BACKGROUND

[0002] The present invention in general relates to managing the storage and distribution of medications and other medical supplies at a healthcare facility and, in particular, to patient-specific bins.

[0003] At many healthcare facilities, it may be beneficial for items to be available for use at specific locations. For example, in hospitals, practitioners may find it convenient to place medications (including pharmaceuticals) and other supply items near where patients are being treated. A nursing station is one such location, as nurses may find it more efficient to have certain medications readily available. Depending on the type of items to be dispensed, the environment where the items are to be used, and the like, a variety of dispensing cabinets have been employed.

[0004] Typically, medications are placed in dispensing units which each store a specific item to be used for a number of different patients. However, this type of storage configuration often leads to storage of supplies at multiple locations, which may give rise to delivery inefficiencies. This item-specific storage and distribution model may also give rise to billing discrepancies and inventory control challenges. It would therefore be beneficial to create systems, methods, or devices which address one or more of the issues raised above, while still providing for distributed storage of medications.

SUMMARY

[0004a] According to a first aspect of the present invention, there is provided a system for assigning a patient-specific bin to a patient, the system including: a plurality of dispensing devices for medical supplies, wherein at least a subset of the plurality of dispensing devices includes one or more patient-specific bins allocated for assignment to a patient and includes one or more dispensing mechanisms that are secured within the device and configured to dispense items from the one or more patient-specific bins; and a central server computer system, communicatively coupled to each of the plurality of dispensing devices, and configured to: receive an identification of a location to be occupied by the patient; identify a dispensing device of the plurality of dispensing devices based at least in part on an association between the location and the identified dispensing device; assign the dispensing device as an active device to provide use of the dispensing device for the patient, wherein the assignment of the dispensing device as active enables a set of functions that are allowed for the dispensing device; receive information from the dispensing device identifying one or more patient-specific bins within the dispensing device that are assigned to other patients; determine one or more patient-specific bins within the dispensing device are available for assignment to the patient based on the information received from the dispensing device; assign to the patient a selected first one of the patient-specific bins available for assignment;

configure the controls of the dispensing mechanism to dispense items from the first one of the patient-specific bins to a group of authorized user; assign the dispensing device as an interim device to provide continued use of the dispensing device during a transfer of the patient, wherein the assignment of the dispensing device as interim limits the functions that are allowed for the dispensing device; and based on the assignment of the dispensing device as an interim device, reconfigure the controls of the dispensing mechanism to restrict access to the items of the first one of the patient-specific bins to a subset of the group of authorized users.

[0004b] According to a second aspect of the present invention, there is provided a method of assigning a patient-specific bin to a patient, the method including: receiving an identification of a room to be occupied by the patient; identifying a dispensing device among a plurality of dispensing devices based at least in part on an association between the room and the identified dispensing device, wherein the dispensing device includes one or more dispensing mechanisms that are secured within the device and configured to dispense items from bins within the device; designating the dispensing device as an active device, wherein the designation of the dispensing device as active enables a set of functions that are allowed for the dispensing device; receiving information from the dispensing device identifying one or more patient-specific bins within the dispensing device that are assigned to other patients; determining one or more patient-specific bins within the dispensing device are available for assignment to the patient based on the information received from the dispensing device; assigning a selected first one of the identified patient-specific bins to the patient; configuring the controls of the dispensing mechanism to dispense items from the selected first one of the identified patient-specific bins to a group of authorized user; adjusting a designation of the dispensing device from active to interim to provide continued use of the dispensing device for the patient during a transfer of the patient to another room, wherein the designation of the dispensing device as interim limits the functions that are allowed for the dispensing device; and based on the designation of the dispensing device as interim, reconfiguring the controls of the dispensing mechanism to restrict access to the dispensed items of the selected first one of the identified patient-specific bins to a subset of the group of authorized users.

[0004c] According to a third aspect of the present invention, there is provided a device for assigning a patient-specific bin to a patient, the device including: a receiving unit configured to receive an identification of a room to be occupied by the patient and to receive information from a dispensing device identifying a patient-specific bin within the dispensing device that is currently assigned to another patient; a processing unit, communicatively coupled with the receiving unit, and configured to: identify the dispensing device based at least in part on an association between the room and the identified dispensing device, the dispensing device including one or more dispensing mechanisms secured within the dispensing device and configured to dispense items from one or more bins of the dispensing device; designate the dispensing device as an active device, wherein the designation of the dispensing device as

active enables a set of functions that are allowed for the dispensing device; automatically identify one or more patient-specific bins that are available for assignment to the patient from a plurality of bins within the identified device; assign a selected one of the identified patient-specific bins to the patient; configure the controls of the dispensing mechanism to dispense items from the selected one of the identified patient-specific bins to a group of authorized user; designate the dispensing device as an interim device based at least in part on a transfer of the patient, wherein the designation of the dispensing device as interim limits the functions that are allowed for the dispensing device; and based on the designation of the dispensing device as interim, reconfigure the controls of the dispensing mechanism to restrict access to the items of the selected one of the identified patient-specific bins to a subset of the group of authorized users; and a transmitting unit, communicatively coupled with the receiving unit, and configured to transmit the assignment and designation to the dispensing device.

[0005] Systems, methods, and devices are described for the storage and distribution of medications and other supplies at a healthcare facility. A dispensing device (e.g., a cabinet) at the facility includes a number of bins for storage of medications and other supplies, and some of the bins may be allocated as patient-specific bins available to be assigned for patient-specific storage and dispensing functions.

[0006] A central server computer system, in communication with a computer of the dispensing device, may assign and monitor current and future patient-specific use of the bins for the dispensing device. Both the stocking and removal of items from patient-specific bins may be managed by the central server computer system. The central server computer system may also manage the handling of medications and bin assignments during the transfer or discharge of a patient. Management of multi-use items and items brought to the healthcare facility by the patient is provided for, as well.

Claims

1. A system for assigning a patient-specific bin to a patient, the system comprising:

a plurality of dispensing devices for medical supplies, wherein at least a subset of the plurality of dispensing devices includes one or more patient-specific bins allocated for assignment to a patient and includes one or more dispensing mechanisms that are secured within the device and configured to dispense items from the one or more patient-specific bins;

and a central server computer system, communicatively coupled to each of the plurality of dispensing devices, and configured to:

receive an identification of a location to be occupied by the patient;

identify a dispensing device of the plurality of dispensing devices based at least in part on an association between the location and the identified dispensing device;

assign the dispensing device as an active device to provide use of the dispensing device for the patient, wherein the assignment of the dispensing device as active enables a set of functions that are allowed for the dispensing device;

receive information from the dispensing device identifying one or more patient-specific bins within the dispensing device that are assigned to other patients;

determine one or more patient-specific bins within the dispensing device are available for assignment to the patient based on the information received from the dispensing device;

assign to the patient a selected first one of the patient-specific bins available for assignment;

configure the controls of the dispensing mechanism to dispense items from the first one of the patient-specific bins to a group of authorized user;

assign the dispensing device as an interim device to provide continued use of the dispensing device during a transfer of the patient, wherein the assignment of the dispensing device as interim limits the functions that are allowed for the dispensing device;

and based on the assignment of the dispensing device as an interim device, reconfigure the controls of the dispensing mechanism to restrict access to the items of the first one of the patient-specific bins to a subset of the group of authorized users.

2. The system of claim 1, wherein the plurality of bins includes a first set of patient-specific bins allocated for assignment to a patient and a second set of item-specific bins allocated for assignment to an item for use by a plurality of patients.

3. The system of claim 2, wherein the central server computer system is further configured to:

determine that the dispensing device associated with the location does not currently include one or more available bins allocated as patient-specific bins in the plurality of bins;

and allocate one or more available bins of the plurality of bins as patient-specific bins based at least in part on the determination.

4. The system of claim 2, wherein the central server computer system is further configured to:

determine that a second patient-specific bin previously assigned to the patient in the dispensing device has insufficient available capacity for identified medical supplies to be stored for the patient in one or more patient-specific bins;

determine that the dispensing device associated with the location does not currently include an available bin allocated as a patient-specific bin and configured with sufficient capacity to store the identified medical supplies;

and re-allocate one or more available bins of the plurality as patient-specific bins based at least in part on a determination of sufficient storage capacity for the identified medical supplies, wherein the first assigned patient-specific bin comprises a selected one of the re-allocated bins.

5. The system of claim 2, wherein the central server computer system is further configured to: receive a listing of medical supplies to be stored for the patient in one or more patient-specific bins;

and determine storage requirements associated with the received listing, wherein the automatic identification of one or more available patient-specific bins is based at least in part on the determined storage requirements.

6. The system of claim 5, wherein the storage requirements comprise a control level, an additional security requirement, an item group, a storage type requirement, and a storage capacity requirement.

7. The system of claim 2, wherein the central server computer system is further configured to: automatically re-allocate a subset of the set of the item-specific bins to the set of patient-specific bins based on current or future projections for patient-specific storage at the dispensing device.

8. The system of claim 2, wherein the central server computer system is further configured to: receive information indicating the assigned patient-specific bin has insufficient available capacity for identified medical supplies to be stored for the patient in one or more patient-specific bins;

and automatically identify one or more additional available bins of the set of patient-specific bins to provide sufficient storage capacity for the identified medical supplies.

9. The system of claim 1, wherein the listing of medical supplies comprises active and future medications prescribed for the patient.

10. The system of claim 1, wherein the central server computer system is further configured to:

receive a listing of medical supplies for the patient;

analyze the set of item-specific bins to identify medical supplies of the listing that are stored within the second set of bins;

and transmit data identifying medical supplies of the listing to be stored in the one or more patient-specific bins.

11. The system of claim 1, wherein the assignment of the selected first one of the identified patient-specific bins to the patient comprises an automatic assignment.

12. The system of claim 1, wherein the central server computer system is further configured to:

automatically identify the first assigned patient-specific bin for storage of medical supplies for the patient;

and transmit data comprising the automatic identification to the dispensing device.

13. The system of claim 1, wherein the central server computer system is further configured to:

associate the dispensing device with a plurality of rooms in a healthcare facility, wherein the location to be occupied by the patient comprises a room of the plurality.

14. The system of claim 1, wherein the central server computer system is further configured to:

determine that identified patient-specific bins are eligible to store medical supplies to be stored for the patient;

and determine that the patient is eligible for assignment to the identified available bin.

15. The system of claim 1, wherein, the first dispensing device comprises a cabinet;

and the plurality of bins includes a container, mechanism, location, zone, or any combination thereof.

16. The system of claim 1, wherein the central server computer system is further configured to:

transmit a selectable user interface configured to display at least a subset of the identified patient-specific bins;

and receive a selection via the selectable user interface of the patient-specific bin to be assigned to the patient.

17. A method of assigning a patient-specific bin to a patient, the method comprising:

receiving an identification of a room to be occupied by the patient;

identifying a dispensing device among a plurality of dispensing devices based at least in part on an association between the room and the identified dispensing

device, wherein the dispensing device includes one or more dispensing mechanisms that are secured within the device and configured to dispense items from bins within the device;

designating the dispensing device as an active device, wherein the designation of the dispensing device as active enables a set of functions that are allowed for the dispensing device;

receiving information from the dispensing device identifying one or more patient-specific bins within the dispensing device that are assigned to other patients; determining one or more patient-specific bins within the dispensing device are available for assignment to the patient based on the information received from the dispensing device;

assigning a selected first one of the identified patient-specific bins to the patient;

configuring the controls of the dispensing mechanism to dispense items from the selected first one of the identified patient-specific bins to a group of authorized user;

adjusting a designation of the dispensing device from active to interim to provide continued use of the dispensing device for the patient during a transfer of the patient to another room, wherein the designation of the dispensing device as interim limits the functions that are allowed for the dispensing device;

and based on the designation of the dispensing device as interim, reconfiguring the controls of the dispensing mechanism to restrict access to the dispensed items of the selected first one of the identified patient-specific bins to a subset of the group of authorized users.

18. The method of claim 17, wherein the plurality of bins includes a first set of patient-specific bins allocated for assignment to a patient and a second set of item-specific bins allocated for assignment to an item to be used by a plurality of patients.

19. The method of claim 18, further comprising: determining that a second patient-specific bin previously assigned to the patient in the dispensing device has insufficient available capacity for identified medical supplies to be stored for the patient in one or more patient-specific bins;

determining that the dispensing device associated with the room does not currently include an available bin allocated as a patient-specific bin and configured with sufficient capacity to store the identified medical supplies;

and re-allocating one or more available bins of the plurality as patient-specific bins based at least in part on a determination of sufficient storage capacity for the identified medical supplies, wherein the first assigned patient-specific bin comprises a selected one of the re-allocated bins.

20. The method of claim 18, further comprising: automatically re-allocating a subset of the set of the item-specific bins to the set of patient-specific bins based on current or future projections for patient-specific storage at the dispensing device;

and automatically re-allocating one or more empty patient-specific bins assigned to a second patient as available patient-specific bins.

21. The method of claim 17, further comprising:

receiving a listing of medical supplies to be stored for the patient in one or more patient-specific bins;

determining that the first assigned patient-specific bin has insufficient storage capacity for the listed medical supplies of the patient;

and assigning a selected second one of the identified patient-specific bins to the patient.

22. The method of claim 17, wherein the assignment of the selected first one of the identified patient-specific bins to the patient comprises an automatic assignment.

23. The method of claim 17, further comprising:

associating the dispensing device with a set of rooms comprising an area of a healthcare facility, wherein the area includes the room to be occupied by the patient.

24. The method of claim 17, further comprising:

transmitting a selectable user interface configured to display at least a subset of the identified patient-specific bins;

and receiving a selection via the selectable user interface selecting the patient-specific bin to be assigned to the patient.

25. A device for assigning a patient-specific bin to a patient, the device comprising:

a receiving unit configured to receive an identification of a room to be occupied by the patient and to receive information from a dispensing device identifying a patient-specific bin within the dispensing device that is currently assigned to another patient;

a processing unit, communicatively coupled with the receiving unit, and configured to:

identify the dispensing device based at least in part on an association between the room and the identified dispensing device, the dispensing device including one or more dispensing mechanisms secured within the dispensing device and configured to dispense items from one or more bins of the dispensing device;

designate the dispensing device as an active device, wherein the designation of the dispensing device as active enables a set of functions that are allowed for the dispensing device;

automatically identify one or more patient-specific bins that are available for assignment to the patient from a plurality of bins within the identified device;

assign a selected one of the identified patient-specific bins to the patient; configure the controls of the dispensing mechanism to dispense items from the selected one of the identified patient-specific bins to a group of authorized user;

designate the dispensing device as an interim device based at least in part on a transfer of the patient, wherein the designation of the dispensing device as interim limits the functions that are allowed for the dispensing device;

and based on the designation of the dispensing device as interim, reconfigure the controls of the dispensing mechanism to restrict access to the items of the selected one of the identified patient-specific bins to a subset of the group of authorized users;

and a transmitting unit, communicatively coupled with the receiving unit, and configured to transmit the assignment and designation to the dispensing device.