Slide 1

Hello and welcome to this webinar. My name is Lieutenant Commander Neil Murthy, and I am a U.S public health service medical officer at the Centers for Disease Control and Prevention. Vaccines are critical tools that we have to protect populations, and in this webinar, we’re going to discuss how you as a frontline healthcare worker can employ best practices to prevent common errors in vaccine administration.

Slide 2

The ongoing COVID-19 pandemic has placed a great strain on our nation’s public health and healthcare system. As of March 2021, there have been over 27 million cases and over half a million deaths from this disease.

Slide 3

Public interest in vaccines has renewed ever since the Food and Drug Administration authorized the use of multiple COVID-19 vaccines under emergency use authorization.

Slide 4

Some of these products require two doses

Slide 5

While other products only require a single dose.

Slide 6

Regardless of the type of vaccine, frontline healthcare workers are responsible for safely handling and administering vaccines to patients. How you prepare and administer vaccines is critical to ensure that vaccines remain safe and effective at protecting patients and saving lives.

Slide 7

In this webinar, we will recognize the common vaccine administration errors and learn how to prevent such errors from occurring so that you can build public trust in all vaccines. Improper vaccine administration can reduce vaccine potency, resulting in inadequate immune responses in patients and poor protection against disease.

Slide 8

You play a critical role in ending the COVID-19 pandemic. Let’s get started!

Slide 9

So, what is a vaccine administration error?

Slide 10

Vaccination errors are any preventable event that may result in inappropriate use or patient harm while the vaccine is in the control of the health care professional, patient, or consumer.

Slide 11

For the rest of this presentation, we will talk about common vaccine errors that occur with all types of vaccines and go over a few specific considerations with the COVID-19 vaccines as well.

Slide 12

There are many underlying causes of vaccine administration errors.

Slide 13

But all these causes lead to the most common vaccine administration errors presented here. For the rest of this webinar, we’ll talk about each of these error types and talk about how to prevent these common errors when administering vaccines to your patients.

Slide 14

Let’s start with scheduling errors.

Slide 15

So what is a scheduling error?

Slide 16

A scheduling error is when any dose is administered too early, either before the minimum time interval between doses or before the minimum age requirement for that vaccine.

Slide 17

In the context of COVID-19 vaccines, the minimum time interval between doses for the Pfizer BioNTech vaccine is 21 days and the minimum time interval between doses for the Moderna vaccine is 28 days.

Slide 18

And the minimum age requirements are 16 years of age for the Pfizer BioNTech vaccine, and 18 years of age for Moderna and the Janssen Johnson & Johnson vaccine. Any dose administered too early, either before the minimum time interval between doses or before the minimum age requirement for either vaccine would be considered a scheduling error.

Slide 19

There are many tools that health care workers can use to avoid making scheduling errors.

Slide 20

Depending on the type of vaccine, one tool is standing orders. Where authorized under state law, standing orders allow nurses and other health care professionals to assess the need for routine vaccines for a patient. Then, the healthcare professional can administer the vaccine to those patients who meet the criteria without the need for a clinical examination or a direct order from the attending provider at the time of the interaction.

Slide 21

Additionally, a screening questionnaire should be used consistently to avoid giving a vaccine to a patient for whom it is contraindicated or to avoid missing any opportunities to vaccinate because of false contraindications. It can also prevent vaccines from being administered outside the approved age range.

Slide 22

And lastly, for vaccines in a series that require additional doses, always schedule the follow up appointment for the next dose during the patient encounter for the first dose of the vaccine.

Slide 23

Currently for the COVID-19 vaccines requiring two doses,

Slide 24

There is a 4-day grace period for the minimum time interval between the first and second doses.

Slide 25

where patients may return up to 4 days earlier than the recommended time intervals to receive their second dose.

Slide 26

However, do not use the grace period to schedule the second dose

Slide 27

and try to schedule the second dose as close to the recommended time intervals as possible.

Slide 28

By proactively scheduling the second dose appointment 21 days after the first dose for the Pfizer-BioNTech vaccine,

Slide 29

And 28 days after the first dose for the Moderna vaccine

Slide 30

health care providers can avoid inadvertently administering second doses that are too early.

Slide 31

Additionally, by proactively scheduling the second dose at the first dose visit, patients do not have to call and schedule their second dose eliminating additional patient burden and helping ensure that patients return for their second dose.

Slide 32

Although there is no maximum interval between the first and second dose for either the Moderna or the Pfizer-BioNTech vaccines, it is recommended to administer the second dose within 6 weeks after the first dose as there are limited data on efficacy beyond this time.

Slide 33

If the second dose is administered beyond the recommended time intervals, there is no need to restart the series.

Slide 34

Other strategies to prevent scheduling errors include obtaining a complete vaccination history, using immunization information systems, previous medical records, and personal vaccination records to determine which vaccines are needed at the current visit.

Slide 35

And to train clinic staff on the timing and spacing of vaccines.

Slide 36

Now let's give you an opportunity to check your knowledge so far. What do you think? True or False? For COVID-19 vaccines that require two doses, you need to restart the series if the second dose is given outside the recommended time intervals.

Slide 37

FALSE. The recommended time interval between doses for the Pfizer-BioNTech vaccine is 21 days, and for the Moderna vaccine is 28 days. However, do not restart the series if the second dose is administered outside these recommended time intervals, even if the second dose is administered outside the 4-day grace period, or after 6 weeks from the first dose.

Slide 38

Let us now discuss how to prevent inadvertent administration of a vaccine to a wrong patient.

Slide 39

There are many concrete steps that you can take as a healthcare provider to prevent administering a vaccine to the wrong patient.

Slide 40

First, be sure to verify the patient's identity before administering vaccines.

Slide 41

Next, be sure to prepare and administer vaccines to only one patient at a time. If more than one patient needs vaccines during the same clinical encounter, be sure to assign different providers to each patient, if possible. Alternatively, bring only one patient's vaccines into the treatment area at a time, labeled with the vaccine and patient’s name.

Slide 42

Finally, be sure to educate staff on the importance of avoiding unnecessary distractions or interruptions when staff is administering vaccine.

Slide 43

We will now discuss wrong vaccine, route, site or dosage.

Slide 44

Let’s first discuss wrong vaccine. There are many examples of this, such as when an incorrect vaccine is given because of a similar name (such as DTaP instead of Tdap), or another product is accidentally used instead of a product that was originally intended.

Slide 45

In the context of COVID-19 vaccines, this would be when a patient who received the Pfizer BioNTech vaccine for their first dose, accidentally received Moderna for their second dose, or vice versa.

Slide 46

Or a patient accidentally receiving COVID-19 antibodies instead of the COVID-19 vaccine.

Slide 47

Wrong route refers to accidentally delivering the vaccine in a way that the product was not intended, such as administering the vaccine subcutaneously instead of intramuscularly, or vice versa. It is important to give vaccines by the route recommended by the manufacturer to ensure vaccine potency.

Slide 48

Wrong site refers to missing the intended anatomical location for vaccine delivery. The deltoid muscle is the preferred site for intramuscular (IM) injection for children age 3 years and older and adults, while the anterolateral thigh muscle is preferred for infants and toddlers. Missing the intended anatomical target can result in injecting the vaccine into bursa or nerves. For deltoid injections, care must be taken to avoid injecting too high on the upper arm where injury to the shoulder could result in SIRVA, or Shoulder Injury Related to Vaccine Administration.

Slide 49

And lastly, we will talk about wrong dosage. This category of errors includes either giving too much or too little of the vaccine. Or if you give the diluent only without mixing it with the vaccine. For routinely administered vaccines, this also includes accidentally giving pediatric doses to adults or vice versa. Using smaller than recommended dosages can leave the patient unprotected against the disease, while administering larger than recommended dosages can lead to more vigorous local or systemic reactions.

Slide 50

In order to prevent errors related to wrong vaccine, route, site or dosage, it is important to separate vaccines and diluents into bins according to type and formulation. Be sure to clearly identify diluents if the manufacturer's label could mislead staff into believing the diluent is the vaccine itself.

Slide 51

CDC also recommends using color-coded identification labels on vaccine and diluent storage containers, and storing similar sounding vaccines in different areas of the storage unit. You can also circle important information on the packaging to emphasize the difference between the vaccines. Pictured here are example color-coded labels that can be placed on storage bins to clearly separate the Pfizer-BioNTech from the Moderna COVID-19 vaccines.

Slide 52

Additionally, you can establish "Do NOT Disturb" or no-interruption areas or times when vaccines are being prepared or administered.

Slide 53

And be sure to check the vial labels three times while preparing the vaccine.

Slide 54

Furthermore, CDC recommends that healthcare providers prepare vaccines for one patient at a time. Once prepared, be sure to label the syringe with vaccine name.

Slide 55

And do not administer vaccines that are prepared by someone else.

Slide 56

Finally, use standing orders when appropriate to prevent wrong vaccine, route, site, or dosage.

Slide 57

And be sure to integrate vaccine administration training into orientation and other appropriate education requirements. It is important to train staff when new products are added to inventory or recommendations are updated. Ensure that reference materials on recommended sites, routes, and needle lengths for each vaccine used in your facility are readily available in the medication preparation area.

Slide 58

Next, we will review how to prevent errors related to incorrect vaccine preparation.

Slide 59

As mentioned earlier, it is important to avoid using the wrong diluent, administering the diluent only without adding the vaccine antigen, or mixing in a diluent when a vaccine doesn't require a diluent. Always triple check instructions and vaccine and diluent vial labels before reconstituting vaccine.

Slide 60

In the context of COVID-19 vaccines, this is especially important to remember with the Pfizer BioNTech vaccine, since this vaccine requires a diluent, while the other COVID-19 vaccines as of this writing do not require a diluent.

Slide 61

Additionally, be sure to check that you have the correct needle size. Vaccines must reach the desired tissue to provide an optimal immune response and reduce the likelihood of injection-site reactions. Needle selection should be based on the injection site, route, age, as well as gender and weight for adults.

Slide 62

Now let's give you an opportunity to check your knowledge so far. What do you think? True or False? For the Pfizer-BioNTech COVID-19 vaccine, check the vaccine and diluent labels only once before reconstituting the vaccine.

Slide 63