**Introduction**

Line listings for COVID-19 vaccination summary data can be produced in NHSN for healthcare personnel, long-term care (LTC) residents, and dialysis patients. The line listing is an organized, detailed list of each record entered into NHSN, available to both facilities and groups. The purpose of this resource is to provide step-by-step instructions for using the “**All COVID-19 Vaccination Cumulative Detail Data**” line listing report to view weekly rates of additional or booster doses. Note that while this example uses the line listing for long term care residents, similar steps can be followed for all COVID-19 Vaccination Cumulative Summary Data line listing reports.

**Example**

We are interested in seeing the different types of vaccines that residents received over the time of 09/06/2021 – 09/26/2021. We will need to run the line listing report “**All COVID-19 Vaccination Cumulative Detailed Data – Residents**”. Please note that these dates were chosen because collection of weekly COVID-19 vaccination data for residents begins on a Monday (09/06) and ends on a Sunday (09/26). The steps below show how to produce a line listing report showing the information of interest.

**Generating Data Sets**

Before being able to run any report, you must generate data sets. This process will freeze your NHSN data at the current date and times by copying those data into defined data sets. When you wish to view updates to the data contained in your NHSN reports or to include data entered since the datasets were last generated, you must regenerate datasets for those updates to be reflected. Datasets are user-specific; therefore, each user in NHSN who wishes to analyze data must generate datasets.

To generate datasets in NHSN, navigate to Analysis > Generate Data Sets. Then, on the Reporting Data Sets tab, click...
“Generate Reporting Data Sets”. Any datasets previously generated will be overwritten.

Creating the Line Listing

Once you have generated your data sets, you are ready to produce a line listing.

2. Select the “COVID-19 Vaccination” subfolder. Note that the folder “COVID-19 Vaccination” includes default output variables for reporting weeks prior to the surveillance week of 9/27/2021-10/3/2021 for healthcare worker data, while the folder “COVID-19 Vaccination (Pre-10.0)” includes default output variables for weeks on or after the surveillance week of 9/27/2021-10/3/2021 for healthcare worker data. This is because many variable names changed for healthcare worker data following an application update on September 27, 2021. Since this QRG discusses resident, not healthcare worker, data, we will select the folder “COVID-19 Vaccination,” regardless of the time period included in the output.
3. Click on the report that you would like to run. In our example, “All COVID-19 Vaccination Cumulative Detailed Data-Resident”.

Modifying the Report

Using the Modify Report option allows you to customize your report. You can add a title to the output, select a time period, add filters, select additional variables or remove variables from the default list, choose how to sort variables, and select display options. Below are modifications for this example. For more detailed information on how to modify a report, please refer to How to Modify a Report Quick Reference Guide.
Time Period

To filter the data by time period, choose the “Time Period” tab at the top of the page. For our example, we will modify the time period by the surveillance week ending date (survWeekEnd). If you don’t select a time period, your report will include all data from your previously generated dataset.

In this example, we were interested in seeing data from 09/06/2021 – 09/26/2021, so we set ‘Week of data collection, end date’ to 09/06/2021 (beginning) and 09/26/2021 (ending) to capture that three-week period.

Filters

The “Filters” tab allows you to further filter the data that display in the report. The default filter will restrict output data from 9/27/2021 onward. You can remove this filter to create reports that include data from before 9/27/2021 by simply clicking delete. For our example, we do not need to filter the data.
Display and Sort Variables

The “Display Variables” and “Sort Variables” tabs are specific to line listing reports and allow you to display and sort specific variables in your report. Both tabs allow you to move variables from the available list in the left column to the selected list in the right column by using the directional arrows in the center. You can also re-order the selected variables using the “Up” and “Down” buttons, found to the right of the selected variables list.

For our example, we will add the CCN numbers for each facility. This could be useful data if the user wants to share the report with their administrator.

If including multiple weeks, it is recommended to sort the line listing by “Week of data collection, start date” or “Week of data collection, end date”. This can be done by selecting the “Sort Variables” tab and selecting the desired variable.

**Recommendation for Group-level Users:** If you are analyzing data as a NHSN Group User, it is recommended to also “Page By” orgID – this will result in one table per NHSN facility. To select a “Page By” variable, select the
“Display Options” tab on the modification screen, and selecting “orgID” as the Page by variable.

Final Report

After modifying the report, you are now ready to see the output. The example line listing shown below is the result of the example report with the modifications described above. You will see that the detailed line listing report breaks down vaccines that were given during the reporting week by vaccine manufacturer. There is one row for each week per vaccine manufacture and dose. The column titled “Vaccine Name” (A) indicates the vaccine manufacturer. The column titled “COVID-19 Vaccination” (B) corresponds to the specific dose for each vaccine type. Vaccine names ending in the number “1” represent the first dose of a 2-dose vaccine series. For example, “Moderna1” would refer to the first dose of Moderna vaccine. A number “3” at the end of a 2-dose vaccine type (e.g., Pfizer or Moderna vaccine) would indicate an additional or booster dose of COVID-19 vaccine. Similarly, number “2” at the end of a 1-dose vaccine type (e.g., Janssen vaccine) would also indicate an additional or booster dose. The number of residents having received each vaccine type is listed in the column titled “Resident Vaccine Series Status Count(s)” (C).

Based on the report below, for the week of 09/06/2021 (in yellow), this facility has reported 1 resident having received the first dose of Moderna COVID-19 vaccine, 10 residents having received dose 1 and dose 2 of Moderna COVID-19 vaccine, 1 resident having received dose 1 of Pfizer COVID-19 vaccine, and 15 residents having received dose 1 and dose 2 of Pfizer COVID-19 vaccine. No residents have received a booster dose of any kind.

When reviewing these data, the number of residents receiving Moderna and Pfizer COVID-19 vaccines increases from week 09/06/2021 to 09/19/2021. Note that there seems to be a large increase in the number of Janssen vaccines reported for the week of 09/20/2021 and zero Pfizer vaccines reported for this week (D). This observation may be correct, or it could possibly be a data entry error. As we look at the data prior to 09/20/2021, Janssen numbers are consistently not reported. The large increase in the Janssen vaccine doses could be a data error where Janssen was reported in place of Pfizer vaccine. If this represents a data entry error, the facility could easily update their data.
**Note:** The data in this example output are fictitious and intended for illustrative purposes only

**Additional Resources**
How to Export Data from NHSN: [https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/exportdata.pdf](https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/exportdata.pdf)

