CASE STUDY
PYCUBE, INC.

Optimizing Patient Movement within Emergency Departments

Emergency Departments around the world are continually facing challenges due to growing patient numbers and inadequate staff to meet the demand. Add to it the temporary shortage of assets such as wheelchairs, stretchers, intravenous and infusion pumps, and you have a complicated situation at hand. Locating and accessing assets that are available becomes all the more difficult in such situations. While most hospitals aim to optimize the use of available resources, they often fall short of achieving it due to the steadily increasing number of emergency cases.

The staff particularly has a tough time finding the right equipment to transport the patients. The search for these can sometimes be tiring and time-consuming, with no one to tell them how they can locate the right equipment. This often prevents patients from receiving the care they need.

The ED is at the heart of every health care center and is the most challenging ward given the rush, overcrowding, and device related issues.

30% Assets replenished yearly due to loss or misplacement[1]

128 HOURS Average time a year nurses waste looking for equipment[1]

42% Average utilization of mobile devices[1]

Multiple research articles have stated the lack of tracking devices and systems as one of the important factors causing patient flow problems in an ED.

Lack of tracking devices and systems to determine the location and the availability of patient transport equipment such as stretchers, wheelchairs and other patient care and handling systems could lead to potential patient flow problems.

This could cause patients to wait longer than necessary to get the care they need, leading to patient dissatisfaction and an adverse impact on the hospital's brand and reputation. This problem can be avoided if the hospital ensures timely availability of equipment.

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THE CHALLENGE

One crucial aspect for the Emergency Department is the timely availability of the staff when the patient arrives at the hospital premises. Optimizing patient movement and patient discharge is an important aspect of **Patient Flow Management** (NEJM Catalyst, 2018).

In large hospitals typically dealing with a high number of emergency cases, lack of patient transport assets can lead to slow throughput and decrease in overall productivity in the ED.

New age tracking devices help overcome the lack of clarity of various hospital assets. With the help of latest technologies such as RFID tags, BLE beacons, infrared, and ultrasonic sensors it is possible for equipment to provide its location and - if occupancy sensors are used - indicate whether it is 'in use' or 'available.'

With the adoption of such a system, most of the medical resources can become part of a holistic system solution; the data that is gathered can be used to study patterns, optimize activities and predict how many assets will be required.

THE SOLUTION

Health systems worldwide (be it hospitals or trauma care centers) struggle to reduce Emergency Department overcrowding both during admission and discharge of patients. Improving patient flow and ensuring patient safety is one of the top priorities for most healthcare centers. The solution helps healthcare facilities streamline patient inflow, reduce wait time and improve the availability of equipment.

The solution comprises three components - Sensors/tags, Tracking monitors, and a Central Console.

Hospital assets are tagged with sensors that help real-time tracking of available assets. Tracking monitors are used by transportation operators to locate specific assets as highlighted by sensors.

OUR SOLUTION

The visual display of the central console shows/provides the location of all tagged and available assets, helping the operators immediately find the ones that are freed up. It helps the staff reach the nearest available asset without any delay.

Asset management solution can be customizable to meet the requirements of ED and thereby resolve issues related to patient flow management.

THE RESULT

Such an asset management solution could be used to track, plan and obtain the assets necessary for when a patient arrives, is taken around the hospital for treatment, or is discharged. The resulting increase in staff efficiency would ensure that patients are brought to the point of treatment promptly.

The solution can be deployed by healthcare systems/centers to track, obtain and utilize hospital assets in real-time – be it at the time of patient arrival or consultation or discharge. As the patient is readily taken to the point of treatment, the staff and other hospital resources are optimally utilized.

Time is critical in emergency cases. Patients and their accompanying caregivers' need hospitals that respond swiftly. If patients are dissatisfied with their experience, it can lead to poor HCAPHS scores leading to money lost for the hospital. According to the feedback in the HCAPHS surveys (Center for Medicare and Medicaid Services, 2017), better scores means faster reimbursements which means more customers.

An asset management solution only reaps more benefits, in the long run, hospitals can collect data on how and when equipment is needed and used. They can use this data collection to properly forecast, plan, and staff their hospital and its assets as required.

THE CONCLUSION

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With the described solution, the Emergency Department would able to locate assets promptly and thereby improve their patient flow. Patients would be happier due to the favorable attention paid to them, and this could contribute to better customer satisfaction (HCAHPS) scores. This could result in more streamlined hospital activities and could lead to better overall performance.

REFERENCES

California Health Foundation. (2011, April). Using Tracking Tools to Improve Patient Flow in Hospitals [Nonprofit Independent Philanthropy]. Retrieved September 26, 2018, from https://www.chcf.org/wp-content/uploads/2017/12/PDF-UsingPatientTrackingToolsInHospitals.pdf

Center for Medicare and Medicaid Services. (2017, December 21). HCAHPS: Patients' Perspectives of Care Survey [Federal Government website]. Retrieved September 26, 2018, from https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalHCAHPS.html

Collins, R. (2016, September 7). How to overcome the 'controlled chaos' of healthcare communication to improve patient safety & staff morale [Online Weekly Magazine]. Retrieved September 26, 2018, from https://www.beckershospitalreview.com/quality/how-to-overcome-the-controlled-chaos-of-healthcare-communication-to-improve-patient-safety-staff-morale.html

NEJM Catalyst. (2018, January 1). What Is Patient Flow? [Newsletter]. Retrieved September 26, 2018, from https://catalyst.nejm.org/what-is-patient-flow/

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