Lesson: Preparing Vaccines

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Preparing Vaccines

If this is your first time taking an EZIZ lesson, watch the video to learn about navigation and other features you might find helpful. To skip this introduction and start the lesson, click “next.”

[video]

Let’s start by reviewing the navigation. The Lesson Map, Glossary, References, and Help tabs are at the top of the screen. The Lesson Map shows the list of screens in this lesson. Once you have completed a screen, you can click it to go back and review it. The Glossary shows a list of word definitions. You may also click any underlined word on a screen to go directly to its definition. The Reference tab contains a list of all the Job Aids. Some screens will also contain a printer icon. Click it to see a job aid that you can skim now or print and read later. Audio plays automatically on many screens. Use the buttons at the top right of the page to control the audio. Finally, the Next and Back buttons are at the bottom of each screen. The Next button becomes clickable when you have read all the required information on that screen. You can go back at any time. If at any time you would like more information about the navigation tools for this lesson, click the Help tab. Now you’re ready to take your first lesson.

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Introduction

Hi, I’m Elena. I’m a Medical Assistant and I will be your guide during this online lesson. When I started working as a medical assistant last year, I learned that I would be responsible for preparing vaccines. So, I took this online training, and, along with my hands on training, I quickly learned how to safely and effectively prepare vaccines. Now I feel confident and less rushed. And I no longer keep my patients waiting. All the lessons in this training are based on best practices identified by the California Department of Public Health. The quiz at the end of this lesson is based on the information in this lesson. However, protocols in your practice may be a little different. So remember, any time you have a question or concern about how something should be done, ask your supervisor or the doctor. Now we’re ready to start learning how to prepare vaccines. Click Next to continue.
Lesson Overview

Vaccines come in injectable, nasal, and oral forms. Some injectable vaccines are freeze-dried and come in powdered form. They need to be mixed with a liquid called a diluent to be reconstituted. Others come in ready-to-use vials or manufacturer filled syringes. By the end of this lesson, you will have learned how to safely prepare injectable vaccines. Did you notice that some of the words are underlined? That means that they are links to the glossary. So if you want to know what an underlined word means, just click it and you will see its definition.

Selecting the Right Vaccines

The first step in preparing a vaccine is to select the correct one. Carefully check each vaccine label against the physician’s written order. You may receive a vaccine order on a printout instead of a written physician order. Vaccine names and packaging can be very similar, so pay careful attention. Your attention to detail helps keep patients safe and healthy. Doctors often use abbreviations and product names when they write orders. Familiarize yourself with the names and abbreviations your office uses. Ask your supervisor or a doctor for help if you would like additional training in how to read vaccine labels and packaging. Next, click each of the images below to learn how to select the right vaccines.

Checking Your Vials

Carefully inspect vaccines and syringes when you take them from storage. Never use damaged vials, bent or contaminated needles, or expired vaccines. If you have any questions, ask your supervisor or the doctor. Your attention to detail helps keep patients safe and healthy. Click the images to learn more about how to check vaccines.
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**Practice Exercise: Selecting the Right Vaccines**

Now let’s practice selecting the right vaccines for the physician’s written order. Click the pictures of the two vials that match the vaccines listed on the physician’s written order. When you have finished, click *Check Answer.*

Sorry, try again.

[or]

That is correct. Click *Next* to continue.

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**Practice Exercise: Checking Vaccine Expiration Dates**

Now let’s practice checking expiration dates. Image today is May 4, 2012. Click the one vaccine that has not expired. When you are done, check your answer.

Oops, try again.

[or]

Good job. Click *Next* to continue.

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**Selecting the Right Needle**

After you select the patient’s vaccine, you need to select the right needle. The needle you use depends on the injection route. Click the play button on the right to watch an animation about needles for IM and subcutaneous injections.

[video]

Immunizations can be injected by either the intramuscular route, delivered into the muscle, or the subcutaneous route, delivered into the fatty tissue below the skin. Intramuscular injections are given with a 1-inch, 23-25 gauge needle. The needle length makes sure the needle deposits the vaccine in the muscle. Subcutaneous injections are given with a 5/8-inch, 25 gauge needle. The shorter length of the needle ensures that the vaccine is deposited into the fatty tissue under the skin.
Practice Exercise: Selecting the Right Needle

Now let’s practice choosing the right needle. Imagine you are preparing two immunizations – one intramuscular and one subcutaneous. Select the correct needle for each injection. Drag the correct length needle to the intramuscular site and the correct length needle to the subcutaneous site.

Oops, try again.

[or]

Good job! Click Next to continue.

Ready-to-use Vaccines

Now let’s learn about ready-to-use vaccines. When vaccine comes in liquid form, it does not need to be reconstituted or combined with diluent. It is ready to use. Always check the package for specific product information. Vaccines in vials are drawn up from the vial into the syringe. They come in single dose or multiple dose vials. Vaccines in manufacturer pre-filled syringes come filled with vaccine. However, they do not come with needles. You will need to attach needles to the syringes. Click Next to continue.

Drawing Up Ready-to-use Vaccines

Watch the video to learn how to draw up vaccine from a vial. Then click on the “Job Aid” icon to review the steps.

[video]

Single Dose

Remove the plastic cap. Wipe the stopper of the vial with an alcohol pad and let it dry. While the stopper is drying, remove the needle and syringe and carefully assemble them. Twist them together until you hear a distinct clicking. At this point, uncap the needle. Hold the vial steady on the counter and insert the needle straight into the center of the vial stopper. Pick up the vial, invert it, and pull the needle back until the tip is in the liquid. Pull back on the plunger until you withdraw the entire contents of the single dose vial. Withdraw the needle from the vial. If there are any air bubbles from the vial, tap it gently so the large bubbles move to the tip then gently push them out, being careful not to expel the vaccine. Now, recap the needle using care to
avoid contaminating it. At this point, the needle has not been used on a patient, so it can be recapped.

Multi Dose

When drawing up from a multi dose vial, the steps of inspection and preparation are the same, from hand washing to wiping the vial stopper with an alcohol pad to setting up your needle and syringe while the vial stopper dries. With a multi dose vial, it is important to avoid creating a vacuum in the vial by equalizing the pressure. To do this, pull back on the syringe plunger equal to the amount of one dose of the vaccine, which is usually half a cc. The air in the syringe barrel takes up the same amount of space as the vaccine you want to withdraw. Now, uncap the needle. Hold the vial steady on the counter, and insert the needle straight into the center of the vial stopper. And inject the air into the vaccine vial. Pick up the vial, invert it, and pull the needle back so the tip is in the liquid. Withdraw one dose of vaccine by pulling the barrel of the syringe back to the dose mark. Now, holding the needle and vial together, return both the needle and vial to the countertop before withdrawing the needle from the vial. Clear the vial of any air bubbles. Now, recap the needle using care to avoid contaminating it. At this point, the needle has not been used on a patient so it can be recapped. As soon as you have drawn up the vaccine, recheck it against the doctor’s order. Label the syringe. Place the syringe on the tray and return the multi dose vial to storage. Now the vaccine is ready to administer to your patient.

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Reconstituted Vaccines

Vaccines that dome in freeze-dried or powdered form need to be reconstituted with diluent before they can be drawn up into the syringe.

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Mixing and Drawing Up Reconstituted Vaccines

Watch the video to learn how to prepare reconstituted vaccines. Then, click on the Job Aid icon to review the steps.

[video]

Remove one dose of vaccine and its diluent from storage. Diluent can be stored at room temperature or in a refrigerator. Check the vaccine against the doctor’s written order and check the expiration dates. Select a syringe and needle. Remove the plastic caps from the diluent and vaccine vials, wipe the stoppers with an alcohol pad, and let them dry. Assemble your needle and syringe. Uncap the needle. Hold the diluent vial steady on the counter. Insert the needle into the center of the vial stopper, invert the vial, and pull the needle back so the tip is in the liquid. Now withdraw all the diluent into the syringe. Withdraw the needle and clear the syringe
of any air. Now hold the vaccine vial steady on the counter and insert the needle straight into the center of the stopper. Inject all the diluent. Holding the vial and syringe together, carefully shake the vial to mix it well. Now, invert the vial and pull the needle back so the tip is in the liquid. Then pull back on the plunger to withdraw all the contents. Withdraw the needle, and clear the barrel of any bubbles. As soon as you have drawn up the vaccine, check it against the doctor’s order and label it. The vaccine is now ready to be administered to your patient.

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Practice Exercise: Preparing Vaccines

Now let’s practice what you learned about preparing vaccines in this lesson. Put the photos in the correct order by dragging them to the appropriate step number. When you have finished check your answer

Oops! Try again

[Or]

Good job! Click Next to continue.

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Lesson Conclusion

That wasn’t that hard, was it? Learning how to prepare vaccines includes selecting the right vaccines, checking for expiration dates and damage, selecting the right needle, and then preparing and drawing up the vaccines so they are ready to be injected. In the next lesson, you will learn best practices for administering vaccines. Check it out! In the meantime, start practicing what you learned today. I bet your confidence will go way up and your coworkers and patients will appreciate your professionalism. I also recommend that you go to the reference tab and print the job aids from this lesson. I found them to be very helpful when I was learning how to prepare vaccines. And remember, any time something does not look or seem right, check with your supervisor or the doctor. Exit the lesson by clicking the Close button.
Lesson: Administering Vaccines

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Administering Vaccines

If this is your first time taking an EZIZ lesson, watch the video to learn about navigation and other features you might find helpful. To skip this introduction and start the lesson, click Next.

[video]

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Introduction

Hi, I’m Elena. I’m a Medical Assistant and I will be your guide on administering vaccines. If you have not yet taken the lesson on preparing vaccines, please complete that lesson first. When I first starting working as a medical assistant, I learned that I would be responsible for giving immunizations. So, I took this online training, and, along with my hands-on training, I quickly learned how to safely and effectively administer vaccines. All the lessons in this training are based on best practices identified by the California Department of Public Health. The quiz at the end of this lesson is based on the information in this lesson. However, protocols in your practice may be a little different. So remember, any time you have a question or concern about how something should be done, as your supervisor or the doctor. Now we’re ready to start learning how to administer vaccines. Click Next to continue.

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Lesson Overview

Did you know that there are four ways, or routes, to administer vaccines? Intramuscular injections are given in the muscle, subcutaneous injections are given in the fatty tissue under
the skin, oral vaccine is liquid that is put in the mouth, and nasal vaccine is sprayed into the nose. In this lesson, you will learn how to give intramuscular and subcutaneous injections. It is important to learn the proper technique and route. Giving vaccines the right way gives your patients the best protection against disease. Click Next to continue.

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Intramuscular Injections

There are two routes for injectable vaccines – intramuscular and subcutaneous. A few vaccines can be given by either route. We’ll start with the intramuscular, or IM, route which means that the vaccine is injected right into the muscle. Click each of the images on your screen to learn about the needle length and angle and learn the correct muscles for intramuscular injections. Then click Next to continue.

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Giving an Intramuscular Injection

Watch the video to learn how to give an intramuscular injection. Then click on the “Job Aid” icon to review the steps.

[video]

When you are ready to go, study the overall size of the thigh and identify the sight for needle insertion. Here she will begin with the DTaP in the left thigh, in the vastus lateralis muscle. She is using a 1-inch, 25 gauge needle. Starting at the sight, clean the area and a surrounding 2-inch radius with an alcohol prep and allow it to dry. Shake the syringe, and then grasp it like a dart. Hold the needle about an inch away from the sight. Using your non-dominant hand, compress or bunch the baby’s muscle tissue between the fingers and quickly insert the needle perpendicular to the leg surface at a 90-degree angle.

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Practice Exercise: Giving an IM Injection to a Child

Now let’s practice what you learned. Drag the needle that shows the correct angle for an IM injection to the correct site on the child. When you have finished, click Check Answer.

Good Job! Click next to continue.

[or] Sorry, try again.
Practice Exercise: Giving an IM Injection to a Baby

Now let’s practice what you learned. Drag the needle that shows the correct angle for an IM injection to the correct IM site on the baby. Then, click Check Answer

That is correct! Click Next to continue.

[or]

Oops! Try again.

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Subcutaneous Injections

Subcutaneous injections, sometimes called “subcu”, are different than intramuscular injections. They are injected into the fatty tissue just under the skin. Several vaccines are given subcutaneously. Click each of the images to learn about needles, needles angles, and sites for subcutaneous injections.

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Giving a Subcutaneous Injection

Watch the video to learn how to give a subcutaneous injection.

[video]

For administering the vaccine, expose the site and evaluate where the needle should enter. Clean the injection site with an alcohol pad and let it dry. With your non-dominant hand, pick up some fatty tissue and, holding the syringe with your dominant hand, quickly insert the entire needle at a 45 degree angle. Push down on the plunger in a smooth steady motion and inject the contents of the syringe. Enable the safety restraint. Then, immediately discard the syringe into a sharps container. Apply light pressure to the injections site with a sterile dressing. Finally, after administering the vaccines have the patient sit for a few minutes.

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Practice Exercise: Giving SC Injections

Now let’s practice what you learned. Click the image that shows the correct needle angle and route for a subcutaneous injection. When you have finished, check your answer.
Lesson Conclusion

Well, that's it for this lesson. Now you know how to clean the injection area and how to administer injectable vaccines by the intramuscular and subcutaneous routes. You will often give a patient multiple injections during a single office visit. The immunizations site map listed under the Reference tab will help you locate intramuscular and subcutaneous injection sites. It is very important that you give injections by the recommended route so make sure you check the package before you administer a vaccine. Remember, any time you have a question about administering a vaccine be sure you ask your supervisor or the doctor. If you have not given vaccines before, you will need additional instruction and practice. Ask your supervisor or the doctor what additional training you need to administer vaccines. You can begin by checking the skills checklist to see how many skills you already have, and I strongly recommend that you go to the Reference tab to print all of the Job Aids. I found them to be very helpful when I was learning how to administer vaccines. You can feel proud that you play such an important role in safely and effectively giving vaccines that protect your patients against serious diseases.
Lesson: Storing Vaccines

Welcome to Storing Vaccines

In this lesson, you’ll learn the correct way to store vaccines in refrigerators and freezers. If this is your first time taking an EZIZ lesson, watch the video to learn about navigation and other features you might find helpful. To skip this introduction and start the lesson, click Next.

[video]

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Introduction

Hi. I’m Cecilia. I’m a medical assistant and the Vaccine Coordinator in our practice. I work in a pediatric office where everyone is committed to protecting the vaccine that protects our patients!

In my role as Vaccine Coordinator, I am responsible for overseeing proper storage of our vaccine supply. We also have a Backup Vaccine Coordinator who is responsible for the vaccine supply when I’m not here. Click on the job aid icon for more information.

In this lesson, you’ll learn how to set up vaccine refrigerators and freezers. First you’ll learn how to prepare refrigerators and freezers for vaccine storage. Then you’ll learn how to store vaccines in them.

All the lessons in this training are based on best practices identified by the California Department of Public Health. But protocols in your practice may be a little different. So remember, any time you have a question or concern about how something should be done, ask your supervisor or the doctor, or call the VFC program. The post-lesson check at the end of this lesson is based on the information in this lesson.
Placing Vaccine Storage Units

Before your practice purchases vaccine storage units, decide where they will be placed and measure to ensure units will fit in that space!

Vaccine storage units should be placed in rooms with good air circulation; should have 4 inches of space around the top, sides, and back; and should have a designated outlet. Do not put the refrigerator or freezer in public areas, or in the sun, or next to a heat source.

Did you notice the underlined words? Click them to see the definition in the glossary.

Vaccine Storage Units

Refrigerators and freezers come in many styles and sizes. However, they are not equally good at keeping vaccines at the right temperatures.

Vaccine storage units come in household, commercial, and pharmaceutical grades.

Your vaccine storage units must have enough room to hold the year’s largest monthly inventory of refrigerated vaccines—including flu vaccine during flu season.

If you will be buying a vaccine refrigerator or freezer, it must meet VFC equipment requirements.

Click each picture to learn about the types of vaccine storage units. Click each picture to learn about the types of vaccine storage units.

A refrigerator-only unit is also called a freezerless refrigerator. The VFC Program prefers refrigerator-only units because of their ability to keep temperatures constant. Most VFC providers are required to store refrigerated vaccine in refrigerator-only units. Almost all of the space in refrigerator-only units is usable. They have fans that promote good air circulation throughout the refrigerator. This keeps the temperature stable.

These are stand-alone freezers. One is an upright freezer. The other is a chest freezer.
This is a household combination unit. It has both a refrigerator and a freezer. Unfortunately, these units have disadvantages; their temperatures tend to fluctuate and they can have warm and cold spots.

The VFC Program allows combination units only under very limited conditions. If you are unsure about what is required for your practice, contact your VFC representative.

Most refrigerators in combination units do not have fans to keep air circulating. They have one or more cold air vents at the top of the refrigerator, in the back. The vents release freezing cold air, which can damage vaccines. If your practice has a combination unit, you must keep vaccines away from the air vent. If you don’t, the vaccines could freeze.

This means that the refrigerator in a combination unit has less usable space than a refrigerator-only unit.

Dormitory style refrigerators have a small freezer inside them that has visible cooling plates, which often have frost or ice formations on them.

California VFC providers are not allowed to store VFC vaccines in these units—not even for short-term use—because units can’t maintain vaccines at the required temperatures.

Preparing a Refrigerator for Vaccine Storage

You need to prepare the refrigerator before you store vaccines in it. Click each step to learn how to prepare a refrigerator for vaccine storage.

[Step 1 Remove drawers and bins.]
Vaccines should not be stored in refrigerator doors, drawers or bins. If your refrigerator has drawers or bins, remove them.

[Step 2 Put in water bottles.]
Fill the refrigerator floor with water bottles. Put water bottles in the door and on the top shelf, underneath the cold air vent. Do not block air vents.

[Step 3 Place thermometer probe.]
Place a VFC-compliant thermometer in every refrigerator that stores VFC vaccines. If you don’t yet have one, click on the job aid icon to learn more.
Place the probe of the thermometer in the center of the refrigerator.

You also need to have a backup VFC-compliant thermometer handy in case a problem develops with the one in the refrigerator.
[Step 4 Attach the digital display.]

Next, attach the thermometer’s digital display to the outside of the refrigerator, either on the door or on the side. Set the mode so that the digital display shows MIN and MAX temperatures.

[Step 5 Plug in refrigerator.]

Plug in the refrigerator. Secure the plug with a plug guard or cover, and post a “Do Not Unplug” sign.

[Step 6 Set temperature.]

Refrigerator temperatures must be kept between 35 and 46 degrees Fahrenheit.

- If the refrigerator has a thermostat, set it at 40 degrees Fahrenheit.
- If it has a dial with a range of settings, set it to the middle of the range.

The next morning, check the temperature and adjust it until it stabilizes at approximately 40 degrees Fahrenheit.

[Step 7 Record temperatures]

Once the temperature has stabilized, record current, minimum, and maximum temperatures on the VFC temperature log twice a day. Set the alarm on the thermometer.

Do not store vaccines in the refrigerator until the temperature has stabilized around 40 degrees Fahrenheit for 3 to 5 days.

If you do not know how to record refrigerator temperatures on the temperature log, learn how by taking the EZIZ lesson Monitoring Refrigerator Temperatures. For more information about storage and handling requirements and how to prepare for an emergency, refer to the Routine and Emergency Vaccine Management Plan job aids.

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Storing Vaccines in a Refrigerator

Vaccines must be stored properly to ensure that they remain usable. Most vaccines should be stored in the refrigerator except MMRV (also called ProQuad), varicella, and zoster vaccines which should be stored in the freezer. MMR may be stored in either the refrigerator or the freezer, but the VFC program recommends storing it in the freezer.

The biggest danger to refrigerated vaccines is exposing them to freezing temperatures, which can permanently damage the vaccine.

First you need to organize and label the space in the refrigerator. Label one area for VFC vaccine and a separate area for privately-purchased vaccine. Then, label baskets by type of vaccine. Plastic, mesh containers are recommended because they allow for good air circulation. Now you’re ready to store the vaccines.

Do not remove any vaccine from its original packaging until you’re ready to administer it.
Put vaccines with the earliest expiration dates in the front of the shelf. Vaccines with the latest expiration dates go in the back. In this example, December 31, 2014 is the earliest expiration date, so that box will be stored in front of the box with the latest expiration date of June 30, 2015. If you have vaccines that will expire in 3 to 6 months that you will not be able to use, notify the VFC Call Center.

Group vaccines in the mesh baskets according to patient age group, such as pediatric and adolescent. Leave two to three inches between the baskets and the walls of the refrigerator. Make sure that the door is shut at the end of the day.

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Preparing a Freezer for Vaccine Storage

You also need to prepare a freezer before you can store vaccines in it. Click each step to learn how to prepare a freezer for vaccine storage.

[1 Put in cold packs.]
In an upright freezer, put a few cold packs in areas where vaccine cannot be stored, like the door, top shelf, and floor.
In a chest freezer, put a few cold packs in the basket at the top or, if your unit doesn’t have a basket, place cold packs at the bottom.

[2 Place thermometer.]
Place a VFC-compliant thermometer in every freezer that stores VFC vaccines to ensure accurate temperatures. Place the thermometer probe in the center of the freezer near the vaccines.

[3 Attach the digital display.]
Attach the digital display to the outside of the freezer, either on the door or on the side. Set the mode so that the digital display shows MIN and MAX temperatures.

[4 Plug in the freezer.]
Plug in the freezer. Secure the plug with a plug guard or cover. Post a “Do Not Unplug” sign. [5]
If the freezer has a thermostat, set it at -5 degrees Fahrenheit. If it has a dial with a range of numbers, set it in the middle. The next morning, check the temperature and adjust it until it stabilizes below 0 degrees Fahrenheit.

[5 Set the temperature.]
Frozen vaccine must be kept below 5 degrees Fahrenheit. If the freezer has a thermostat, set it below 0 degrees Fahrenheit. If it has a dial with a range of settings, set it to the coldest.
Check the temperature the next morning. Adjust the thermostat until the temperature stabilizes below 0 degrees Fahrenheit.

[6 Record temperatures.]

Once the temperature has stabilized, record current, minimum, and maximum temperatures on the VFC temperature log twice a day. Set the alarm on the thermometer.

Do not store vaccines in the freezer until the temperature stays below 0 degrees Fahrenheit for 3 to 5 days. If you do not know how to record freezer temperatures on a temperature log, learn how by taking the EZIZ lesson Monitoring Freezer Temperatures.

Storing Vaccine in the Freezer

Now you’re ready to store vaccines in the freezer. Click each number to learn more.

[1] Organize the freezer by labeling one area for VFC vaccine and a separate area for privately-purchased vaccine.

[2] Do not remove vaccine from its original packaging until you’re ready to administer it.

[3] Place vaccine in breathable, plastic, mesh baskets and clearly label them by type of vaccine. Do not store diluent in the freezer.

[4] Put vaccines with the earliest expiration dates in the front of the unit. Vaccines with the latest expiration dates go in the back. If you have vaccine that will expire in 3 to 6 months that you will not be able to use, notify the VFC Call Center.

[5] Keep freezer temperatures below 0 degrees Fahrenheit so that the freezer will stay cold enough even if there are minor temperature fluctuations.

Safeguard the Power Supply

Even if we use all the vaccine storage best practices, we can still lose our entire supply of vaccine if somebody accidentally unplugs the refrigerator or freezer! We have to do everything we can to make sure that doesn’t happen.

Electricity to the refrigerator and freezer must never be interrupted. We may not be able to prevent a power failure, but there are many things we can to do prevent the power supply from being accidentally cut off. Click each box to learn how to protect the power supply for vaccine storage units.

[1] Plug the vaccine storage unit into a nearby outlet. Secure plug with a guard or cover and post “Do Not Unplug” signs near the outlet.
[2] Use labels to identify fuses and circuit breakers for vaccine storage units. Post a notice that the Vaccine Coordinator should be alerted any time the power goes out.

[3] Do not use extension cords or power strips that have On/Off power switches.

[4] Do not use outlets that are controlled by wall switches or outlets that have built-in circuit switches. They have little red reset buttons.

[5] Do not plug more than one appliance into an outlet. Sharing an outlet or circuit with a microwave, coffee maker, heater, or other appliance could trip the circuit breakers. If that happens, you may need a dedicated circuit for each vaccine storage unit, depending on the type of unit and power supply.

[6] Never unplug the vaccine refrigerator or freezer.

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Practice–Storing Vaccines

Now practice what you’ve learned about storing vaccines. Look carefully at the refrigerator and freezer. Drag items that do not belong in the refrigerator or freezer to the circles on the right. Next, drag the items on the table to the appropriate circles inside the refrigerator and freezer. Make sure to fill in all of the circles. Click check answer to continue.

Not quite. Try again!

[or]

That is correct.

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Storing Vaccines–What You Learned

In this lesson you learned how to:

- Prepare a refrigerator for vaccine storage.
- Store vaccines in a refrigerator.
- Prepare a freezer for vaccine storage.
- Store vaccines in a freezer.
- Safeguard the refrigerator and freezer power supplies.

I strongly recommend that you go to the Reference tab and print the job aids from this lesson. I found them to be very helpful when I was learning how to store vaccines. Remember, any time something does not look or seem right, check with your supervisor or the doctor, or the VFC program. So that’s the end of this lesson.
Lesson: Conducting a Vaccine Inventory

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Conducting a Physical Vaccine Inventory

Before you start, watch the video demonstration to learn about navigation and other features you might find helpful during this lesson. Then, click Next to begin.

[video]

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Welcome to Conducting a Physical Vaccine Inventory

Hi. I’m Jessica. I’m the Vaccine Coordinator in a busy family practice.

Welcome to the lesson Conducting a Vaccine Inventory. As a provider in the California Vaccines for Children program you are required to do an inventory of all your VFC vaccine every time you order.

In this lesson, you’ll learn how to do a physical inventory of vaccines. All the lessons in this training are based on best practices identified by the California Department of Public Health… But protocols in your practice may be a little different. So remember, any time you have a question about how something should be done, ask your supervisor, or the doctor… and call the VFC program or your rep.

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Process for Ordering VFC Vaccine
The process for ordering VFC vaccine consists of four major activities:

- Conducting a physical inventory of VFC vaccines
- Determining the number of doses you’ve used since your last vaccine order
- Calculating how many doses of VFC vaccine you need to order, and
- Completing the vaccine order form

In this lesson you’ll learn how to do the first one—conducting a physical inventory of vaccines. You’ll learn how to:

- Find vaccine names, brand names, lot numbers, expiration dates, and types of packaging,
- Count the number of doses on hand of each vaccine by lot number and expiration date, and
- Enter lot numbers, expiration dates, and total number of doses on the Vaccine Inventory Form.

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The Physical Inventory

Click each bar to learn about conducting a physical inventory.

When you conduct a physical inventory of vaccine, you count all the doses of all the VFC vaccine that you have on hand in your refrigerator and freezer by lot number and expiration date. If you also have private vaccine, you can inventory it at the same time.

It’s called a physical inventory because all vaccine is physically counted.

A physical inventory is also called a “fridge count” and a “freezer count.”

When you do a physical inventory you’ll find any short-dated vaccine that could be transferred to another office or to another provider.

The VFC Program requires your practice to account for every dose of VFC vaccine it receives.

If your inventory isn’t correct, your vaccine order might be delayed by the VFC office. If it is, you might have to do the inventory over again.

Providers are financially responsible for their VFC vaccine. If vaccine is allowed to expire, the practice might have to pay for it.

When you do a physical inventory you know exactly how much vaccine you have and when it expires. Also, if a vaccine is recalled, you will quickly be able to determine if your practice received any of the recalled vaccine.

Providers in the California Vaccines for Children Program are required to conduct a physical inventory every time they order vaccine. However the VFC Program recommends that providers
conduct a physical inventory at least once a month, and even more often, depending on practice size and needs.

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The Vaccine Inventory Form

This is the form you'll use when you take inventory. It lists all the VFC vaccines.

- These are the names of the vaccines.
- Next to them are the brand names of the vaccine, whether they are packaged as vials or syringes, and the number of doses in a box.
- This is where you write the lot number for each vaccine you have in your inventory. Be sure to look at the lot number on every box of vaccine. You need to write every lot number.
- This is where you write the expiration date for that lot number.
- This is where you write the total number of doses of that lot number.
- This is where you write the total number of doses of that vaccine.

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Locating Information on Vaccine Boxes

When you do a physical inventory you need to find the vaccine name, brand name, lot number, and expiration date on the vaccine box so that you can correctly complete the Vaccine Inventory Form.

If you don't know how to read expiration dates, learn how in the EZIZ lesson, Preparing Vaccines.

Click each image to see how information is shown on vaccine boxes. When done, click Next to continue.

This is the name of the vaccine.

This is the brand name of the vaccine.

This is the lot number and the expiration date for this vaccine.
Practice—Counting Doses in Full Boxes

Count the number of doses of each vaccine. Then drag the correct number to the Total Doses line. The section of the inventory form on the right shows the number of doses in a full box.

That's correct!

[or]

Oops try again. Remember to check the Vaccine Inventory Form for the number of doses in a box.

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Counting Individual Doses

When you do a physical inventory you’ll probably find several opened boxes of vaccine that have had doses removed. You may also find a multi-dose vial that has had doses removed. It is important to count every dose.

Click the images below to learn how to count individual doses. When done, click Next to continue.

If the vial caps are all the same color, then each one is one dose. This box contains eight doses.

If the vial caps are different colors, then it takes one of each color to make one dose. This box contains two doses.

If the box contains vials and syringes, then it takes one of each to make one dose. This image shows four doses.

This vaccine comes in a 10-dose vial. There is only one vial in a box. You can see that someone has made three hatch marks on the vial. That means that three doses have been removed, so there are 7 doses left.

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Practice—Counting Individual Doses

Practice what you’ve learned about counting doses in opened boxes.
Count the number of doses in each box of vaccine. Then drag the correct number of doses to the Total Doses line. The section of the inventory form on the right shows the number of doses in a full box.

That’s correct!

[or]

Oops, try again. Remember when caps are different colors, it takes one of each to make one dose.

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Counting All Doses of VFC Vaccine

When you do a physical inventory, you count all vaccine on hand. Click the images below see how to count all doses of a vaccine. When done, click Next to continue.

This picture shows 5 unopened boxes. Each box contains 5 doses. So 5 boxes multiplied by 5 doses equals 25 doses in the unopened boxes. There is also an opened box with 3 doses. So 25 doses plus 3 doses equals 28 doses total of this vaccine.

In this picture there are 3 unopened boxes. Each box contains 10 doses. So 3 boxes multiplied by 10 doses equals 30 doses in the unopened boxes. There is also an opened box with 9 doses. So 30 doses plus 9 doses equals 39 doses total of this vaccine.

This picture shows 4 unopened boxes. Each box contains 10 doses. So 4 boxes multiplied by 10 doses equals 40 doses in the unopened boxes. There is also an opened box with 7 doses. So 40 doses plus 7 doses equals 47 doses total of this vaccine.

There are two boxes in this picture—an opened box and an unopened box. The unopened box contains 5 doses. The opened box contains 2 doses. So 5 doses plus 2 doses equals 7 doses of this vaccine.

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Practice—Counting All Doses of VFC Vaccine

Now you’ll practice what you’ve learned about counting all doses of a vaccine.
Count the total number of doses of both vaccines. Then click the brand name that shows 14 doses of vaccine.
When done, click Next to continue.

Sorry, try again.

[or]

That’s correct!

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Practice—Completing the Vaccine Inventory Form

Now you’ll practice entering all required information on the Vaccine Inventory Form.
Count the number of doses. Then drag all required information to the correct spaces on the inventory form.
When done, click Next to continue.

That’s correct!

[or]

Oops, try again.

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Process—How to Do a Physical Inventory

Click the numbered steps to learn how to do a physical inventory.

Step one: Print a copy of a blank VFC Inventory Form. If your practice uses an immunization registry, also print a copy of the inventory report.

Step two: Determine which vaccine is VFC vaccine. Many practices keep all of their VFC vaccine on one shelf in the refrigerator, and keep their private stock on a different shelf. Your VFC vaccine should be clearly labeled.
To learn best practices for storing VFC vaccine, go to the EZIZ lesson, Storing Vaccines.

Step three: Remove all doses of the first vaccine. Then close the refrigerator door.

Step four:
- Group the vaccine by lot numbers.
• Be sure to look at the lot number on every box of vaccine.

Step five:
• Write a check next to the brand and packaging.
• Write the first lot number of that vaccine and its expiration date; if any vaccine has expired or will expire within three months, tell your VFC rep.
• Count all doses of that lot number and write the total in the number of doses on hand space; be sure to count all doses in all opened boxes.
• Do the same for each lot number of that vaccine.
• Add the number of doses on hand for all the lot numbers of that vaccine and write it in the Total Doses on Hand column.

Step six: Be sure you put all the doses of that vaccine back in the refrigerator or freezer in order of expiration date with the short-dated vaccine in the front.

Step seven: Repeat those steps for every vaccine you have in your refrigerator and freezer. When you have finished, make sure that all vaccine has been returned to the refrigerator and freezer and that their doors are closed.

If you also printed an inventory report from an immunization registry, and any of the number of doses on that report is different than the number of doses you wrote on the inventory form, you may need to figure out why.

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Physical Vaccine Inventory – What You Learned

In this lesson you learned how to:
• Count all VFC vaccine in your vaccine inventory,
• Locate vaccine name, brand name, lot number, and expiration date on vaccine boxes,
• Find doses per box and type of packaging on the VFC Vaccine Inventory Form, and
• Complete the VFC Vaccine Inventory Form.

Go to the References tab now and print the job aids for this lesson.
When you're ready, click the Close button. It will take you right to the Post-lesson Check.

You might also want to take the EZIZ lessons Preparing Vaccines and Storing Vaccines after you complete the Post-lesson Check.
Lesson: VFC Program Requirements

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Before you start, watch the video demonstration to learn about navigation and other features you might find helpful during this lesson. Then, click Next to begin.

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Welcome to the EZIZ lesson on VFC Program Requirements. I'm Jessica. I'm a medical assistant here at Citrus City Pediatrics. I am also the VFC Vaccine Coordinator.

And I’m Dr. Morales. I’m the medical director of Citrus City Pediatrics. I’m also the VFC Provider of Record. We’ve been a VFC provider for more than 5 years.

This lesson, as well as the other lessons in the EZIZ Training, was developed to help you acquire the skills you need to be successful as a VFC provider.

If your practice is currently a VFC provider, the Provider of Record agreed to comply with federal VFC requirements when you joined the VFC program.

If you haven’t yet joined the VFC program, you should be aware that there may be costs associated with being a VFC provider, such as calibration of thermometers and the purchase of VFC-acceptable refrigerators and freezers.

The tools, forms, job aids, and lessons you see or hear about in this lesson are available at eziz.org.

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The practice I work in is one of four thousand VFC provider practices in California that supplies vaccines at no cost to more than five million children each year.

VFC vaccine is purchased with federal funds and provided at no charge to VFC-enrolled providers, who in turn provide the vaccine at no charge to eligible children.

Click the images below to learn more about the VFC Program. When done, click Next to continue.

When we decided to join the VFC program, I downloaded an enrollment packet from the EZIZ website. It outlines all the requirements and contains the forms we needed to complete to be a VFC provider.

When I filled out the Provider Supplemental Information on the Provider Enrollment Form, I estimated the number of children in our practice who are VFC-eligible and the number who are not.
I reviewed and agreed to the requirements in the rest of the documents in the enrollment packet. I agreed to use only vaccine storage units that meet VFC requirements.

I recertify our enrollment in the program every year by agreeing to comply with the program’s requirements. That way we can stay in the VFC Program and continue to receive VFC vaccine.

There are three VFC roles that must be assigned in every VFC provider practice. We must notify the VFC program any time the people in those roles change.

In our practice I’m a medical assistant, but my VFC role is Vaccine Coordinator.

One of our other medical assistants is my Backup Vaccine Coordinator.

I’m the VFC Provider of Record. Since I’m the one who agreed to the VFC Program’s requirements, I’m the one who is ultimately responsible for the practice’s compliance.

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We are allowed to give VFC vaccine only to children who are eligible. Not all of our patients are eligible to receive VFC vaccine.

We are required to screen all patients for VFC eligibility and document their eligibility status at every immunization visit. We’re also required to keep that documentation for 3 years.

Click the images below to learn what is required during the patient visit. When done, click Next to continue.

Children are eligible to receive VFC vaccine if they are less than 19 years old and meet any of these criteria:

- They are in the Medi-Cal insurance program,
- They are in the Child Health & Disability Prevention Program, also called CHDP,
- They have no health insurance,
- They are American Indian or Alaskan Native, or,
- They are underinsured, which means that their insurance doesn’t cover vaccines.

Children who are underinsured, however, can only receive VFC vaccine at a Federally Qualified Health Center (also called a FQHC) or a Rural Health Clinic (also called an RHC).

Administering VFC vaccine to non-VFC eligible patients for any reason is not allowed and can result in termination from the VFC Program. If we administered VFC vaccine to private patients, it could be considered fraud, and I could be investigated.
The Advisory Committee on Immunization Practices, or ACIP, is a group of medical and public health experts that develops recommendations on how to use vaccines.

As a VFC provider, whenever we administer immunizations, we must comply with ACIP recommendations about immunization schedules, dosages, and contraindications. We must offer all age-appropriate vaccines.

Before we administer an immunization we are legally required to give the patient or the parent the most current version of the Vaccine Information Statement, or V-I-S, about that vaccine.

We record information about each immunization, including:

- The version date on the V-I-S that was given to the patient or parent.
- The name of the vaccine given, lot number, and injection site, and
- The date the vaccine was given and the name of the person who gave it.

We must keep this information on file for 3 years.

We used to enter the information in patients’ charts by hand. Now our practice uses an electronic immunization registry to record the information. It would also be okay if we used an electronic health record system, or EHR, instead, as long as it was capable of recording all the immunization information we need for our documentation.

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The requirements and laws about charging fees related to VFC vaccines are very specific.

- As VFC providers, we do not pay for VFC vaccine, so we do not charge patients for the vaccine. We do not bill any patient, Medi-Cal, or any insurance company for VFC vaccine. If we billed for VFC vaccine, that would be fraud.

- VFC providers are allowed to charge patients a vaccine administration fee, except for Medi-Cal patients. Providers may bill Medi-Cal for the administration fee. The fee can be any amount up to the maximum stated in the VFC Provider Enrollment Agreement.

- But, we are not allowed to deny a VFC-eligible patient an immunization just because they or their parent is not able to pay the administration fee. In those situations, we have to waive the administration fee, but other office visit fees may still be charged.
As Vaccine Coordinator, I’m responsible for the management of our vaccine inventory. Vaccine inventory management consists of four major activities:

We conduct a vaccine inventory to determine how much vaccine we have on hand.

Vaccine Coordinators are required to take the EZIZ lesson, Conducting a Vaccine Inventory.

We determine the number of doses used.

We determine how much vaccine we need and place our order online.

The Vaccine Coordinator— that’s me— and the provider-of-record— that’s Dr. Morales— are responsible for ordering vaccine. Reps from drug companies are not allowed to order vaccine for us.

When our order arrives, we carefully follow the VFC guidelines for receiving vaccines.

Our practice receives more than eighty thousand dollars’ worth of VFC vaccine every year. And larger VFC providers receive way more! Everyone is responsible for proper storage and handling of vaccine.

Click the images below to learn more. When done, click Next to continue.

As Vaccine Coordinator, I’m responsible for two vaccine management plans—a routine vaccine management plan and an emergency vaccine management plan.

At least once a year we review both plans with staff and revise the plans as necessary. We also update the plans when vaccine management practices change or when there is a change in staff that have responsibilities identified in the plans.

As the Provider of Record, I need to be sure that our Routine Vaccine Management plan describes the actions we need to take on a day-to-day basis to ensure proper storage and handling of our vaccine supply.

The Certification of Capacity to Store and Manage Vaccines that I agreed to outlines the requirements we addressed in our routine vaccine management plan, including:

- The roles and responsibilities of the Provider of Record and the Vaccine Coordinator
- Vaccine storage and handling requirements
- Reporting of storage and handling incidents
- Thermometer requirements
• Requirements about labeling VFC and privately purchased vaccine
• Vaccine ordering requirements, and
• Requirements for receiving vaccine

If we have a loss of VFC vaccine that we could have prevented, our practice may be financially responsible for the cost of that vaccine.

We are also required to have an emergency vaccine management plan in case of power outages and breakdowns of vaccine refrigerators and freezers.

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Our routine vaccine management plan explains what we do to meet the VFC Program’s vaccine storage and handling requirements.

Vaccine Coordinators are required to take the EZIZ lesson Storing Vaccines where they learn how to:

• Prepare refrigerators and freezers for vaccine storage,
• Store vaccines in refrigerators and freezers, and
• Safeguard refrigerator and freezer power supplies

We label our VFC vaccine and privately purchased vaccine, and keep them separate in the refrigerator and freezer. And we always order enough vaccine so we don’t run out of either our VFC or private vaccine stock. We are not allowed to borrow vaccine from our VFC stock to administer to our private patients.

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Our routine vaccine management plan also describes what we do to meet VFC Program requirements for monitoring temperatures in our vaccine refrigerator and freezer, so that the vaccine is kept at acceptable temperatures. If we ever find temperatures that are unacceptable, we must take the actions listed on the temperature logs.

As Vaccine Coordinator I am responsible for recording refrigerator and freezer temperatures on temperature logs twice a day. When I’m not here, my backup is responsible for doing it.

We use calibrated thermometers to monitor temperatures. Thermometer calibration must be tested every one to two years, or according to manufacturer recommendations.

Vaccine Coordinators are required to take the EZIZ lessons Monitoring Refrigerator Temperatures and Monitoring Freezer Temperatures where they’ll learn:

• How to read a Min/Max thermometer,
• How to record minimum, current, and maximum temperatures,
• How to identify acceptable and unacceptable temperatures,
• How to complete refrigerator and freezer temperature logs,
• What actions to take if temperatures are not acceptable, and
• How long to keep temperature logs.

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As a VFC provider we see the VFC Program as our partner. As with any partnership, having a clear, two-way communication process helps ensure we stay current about program changes. It also helps us identify problems quickly and work with the VFC Program to find solutions. We have several ways to communicate with the VFC Program. The best way is to use the VFC website, eziz.org. Play the video to learn more.

We use EZIZ for almost everything! We use it to:
• Access current and past memos, emails, and fax blasts,
• Keep up to date about vaccine availability, what to expect during the next flu season, and any VFC program changes,
• Find contact information for VFC field reps,
• Increase our skills by taking EZIZ training,
• Print job aids that give step-by-step instructions for how to do many of our VFC responsibilities,
• Download and print forms we use to document eligibility, take inventory, log doses used, log temperatures, and
• Order vaccine online and recertify every year as a VFC provider through MYVFCVACCINES.

If you aren’t familiar with EZIZ, check it out! I know you’ll find it useful in your role as Vaccine Coordinator.

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Sometimes I need to speak with a live person. That’s when the VFC Call Center is my go-to place.

There are some situations, though, that can only be handled by my VFC Field Rep.
Hi. I'm Thyrone. I'm a Customer Service representative in the VFC Call center. We get many different kinds of questions from VFC providers on our 800 number. We're trained to answer all of them. We get a lot of questions about vaccine orders. We do our best to help providers, so that their vaccine shipments won't be delayed. We also process all the vaccine orders right here.

(Field rep) Hi. I'm Steve. I'm a field representative in the Bay Area Region.

When Jessica’s practice first enrolled in the VFC program, I went there to do the new provider site visit. I checked their refrigerator and freezer to make sure they were working properly, and gave Jessica a packet of materials to help her get up to speed with her new duties as VFC Vaccine Coordinator. I told her to call me if she needs anything.

At least once every other year I go there to conduct a site visit to make sure that they are meeting VFC requirements. Sometimes I'll do a training for staff while I'm there. When I find problems, I work with Jessica to develop a corrective action plan to fix the problems. I may also drop by for an Unannounced Storage and Handling visit.

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When our field representative comes here, he reviews our documentation. He looks at a sample of our patients’ charts to make sure that patient eligibility screening has been done correctly, and that we have documented that we gave V-I-Ss to patients for all the immunizations they received.

He also looks at other documentation, including:

- Temperature logs,
- The thermometer calibration certificate,
- Inventory records,
- Vaccine usage logs, and
- Invoices for privately-purchased vaccine.

VFC-related records and documentation need to be kept for up to three years.

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During this lesson you learned about the requirements that California VFC providers are expected to comply with to help ensure their success as VFC providers. If you are currently a VFC provider, you already agreed to comply with program requirements when you joined the program.
As VFC providers we are required to:

- Have a Vaccine Coordinator, Backup Vaccine Coordinator, and Provider of Record who understand their roles and responsibilities,
- Let the VFC Program know if any of the people in those roles change,
- Document that all patients receiving VFC vaccine have been screened for eligibility before receiving VFC vaccine, and
- Record specific information about each immunization.

We are also required to:

- Comply with ACIP recommendations,
- Have routine and emergency vaccine management plans,
- Make sure we don’t have a vaccine loss that could have been prevented,
- Charge no more than the allowable vaccine administration fee,
- **Not** refuse to immunize a patient due to inability to pay the administration fee,
- **Not** borrow VFC vaccine to administer to private patients, and
- **Not** bill for VFC vaccine.

And remember that the VFC program is always there to help you. The EZIZ web site is available 24/7. Reps in the VFC call center are available during regular business hours. And your VFC field representative is there to help you, too.

Next, click the Close button. You will automatically be taken to the post-lesson check.