NHSN Guidance for Missing Device-associated Denominator Data

Last Reviewed: September 2024

The following guidance has been developed to assist facilities in situations where denominator data are not collected on one or more days during a given month. In the updated guidance, NHSN has moved to the term "adjacent days." Adjacent days refer to the same days in the next month. The next month may represent the month **before** or **after** the given month where denominator data is not collected. Note there are four scenarios described below, each with prescribed guidance on imputing values for that specific scenario.

Scenario 1

Missing denominator data 1 or 2 days within a month: If missing 1 or 2 days within a month**,** use data from the month with the nearest adjacent days. For instance, the unit should use the data one day before or one day after the missing day based on available data and impute the value for the missing day(s).

Example: In the medical unit, the patient days and device days are missing for 1/28 and 1/29 (marked with *X* in Table 1). The day before and after the missing denominator days are 1/27 and 1/30. For both the patient and device days, use data from the day before or the day after the respective missing day.

- For the missing **device days (urinary catheter days)**, the value on 1/27 is 6 and the value on 1/30 is 4, as shown in Table 1. The medical unit should report 6 urinary catheter days on 1/28 and 4 urinary catheter days for 1/29.

- For the missing **patient days**, the patient day values on 1/27 and 1/30 are 11 and 10 respectively, as shown in Table 1. The medical unit should report 11 patient days on 1/28 and 10 patient days for 1/29.

Table 1: Missing 1 or 2 Days of Denominator Data within a Month

Date	Patient Days	Urinary Catheter Days
1/25/2021	11	4
1/26/2021	12	5
1/27/2021	11	6
1/28/2021	*X* (11)	*X* (6)
1/29/2021	*X* (10)	*X* (4)
1/30/2021	10	4

Day before → 1/27/2021

Day after → 1/30/2021

X= days of missing data

Scenario 2

Missing denominator data for 3 to 14 days within a month: If missing denominator data for 3 to 14 days within a month, use data from the month with the nearest adjacent days. The missing day values are combined with the respective values from the nearest adjacent days. A prior or future month's data may be used to complete the denominator data reported.

Example: There are 10 central line (CL) days missing in our surgical intensive care unit (SICU) in January 2021. The CL denominator data is collected for 21 of the 31 days in the month as indicated by the *X* in Table 2. SICU should use data from the month with the nearest adjacent days. Adjacent CL denominator days from December are used, since both December and January have the same number of days in each respective month.

To determine the total number of CL days for January 2021:

- Combine the reported 21 CL days from January 2021 (**33 + 25** = **58**)
- Add the 21 reported CL days from January 2021 (**58**) to the 10 reported CL days from December 22-31, 2020 (**31)**
- The sum of the numbers (**58 + 31 = 89)** provides a complete month of CL denominator counts for this location (see Table 2).
- SICU should report **89** total CL days for the month of January 2021.

Note: There are instances when data from the previous month is not available. If this occurs, use data from the next available future month with the nearest number of adjacent days.

Table 2: Missing denominator data for 3 to 14 days within a Month

Month/Year	Number of **Patient Days** (by days)			Number of **Central Line Days** (by days)		
	Days (1-10)	**Days (11-21)**	**Days (22-31)**	**Days (1-10)**	**Days (11-21)**	**Days (22-31)**
December 2020	35	27	20	26	22	**31**
January 2021	28	29	18	**33**	**25**	*X (31)*
February 2021	32	15	23	30	21	25

X= days of missing data

Scenario 3

Missing denominator data for 15 or more days within a month: If missing denominator data for ≥15 days, use data from the month with the nearest adjacent days.
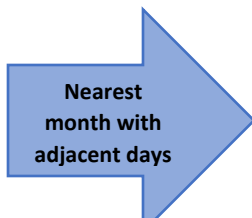
Example A: The medical-surgical (med-surg) unit is missing patient day and device day denominator data for March 2021 (as indicated by the *X*).

The med-surg unit reported no patient day or device day denominator data for the month of March. January has the nearest number of adjacent days. Using the table below, med-surg reported 176 patient

days and 48 device days for January. The med-surg unit should report 176 and 48 respectively for the patient day and device day counts, since January has the nearest number of adjacent days.

Note: The data from February is not used since the number of days for this month is not considered a month with the nearest adjacent days (Table 3).

Table 3: Missing >15 Denominator Days within a Month

	Month/Year	Number of **Patient Days**	Number of **Device Days**
	November 2020	159	53
	December 2020	165	59
Nearest month with adjacent days →	January 2021	**176**	**48**
	February 2021	164	58
	March 2021	*X (176)*	*X (48)*

X= days of missing data

Example B: The medical intensive care unit (MICU) unit is missing denominator data for > 15 denominator days in February (as indicated by the *X*). The nearest adjacent month, January, is not eligible for use because the adjacent denominator data are not collected.

The medical intensive care unit (MICU) is missing denominator device days from February 1st - February 15th. Denominator data from the nearest adjacent month is not eligible for use since there are missing denominator days in January (January 1st - January 15th). What month should be used to report the denominator device day data for February?

If data from the previous month is not available, use data from the next available future month with the nearest number of adjacent days. For example, if there are missing device denominator data for February and the same days are missing for the month of January, use data from March with the nearest number of adjacent days.

Since the denominator days are not reported for the adjacent days in January, March is the next available adjacent month with the complete number of denominator days reported. There is a total of 177 **(92 + 85 = 177)** device days reported in March. The number of denominator device days collected from March 1st -March 15th are 92 device days. Use 92 device days for the missing days of denominator data in February. Report a total of 147 (**92 + 55 = 147**) denominator device days for February. This same method can be used to calculate the patient day denominator count if there are missing data.

Table 4: Missing >15 Denominator Days within a Month

Month/Year	Number of Patient Days (by days)		Number of Device Days (by days)	
	Days (1-15)	**Days (16-31) ***	**Days (1-15)**	**Days (16-31) ***
January 2021	*X*	78	*X*	62
February 2021	*X*	65	*X (92)*	55
March 2021	97	88	92	85

*There are only 28 days in February; therefore, additional days are added using the data from March since this month has 31 days.

X= Missing denominator data

Scenario 4

If there is a location within your facility with more than one month of missing denominator data, consider using a manual collection method. There are only a few possible solutions when there is more than one month of missing denominator data. An example of a possible solution includes performing a chart review for the missing month(s) to determine the number of patients with devices during this timeframe. There may be additional resources or tools available to individual facilities that will allow for the most accurate capture of device and patient day data under these circumstances. The important point for Scenario 4 is facilities should report the most accurate denominator device data available to NHSN.

If there are any additional questions, contact the NHSN helpdesk at NHSN@cdc.gov .