

Hand Hygiene Quality Improvement

Atticus Kenny, BS, REHS, a-IPC
Case Western Reserve University

Background

My host site was University Hospital located at 11100 Euclid Ave, Cleveland, OH 44106. University Hospital is a non-profit hospital that provides services to patients across Northeast Ohio with a network composed of 21 hospitals, 50 health centers and over 200 physician offices. My time at UH was spent with the infection prevention program whose work is to conduct surveillance, develop policy, and monitor the environment of care to prevent the incidence of hospital acquired infections and the spread of infectious diseases; promoting and protecting the health of patients, staff and visitors alike.

Population

Due to the large catchment area of University Hospital and its over 1,000 registered beds, they serve a very diverse population of people. As displayed by its payor mix with ~49% Medicare, 18% Medicaid, 26% commercial, 6 % other and 1 % self payors. The quality improvement project I was afforded the opportunity to work on was conducted on a Intensive Care Unit (ICU) which is comprised of a patient population that is severely ill which makes them more susceptible to complications that require higher levels of monitoring and specialized care.

Learning Objectives

- 1.) Understand the basic principles and practices of infection prevention and control in a hospital setting.
- 2.) Collect, analyze and interpret hand hygiene data used to evaluate the effectiveness of current policies and initiatives.
- 3.) Develop educational materials on hand hygiene to promote better hand hygiene practices and awareness amongst health care professionals and visitors.

Activities

My main responsibility was to perform “secret shopper” hand hygiene audits to compile a robust and representative data set. This auditing was performed by covertly observing staff to assess compliance rates with the established hand hygiene protocol. Other activities included the creation of educational materials, assisting in the development of line list for surgical site infection investigations, attending CLABSI/CAUTI huddles, Hospital Associated Infection (HAI) case reviews in accordance with National Healthcare Safety Network (NHSN) chapters, and multidisciplinary rounding.



Deliverables

The first deliverable was a baseline data set that provided accurate data on hand hygiene compliance. Prior to the initiation of this project hand hygiene compliance was monitored by a system that was reliant on staff reported data which induced bias via self reporting and lack of validity due to small sample sizes. This robust data set will be used to compare pre and post intervention data to assess the effectiveness of the quality improvement initiatives across the ICU in totality and across different positions within the staff. Furthermore, this baseline data can serve as a comparative data set for future initiatives that include secret shoppers across the system.

The second deliverable was also one of the interventions included in the project which was targeted educational material on hand hygiene. A flyer was developed and disseminated to staff. The education material was focused on addressing observed/common misconceptions regarding hygiene requirements. With the focus being that the use of PPE is not a replacement of hand hygiene but instead serves as an additional layer of protection. Statistics were also provided on the impact of hand hygiene, and its use in the reduction of HAIs. This helped the staff become aware of the increased risk of infection related to not performing proper hand hygiene. A copy of this handout can be seen by scanning the QR code below.

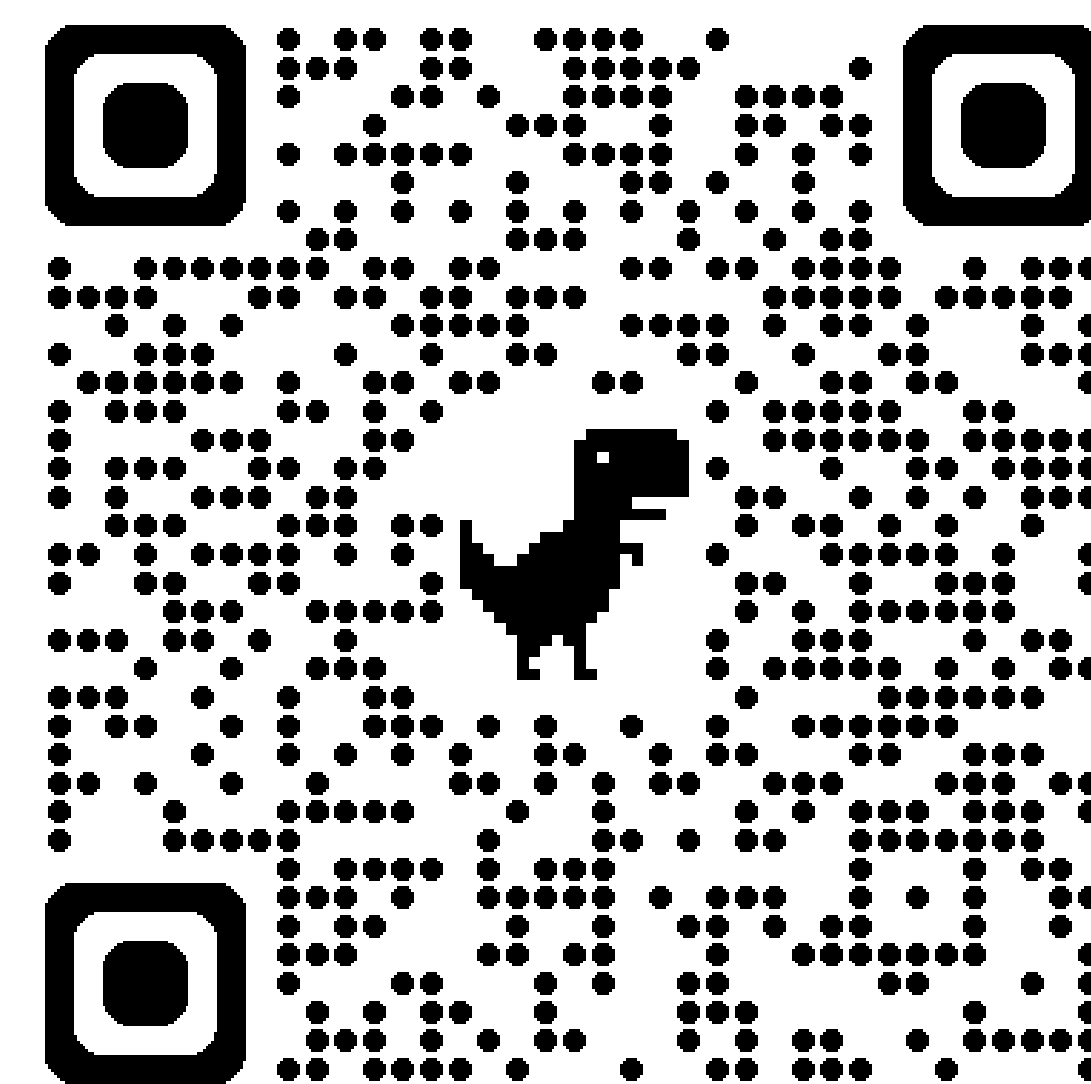


Figure 1: Educational material provided to staff during the “education” intervention

Methods and Results

After baseline data was collected two intervention were implemented: one engineered and one administrative. The first intervention was focused on changing the built environment that staff interacts with by installing more hand sanitizers in readily available and visible locations. The second intervention (administrative) was the distribution of educational materials to staff as well as postage of signs, and staff education at daily huddles which were attended by physicians and nurses to gather greater buy-in from staff. Each intervention was implemented over the course of a month and no observations were made during this period. After the month-long intervention period, observations resumed, occurring every other week over the course of two months. Descriptive Statistics and preliminary results are displayed in the following visuals:

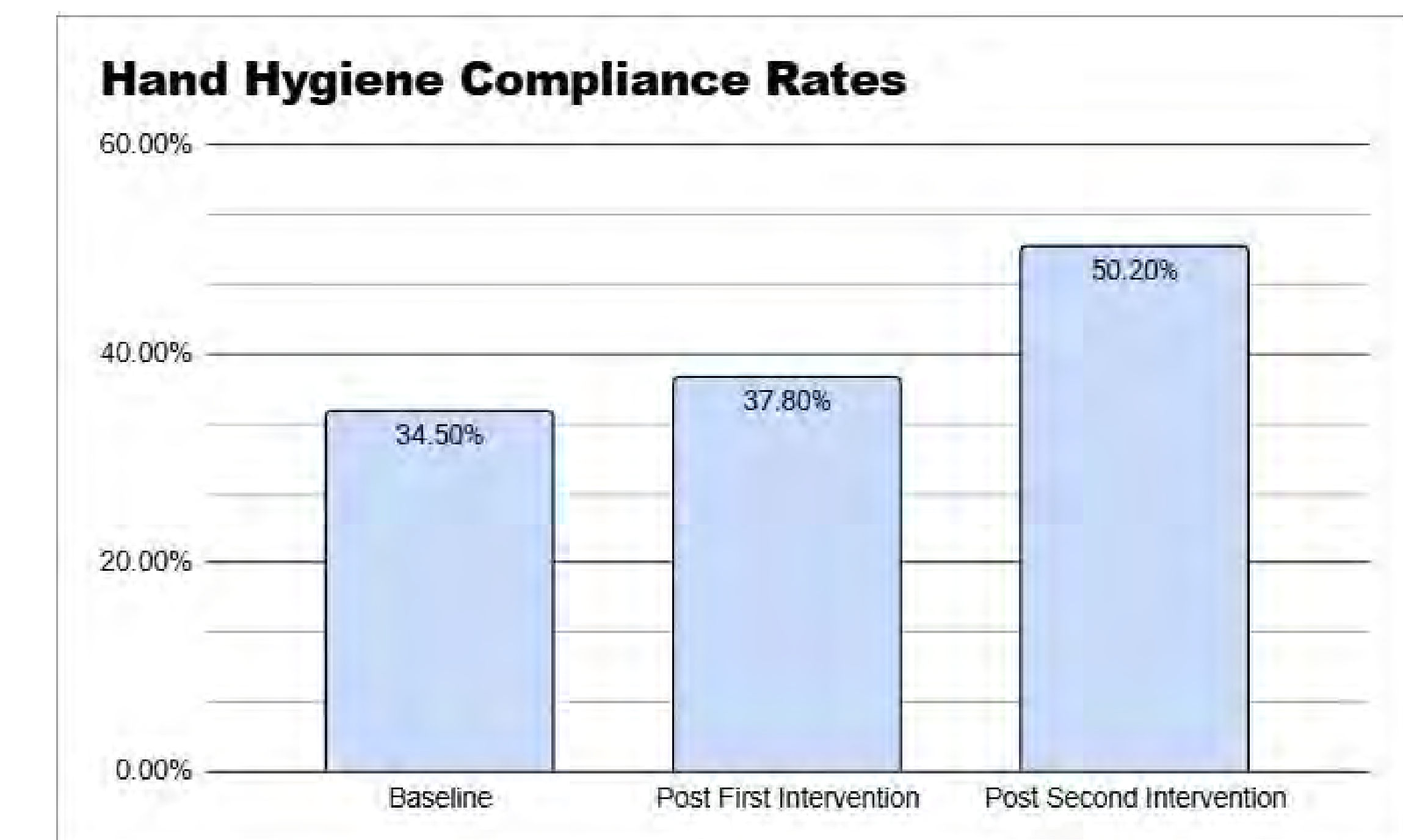


Figure Three- Bar chart displaying hand hygiene compliance rates pre and post interventions

Lessons Learned

The simple establishment of policy is not sufficient to create lasting and effective change. The need for surveillance, evaluation, enforcement, and continuous improvement is essential in managing healthcare facilities. Furthermore, interventions need to be cross sectional and include a variety of stakeholders to enhance buy-in and acculturation of best practices. Quantitative Data plays an important role in identifying trends to drive new initiatives but one must drive deeper past the numbers to obtain qualitative data that can provide context that promotes targeted efforts that address the barriers to adherence of best practices.

Public Health Implications

Hand Hygiene is the number one most effective measure to prevent the spread of diseases, but the underutilization of this practice still poses a serious risk in the health care industry. According to the CDC one in every 31 patients will acquire a hospital associated infection (HAI) leading to an annual mortality of 75,000 patients by means of preventable infections. Furthermore, increased occurrence of HAIs has important economic implications, with the current rate of HAIs being attributed to an estimated \$28 billion in direct medical cost. With the increased threat of emerging multiple drug-resistant organisms and the ever-threatening appearance of novel diseases, infection prevention and control is a quintessential public health practice.

Acknowledgements

A special thank you to the entire UH infection prevention department for hosting me for my practicum experience and playing a vital role in my professional development. Thank you to my preceptors who guided and supported me through this experience: Brenna Michaud, MPH, Nikki Lutz, MPH, CIC. Lastly, Dr. Aubrey Husak who headed the quality improvement project.

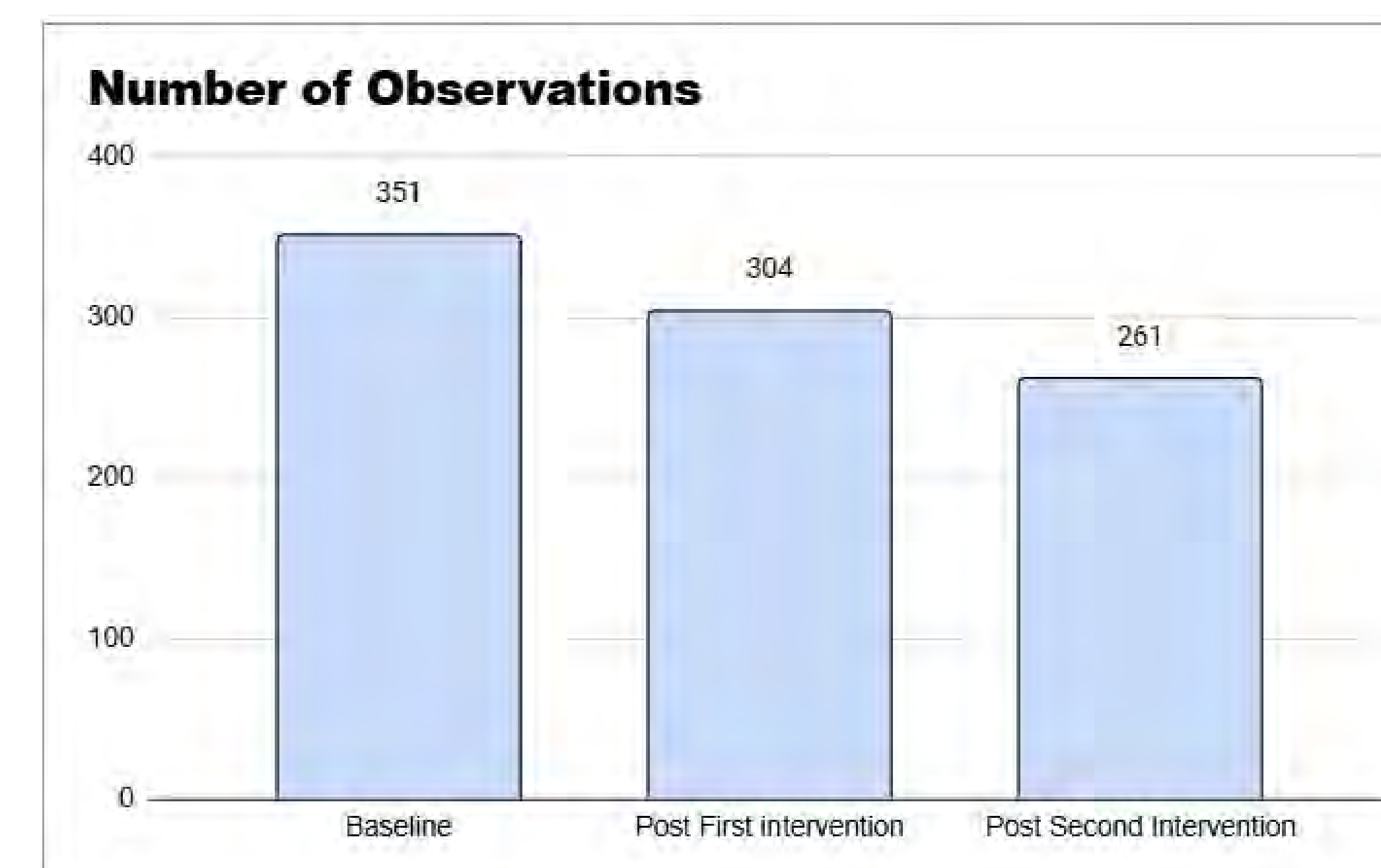


Figure 2: Bar chart displaying the number of observations collected in each intervention

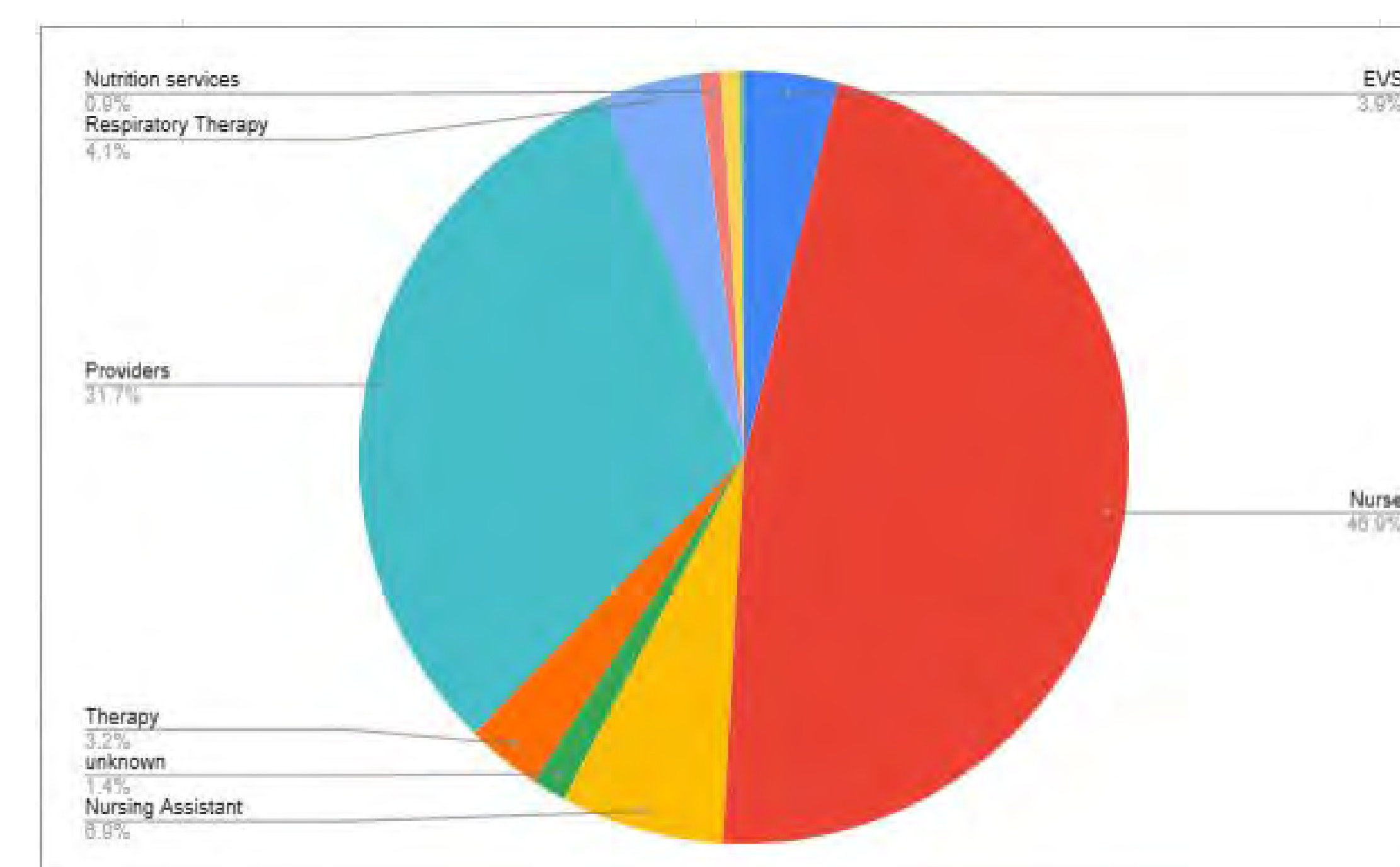


Figure 2- Pie chart displaying the percentage of observations in each positional classification of health care works