Preparing for Pharmacy Automation
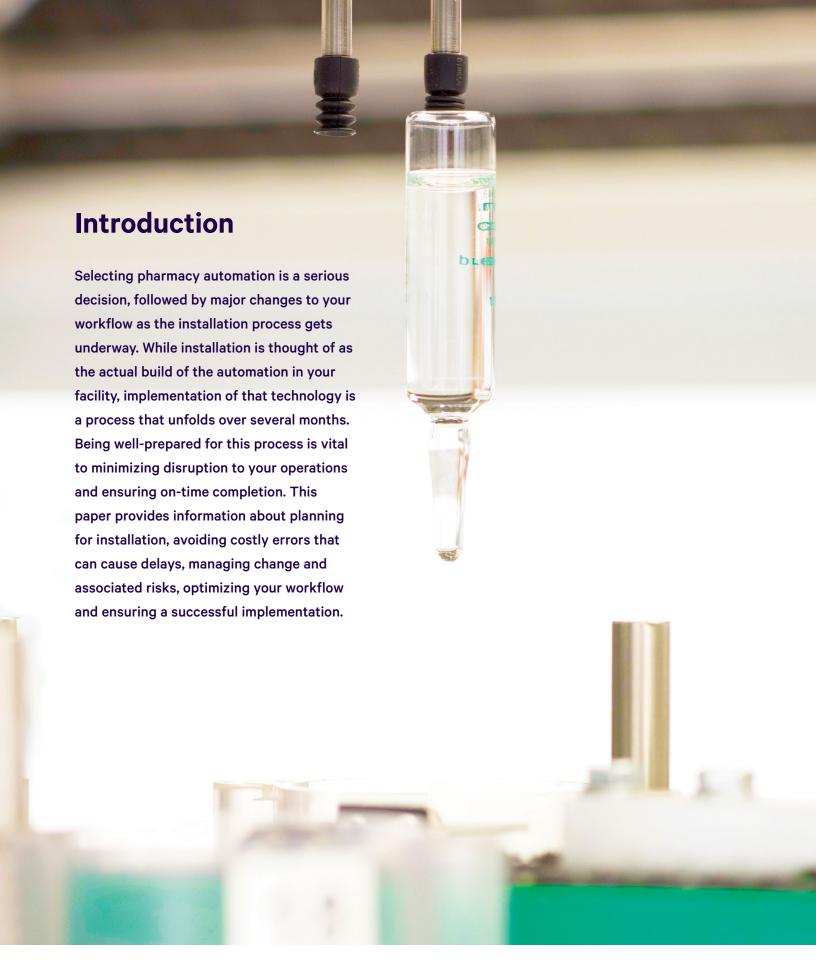
A detailed guide to ensuring successful planning and implementation

swisslog healthcare

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Introduction

Selecting pharmacy automation is a serious decision, followed by major changes to your workflow as the installation process gets underway. While installation is thought of as the actual build of the automation in your facility, implementation of that technology is a process that unfolds over several months. Being well-prepared for this process is vital to minimizing disruption to your operations and ensuring on-time completion. This paper provides information about planning for installation, avoiding costly errors that can cause delays, managing change and associated risks, optimizing your workflow and ensuring a successful implementation.

Assessing the Impact of Change

The installation process will be disruptive to your current operations. How you handle that disruption depends on your ability to assess the impact that automation will have on your staff and workflow and how you manage the change process.

Typically, replacing your existing automation with a new model or vendor has the least amount of impact to your workflow. Conceptually, your staff understands automation and is used to the tasks and procedures involved in using equipment to dispense medication. However, new automation can present different challenges for your staff. Specific process steps and the terminology used to describe and execute those steps will change. Training is critical to this installation, as is preparing the appropriate

expectations. A new piece of equipment likely will not do all the same things the existing model does, nor will it resolve all the perceived problems that the existing equipment has. **Setting the proper expectations for the staff is imperative for ensuring success.**

Questions To Consider:

— What is my staff's expectation of the new automation?
— What policies and procedures must be changed and adapted to accommodate the new equipment?
— Are my current dispensing practices going to change with the new automation?

Answers to these questions will guide you in the change management and risk management planning processes. Consult your automation vendor for recommendations based on your particular situation.

Adding automation to a pharmacy that does not currently have automation will have a large impact on workflow and process. Every aspect of your pharmacy's operations will change, and it's your job to prepare your staff for what's to come.

Questions To Consider:

— Do I have the right staff skillset to learn automation?

— Do I have the right people in the appropriate roles?

— Are there new roles that should be developed to support this implementation?

— Does my current dispensing process support automation?

— How will nursing be impacted by the change?

— What steps do I need to take in advance of the implementation to ensure stakeholder buy-in and support?

— What champions do I need for success?

Adding automation in conjunction with a construction project, whether the construction is in an existing pharmacy or in the form of a new facility, has the biggest impact to a pharmacy operation. Modifying or opening a new pharmacy is a large undertaking in itself, and adding new equipment presents additional complexities that can further stress a project.

Questions To Consider:

— Am I staffed appropriately to support the automation and construction project in addition to normal operations?

— Am I making any organizational changes in conjunction with the project?

— What will be the impact to patient care, and are all stakeholders involved and in support of the project?

— What other departments need to be involved in the project?

— Am I changing drug distribution models?

— How will inventory levels need to change to support the new facility or new pharmacy?

— How will I ensure drug security during a renovation?

— Do my architects have detailed specifications of my new equipment and clear instructions for the configuration and layout?

Setting Expectations

Having clear expectations is key to ensuring a positive experience with your automation vendor, your staff and your stakeholders.

Automation Vendor

Most conversations about what the technology will do and how it will function are had with a sales person. Although many automation vendors educate their sales teams on equipment functionality, topics such as pharmacy workflow, regulatory requirements and hospital information systems are usually not their area of expertise. When selecting a vendor and preparing for installation, it's appropriate to ask to speak with a technical resource from your vendor. Don't wait until the equipment arrives to start asking detailed questions about tactical use. The following are a few key topics to cover:

Detailed Workflow: Anticipating how your workflow will change is critical for ensuring automation enhances your medication distribution. Along with a technical resource from your vendor, review exactly how you intend to utilize the equipment as well as your expectations for its functionality. Keep in mind how this functionality may differ from any existing automation you may have.

Additional Costs: Keep in mind that in addition to your initial investment, there are often several other costs to consider, including consumables and service. One cost that many pharmacies don't consider is the fee that many automated dispensing cabinet suppliers charge to interface with pharmacy automation. Initial fees can be around $20,000 in addition to ongoing monthly "maintenance" fees.

Analytics and Reporting: Don't make assumptions about what type of reporting will be available with your new equipment. Make a list of all of the reports you expect to be able to run and have your vendor provide examples of each report. You may find that software updates or enhancements need to be made to accommodate your requirements. It's best to find this out before go-live.

System Support: How often do you expect to see a technician for your automation equipment? What types of issues will your staff be expected to resolve, versus your vendor? Having clear expectations around your service agreement will ensure your pharmacy staff has the correct level of ownership of caring for the equipment.

Pharmacy Staff

Whether transitioning from a manual pharmacy or an automated one, your staff likely will have preconceived notions of what the new technology will do. Setting clear expectations will ensure compliance and ensure they are not disappointed by how the automation actually functions. Consider the following:

Site Visit: When going on a site visit to see the automation in action, don't forget to take a technician, likely a future super user, to help with the evaluation. They will think of details that may not occur to your higher-level staff and help ask tactical questions. This person will be a great resource when developing a new workflow and training other staff.

Process Comparison: Make a comparison chart showing how the new technology will differ from the current state. Whether those processes are manual or automated, understanding these differences will help them prepare to use the equipment. Don't be afraid to acknowledge aspects where the new automation may be perceived as inferior. It's better to call this out and put a positive spin on it before it arises as a complaint from your staff.

Staff Forum: Create a forum for your staff to ask questions. Not only will this help assist in risk mitigation, it will show your staff that you care about how this change will affect them. Often people are afraid to ask questions for fear of sounding stupid or as if they need help, so consider less public ways of gathering questions from the team.

Peer Support: Take advantage of user groups, customer service portals and other communities early in the process to gain a better understanding of the tools in place to support your implementation and to access the experience of others as you go through the process yourself.

When setting expectations for all of these groups, it's important to remember that even with great planning comes many unexpected events. Allowing for extra time in your schedule and room in your budget will help to minimize the effects of these events.

Stakeholders

When making a large investment in new technology, there are often many different stakeholders involved in the decision. They each have their own impression of how this technology will affect their departments, which may or may not be accurate. Consider the following stakeholders:

Information Technology: Is this department aware of your installation timing and prepared for the resources you will need for implementation? Keeping this team in the loop will ensure support is available when you need it.

Nursing: With a change to pharmacy automation, nursing will likely feel the impact—hopefully for the better. Will there be a change to your replenishment schedule? Will medication be distributed differently? How will staffing for go-live affect your ability to service the nursing units? By anticipating how this change will affect nursing, you can help eliminate any interruptions to patient care.

Executive Team: When making a budget request for new technology, you likely identified clear improvement metrics and return on investment goals. Setting expectations for these metrics, as well as timing, is essential to engaging with your executive team and building a business case for the project. Consider how you will be measuring and reporting on these results.

Change Management Planning for Automation Installation

Clear change management plans are essential to staff acceptance and the success of automation implementation. At a minimum, your change management plan should include:

A project charter: Identify the goal of the project and clearly identify the successful end state. This should be agreed-upon by executives and stake holders and should be accessible to everyone involved in the project team and anyone impacted by the automation.

A strong communication plan: Frequent communication to project stakeholders allows people to voice concerns, ask questions and work to resolution in advance of the final project handoff.

Quick wins: Getting some quick wins early in the project demonstrates the positive changes that automation is bringing. Focusing on positives builds momentum as the project moves forward.

Process and transition review: Regular (weekly or monthly) reviews allow for adjustments in the plan to address unanticipated issues as the project progresses.

Your selected vendor should provide change management support in order to alleviate concerns and assist in planning for work continuation during the installation and transition periods. For more information on change management, download the white paper, "Managing Technological Change in Your Pharmacy."

Staff Acceptance: Stakeholder Analysis Chart (Table 1.)

A critical element of successful change management is achieving staff acceptance. As the primary users of the equipment, their attitude toward the new technology greatly impact project success. By doing a stakeholder analysis, you can fully understand the impact of the change throughout your hospital. Most importantly, it will identify individuals whose resistance could derail your installation. An example of a possible stakeholder analysis is seen in Table 1.

Table 1. Stakeholder Analysis Chart				Current/Desired Support					
Key Stakeholder	Role in Organization	Power/ Influence Category	Impact of Project on Stakeholder	Strongly Opposed	Opposed	Neutral	Supportive	Strongly Supportive	Reasons for Resistance or Support
Mary Jones	Nurse Manager		Medium		○——————→				Concerned nurses will have to take time away from patients to learn new process.
John Smith	Staff Pharmacist		High	○——————→					Fears job loss and worried about introducing new processes.
Bob Walker	VP, Patient Safety		Medium					○	Project will decrease likelihood of medication errors.
Sarah Hammond	IT/IS Project Manager		Low			○——————→			Indifferent to the project as long as the timeline doesn't slip causing an overlap in projects.

Developing a Risk Management Strategy

Risk is inherent in any big project. The introduction or replacement of automation may create unanticipated risks within the pharmacy as well as on the patient floors. While it's unreasonable to expect to be able to prevent all potential risks, identifying potential risks and assessing their likelihood and severity allows you to avoid project derailment by planning appropriate responses. A risk management strategy includes the creation of a risk management team to identify risks and determine how to mitigate them. It is important that your risk management team include both project supporters and detractors. Once compiled, your team needs to set regular meetings in order to identify any potential risks and plan for their mitigation.

Risk Identification and Mitigation

Risk identification is essential to preparing for problems that may arise during the pre-installation, installation, testing and go-live of your new automation. Risks associated with the project should be recognized within the pharmacy as well as outside of the pharmacy, even up to the patient level.

Likely there are many stakeholders that will be affected by the installation of your automation, from pharmacy staff to nursing and ultimately your patients. Involving both project supporters and detractors in the risk identification process is a great way to proactively mitigate project failure as well as change opinions. The supporters will be able to promote all of the positive changes that the introduction of the automation brings to the pharmacy. The detractors will assist in the identification of risks as they likely have a list of concerns fueling their negativity toward the project. Their involvement in planning will ensure they feel ownership in the change and secure their support

moving forward. Scheduling a standing morning meeting during installation and training can assist you in quickly addressing any potential disruptions or issues impacting workflow.

> **8 Steps to Risk Mitigation**
>
> The Society of Actuaries suggests a multi-step process to compile your comprehensive risk management plan.[1]
>
> 1. Identify risk
> 2. Assess likelihood and impact
> 3. Measure the impact
> 4. Decide response
> 5. Assign responsibility
> 6. Monitor activity
> 7. Report risk occurrence
> 8. Inform risk analysis

SOURCE

1 — Booker, F. (2005). Developing Effective Risk Management Strategies to Protect Your Organization. Risk Management, (5), 27-32

Workflow Optimization Planning

Purchasing automation is a step toward workflow optimization but is not a magic bullet to streamlining pharmacy operations. Your vendors are a valuable resource when it comes to utilizing their equipment in the most effective manner. They should work with you to plan the best locations for your equipment in the pharmacy in order to optimize your workflow. Additionally, addressing workflow changes in advance of implementation will prevent adding automation to an inefficient system.

Your vendor should provide you with a workflow consultant who will visit your site to review your current operations. During their visit, they will observe your current operations, specifically reviewing:

— Receipt and reconciliation of wholesaler orders
— Stocking
— Patient order receipt and preparation
— Dispense to the patient floors
— Ordering inventory

When observing the above, they will also assess your staffing for each activity, noting the roles and responsibilities of each pharmacist and technician. With your super users previously identified, this provides an opportunity to reassess and confirm the roles and responsibilities in order to set expectations for the new workflow.

Your new workflow should do more than just accommodate a new technology purchase; it should create process improvement and decrease waste. Leveraging lean methodologies to optimize workflow therefore should be a consideration

during early pre-implementation stages. Whether you are utilizing existing space, renovating or building a new location, consulting with a lean expert can streamline activities and decrease costs prior to installation.

With the workflow optimized for your automation, it's important to look further at your practices including inventory locations and packaging. For instance, are all your fast movers in the right place? Should they be packaged and stored or should you store them in bulk? Putting inventory in the correct place allows you to use your automation to its full potential.

Inventory Preparation

Preparing your formulary for automation is no simple task. It is time consuming and takes resources away from critical daily tasks; however, this stage is temporary and the sooner you start, the easier it will be. The data-gathering process has two goals: preparing medication information for entry into the system, and making decisions about how to store, dispense and replenish stock.

«I always recommend clients begin the process as soon as they've selected their automation vendor,» said Cindy Doig, pharmacy workflow consultant. «Additionally, the process will proceed with more consistency and accuracy if you dedicate resources to it.»

Each vendor has its own requirements for formulary management. Before starting to organize inventory to load into your new system, discuss what information is required in the system database, and in what format, in order to upload all of the right information to your automation management software.

Formulary information typically can be exported from your existing Health Information System (HIS). Your vendor likely has a template you can use to determine which data to export and in which format. A detailed quality review of this data is critical before providing it to your vendor for upload.

To plan for your automation utilization, your vendor likely will need the following data:

— Dispense history (usually over a one-year period to account for seasonality)
— Current inventory value and annual supplier spend
— Value of medication wasted due to expiration

These pieces of information allow the vendor to help you make decisions about how to store and dispense your medications.

Project Implementation

When your automation contract is signed, it's time to establish more concrete plans for implementing your project. This includes developing a timeline, planning for staffing requirements and anticipating how your pharmacy operations will continue during installation.

Timeline Development

Your project timeline should be comprehensive, including minor milestones for inventory overhaul and reconciliation and IT infrastructure as well as major milestones for pre-construction area preparation, the automation build, testing and go-live. A typical automation project could take anywhere from 9 to 18 months, depending on project complexity. Multiple pieces of equipment or vendors, construction and changes in distribution model could expand the schedule. The timeline should be published and updated regularly to keep all stakeholders and staff aware of project status. This will hold the project team, vendor and staff accountable. Additionally, being able to anticipate the next milestone minimizes dissatisfaction due to unexpected events.

When developing a timeline, it's important to avoid an overlap with other big projects. The installation of your automation needs to be the primary focus for your stakeholders—including other departments that are essential to go-live, such as information technology (IT). A hospital-wide project such as an HIS or EMR upgrade likely will take precedence over any single department's projects. Communication with these groups is critical to avoiding installation delay.

Top Causes of Installation Delay
— State board inspection and approval
— Construction permit denial and construction delays
— IT/IS availability issues
— Custom interface delays
— Incomplete formulary data
— Damaged/missing parts or components
— Equipment failure during testing

«It is initially challenging to get all staff to trust the automated system,» explains Andrea Gimpel-Blanchard, PharmD, Director of Pharmacy at Maine General Medical Center. **«Going from a manual system, where you could see the stock on the shelves, to having to trust the automation can be difficult. It is critical to properly in-service your staff and standardize processes for successful maintenance of accurate inventory levels in the automation.»**

While each vendor will have a specific project timeline, you can anticipate these major phases:

Phase 1: Project Start Up

During the initial phase of the process, it's important to assemble a project team that is responsible for driving and communicating the change. It's advantageous to involve both leadership and staff so that you can have project promoters relaying the benefits of the coming automation to the rest of the staff.

If you have not already done so, begin to think about what your new workflow will look like. It is also a good time to determine who your super users will be. These people will be the automation experts and those responsible for shaping the policies and procedures, as well as training new staff and communicating updates and improvements to users. It's recommended that you select one person from each shift as well as an IT pharmacist. The super users are responsible for training other people on their shift.

Additionally, with the installation of automation and an alteration of workflow there will be a substantial amount of change. Now is a good time to kick off your change management plan. See the previous section on Change Management.

To keep your installation process moving, make sure to work with IT to order any equipment not included with your automation purchase. This may include servers, computers, peripherals, etc. In the event that your supplier experiences a backorder, give yourself plenty of time to receive them.

Phase 2: Configure and Prepare

Once the project schedule is defined and a go-live date has been established, assign the responsibilities of your super users to other staff, since your super users will need to be deployed full-time on the project. They will spend their time working with their vendor counterparts to make decisions about equipment configuration, preparing the data and learning the logic of the system. You are responsible for the availability of your super users during the course of the installation.

If workflow optimization has not been planned yet, the vendor workflow consultant should visit your site to do an assessment of your existing workflow and generate recommendations for the new process.

IT projects will begin, requiring hardware and software infrastructure to be in place and IT resources to be available. Interfaces with third-party systems are installed and configured during this time to allow for adequate testing. It's a good idea to have test messages available for your vendors, as well as a pharmacy resource to validate that the messages received and processed by automation contain the appropriate information.

Phase 3: Build and Train

Once the equipment arrives on site, the build begins. This is an exciting time, as most of your staff will not have had the benefit of seeing the equipment before this time. Make sure that your change management plan is fully executed and that super users are prepared to answer questions about functionality, downtime and changing processes. Your project team should work together to keep staff and stakeholders informed about the progress in order to alleviate any anxiety this may cause.

When the equipment is built, your staff will begin to load the machines. This allows for full-dispense testing and will be the time to see the process in action.

Full user training should begin as soon as the equipment is operational. Super users should start to train the entire staff to ensure knowledge of the equipment is spread throughout the pharmacy. Develop a training checklist so that training is standardized, and some sort of form should capture who has been trained and who hasn't. A certification and continuous improvement program is a great way to recognize staffers who have been through training and are eager to learn more, and provides user documentation for Joint Commission audits.

Phase 4: Go-Live

Most vendors require large amounts of testing prior to go-live, so "flipping the switch" to automation is sometimes a non-event. However, this is an important occasion and one that should be recognized. Make a point to celebrate the accomplishment and congratulate your staff for a job well done.

It's also important to increase staffing during the go-live period. There will be bumps in the process as everyone gets used to the changes, and keeping staff calm and focused is critical to promoting a positive environment. Work with your vendor to ensure they will provide appropriate resources, such as a trainer, project manager and technician, for this critical part of implementation. They are key to troubleshooting any potential issues.

the best use of your automation. This is especially relevant when transitioning from manual to automated processes. For example, inventory management software is only as accurate as the information it is given. If the system is told that five units of medication have been dispensed, but the technician takes seven, your inventory quantities will be off. "It is initially challenging to get all staff to trust the automated system, " explains Andrea Gimpel-Blanchard, PharmD, Director of Pharmacy at MaineGeneral Medical Center. "Some staff created workarounds, additional steps, and reports to gain the same comfort level compared to their previous processes. Going from a manual system, where you could see the stock on the shelves, to having to trust the automation can be difficult. It is critical to properly in-service your staff and standardize processes for successful maintenance of accurate inventory levels in the automation."

Phase 5: Post-Implementation

As your staff settles in to the new workflow and must rely on the automation in a real working environment, it is normal for issues to arise. Scheduling a super user for each shift will assure your staff that help is available when they need it. As best practices are developed and workflow is optimized, this knowledge should be shared among staff across all shifts. Look for ways to reward your staff who quickly adopt the new technology or help the team resolve questions. Creating a positive environment around your automation is critical to successful usage.

The compliance of pharmacy staff is critical also to ensuring the integrity of your data as well as

Ongoing training and optimization helps ensure staff compliance as well as making sure that your pharmacy is getting the best and highest use of the system.

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Staff Allocation for Training

Training is key to implementation success, staff adoption and proper use of your new automation. It provides your super users time to become comfortable with the new technology. It is also an opportunity to troubleshoot and anticipate questions/issues you may have once the automation is live while your vendor is still on-site.

During the training period, the trainer should teach your staff how to operate the equipment, as well as perform basic functions of the technology such as canister maintenance, recalibration and how to load and unload disposables. At the end of the training period, each trained staff member should be required to demonstrate their knowledge in order to become a certified user and trainer for additional staff training.

Embedding the new super-user responsibilities into your employee performance objectives recognizes the technicians for their advanced skills, as well as emphasizes the importance of their role in maintaining the automation. In addition, your vendor can assist in creating a core competency checklist, to ensure that all users are qualified to operate the equipment.

In order to maintain the skills learned during the on-site training session, follow up training, such as on-demand/online training, written training manuals and vendor site-based training, should be provided. If you are interested in ongoing training experiences such as vendor site-based training for additional or new employees, be sure to include it as a requirement for vendor selection.

Utilizing Train-the-Trainer methodology, certified pharmacy staff then trains their colleagues on best practices. Successfully used in hospitals and companies worldwide, the train-the-trainer method offers numerous benefits to the organization, including **«building the self-confidence of the in-house trainer by allowing them to take on a new or expanded role, ensuring the trainers understand and utilize interactive training techniques, helping them feel more comfortable in sharing knowledge and assisting trainers in forming new alliances and collaboration among employees.»**[2]
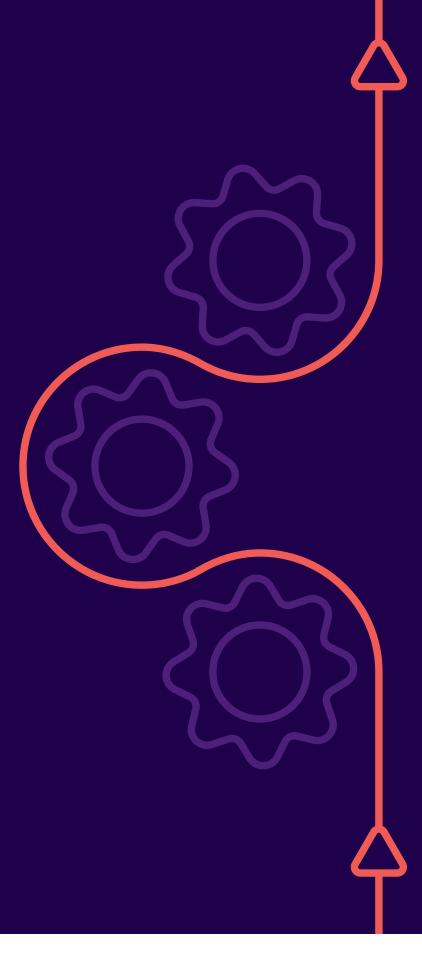
Continuing Operations During Installation

During the installation and testing processes, normal pharmacy operation must continue, whether your pharmacy is moving to a new location, doing a renovation or expansion or simply replacing aged equipment. If you are moving to a new location, operations can continue in the existing pharmacy without disruption during installation. Renovations, expansions and replacements pose their own challenges, but with proper planning, the right solution – one that works for your operations, schedule and the vendor's requirements – will allow you to complete the project smoothly.

In each case, working closely with your vendor during project planning and reviewing your options, including phased installation or temporarily moving to a different distribution model, ensures your ability to continue patient care delivery throughout the process.

SOURCE

2 — Jackson, Lynn. "The Hidden Benefits of Training the Trainer." Corporate Strategies. Blog. 16 July 2012, accessed July 13, 2014

Optimizing Automation for Maximum Benefit

After several months of automation use and process measurement, take the time to review your new processes to determine if there are any further improvements you can make. Optimization of your equipment and processes should be an ongoing initiative. In lean methodologies, this continuous improvement process is referred to as "kaizen," and provides a discipline for reviewing and improving standardized processes and eliminating waste.

Use the reports available to you to determine whether the machine is operating at its most efficient level. Your vendor can help determine this, and you should have access to support technicians who can provide input as well.

Your super users should be the voice of the staff, gathering suggestions for improvements or changes and recommending changes to the configuration or medication settings.

Conclusion

Implementing automation in a pharmacy is an exciting project. It's something that most leaders will do only once or twice in their careers, and it can often define their future opportunities. There is no perfect piece of automation, so more important than choosing the right equipment is choosing how you'll implement the technology. Managing through change, getting everyone involved and truly assessing the quality of your processes and staff are critical to ensuring the project will be successful.

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