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How to Leverage Health Technology to Improve Patient Flow

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A growing population has led to an increased demand for healthcare services. Concurrently, healthcare reforms and reimbursement requirements necessitate improvements in quality care and patient satisfaction. Healthcare facilities have begun searching for ways in which to handle the influx of patients without sacrificing either quality or the patient experience. How can your facility achieve increased volume and profits while maintaining quality and improving patient satisfaction?

This whitepaper addresses how RTLS (Real Time Locating System) technology can be implemented to solve critical issues such as:

- **Increased capacity**
- **Decreased waiting times**
- **Patient and staff satisfaction**
- **Increased healthcare staff productivity**

Increased Capacity

The aging population in the United States is requiring more healthcare services. As the Baby Boomer population ages, almost twenty percent of the current population living in the United States will reach age 65 or older. This increase in the aging population leads to a significant growth in the number of individuals with chronic conditions. According to the American Hospital Association, the number of Boomers with multiple chronic conditions is continuing to grow and will reach about 37 million adults by 2030.[i] The prevalence of chronic conditions is also increasing in the United States population as a whole and calls for increased medical services and innovative approaches on how to properly deliver care to this population.

Many healthcare delivery systems are utilizing RTLS technology to meet the increased population challenge. The Nor-Lea Medical Clinic in Lovington, New Mexico implemented an RTLS system to handle their growing influx of patients. The town in which the clinic was located experienced a boom in population that "led to a 75% increase in the number of patients" that were visiting the medical clinic.[ii] Before implementing RTLS, patients reported that they were sitting in the waiting room for up to two hours and waiting 30-60 days to receive an appointment. In response to these challenges, the clinic installed an RTLS system to improve workflow and to handle the increased patient population.[iii] The RTLS system is similar to GPS technology. The RTLS technology locates people and items by using a badge that can be worn by individuals or a tag that can be placed on equipment. These badges and tags communicate with a network of receivers that are installed in the facility and can provide the location of people and items in real time. You can think of the RTLS system like the Marauder's map in the movie Harry Potter. And just as clever and helpful as the map is in the movie, the RTLS system not only can locate patients, providers, and equipment, but can be implemented to ensure decreased waiting times,

increase the patient capacity of a facility, provide administrative reports to recognize bottlenecks in work flow, increase healthcare staff productivity, and increase patient and staff safety.

After installing the RTLS system, the Nor-Lea Clinic "dramatically reduced patient wait times, improved provider productivity, increased access, and significantly increased both patient and physician satisfaction."[iv] The system allowed the staff to view which rooms were available, which healthcare provider had seen a patient, and whom the patient still needed to see. This information enabled the staff to focus on patient care instead of trying to find rooms or other staff members. The results of these improvements were that patient wait times were reduced by 94%, the days to receive an appointment were reduced 88%, the productivity of the physicians were increased by 88% and their satisfaction increased by 232%. [v] Patient satisfaction increased 233% and the clinic experienced the first profitable year in their facility history![vi]

"But in 2014, the clinic turned a profit for the first time ever." Dan Hamilton, COO of the health system that includes Nor-Lea Medical Clinic. (Versus n.d.)

Waiting Times

Patient satisfaction often decreases with longer wait times. In the current healthcare market of patient centered care, clinics and hospitals can't afford to have dissatisfied patients. When a patient's wait time is minimized, the patient feels respected and has a more positive experience. Creating an atmosphere of mutual respect is a key component of a successful healthcare facility and has the potential to increase revenue for the practice. According to L. Gordon Moore, MD, the Senior Medical Director for Populations and Payment Solutions at 3M Health Information Systems, "the ability to move patients from door to doctor with minimal delay enables practices to increase volume without sacrificing quality of care. But it also helps practices deliver a more positive patient experience by decreasing wait times and giving doctors more time to complete exams."[vii]

Tracking technology can provide an organized and efficient patient flow with minimized wait times. The Davis Medical Center implemented radio frequency identification technology that enabled the West Virginia clinic to decrease wait times dramatically below its one-hour goal to an average of less than 10 minutes.[viii] The technology allowed the staff to determine where bottlenecks in workflow were occurring in real time so that the staff could quickly address issues.

Some clinics have bypassed the waiting room completely. Upon arriving to a clinic, the patient is given a tracking badge and room into which they can check in themselves. When the patient arrives at their designated room, the healthcare staff is alerted to their location and can begin the process of treatment. The Virginia Mason Medical Center implemented this type of experience for their patients with positive results. One Virginia Mason patient stated "I was impressed there wasn't a waiting room and I could walk straight to my exam room after checking in. I felt I had more time with my doctor and nurse to talk about my concerns."[ix]

Patient and Staff Satisfaction

Patients aren't the only ones experiencing increased satisfaction with the tracking technology. Healthcare providers are also pleased with the results and are reporting more productivity and less stress. When Rush University Medical Center installed an RTLS system, the healthcare providers found that they spent less time searching for patients and instead were able to spend more time providing care to the patients.[x] This ability to deliver more patient centered care has impacted the patients and staff in various types of clinics as well as surgical centers, resident care, emergency departments, and hospitals.

Memorial Sloan Kettering Medical Center in New York equipped their new Josie Robertson Surgery Center with innovative technology that included an RTLS system. The surgery center provides an RTLS badge to their patients and family members. The tracking technology is integrated with an information board that the family can see and that follows the patient's pathway through the surgery process. The family can see, for example, if their mother is in the pre-op room, in surgery, or out of surgery in the post operation room.[xi] This allows the family to know what is happening and help alleviate some of their anxiety and not have to ask the staff for updates. The surgery center is also using the tracking devices on the patients after surgery to track how much the patient is walking. This information is extremely helpful to the physicians because they can use the technology to help determine if the patient is able to go home based on their ambulation.[xii] "We don't call the patient and family on the overhead, but track them and bring them to see the doctor. Patients can move around and not miss a thing." Brett Simon, MD, Director of Josie Robertson Surgery Center[xiii]

RTLS technology can also create a calmer and safer environment in the resident care setting. Badges can be worn by the patients that can be pressed and send an alert if the patient or the staff needs assistance. The badges can also be used to help prevent a patient from wandering outside the facility. Knowing that their loved one is in a safe care environment decreases the stress on family members and caregivers.

Increased Healthcare Staff Productivity

Time is wasted when a healthcare provider is walking around trying to find a patient. This is time that could be spent providing direct patient care or updating notes in the patient medical record. The staff can utilize the time to respond to patient emails or phone calls. A quieter environment is also achieved with more efficient communication and less overhead paging. In the surgery center, for example, the RTLS technology can be used to notify the surgeon or anesthesiologist that the patient is on their way to the operating room.

Some of the healthcare staff's daily communication needs can be met with tracking technology. Often patients have several providers that they are seeing in one day. The patients may also be getting lab work or diagnostic testing before they see the provider. The RTLS badge can locate the patient along their process so that delays do not occur while the staff is searching for the patient. Rush University Medical Center utilizes real time location technology to support their staff. "The data from the RTLS will allow us to match up schedules so our clinicians have the staffing and support they need," Darren Reynolds, a performance improvement specialist at Rush University Medical Center says. "The tool is about the patient experience, but it also sets up our staff for successful work and collaboration." [xiv]

"This technology improves communication among our clinicians, and between providers and patients. We are better able to function as a care team. And better communication means better care." (Toomey 2016) Antonio Bianco, MD, PhD, president of Rush University Medical Group.

At Christiana Hospital in Newark, DE, not only have LOS (length of stays) been reduced in their Emergency department since RTLS was implemented, but treatment time has also decreased. "Within one year of implementing the RTLS technology, LOS in the ED was reduced by 40 minutes for admitted patients and 18 to 20 minutes for the treated-and-released population. A work group focused on process improvements in the ED's fast track section reduced the average LOS from 2.5 hours to 60 minutes or less. Similarly, a work group focused on the ESI 3 population reduced the average treatment time for this population from 5 or 6 hours to 3.4 hours."[xv] This increased staff productivity can increase revenue for the facility.

Conclusion

Providing better quality care to patients is the goal of many healthcare facilities. By implementing RTLS technology, this goal can be accomplished with the added benefit of increasing the number of patients treated while decreasing wait times. RTLS technology also benefits the facilities by increasing patient and staff satisfaction and staff productivity. Combined, these improvements can lead to an increased ROI for the healthcare facility.

To request a demonstration please contact SVT at: solutions@gosvt.com

[i] (The American Hospital Association 2007)
[ii] (Versus n.d.)
[iii] (Versus n.d.)
[iv] (Versus n.d.)
[v] (Versus n.d.)
[vi] (Versus n.d.)
[vii] (Schwartz 2011)
[viii] (Swedberg 2017)
[ix] (Versus 2012)
[x] (Geva 2017)
[xi] (Goedert 2017)
[xii] (Goedert 2017)
[xiii] (Goedert 2017)
[xiv] (Toomey 2016)
[xv] (listed 2012)

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About SVT

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