Dialysis Patient Influenza Vaccination Protocol

Introduction

Influenza infections are associated with increased medical costs, hospitalizations, lost productivity, and thousands of deaths every year in the United States. The majority of deaths from seasonal influenza occur in adults aged ≥65 years.[1-5] Serious influenza complications occur most often in young children, pregnant women, older adults, and those with certain medical conditions, including chronic kidney disease.[5]

Annual epidemics of seasonal influenza usually occur during the late fall through early spring each year. Influenza vaccination is the best way to reduce the risk of complications from influenza and is recommended for all persons aged six months or older.[5] Occasionally, a variant influenza strain emerges that is distinct from the expected seasonal strain and requires a separate vaccine for prevention.

Data reported to this surveillance module will be used to track influenza vaccinations among all dialysis patients and help identify the reasons for non-vaccination that can be targeted to improve influenza vaccination rates. Additionally, dialysis facility staff will be able to identify specific gaps in vaccination among patients and recommend changes in facility practices to ensure that all eligible patients are given the opportunity to be vaccinated.

Monthly Data Collection (Prospective Surveillance)

Overview: The Dialysis Patient Influenza Vaccination Module monitors all dialysis facility patients receiving in-center hemodialysis, home hemodialysis, or peritoneal dialysis, who are six months of age or older. This prospective surveillance requires the use of two forms, the *Dialysis Patient Influenza Vaccination Denominator* form (CDC 57.506) and the *Dialysis Patient Influenza Vaccination* event form (CDC 57.505). The patient vaccination forms should be completed when the facility is vaccinating patients against influenza. An individual, trained on this protocol, shall initially seek to: 1) identify all dialysis patients (i.e., patients receiving in-center hemodialysis, peritoneal dialysis, or home hemodialysis); 2) determine if influenza vaccine was offered and administered; and 3) verify whether the patient accepted and was vaccinated (onsite or elsewhere), or declined the influenza vaccine.
Setting and Target Population: This surveillance is facility-wide for any facility enrolled in NHSN as either "AMB-HEMO—Hemodialysis Center" or "AMB-HDPD─ Home Dialysis Center" serving any combination of in-center hemodialysis, home hemodialysis, or peritoneal dialysis patients.

Requirements: Participating facilities are required to report in-plan data according to this

protocol, using the NHSN definitions described herein, to ensure data are uniform across participating facilities. Users should report available data to NHSN within 30 days of the end of the month for which they were collected. If additional data become available after that period, users are expected to report the additional information retrospectively to ensure NHSN data are complete and accurate. This may involve reporting additional events and/or editing existing event records. In-plan surveillance must be conducted for at least one calendar month and facilities are encouraged to report during every month of the influenza season between September and April. Facilities reporting according to this protocol should check off the "Influenza Vaccination Dialysis Patients (FLUVAXDP)" checkbox on the *Dialysis Component Monthly Reporting Plan* (CDC 57.501). During seasons when seasonal and non-seasonal subtype vaccinations are recommended, both types should be reported. Dialysis facilities offering both seasonal and non-seasonal vaccinations should report denominator and numerator data separately for each vaccination subtype (i.e., seasonal or non-seasonal). Complete the *Dialysis Patient Influenza Vaccination Denominator* form (CDC 57.506) for each subtype on a monthly basis and a *Dialysis Patient Influenza Vaccination* event form (CDC 57.505) for each dose given per patient. (See latest CDC/ACIP recommendations for current season details).

REPORTING INSTRUCTIONS

NHSN forms and/or the definitions in this protocol should be used to collect required data. Each form has a corresponding table of instructions.

Complete a Survey Annually: Upon enrollment and annually thereafter, complete the *Outpatient Dialysis Center Practices Survey* (CDC 57.500). After enrollment, the data for the dialysis survey should be collected and reported in February.

Complete Dialysis Monthly Reporting Plans: The *Dialysis Component Monthly Reporting Plan* (CDC 57.501) is used by NHSN facilities to inform CDC that they are committed to following the NHSN surveillance protocol, in its entirety, for each data type specified on the plan. A Monthly Reporting Plan must be completed before influenza vaccination data can be entered into NHSN for a month for those data to be considered "in-plan."

To indicate the facility is reporting in accordance with this protocol, select the checkbox for "Influenza Vaccination Dialysis Patients (FLUVAXDP)" on the *Dialysis Monthly Reporting Plan* for each month of participation in Dialysis Patient Influenza Vaccination surveillance.

Report Denominator Data Monthly: Influenza vaccination denominator data are those data reported on the *Dialysis Patient Influenza Vaccination Denominator* form *(*CDC 57.506) (refer to the tables of instructions for completion details). When determining vaccination rates, influenza vaccination denominator data are the size of the population being monitored for influenza vaccination: the number of unique patients on your facility census throughout the influenza season.

Following the first month of your vaccination campaign, report the month's total patient census, separated by patient dialysis modality: in-center hemodialysis, home hemodialysis, or peritoneal dialysis. In the subsequent months of your vaccination campaign, count all new in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients (i.e., those who were not present at your facility during the previous months of the vaccination campaign). If there are no new patients during a given month, enter zero for each denominator modality category. The census count for the influenza vaccination denominator should be done at the end of each month to accounting for all patients. Only include patients age six (6) months or older. Complete two separate denominator forms for each month when the facility offers both seasonal and non-seasonal vaccines.

Report Numerator Data Monthly: Influenza vaccination numerator data are those data reported on the *Dialysis Patient Influenza Vaccination* event form (CDC 57.505) (refer to the tables of instructions for completion details). When determining vaccination rates, influenza vaccination numerator data are the number of patients that fall into each vaccination administration category. Complete a *Dialysis Patient Influenza Vaccination* event form (CDC 57.505) as patients are offered an influenza vaccine and report those data monthly. If a patient declines the vaccine, note his or her reasons for declination (either medical contraindications or personal) (Table 1). To ensure one form is completed for every patient, at the end of the influenza campaign, complete forms for any outstanding patients, including those who were not offered the vaccine.

Table 1: List of Medical Contraindications to Influenza Vaccination and of Personal Reasons for Declining Influenza Vaccine

Medical Contraindications	Allergy to vaccine components History of Guillain-Barré syndrome within 6 weeks of previous influenza vaccination Current febrile illness (Temp >101.5°)*
Personal (non-medical) reasons for declining vaccination	Fear of needles/injections Fear of side effects Perceived ineffectiveness of vaccine Religious or philosophical objections Concern for transmitting vaccine virus to contacts

*Although this is a temporary condition that might result in delaying vaccination, patients who meet this criterion should be offered vaccine again when afebrile. In such situations, the facility may delay submission of that patient's vaccination event form, or can update the existing event record once the patient has been vaccinated.

Data Analysis: Influenza vaccination data are stratified by dialysis modality, influenza subtype, and influenza season. Vaccination rates are calculated by dividing the number of vaccination events by the total number of patients present during each month of influenza surveillance.

Facilities are strongly encouraged to analyze the data they report and provide regular feedback to staff about vaccination rates. Table 2 shows the formulas for metrics that can be calculated using these surveillance data.

Table 2: Formulas for Metrics

Data come from two CDC forms:

Dialysis Patient Influenza Vaccination (DPIV) Denominator form (CDC 57.506)

Dialysis Patient Influenza Vaccination (DPIV) Event form (CDC 57.505)

Metric	**Formula (x 100 for percent)**
Influenza vaccination rate among all patients	$\frac{\text{Total \# DPIV Events where “vaccine administered” = “onsite” or “offsite”}}{\text{Total \# patients from DPIV Denominator forms}}$
Influenza vaccination rate among all medically eligible patients	$\frac{\text{Total \# DPIV Events where “vaccine administered” = “onsite” or “offsite”}}{\text{[(Total \# patients from DPIV Denominator forms) − (Total \# DPIV Events = vaccine declined and reasonCode = "medical")]}}$
Proportion of patients offered vaccine	$\frac{\text{Total \# DPIV Events}}{\text{Total \# patients from DPIV Denominator forms}}$
Proportion of patients who declined vaccine among all patients offered vaccine	$\frac{\text{Total \# DPIV Events = “vaccine declined”}}{\text{Total \# DPIV Events}}$
Proportion of patients who declined vaccine due to personal (non-medical) reasons among all patients offered vaccine	$\frac{\text{Total \# DPIV Events = “vaccine declined” and reasonCode = “personal”}}{\text{Total \# DPIV Events}}$
Proportion of patients who declined vaccine due to medical contraindications among all patients offered vaccine	$\frac{\text{Total \# DPIV Events = “vaccine declined” and reasonCode = “medical”}}{\text{Total \# DPIV Events}}$
Proportion of patients vaccinated onsite among all patients administered vaccine	$\frac{\text{Total \# DPIV Events “vaccine administered” = “onsite”}}{\text{Total \# DPIV Events “vaccine administered” = “onsite” or “offsite”}}$

References

1. Simonsen L, Reichert TA, Viboud C, Blackwelder WC, Taylor RJ, Miller MA. Impact of influenza vaccination on seasonal mortality in the US elderly population. Arch Intern Med. 2005;165(3):265-72.
2. Thompson WW, Moore MR, Weintraub E, Cheng PY, Jin X, Bridges CB, et al. Estimating influenza-associated deaths in the United States. Am J Public Health. 2009;99 Suppl 2:S225-30.
3. Thompson WW, Shay DK, Weintraub E, Brammer L, Cox N, Anderson LJ, et al. Mortality associated with influenza and respiratory syncytial virus in the United States. JAMA. 2003;289(2):179-86.
4. Thompson WW, Weintraub E, Dhankhar P, Cheng PY, Brammer L, Meltzer MI, et al. Estimates of US influenza-associated deaths made using four different methods. Influenza Other Respi Viruses. 2009;3(1):37-49.
5. Centers for Disease Control and Prevention. Influenza (Flu). http://www.cdc.gov/flu/index.htm, 2015.