Introduction to the National Healthcare Safety Network Dialysis Event Surveillance Protocol

Outline

- **Overview: Getting Started with National Healthcare Safety Network (NHSN)**
- **Quality Incentive Program (QIP) NHSN Reporting Requirements**
- **NHSN Dialysis Component Requirements**
  - Outpatient Dialysis Center Practice Survey
  - Monthly Reporting Plans
- **Dialysis Event Surveillance Protocol & Requirements**
  - Denominators for Dialysis Event Surveillance
  - Numerators: Dialysis Events & “Report No Events”
- **Data Quality**
- **Summary**

Training Objectives

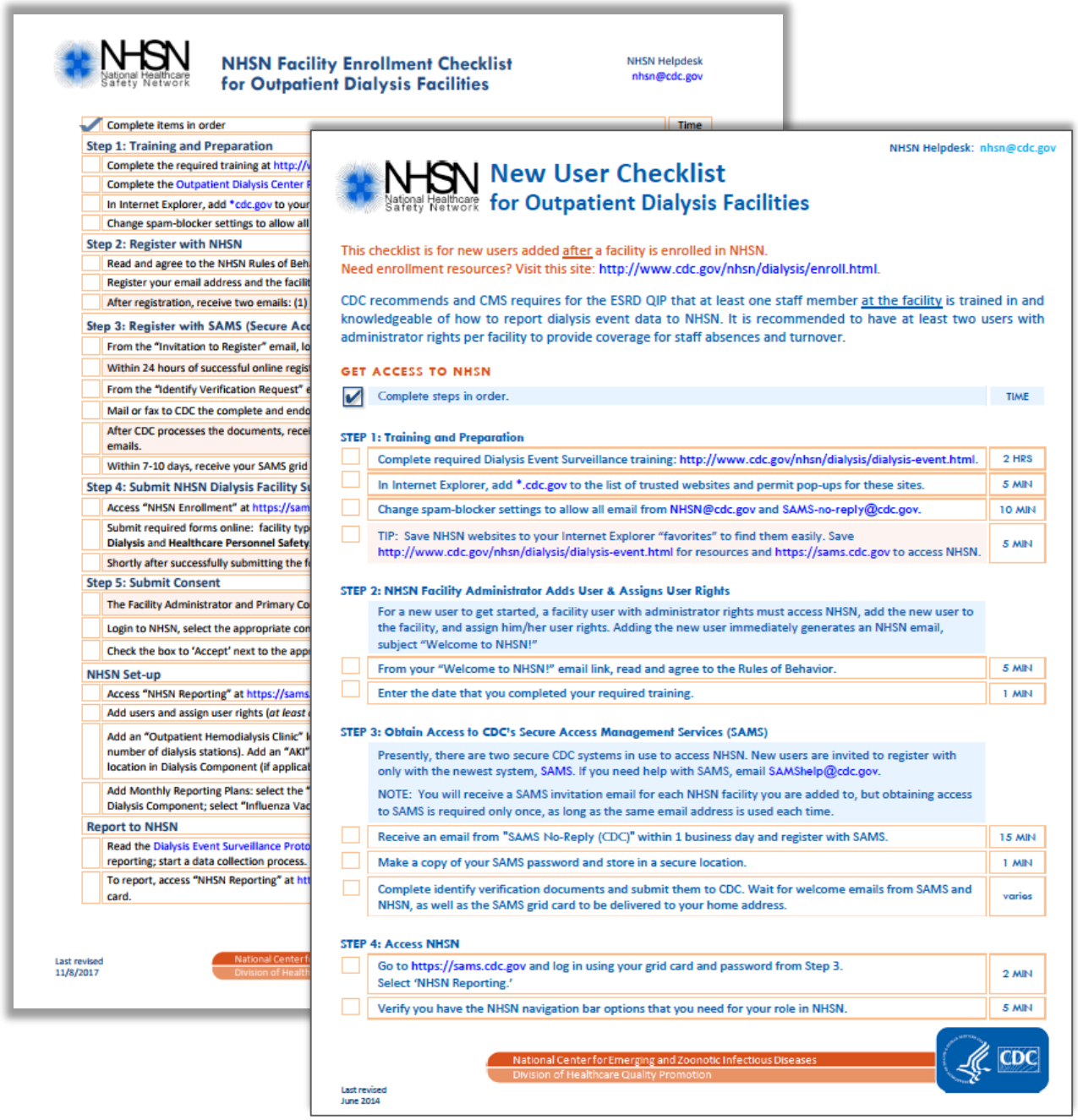
- **Edit the NHSN Monthly Reporting Plan to show your outpatient hemodialysis facility is participating in Dialysis Event Surveillance.**
- **Correctly count hemodialysis outpatients for the "Denominators for Dialysis Event Surveillance" form.**
- **Describe the 3 reportable dialysis events:**
  1. Positive blood cultures
  2. IV antimicrobial starts
  3. Pus, redness, or increased swelling at a vascular access site.
- **Determine when and how to apply the "21 day rule" to each of the three dialysis event types**
- **Determine when and how to confirm no events occurred**

Overview: Getting Started With NHSN

Getting Started

- **NHSN Facility Enrollment Checklist**
  - http://www.cdc.gov/nhsn/pdfs/dialysis/enrollment-checklist.pdf

- **If the facility is enrolled, see the NHSN New User Checklist**
  - http://www.cdc.gov/nhsn/PDFs/dialysis/NHSN-de-New-User-Checklist.pdf



NHSN National Healthcare Safety Network

NHSN Facility Enrollment Checklist for Outpatient Dialysis Facilities

NHSN Helpdesk
nhsn@cdc.gov

Complete items in order — Time

Step 1: Training and Preparation
Complete the required training at http://
Complete the Outpatient Dialysis Center
In Internet Explorer, add *.cdc.gov to your
Change spam-blocker settings to allow all

Step 2: Register with NHSN
Read and agree to the NHSN Rules of Beh
Register your email address and the facilit
After registration, receive two emails: (1)

Step 3: Register with SAMS (Secure Acc
From the "Invitation to Register" email, lo
Within 24 hours of successful online regis
From the "Identify Verification Request"
Mail or fax to CDC the complete and endo
After CDC processes the documents, rece
emails.
Within 7-10 days, receive your SAMS grid

Step 4: Submit NHSN Dialysis Facility Su
Access "NHSN Enrollment" at https://sam
Submit required forms online: facility typ
Dialysis and Healthcare Personnel Safety
Shortly after successfully submitting the f

Step 5: Submit Consent
The Facility Administrator and Primary Co
Login to NHSN, select the appropriate con
Check the box to 'Accept' next to the app

NHSN Set-up
Access "NHSN Reporting" at https://sams
Add users and assign user rights (*at least
Add an "Outpatient Hemodialysis Clinic"
number of dialysis stations). Add an "AKI"
location in Dialysis Component (if applica
Add Monthly Reporting Plans: select the "
Dialysis Component; select "Influenza Vac

Report to NHSN
Read the Dialysis Event Surveillance Proto
reporting; start a data collection process.
To report, access "NHSN Reporting" at ht
card.

Last revised
11/8/2017

National Center f
Division of Health

NHSN Helpdesk: nhsn@cdc.gov

NHSN National Healthcare Safety Network

New User Checklist for Outpatient Dialysis Facilities

This checklist is for new users added after a facility is enrolled in NHSN.
Need enrollment resources? Visit this site: http://www.cdc.gov/nhsn/dialysis/enroll.html.

CDC recommends and CMS requires for the ESRD QIP that at least one staff member at the facility is trained in and knowledgeable of how to report dialysis event data to NHSN. It is recommended to have at least two users with administrator rights per facility to provide coverage for staff absences and turnover.

GET ACCESS TO NHSN

☑ Complete steps in order.	TIME

STEP 1: Training and Preparation

☐ Complete required Dialysis Event Surveillance training: http://www.cdc.gov/nhsn/dialysis/dialysis-event.html.	2 HRS
☐ In Internet Explorer, add *.cdc.gov to the list of trusted websites and permit pop-ups for these sites.	5 MIN
☐ Change spam-blocker settings to allow all email from NHSN@cdc.gov and SAMS-no-reply@cdc.gov.	10 MIN
☐ TIP: Save NHSN websites to your Internet Explorer "favorites" to find them easily. Save http://www.cdc.gov/nhsn/dialysis/dialysis-event.html for resources and https://sams.cdc.gov to access NHSN.	5 MIN

STEP 2: NHSN Facility Administrator Adds User & Assigns User Rights

For a new user to get started, a facility user with administrator rights must access NHSN, add the new user to the facility, and assign him/her user rights. Adding the new user immediately generates an NHSN email, subject "Welcome to NHSN!"

☐ From your "Welcome to NHSN!" email link, read and agree to the Rules of Behavior.	5 MIN
☐ Enter the date that you completed your required training.	1 MIN

STEP 3: Obtain Access to CDC's Secure Access Management Services (SAMS)

Presently, there are two secure CDC systems in use to access NHSN. New users are invited to register with only with the newest system, SAMS. If you need help with SAMS, email SAMShelp@cdc.gov.

NOTE: You will receive a SAMS invitation email for each NHSN facility you are added to, but obtaining access to SAMS is required only once, as long as the same email address is used each time.

☐ Receive an email from "SAMS No-Reply (CDC)" within 1 business day and register with SAMS.	15 MIN
☐ Make a copy of your SAMS password and store in a secure location.	1 MIN
☐ Complete identify verification documents and submit them to CDC. Wait for welcome emails from SAMS and NHSN, as well as the SAMS grid card to be delivered to your home address.	varies

STEP 4: Access NHSN

☐ Go to https://sams.cdc.gov and log in using your grid card and password from Step 3. Select 'NHSN Reporting.'	2 MIN
☐ Verify you have the NHSN navigation bar options that you need for your role in NHSN.	5 MIN

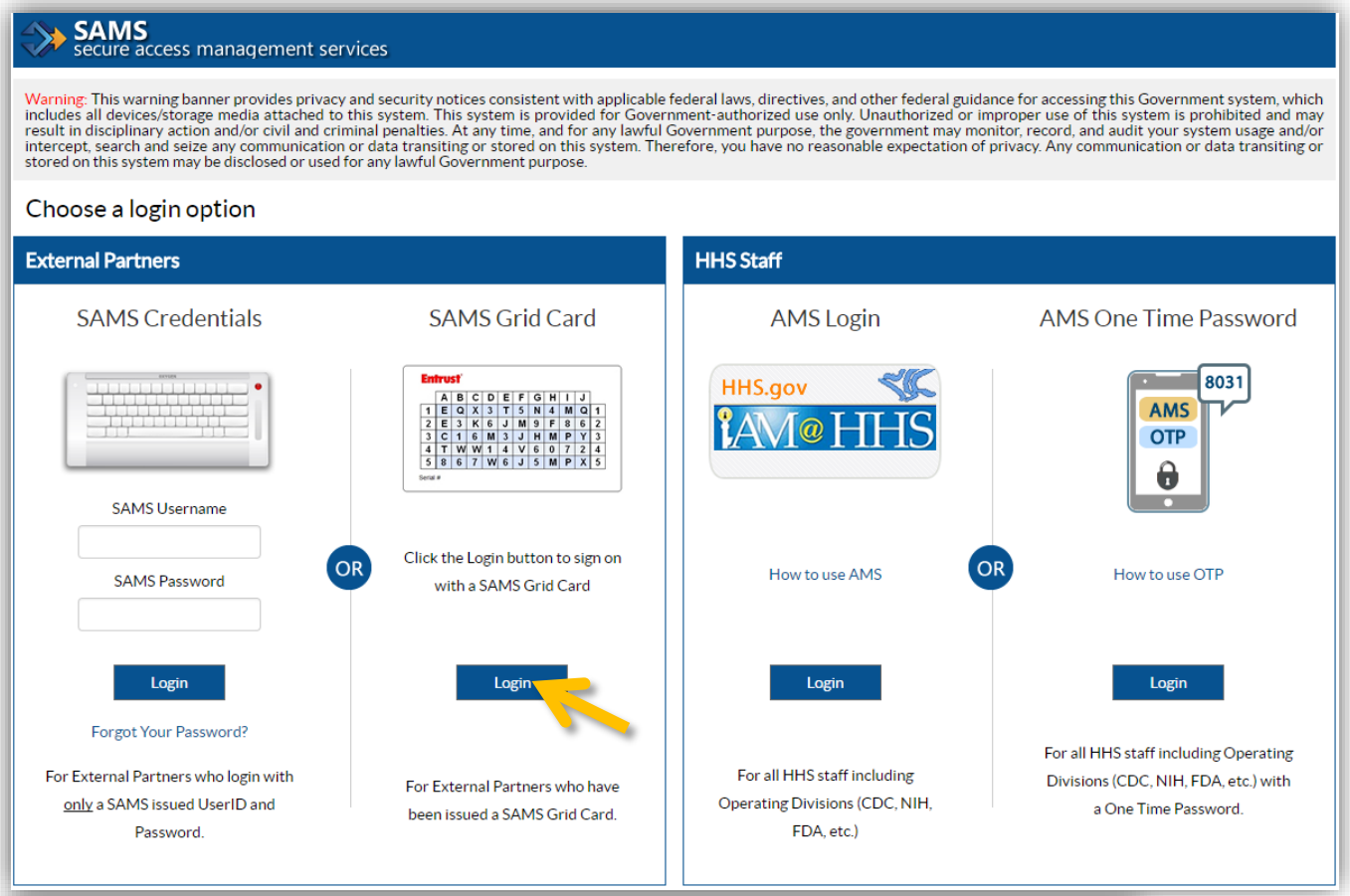
National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

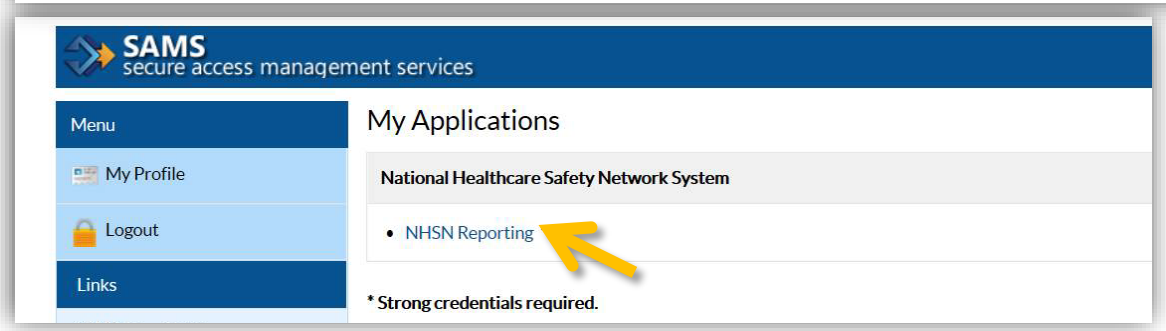
CDC

Last revised
June 2014

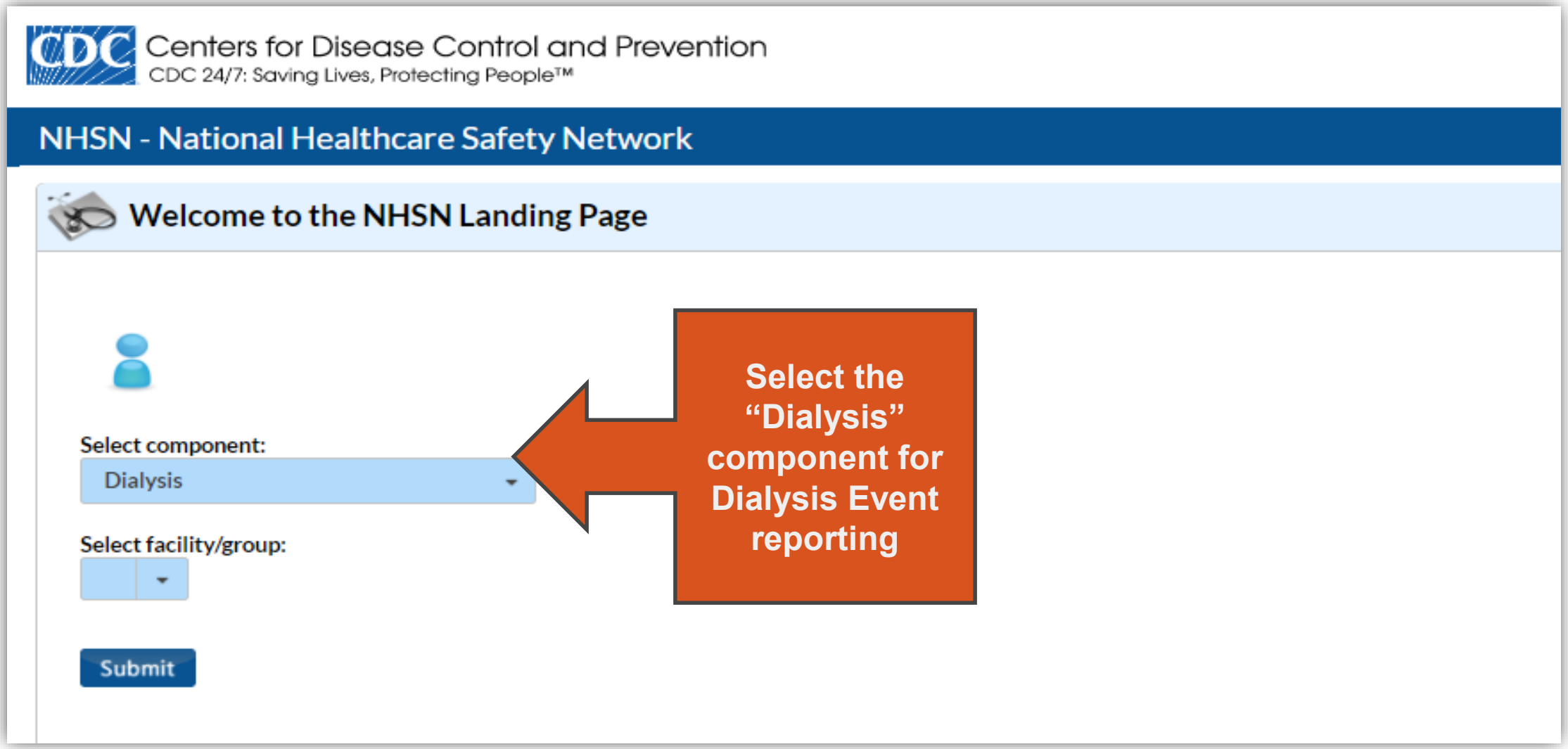
SAMS

- **Secure Access Management Services (SAMS) is the secure gateway used to access NHSN**
  - Each NHSN user must have their own SAMS account
  - You will receive an email invitation to SAMS when you are added as a user to NHSN
- **Log in to SAMS**
  - https://sams.cdc.gov
- **Select the "NHSN Reporting" option**



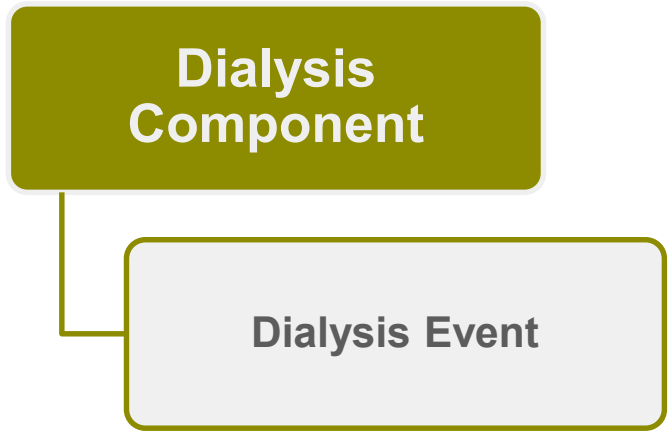


NHSN Landing Page

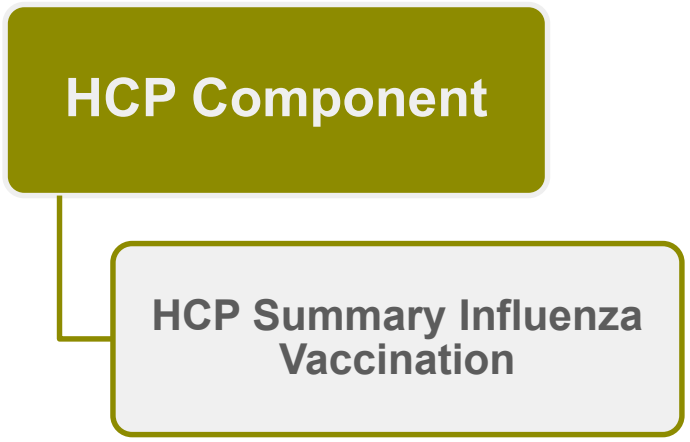


Quality Incentive Program (QIP) NHSN Reporting Requirements

Centers for Medicare and Medicaid Services (CMS) Quality Incentive Program (QIP) NHSN Calendar Year 2017/2018 Reporting Requirements



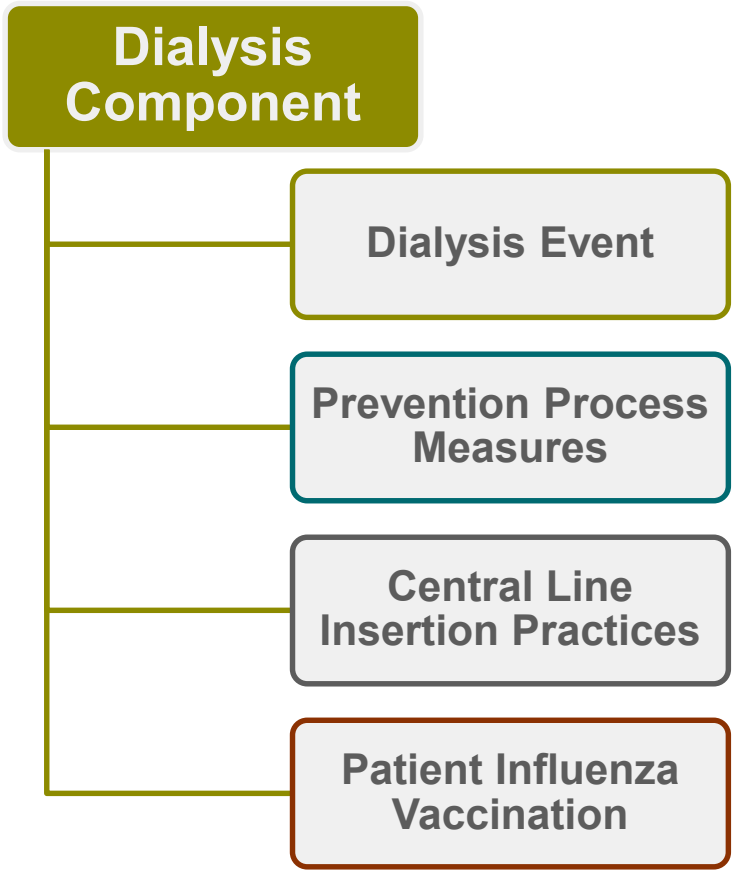
- **Dialysis Event data:**
  - Q4 2017 data due 03/31/2018
  - Q1 2018 data due 06/30/2018
  - Q2 2018 data due 09/30/2018
  - Q3 2018 data due 12/31/2018



- **Healthcare Personnel (HCP) Influenza Vaccination Summary**
  - 2017/2018 flu season summary data due 5/15/2018

For more information on HCP Summary Influenza Vaccination -
http://www.cdc.gov/nhsn/dialysis/hcp-vaccination/index.html

NHSN Dialysis Component



- **Four surveillance modules within the Dialysis Component**
- **Participation in the Dialysis Component requires:**
  1. Users complete training for each module in use
  2. Completion of the annual Outpatient Dialysis Center Practices Survey
  3. Monthly Reporting Plans indicate what surveillance the facility is doing according to NHSN protocol(s)

Find reporting resources for each: http://www.cdc.gov/nhsn/dialysis/index.html

Outpatient Dialysis Center Practices Survey

NHSN Dialysis Component Requirements

NHSN Outpatient Dialysis Center Practices Survey

- **Complete one survey per NHSN facility organization ID (org ID)**
  - Your facility only needs to complete one survey each year
- **Complete survey in February of each year**
  - Multiple questions pertain to patients and staff present during the first week of February
- **Data collection should be performed by someone who works in the center and is familiar with center's practices**
- **The survey should be completed based on the center's actual practices, not necessarily the center's policies, if there are differences**

Monthly Reporting Plan

Training Objective #1

NHSN Dialysis Component Requirements

Monthly Reporting Plans

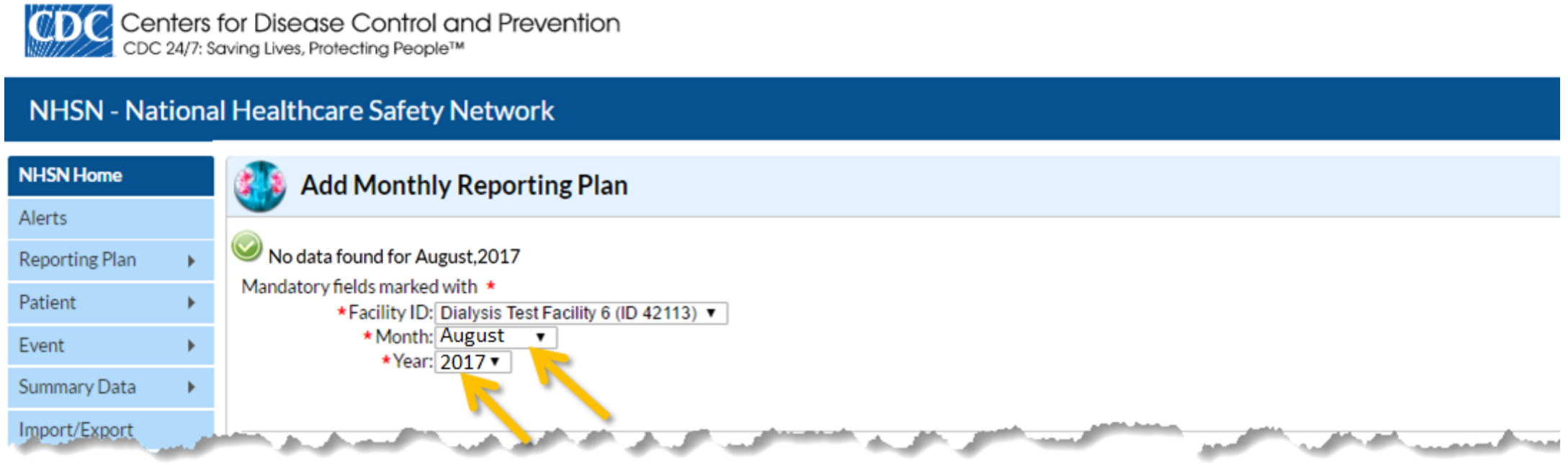
- **The Monthly Reporting Plan informs CDC what surveillance the facility is participating in according to NHSN protocol(s)**

- **Data should be reported according to the NHSN Protocol(s)**
  - By making a selection on the plan, you agree to follow the NHSN Protocol(s) selected for monitoring and reporting for that month
  - Data are considered in accordance with the protocol if they are reported for a month where the surveillance type is marked on the Monthly Reporting Plan

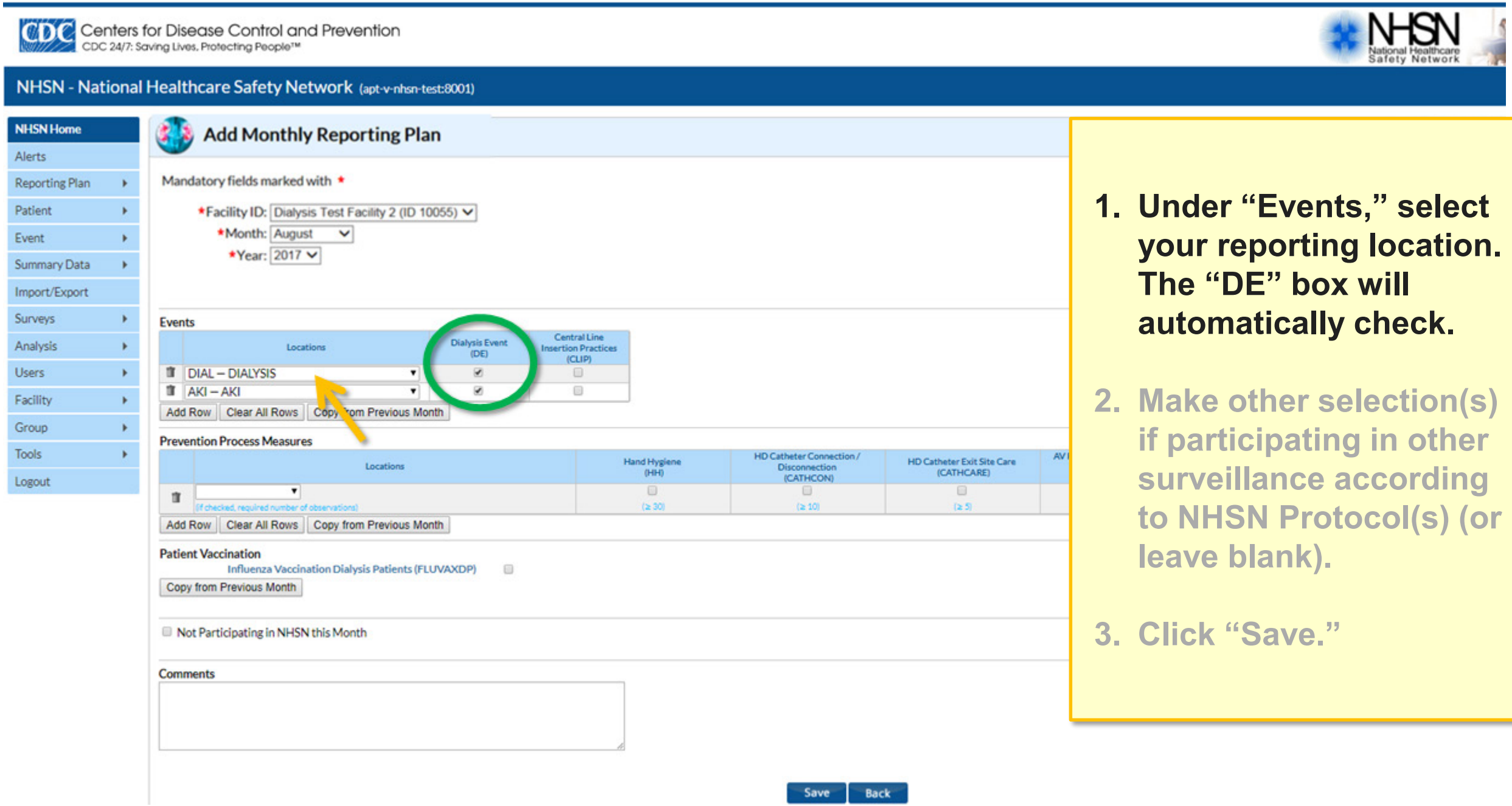
- **These data will be included in the aggregate pool for analysis**
  - CDC only uses data that is in accordance with the protocol in analysis and these data are shared with CMS

- **Plans can be modified retrospectively**

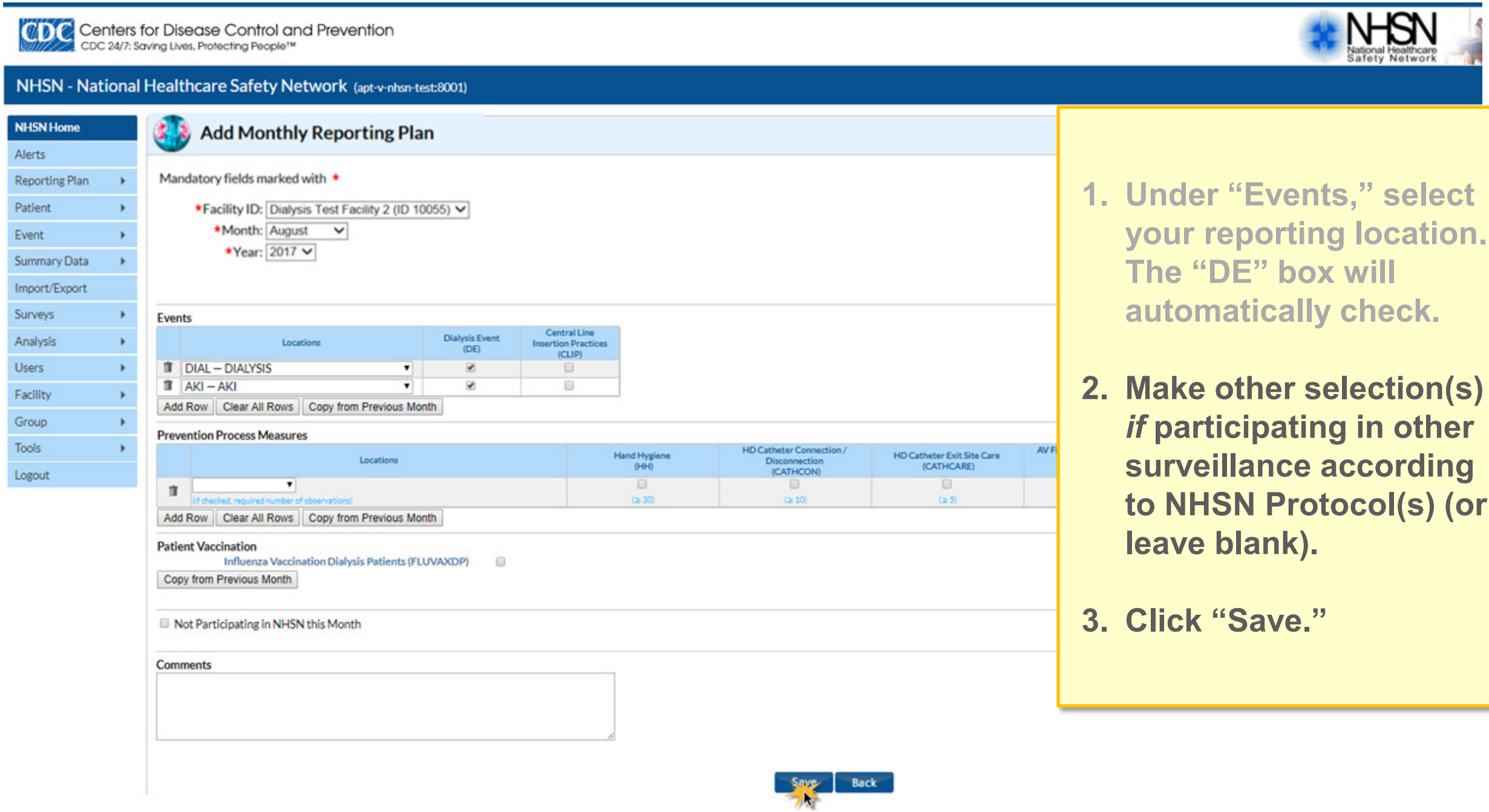
How to Add/Edit a Monthly Reporting Plan



- **Select the Month and Year**
- **If a plan has not yet been created, "No data found" will display**
  - Otherwise, the existing plan will display and can be edited, as needed



1. **Under "Events," select your reporting location. The "DE" box will automatically check.**
2. **Make other selection(s) if participating in other surveillance according to NHSN Protocol(s) (or leave blank).**
3. **Click "Save."**



1. Under "Events," select your reporting location. The "DE" box will automatically check.
2. **Make other selection(s) *if* participating in other surveillance according to NHSN Protocol(s) (or leave blank).**
3. **Click "Save."**

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

NHSN - National Healthcare Safety Network (apt-v-nhsn-test:8001)

- NHSN Home
- Alerts
- Reporting Plan
- Patient
- Event
- Summary Data
- Import/Export
- Surveys
- Analysis
- Users
- Facility
- Group
- Tools
- Logout

Add Monthly Reporting Plan

Mandatory fields marked with *

*Facility ID: Dialysis Test Facility 2 (ID 10055)
*Month: August
*Year: 2017

Events

	Locations	Dialysis Event (DE)	Central Line Insertion Practices
	DIAL – DIALYSIS	☑	
	AKI – AKI	☑	☐

Add Row | Clear All Rows | Copy from Previous Month

Prevention Process Measures

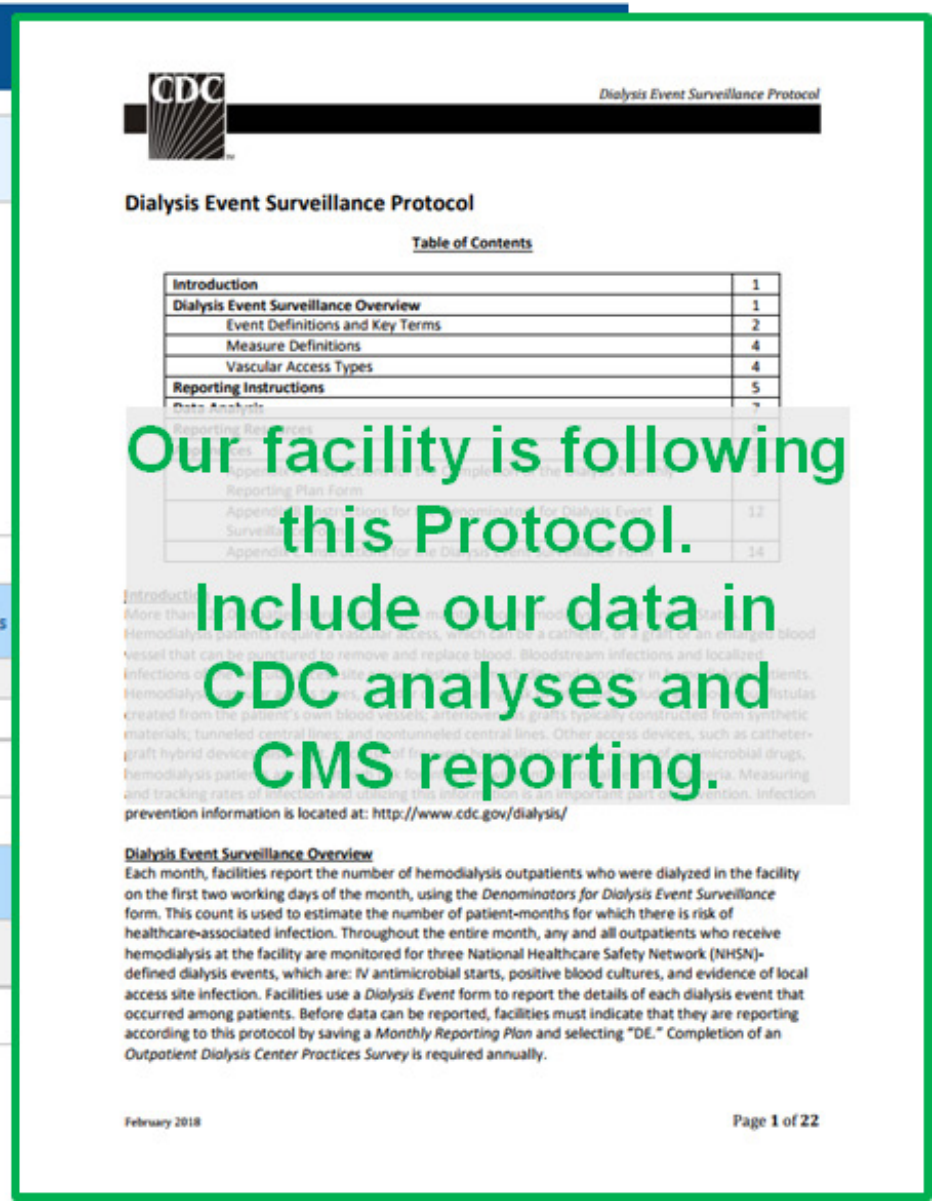
	Locations
	(if checked, required number of observations)

Add Row | Clear All Rows | Copy from Previous Month

Patient Vaccination

Influenza Vaccination Dialysis Patients (FLUVAXDP) ☐

Copy from Previous Month


Dialysis Event Surveillance Protocol

Dialysis Event Surveillance Protocol

Table of Contents

Introduction	1
Dialysis Event Surveillance Overview	1
Event Definitions and Key Terms	2
Measure Definitions	4
Vascular Access Types	4
Reporting Instructions	5

Our facility is following this Protocol.
Include our data in CDC analyses and CMS reporting.

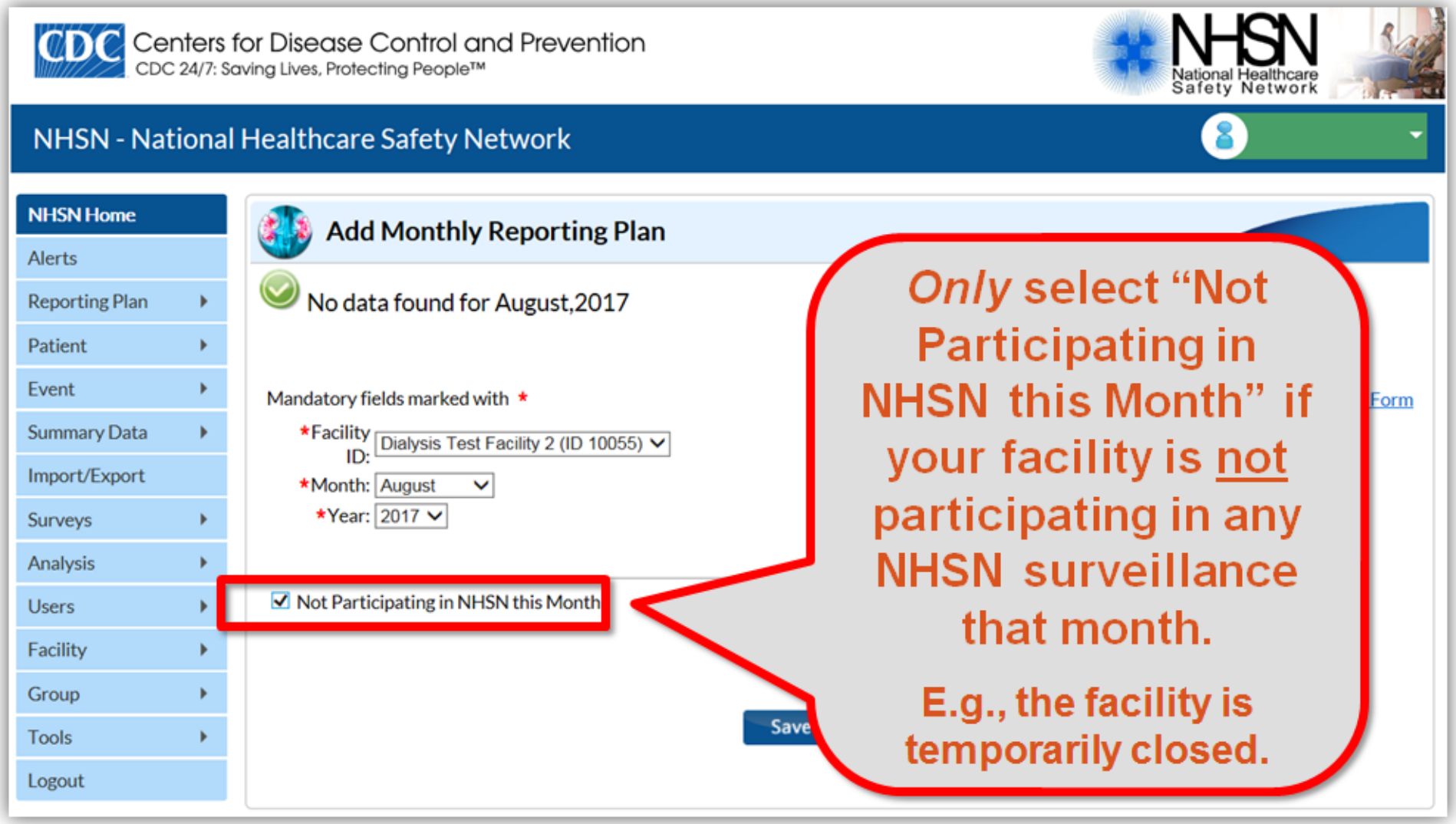
prevention information is located at: http://www.cdc.gov/dialysis/

Dialysis Event Surveillance Overview

Each month, facilities report the number of hemodialysis outpatients who were dialyzed in the facility on the first two working days of the month, using the *Denominators for Dialysis Event Surveillance* form. This count is used to estimate the number of patient-months for which there is risk of healthcare-associated infection. Throughout the entire month, any and all outpatients who receive hemodialysis at the facility are monitored for three National Healthcare Safety Network (NHSN)-defined dialysis events, which are: IV antimicrobial starts, positive blood cultures, and evidence of local access site infection. Facilities use a *Dialysis Event* form to report the details of each dialysis event that occurred among patients. Before data can be reported, facilities must indicate that they are reporting according to this protocol by saving a *Monthly Reporting Plan* and selecting "DE." Completion of an *Outpatient Dialysis Center Practices Survey* is required annually.

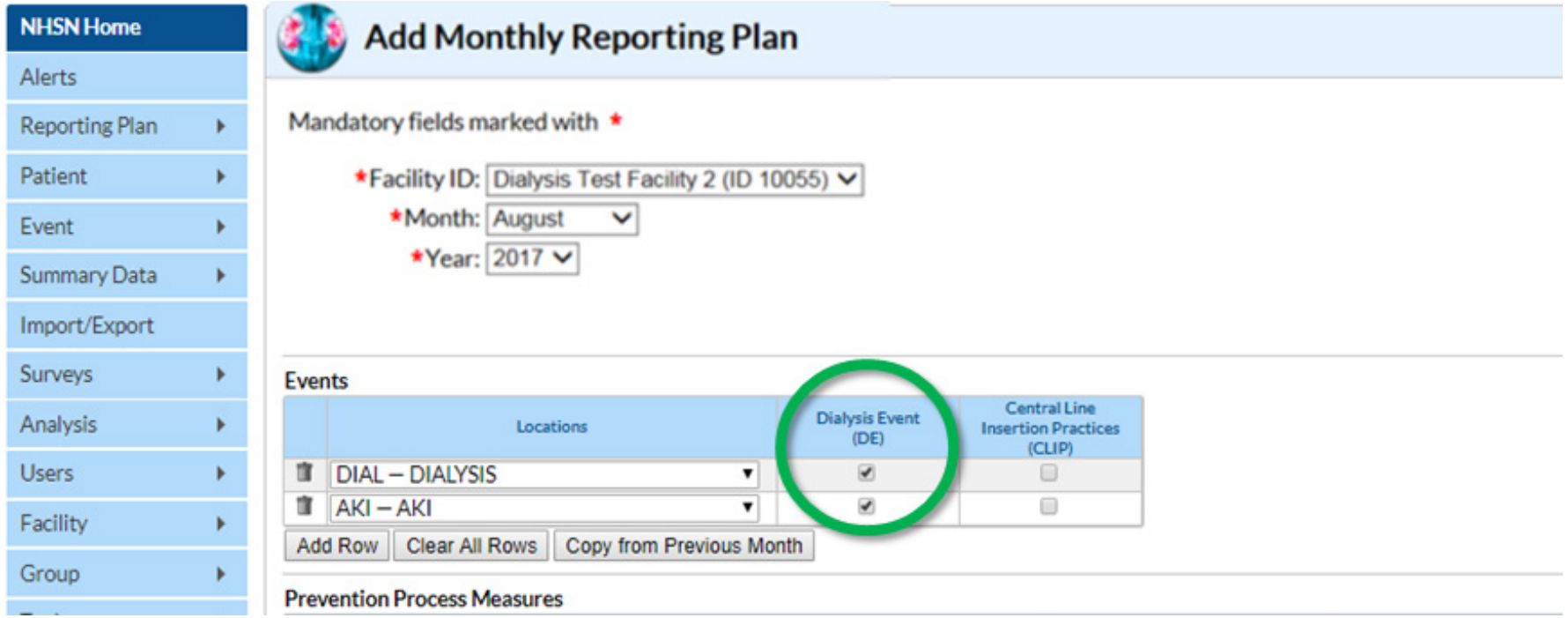
February 2018 Page 1 of 22

How to Add a Monthly Reporting Plan if Your Facility is *Not* Participating



Training Objective #1: Add/Edit the Monthly Reporting Plan to Show Your Facility is Participating in Dialysis Event Surveillance

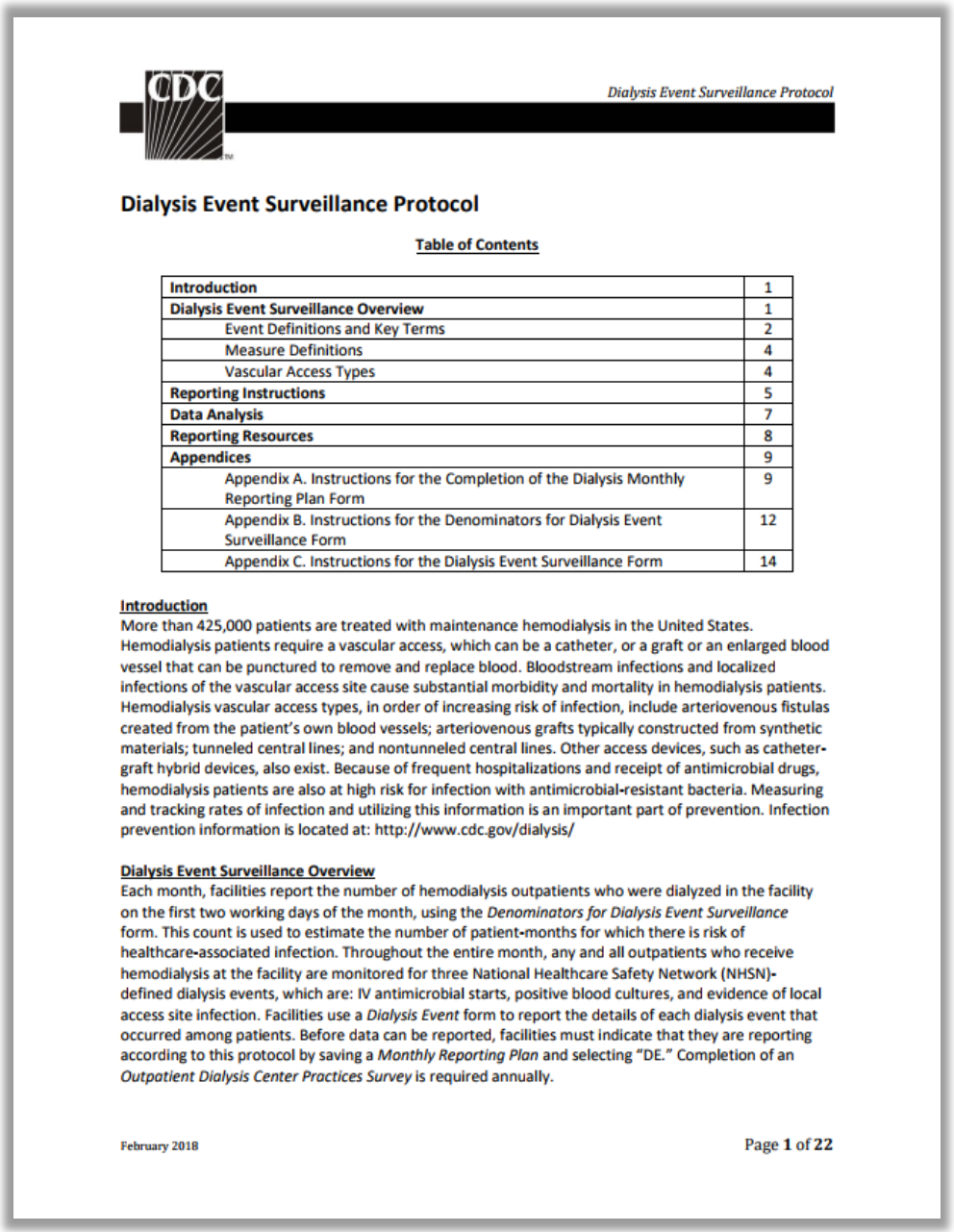
- Check the “DE” box every month before submitting your Dialysis Event data to indicate your facility is following the protocol



Dialysis Event Surveillance Protocol and Requirements

Required Reading: Dialysis Event Protocol

- **The Dialysis Event Protocol is a document that provides instructions for reporting to NHSN**
- **All users must read the Dialysis Event Protocol and follow the instructions, definitions and procedures**



Dialysis Event Surveillance Protocol

Table of Contents

Introduction

More than 425,000 patients are treated with maintenance hemodialysis in the United States. Hemodialysis patients require a vascular access, which can be a catheter, or a graft or an enlarged blood vessel that can be punctured to remove and replace blood. Bloodstream infections and localized infections of the vascular access site cause substantial morbidity and mortality in hemodialysis patients. Hemodialysis vascular access types, in order of increasing risk of infection, include arteriovenous fistulas created from the patient's own blood vessels; arteriovenous grafts typically constructed from synthetic materials; tunneled central lines; and nontunneled central lines. Other access devices, such as catheter-graft hybrid devices, also exist. Because of frequent hospitalizations and receipt of antimicrobial drugs, hemodialysis patients are also at high risk for infection with antimicrobial-resistant bacteria. Measuring and tracking rates of infection and utilizing this information is an important part of prevention. Infection prevention information is located at: http://www.cdc.gov/dialysis/

Dialysis Event Surveillance Overview

Each month, facilities report the number of hemodialysis outpatients who were dialyzed in the facility on the first two working days of the month, using the *Denominators for Dialysis Event Surveillance* form. This count is used to estimate the number of patient-months for which there is risk of healthcare-associated infection. Throughout the entire month, any and all outpatients who receive hemodialysis at the facility are monitored for three National Healthcare Safety Network (NHSN)-defined dialysis events, which are: IV antimicrobial starts, positive blood cultures, and evidence of local access site infection. Facilities use a *Dialysis Event* form to report the details of each dialysis event that occurred among patients. Before data can be reported, facilities must indicate that they are reporting according to this protocol by saving a *Monthly Reporting Plan* and selecting "DE." Completion of an *Outpatient Dialysis Center Practices Survey* is required annually.

http://www.cdc.gov/nhsn/PDFs/pscManual/8pscDialysisEventcurrent.pdf

Dialysis Event Surveillance

- **The reporting protocol is designed to reliably capture data useful for informing quality improvement decisions.**

- **All participants are required to follow the protocol so data are uniformly collected across users in different facilities, and meaningful comparisons can be made.**

- **Dialysis Event Surveillance has FOUR requirements:**

1. Outpatient Dialysis Center Practices Survey
2. Monthly Reporting Plan
3. Denominators for Dialysis Event Surveillance form
4. Dialysis Event form

Protocol Terminology and Components of a Rate

- **Numerator = number of dialysis events**
  - IV antimicrobial start, positive blood culture, or pus, redness, or increased swelling
  - Information from “Dialysis Event” forms

- **Denominator = count of patients, by vascular access type, used to estimate number of patient-months considered at risk for dialysis events**
  - Information from “Denominators for Dialysis Event Surveillance” forms

$$\textit{Rate} = \frac{\text{Dialysis Events (numerator)}}{\text{Patient-Months (denominator)}} \times 100$$

- **Both numerator and denominator data must be correct to calculate valid rates**

Denominators for Dialysis Event Surveillance

Training Objective #2

Dialysis Event Surveillance Protocol and Requirements

Protocol: Report Denominator Data Monthly

- **Each month, report the number of hemodialysis outpatients by vascular access type who received hemodialysis at the center during the first two working days of the month.**
  - Report all hemodialysis outpatients, including transient patients, and patients with acute kidney injury (AKI).
  - Exclude non-hemodialysis patients and exclude inpatients.

“Working Days”

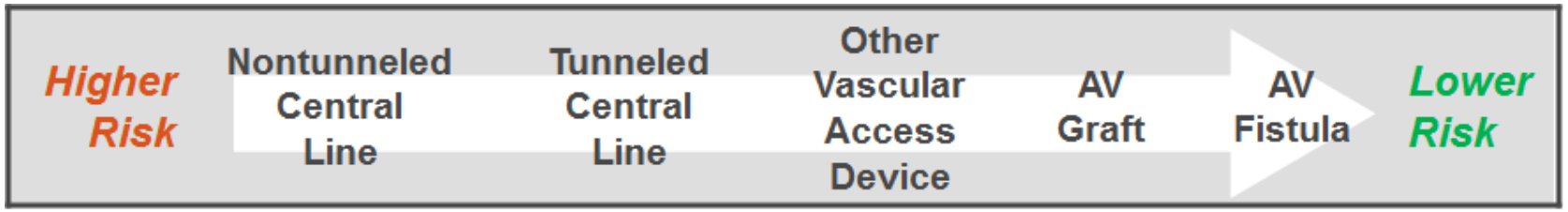
- The first two “working days” of the month provide the opportunity to capture all regularly scheduled hemodialysis shifts and patients.
- Count each patient only once.
- Example: A facility dialyzes patients 6 days a week, Monday - Saturday. If the 1st day of the month falls on a Sunday, then Monday and Tuesday are the 1st two “working days” of the month.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 Closed	2 **Working Day 1**	3 **Working Day 2**	4	5	6	7

Protocol: Report Denominator Data Monthly

- **Each month, report the number of hemodialysis outpatients by vascular access type who received hemodialysis at the center during the first two working days of the month.**
  - Report all hemodialysis outpatients, including transient patients, and patients with acute kidney injury.
  - Exclude non-hemodialysis patients and exclude inpatients.

- **Count each patient only once by vascular access type**
  - If a patient has multiple vascular access types, record that patient once, reporting only their vascular access type with the highest risk of infection.
  - Note: this might not be the vascular access currently in use for dialysis.



Refer to Protocol for Vascular Access Definitions

- **Nontunneled central line:** a central venous catheter that travels directly from the skin entry site to a vein and terminates close to the heart or one of the great vessels, typically intended for short term use (e.g. triple lumen catheters).
- **Tunneled central line:** a central venous catheter that travels a distance under the skin from the point of insertion before entering a vein, and terminates at or close to the heart or one of the great vessels (e.g., Hickman® or Broviac® catheters*).
- **Graft:** a surgically created connection between an artery and a vein using implanted material (typically synthetic tubing) to provide a permanent vascular access for hemodialysis.
- **Fistula:** a surgically created direct connection between an artery and a vein to provide permanent vascular access for hemodialysis.
- **Other vascular access device:** includes catheter-graft hybrid access devices (e.g., HeRO® vascular access device*), ports, and any other vascular access devices that do not meet the above definitions.

*Use of trade names and commercial sources is for identification only and does not imply endorsement.

Refer to Protocol for Vascular Access Definitions

- **Nontunneled ce** to a vein and termi term use (e.g. triple
- **Tunneled centra** point of insertion b vessels (e.g., Hickm
- **Graft:** a surgically (typically synthetic
- **Fistula:** a surgicall vascular access for
- **Other vascular a** vascular access dev definitions.

rom the skin entry site intended for short

der the skin from the t or one of the great

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provide permanent

es (e.g., HeRO® ot meet the above

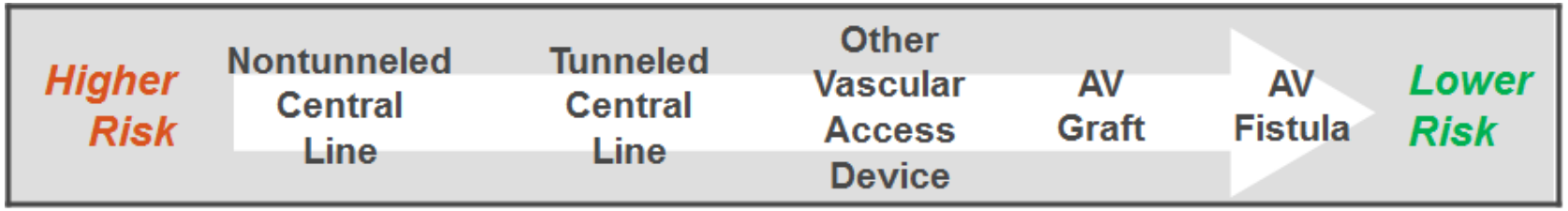
When determining each patient's vascular access with the highest risk of infection for the denominator…

Consider all vascular accesses for hemodialysis and all central venous catheters that are present at the time of the event in Dialysis Event reporting, even if they are not used for dialysis and even if they are abandoned/non-functional. Do not include peritoneal dialysis catheters in vascular access type reporting (e.g., Do NOT count peritoneal dialysis catheters as Other vascular access device)

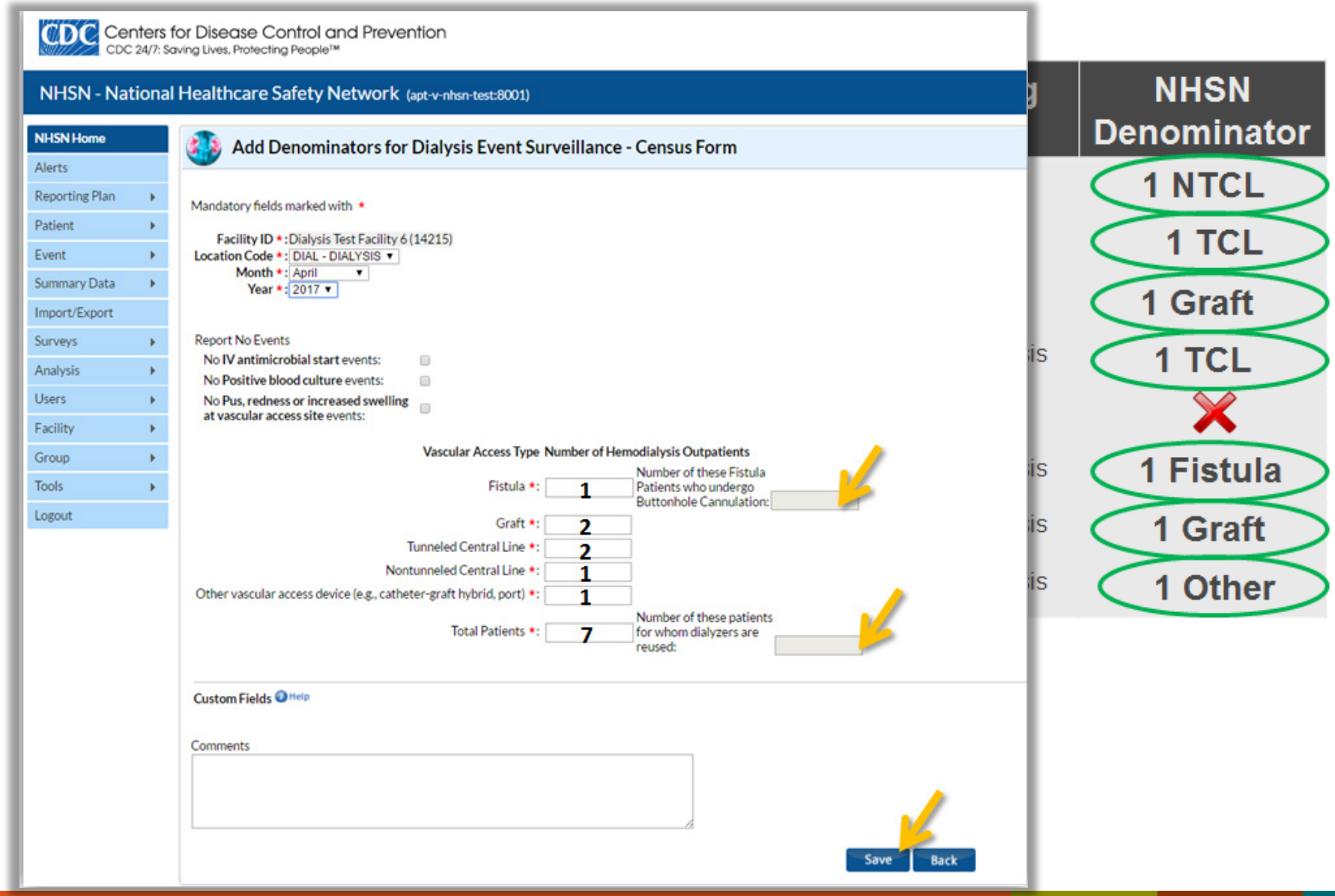
Denominator Data Collection Example

Patient	All Vascular Access(es)	Working Day 1	Working Day 2	NHSN Denominator
A	**NTCL** TCL O **G** F	OP Hemodialysis	-	1 NTCL
B	NTCL **TCL** O G **F**	OP Hemodialysis	-	1 TCL
C	NTCL TCL O **G** **F**	OP Hemodialysis	-	1 Graft
D	NTCL **TCL** **O** **G** F	OP Hemodialysis	OP Hemodialysis	1 TCL
E	NTCL **TCL** O G F	-	H Hospital	✗
F	NTCL TCL O G **F**	-	OP Hemodialysis	1 Fistula
G	NTCL TCL O **G** F	-	OP Hemodialysis	1 Graft
transient	NTCL TCL **O** G **F**	-	OP Hemodialysis	1 Other

- NTCL = Nontunneled Central Line
- TCL = Tunneled Central Line
- O = Other vascular access device
- G = AV Graft
- F = AV Fistula



Denominator Data Collection Example



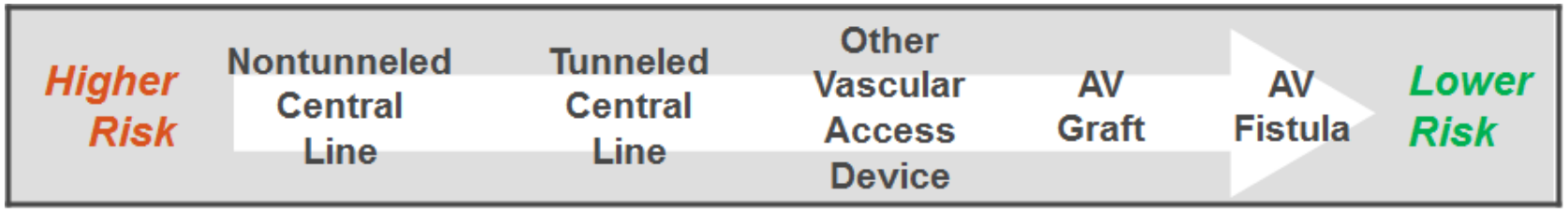
NHSN Denominator
1 NTCL
1 TCL
1 Graft
1 TCL
✗
1 Fistula
1 Graft
1 Other

Denominator Data Summary

- **Each month, report the number of hemodialysis outpatients who received in-center hemodialysis during the first two working days of the month.**
  - The first two days of the month that the facility provides hemodialysis treatment and are days that include all regular shifts

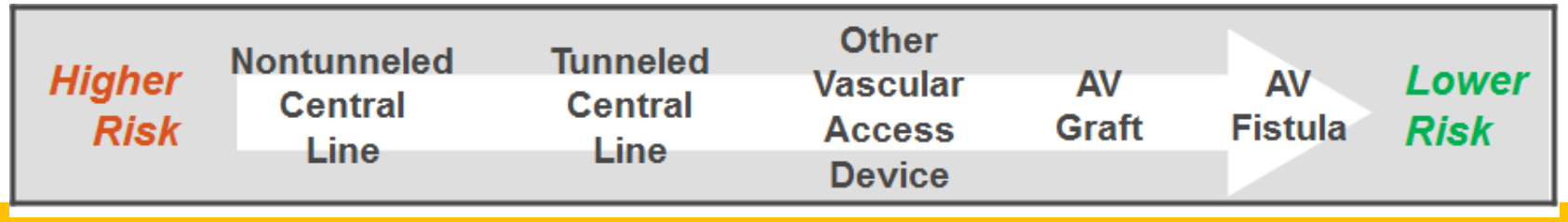
- **Count each patient only once.**

- **If the patient has multiple vascular access types, report the vascular access with the highest risk of infection.**
  - This might be a vascular access that is not currently in use for dialysis.



Training Objective #2: Correctly Count Patients for the "Denominators for Dialysis Event Surveillance" Form

- **Describe patient inclusion/exclusion criteria:**
  - Include: all outpatients, including transient patients and patients with acute kidney injury, who undergo hemodialysis treatment on the first two working days of the month.
  - Exclude: non-hemodialysis patients, inpatients, patients who are not present on the first two working days.
- **Determine the first two "working days" of each month:**
  - The first two days that include all regular shifts (i.e., all patients have the opportunity to be included in the count).
- **Categorize patients by highest infection risk access type:**
  - Count each patient only once.
  - If the patient has multiple vascular accesses, report him/her only once, under the category of his/her vascular access with the highest risk of infection:
  - Select the highest infection risk access, even if that access is not used for dialysis, is abandoned, or non-functional.



Numerators: Dialysis Events & “Report No Events”

Training Objectives #3, 4, and 5

Dialysis Event Surveillance Protocol and Requirements

Protocol: Report Numerator (Event) Data

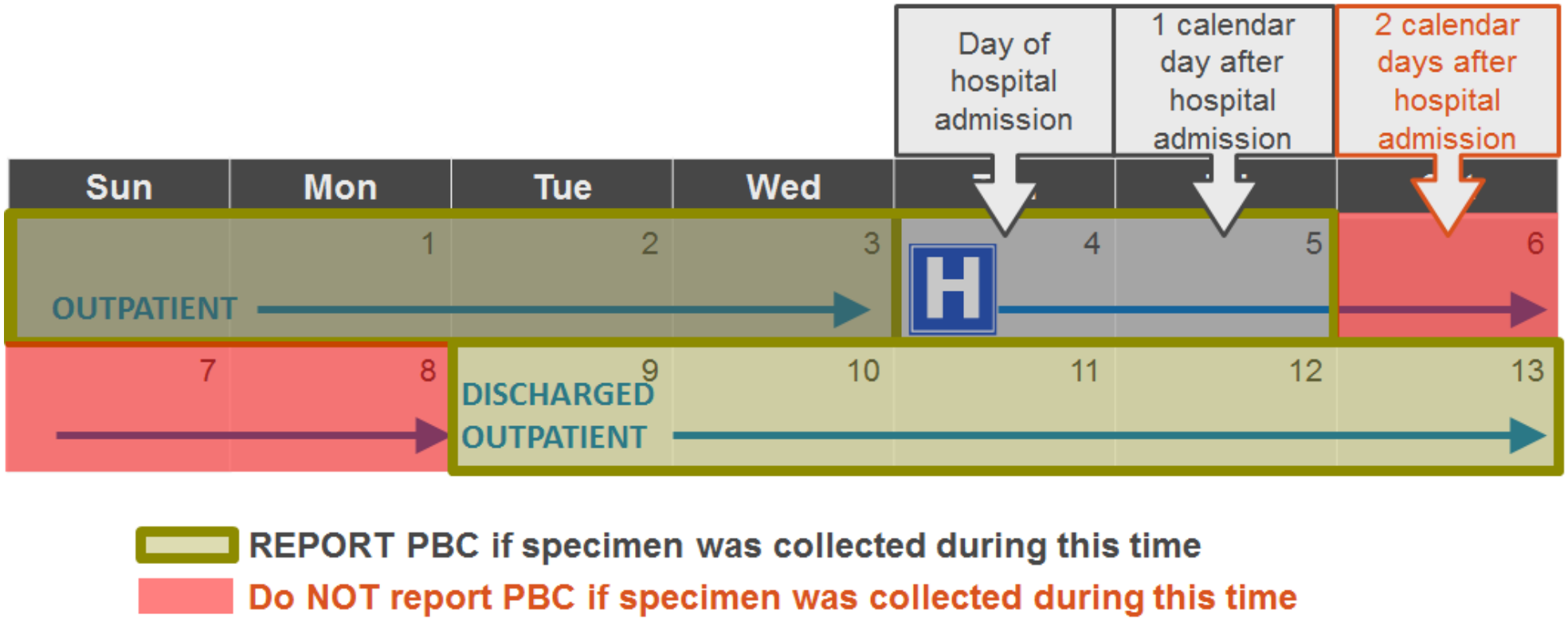
- **Throughout the month, monitor all outpatients who undergo hemodialysis at your facility for dialysis events.**
  - Even if they were not present on the 1st two working days, and therefore were not counted on that month's denominator form.
  - Monitor transient patients and acute kidney injury patients and report dialysis events that occur at your facility.
- **Report an event for any of the three types of dialysis events:**
  - Positive blood culture
  - IV antimicrobial start
  - Pus, redness or increased swelling at the vascular access site
- **On the event form under Risk Factors, report <u>all</u> of the patient's vascular accesses, regardless of whether they are in use for hemodialysis, abandoned, or non-functional.**
  - Note: this is different from the denominator form where only the highest risk vascular access is reported

Protocol: Report Numerator Data Dialysis Event Types

- **Positive blood culture: Report all positive blood cultures from specimens collected as an outpatient or collected on the day of or the day following hospital admission.**
  - Report regardless of whether the infection is thought to be related to hemodialysis or whether or not a true infection is suspected.

Reportable Positive Blood Cultures

- **Report all positive blood cultures (PBC)**
  - Collected as a hemodialysis outpatient
  - Collected within 1 calendar day after a hospital admission



Positive Blood Cultures: Requesting Information from Hospitals

- **Report all positive blood cultures (PBC)**
  - Collected as an outpatient, including Emergency Department
  - Collected on the day of, or the day after, hospital admission

- **Requires follow-up on every hemodialysis outpatient's hospitalization**
  - Implement a standardized process to request data
  - Consider requesting access to the hospital's electronic medical record

- **Hospital's medical records department unresponsive?**
  - Involve your ESRD Network
  - Develop a relationship with the hospital's infection preventionist
    - They are familiar with NHSN, although their reporting requirements differ

Positive Blood Cultures: Indicate the Suspected Source

- "**Vascular access**" if there is objective evidence of vascular access infection and it is thought to be the source

- "**A source other than the vascular access**" if another source is thought to be the source and either:
  - Culture from that site has the same organism as the blood
  - Clinical evidence of infection at the site, but site is not cultured

- "**Contamination**" if organism is thought by the physician, infection preventionist, or nurse manager to be a contaminant

- "**Uncertain**" only if there is insufficient evidence to decide among the 3 previous categories

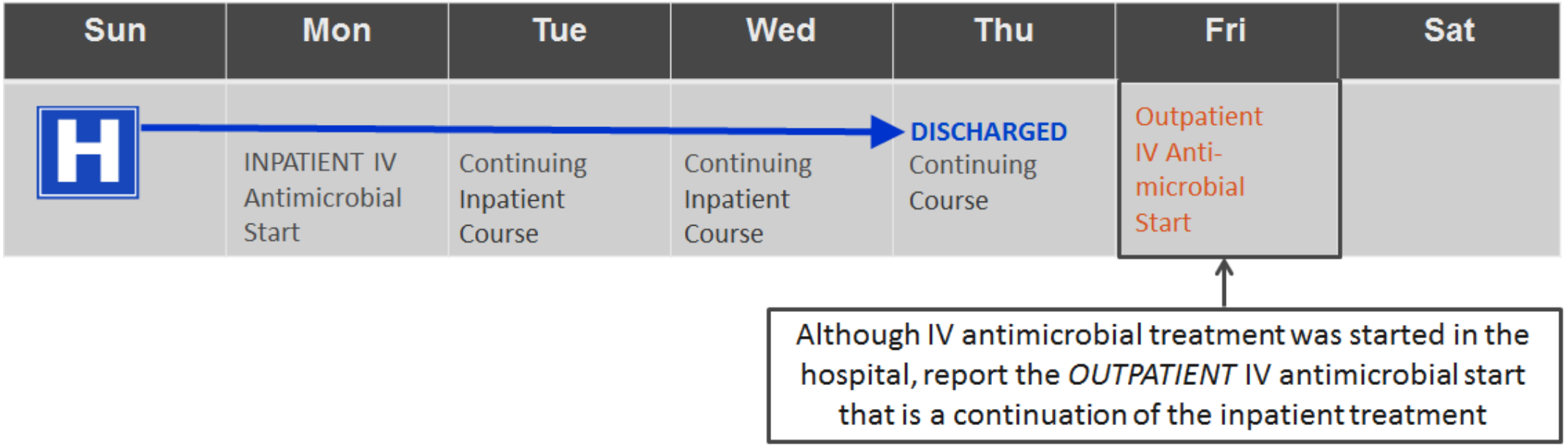
Protocol: Report Numerator Data Dialysis Event Types

- Positive blood culture: Report all positive blood cultures from specimens collected as an outpatient or collected on the day of or the day following hospital admission.
  - Report regardless of whether the infection is thought to be related to hemodialysis or whether or not a true infection is suspected.

- **IV antimicrobial start: Report all starts of intravenous antibiotics or antifungals administered in the outpatient setting.**
  - A “start” is defined as a single outpatient dose or first outpatient dose of a course.
  - Report regardless of the reason for administration or duration of treatment.

IV Antimicrobial Starts Can Include Continuations of Inpatient Treatment

- **Report outpatient starts that are continuations of inpatient treatment**



Protocol: Report Numerator Data Dialysis Event Types

- **Positive blood culture: Report all positive blood cultures from specimens collected as an outpatient or collected on the day of or the day following hospital admission.**
  - Report regardless of whether the infection is thought to be related to hemodialysis or whether or not a true infection is suspected.

- **IV antimicrobial start: Report all starts of intravenous antibiotics or antifungals administered in an outpatient setting.**
  - A “start” is defined as a single outpatient dose or first outpatient dose of a course.
  - Report regardless of the reason for administration or duration of treatment.

- **Pus, redness, or increased swelling at the vascular access site: Report each new outpatient episode where the patient has pus, greater than expected redness, and/or greater than expected swelling at any vascular access site, regardless of whether the patient receives treatment for infection.**
  - Always report pus.
  - Report redness or swelling if greater than expected and suspicious for infection.

Training Objective #3: Recall and describe the three types of reportable dialysis events

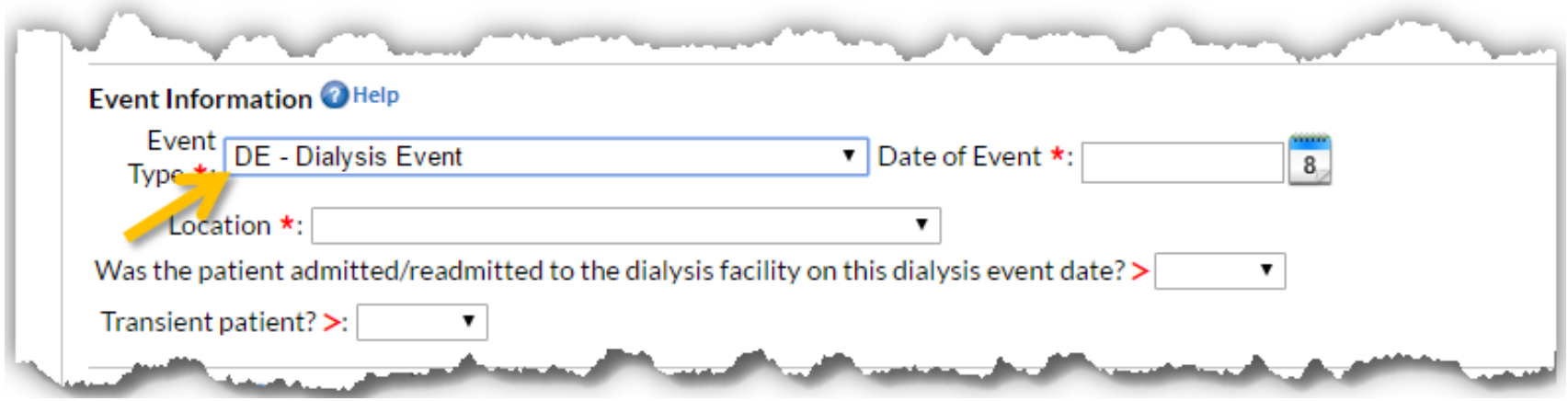
- **Positive blood culture:**
  - Report all positive blood cultures from specimens collected as an outpatient or collected on the day of or the day following hospital admission.
  - Report regardless of whether the infection is thought to be related to hemodialysis or whether or not a true infection is suspected.
- **IV antimicrobial start:**
  - Report all starts of intravenous antibiotics or antifungals administered in an outpatient setting.
  - “Start” is a single outpatient dose or first outpatient dose of a course.
  - Report regardless of the reason for administration or duration of treatment.
- **Pus, redness, or increased swelling at the VA site:**
  - Report each new outpatient episode where the patient has pus, >expected redness, and/or >expected swelling at any vascular access site, regardless of whether the patient receives treatment for infection
  - Always report pus.
  - Report redness or swelling if greater than expected and suspicious for infection.

Dialysis Event Combinations

- **If multiple dialysis events occur together, as a part of the same patient problem, they should be reported on the same Dialysis Event form.**
  - One Dialysis Event record may include:
    - Positive blood culture
    - IV antimicrobial start
    - Pus, redness or increased swelling at vascular access site
  - E.g., if a positive blood culture is the reason IV antimicrobials are started, they are reported together
- **Determining if events should be reported together can be subjective**
- **Purpose:**
  - Improves clinical usefulness and interpretability of surveillance data
  - Reduces data entry burden

Dialysis Event Form: Event Information

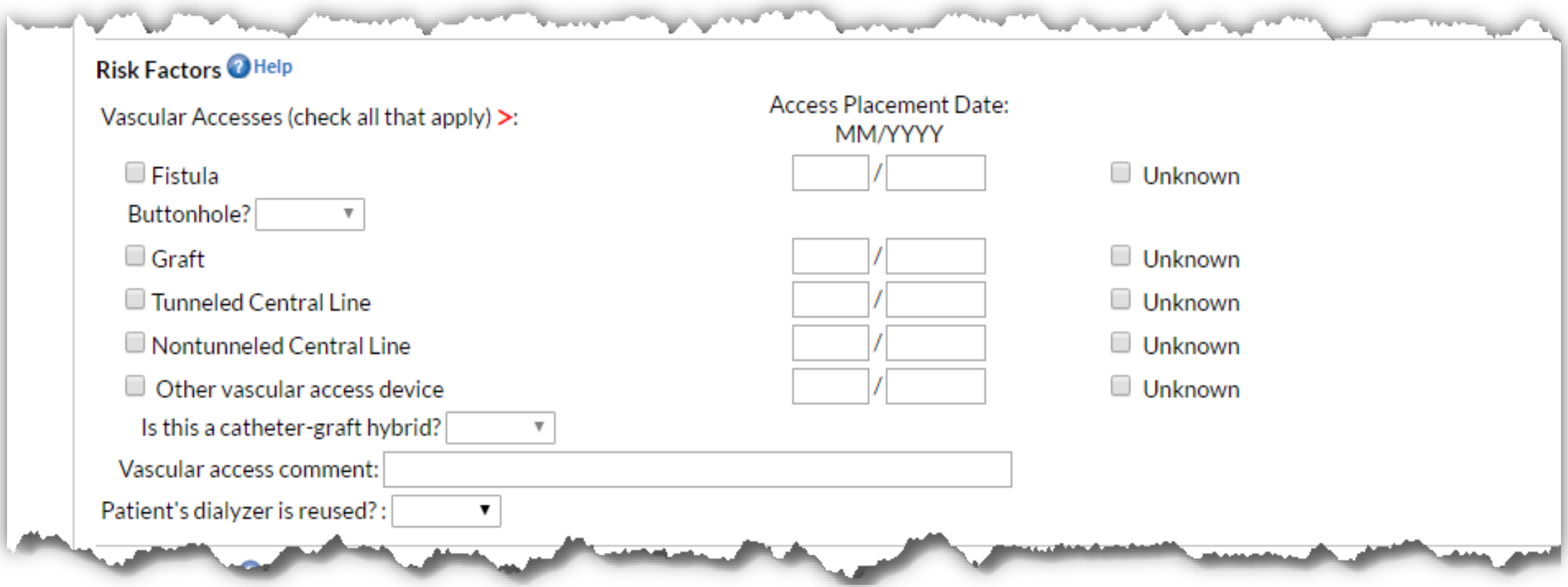
- **Event type = “Dialysis Event”**
- **Date of event**



Event Type	Date of Event
IV Antimicrobial Start	Date of first outpatient dose of an antimicrobial course
Positive Blood Culture	Date of specimen collection
Pus, Redness, Swelling	Date of onset
Combination	Earliest date among related event types

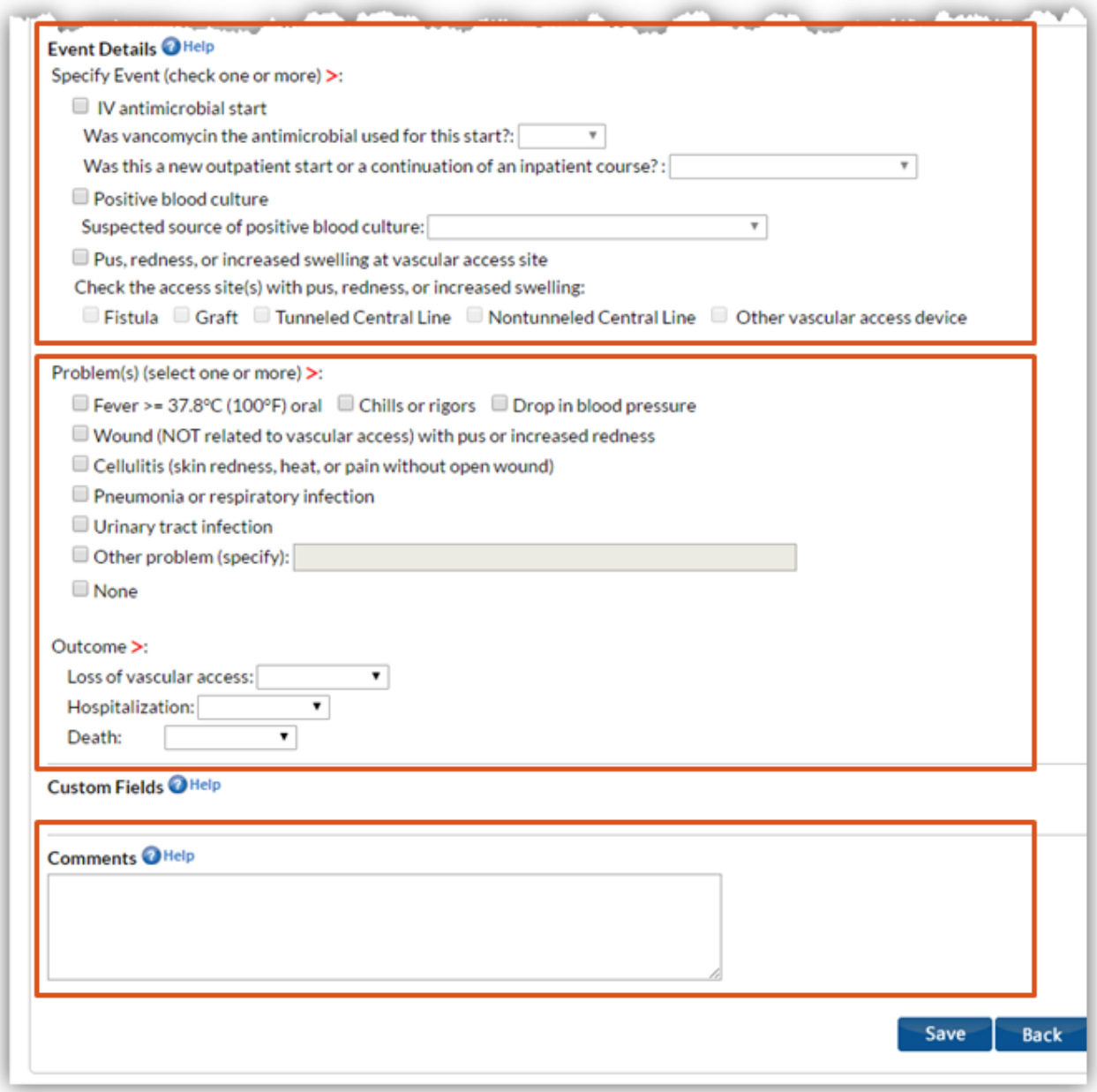
Dialysis Event Form: Risk Factors

- **Specify all of vascular access types present at the time of event and access placement date, if known**
- **Indicate if the patient's dialyzer is reused**



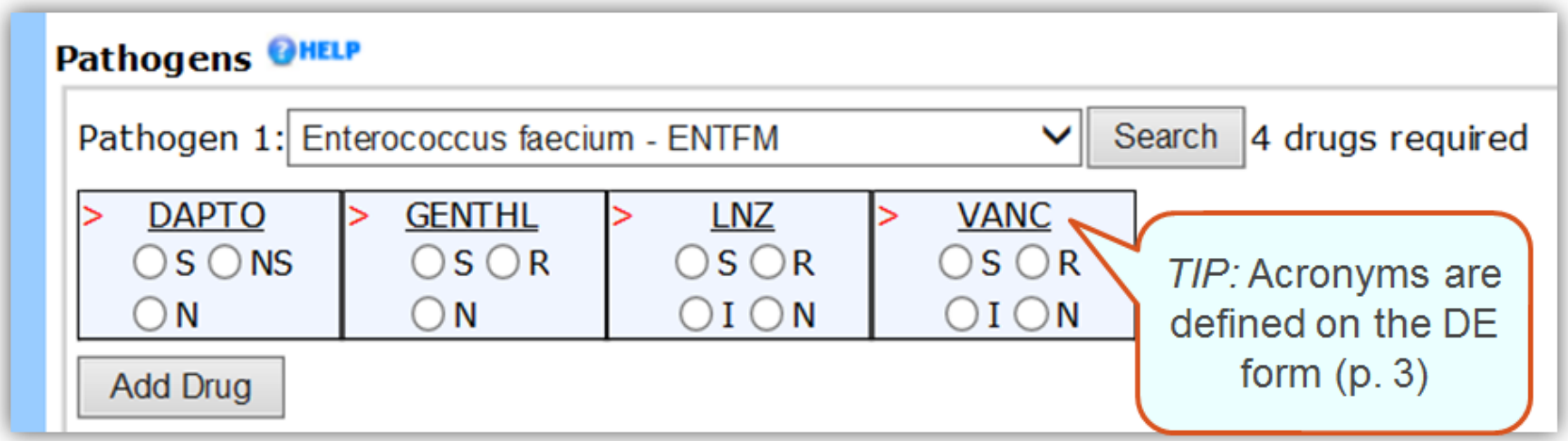
Dialysis Event Form: Event Details

- **Specify the dialysis event type(s) and associated details**
- **Indicate problems associated with the events and outcomes**
  - Outcomes should only be reported if they are related to the event
- **Use the "Comments" box to add any additional information**



Positive Blood Cultures: Pathogens & Antimicrobial Susceptibilities

- **For each positive blood culture, report up to three microorganisms**
- **Indicate antimicrobial susceptibility information for each organism reported**
  - Susceptible (S), Intermediate (I), Resistant (R), or Not tested (N)



- **Do not report cultures from sites other than blood**

Dialysis Event “21 Day Rule”

- **An event reporting rule which reduces reporting of events likely related to the same patient problem.**
  - E.g., multiple positive blood cultures may result from a single infection

- **The rule is that for each patient, 21 or more days must exist between two dialysis events of the same type for the second occurrence to be reported as a separate (new) dialysis event.**

- **If fewer than 21 days have passed since the last reported event of the same type, the subsequent event of the same type is NOT considered a new dialysis event and it is not reported.**

- **The 21 day rule applies across calendar months.**

- **Refer to each event definition in the protocol for instructions on applying the 21 day rule for each specific dialysis event type.**

Applying the 21 Day Rule In Situations Where Patients Have Had >1 of the Same Event Type

- **Positive Blood Culture 21 Day Rule:**
  - Only report another positive blood culture for the same patient if there have been ≥ 21 days since their last positive blood culture date

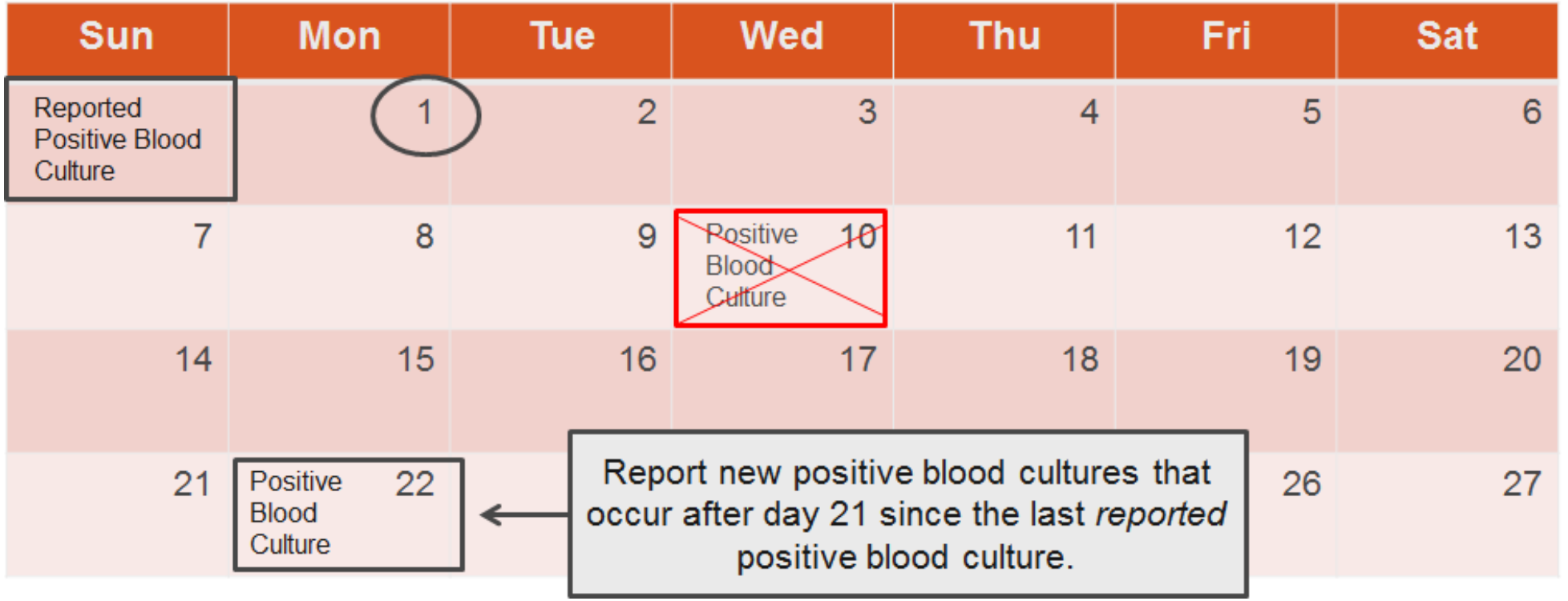
- **IV Antimicrobial Start 21 Day Rule:**
  - Only report another IV antimicrobial start for the same patient if there have been ≥ 21 days since their last IV antimicrobial dose
  - The rule still applies even if antimicrobial drugs are different

- **Pus, Redness, or Swelling at Vascular Access Site 21 Day Rule:**
  - Only report another episode of pus, redness, or swelling for the same patient if there have been ≥ 21 days since their last onset date of these symptoms

- **21 day rule only applies to multiple events of the same type**

21 Day Rule Applies to the Last Reported Event

- **If fewer than 21 days have passed since the last *reported* event of the same type, the subsequent event of the same type is NOT considered a new dialysis event and it is not reported.**



Applying the 21 Day Rule to Each Event Type (After a Previous Report of the Same Type)

Event Type	Count 21 Days…
Positive Blood Culture	From the **last PBC** (specimen collection date) to the next PBC (even if microorganisms differ) ▪ Has it been 21 or more days since the specimen collection date of the last reported PBC?
IV Antimicrobial Start	From the **end** of one IV antimicrobial course to the **beginning** of the next IV antimicrobial start (even if antimicrobials differ) ▪ Has it been 21 or more days since this patient received an IV antimicrobial dose?
Pus, Redness, or Swelling at Vascular Access Site	From the last Pus, Redness, Swelling **onset** to next **onset** ▪ Has it been 21 or more days since this patient's last reported onset of PRS?

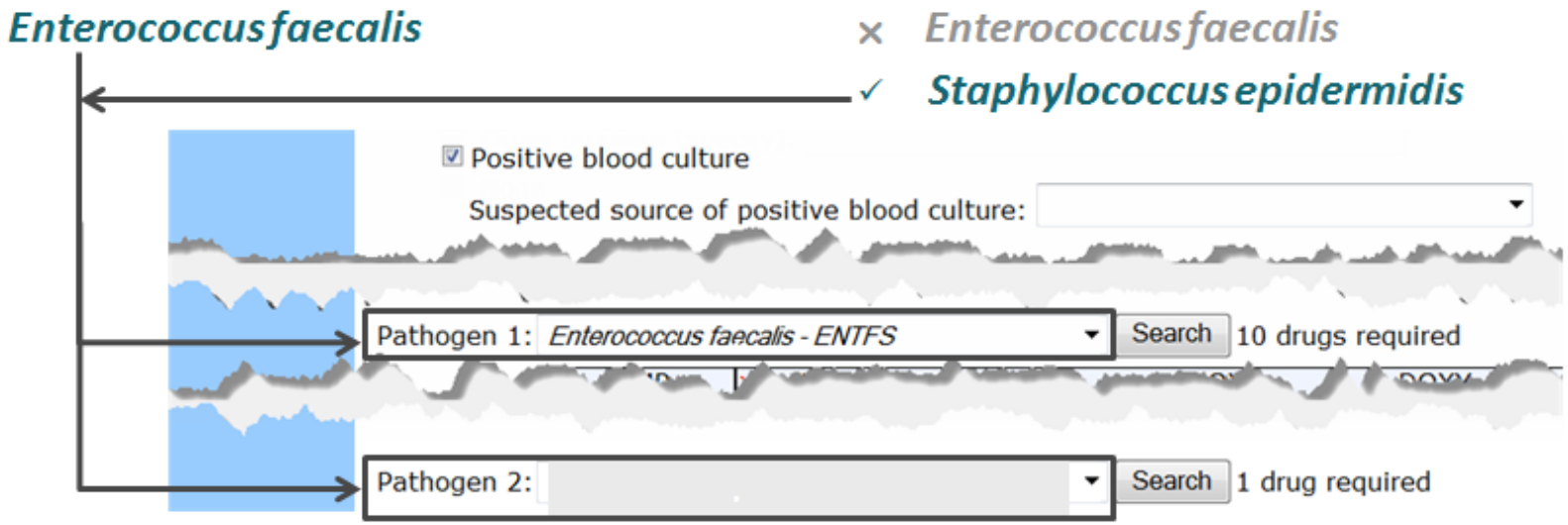
If yes, report a new Dialysis Event.

If no, DO NOT report a new Dialysis Event.

21 Day Rule: Positive Blood Cultures with Multiple Microorganisms

- **If different microorganisms grow from subsequent positive blood cultures, add the new organism(s) to the initial report**

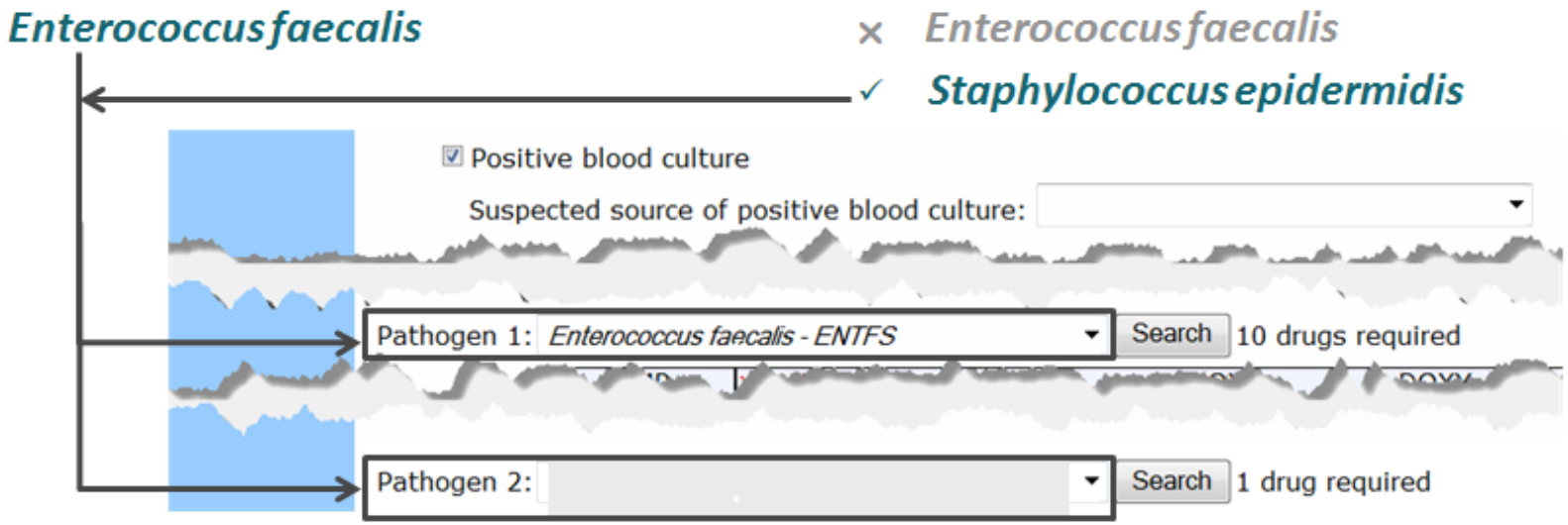
Sun	Mon	Tue	Wed	Thu	Fri	Sat
Reported Positive Blood Culture	1	2	Positive Blood Culture 3	4	5	6



Training Objective #4: When and How to Apply the “21 day rule” to Each Dialysis Event Type

- **If different microorganisms grow from subsequent positive blood cultures, add the new organism(s) to the initial report**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Reported Positive Blood Culture	1	2	Positive Blood Culture 3	4	5	6



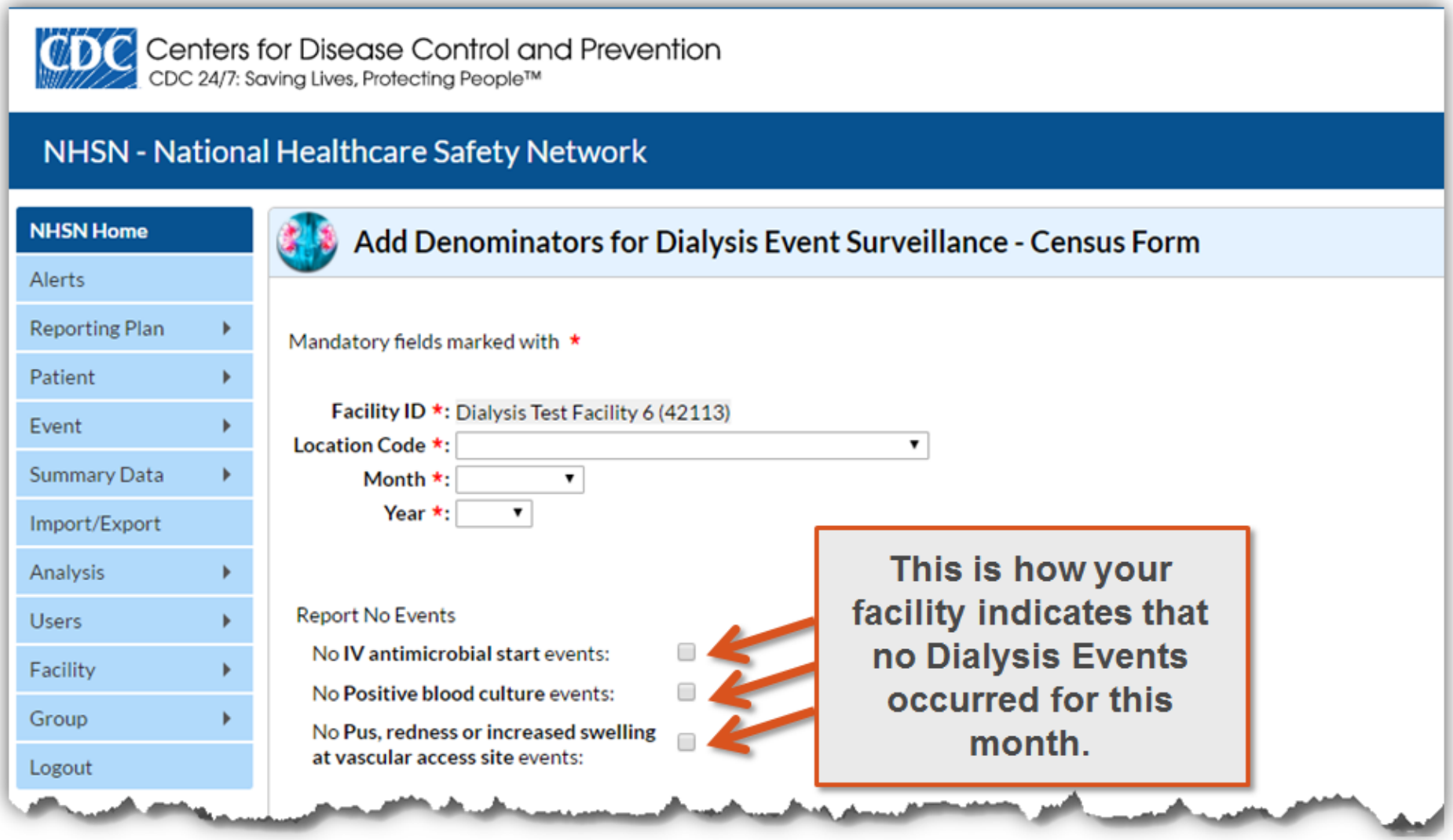
Numerator Data - Confirming there were zero events

- **Each month, your facility must account for each dialysis event type.**

- **So, for each event type, either:**
  - The event is reported on one or more Dialysis Event forms, **or**
  - The “report no positive blood culture events” box for that event type is checked on the Denominators for Dialysis Event Surveillance form to confirm no events (i.e., zero) of that type occurred during the month.

- **When you check the “report no positive blood culture events” box it means:**
  - You have reviewed your records and are confirming there were no reportable positive blood culture events that occurred that month in your patients.

Training Objective #5: Reporting there were “no events”



Numerator (Event) Data Summary

- **Report a dialysis event for any of the three event types:**
  - IV antimicrobial start
  - Positive blood culture
  - Pus, redness or increased swelling at the vascular access site

- **Apply the 21 day rule across calendar months**
  - For a given patient, 21 or more days must pass between two dialysis events of the same type for the second occurrence to be reported as a separate (new) dialysis event
  - Rule is applied differently depending on the dialysis event type
  - Refer to the Dialysis Event Protocol if you are unsure how to report a particular event

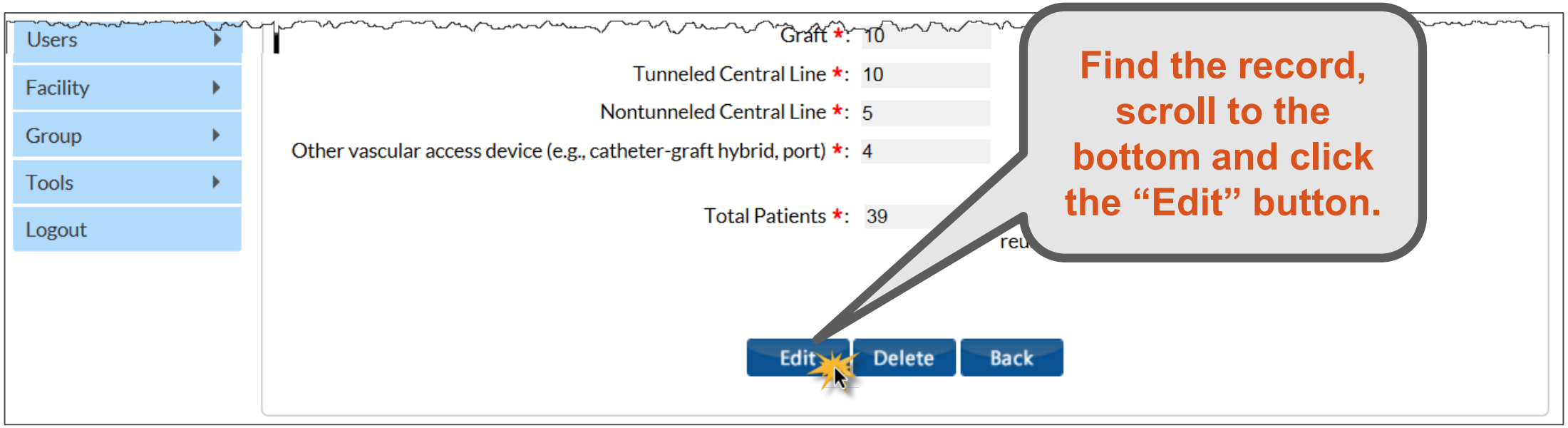
- **Account for each event type each month:**
  - If no events occurred, confirm for that event type on that month's denominator form

Data Quality

Corrections

- **Corrections can be made to NHSN data, even if QIP reporting deadlines have passed.**

- **Corrections will:**
  - Improve your data for facility internal uses (quality improvement)
  - Improve national data quality for external uses (CDC analyses and benchmarking)



Electronic Data Submission

- **At least one staff member at the facility must be trained and know how to report dialysis event data to NHSN, regardless of the data submission method used**

- **The facility is accountable for all data reported on its behalf:**
  - Review all the data monthly
  - If incorrect data are identified, make corrections as soon as possible

- **Contact your corporate representative to ensure the problem is not repeated**

- **Some organizations use CDA (clinical document architecture) to electronically submit data to NHSN**
  - These organizations will report some or all NHSN Dialysis Event data for the facility
  - Verify with your organization what data you are responsible for reporting manually

Summary

Summary – Dialysis Event Surveillance Requirements

- **Annual Outpatient Dialysis Center Practices Survey**
  - Completed in February each year

- **Monthly Reporting Plans**
  - Indicate which data are reported according to NHSN protocol(s)
  - Select the “DE” checkbox each month to indicate the facility is participating in Dialysis Event Surveillance

- **Denominator data**
  - Count all hemodialysis outpatients, transient patients and patients with acute kidney injury present on first two working days of the month, by their highest infection risk access type (even if that access is not used for dialysis, is abandoned or non-functional)

Summary – Dialysis Event Surveillance Requirements

- **Numerator (Event) data**
  - Across the entire month, monitor hemodialysis outpatients and report a dialysis event for IV antimicrobial starts; positive blood cultures; pus, redness, swelling at a vascular access site
    - Apply the 21 day rule as needed, to dialysis events of the same type
  - Confirm if zero dialysis events occurred for the month

- **Data quality**
  - Make corrections to data, as needed
  - Your facility is responsible for its data, even if corporate is submitting data on your facility's behalf

Thank you! Questions?

nhsn@cdc.gov

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.