Quality Improvement Story Board ~~ November 2022 – March 2023

Stop Vaccine Errors

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16 (full-time and part-time) staff
Population Served: 33,500

PUTNAM COUNTY HEALTH DEPARTMENT
PREVENT • PROMOTE • PROTECT

Step 1 Plan

getting started

We have had a few COVID vaccine administration errors that have occurred within the past year. Previously, an error was related to improper dilution. The nurses informally discussed options of how to better communicate when a vial had been diluted and came up with small "report" sheets for each vaccine that would state how much diluent, when mixed and signed by 2 nurses. However, there was another COVID vaccine administration error that occurred in early November and was mentioned on our customer satisfaction survey. We have now decided to use a formal process improvement to address the issue.

problem

Since our previous error, there have been multiple changes for COVID vaccines and clinic. Previously we gave COVID vaccines to anyone under the age of 12 on Tuesday's with our regular clinic. We administered all doses of COVID vaccine to those >12 on dedicated Thursday clinics. However, with a drastic decrease in Thursday appointments, starting in November, we moved all COVID vaccines to our Tuesday clinics to increase nursing productivity and decrease vaccine wastage. There have been multiple formulations of vaccine added - there are two different manufacturers that we stock and within each manufacturer there are different vials for different age groups. There are also monovalent and bivalent formulations for most age groups now. To add to the confusion, some vials still need to be diluted before administration and some do not. There are different dosage amounts depending on the age. The dosage may also vary if it is primary series dose or booster dose. They all have different storage requirements as well. All of these factors contribute to an environment susceptible to error.

To get to the root cause of vaccine errors, the 5 Whys methodology was conducted by the group. During this process it was discovered that

AIM statement

PCHD will be free of COVID Vaccine errors.

examine current approach

Currently, when in the fridge, vaccine is kept in a bag to protect from light and the outside is labeled with a sticker to state what is inside and when it was placed in the fridge. When we have COVID vaccine vials out of the fridge, we place them in a kidney basin or other plastic basin on the clinic counter. We use our mixing report sheets as necessary. Otherwise, the bins are labeled with a sticky note stating what the vaccine is, when it was taken out of the fridge and when it was punctured.

potential solution

Decrease number of different vaccines that may be open at one time, formalize a storage/labeling process to be consistent among all nurses, make sure all vaccine info regarding storage/administration/etc is up to date and easily viewable.

Step 2 Do

6/29/22 – nurses discussed ways to better label and communicate if a vial of vaccine has been diluted, if it was diluted with the correct amount and who diluted the vial. The idea of a report style sheet was mentioned and chosen as a method to try.

6/30/22 – vaccine mixing report sheets were created and put into use

11/16/22 – first QI meeting to discuss errors further and possible steps to prevent future errors

2/21/23 – order placed for vaccine bins

2/28/23 – vaccine bins received, labels made and bins placed in vaccine fridge

3/1/23 – new storage process reviewed with all nursing and clinic staff

3/7/23 – trialed new storage during clinic

Step 3 Study

With implementing the use of vaccine mixing report sheets, there have been no further dilution errors. Since implementing a more clearly labeled storage system for COVID vaccine, there have been no further errors with incorrect formulations given. During the implementation process it was discovered that there was often confusion around expiration/beyond use dates for vaccine. The vial may say one thing, the online site say another, but it is ultimately dependent on when the vaccine is placed in the fridge and which manufacturer. The vaccine bin labels were made to include "Date placed in fridge" and "Expiration date" that can be written with dry erase marker and changed as needed. This way in plain sight is the manufacturer, monovalent vs bivalent, age group, dates, dosage amount, number of doses per vial and if diluent is needed. It was also found that we frequently were referring to CDC "at a glance" vaccine sheets that were kept in a binder in a nursing office to double check dosing, etc. These sheets were then laminated for both Pfizer and Moderna and hung in the clinic so they can be easily referenced. These are replaced and updated as changes are made and new ones are made available.

Step 4 Act

Implementing the above changes has helped to simplify and standardize the storage situation for our COVID vaccine. Since implementing the report mixing sheets, we have discontinued offering the Pfizer vaccines that require diluent so have not had to use those but still have them available if that were to change. Our Director of Nursing also worked with our Medical Director to decrease the number of different COVID vaccines we stock and offer to decrease vaccine wastage which in turn helped decrease the potential number of different COVID vaccines open a clinic day. Since all of the above changes have been put into place, PCHD has had no COVID vaccine errors.

Nursing will continue to discuss any potential issues that could lead to vaccine errors and change process as needed. Nursing will check "at a glance" vaccine sheets for the most recent update quarterly.