Successful Implementation of New Pharmacy Practice Models

Methods of fostering change in the practice model at the pharmacy department level

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There is a clear mandate for change in health-system pharmacy practice that has arisen from the public demand for improvements in medication availability, affordability, safety and effectiveness. Since it is but one professional component of a complex health care delivery process, health-system pharmacy cannot meet such a mandate unilaterally. It can, however, provide leadership to bring about the necessary system-wide changes required to address this broad need. This article addresses the need for change in health-system pharmacy and the leadership challenges that must be confronted to foster such change.

The nature of change

A detailed review of the vast literature on change is outside the scope of this article, but there are a few generalizations that health-system pharmacy leaders should keep in mind.

• There are conceptual, psychosocial, and methodological aspects to change.

Each aspect needs to be taken into account in any plan for change or change management.

• There are two broad categories of change: those that are imposed by external forces or events and those that are created through individual (or organizational) initiatives.

• The common view that “people resist change” is misleading. People generally resist change that is imposed by external conditions. On the other hand, people generally embrace change that they helped create or that they perceive to be in their own best interest (i.e., directed toward improving their quality of life). In addition, professional people (including pharmacists) often embrace change that they believe will improve the services they provide to their clients (patients).

• Change (or change management) does not happen randomly. It occurs only through careful planning and management. (This applies both to the implementation of a desired change and to the containment or redirection of an externally imposed change.)

• Positive change (a desired new state) can be fostered. Fostering change entails conceptualization, consensus building, implementation, and dissemination (diffusion).

Changes in health-system pharmacy practice models: Common threads

Health-system pharmacy, dating roughly from the time of the 1985 ASHP Hilton Head Conference, has been moving steadily in the direction of clinical practice. During that same period, drug distribution and control programs have been modernized, information systems have been implemented, and pharmacy technicians have been trained and deployed in new and creative ways. A variety of practice patterns have emerged that incorporate traditional responsibilities (drug distribution and control) and new clinical roles. However, such changes have been unevenly developed and applied, and they have resulted in a variety of practice patterns or models. While...
these changes paint an encouraging picture, they have not yet resulted in the sort of coordinated national health-system pharmacy effort that is needed to meet the mandate referred to above.

Based on the authors’ collective observations, there are some common threads that run through those health-system pharmacy departments where significant changes in practice patterns or models have occurred.

1. The changes involved transformation from a dispensing-oriented function to an integrated model that included drug distribution and control plus patient-specific clinical and informational services.

2. At the beginning of the change process, the staff typically included some pharmacists with very little clinical training or experience and others with varying degrees of clinical expertise. There was also wide variation in pharmacists’ motivation or willingness to change.

3. Major staff development was required; in some cases, it was necessary to rebuild the staff through attrition and recruitment.

4. More often than not, the change process was initiated by the pharmacy rather than health-system; however, opportunities occasionally arose to tie in a pharmacy change initiative with a broader initiative for the health system, such as medication safety or medication reconciliation.

5. The pharmacy director typically had a strong vision for change and was able to communicate that vision to the pharmacy staff, hospital executives, physicians, and nurses, among others.

6. The pharmacy director tended to be a pioneer (an early adopter of innovation).

7. New performance measures were established for pharmacists, based on responsibility and accountability for solving drug-related problems.

8. Building a strong relationship with the medical staff was a critical step.

9. Adopting new technology (e.g., pharmacy information systems, automated dispensing cabinets, robotic dispensing systems, i.v.-fill systems, bar code technology) was also a critical step.

10. Technicians were given new responsibilities (as well as the requisite training to perform those added responsibilities), including medication processing, order entry, and clinical data gathering (among others).

11. In most cases, there was not a conscious decision to follow a particular change model; the process used was often more intuitive than scientific.

12. Changes occurred incrementally, over a period of several years. In most cases, changes are still ongoing.

The need for change models in health-system pharmacy

While generally encouraging, the progress in health-system pharmacy over the past 25 years has been more process driven than outcomes driven. For example, most changes have been based on the incremental addition of new services or programs, rather than on the pursuit of broad departmental goals, such as optimization of medication use. Moving forward, we will need to reorient health-system pharmacy departments to the acceptance of responsibility and accountability for the outcomes of medication use in the patients they serve—a vision set forth in the ASHP 2015 Health-System Pharmacy Initiative.3

In most cases, new practice models will be required to achieve this goal.

It will fall to the leaders in health-system pharmacy, particularly department directors, to provide the vision, direction, encouragement, and staying power to see us through this transition. Leaders, then, will be required to be change agents. To be effective, health-system pharmacy leaders will need to be guided by a well-thought-through practice model that is based on the broad goals of the department. They will need to develop a plan for adoption and implementation of the new model and for assessing its effectiveness. And they will need to understand the principles that affect the rate at which (or the extent to which) innovations—whether new ideas, new programs, or new technologies—are adopted by new users.

A very useful tool for leaders and managers who are seeking to implement organizational change is a change model. A number of such models, described in the literature, have been used with success in a variety of settings (e.g., businesses, nonprofit associations, health care organizations). One such model, described by Kotter,2 includes the following eight specific change-management steps or functions:

1. Create urgency.

2. Form a powerful coalition.

3. Create a vision for change.

4. Communicate the vision.

5. Remove obstacles.


7. Build on the change.

8. Anchor the changes in corporate culture.

Sutevski2 describes another eight-step change model, which includes the following steps:

1. Make a determination of when to change something and what to change.

2. Make a plan for implementation of the changes.

3. Find possible factors that will cause resistance to change.

4. Decrease the impact of those factors on the process before starting with implementation.

5. Implement the process of organizational changes.

6. Celebrate the successful implementation.

7. Measure the results.

8. Restart the whole process again.

Although there are obvious overlaps in Kotter’s and Sutevski’s models, Sutevski’s calls attention to the
need to measure results and adopt an iterative quality-improvement process. Deming advocates the adoption of a "plan-do-study-act" cycle to guide improvements in any new process; this seems to fit with steps 7 and 8 of Sutevski’s model. It would seem reasonable to develop a change model for health-system pharmacy that incorporates the thinking of both of these models. (Other, somewhat similar, models have been described elsewhere in the organizational management and systems engineering literature.)

The Institute for Healthcare Improvement (IHI) advocates the use of a specific improvement acceleration model. This model is intended to complement, rather than replace, any other change model that a health care organization may already be using. Although designed for and addressed to health systems, the improvement model would appear to be useful to health-system pharmacy departments and to other individual departments or units within the parent organization. This model includes the following steps:

1. Form a project team that encompasses the necessary leadership and technical expertise.
2. Set aims (answering the question, “What are we trying to accomplish?”).
3. Establish measures (answering the question, “How will we know that a change is an improvement?”).
4. Select changes (answering the question, “What changes can we make that will result in improvement?”).
5. Test changes, using a plan-do-study-act cycle.
6. Implement changes on a broader scale.

Another tool for use by health care organizations in implementing organizational improvements was developed by the Denver (Colorado) Health and Hospital Authority (DHHA), with funding from the U.S. Agency for Healthcare Research and Quality (AHRQ). Titled “A Toolkit for Redesign in Health Care,” this resource, like the IHI resource mentioned above, appears to be useful to pharmacy departments as well as to health care organizations as a whole. This tool kit is structured around the following six redesign planning steps:

1. Assess readiness for major redesign.
2. Establish the perspectives for redesign.
3. Create a structure for the redesign process.
4. Gather external data (e.g., literature review, field trips, consultation by individuals from other industries).
5. Gather internal data (e.g., employee focus groups, patient focus groups, data based on observation of current processes).
6. Choose the tools to enable redesign implementation.

The tool kit also provides strategies for developing specific projects for implementation and guidelines on establishing the appropriate system metrics.

We recommend that readers carefully review the IHI improvement model and the DHHA redesign tool kit, and offer one caveat. Health-system-wide improvement efforts, which are initiated by the executives of the institution and often administered in a top-down manner, are sometimes based on preconceived notions about how the pharmacy department (and other departments) should be involved or on a limited understanding of the goals or the unrealized potential of those departments. For example, in cases where the major focus of a health-system-wide redesign effort is improved efficiency (cost reduction), the redesign effort may not give the pharmacy department the opportunity to implement changes aimed at, for example, improvements in medication safety, clinical outcomes, or patient satisfaction. It is critical, therefore, that the pharmacy department take the initiative to develop its own plans for change, keeping in mind the need to demonstrate how these plans can result in cost savings and cost reduction for the organization. Health-system executives should be informed about and involved with these plans on a regular basis. Since comprehensive changes in pharmacy departments will (or should) be tied to systemwide efforts, such as overall improvements in the medication-use process, pharmacy can play a key role in any organizationwide redesign initiative, such as that advocated by IHI or described in the DHHA tool kit, and pharmacy should be positioned to do so.

One other useful tool is the U.S. Health Resources and Services Administration Patient Safety and Clinical Pharmacy Services Collaborative (PSPC) change package. Developed by health-system pharmacists and pharmacy educators for use by health-system pharmacy departments, this package is designed to support specific PSPC strategies and change concepts.

1. Leadership commitment. Developing organizational relationships that promote safe medication-use systems and optimal health outcomes.
2. Measurable improvement. Achieving change using the value and power of data-driven improvements.
3. Integrated care delivery. Building an integrated health care system across providers and settings that produces safety and optimal health outcomes.
4. Safe medication-use systems. Developing and operating by safe medication-use practices.
5. Patient-centered care. Building a patient-centered medication-use system.

Each of these five strategies is described in detail in the change package, and a set of tools and references is provided for each one. The change package incorporates most of the elements of the other change models described above.
Vermeulen et al. described a strategic approach for establishing priorities for changes (improvements) in the medication-use process, based on feasibility, the potential for financial return, and the effect on quality and safety. Although this work is not presented as a comprehensive health-system pharmacy change model, it does provide useful strategies for establishing priorities, and it should serve as a very useful adjunct to any change model that a health-system pharmacy may adopt.

Finally, we call attention to some recent work conducted by the University HealthSystem Consortium that resulted in a report titled “Pharmacy Practice Model for Academic Medical Centers.” Although this work addresses the needs of a particular constituency (i.e., health-system pharmacy departments in academic medical centers), the practice models it describes should be applicable to a much broader range of health systems. It does not serve as a change model per se, but it does describe the process used in arriving at proposed new practice models and should therefore be useful in establishing or refining a change model for use by others.

Pitfalls in the application of change models

Although change models have been used successfully by many organizations, others have tried them without success (i.e., they either failed to achieve the desired change or they were unsuccessful in sustaining the change). Aiken and Keller claimed that most such failures result from a lack of understanding (by change agents) of certain predictable elements of human nature. Their key findings and related recommendations are briefly summarized below.

1. What motivates the manager (change agent) doesn’t motivate most of his or her employees. Employees are motivated to change based on their sense of what effect the desired change will have. Their motivation is based on one or more of the following five forms of impact of the change: impact on society, impact on the customer, impact on the organization, impact on the working team, and impact on the individual employee. In creating consensus around the need for change, the manager needs to build a message that addresses each of these effects, not just those that motivate the manager.

2. Managers should let employees write their own change story. Letting employees create their own change message and change strategies produces better results than using a top-down approach.

3. A change message, in order to create sufficient energy, must contain both positive and negative elements. Managers cannot motivate employees simply by pointing out the advantages of change (e.g., a new practice model) or by dwelling on the consequences of failure to change. A balanced “plus-and-minus” story is more effective.

4. Leaders may mistakenly believe they are already effective role models. If leaders fail to recognize how they themselves need to change and fail to demonstrate that they have changed, they will not succeed in motivating their staff to change. Introspection on the part of the leader is a critical first step.

5. The role of “influence leaders” can be overestimated. Influence leaders, or opinion leaders, cannot effect change by sheer dint of personality. They are more effective as a helpful element of a broader set of change initiatives, not simply as a panacea for change.

6. Money is not the most effective motivator. Employees are motivated by public recognition, small token rewards, and a sense of ownership of the organization. These are often more important than salary increases or large bonuses.

7. Change must be perceived as fair and just. Employees will often resist change if they perceive that it leads to unfair or unjust treatment of customers. A change message, then, must address fairness and justice issues.

8. Employees do not change without their permission. They are what they think, feel, and believe in. Managers must keep in mind the personality types and emotional intelligence of each individual employee in making new assignments (related to, for example, a new health-system pharmacy practice model).

9. Environmental barriers to change must be addressed. Providing training sessions for employees related to an anticipated change (e.g., interactive simulations, role-playing exercises) will not produce the desired change if the workplace environment has not been addressed. Environmental barriers to change must be anticipated and addressed so that employees can apply what they have learned in their training sessions.

Diffusion of innovations (dissemination of change)

Not every innovation in health-system pharmacy practice has to be developed de novo in every department. In fact, most innovations adopted by individual pharmacy departments have been developed elsewhere. The array of technologies used in contemporary health-system pharmacy departments illustrates this point. A few pharmacy departments were involved in developing first-generation technologies (such as pharmacy information systems or unit dose packaging equipment); a few others were involved (and continue to be involved) as alpha-and beta-testing sites for commercially developed equipment; but the majority have adopted such technologies (at varying rates) after they reached the market.

There are numerous examples of pharmacy services that have followed this same pattern: implementation of unit dose distribution programs, i.e., admixture programs, drug information centers, pharmacokinetic monitoring services, pharmacist-run...
He defined diffusion perhaps most notably by Rogers.11 Adoption by a number of social scientists, described them in the literature or at professional meetings, and gradually adopted by individual health-system pharmacy departments. New health-system pharmacy practice models represent another innovation that will likely follow the same pattern of development and implementation; that is, they will be developed initially in a few specific sites, described in the literature, discussed at professional meetings, and gradually adopted by individual health-system pharmacy departments.

Factors affecting the rate of diffusion of innovations have been studied by a number of social scientists, perhaps most notably by Rogers. He defined diffusion as “the process by which an innovation is communicated through certain channels over time among the members of a social system.”

What is an innovation? Rogers defined innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption.” A new health-system practice model could be viewed as an innovation, worthy of consideration for diffusion. And, as Rogers noted, an innovation does not have to be “new” but only “perceived as new” by the person or entity considering it for adoption. It is new, then, only at the point at which the prospective adopter becomes aware of it. Finally, the prospective adopter may be “an individual or other unit of adoption.” For our purposes here, the “unit of adoption” will typically be a health-system pharmacy department, though in a broader sense the unit could be the parent health system.

Characteristics of innovations that affect their rate of adoption. Widespread adoption of an innovation, according to Rogers,11 can occur fairly quickly or very slowly, depending on certain characteristics of the particular innovation, including:

- **Relative advantage.** This is the degree to which an innovation is perceived by the potential adopter as an improvement over the idea, practice, or object it supersedes. This perception may be based on economic factors, convenience, social prestige, or satisfaction (or some combination of these).
- **Compatibility.** This refers to the degree to which an innovation is seen to be consistent with existing values, past experiences, and needs of potential adopters. A new health-system pharmacy practice model, then, would have to be perceived as compatible with the established professional values and practice routines of the department. If the department perceives a new model as revolutionary or disruptive, it would not be readily adopted.
- **Complexity.** How difficult will it be to understand and use the innovation? If the potential adopter concludes that the innovation is just too complex, it will likely be rejected.
- **Trialability.** This term refers to the degree to which the innovation can be tried or sampled. Does the innovation (a new pharmacy practice model) have to be adopted as a total package, or are there opportunities to adopt just parts of it on an experimental or trial basis? According to Rogers,11 the greater the degree of “trialability” of an innovation, the greater the likelihood of adoption.
- **Observability.** According to Rogers,11 “[t]he easier it is for individuals to see the results of an innovation, the more likely they are to adopt it.” If a new practice model that has been implemented in one health-system pharmacy can be visualized by others—if they can go for a visit and see it in action—they will be more inclined to adopt it.

A careful reading of Rogers’s11 work will help health-system pharmacy leaders understand how innovations (including new pharmacy practice models) will likely be diffused, and under what conditions. There are no rigid laws at work here; in fact, the factors influencing the rate of adoption can be managed or controlled. For example, a pharmacy director, working with members of his or her staff, can ensure that any new practice model being considered for adoption meets a certain threshold for each of the five characteristics that influence the rate of diffusion. He or she can take full advantage of the rich opportunities for communication that already exist in health-system pharmacy (e.g., professional meetings, publications, networking opportunities). The director can examine his or her innovation-decision habits and work to change them if necessary. He or she can also examine the social structure of the pharmacy department and seek to remove barriers to growth and innovation that are imposed by the existing structure (e.g., inadequate communications, autocratic decision-making, system norms that inhibit professional contributions by individual pharmacists).

Specific considerations in fostering practice model changes

An understanding of the nature of change, familiarity with evidence-based change models, and a grasp of the factors influencing a decision to adopt an innovation are all part of the conceptual framework needed in creating change. We turn now to creating change.

The work involved in changing the practice model in a health-system pharmacy (or in implementing a definable model where none exists) entails a number of specific steps, each of which has been described in several of the references cited earlier. Without intending to minimize the

anticoagulation clinics, and many others. In each case, a few pioneers developed the prototype services, described them in the literature or at professional meetings, and created interest among other health-system pharmacists in developing similar programs. These innovations were gradually (and continue to be) adopted by others who were not involved in their initial development.

Methods of fostering change
Consensus building and shared leadership. The collective vision of ASHP and its members regarding the desired future (new reality) of health-system pharmacy has been articulated in a number of ways and on a number of occasions. The achievement of this vision will require individual health-system pharmacy leaders to share and earnestly support the vision and use their leadership and management skills to “sell” the vision to others. This will entail building consensus among those most directly affected by the vision—members of the pharmacy department, hospital executives, physicians (including hospitalists), and nurses—concerning the need for change and the general directions to be pursued in creating that change. An argument could be made to include patients or patients’ representatives in the stakeholder group, but we believe patients are likely to be more interested in the outcomes of any change, rather than the specific nature of the change or the steps involved in creating that change.

Once agreement has been reached on a new direction for a health-system pharmacy department, such as establishing a new practice model, it is critical that a wide representative group of constituents (stakeholders) be involved in its implementation. Appropriately constituted and empowered project implementation teams will be key to maintaining organizational consensus for the planned-for change.

Building support within the institution. Beyond gaining conceptual support within the institution for an important change (e.g., implementation of a new pharmacy practice model), the pharmacy leadership will need to solicit, listen to, and address concerns that others may have. These concerns may include cost; space utilization; impact on workload of physicians, nurses, or individual pharmacists and pharmacy technicians; credentialing issues; and a range of other concerns. Building support will require that all valid concerns be addressed to the satisfaction of those who raise them.

The other part of the message, of course, is the overarching value of the change to the institution. Health-system executives, physicians, nurses, and pharmacy staff members should all be engaged in crafting that message. Staying focused on the advantages (value) will be critical in building institutionwide support.

Interprofessional patient care. Assuming that any new practice models we seek to implement in health-system pharmacy are focused on patients’ medication needs and the medication-use process, the new models must be interprofessional. Physicians (including hospitalists), nurses, pharmacists, and pharmacy technicians will all have important roles to play. Recognizing this fact, an important consideration will be the development of high-performance interprofessional care delivery teams.

Staff development. Careful consideration will need to be given to the “readiness for change” of individual members of the pharmacy staff and to their personal knowledge, skills, and attitudes. Plans will need to be developed whereby individual pharmacists and technicians will be able to acquire any additional knowledge and skills they may need and to modify attitudes and values, where necessary, to make a new practice model succeed. These needs should be addressed before any attempt is made to implement a major change.

Identifying resources required for planning and implementation. In addition to those resources one might expect to be available in most individual health systems (such as information technology experts, human resource specialists, quality-improvement consultants), there may likely be a need for outside resources, such as organizational development, process improvement, strategic planning, and industrial engineering consultants and specialists. The DHHA tool kit recommends that all redesign project teams include an industrial engineer or operations management engineer. Considering that new pharmacy practice models will likely be based on the goal of a safe and effective medication-use system, it seems reasonable to include industrial or systems engineers on the team.

Recommendations for new resources and tools designed to facilitate the implementation of change in health-system pharmacy

There are a number of schools of thought, each with its own related set of tools, that a health-system pharmacy leader could use in fostering change in pharmacy practice models. Several of these have been briefly reviewed in this paper. We conclude with a set of recommendations regarding additional resources that are needed (or that could be used to great advantage) in bringing about a transformation of health-system practice models. We recommend that ASHP explore the development of the following:

1. Structured, interactive (hands-on), reasonably priced road-show workshops, of one or two days’ duration, devoted to the topics of conceptualization, development, implementation, and evaluation of new practice models. Such workshops could showcase examples of new practice models and provide participants with new visions for what they might be able to create in their own settings.
2. Webinars on selected change management topics.
3. Facilitated onsite (in the workplace) strategic planning and organizational improvement exercises of one or two days’ duration.
4. Facilitated onsite interprofessional teambuilding exercises (joint exercises...
involving physicians [with particular attention to hospitalists], pharmacists, and nurses, among others).

5. Professional development modules that individual pharmacists could pursue independently, based on a personal knowledge-skills-attitudes-values needs assessment. Such modules should have a strong active learning component, particularly for those devoted to skills, attitudes, and values.

6. A tool kit for the redesign and ongoing assessment of health-system pharmacy practice (modeled after the AHRQ-funded tool kit for redesign in health care).

7. A national, real-time (online) scorecard on progress, which individual pharmacy departments could use to measure themselves against national trends or averages.

We acknowledge that making such services available would not guarantee the transformation of health-system pharmacy. Standardized services and tools are no substitute for individual vision and leadership. We believe, however, that vision and leadership in health-system pharmacy could be greatly fostered and developed through a carefully planned and designed menu of services and tool kits. It is the authors’ sense that there are many pharmacy directors who sincerely want to redesign their departments (based on goals set out in the ASHP Health-System Pharmacy 2015 initiative) but who are looking for direction and assistance in this effort.

Conclusion

Health-system pharmacy leaders are increasingly expected to assume responsibility for the overall medication-use system in their respective institutions. To accomplish this goal will, in most instances, require the adoption of a new practice model or significant reengineering or restructuring of an existing model. In some cases, it might require that the health system redefi the mis-

sion and key responsibilities of the pharmacy service. Such a transition represents profound change for the department, the professional and technical staff, and, to varying degrees, to physicians, nurses, and the entire organization. Fostering this change process is a special challenge—one that can be daunting or overwhelming to many pharmacy directors. We hope this article provides some useful ideas on how to take such a challenge in stride and to move the health-system pharmacy department to a new level of responsibility and performance.

References


Methods of fostering change

Appendix—Resources on methods of fostering change in the practice model at the pharmacy department level

The following references include selected books, reports, commentaries, primers, and tool kits intended for use in fostering change in established practice models in health-system pharmacy departments.

These resources, organized into seven subject headings, are suggested for their practical, rather than theoretical, value. The literature on the broad subjects of change and change management is vast, and the reader may find it helpful to explore the subject further.

Some of these resources were available at the time of this compilation on the Internet. It is recognized that website addresses change and that content is modified or deleted over time.

Conceptual Framework for Change


Organizational Improvement—General Considerations


Change Management Learning Center (resources available at www.change-management.com)

Change Management Toolbook (resources available at www.change-management-toolbook.com)


Schuler AJ. Overcoming resistance to change: top ten reasons for change resistance.
SUCCESSFUL IMPLEMENTATION


Organizational Improvement—Health Care Systems


Institute for Healthcare Improvement. The breakthrough series: IHI’s collaborative model for achieving breakthrough improvement. www.ihi.org/IHI/Results/WhitePapers/TheBreakthroughSeriesIHI’sCollaborativeModelofAchievingIBreakthroughImprovement.htm (accessed 2011 Mar 10). (Note: Registration is required but free of charge.)


Organizational Improvement—Health-System Pharmacy Departments


A number of ASHP Whitney Lecture Award presentations and Northeaster University John W. Webb Visiting Professorship presentations, extending over a number of years, have provided visions for the future of health-system pharmacy. It is recommended that the reader undertake a systematic review of these papers for additional thoughts concerning organizational improvements in health-system pharmacy practice models.

Personal Effectiveness—General Considerations
Greenleaf Center (resources available at www.greenleaf.org).
The Resiliency Center (resources available at www.resiliencycenter.com).
Siebert A. The resiliency advantage: master your mind, change, thrive under pressure, and bounce back from setbacks. San Francisco: Berrett-Koehler; 2005.

Teamwork and Interprofessional Collaboration

Methods of fostering change

Dissemination of Change