Checklists for Go-Live and Updates

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CHAPTER

17

Key Terms

Biomedical services—department within a health system concerned with storing and maintaining biomedical equipment and technology.

Drug library push—act of updating pumps using wireless technology. The new drug library is "pushed" from the software housing the library out to the individual pumps.

Entity—single factor within the health system (individual hospital, clinic, or infusion center).

Periodic automatic replenishment (PAR)—the average or normal amount of a supply that should be kept in stock so that it does not run out prior to re-stocking.

Sterile services—department within a health system concerned with cleaning and sterilizing supplies.

Supply chain—department within a health system concerned with obtaining products and supplies from vendors.

System—all entities within the health system.

Considerations for Go-Live

Implementation of new pump technology is an enormous task that will impact every discipline in the hospital or clinic. The process for updates in discussed in Chapter 13. Careful coordination between departments is essential to a smooth implementation. The timing of implementation should be carefully planned. For example, a hospital system may elect to go live at one of the smaller hospitals first to assess how the implementation process flows. Teams should include a nurse educator, pharmacist, supply chain representative, and a representative from biomedical engineering. This team should

arrive on the nursing unit prepared to change out pumps one by one, change medication and solution stocks in the solution area and in the automated dispensing cabinet (if planning on changing standard concentrations of medications during go-live), and assist the nurse in programming the pump. In some cases, intravenous (IV) solutions may need to be remade and new tubing attached. If a change in drug concentration or solution type is incorporated into the pump go-live, electronic medical records and flowsheets will need modification. The next section includes examples of go-live checklists.

Go-Live Checklists

Implementation Team Checklist

- Develop timeline for pump rollout.
- Develop contact lists for all members of the rollout team.

Biomedical Services Checklist

- Clean pumps and prepare for rollout.
- Attach barcodes to pumps.
- Enter pumps into tracking system.
- Determine need for new rental stock, if necessary.
- Test pumps for operational functionality.
- Push drug library to pumps if applicable; confirm wireless transfer.
- Charge pumps for 24 hours.
- Provide education for biomedical staff.
- Create trouble-shooting tip sheets for biomedical staff.
- Educate biomedical staff on appropriate charging procedures.
- Verify wireless connectivity.
- Establish a storage and set-up area for pumps; verify electrical outlet or extension cord needs.
- Determine process for hand-off to sterile services.

Sterile Services Checklist (or Department Responsible for Cleaning Pumps)

- Obtain solutions needed to clean pumps.
- Establish appropriate policies and procedures related to pump cleaning and storage.
- Coordinate change in supply needs (tubing) to inventory manager, if applicable.
- Establish procedures for medications left in the pump on return.
- Develop staffing schedule for rollout.
- Educate staff on pump cleaning.

Supply Chain/Inventory Specialist Checklist

- Communicate any changes in solutions and tubing (including new order numbers).
- Collaborate with pharmacy to develop a crosswalk of old solutions, new solutions, old order numbers, and new order numbers.
- Determine additional supplies needed for go-live teams (in collaboration with pharmacy).
- Receive and deliver pumps to the appropriate loading docks; communicate arrival with biomedical services.
- Change out tubing and solutions to new products in nursing areas if applicable.
- Plan for disposal or disposition of old pumps being taken out of circulation.
- Update online ordering systems with new order numbers and PAR levels.
- Order and stock new solutions.
- Coordinate final delivery date of pumps.
- Dispose/return old tubing, if applicable.
- Update PAR levels in automated solution dispensing cabinets.
- Establish PAR quantities in storage locations.
- Update barcodes for solution shelving.
- Determine if new IV poles are needed.

Nursing/Nurse Educators Checklist

- Collaborate with pump vendor to develop training material for nursing.
- Collaborate with implementation team and staff to develop training schedule; typically, training will begin four to six weeks prior to implementation.
- Determine staffing needs for rollout, assign super-users.
- Schedule staff for training and rollout.
- Determine mode of education; include multiple types such as classroom training, hands-on education, and online education.
- Develop training tools: posters, tip sheets, frequently asked questions (FAQs), PowerPoint presentations, and online modules.
- Develop tracking tool for staff education.
- Upload pump online training tools to intranet, if applicable.
- Conduct training of nurses, certified registered nurse anesthetists, and nursing assistants.
- Provide education on new supplies, such as tubing and solutions.
- Provide trouble-shooting guides for nurses.
- Support nurses on go-live day with super-users and implementation teams.

Pharmacy Services Checklist

- Develop drug library content in collaboration with nursing department.
- Develop drug library clinical care areas in collaboration with nursing department.
- Develop update list for any changes in automated dispensing cabinets.
- Work with supply chain to determine any solution changes.
- Communicate solution changes, if necessary, to all departments.
- Collaborate with information services on any order set changes.
- Communicate order set changes to physicians, nurses, and pharmacists.
- Order new tubing supplies for the pharmacy sterile products area (IV room).
- Order new solutions, if necessary, for the pharmacy department.
- Develop list of needs for barcoding in pharmacy systems.
- Develop list of changes needed in the electronic health record (EHR), including medication entries, the electronic medication administration record, flowsheets, and order sets.
- Collaborate with nursing to identify any changes needed for bolus procedures (for example, if dose limits exist for boluses, there may be a change to administer bolus medications from a medication infusion bag).
- Identify any changes that may occur for medications delivered by syringe (syringe infusion pump or large-volume pump syringe adaptor).
- Determine if new tubing supply will meet all medication needs, or if there are needs for alternate special tubing.
- Develop list of patients on infusions on go-live day; prepare new solutions and attach new tubing, if necessary; assist nurses (along with the go-live team) in changing out pumps and medication infusions. If new concentrations of infusions are used, attach warning label.
- Develop tool for reporting pump problems and request for library changes.

Information Technology

- Incorporate any label changes in the pharmacy labeling system.
- Collaborate with nursing and pharmacy to determine needed changes in the EHR (for example, drug entries, MAR changes, instructions, flowsheets) and to order sets.
- Set a change over date for any EHR changes and order set changes.

Considerations for Wireless Pump Updates

Drug library updates may be frequent after the initial rollout. The nursing staff may identify many issues that must be addressed. There may even be mistakes in the drug library that will need correction. The implementation team's role will change; this group should identify lead individuals to participate in the maintenance phase of pump deployment. The work continues after rollout, and frequent revisions will be necessary. The implementation team should identify an ideal schedule for drug library and pump updates. Constant revisions of the pump firmware or medication library are not sustainable situations. Our team decided that, initially, we would conduct quarterly updates. As time goes on and the staff become used to the pumps, the updates can be less frequent.

There should be a process for front-line staff to request modifications to the pump library using either electronic or paper processes. When requests for changes are received, there should be a well-understood process for evaluating change requests. A multidisciplinary team should be involved in the development of criteria for accepting drug library changes and assigning changes to an urgent status versus a nonurgent status. Our team uses quarterly conference calls with a multidisciplinary team to evaluate possible drug library changes. Once a drug library update is accepted or a hardware or firmware upgrade is scheduled, the team will use the wireless pump update flowcharts. Individual departments should use the flowcharts, along with their go-live checklists, to ensure thorough preparations are made for any wireless pump updates.

There are some considerations for wireless pump updates that will not be included in the go-live checklists. Examples of these quarterly update procedures include the following:

- Maintaining an inventory of pumps that have been updated wirelessly versus those that have not been updated
- Developing nursing policy to address expectations of nurses when updates are sent to active pumps
- Moving pumps that are out of wireless range into wireless range so that they can receive the updates.
- Making replacement medication infusions available for pump updates, if necessary.
- Developing processes for updating any rental pumps.

Figures 17-1 through 17-3 are examples of flowcharts for wireless pump updates.

CONCLUSION

Wireless pump updates are complex processes that require clear accountability and communication. All disciplines should have a good understanding of the processes for updates that the pump team has defined.

◆ PRACTICE TIPS

- Plan ahead for pump updates, identify a multidisciplinary group to manage the pump and library upgrades.
- Identify approval process for pump library changes; make checklists for each department so that no step is overlooked.
- Identify the impact of pump library changes on medication entries in the EHR, the electronic medication administration record, the flowsheets, and any order sets.
- Pump tracking is essential during a pump library update; you will need to track which pumps have the new library or software and which have the old version.
- Identify a team of biomedical and supply chain personnel to conduct the pump swap.

Requestor submits suggestion via on-line or e-mail

System team evaluates for appropriateness

Is request clinically appropriate?

No → Requestor told reason for denial via e-mail or blog

Yes

Parallel reviews by pump team, EMR team, flowsheets

System team sends proposal to entities for discussion/input. Discussion with nursing, medical staff, Rx and other groups/individuals as appropriate.

Entity input back to system team via e-mail or blog

Will requested change be implemented?

No → Requestor told reason for denial

Yes

System team prioritizes immediacy of change (regular update or sooner?)

System team informs site leads from all disciplines
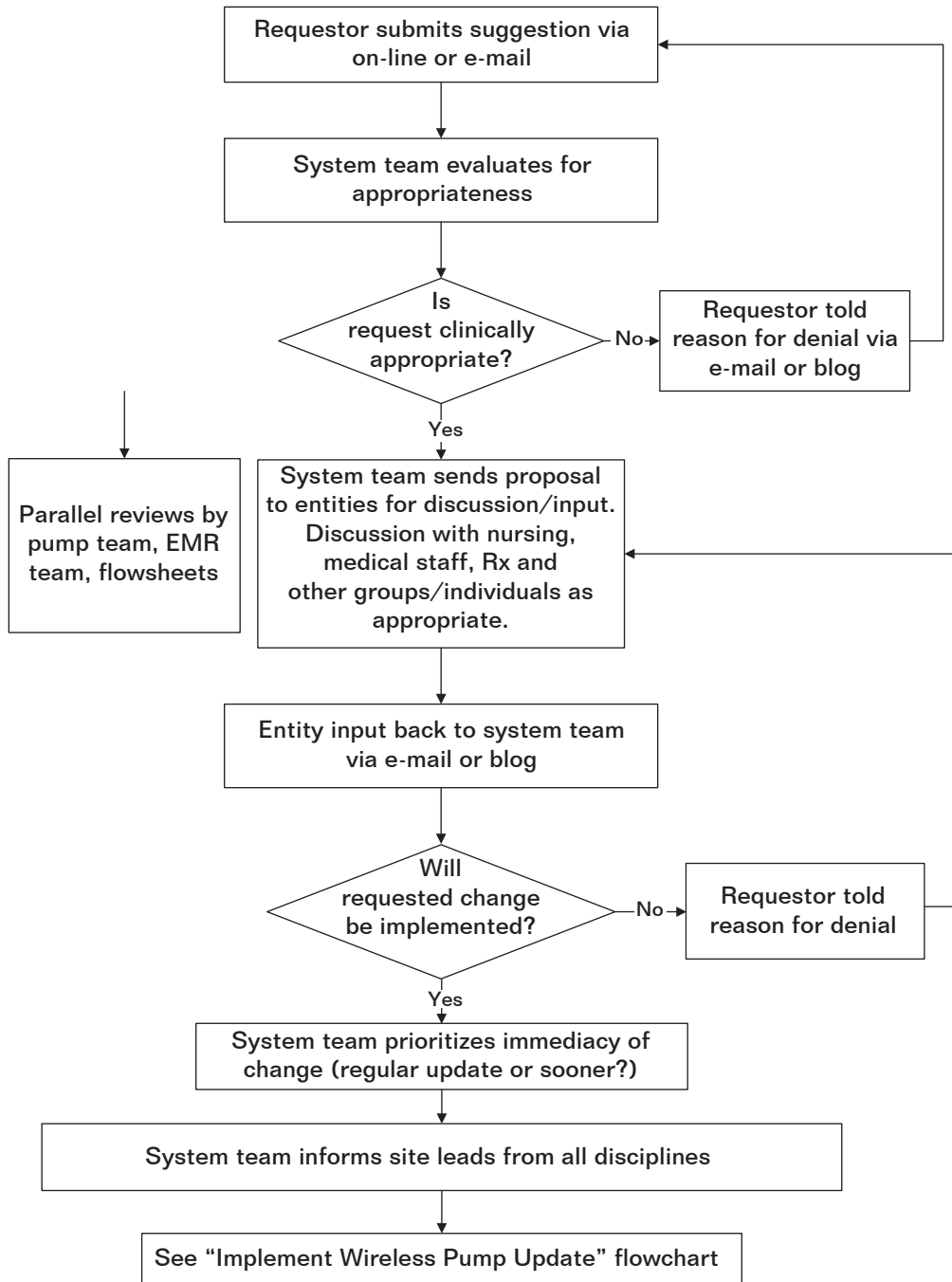
See "Implement Wireless Pump Update" flowchart

Figure 17–1. Flow chart for request/suggestion for wireless pump updates.
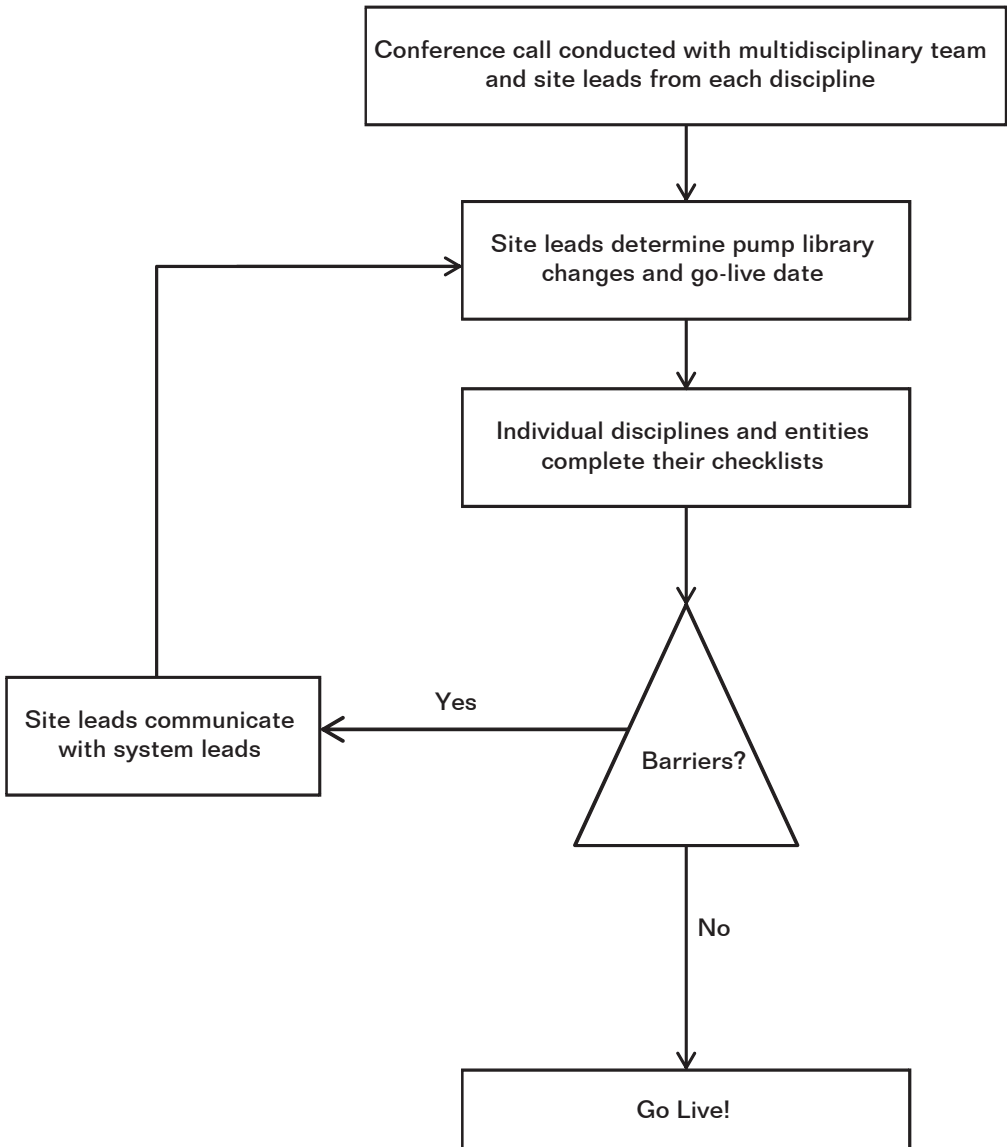
Figure 17-2. Flow chart for implementation of wireless pump change.

Integrated Flow Chart for conducting Drug Library (DL) Updates

Pump Oversight Committee → **Decision to push a DL finalized** → **Timeline Established**

Education

Before DL push, provide education on drug library changes to all affected disciplines

→ Remind staff to have pumps plugged in
Send notice to those in non-wired zones of pending DL push

→ Send out instructions for updating drug library to all pump users

Pharmacy Pump Library Owner

Inform Site BioMed Lead of plan to push DL

→ Push drug library to pumps according to vendor specifications on go-live date

→ Collaborate with other disciplines to change out pumps or medications as needed

Site BioMed Lead

Work with supply chain to locate pumps in non-wired zones; connect to Ethernet prior to DL push

→ Collaborate with other disciplines to change out pumps or medications as needed

Site Supply Chain Equipment Manager

Collaborate with BioMed to locate pumps in non-wired zone

→ Connect non-wired pumps via Ethernet or move to a wired zone during DL push

→ Determine if additional pumps are needed during DL push

→ Collaborate with other disciplines to change out pumps or medications as needed

Information Services

Incorporate needed changes in medication labels, medication entries in the EHR, order sets, and flowsheets

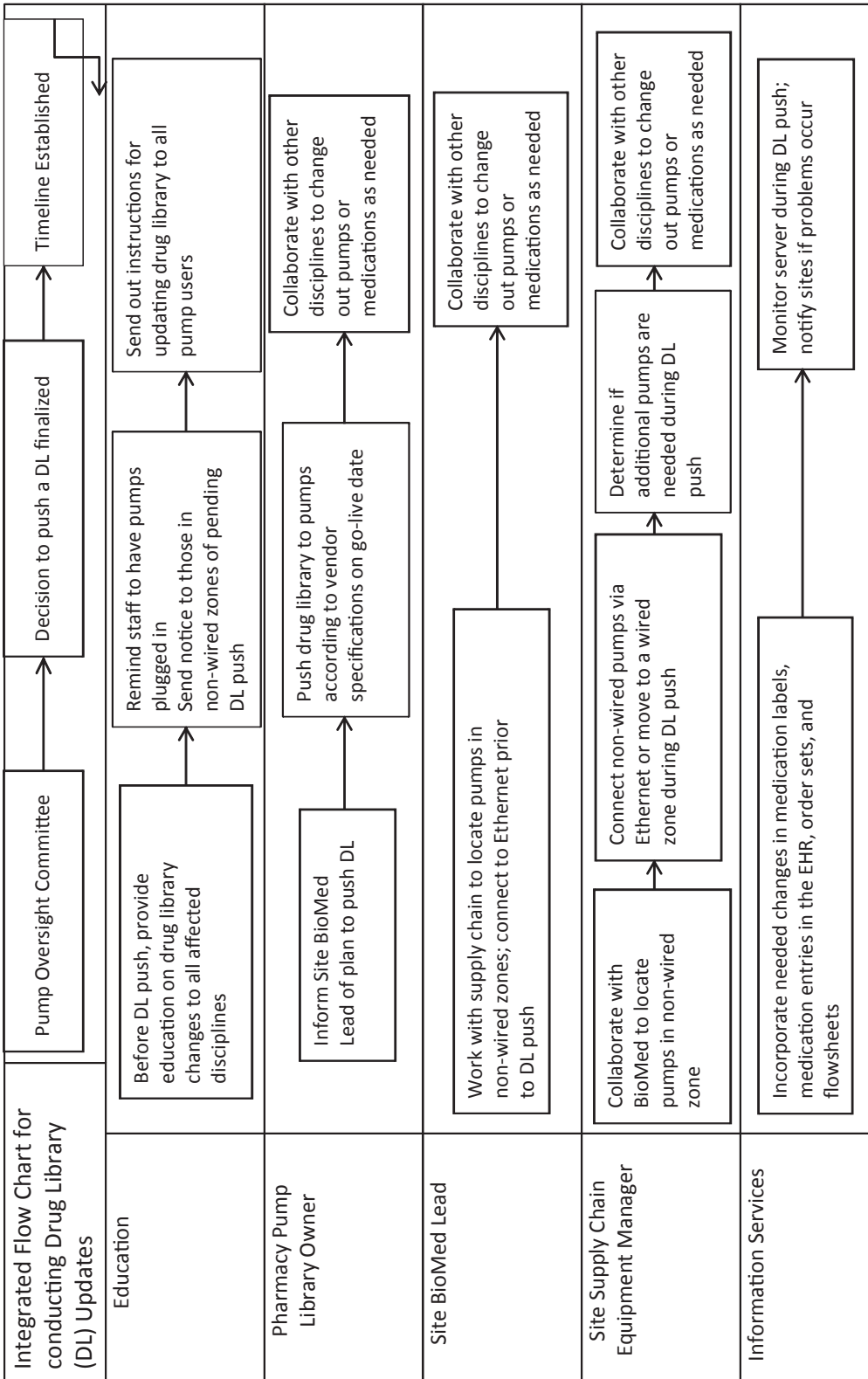→ Monitor server during DL push; notify sites if problems occur

Figure 17-3. Integrated flow chart of drug library transfer for pumps.

SUGGESTED READING

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