Application of Statistics in Health Care

October 6, 2019

The Significance of Statistical Application in Health Care

Nursing relies on an accurate statistical analysis of patient data in order to improve patient safety and health outcomes. Ambrose defines statistics as, "A component of mathematics that looks at how gathered data is collected as well as the analysis and interpretation, presentation, and organization of the data" (GCU, 2018). This report explains the significance of healthcare statistics for quality, safety, health promotion, and leadership, and describes how statistics are used in day-to-day operations in Labor and Delivery to help with decision making and future improvements in baby and maternal care nursing.

Quality

The National Center for Health Statistics (NCHS) has a "mission to provide statistics and data that can guide public policies and actions and improve the health of Americans" (CDC, 2019). Hospitals and other healthcare organizations pursue quality improvement initiatives to enhance clinical outcomes, patient experiences, and to reduce hospital costs. The goals for quality performance improvements should involve three main areas: "improving measurement and analytics, creating workgroups to focus on monitoring the effectiveness of quality improvements, and deploying a data-driven approach to implement evidence-based best practices" (HealthCatalyst, 2014). Using an analytics application can identify variation points for standardizing processes. Using statistics, health care facilities will have more significant opportunities to improve the patients' quality of care if the highest-performing practices are identified. Once established, then the evidence-based practices will be the standards for all caregivers (2014).

Safety

Todays' researchers estimate that "one in three hospitalized patients experiences preventable harm and over 400,000 individuals per year die from these injuries" (HealthCatalyst, 2014). It seems as though the job of making patients safer is insufficient. Medical facilities are crowded with an overflow of patients, and nurses, techs, and aids are in short supply. This cascade is when preventable errors happen, and patient harm is evident with 1) hospital-acquired infections, 2) patient falls, 3) patients getting the wrong diagnosis from overworked physicians, and 4) with the wrong diagnosis comes the wrong treatment and medications. In the past, hospitals were compensated for more services and extended medical stays. Now, medical organizations will lose revenue due to a decrease in patient satisfaction, less patient safety, and high readmission rates. Measures to improve patient safety include the measuring of data, intervene and making changes to the plan of care, and prevent similar events in the future. These necessary statistical measures must take place for patients and the medical community to integrate successfully and create better and safer care and outcomes for patients.

Health promotion

Health statistics are vital to improving global health by setting targets for health promotion, disease prevention, and assessing the progress of these goals. "Because desired information was often unavailable in the past, a major goal of Healthy People 2020 was to improve surveillance and data systems" (Schloman, 2001). The improvements in data systems and data collection in electronic formats help us to understand and improve the health conditions of a population. Also, these systems help in assessing progress and in planning effective prevention programs (Schloman, 2001).

Leadership

"Nurses at all levels need strong leadership skills to contribute to patient safety and quality of care" (Institute of Medicine (IOM), 2011). As nurses, we are trusted sources of information. Because of this, nurses have a greater responsibility in the areas of quality, efficient patient care, and safety. Nurses must lead in working with policymakers and legislators to prepare the nursing workforce to meet patient needs. Also, nurse leaders are vital in translating and applying research findings to prevention practice and care.

Utilizing Statistical Knowledge in Labor and Delivery

The use of statistical information in Labor and Delivery is essential in improving patients' quality of care, reducing related costs, and enhancing the patient's labor and delivery experience. One way data helps is by using patient satisfaction surveys. Another way statistics are used is with daily reports identifying how many vaginal deliveries are completed (how long a patient is in labor and how many medications used), how many cesarean deliveries occurred (operating room time, anesthesia, and medications), and how many inductions of labor before 38 weeks gestation. By analyzing and monitoring the data, we can observe trends and find opportunities to improve our unit and eliminate unnecessary waste. By sharing our evidence-based results with our doctors and midwives, we can garner support for change in certain areas, such as no inductions before 40 weeks, rather than 38 weeks, which used to be the norm. These changes can directly affect the labor time for a patient and decrease the mother's chances of having a cesarean section delivery. Also, this gives the baby's body and lungs more time to fully develop, which can decrease the need for time in the neonatal intensive care unit.

Conclusion

As we have seen, statistics are vitally important to the safe and healthy outcomes of patients. The use of statistical information helps to guide the quality of care, safety, health promotion, and leadership goals of medical practices. By observing trends in data and sharing the validated information, we can garner support for health care changes in all areas and create a world where people live longer, healthier lives.

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