

Tracking Boards

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Today's fast paced medical world requires technology that will enhance or improve the speed of productivity. Health care workers have to see more patients and do more with each patient than ever before. Without improving their equipment and technology, this would be virtually impossible. Therefore, health care administrators are always looking for the latest technology that will continue to increase output.

In the hospital setting, one complication that slows down the work pace is trying to keep track of what is occurring throughout the healthcare system with every patient. Their orders, lab, radiology, and other pertinent results, and even general information such as what nurse is assigned to them on that shift is information that is necessary to keep the flow of care moving. Delaying this flow can cause costly wastes in the overall process of their care. That is why software companies are always looking for new and improved ways to assist healthcare providers in better managing personnel and time constraints.

With the creation of new computer systems and upgrading of older systems occurring on a daily basis, technological companies are realizing that to compete with others, they must have new ideas that increase productivity. They will not be able to sell health care systems on their product without keeping up with their competition. Therefore, when choosing a new computer system for a health care system, administrators are looking beyond the main component itself to what else is available with this system that will improve output. One such component is a tracking board. The general concept of a tracking board is to supply information pertinent to the flow of care for each patient. This information has to be readily available and visible while still maintaining patient confidentiality. It must also be maintained in real-time results so that there is no delay in change of information, which could add to delay in treatment.

Most large companies are developing their own tracking boards to go with their computer systems. Western Maryland Health System in Cumberland, Maryland recently purchased a new computer system for their Emergency departments. This system was purchased from Vital Works and is called EMStation. It is a system developed specifically for emergency medicine. Along with their system, they have developed a tracking board. Unfortunately, Western Maryland Health System did not purchase this component at this time. However, after using the purchased part of this system, and seeing some acquired research on the tracking board, the health system is now considering this purchase with the April budget.

Vital Works tracking board, like most other tracking systems, works on a color system. The patient's name is entered into the system by the registration department. This automatically is entered when the patient is registered into the Emergency department system. The name of the

nurse assigned is then entered in the Emergency department when the patient arrives and is assigned. This assists the Physician in knowing who is assigned to what patient. If the Physician writes an order on the patient, the patient information on the tracking board changes colors so that it is obvious to the nurse there is an order to be carried out. The present system at our health care system is for the Physician to announce that there is an order and hopefully the patient's nurse is available. If not, it is placed into the box for orders and waits for the nurse to see it. This can be a very time consuming system, which decreases the output time, related to each patient. After the nurse carries out the order, the tracking board again changes back to its original color. If lab work has been ordered and drawn, but no results are received in the Emergency department, the tracking board will change colors on that patient after one hour to remind the care giver to check with the laboratory to see what the delay is from. Our present system requires constant checking into the computer system to see if there are any available lab results. This system is completely dependant on human memory and error. Again, this causes a delay in treatment and output. This tracking continues throughout the patient's entire stay in the Emergency department until the time that the patient is either discharged from the department or the patient is assigned a bed in the health system and is transferred out of the Emergency department. Then, the next patient's identification information is entered and the process starts over. As you can see, the throughput time of caring for a patient with the help of a tracking board can decrease the wasted time that has been the norm in most Emergency departments for years. The delay in treatment is the most frequent complaint voiced relating to visits in the Emergency department.

Mountain States Health Alliance (MSHA) which includes health systems in Washington, Sullivan, Johnson and Carter counties in Tennessee have also purchased the Vital Works system. They went from a white eraser board to track all aspects of client care in their emergency departments to the much faster, more efficient way of producing throughput by using the tracking board. They have decided to assign a number to each client instead of using their name for confidentiality reasons. Because this tracking board is similar to that of the information boards in an airport, other clients and visitors in the emergency department can usually see the information. It is difficult to find a place to conceal that large of a tracking board from the site of others. MSHA also uses bedside registration that directly goes into the tracking system in order to also speed up the time from arriving at the health care system, to the time that their care is begun. All of this increases patient and employee satisfaction.

Of course, Vital Works is not the only company creating tracking boards. In Columbia, South Carolina, a company called Integrated Business Systems and Services (IBSS) has announced the creation of a radio frequency identification system and personal tracking system called SynTrack. This system was created to track large, non-consumable assets such as wheelchairs and items needed for patients as well as tracking hospital personnel. This system is also using embedded chips in the wristbands of patients and smart cards for employees for

tracking purposes. Therefore, a centralized command center would be able to identify where needed equipment is and where available employees are to retrieve it. Also by knowing where available personnel such as transporters are located, would help to decide on which personnel to notify for what job. If a transportation employee is needed to discharge a patient, the closest available transporter would be notified in order to decrease the amount of down time between tasks.

To deploy the SynTrack system, an administrator defines the "group level" of the health care system. This can be an entire floor or department. They then divide it into smaller "zones". Tags are assigned to different groups such as wheelchairs or personnel. To locate a particular item, the user would "drill down" to the group level and the zone level to determine how many of a certain item are available and where. This would eliminate the human aspect of searching department to department for needed equipment. The Identec readers can be installed near important areas within a zone such as a doorway. The system can then detect if an item or person enters or leaves the area. This can show the travel of equipment, clients, and personnel. This system is designed to handle an unlimited number of zones and tagged items. IBSS is conducting a pilot program in a large, undisclosed Chicago health care facility to test its validity and has announced that this health care system may be its first SynTrack customer.

T-System is a frequently advertised Emergency department computer system that also includes its version of a tracking board. This system is advertised in Emergency medicine magazines and is one of the more common systems found when investigating medical computer systems. T-System's tracking board has the ability for continually updating the status board. It has a color-coded process of tracking and order status tracking. Timed alerts notify the staff of delayed results so that the staff can assess the reason for delay. It has an easy access to lab results. T-System has a customized view for each area of the Emergency department. At the main desk, more detailed information would be displayed. This information could include the room number, name, age, sex, chief complaint, triage level, time in the department, nurse assignment, physician assignment, clinical processes, disposition, and the exact status of labs and orders. This information is constantly being updated. At the tracking boards located around the department, only information notifying the employee of orders and generic information would be displayed. The tracking board located in the triage area would inform the triage nurse what area to move the patient to and this would increase the flow time in the department. T-System also has handheld devices available for the employees to carry with them so that they have the information available if a tracking board is not readily viewable.

Another type of tracking system has been developed by Crothall and is called TeamChimes. This is a bed tracking system that has been developed mainly for Housekeeping departments but is finding use for many other departments. This system was purchased and used by Cleveland Clinic. Its information is displayed on designated personal computers throughout the healthcare system. It has four components on the main screen. The first column

has available filters and functions that would only be used to access different hospitals, buildings, or to change the displayed department if you wanted to track that specific of an area. The next three columns display the bed status. The first of these columns shows available beds. This has subsets that display if it is a male or female bed; if it is a private or semi-private room or other important information such as if it is an isolation room. The next column shows what beds are in the process of being cleaned by the housekeeping department and what phase of cleaning they are in. The final column shows the beds that are not available and why. Examples of this are if they are occupied, on hold, or out of service. When a client is discharged and physically leaves the assigned room, the personnel who takes the client out activates a code by the phone system. This, in real time, sets off the housekeeping personnel's pager notifying them of a cleaning request. A time is displayed on the tracking system, which shows how long it takes for the housekeeping department to acknowledge the requested job and to clean the room. Once the room has been cleaned, the housekeeper activates the system by phone and with the same, simple phone prompts as used by the discharging personnel, notifies the system that the bed is available for a new patient. The room then enters the column for available beds. This deletes the human error of no one knowing that a patient has been discharged, a room needs to be cleaned, or that the room is available for the next client. This board again uses color-coding to show what stage of cleaning the room is in. This system also has audit pages, which allow the administrators of the housekeeping department to see which employees are logging in the most work and which employees are slower at cleaning tasks than others. I was able to view this system recently when our Housekeeping department had a teleconference with Crothall. If it is purchased for our health care system, we will also use it for nursing supervision to know how many regular beds and how many telemetry beds are available. The Emergency department will also access the system to know the same information and to know approximately how long it will take to be able to admit a patient from the Emergency Department. Finally, the admitting department will access this system to know what beds they can admit to and what stage of preparation the room is in. This will eliminate the system of assigning a room to a client that has a patient in it that is scheduled for discharge but that may not be leaving until after another client. The problem with this system is that it relies on human contact to initiate the system. If nursing personnel feel that they are too busy to accept another admission, they can delay entering the bed into the system for cleaning. This will hold the bed in the unavailable column and the process cannot begin until someone notices that the client has been discharged.

Monogahela Valley Hospital in Monogahela Pennsylvania recently chose to use the EDTracker software that was developed by Healthcare I. T., Incorporated which is a Patient Care Technology Systems (PCTS) company. This system provides real time, wireless tracking of the location of patients and equipment through badges worn by the patients and staff in the emergency department and ancillary departments. Data such as the care status and location of

a patient is communicated in real-time on electronic tracking boards with no data entry required by the emergency department. The elimination of data entry and the ability to generate detailed reports of all patient flow history assist the emergency departments to improve workflow and overall efficiency. These are key factors in managing increasing patient volumes. The EDTracker system is the most widely purchased and implemented passive tracking system in U.S. emergency departments. Another PCTS company, Amelior ED Tracker, uses similar technology and is available and being used today. It works in a similar way by utilizing badges worn by patients and staff in the emergency department. It is also a wireless system that requires no data entry by clinicians and staff. In real-time, information is transmitted into the system and is displayed on a tracking board. This system is presently being used in the emergency department at Christiana Care Health System of Wilmington, Delaware.

Another choice in tracking boards is NWS/eBoard. This is an electronic board system that works with a large screen TV or LCD and is mounted at several locations around the department. It displays similar information as the other tracking boards. It shows where the patient is, status of the patient, assigned rooms and is customizable by the department. It can be interfaced with the health systems present computer system. This tracking system, however, does not use colors to show changes and needs. Therefore, changes in the patients needs, orders not yet carried out, and test results would not be recognized as rapidly as with some of the other systems.

CareSuite SmarTrack is a tracking system that monitors the status and locations of surgical patients and resources during the perioperative process, from registration to discharge. This system uses information from the OR manager, anesthesia and nursing documentation to alert staff to possible delays and problems before they impact patient care and satisfaction. This system displays the information on large screens and assists in promoting a smooth flow of patients, enhances productivity and saves money by decreasing the down time between patients. By tracking the patient's progress while they are in the OR, the staff makes fewer phone calls to the OR to check on the status of a patient for their family and is aware of a potential delay for the following patient who is next on the surgical schedule. This system is color coded to alert of changes and delays. The view on these screens can be customized so that they can be located in family waiting rooms so that the families can track the flow of the patients from pre-op to surgery, to PACU, and finally to their inpatient room. The surgical areas mainly use this system; however, it can also be useful to admitting and to inpatient floors to know when admissions will be ready to arrive.

These are only a few of the available tracking systems. Every company that is developing new software is also considering developing tracking devices to go along with their software. The key to getting the best tracking board isn't always to go with the system that your software company has implemented. Other systems can be interfaced with your present system. Often,

though, your health care system can get a discount on the cost of a tracking board and its software if it is purchased at the same time the computer system is purchased. These considerations often help to determine what system is purchased. Because of this, going on site visits to see how several different systems work, and then deciding on the top few choices can assist the finance department in making the best decision of purchase.

It is no secret that emergency departments are under immense pressure. Rising patient volumes, a national nursing shortage, increased demands for patient safety protocols, and new regulatory compliance measures are placing more demands on an already overburdened system of patient care. Therefore, the importance of a healthy delivery mechanism for emergency medicine is imperative. An aging population with their higher use of emergency departments, an uninsured population estimated at 40 million people, and an increasing inpatient capacity cause us to increase the quality and capacity of our emergency departments. The mechanisms of emergency medicine have evolved little in comparison to the changes in a field of medicine that now sees more than 35 million additional patients annually compared with just thirty years ago. This is particularly evident in how clinicians track patients and manage a patient's documentation and flow. Manual grease-boards are still the most common method used to identify the location and acuity levels of emergency patients despite the difficulties in keeping the information up-to-date, private and still convenient to viewing. Computerized documentation and tracking enhance the flow and care of patients in the emergency department in today's fast changing health care and can be the added assistance needed to compete in health care today.

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