment." See Lesson 1 for a Field Trip Grading Form (with criteria). Make at least one specific, positive comment about each report, as the student finishes. Then, write specific feedback on the typed version of the student's report.

Ensure that the class knows (even if Reporters fail to mention) these things:

- *Young people of any age can get tested and treated for STDs without having to involve their parents. There is no minimum age to get tested and treated for STDs or to receive contraception. Their parents **will not be notified** by the doctor or the Public Health Department in Washington State. (Find out your own state's laws regarding adolescents, if you live elsewhere.)*
- *You can go by yourself or bring a friend to an STD clinic. For some, it can be difficult enough to go to the doctor about something like STDs, so a friend or family member can offer some support. It's great if teens **can** talk with their parents, but the law doesn't require it. Having a parent, friend, or trusted adult with you can make the experience a little easier, especially if you test positive for an STD and need to talk to someone immediately after you find out.*

Hand out, read aloud and discuss the STD Resource List.

NOTE: If you live outside of King County, WA, you will have compiled your own local Resource List ... for which we have provided a blank "master."

3. Define "**epidemiology**" as: the *study of how diseases spread through populations*. Write the word on the white board.

Introduce the concepts of the lesson by starting with a brief history lesson:

Some STDs have been around for thousands of years. Syphilis and gonorrhea, for example, date back to ancient times. Some famous people like Hitler, Christopher Columbus, Al Capone, George Washington, Henry VIII, Napoleon Bonaparte had syphilis and all died from it except Hitler.¹ Throughout most of history, nothing could be done about STDs; they were neither preventable with immunizations, nor curable. So they spread.

*Except for three, we still cannot **prevent** STDs with immunizations, the way we prevent polio, measles, etc. The only 3 STDs for which we have immunizations are Hepatitis A and B and HPV:*

- **Hepatitis A** immunizations are now routine infant immunizations. Therefore, many of you were already immunized. The vaccine is now recommended² for all children and teens 1-18 years of age.
- **Hepatitis B** immunizations are also now routinely provided in infancy. Again, you may already be protected. The vaccine is now recommended³ for all babies, children and teens 19 years of age or younger.
- The **HPV** vaccine, called “Gardasil,” is the newest of these three immunizations. It can prevent most genital warts and most cases of cervical cancer. **Ideally, all girls would get the HPV vaccine before they start having sex (it isn’t available to boys at this point).** Public Health currently recommends every 11 or 12 year old girl have the shots and that **all teenage girls should get it, if they haven’t already.** It is approved for girls and women from 9 to 26 years old, and even if a young woman is sexually active she will still benefit from getting the vaccine.
- Research is going on right now to develop immunizations against HIV, gonorrhea, and chlamydia. Until vaccines for these other STDs are rated safe by the FDA, the only way to protect yourself is by not having sex of any kind or by using condoms correctly and consistently if you do have sex.

In contrast, many STDs are curable. Since the 1940s (when penicillin was discovered), bacterial infections like syphilis and gonorrhea, have been curable. Some other STDs are curable today, too. So, even without immunizations, you would think we could eliminate the curable ones from the earth, by people getting treated and stopping their spread. In fact, around 1999, many scientists believed that we could eliminate syphilis in the United States. But, due to several factors, people stopped practicing safer sex as much and it started to spread again.⁴

- a. Ask the class: *Why do you suppose curable STDs are still around? Why haven’t they been eliminated?*

If they don’t come up with all of the following, you fill in the gaps. Curable STDs are still around because

- ... people don’t always realize the risk ... their partners are “nice”, “clean”, healthy, caring people who (they think) are not “the kind of people with diseases” (*make sure the class knows the latter is ludicrous.*)
- ... people don’t always get symptoms. People with asymptomatic infections are the most likely to spread them because they think they are free of disease.
- ... people who get symptoms don’t always recognize them or realize how serious they are.
- ... people may be reluctant to get treatment if they’re afraid of knowing for sure, or of the check-up itself, or of confidentiality.

- ... people may not get treatment because they think they can't afford it or they don't know where to go.
- ... people don't always tell their partners, either because they don't care or because they feel angry, embarrassed, guilty or they're afraid the relationship will end.
- ... people sometimes start having sex again too soon after treatment, if their symptoms have disappeared, even though the doctor has not told them they are cured. Some infections need to be rechecked after treatment, before they know if they're really gone.
- ... doctors don't always recognize an STD, especially if there are more than one present, and the doctor is not a specialist. (Specialists can be found in STD and family planning clinics.)

b. Ask the class: *Are STDs really an epidemic or does it just seem that way?*

It's actually both: the number of people with STDs is growing because people are not practicing safer sex AND society is becoming more aware of an existing, serious problem.

c. For discussion, ask the class to: *Make some guesses about why there are actually more cases of STDs today than ever before.*

Again, if they don't come up with all of the following, you fill in the gaps: *There are more cases of STDs today because*

- ... there are more young adults (the group at greatest risk).
- ... the average number of sex partners in people's lives has increased (fewer people wait until marriage and then remain monogamous until death). The frequency of sex can increase your chance for getting an STD. The more you have sex, the more at risk you are for getting a sexually transmitted infection. Also, the more sex your partner has (or has had before you) or the more partners they've had can increase your risk of infection.⁵
- ... the average age of first intercourse has declined and teenage women's cervixes are more vulnerable than adult women's to infections like chlamydia⁶ ... a teen's body **seems** mature, but really isn't in terms of protection from disease.
- ... engaging in high risk behaviors like drinking alcohol or taking illegal drugs before sex can all lead to unclear judgment and not using a condom or not using it properly.⁷
- ... having sex with members of certain groups can put you at increased risk not because of people's identities but for simple mathematical probability reasons. These groups include men who've had sex with men, people who use injection drugs, and people who've traded sex for a place to sleep or for food, money, or drugs.⁸ It's very important that you know your sex partner well so you can trust his or her answers if you ask these questions.

- ... fewer people are becoming infected with oral herpes (cold sores) in childhood, so more are entering adulthood without any immunity to genital herpes. (Oral herpes antibodies provide some protection against genital herpes.)
 - ... Some people don't use condoms, believing (mistakenly) that other birth control options will protect them against STDs. Even if you use the pill, the patch, or other contraception, it's important to use condoms, *too*, to keep from getting or giving an infection.
 - ... Some people assume (mistakenly) that they were tested for all STDs when they had a routine check-up or Pap test. They need to realize that just because the doctor didn't say they had an STD, that doesn't necessarily mean they are in the clear. It might just mean they weren't tested for that particular disease. People should ask the doctor or other health care provider *which* STD's were tested for and what the results were for each STD that was tested. If the result of one STD test is negative, it doesn't mean that other results are negative as well.
- d. Now ask the class to: *make some guesses about why it might seem as if there is an even greater increase in STDs than there really is.*

As before, elicit as much from the class as you can, and fill in the rest of these factors: It may seem like there's an even greater increase than there is, because

- ... this generation is more willing to talk about STDs and STDs receive greater media coverage.
- ... doctors are being more honest with patients. (Some used to treat infections without telling the patient what she/he had or where it came from.) Be careful! Some doctors are still embarrassed, and you may have to ask for STD testing and treatment if you never talk about sex with your doctor. You may also need to advocate for getting tested for all STDs, not just HIV.
- ... more doctors can diagnose STDs. There was a time when only "venereologists" were knowledgeable about STDs; now, many gynecologists, urologists, and general/family practitioners can diagnose STDs. Regardless of where a person decides to get tested for STDs, they should talk with their health care provider about what to be tested for, depending upon their own sexual history.
- ... new STDs are being identified.
- ... there's been a resurgence of awareness/alarm due to HPV, herpes and HIV, because, in the 1940s - 70s all the STDs we knew of could be cured and now there are some which can't ... one of which is often fatal.
- ... Many STDs can make it easier to get HIV, the most serious STD, because some STDs open up sores on your skin or in your reproductive tract allowing HIV to enter and because more white blood cells are in your genitals fighting off the infection. These white blood cells make ready HIV factories if the virus gets inside your body. Also, if you have an STD and HIV and don't know it, the STD makes it easier to spread HIV to others.⁹

4. Explain that it's time to trace the path of a disease through a population: your own high school.

NOTE: To prepare for the Epidemiology Exercise (below), you will have, in advance:

- > made 3 copies of each page of Epidemiology Cards for this class period ... "round one" cards should be a different *color* from "round two" cards, so they don't get mixed up.
- > cut each page on the dotted lines, so that you have a total of 30 cards for round one, and 30 for round two ... for each period of the day (the cards will not be reusable).
- > photocopied *Epidemiology Transparencies 1 and 2*.

Conduct the Epidemiology Exercise. Here's how:

Explain that the object of this exercise is learning; **there is no winner**. Mention that today, more so than in some lessons, ground rules will be crucially important. Remind everybody of the ground rules they established at the beginning of the unit before any movement is allowed.

Round one...

- a. Have each student take a round one card, get a pen or pencil, stand up and begin to mill around. You should participate, too, and you should be one of the individuals with a "C" on your Card. (It will alleviate some students' awkwardness if **you** [the teacher] are the first individual identified with an infection.)
- b. After 10-15 seconds, say, "Stop." Have each person find a partner and shake hands ... except the "A"s (whose card, says "A" and represents abstinence but don't tell them that yet). "A"s should put their hands in their pockets or at their sides.
- c. Have each person write, in the space marked "1", the name of the person whose hand they shook.
- d. Have everyone resume milling, and repeat steps b and c, writing names in the blanks marked "2" and "3". "A"s should continue to keep their hands in their pockets.
- e. Have everyone sit down.
- f. Ask them to imagine that each handshake was a sexual encounter. Begin with *Epidemiology Transparency 1*, asking the other 2 people (besides yourself) whose card has a "C" to tell you their names. Write their names (including your own) in the 3 blanks on line 1. These 3 folks started out with chlamydia. Chlamydia is most common in people under 25 years of age.¹⁰ Remember, chlamydia is a bacterium, so it is curable.
- g. Begin by naming the first person with whom you shook hands. Suppose it was Mike. Write his name underneath yours. Now ask "Mike" what letter is on *his* card.

If it's also "C", explain that you and he both started out with **chlamydia**. You may now have some symptoms, but most of the time there are no signs of infection with chlamydia.

If Mike has an "L", explain that he's smart; he **Looks** at a partner's genitals. He knows not to have sex if there are sores, lumps, or unusual discharge. Let's assume that you had symptoms, since people sometimes (but not always) do when they are contagious with chlamydia, and that "Mike" decided against risking sex; you just held hands or cuddled. He did not catch chlamydia; cross his name off. (Many times "looking" does not work with chlamydia; about three quarters of women with chlamydia and half of men with chlamydia have no symptoms.⁹ So don't always let the "L"s off the hook.)

If he has a "T", explain that he is smart; he knows that **Talking** is important. He talked with you ... asked if you would tell him if you did have an STD. He assured you that he would *always be honest* with you. That helped you to be brave enough to tell him that your past partner did have chlamydia, but that you have no symptoms. You had sex and he caught chlamydia despite your lack of symptoms. It is possible to transmit chlamydia when there are no symptoms, and it is possible to have an STD without having any symptoms... so you should have used a condom. It is important to get tested for STDs, especially if a current or past partner had an STD. (Sometimes you can let the "T"s off the hook. They may be lucky and the person they talk to does know whether he/she is contagious. It helps to ask your partner: When was your last STD test? What STD tests did you get? (Not just HIV, but also herpes, Chlamydia, etc.) What were your test results? Did you complete treatment if you were positive for any STD? Some couples choose to get tested together. Again, you can't assume that you were tested for all STDs. It is important to talk with your provider about what you should be tested for.

If he has an "I", explain that "Mike" thought, "**It can't happen to me.**" Thus, he didn't worry whether you might have an STD. He caught chlamydia.

- h. Repeat "g" for the second person on line 1.
- i. Repeat "g" for the third person. Now, you've completed tracing one handshake. Next, write the names of each infected person in the second handshake section of the Transparency. There may be as many as six names, with a space under each.
- j. Repeat step "g" for each person who was infected by the second handshake. Next, write the names of all who are **now** infected, in the third handshake section. There may be as many as 12, with a blank under each.
- k. Repeat step "g" for each person who was infected by the third handshake. There may now be as many as 24 infected people.
- l. Review with them what **all** the symbols on their Cards represented. **Point out that those whose cards said "A" chose to abstain and did not end up infected.** If any letter did not come up, explain what would have happened if it had. Reinforce that condoms can provide protection against many STDs, but some that infect the skin outside the genitals can still be transmitted even with a condom, like HPV, genital herpes, and syphilis.¹⁰

Round two...

- a-i. If you have time (this will depend upon how many oral reports were presented) repeat the Epidemiology Exercise (steps a—e above), using “Round 2 Cards”. Note these three changes from round one:

Your tone should become more sober; you are about to trace a fatal disease. But wait to tell students this after the activity is over.

“M”s must shake with another “M” -- same person all 3 times -- because “M” represents Monogamy.

“F”s only shake on the first two handshakes. On the third handshake, they keep their hands in their pockets or at their sides -- because “F” represents deciding to have Fewer partners in one’s life.

- f. Use *Epidemiology Transparency 2* to trace the spread of the human immunodeficiency virus (HIV), beginning by writing the names of the “H”s on line 1.
- g. As you trace the spread, suppose “Kathy” says she shook hands first with “Mary”. Write Mary’s name below Kathy’s and ask Mary what letter *her* card had.

If it’s also “H”, she had already been exposed to **HIV** and may progress more quickly to AIDS due to extra stress on the immune system or pick up a different strain of HIV.

If it’s an “C”, they used **Condoms**, or shared safer touch ... no unprotected vaginal, oral or anal intercourse; instead, hugs, back rubs, etc. “Mary” is probably fine -- cross her name off. (Since condoms do, on rare occasions, break or slip off inside a partner, do not always let the “C”s off the hook. But make clear that condoms would have *greatly* reduced the risk for students with a “C” on their Epidemiology Card.)

If it’s an “F”, Mary had **Fewer partners**. By deciding to limit the number of people she had sex with in her life, she was trying to reduce her risk ... and she did. But, sadly, this shows that it only takes once. She got infected. It may be years before her HIV Disease progresses to AIDS, if it ever does, but, in any case, she is now contagious.

If it’s a “D”, Mary uses **Drugs**. Whether or not she “shoots up”, her immune system has been weakened by the drugs ... even alcohol, and while under the influence she’s less likely to make the right decisions to remain safer during sex. She is even more vulnerable. She not only catches the virus from “Kathy”, but is more likely than she would have been to actually develop AIDS from it. The same would be true if her immune system had been weakened by many previous illnesses, not enough sleep, an unbalanced diet, etc. Taking good care of yourself is no guarantee, but it can’t hurt. In any case, “Mary” has acquired HIV.

If it’s an “N”, “Mary” took **No Precautions**. She’s like the “It-can’t-happen-to-me” people in Round One. She caught the virus.

- h. Repeat step “g” for the second person on line 1.
- i. Repeat step “g” for the third person. Now, you’ve completed tracing one handshake. Next, write the names of each person who’s infected in the second handshake section (up to 6 names), with a blank below each.
- j. Repeat step “g” for each person infected by the second handshake. Write the names of all who are **now** infected (up to 12) in the third handshake section.
- k. Repeat step “g” for each person infected by the third handshake. There may now be as many as 24 infected people.
- l. Show them *Epidemiology Transparency 2*. **Point out that those whose cards said “M”, chose to be monogamous for life. They did not end up infected.** (Of course, some may have used IV drug and could have gotten infected that way, instead.) Point out that those who had an “F” were less likely to get infected, because they had sex with fewer people. Once is all it takes, but the more partners in a person’s life, the greater their risk. If any letter did not come up, explain what would have happened if it had.

Also clarify that: ***neither chlamydia nor HIV is transmitted via handshakes ... these handshakes were only symbolic.*** Point out that: ***as in real life, most of the people who transmitted diseases in this exercise had no idea they were doing so. They did not intend to infect someone they cared about.***

5. Finally, pose some of the following questions about people’s (and Public Health’s) responsibilities.
 - > *In Washington State it is illegal to knowingly transmit an STD, but what if you lived in another state? What is a fitting or fair punishment for doing this? Even if there’s no specific law, is a person morally responsible to be honest with a sex partner about STDs? Why or why not? Would it make a difference if they were “certain” the other person gave them the infection?*
 - > *In some states there is a law requiring a test for syphilis prior to marriage (there is no such law in Washington State) ... but even if there is no specific law in our state, do you think a person is morally responsible to get tested for STDs before they get married, or before they get sexually involved with someone? Why or why not? How about before they get pregnant? Why or why not?*
 - > *Why do doctors have to report many STDs to the Health Department? Why does the Health Department have to protect people’s (including teens’) privacy?*

Epidemiology Cards for Round One



C. 1) _____ 2) _____ 3) _____

A. 1) _____ 2) _____ 3) _____

L. 1) _____ 2) _____ 3) _____

A. 1) _____ 2) _____ 3) _____

T. 1) _____ 2) _____ 3) _____

Epidemiology Cards for Round One

(continued...)



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I. 1) _____ 2) _____ 3) _____

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I. 1) _____ 2) _____ 3) _____

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I. 1) _____ 2) _____ 3) _____

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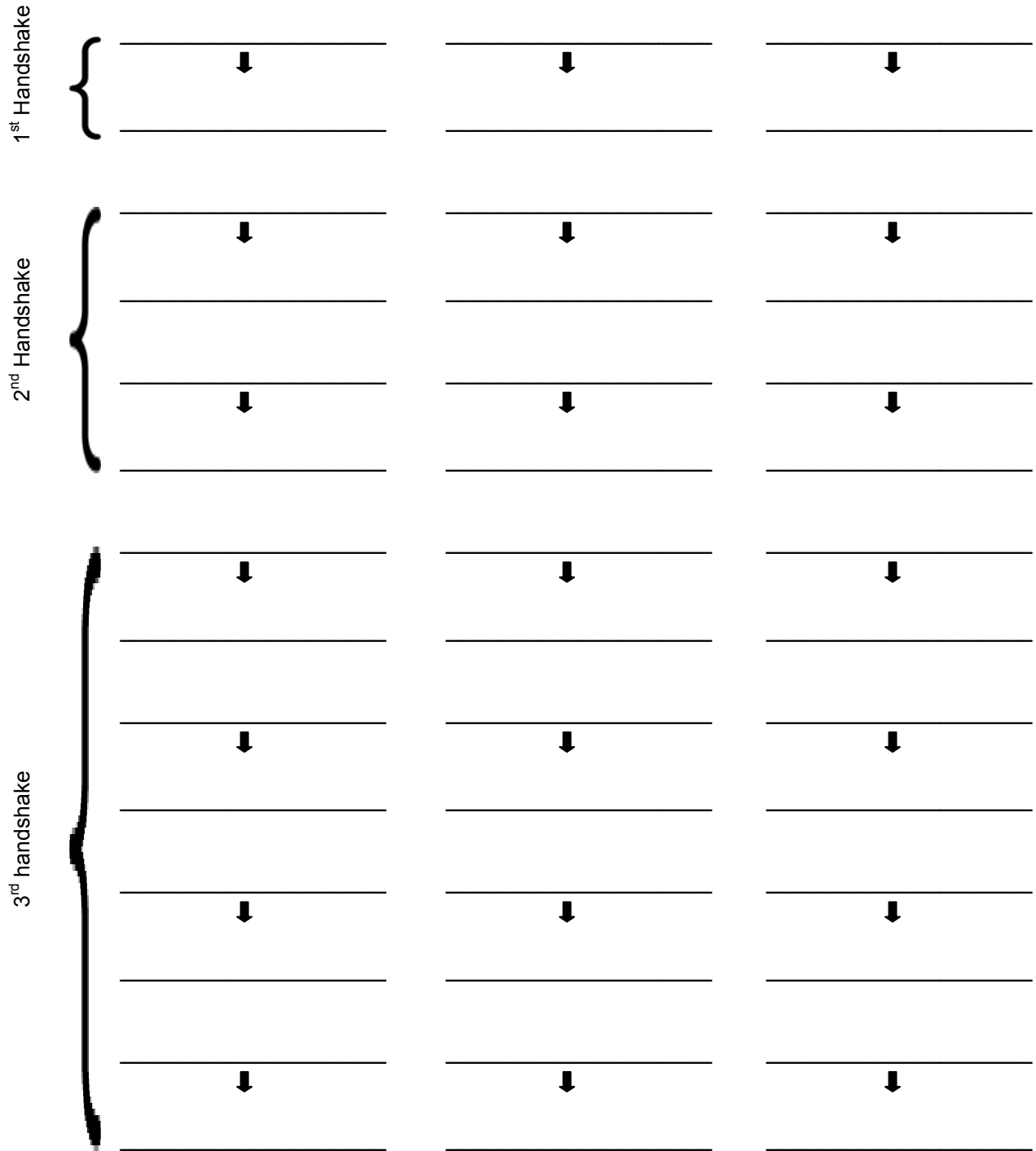
I. 1) _____ 2) _____ 3) _____

.....

I. 1) _____ 2) _____ 3) _____

.....

Epidemiology Transparency 1: The Spread of Chlamydia



Epidemiology Cards for Round Two



H. 1) _____ 2) _____ 3) _____

C. 1) _____ 2) _____ 3) _____

F. 1) _____ 2) _____ 3) _____

D. 1) _____ 2) _____ 3) _____

M. 1) _____ 2) _____ 3) _____

Epidemiology Cards for Round Two

(continued...)



N. 1) _____ 2) _____ 3) _____

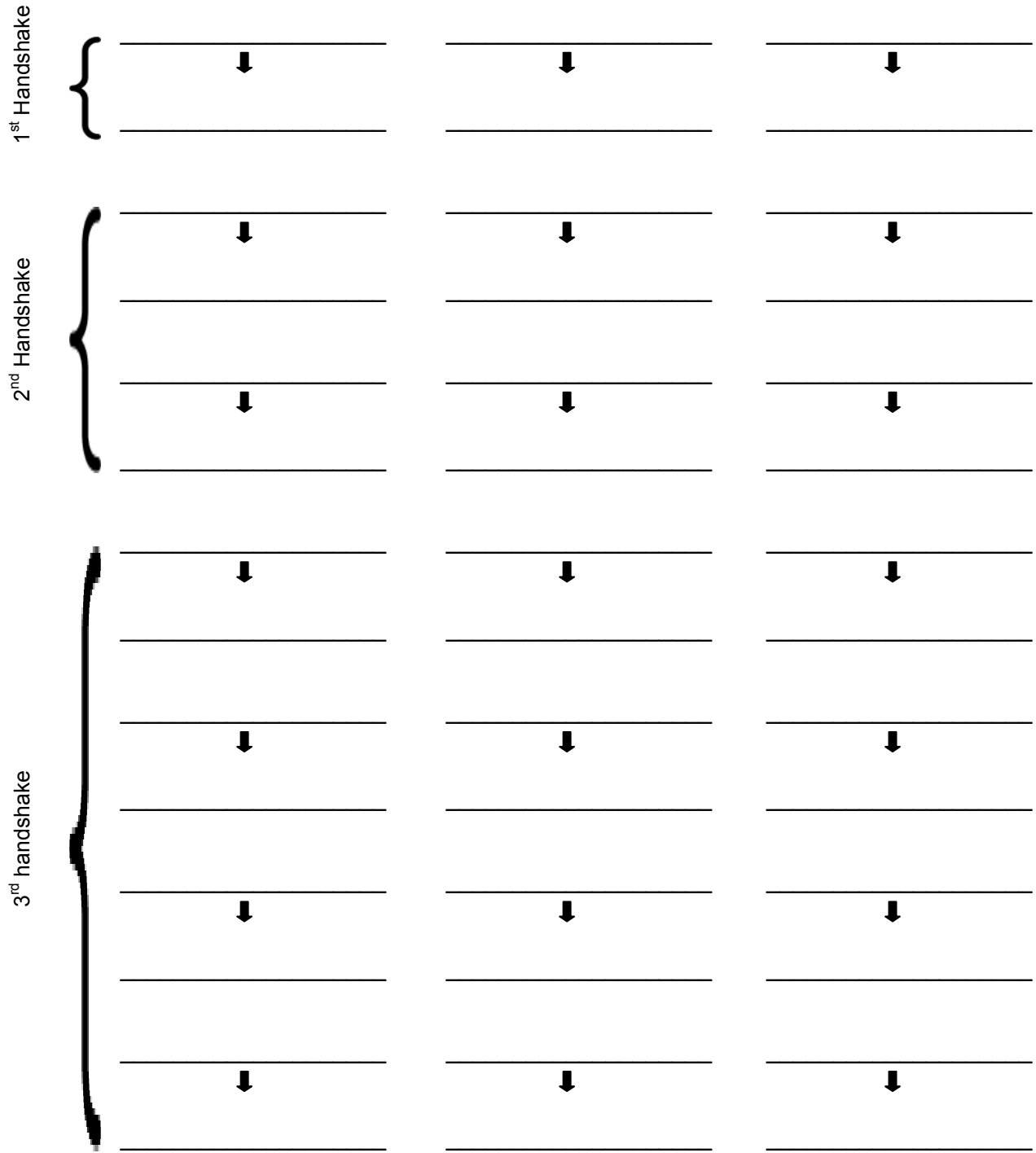
N. 1) _____ 2) _____ 3) _____

N. 1) _____ 2) _____ 3) _____

N. 1) _____ 2) _____ 3) _____

N. 1) _____ 2) _____ 3) _____

Epidemiology Transparency 2: The Spread of HIV



STD Resource List for King County*

TESTING AND TREATMENT for STDs are available free or at low cost, at many community clinics and at any Public Health center. Free pamphlets are usually available, too. It is important to call first for an appointment. Interpreters are available in most languages (including sign-language) if the person making the appointment asks for one.

Auburn.....	206-296-8400 / 253-833-8400
Columbia City (South Seattle).....	206-296-4650
Downtown Teen Clinic (Belltown, Seattle).....	206-296-4960
Eastgate (Bellevue/Factoria).....	206-296-4920 / 800-244-4512
Harborview Hospital STD Clinic (First Hill, Seattle).....	206-731-3590
Highline Youth Health Center (Burien)	206-439-9300
Kent Teen Clinic.....	206-296-7450
Northgate (near North Seattle Community College).....	206-296-4990
Northshore (Bothell).....	206-296-9787
Renton.....	206-296-4700
White Center (West Seattle)	206-296-4646
Federal Way.....	206-296-8410 / 253-838-4557

Maps and Bus Trip Planners available at: www.metrokc.gov/health/locations/teens.htm

FREE PHONE LINES.

In Seattle, call any of these:

HIV/STD Hotline.....	206-205-STDS / 800-678-1595
Facts of Life Line (operated by Planned Parenthood of Western WA)	206-328-7711 / 888-307-9275
Crisis Clinic	206-461-3222

Anywhere in Washington State:

Washington State HIV/AIDS Hotline	1-800-272-AIDS (2437)
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Anywhere in the United States:

National Centers for Disease Control Info Line	1-800-CDC-INFO (232-4636)
American Social Health Association HIV/STD Hotline.....	1-800-227-8922
National Sexual Assault Hotline (operated by the Rape Abuse and Incest National Network)	1-800-656-HOPE

For a current listing of HIV/AIDS EDUCATION AND SERVICE PROGRAMS in Seattle or King County, go to <http://www.metrokc.gov/health/apu/resources/list.htm>

Other websites that offer accurate, up-to-date STD information aimed at teens:

Sex Etc. (the web site of Rutgers University's Network for Family Life Education):

www.sexetc.org

Teen Source by California Family Health Council

www.teensource.org

Teen Wire by Planned Parenthood

www.teenwire.com

Seattle King County Public Health – Sexually Transmitted Diseases Program

www.metrokc.gov/health/apu/std/

Seattle King County Public Health – STDs among Gay, Lesbian, Bisexual and Trans Youth

www.metrokc.gov/health/glbtyouthstd.htm

* Model copy, for use in King County (WA)

STD Resource List*

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FREE PHONE LINES

Anywhere in Washington State:

Washington State HIV/AIDS Hotline 1-800-272-AIDS (2437)

Anywhere in the United States:

National Centers for Disease Control Info Line 1-800-CDC-INFO (232-4636)

American Social Health Association HIV/STD Hotline..... 1-800-227-8922

National Sexual Assault Hotline (operated by the
Rape Abuse and Incest National Network) 1-800-656-HOPE

Our local **HIV/AIDS EDUCATION AND SERVICE PROGRAMS** include:

websites that offer accurate, up-to-date STD information aimed at teens:

Sex Etc. (the web site of Rutgers University's Network for Family Life Education):

www.sexetc.org

Teen Source by California Family Health Council

www.teensource.org

Teen Wire by Planned Parenthood

www.teenwire.com

Seattle King County Public Health – Sexually Transmitted Diseases Program

www.metrokc.gov/health/apu/std/

Seattle King County Public Health – STDs among GLBT youth

www.metrokc.gov/health/glbtyouthstd.htm

* Master copy, on which teachers outside King County, WA can list their local resources.

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