# Data Visualization & Storytelling

## 2.10: Presenting Findings to Stakeholders

**Link to the video:**

Video

**Link to the story:**

Preparing for Influenza Season 2018

## Project data limitations and metrics

**Directions**

Create a document reflecting on your project data limitations and metrics.

- Q1. Were there any limitations that prevented you from conducting an analysis? Think of these in terms of a future project or wish list (i.e., "If I had x, I would have been able to do y.").
- Q2. Did your data have any limitations that may have affected your results? Consider this in terms of data quality and data bias.
- Q3. How might you monitor the impact of the staffing changes you recommended?
- Q4. Is there a metric that could be used for monitoring this impact?

**A1.** In the project's business requirements document, it is emphasized that the project's success hinges on an efficient staffing plan that effectively utilizes all available agency staff according to state requirements. The goal is to avoid any need for additional resources and to minimize instances of both understaffing and overstaffing across different states. A state is considered understaffed when the staff-to-patient ratio falls below 90% of the required ratio, and overstaffed when it exceeds 110%.

However, at this stage, we are unable to proceed with the preparation of the staffing plan due to the lack of necessary information. To successfully develop the plan, we require the following additional data:

**Agency Staff Data:** We need to gather comprehensive information about all agency staff members, including their qualifications, certifications, relevant experience, and availability. This will help us understand the skills and expertise of each staff member, ensuring that they are appropriately assigned to tasks.

**Shift Scheduling Data:** Access to data on past shift schedules and staffing patterns is essential to identify any recurring trends or peak periods of patient demand. This historical data will enable us to make informed decisions regarding optimal staffing levels during different times of the day and week.

**Staff Availability and Preferences:** Collecting information about staff availability and their preferences for shifts or locations is crucial. By understanding their preferences, we can create a flexible staffing plan that aligns with their needs while still meeting the state's staffing requirements.

Acquiring this additional information will be instrumental in creating a staffing plan that not only meets state regulations but also maximizes the potential of available agency staff without necessitating any extra resources. By avoiding instances of understaffing and overstaffing, we can ensure the efficient allocation of human resources, resulting in enhanced patient care and overall project success. Regularly monitoring and adjusting the plan based on changing circumstances and staff availability will further improve its effectiveness.

**A2. Data limitations**

1) Data Set: Influenza Deaths

Single Cause of Death: Death certificates only list one cause of death, potentially leading to underrepresentation or overlooking of cases where influenza may have contributed to the decline in health of vulnerable populations.

2) Data Set: US Census data

• Sampling Bias: The US Census uses sampling techniques, which can result in biased population estimates if certain groups are underrepresented or missed in the sample.

• Non-Response Bias: Some individuals or households may not respond to the census survey, leading to bias in the data.

• Coverage Bias: The census may not accurately capture all segments of the population, such as homeless individuals or those in remote areas, resulting in undercounting or omission.

• Timing and Frequency: The decennial census is conducted every ten years, providing a comprehensive count. However, for more frequent updates, other surveys like the American Community Survey are used, which may have a delay between data collection and release. This limits the availability of up-to-date population data.

**A3.** Monitoring the impact of staffing changes is an ongoing process that requires continuous data collection and analysis. This impact can be monitored by:

**Staff Feedback:** by gathering feedback from agency staff about their experiences with the new staffing plan. Employee satisfaction surveys and open communication channels can provide valuable insights into staff morale and the plan's effectiveness.

**Patient Feedback:** by gathering feedback from patients about their experiences with the healthcare services provided.

**Comparative Analysis:** by conducting comparative analysis between facilities or states to identify any discrepancies in the impact of staffing changes. This can help determine best practices that can be replicated across the organization.

**Staffing Ratios:** Continuously tracking the staff-to-patient ratios across different states and facilities and comparing these ratios before and after implementing the staffing changes, with aim to keep the ratios within the desired range (90%-110%) to ensure optimal staffing levels.

By incorporating these monitoring methods, organizations can assess the overall effectiveness of the staffing plan and make data-driven decisions to enhance patient care, staff satisfaction, and operational efficiency. Regularly collecting and analyzing data empowers the organization to adapt the staffing plan as needed, ensuring its continued success and alignment with project objectives.

**A4.** Yes, one effective metric that can be used for monitoring the impact of staffing changes is the **Patient-to-Staff Ratio**. This metric measures the number of patients cared for by each staff member within a specific period.

The second metric can be **Number of Influenza-related Deaths:** Tracking the number of influenza-related deaths can provide a valuable indicator of the quality of patient care. If staffing changes have positively impacted patient outcomes, such as reducing the number of deaths related to influenza, it suggests that the staffing plan is contributing to improved patient care and medical management.