IMPROVING VETERANS URGENT CARE CENTER FLOW AND PATIENT SAFETY: QUEUEING THEORY APPLIED

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Background: After Hurricane Katrina destroyed the Department of Veterans Affairs health system inpatient care facility in August, 2005, the Veterans Association has created an Urgent Care Center to address the need for same day services and urgent care health issues. The high demand for such services has created excessive waiting times for triage leading to significant patient safety issues.

Methods: Direct observation and timing of patient care and waiting times from patient check in till completion of triage occurred intermittently over the month of November, 2009. Data regarding the most common types of health care issues and patient characteristics were obtained from VA VISN 16 data warehouse, log in or time sheets, and staffing schedules. The results were analyzed with a queueing theory model to create recommendations to improve flow and patient safety.

Results: Queueing theory states that waiting times can be modified exponentially via three mechanisms: 1) modifying number of patients requiring service, 2) modifying the number of persons available to serve (nurses for triage) and 3) modifying how long it takes to serve the patient. Multiple types of un-necessary repeat patient visits were identified in areas such as chronic wound care, follow up labs results or return for repeat lab work, social work or mental health, and medication refills. These repeat visits made up over 11% of the visits during the studied time period. Mean arrival to end of triage was 52 minutes and 13 seconds with a minimum of 10 minutes and a maximum of 2 hours and 25 minutes. Actual time spent with the triage nurse ranged from 1 minute to 28 minutes with a mean of 12 minutes 37 seconds. On average, 18% of patients arrived in the first ten minutes of the clinic opening and a mean of 69% of patients arrived within the first 4 hours of 8am to 12pm. However, the highest numbers of nurse and ancillary staff were present throughout the noon hours. The VA also has standardized intake questions such as fall assessment and full pain assessment with every patient contact that occupied the majority of time spent with the triage nurse.

Conclusion: New Orleans Veterans Administration Urgent Care can improve clinic flow by working with other services to appropriately delegate patient care, arranging staff to match the usual pattern of patient arrival, re-delegating tasks to allow triage nurses to focus solely on triage, and reducing the burden of routine data assessment to improve the efficiency of triage flow in the Urgent Care.