



Bed Management System Information (BMX)

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INVISION® now has the capability to help you improve the workflow around bed management. The Siemens Bed Management system (BMX) is a robust and fully-integrated program that assists Nursing Services, Patient Access, and Environmental Services with managing beds. BMX is flexible enough to allow a facility to utilize existing departmental workflows and offers a quick learning curve for the average user. Enhancements in this program include the ability to identify unique attributes about a bed and gives the bed management personnel tools to help them be more efficient in their jobs. This brief overview will list the major areas included in the first release of the BMX product and provide considerations for the implementation process.

Primary BMX Processing

There are six key functions used in BMX:

1. Room and Bed maintenance:

The enhanced Room and Bed Maintenance function allows the client to associate unique room/bed attributes with each bed. These attributes can then be used by end users to search for specific types of beds when trying to place a patient. In addition to traditional attributes (e.g., housekeeping status, out of service status), there are now key model bed attributes, hospital defined bed attributes, statistic collection indicators, and room linking. The BMX functionality has four key model bed attributes defined: Isolation, VIP, Telemetry, and Negative Pressure. Each of these switches is set as predetermined indicators and has its own processing designed exactly for its use. In addition to these attributes the client can define profile driven customizable indicators to attach to a bed. For example, a client could flag rooms next to a nurse station or rooms with constant video surveillance.

2. Bed Location

This function is similar to the INVISION® “Nurse Stations At-A-Glance” functionality yet it provides more information; such as, a count of the unit total number of beds pending discharges, beds out of service, and the total number of beds that are clean, dirty, and have cleaning in-progress. The specifics on an individual nurse station includes a line for patient data that indicates if the bed is occupied, a line for an empty bed (future bed request indicators are available for display on that line), and an out-of-service line which holds the reason for the bed being out-of-service. Standard target and source processing is used to complete these displays. There is a branching function available that links to the Room and Bed Maintenance utility as well as the ability to print an individual nurse station report from within the secondary display.

3. Bed Request

This function is used during the pre-admission process prior to a patient’s arrival. The request moves through several levels as it is ‘worked’. The request begins in an open status, which includes data collected from the admission flow, as well as user entered data on the bed request form (e.g., telemetry, isolation). If the request was not entered when the patient was pre-admitted it can be later

added to the account. Once a request is opened, a bed can be reserved for the patient, which will set an indicator in the bed segment that is available for display. The bed is not yet locked; however it can still be selected for another patient. The next step is for a bed to be assigned to the bed request; this process does lock the bed for the patient. If a bed has been assigned, it is populated in the correct fields during the admission process, by passing the room and bed search. Placing a patient in the bed puts the bed request in a 'complete' status. This function has a tool that can be used to set up custom displays that will meet the needs of each hospital's unique staff.

4. Bed Search

The Bed Search function is designed to locate the best bed for a patient and includes the use of attribute searching. Additional options, such as adding a hospital service and indicating if the patient requires an inpatient or an outpatient bed, can be added to help the registration staff search for the best bed. The sort function of the available beds selected from the program is designed to display "best bed(s)" at the top of the list. A tally of the number of requested attributes matched for the beds chosen is done and presented to the user in a score format. Default search criteria are set up to auto populate some key fields, but these can be changed to suit your institutions needs during installation. The end-user can alter any model pre-selection to meet the actual requirement for each search request if needed. This function can be used as a stand-alone option or it can be used in the admission pathways as described above.

5. Bed Control Worklist

The Bed Control Worklist combines most of the bed management processing into one function. It includes the Bed Request function with the ability to modify any open request and perform Bed Maintenance, and the Bed Assignment function. It can also be used to review information about requests for a period of time, a very useful function for Bed Control oversight. The Model form can be modified to include user defined attributes and data. This is the key function for bed control personnel.

6. Bed Board

This new OAS/Gold™ display lists the nurse stations in a bed board view with no patient identifying information, giving a graphic snapshot of each nurse unit's bed statuses. The feature can replace manual bed boards with a HIPAA compliant view. The view can be changed to display one nurse station, several selected nurse stations or the entire room and bed configuration for a hospital. It is color coded for easy room recognition: e.g., male rooms are blue, female rooms are pink, and out of service rooms are orange. Icons are also used to identify other aspects of a bed. This is a helpful enhancement, but the form used to display this data is not very customizable and the entire display is on one form, which may take some time to get comfortable with.

At one site we were able to create a new flow to allow a user to see a display of nurse stations, pick a desired selection, then view the bed board. The process that allowed users to return to the selection form was difficult and was not the most aesthetically appealing, but it allowed a "refreshed" selection of nurse stations without signing off. The Model bed board has only one form on the stack and once the user backs-off the form they are logged off the system. Therefore this process must be changed to have the driving TCL stack itself over and over to keep in the loop.

Implementation Considerations

Process Considerations

A successful implementation of BMX depends on open communication and cooperation between the three key hospital departments: Nursing, Patient Access, and Environmental Services. It is also necessary to do a sound functional analysis from which to implement the program. A Bed Management design team should be formed to include personnel from the three key hospital departments listed above plus Information Systems and the PMO, if applicable. The initial task of the team should be to prepare a functional analysis of current workflows that touch the Room and Bed Master.

Once this analysis is complete, the workflows can be used to identify key users and key processes. The design team can also use the analysis to identify opportunities to improve efficiency by transferring a particular task or tasks from one department to another. The BMX functionality should be analyzed to see where it can optimize organizational processes. For example, you may consider discussing ways BMX can help in disaster/pandemic planning.

After the initial functional analysis is completed a standard integrated workflow should be developed by the team. The standard integrated workflow should then be presented to a round table of decision-makers including: Patient Access Directors and Trainers, Nursing Service Coordinators and Bed Management Nurses, and Environmental Services Directors and Supervisors. This group should use the integrated workflow as a starting point for discussions addressing a standard workflow, decisions about electronic communication, needed features on bed boards, etc. The end result of these efforts should incorporate the best practices of each of the three departments with the goal of moving the patient through the system more efficiently and resulting in improved customer-patient satisfaction.

Technical Considerations

Many programs were changed to accommodate the BMX processing. Siemens will provide a list of programs when BMX is delivered, which should be carefully checked if a site has made custom modifications to existing programs. For example, Siemens modified CHPPCASR (case unload/select program) to include a new % field for the case display. The field is populated with an "A" if there is an assigned bed request, an "R" if there is no assigned bed, and an "O" if there is not an assigned or reserved bed.

Users of the older INVISION[®] reservation pathways will notice that BMX is not just an upgraded version but rather a completely new process. For example, BMX data is not stored in the case segment, which will impact Ad Hoc reports running off of the current fields. However, with the new on-line searches available some of the reports may not be necessary. BMX assumes that the Model fields are used in the admitting process (e.g., the Model "2" fields used for diagnosis). The programs will automatically keep some BMX fields in synchronization with the case level fields, so if a facility has opted to use non-model components or naming conventions building will need to be done to ensure the Model fields are also valued.

The Rules Engine and paging processing have been used to perform several functions. There are new processes designed for the Environmental Service Department to communicate their progress of cleaning rooms to registration/nursing staff. The priority of the cleaning requests can be tracked and changed to keep the whole bed process moving as smoothly as possible.

BMX was created in a modular design that often incorporates two or three different functions which can be accessed and used within the same OAS/Gold[™] form. To assist in this processing there are new programs that include special save and restore processes above the standard SVE/RST commands. Access to these multiple function OAS/Gold[™] forms will need to be evaluated based on the functions assigned to different levels of staff. For example, should all staff be allowed to perform

bed maintenance, including the ability to change a beds overflow status, since this function does change the true Room and Bed setting?

The functionality of the BMX program should ultimately make the end users more efficient. Understanding the new functionality and analyzing current processes and technical workflows will further enhance your staff productivity. If you would like more information on this topic and the services that Vitalize Consulting Solutions, Inc. has to offer, please contact us at our Corporate Offices at 610-444-1233 or vcs@getvitalized.com. We are also always available on our website www.getvitalized.com.