



A Shot At Good Health



Violet Alexander, Education Chair, District 10 Developed and Presented by Morgan Bradley, Program Manager and Andrew Crocker, Senior Extension Program Specialist, Texas A&M AgriLife Extension September 15, 2021

A Shot at Good Health – Lesson Plan



Education Chair Violet Alexander

Authors and Presenters

Morgan D. Bradley, Program Manager Andrew B. Crocker, Senior Extension Program Specialist

Description

Routine vaccinations are a staple for protecting our immune systems; but, as we get older, we may fall behind on recommended vaccinations. Truth is, staying up-to-date on vaccinations is a life-long (and maybe life-saving) job!

Learning Objectives

- 1. Describe the difference between viral and bacterial infections
- 2. Describe the difference between vaccines and antibiotics and how they work
- 3. Examine the Centers for Disease Control and Prevention's Adult Immunization Schedule
- 4. Identify communication strategies to meaningfully discuss the importance of vaccinations

Materials (available from http://teea.tamu.edu)

- "A Shot at Good Health" PowerPoint, Handout, and Evaluation
- "A Shot at Good Health" Conversation Guide
- "A Shot at Good Health" Outbreak Activity
- Optional Resources
 - o Centers for Disease Control and Prevention Adult Immunization Schedule
 - https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combinedschedule.pdf
 - National Institute on Aging Shots for Safety
 - https://order.nia.nih.gov/publication/shots-for-safety

A Shot at Good Health – Outbreak Activity



Supplies

- A bag of colorful, individually wrapped candy (such as jolly ranchers, dum dums, etc.). Sort the bag so that there are only four (4) color options, discard or enjoy the leftovers! Return all the candy in the four chosen colors to the bag.
- Cut out and fold slips of paper on page 2.

Instructions

- 1. Do not announce the start of the activity.
- 2. Pass the bag of candy around the room, asking participants to take one piece of candy each.
- 3. After all participants have at least one candy piece, ask two to four participants to trade their piece of candy for one of the folded slips of paper.
- 4. Give the participants a folded slip of paper, ask them not to read it, and take their candy.
- 5. Begin the activity.

Outbreak Simulation

SAY: An outbreak has occurred in the room and a virus has impacted everyone here today. But let's take a look at how it spread.

Item	Script
Candy Calan 1	Ask each participant that has Candy Color 1 to raise their hand. SAY: If you are holding (insert color) candy, you have contracted the virus after
Candy Color 1 (assign a color)	someone sneezed in close proximity to you, through direct transmission. Direct transmission happens when bacteria or viral particles are spread through skin-to-skin contact, kissing, or sexual intercourse. Direct transmission can also happen though the spread of droplets, for example when someone coughs or sneezes near you.
Candy Color 2 (assign a color)	Ask each participant that has Candy Color 2 to raise their hand. SAY: If you are holding (insert color) candy, you have contracted the virus through airborne transmission. Indirect transmission can happen through airborne transmission – infectious particles can remain in the air for a short amount of time.
Candy Color 3 (assign a color)	Ask each participant that has Candy Color 3 to raise their hand.

	SAY: If you are holding (insert color) candy, you have contracted the virus by touching the doorknob through fomite transmission. Indirect transmission can happen with inanimate objects (also known as fomites), including, but not limited to, blood, food, water, door handles, that dirty dish sponge in your sink, etc. The amount of time bacteria and virus can remain viable on these inanimate surfaces varies depending on a lot of factors – moisture, temperature, surface type, etc.
Candy Color 4 (assign a color)	Ask each participant that has Candy Color 4 to raise their hand. SAY: If you are holding (insert color) candy, you were outside when a mosquito bit you and you have contracted the virus through vector transmission. Indirect transmission can happen through vectors. Vectors are things like mosquitoes and fleas that carry pathogens and transmit them to humans or animals – think things like West Nile Virus, Lyme Disease, and the Plague.
Folded Slips of Paper	Ask the participants that have folded slips of paper to raise their hands. SAY: If you are holding a slip of paper, you did not get the illness. Ask participants to read what is on their slips of paper. SAY: You made the choice to reduce or eliminate your risk of contracting the illness by putting clinical and non-clinical safety measures into practice. Maybe you
	by putting clinical and non-clinical safety measures into practice. Maybe you decided to wash your hands frequently or wear a mask in public or keep your distance when around other people or work with your health provider to get vaccinated. Whatever strategy you employed (hopefully all of them!) you reduced or eliminated your risk of getting ill and you also helped reduce the risk of spreading the illness to anyone else.

Cut out these slips of paper and fold them.

Washes Hands Frequently with Soap and Water	Routinely Wears Mask Outside the Home
Maintains Physical Distance with Others	Worked with Health Provider to Get Vaccinated





A Shot at Good Health – Conversation Guide



Discussing sensitive topics with another person is sometimes hard. If a person thinks or believes something, s/he may feel threatened when presented with information that challenges that belief.

Some general tips for talking about vaccinations include

- Do not laugh, make fun, or minimize concerns, no matter how trivial they may seem.
- Personal recommendations, stories, and experiences can be powerful motivators.
- Use "I" statements rather than "you" statements to convey your message.

An "I" message is intended to represent your view from your own perspective – it is not intended to blame or threaten. An "I" message is intended to keep a

conversation as positive as possible. As an example, note the difference between these two sentences

- 1. You need to get your vaccinations they're very important for your health.
- 2. I got my vaccinations because I think they're important for my health and I encourage others to do the same.

Both sentences basically convey the same message but the one that begins "you" could be perceived as accusing the other person of not being concerned with her/his health.

The following talking points are intended to help address some common issues surrounding vaccination in a non-threatening way.

Situation	Talking Points to Consider	Example Statements
If you are talking with someone who thinks vaccines do not work or cannot be trusted.	 Share the risk of not getting the vaccine. Share your own positive experience of being vaccinated. 	 I got my vaccinations so I could be around my new grandchild. I talked to my health provider about things I have heard from others and read on Facebook and made the decision to get vaccinated with her/his input. I was scared. I was not sure what to do. But what scared me more than getting the shot was getting the illness.





If you are talking with someone who thinks they are healthy and do not need vaccinations.	 Remind that even people who live healthy lifestyles may be at risk – for example, the virus that causes Shingles may be dormant in the body since childhood. Share that just like you take control of your health by eating right and getting plenty of physical activity, you can take control by getting a vaccine. 	 I didn't know adults needed vaccination updates. But I talked to my health provider and s/he told me the Centers for Disease Control and Prevention has vaccination guidelines for people of all ages. I walk regularly and try to eat right but I didn't realize our immune system slows down as we get older. So even though I'm living a healthy lifestyle, I may be more at risk from infections.
If you are talking with someone who thinks vaccines will give them the illness.	 Acknowledge that there may be some temporary side-effects or unpleasant feelings but these will subside. Remind that this momentary "blip" is better than getting the illness. 	I talked to my health provider about this and s/he said that sometimes a vaccination can cause some funny feelings; but, those funny feelings show that my immune system is jumping into actionjust like it's supposed to.
If you are talking with someone who thinks vaccines may interfere with their medications.	 Encourage to discuss concerns with their health provider or pharmacist. Remind that the health provider is not going to recommend something that is not relatively safe. 	I talked to my health provider about my concerns and s/he is going to review my medications and any other research/guidance about the vaccine to make sure there are no interactions.
If you are talking with someone who thinks they cannot afford to get vaccinated.	 Remind that Medicare Parts B and D cover most recommended vaccinations for adults over age 65. Encourage to talk to doctor, pharmacist, or county/municipal health department about assistance. 	 I told my health provider that cost was a barrier to getting vaccinated and s/he helped find some programs that would allow me to get vaccinated at little or no cost. I talked to one of the Benefits Counselors at the Area Agency on Aging who knew of some resources to help with payment. I decided investing in the vaccination was probably less expensive than getting the illness.



"Rosie the Riveter" represents a generation of women who rolled up their sleeves for the good of a nation at war. It's an image that I'm sure we all recognize and the message of working together for the benefit of ourselves and others is a good one, especially when it comes to helping slow or stop the spread of illnesses.

As we grow older, our bodies need help in the "battle" for wellness – to literally roll up our sleeves – for our best *shot* at good health. When we roll up our sleeves to get those shots for good health, we're helping ourselves and we're helping protect others as well!

Image Credit: US Department of Defense. (n.d.). "Rosie the Riveter Inspired Women to Serve in World War II". [Online].

https://www.defense.gov/Explore/Features/story/Article/1791664/rosie-the-riveter-inspired-women-to-serve-in-world-war-ii/ Last Accessed 30 June, 2021.

About This Lesson

Education Chair

Violet Alexander
Texas Extension Education Association

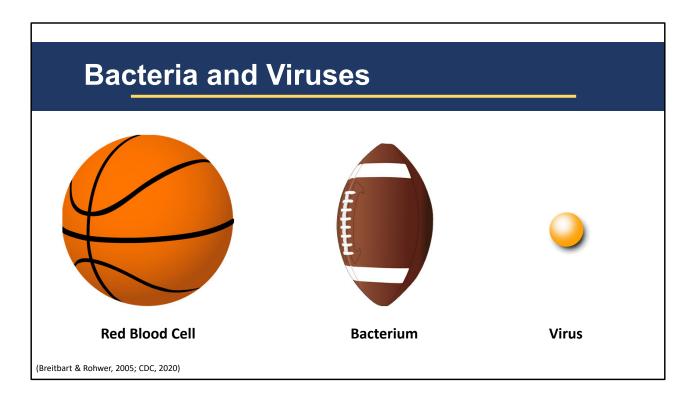
Authors

Morgan D. Bradley
Andrew B. Crocker
Texas A&M AgriLife Extension Service

- Learning Objectives
 - Describe the difference between viral and bacterial infections
 - Describe the difference between vaccines and antibiotics and how they work
 - Examine the Centers for Disease Control and Prevention's Adult Immunization Schedule
 - Identify communication strategies to meaningfully discuss the importance of vaccinations

For this session we'll describe some key differences between viral and bacterial infections and how vaccines and antibiotics work.

We'll also talk about the CDC's recommendations for immunizations and some communication strategies for discussing the importance of vaccines.



Our body is composed of many cells that do different things to help keep us strong and healthy, including cells that work for our immune system. There are red blood cells that transport oxygen and nutrients throughout the body and white blood cells that help us respond to infections.

When our bodies come into contact with germs (bacteria or viruses), we may get infections.

As we age, our bodies may be less able to respond to infections. We produce fewer of the immune cells that help us fight infections and it takes longer for those immune cells to spring into action.

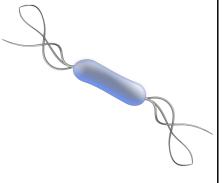
Here is an example of just how small viruses are in comparison to bacteria and red blood cells. In reality, bacteria and viruses are so tiny, we can only see them under microscopes.

References: Breitbart, M., & Rohwer, F. (2005). Here a virus, there a virus, everywhere the same virus? TRENDS in Microbiology, 278-284.

What is bacteria?

Quick Facts

- Bacteria are free living cells that live inside or outside the body.
- Not all bacteria are harmful.
- Harmful bacteria are called pathogens.



(Gilbert et al., 2018)

Bacteria are small cells that live inside or outside the body. There are millions of bacteria cells in and on the human body. This includes good bacteria and bad bacteria.

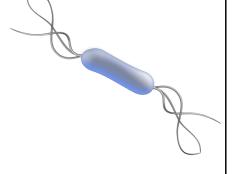
Bacteria can be good? Yes! For example, good bacteria can be used to fertilize soil by releasing nutrients for plants. Good bacteria is also used to create yogurt and some cheeses. Bacteria, like the ones in yogurt, can also be used to help regulate digestion – you may have heard of this as pre- or probiotics.

Reference: Gilbert, J. A., Blaser, M. J., Caporaso, J. G., Jansson, J. K., Lynch, S. V., & Knight, R. (2018). Current understanding of the human microbiome. Nature medicine, 24(4), 392–400. https://doi.org/10.1038/nm.4517

What is bacteria?

Bacterial Infections

- Pathogens in the body can cause bacterial infections such as
 - Pneumonia
 - Staph
 - Tuberculosis
 - Strep throat
- Antibiotics may be effective against bacterial infections



(Gilbert et al., 2018)

About 5% of bacteria are pathogenic and responsible for some human sickness and diseases.

For example, pathogens can cause some common infections like pneumonia, staph infection, tuberculosis, and strep throat. Bacteria are also responsible for most foodborne illness.

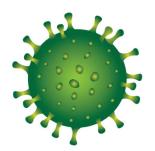
When we develop fever, sweating, chills, among other symptoms, this is our body's immune system response to fight the bacterial infection.

Reference: Gilbert, J. A., Blaser, M. J., Caporaso, J. G., Jansson, J. K., Lynch, S. V., & Knight, R. (2018). Current understanding of the human microbiome. Nature medicine, 24(4), 392–400. https://doi.org/10.1038/nm.4517

What is a virus?

Quick Facts

- There are an estimated 10 nonillion viruses are on Earth.
- Viruses are microscopic parasites smaller than bacteria.
- They are non-living cells, that need a host to survive and replicate.



(Breitbart & Rohwer, 2005)

There are an estimated 10 nonillion viruses on the Earth - that's a 10 with 30 zeroes behind it!

Viruses are non-living cells that need a host cell to survive and replicate – a key difference between a bacteria and a virus. Bacteria are standalone living organisms; a virus needs to get into one of your cells in order to survive.

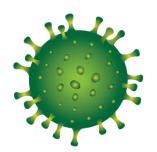
When our bodies encounter a virus, the virus attaches itself to a healthy cell and makes copies. After damaging a healthy cell, it leaves and finds more healthy cells to attach to.

Reference: Breitbart, M., & Rohwer, F. (2005). Here a virus, there a virus, everywhere the same virus? TRENDS in Microbiology, 278-284.

What is a virus?

Viral Infections

- Viruses can infect the body and cause
 - Common cold
 - Flu
 - Chicken pox or shingles
 - Measles
 - COVID-19
- Antibiotics are not effective against viral infections



(CDC, 2018)

Viral infections are responsible for infections like the common cold, the flu, shingles, measles, and COVID-19.

Symptoms will appear as more and more healthy cells are infected causing a person to feel ill. Viral infections may cause many of the same symptoms as bacterial infections – fever, chills, sweats, etc. – once again, your immune system is at work. But the cause of the symptoms and the way it is treated is very different.

In many cases with viral infections, like the flu or common cold, the best treatment is usually just to let it run its course.

Reference: CDC. (2018, August). Understanding how vaccines work. Retrieved June 30, 2021, from Centers for Disease Control and Prevention: https://www.cdc.gov/vaccines/hcp/conversations/understanding-vacc-work.html

How do they spread?

- Bacteria can replicate every 20 minutes and can remain alive on surfaces for some periods of time.
- Viruses replicate by attaching to a healthy cell, creating copies, and then attaching to other healthy cells.
- Transmission
 - Direct
 - Person-to-person
 - Proximity
 - Indirect
 - Airborne
 - Fomite
 - Vector

(CDC, 2012)

Bacteria and viruses can spread rapidly – that is why they have survived centuries.

Bacteria can replicate every 20 minutes and can remain alive on surfaces for some periods of time. Viruses replicate by attaching to a healthy cell, creating copies, and then attaching to other healthy cells.

Direct transmission happens when bacteria or viral particles are spread through skinto-skin contact, kissing, or sexual intercourse. Direct transmission can also happen though the spread of droplets. For example, when someone coughs or sneezes near you the droplets can easily spread.

Indirect transmission can happen through airborne transmission – infectious particles can remain in the air for a short amount of time.

Indirect transmission can also happen with inanimate objects (also known as fomites), including, but not limited to, blood, food, water, door handles, that dirty dish sponge in your sink, etc. The amount of time bacteria and virus can remain viable on these inanimate surfaces varies depending on a lot of factors – moisture, temperature, surface type, etc.

Vectors are things like mosquitoes and fleas that carry pathogens and transmit them to humans or animals – think things like West Nile Virus, Lyme Disease, and the Plague.

Reference: CDC. (2012). Principles of epidemiology in public health practice, third edition. Retrieved from Centers for Disease Control and Prevention: https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section10.html

Strategies to Prevent Spread

Non-clinical

- Regular handwashing
 - http://howdyhealth.org/scrubup
- Avoid close contact
- Masks
- Clean environment/surroundings
- · Healthy immune system

Clinical

- Routine physical/wellness checks with health provider
- Recommended vaccinations
- · Antibiotics, when necessary

(World Health Organization, 2020)

There are many ways to reduce the risk of contracting and/or spreading pathogens – some clinical, some non-clinical – but all important!

Handwashing may be one of the best things that we can do to help stop the spread of pathogens. AgriLife Extension has a great resource to "tune up" your handwashing routine and make sure you're keeping those hands squeaky clean.

During the pandemic we all got quite used to keeping our distance and wearing a mask, helping reduce the risk of transmission. These are really great practices to continue as the situation dictates but especially if you feel ill or you know someone else feels ill.

Keeping a clean environment is also a great strategy – wipe down kitchen and bathroom counters, and high touch surfaces like doorknobs, etc.

Lastly, and maybe most importantly, you want to keep your immune system healthy so that it can fight infections it may encounter. Remember, as we grow older, our immune systems are not as responsive as they once were so keeping it in top shape can help when issues arise. This includes managing stress, getting adequate sleep,

drinking plenty of fluids, and eating a balanced diet.

Working with your health provider is also a great strategy to prevent the spread or get help when you come down with something. An annual check-up with your health provider is a great start. This is a good time to discuss recommended vaccinations to make sure everything is up-to-date. Your health provider will also be able to prescribe the best course of treatment for your illness if you do become sick.

Reference: World Health Organization. (2020). Modes of transmission of virus causing COVID-19:implications for IPC precaution recommendations. Retrieved June 30, 2021, from https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations

Antibiotics

Antibiotics

Specially designed to treat specific bacterial infections.



Antibiotic Resistance

- Antibiotic resistance happens when germs no longer respond to the antibodies.
- It is important to always finish a full antibiotic prescription. Follow doctor and pharmacist recommendations.



(CDC, 2020)

Antibiotics are specially designed to treat specific infections. Your health provider will need to identify the cause of your illness in order to provide the best course of treatment. This may involve culturing (growing the bacteria in a lab setting) the bacteria to identify it.

Often times antibiotics are prescribed to take over a series of time (example: two times a day for seven days). It is important to always finish a full antibiotic prescription – remember, bacteria have been around/alive for centuries and one of the reasons for this is they adapt and evolve to survive. Antibiotic resistance can happen when bacteria no longer responds to the antibodies – if we don't take all the antibiotic, we give the bacteria an opportunity to learn a way around its effectiveness. Always take medications as prescribed but especially antibiotics. If you have concerns about the medication or how it's affecting you, don't just stop taking it – talk to your prescriber or pharmacist.

Let's also remember that antibiotics are not used to treat viral infections. Many times we go to the health provider, not feeling well, and expect to walk out the door with a prescription for an antibiotic (and we're mad if we don't, right?); but, viruses are not impacted by antibiotics.

Reference: CDC. (2020). Antibiotic Do's & Don'ts. Retrieved 30 June, 2021, from Centers for Disease Control and Prevention: https://www.cdc.gov/antibiotic-use/do-and-dont.html

Vaccines



Vaccines help prepare the body to fight a viral or bacterial infection as a method of **prevention**. This process helps build **immunity** against an infection.

Vaccines may require **multiple doses** to help increase the body's immunity. Sometimes vaccines are taken later (booster shots) after a vaccine wears out.



(CDC, 2018)

Vaccines help prepare the body to fight a viral or bacterial infection as a method of **prevention.** This process helps build **immunity** against an infection.

Vaccines may require **multiple doses** to help increase the body's immunity. Sometimes vaccines are taken later, also known as booster shots, to give your immune system a "boost."

We often only associate vaccines with childhood. And for many of us, that's the last time we had a vaccination, right? The last time we enrolled in school! But vaccinations for a variety of conditions are recommended for people across the lifespan. Talk to your health provider about the recommended vaccination schedule for your age and conditions.

Reference: CDC. (2018, August). Understanding how vaccines work. Retrieved June 30, 2021, from Centers for Disease Control and Prevention: https://www.cdc.gov/vaccines/hcp/conversations/understanding-vacc-work.html

Routine Adult Vaccinations

Vaccine	Schedule	Payment		
Flu	Annual	Medicare Part B; health insurance		
Pneumonia	Once	Medicare Part B; health insurance		
Shingles	Once (2 doses)	Medicare Part D; health insurance		
Tetanus (Diphtheria & Pertussis)	Every 10 Years	Medicare Part D; health insurance		

- Shots covered under Part B, or health insurance (check your plan), are generally available at no cost.
- Check with your Part D plan about coverage and cost.
- Talk with your health provider about other vaccinations you may need based on your situation.
 - For example, Varicella (Chicken Pox) or Hepatitis A/B

(CDC, 2021; Centers for Medicare and Medicaid Services, 2021)

For older adults, the Centers for Disease Control and Prevention recommends vaccinations for the flu, pneumonia, shingles (assuming you've previously had Chicken Pox), and Tetanus or a combined shot to address Tetanus and a couple of other conditions.

Talk to your health provider about getting up-to-date on your vaccinations. For instance, all people really need a Tetanus booster every 10 years. Did you know that? Every 10 years! Think about the last time you had a Tetanus shot.

For routine vaccinations, especially those listed above, Medicare beneficiaries may be able to get them at little or no cost. If you are not yet eligible for Medicare, check your health insurance policy to see if they cover these routine vaccinations. Many do as part of your preventive benefits. Talk to your health provider or pharmacist about accessing these benefits. For those with no insurance, check your local health department for availability of vaccinations for little or no out of pocket cost.

Also, talk to your health provider about less common vaccinations. For instance, someone who has not had Chicken Pox may need/want the vaccination for that condition. If you like to travel, you may need certain vaccinations to go certain places.

Also, if you're a caregiver or in certain high risk situations, you may need specific vaccinations.

References: Centers for Disease Control and Prevention. (2021). "Adult Immunization Schedule by Vaccine and Age Group". [Online].

https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html Last Accessed 30 June, 2021.

Centers for Medicare and Medicaid Services. (2021). Your Medicare Benefits. [Online]. Retrieved 30 June, 2021, from https://www.medicare.gov/Pubs/pdf/10116-your-medicare-benefits.pdf

Talk the Talk



- People make decisions to do or not do recommended actions for a variety of reasons.
 - Do not laugh, make fun, or minimize concerns.
 - Use personal experience (and solid, research-based information from trusted sources) to encourage.
 - Remind to make health decisions with their health provider.

Just like we don't always follow recommendations to diet or exercise for a variety of reasons, we may not follow recommendations for routine preventive health measures...including vaccinations...for a variety of reasons.

Whether it's no information – I didn't know I needed to update my shots – or misinformation – Facebook said that shot will turn my tongue plaid – people make decisions based on a variety of factors that are unique to them and very personal. Anything we say or do which challenges these beliefs or these decisions can seem threatening or an attack.

One of your handouts is a conversation guide to help inform and prepare for conversations about recommended vaccinations. Remember, though, the best encouragement and the best source of information for a person – whether they're skeptical or not – is to talk with their health provider.

Summary

- Bacteria and viruses may cause similar issues but in very different ways.
- Help control their spread through routine handwashing, keeping your distance, and working with your health provider.
- Medications may be available to help prepare, prevent, and respond to bacterial and/or viral infections.
- Check with your health provider about what is best for you.

We may not always be able to prevent infections by bacteria or viruses but we can do a lot to reduce our risk of infections. So let's roll up our sleeves and get to it!



Morgan Bradley: morgan.bradley@ag.tamu.edu

Andy Crocker: abcrocker@tamu.edu

Image Credit: US Department of Defense. (n.d.). "Rosie the Riveter Inspired Women to Serve in World War II". [Online].

https://www.defense.gov/Explore/Features/story/Article/1791664/rosie-the-riveter-inspired-women-to-serve-in-world-war-ii/ Last Accessed 30 June, 2021.



Statement

The value of the lesson was

Texas Extension Education Association, Inc. A Shot at Good Health

Scale (1= Worst, 5 = Best)

5

very valuable

Please take a moment to provide feedback on this program.

1. Regarding the **overall program/teaching** (rate your response by circling a number):

1

not valuable

The overall teaching was	1 poor	2	3	3	4	5 cellent
The teacher's knowledge of the lesson was	1 poor	2	3	3	4	5 cellent
2. Regarding what you know and actions	you pla	an to tal	ke (circl	e your re	esponse	e):
I learned new information today.					YES	NO
I plan to use the information I learne	d today.				YES	NO
I feel this information helped me und	erstand	the diffe	erence l	oetween		
viruses and bacteria.					YES	NO
I think I now know the difference bet	ween a	vaccine	and an			
antibiotic.					YES	NO
I will be able to use the conversation	guide t	o help ta	alk to ot	hers		
about the importance of vaccination.					YES	NO
3. This lesson was delivered by a(n) (check	only or	ne):				
TEEA Member Extens	sion Age	ent/Spec	ialist _	Ot	her Spe	eaker.
4. Please tell us about yourself.						
I am a Woman	Ma	ın.				
I am in District: 1 2 3 4	5	6 7	8	9 10	11	12
I have been a member of TEEA for _		yea	ars.			
My age is years-old.						
5. Additional Comments.						