

PHARMACY FORECAST 2014–2018:

STRATEGIC PLANNING ADVICE

FOR PHARMACY DEPARTMENTS IN HOSPITALS AND HEALTH SYSTEMS



*A trends report from the Center for
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STRATEGIC PLANNING ADVICE FOR
PHARMACY DEPARTMENTS IN
HOSPITALS AND HEALTH SYSTEMS

William A. Zellmer, Editor

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Foreword

Pharmacy Forecast 2014-2018 stems from the core mission of the Center for Health-System Pharmacy Leadership, which is to advance the development of effective pharmacy practice leaders. Strategic planning is central to effective practice leadership, and environmental scanning is an essential step in strategic planning. At its heart, the annual *Pharmacy Forecast* series is an environmental scan of trends that are likely to have a major impact on the future of health-system pharmacy practice. The Center is pleased to publish the second edition in this series.

The *Pharmacy Forecast* project began with the encouragement of David A. Zilz, who challenged the Center to catalyze pharmacists' thinking about the future, going well beyond the typical focus on near-term operational issues. This project has been designed to be a strong complement to other practice-advancement initiatives, including the ASHP/ASHP Foundation's Pharmacy Practice Model Initiative (www.ashp/ppmi) and the Center's wide array of leadership-development resources (www.ashpfoundation/leadership).

We were very pleased with the response to last year's *Pharmacy Forecast* report. More than a thousand participants attended the session that unveiled the report at the 2012 ASHP Midyear Clinical Meeting. The number of Web-page visits to the report is approaching 100,000. The report's strategic recommendations have influenced the agendas of ASHP sections and forums, and we have received many favorable comments from pharmacy departments that have used *Pharmacy Forecast 2013-2017* in their planning process.

Building on last year's success, the 2014 report covers new territory. It is an important addition to the previous report, not a replacement or substitute. Pharmacy practice leaders will find value in consulting both the 2013 and 2014 reports in their strategic planning efforts.

We encourage pharmacists to share the report with colleagues in medicine, nursing, administration, and other disciplines. The report can be a stimulus for dialogue on pharmacy's role in this time of transformational change in health care.

We welcome your comments on the new *Pharmacy Forecast*. Tell us what you find particularly useful in the report, whether there is anything that falls short of your expectations, and what you would like to see in the next edition. We want to continue to make this series an important resource in your efforts to enhance pharmacy's contributions to your institution's strategic objectives and to the health and well being of patients.

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Introduction:

LINKING PHARMACY DEPARTMENT STRATEGIC PLANNING TO ENVIRONMENTAL TRENDS

WILLIAM A. ZELLMER AND RICHARD S. WALLING

SUCCESSFUL STRATEGIC PLANNING

The insights of the trend-watchers and strategic advisors represented in this second edition of the *Pharmacy Forecast* report highlight developments that are likely to have a major impact on health-system pharmacy practice over the next several years. With good strategic planning, practice leaders can get ahead of these trends and thereby improve prospects for continually enhancing their contributions to patient care and the success of their institutions. *Pharmacy Forecast 2014–2018* is intended to be a catalyst that fosters good strategic planning.

COMMON THEMES

The following common themes emerge from the trend predictions and strategic recommendations in this report:

1. Health care reform generally, and the Accountable Care Act specifically, will have a profound impact on the pharmacy enterprise in hospitals and health systems.
2. Pharmacy has capacity to aid the success of institutions' engagement with patient-centered medical homes and accountable care organizations.
3. Many of pharmacy's opportunities for contributing to organizational success relate to the ongoing initiative to reform the traditional pharmacy practice model, including giving greater attention to ambulatory care, actively improving quality of care and continuity of care, participating on interdisciplinary patient care teams, and enhancing the technician work force.
4. Pharmacy practice leaders should help their organization's executives evaluate the outsourcing and insourcing options for various medication-related activities such as operating an outpatient pharmacy, improving compliance among

discharged patients, and preparing sterile compounded products.

5. Pharmacy departments and formulary committees should prepare for the marketing of biosimilars over the next few years.

OTHER TOPICS

Many other topics covered by this report are well aligned with the current interests and strategic concerns of practice leaders. These topics include drug shortages, specialty pharmaceuticals, applications of analytics in drug therapy, pharmacogenomics, prescribing authority for pharmacists, expansion of residency training, patient care activities of pharmacy students, contingency planning for downsizing, and leadership succession.

In total, this report analyzes the likelihood of 64 potential trends and offers 39 strategic recommendations for pharmacy practice leaders.

STRATEGIC VERSUS OPERATIONAL PLANNING

Readers of this report should reflect on the difference between *strategic* planning and *operational* planning. Most pharmacy departments probably engage in opera-

tional planning focused on fixing immediate problems and improving existing services. It is more difficult to conduct authentic strategic planning, which considers how emerging external trends will affect activities over the long term.

Often, an important barrier to strategic planning is a lack of time and resources for conducting an environmental scan of relevant issues. Here is where the *Pharmacy Forecast* project enters the picture, by filtering the background signals and amplifying those that are likely to have a major bearing on pharmacy practice within the next several years. As a result, pharmacy practice leaders have ready access to the insights of a group of trend-watchers, and those insights can be used to supplement the wisdom that resides within the pharmacy department to move toward authentic strategic planning.

HOW PHARMACY FORECAST REPORTS ARE CREATED

The methodology used to prepare *Pharmacy Forecast* reports is based on research summarized in the book, *The Wisdom of Crowds*, by James Surowiecki (Anchor Books, 2005). The predictions of wise crowds are generally more accurate than those of individual experts. By definition, wise crowds are composed of independent, decentralized individuals who have a diversity of opinion and whose private judgments can be aggregated.

The wise crowd in the case of *Pharmacy Forecast* reports is a panel of health-system pharmacists nominated by the executive committees of the five ASHP sections. Criteria for nomination are (1) recognition as an expert in the area of pharmacy practice represented by the section, (2) knowledge of trends and new developments within that area, and (3) demonstrated ability to think analytically about the future of pharmacy practice in hospitals and health systems.

Forecast Panelists (FPs) complete a questionnaire that is developed under the guidance of an advisory committee. The questionnaire is pilot tested with a few health-system pharmacists and refined

before launch. The survey asks about the likelihood (“very likely,” “somewhat likely,” “somewhat unlikely,” or “very unlikely”) of certain developments occurring over the next five years. The point of reference for survey items is “the geographic region where you work,” which encourages responses based on firsthand knowledge, observations, or experience rather than conjecture about the situation nationwide. FPs are asked to give their top-of-mind responses and not to do any extra reading or research to decide how to respond.

Experts are recruited to write a brief chapter for each domain of the report. In addition to presenting the survey results, these chapters comment on the FPs’ predictions and offer strategic recommendations for pharmacy practice leaders.

THE 2014 REPORT

The following eight topic areas (domains) were selected for the most recent survey: (1) fiscal issues, (2) quality of care, (3) health care analytics, (4) pharmaceutical marketplace, (5) pharmacy practice model, (6) ambulatory care, (7) pharmacy department operations, and (8) leadership. Each domain had eight survey items for a total of 64 items in the entire survey.

The composition of the 164-member panel for the current report was balanced across the census regions of the United States. FPs were invited on July 30, 2013, to complete the Web-based survey. The survey closed on August 5, 2013, after one reminder. The response rate was 91%. Some form of practice management was the primary position of 31% of FPs; clinical practice, 22%; faculty member, 22%; informatics/technology specialist, 11%; other, 14%.

HOW TO USE PHARMACY FORECAST REPORTS

As a formal or informal leader in pharmacy practice, you should first scan the report to get a sense of its content and then schedule more thorough review to assess the implications of the report for your activities. You will find it helpful to start by reviewing a chapter’s survey questions and the FPs’ responses. Look at

the distribution of responses to a question and see if there is a clear consensus in one direction or another. Think about how the panel's response to a particular question compares with your own sense of what is happening in your practice, at your institution, and in your region. Is your department tuned in to this issue? If not, should it be?

After reviewing the survey results, read what the chapter authors have to say about the FPs' predictions. Reflect on the strategic recommendations in the chapter in relation to your own department's situation and plans.

Pharmacy Forecast 2014-2018 can be assigned as required reading for staff members who participate in the pharmacy department's planning process. Staff members, residents, or students can be asked to make a presentation to the department on the report or on individual chapters.

Consult both the current report and last year's edition. For both reports, FPs were asked to think ahead five years in their predictions, so the previous report (which covers different issues) is a relevant complement to the current report.

CONCLUSION

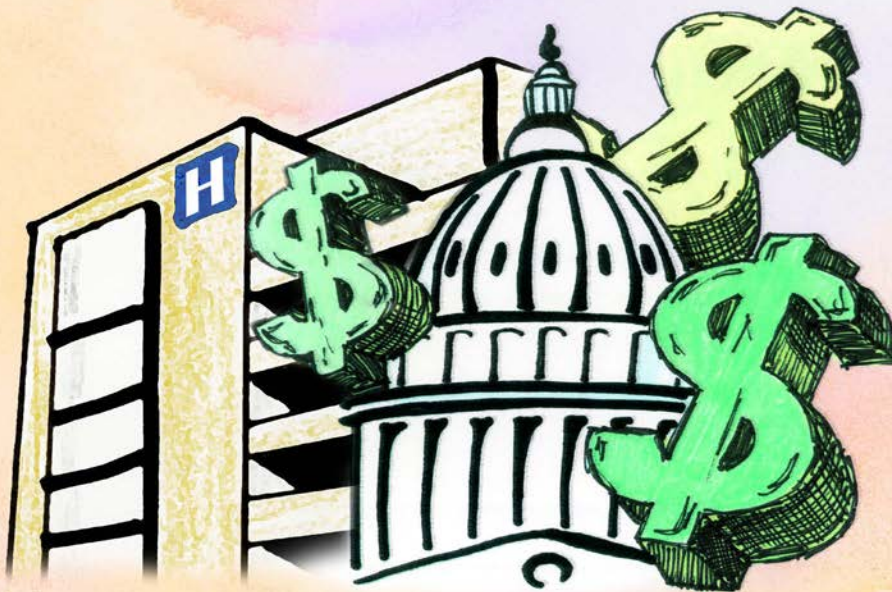
Effective strategic planning requires environmental scanning, not only of the immediate surroundings but also of the horizon. *Pharmacy Forecast 2014-2018*, complemented by the previous edition of the report, will help your pharmacy department with this essential part of looking and planning ahead.

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Fiscal Issues:

IMMENSE CHALLENGES ON THE HORIZON

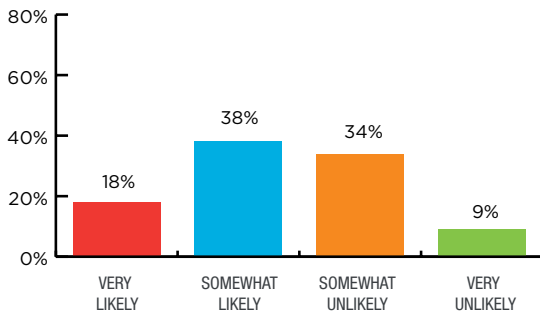
LEE C. VERMEULEN

INTERDEPENDENCE

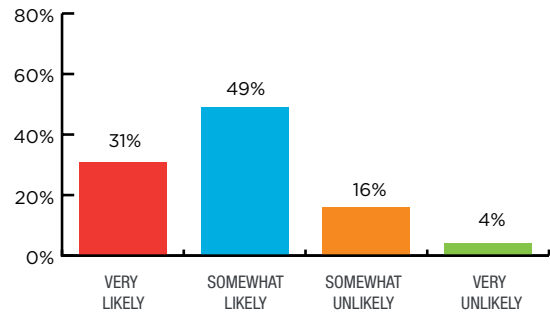
The interdependence of cost, quality, and access in health care is well understood; affecting change in any one dimension requires change in at least one of the other two. For example, cost can be reduced, but not without reducing quality or access, or both. This relationship is challenged by the 2010 Patient Protection and Affordable Care Act (ACA) (“Obamacare”), which aims to reduce the number of uninsured and save a trillion dollars over 10 years without compromising the quality of care. Meeting these objectives will require health care providers to reduce inefficiency and optimize outcomes while receiving significantly lower reimbursement. Notwithstanding delays in ACA implementation and the political bickering that surrounds the law, immense fiscal challenges will confront all hospitals and health systems.

How likely is it that the following will occur, by the year 2018, in the geographic region where you work?

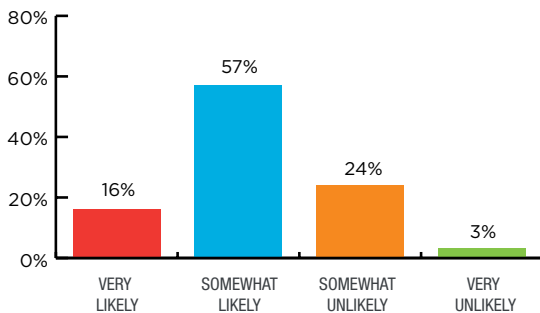
- 1 The proportion of hospital patients that are uninsured will decline by at least 50%.



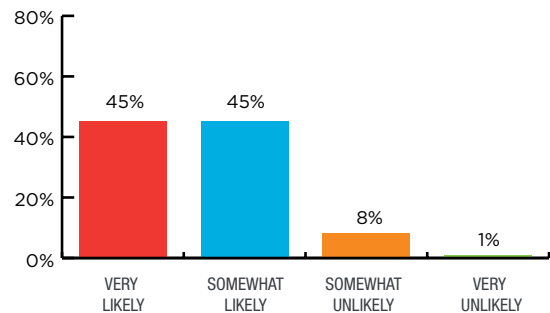
- 2 Hospital admissions of Medicaid beneficiaries will be at least 25% higher than in 2013.



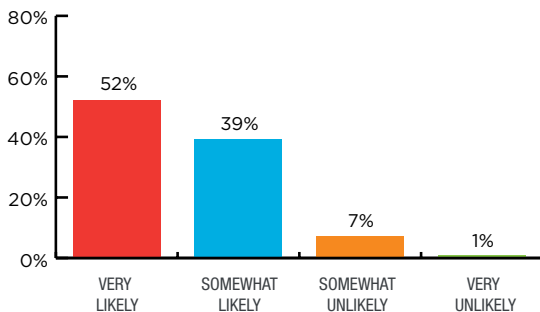
- 3 At least 50% of hospitalized patients will be insured by a plan that assigns them to an accountable care organization.



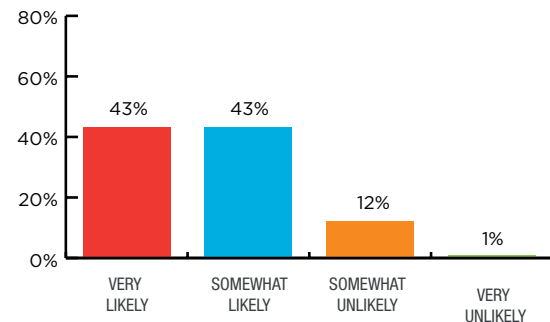
- 4 At least 50% of hospital revenue will come from payment systems that incentivize high-quality care (e.g., pay-for-performance).



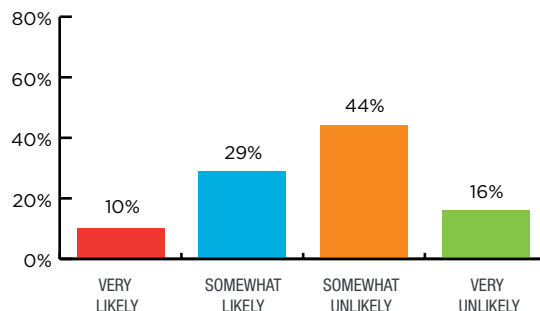
- 5 At least 50% of hospital revenue will come from payment systems that penalize poor-quality care (e.g., never events, readmission shortly after discharge).



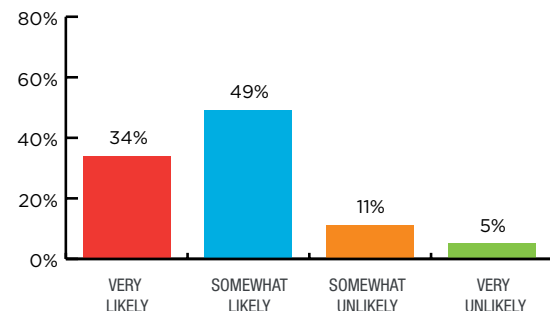
- 6 At least 50% of hospitals will have agreements with payers for bundled payments encompassing short-term acute care, physician services, and long-term post-acute care for at least one medical condition (e.g., acute myocardial infarction, hip replacement, total colectomy, etc.).



- 7 In at least 75% of hospitals, the rate of growth in expenditures for inpatient medicines will be in the lowest quartile of growth across major categories of institutional expenses.



- 8 There will be at least one publicly accessible Web site that reports charges by hospitals for major services, including some pharmacy-related charges.



FUTURE COSTS

In recent years, the **rate of growth of health care expenditures** has declined. The weak economy and high unemployment has led to loss of health insurance coverage for many, and higher out-of-pocket costs have reduced consumption of health care services. Efforts by provider organizations to become more cost-efficient in anticipation of reduced reimbursement have also contributed to reduced growth in spending.¹ These factors and the large number of patent expirations of popular brand-name drugs have reduced the rate of growth in pharmaceutical expenditures.^{1,2}

The response to item 7 in the Forecast Panel survey reflects substantial uncertainty about future **hospital pharmaceutical expenditures**. As the first wave of baby boomers becomes eligible for Medicare, and as coverage expansion promised in the ACA occurs, overall spending may increase (including for pharmaceuticals). Pharmaceutical expenditures may also rise as expensive specialty drug products continue to dominate new product development and as the extremely high cost of new targeted therapies becomes the norm. Reductions in spending mandated by the ACA will not spare the pharmaceutical budget—cost-saving interventions clearly will be required.

INCREASING INSURANCE COVERAGE

A substantial portion of Forecast Panelists (FPs)—43%—did not believe that the **number of hospital patients that are uninsured** will decline by 50% in the next five years (item 1). This perception may reflect uncertainty about the timing of ACA implementation or a belief that key components of the ACA will be repealed or significantly modified. However, because the U.S. Supreme Court has upheld key aspects of the ACA, and because no viable legislative alternatives have been proposed by ACA opponents, the number of uninsured Americans will decline to some extent over the next few years.

Mandatory Medicaid expansion was a cornerstone of the ACA as initially signed

into law. While the individual mandate—requiring individuals to obtain coverage or face tax penalties—was upheld by the Supreme Court, the Medicaid expansion was not; hence, many states will not be expanding their Medicaid programs.³ Nevertheless, reflecting a national perspective, a large majority (80%) of FPs predicted that **Medicaid coverage** among hospital admissions will increase by at least 25% over the next five years.

NEW MODELS OF CARE DELIVERY AND FINANCING

The **accountable care organization (ACO) model**—a critical component of the ACA—is now expanding.⁴ Nearly three-fourths of FPs predicted that most hospital patients will be in an ACO by 2018 (item 3).

FPs were even clearer in their prediction about the future of **bundled payment** schemes, with 86% indicating that it was very likely or somewhat likely that most hospitals will be involved in at least one bundle by 2018 (item 6). Implementation of bundled payments, wherein providers accept greater financial risk for “bundles” of care provided to patients undergoing specific surgical procedures, is very challenging. Providers must be able to (1) influence clinical decision-making before, during, and after surgical procedures, (2) eliminate practice variation, and (3) eliminate complications that require additional care. Organizations that are unable or unwilling to “warrant” their care and compete on price will lose volume in markets where bundled payment is introduced.

END OF FEE-FOR-SERVICE?

Provider organizations may choose to pursue an ACO model, develop bundled payment offerings, some combination of both strategies, or try to wait out health care reform in the hope that they can survive on the remaining traditional fee-for-service (FFS) reimbursement. FPs indicated a very strong belief about the likelihood of future **performance-based reimbursement**, both in terms of incentives for good outcomes, and penalties for

poor performance (items 4 and 5). The future of FFS is uncertain.⁵

In highly competitive markets, where ACOs and bundled reimbursement are becoming common, providers are already experiencing significant declines in FFS-based reimbursement. In response, they are working to reduce admissions, re-admissions, high-intensity resource use (e.g., emergency department visits and high-cost imaging), even though those services are still well reimbursed by some payers. Learning to live with lower reimbursement rates will position those organizations well for the future when most care is not reimbursed in a piecemeal fashion.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Give urgency to working with other organizational leaders to implement **programs that improve quality and reduce cost** in the face of increasing demand caused by larger numbers of insured patients. Leverage the talents of pharmacists in achieving these objectives.
2. Actively participate in developing programs that tie **fixed reimbursement** to high quality outcomes, particularly in ambulatory care. Contribute to ACO development and the creation of bundled reimbursement packages, ensuring that the medication therapy needs of patients cared for in those models are met.
3. If your hospital or health system has a program to **help individuals select the most appropriate** coverage under ACA-mandated exchanges, make pharmacists available for consultation when significant medication therapy is involved.
4. Approach cost containment efforts in a manner that assumes **all medication expense** is borne by the provider organization, not reimbursed in a fee-for-service fashion. Prepare for the emergence of risk-bearing by aggressively eliminating inefficient medication use, even when that medication use is still covered by insurance.

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Quality of Care:

DAWN OF A NEW ERA

PAMELA K. PHELPS

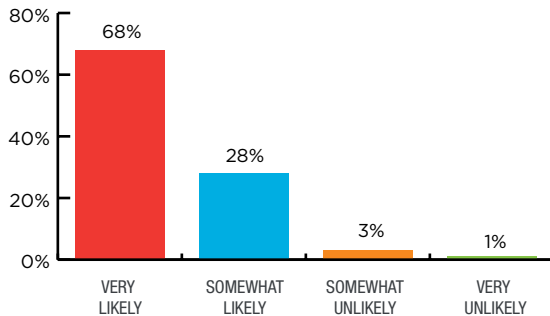
REIMBURSEMENT BASED ON QUALITY

Since the passage of the Affordable Care Act, the Centers for Medicare and Medicaid Services has implemented a new reimbursement model for hospitals, Value Based Purchasing (VBP). Under this model, hospitals are rewarded for meeting quality-of-care targets for certain conditions, such as heart failure, surgical care, acute myocardial infarction, and pneumonia. If quality targets are not met, the hospital is paid less. For the first time, hospitals are held to a quality-of-care standard to be paid the full rate for services. Payment penalties are also incurred by hospitals that have excessive or avoidable readmissions for certain conditions.

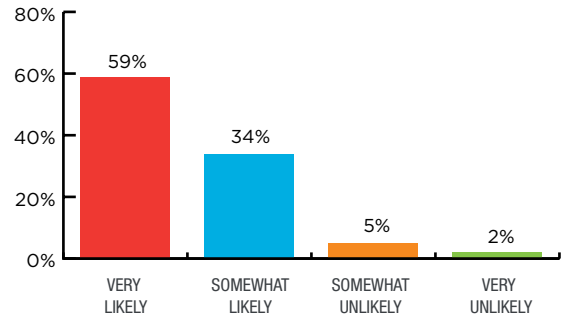
Patient satisfaction also enters into payment-rate calculations. Measuring the patient's experience with care is accomplished through the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) program.¹ Patient surveys are administered to assess satisfaction with their care, particularly related to teamwork and communication.

How likely is it that the following will occur, by the year 2018, in the geographic region where you work?

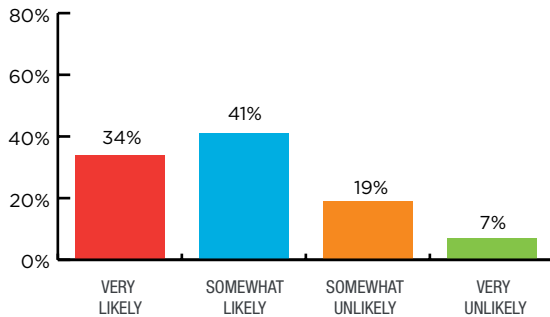
- 1 In at least 75% of hospitals, pharmacy departments will be accountable for contributing measurably to improvement of institutional performance on externally reported "core" indicators of quality and safety.



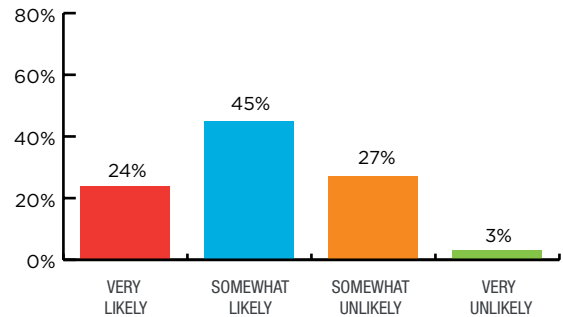
- 2 In at least 50% of hospitals, a pharmacist will be on every quality-improvement committee that is involved in improving drug-therapy-related performance on externally reported "core" indicators of quality and safety.



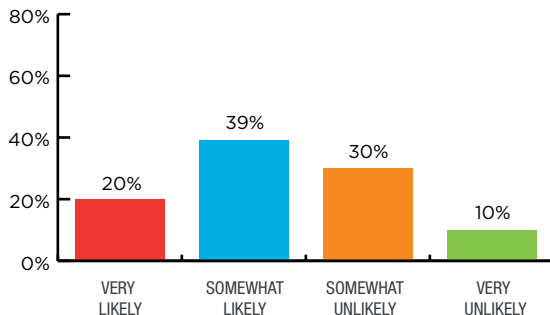
- 3 In at least 25% of hospitals, a portion of pharmacy managers' compensation will be based on pharmacy performance in meeting explicit targets related to patient satisfaction, patient safety, and quality of care (including reducing hospital readmissions).



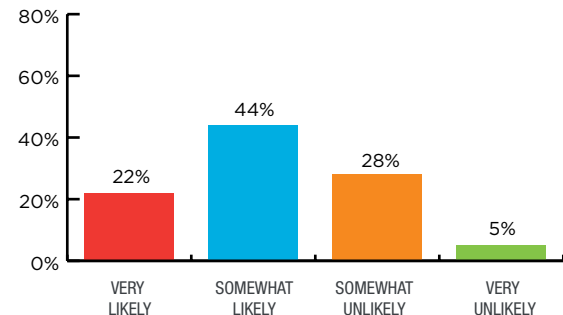
- 4 In at least 25% of hospitals, the pharmacy department will ensure that any patient issues related to medication access (including cost and insurance coverage) are resolved before discharge.



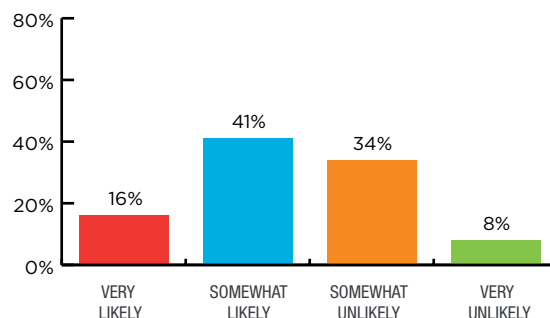
- 5 In at least 25% of hospitals, pharmacists will have authority to write discharge prescription orders that reconcile all medication lists, medications taken before admission, and new medications started during hospitalization.



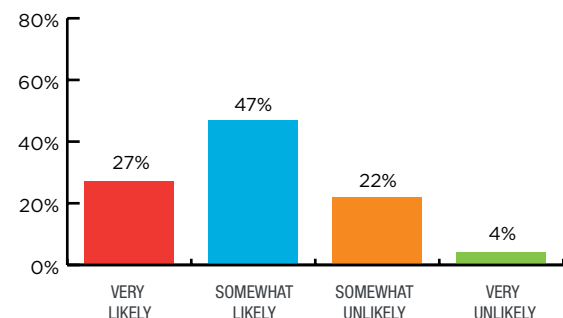
- 6 In at least 75% of hospitals, pharmacists from the institution will follow up with high-risk patients and their health professionals (including community pharmacists) post-discharge to ensure continuity of drug therapy and monitoring of outcomes.



- 7 At least 25% of hospitals will contract with a corporate entity (e.g., a chain drugstore company) to ensure medication adherence by discharged patients who are at risk for early readmission.



- 8 At least 50% of consumers, when considering which health care providers to use, will consult quality-of-care data that are readily available on the Web.



Hence, hospitals are focusing more sharply than ever on improving quality of care, the patient experience of care, and the affordability of care (“the Triple Aim”),² and health-system pharmacists are in a good position to help meet these imperatives. Reducing unnecessary expenditures has been a longstanding focus of hospital pharmacy, and promoting adherence to medication guidelines that improve care is a strength of pharmacy services.³ Pharmacists are in a position to improve patients’ knowledge of medications, which is an element of the patient experience in HCAHPS measurement. Examples of VBP measures that can be influenced by pharmacists include perioperative therapy of patients taking beta blockers, antibiotic therapy for pneumonia, prophylactic antibiotics for surgical patients, and prophylaxis for thromboembolism.

PHARMACIST ENGAGEMENT IN IMPROVING QUALITY OF CARE

As shown in item 1 in the table, 68% of Forecast Panelists (FPs) believe it is very likely that pharmacy departments in 75% of hospitals will be accountable for contributing measurably to **improvement of performance** on core indicators of quality and safety. Item 2 indicates that 59% of FPs think that it is very likely that pharmacists in a majority of hospitals will participate on all committees charged with improving **medication-related core-measure performance**. Seventy-five percent of FPs predicted that it is at least somewhat likely in 25% of hospitals that a pharmacy manager’s **compensation** will be based, in part, on meeting targets for quality, safety, and patient satisfaction (item 3).

It is essential for pharmacy practice leaders to establish rapport with the leaders of the hospital quality-improvement process. Departmental performance-improvement dashboards should include performance on medication-sensitive quality and safety measures. Metrics should be developed to track pharmacists’ impact on these measures. Pharmacy department leaders should identify ways that pharmacists can improve patient satisfaction in their institution.

PRACTICE MODELS THAT SUPPORT QUALITY IMPROVEMENT

More than two-thirds of FPs predicted that it is very likely or somewhat likely in 25% of hospitals that pharmacists will be responsible for **resolving medication-access issues** before patient discharge (item 4). Most FPs predicted that it is at least somewhat likely that pharmacists will have the authority to **write discharge prescriptions** in at least 25% of hospitals (item 5). Two-thirds of FPs predicted that it is at least somewhat likely that in a large majority of hospitals pharmacists will be responsible for ensuring **continuity of drug therapy** and monitoring outcomes for high-risk patients after discharge (item 6).

These predictions speak to a major shift in hospital pharmacy practice models. With the average hospital length of stay at 4.8 days,⁴ and with hospitals being held accountable for patient outcomes after discharge, the role of the hospital pharmacist must encompass responsibility for the quality of medication therapy during the entire cycle of patient care from hospital admission to discharge to the home or other settings.

BUSINESS MODELS THAT SUPPORT QUALITY IMPROVEMENT

The predictions in items 7 and 8 refer to new business models that support improved quality of care. Well over half of FPs predicted that it is very likely or somewhat likely that at least 25% of hospitals will contract with a corporate entity (such as a retail pharmacy chain) to ensure **medication adherence** by discharged patients. Nearly three-fourths of FPs predicted that it is at least somewhat likely that at least 50% of consumers will use quality of care data on the Internet in **selecting health care providers**.

It is becoming more common for hospitals to outsource to retail pharmacy companies tasks such as providing access to medications, prescription fulfillment, discharge medication teaching, medica-

tion therapy management, and adherence coaching.⁵ Pharmacy practice leaders must be prepared to help health-system executives assess whether or not this business model is in the best interest of patients and the institution. Patients may be better served through the continuity and consistency of care that can be achieved when a health system is directly responsible for both inpatient and outpatient pharmacy services.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Identify **medication-related quality-of care measures** within your institution and develop an action plan for the pharmacy department to improve performance on those measures. Develop a pharmacy department **dashboard of indicators** that document pharmacists' contribution to improving the quality of care.
2. Develop a strategy for the pharmacy department to gain authority to manage all **medication-related issues upon patient discharge**. This authority should include ordering discharge medications, hand-off communications to providers at the next site of care, and assuring patient access to prescribed therapy (e.g., verifying insurance coverage, assisting with the prior authorization process, and tapping patient assistance or indigent care programs).
3. Develop discharge hand-off plans for high-risk patients who may benefit from **pharmacy follow-up**. Develop a plan to refer such patients to medication therapy management programs after discharge.
4. Develop a plan to **interact with every patient** in the hospital for medication histories, first-dose education, and discharge planning and follow-up.
5. Study the patient-care and financial implications associated with **outsourced care-transition services** and help your organization's executive leaders assess whether such services are in the best interests of patients and the institution.

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Health Care Analytics:

HYPE BELIES THE HARD WORK AHEAD

ALLEN J. FLYNN

STRATEGIC THINKING ABOUT DATA AND INFORMATION

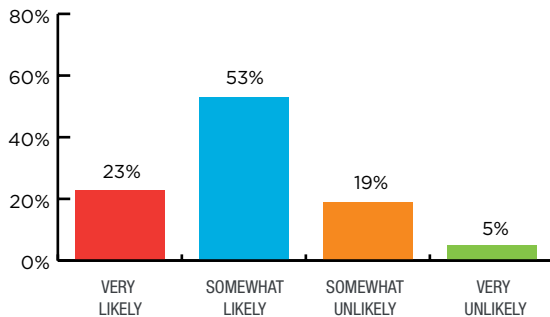
The post-electronic health record (EHR) era in health care favors those organizations most capable of managing and using data. The buzzword “analytics” refers to generating insight from data. Descriptive and diagnostic analytics tell us what happened and why, whereas predictive and prescriptive analytics tell us what will happen and how to intervene.¹ Recently reported examples include predictive models for glaucoma medication adherence,² *Clostridium difficile* infection,³ and cardiac care readmission.⁴ Improved predictive models may follow as outcomes feedback is incorporated, ultimately resulting in automation of particular decisions. However, many hard problems thwart the realization of highly reliable predictive and prescriptive analytics in health care. Poor data quality is just one of several challenges that must be addressed.⁵

Extraordinary organizational commitment and detailed data architecture development are required to achieve analytics success. Larger organizations have more resources with which to establish enterprise-wide data governance and hire data professionals responsible for the utility of the organization’s data. The decreasing number of physician-owned medical practices and the surge in hospital mergers are partly a reaction to the high costs

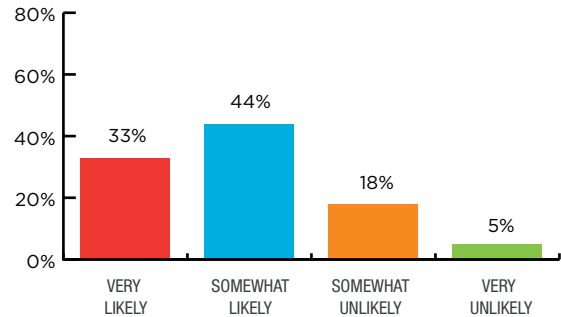
How likely is it that the following will occur, by the year 2018, in the geographic region where you work?

Definition: "Analytics is the discovery and communication of meaningful patterns in data. Especially valuable in areas rich with recorded information, analytics relies on the simultaneous application of statistics, computer programming and operations research to quantify performance." (Wikipedia)

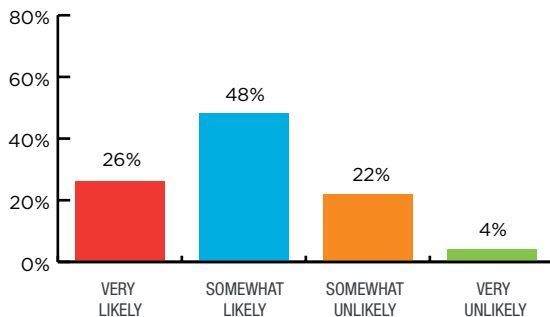
- 1 At least 25% of hospitals will apply analytics in automated real-time "continuous medication use evaluation" (C-MUE) of medication-treatment outcomes.



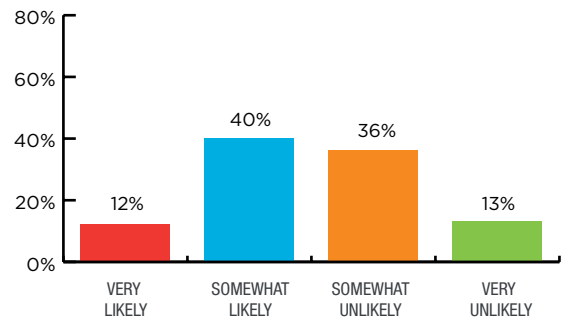
- 2 In at least 25% of hospitals, data from the institution's electronic health records will be automatically analyzed and used to develop and continuously refine patient-care protocols and treatment guidelines.



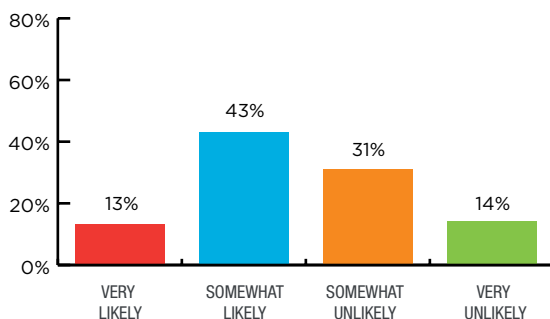
- 3 In at least 50% of hospitals, analytics will be used to automatically detect adverse drug events and notify the care team for clinical intervention.



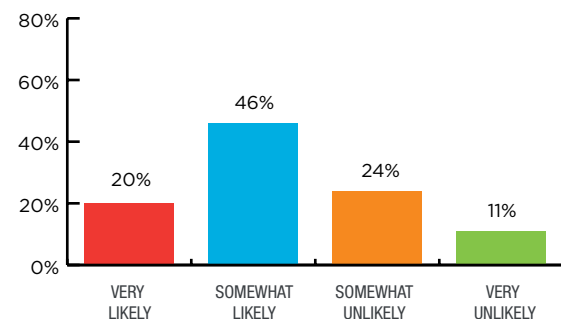
- 4 In at least 25% of hospitals, preemptive computerized drug interaction alerts will be replaced by alerts that detect real-time emerging biometric indicators of a drug interaction (e.g., changes in patient vital signs, lab measures, etc.).



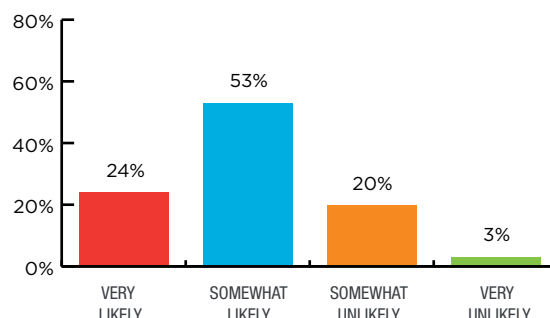
- 5 In at least 50% of hospitals, empiric antimicrobial selection not based on susceptibility testing (such as for pneumonia and urinary tract infections) will be automated by a system that analyzes patient factors and the hospital's antibiogram and outcomes from its previous treatment of infections.



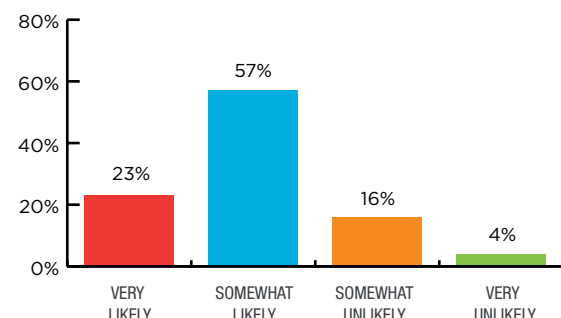
- 6 In at least 25% of hospitals, all medication-related computer applications will connect with a single standard source of drug information, which will automatically ensure that drug products are described consistently across all applications.



- 7 Pharmacists in at least 50% of hospitals will use a validated automated method for identifying patients most likely to benefit from pharmacy-based patient care services, including drug therapy monitoring.



- 8 In at least 50% of hospitals, information technology systems will allow executive leaders to monitor patient-care and financial outcomes from new initiatives, including new pharmacy patient-care services.



of establishing analytics capabilities in conjunction with EHR use.

Relatively few questions can be answered with data from individual systems. To assess adherence, adverse events, drug diversion, drug utilization, guideline compliance, medication errors or medication-use outcomes requires data from many systems to be collected, standardized, and combined. Data architects determine how to extract data from multiple sources, transform the data, and load it into data warehouses where it becomes an enterprise asset subject to “big data” analytic techniques. More than a database or a dashboard, an enterprise data analytics infrastructure is necessary to fulfill the promise of health care analytics.

IMPLICATIONS FOR PHARMACISTS

Medication data is often used in initiatives designed to improve the quality of care and reduce costs. In the process of deciding what **meaning to derive from medication-related data**, the knowledge of pharmacists can be vital. Nevertheless, just as the responsibility for software and hardware has been transferred from pharmacy to IT, the responsibility for analytics is shifting from pharmacy toward data analytics teams.

Meanwhile, pharmacists must adopt procedures to improve the **quality of medication-related data** (e.g., incomplete drug allergy records).⁶ Pharmacy practice leaders should establish a presence for pharmacy in the hierarchy of **organizational data governance** to influence enterprise analytic priorities in the years to come.

PROVIDING INFORMATION FOR FURTHER REVIEW

The Forecast Panelists (FPs) answered the eight health care analytics questions in three different ways. About three-fourths of FPs predicted that we will see at many hospitals **continuous medication use evaluation** (C-MUE) (item 1 in the table), continuous data-driven **refinement of protocols and guidelines** (item 2),

automated **adverse drug event detection** with notification (item 3), use of a validated method for **prioritizing patients** in need of pharmacy care (item 7), and **combined care quality and cost outcomes analyses** (item 8). These five descriptive or predictive analytic capabilities have a common trait: They all provide information that must be further reviewed before being acted upon.

DIRECT APPLICATIONS IN PATIENT CARE

Only about half of FPs expressed confidence in the likelihood that today’s pre-emptive **drug-drug interaction alerts** would be replaced by alerts that detect actual drug-drug interactions biometrically (item 4) or that **empiric antimicrobial selection** for common infections would become fully automated (item 5). These two analytics capabilities call for greater confidence in information systems. It is intriguing that half of the FPs anticipate use of diagnostic or prescriptive analytics to effect medication-use safety and efficacy in the next five years. There is some evidence to support this view.⁷ The survey results suggest greater wariness among FPs when analytics are applied directly to patient care.

DATA QUALITY

With regard to item 6 about whether a **single standard source of drug information** would be in use to ensure drug data consistency across all applications, two-thirds of FPs predicted that this would happen in at least 25% of hospitals within five years. This question is different from the others. Here the FPs have predicted that pharmacy will resolve a well-known data quality problem in our field.⁸ For this prediction to come true health-system pharmacy leaders will have to lobby for standard data models to be defined and used for drug product and medication-use data.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. At small and rural hospitals, **institute new data entry and editing procedures** intended to improve

medication-use **data quality** over time (e.g., confirm the accuracy and completeness of drug allergy data for each patient). Additionally, at larger institutions, consider developing a **pharmacy data quality program** to continuously improve data quality using measures of completeness and consistency.

2. Make it a point to learn about the **roles and responsibilities** of data architects, knowledge managers, and other data experts. Recognize that these roles are increasingly distinct from roles in information technology.
3. Lead interdisciplinary efforts to **identify high-priority medication-use information needs** within your organization. As analytics capabilities improve, be prepared to compete for data analytics resources by highlighting those information and knowledge gaps that, if closed, would have the most favorable impact on the organization as a whole.
4. Anticipate organizational changes such as the hiring of a **chief data officer** and chartering of **data and analytics governing bodies**. Seek to participate directly in data governance to represent pharmacy data as a valuable enterprise asset and influence the determination of analytics priorities.
5. Anticipate and welcome the development of **matrix organizational hierarchies**. Success in developing and implementing an analytics infrastructure and data governance depends somewhat on matrix organizational structures that are flexible in their use of talent and expertise.
6. Identify pharmacy department staff members who have the aptitude and interest to develop the skills and expertise needed to support or join a data analytics team. Give **data analysis skills** greater visibility in relevant job descriptions and greater priority in hiring decisions, and encourage staff to add data analysis skills through various means.

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Pharmaceutical Marketplace:

EFFECTS OF HEALTH CARE REFORM

JOEL A. HENNENFENT AND RICHARD F. DE LEON

VALUE-DRIVEN HEALTH CARE

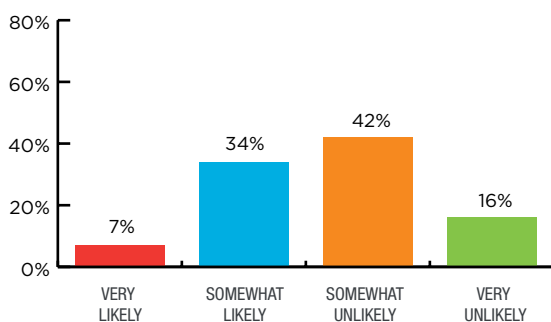
The Affordable Care Act (ACA), patient-centered medical homes, accountable care organizations, and other manifestations of health reform are directly affecting how hospitals and health systems interact with the pharmaceutical marketplace. While health care providers are strategizing on how to survive by improving quality and reducing costs, the biopharmaceutical industry is also strategizing on how to meet its business objectives in this environment.

PURCHASING DYNAMICS

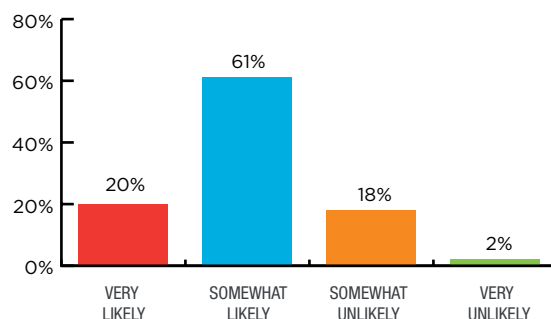
In response to the survey question asking if provider-organization participation in the **340B drug pricing program** will decline by at least 25% over the next five years, 61% of Forecast Panelists (FPs) said this is somewhat likely and 11% very likely (item 4 in the table). Congress has placed the 340B program in a spotlight, demanding action to strengthen program integrity and oversight. The federal agency that administers the program responded with stepped up field reviews and additional regulatory requirements.¹ The program's complexity makes it difficult for small facilities to participate unless they are part of a health system. The future of 340B will depend to some extent on how many uninsured Americans take advantage of the ACA and enroll

How likely is it that the following will occur, by the year 2018, in the geographic region where you work?

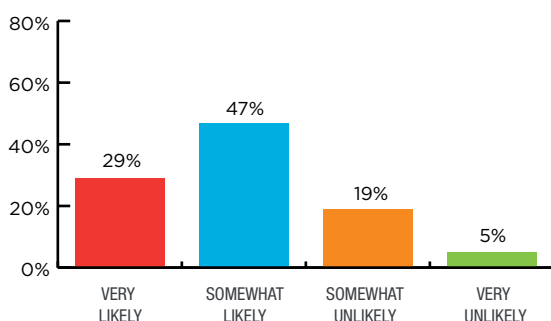
- 1 The proportion of hospital patients whose outcomes are affected negatively by drug shortages will decrease by at least 25%.



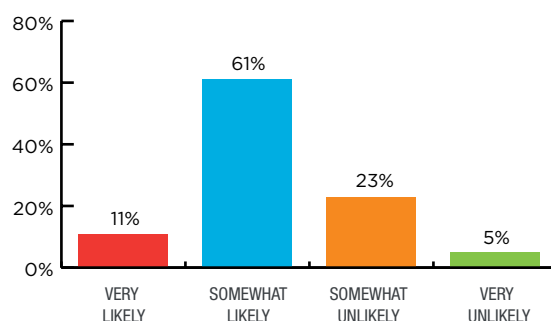
- 2 At least 25% of orders for expensive biologic agents will be filled with biosimilar products.



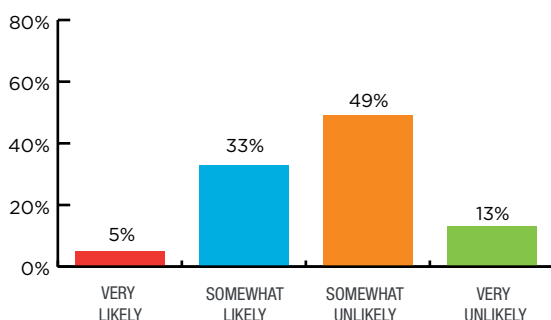
- 3 At least 50% of hospitals will require chain-of-custody verification for the high-cost medications they purchase.



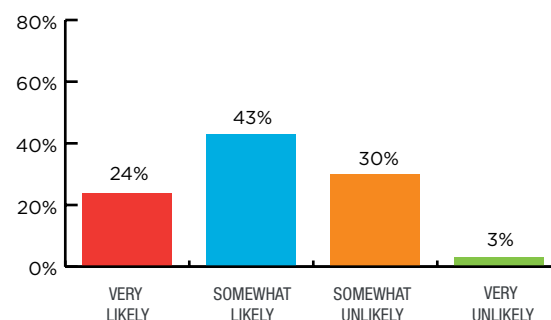
- 4 The number of provider organizations that purchase drug products at a discount through the federal 340B program will decline by at least 25% (because of, for example, more intense scrutiny of program eligibility).



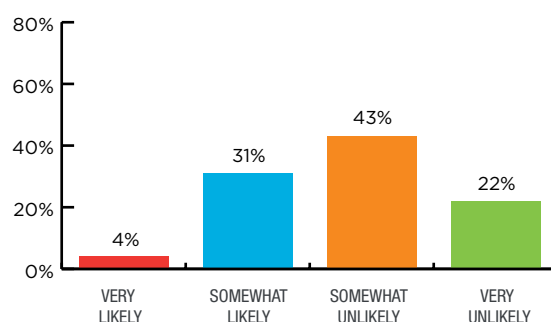
- 5 The proportion of health-system medication purchases made through group purchasing organizations will decline by at least 25% (based on dollar value).



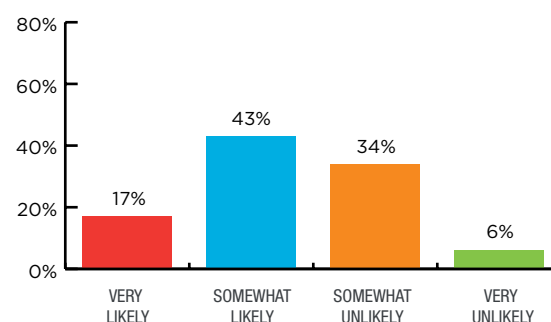
- 6 The number of drug products available only through specialty pharmacies and other closed distribution channels will increase by at least 75%.



- 7 There will be at least two examples of recently marketed high-cost drug products in which the supplier offers a "money-back guarantee" if the desired therapeutic outcome is not achieved and there is proof that patient-selection and medicine use were consistent with FDA-approved labeling.



- 8 At least 25% of new molecular entities entering the market every year will have an accompanying diagnostic test that will enable patient selection or optimal dosing (or both) based on the patient's genetic characteristics.



in insurance plans that include a prescription drug benefit, which will affect whether hospitals meet the “disproportionate share” eligibility requirements for 340B.

More than 60% of FPs said that it is unlikely that medication purchases through **group purchasing organizations** (GPOs) will decline by at least 25% over the next five years (item 5). While many hospitals and health systems will continue to benefit from their GPO’s purchasing power and services, others might find better pricing outside the GPO or conclude that the cost of GPO membership exceeds its value. Also, patent expirations may lower drug expense and contract pricing might not be available for some specialty products, which would lower the proportion of pharmaceutical purchases through GPOs.

DRUG SHORTAGES

The survey results for item 1 substantiate FPs’ prediction in last year’s *Pharmacy Forecast* report that **drug shortages are not likely to be abated** over the next five years.^a Even though shortages may be decreasing (114 in the first eight months of 2013 versus 251 in 2011),³ they can cause delayed therapy or the use of less familiar regimens that can result in medication errors and harm to patients.

SPECIALTY PHARMACIES

The results for item 6 are in line with a similar question in the previous *Pharmacy Forecast* report.^b This year, 67% of FPs predicted that the number of drug products **available only through specialty pharmacies** or closed distribution channels will increase by 75% over the next five years. Closed distribution systems have grown significantly and will probably expand even faster in the near future. Health-system pharmacists will continue to be challenged to manage the cost of

closed-system therapies and their integration into existing patient-care processes.^{2,4}

BIOSIMILARS

FPs predicted that at least 25% of orders for expensive biologic agents will be filled with biosimilar products over the next five years (item 2). Although a biosimilars-approval pathway was established under the ACA, little guidance has been provided for companies wishing to market a biosimilar. Some states have passed legislation that allows **dispensing of interchangeable biosimilar products**, and others have such legislation in the works.⁵ Because of the anticipated introduction of biosimilars, health-system pharmacists must prepare their formulary committees to deal with the “dissimilarities” between biosimilars and the innovator products. Differences in molecular construction might result in a difference in action, side effects, or outcomes between an innovator product and its biosimilar.

APPLICATIONS OF PHARMACOGENOMICS

Most FPs predicted that 25% or more of new molecular entities marketed every year will have an **accompanying diagnostic test** that will enable patient selection or optimal dosing (or both) based on the patient’s genetic characteristics (item 8). More tests for genetic variation that influences drug response have recently become available. FDA-approved labeling of some drug products has been revised to include information about pharmacogenetic biomarkers, but genetic screening is not required to initiate therapy with those products. As companion diagnostic tests become more prevalent, the clinical use of pharmacogenetic testing in many therapeutic areas will grow.⁶

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Assume that **drug shortages will continue to affect your operations** for the foreseeable future. Therefore, implement or shore up the following procedures: (a) conduct a communications program (including training materials) to ensure that hospital

^a See item 1 in the Pharmaceutical Marketplace chapter in *Pharmacy Forecast 2013–2017*.

^b See item 6 in the Pharmaceutical Marketplace chapter in *Pharmacy Forecast 2013–2017*.

staff is aware of the alternative regimen in use and is well versed in handling products that may be less familiar to them than the usual treatments, (b) document the chain of custody of each limited-supply product to ensure the acquisition of unadulterated product from a legitimate supplier, (c) closely monitor drug products purchased outside the usual supplier system for adverse events or outcome failures, and take corrective action as necessary, and (d) document the increased costs associated with drug shortages and report this information to executive leaders.

2. Guide your institution's **biosimilars-interchange policy** to include the following features: (a) collaboration with drug information services at hospitals in the region to share assessments of biosimilar products, (b) establishment of protocols for interchangeability of products for initiation of therapy or midstream changes in therapy, (c) rigorous monitoring and reporting to MedWatch and other surveillance systems of untoward reactions or outcome failures, and (d) tracking of the costs and benefits of biosimilar interchange at your institution. If you are at a small hospital, take your lead from academic health science centers in your region.
3. Collaborate with the **clinical laboratory** on how to ensure **accurate, timely, and actionable results** for diagnostic tests of **patient genetic characteristics** relevant to drug therapy. Train pharmacy staff on how to use such test results to optimize patient outcomes.
4. If your institution participates in the **340B drug pricing program** or plans to apply, ensure that you dedicate the necessary staff resources to achieve program integrity and regulatory compliance.
5. **Optimize your group-purchasing-organization relationship** by actively participating in contract decisions through advisory committees and increasing your contract market share.

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Pharmacy Practice Model:

LIKELIHOOD OF ACHIEVING KEY MILESTONES

DANIEL J. COBAUGH AND DAVID CHEN

ADVANCING PRACTICE-MODEL CHANGE

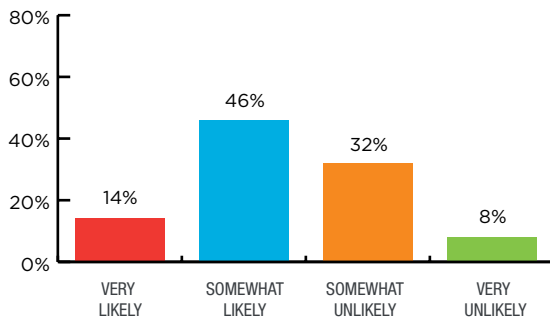
Since the November 2010 ASHP/ASHP Foundation Pharmacy Practice Model Initiative (PPMI) Summit (www.ashpmedia.org/ppmi/ppmi-summit.html), practitioners, professional organizations, and government agencies have continued efforts to ensure that pharmacists participate as interprofessional team members who are responsible for patient outcomes. This includes new research on the role of pharmacists in managing chronic diseases^{1,2} and studies of expanded pharmacist involvement in important areas of health care, including emergency departments,³ medical homes,⁴ and care-transition programs. The 2011 report to the U.S. surgeon general on the effects of pharmacy services on patient outcomes concluded that capitalizing on the expertise of the pharmacist is critical to advancing health care in the United States.⁵

PHARMACISTS ON PATIENT CARE TEAMS

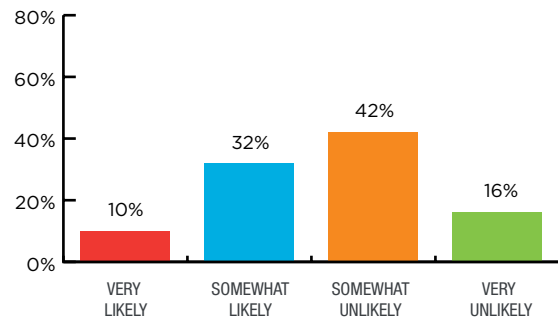
In last year's *Pharmacy Forecast* report, we recommended that pharmacy practice leaders develop specific plans for establishing roles for **pharmacists on patient care teams**. In the current survey, 60% of Forecast Panelists (FPs) predicted that at least 75% of hospital pharmacists will devote the majority of their time as team members who manage complex medication-use

How likely is it that the following will occur, by the year 2018, in the geographic region where you work?

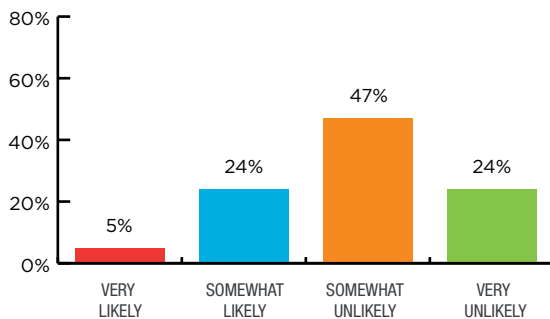
- 1** At least 75% of hospital pharmacists will spend essentially all of their time as members of patient-care teams handling complex medication-use issues (versus time devoted to product preparation, distribution-related, or order-verification-related tasks).



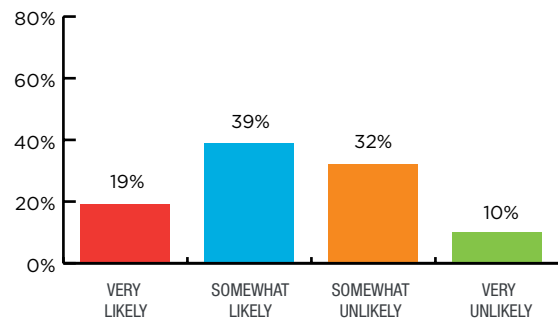
- 2** There will be at least one pharmacist in at least 25% of hospitals who is charged with becoming a departmental expert on applying pharmacogenomics knowledge in patient care.



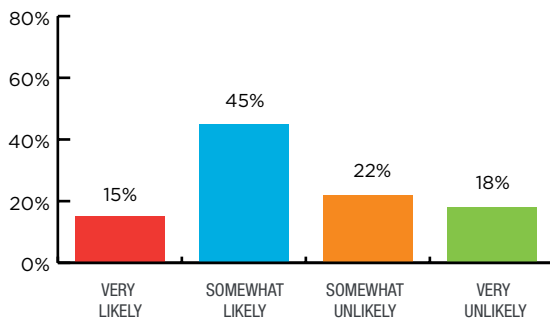
- 3** The number of PGY1 residency positions will be sufficient to meet at least 90% of the demand from applicants for such training.



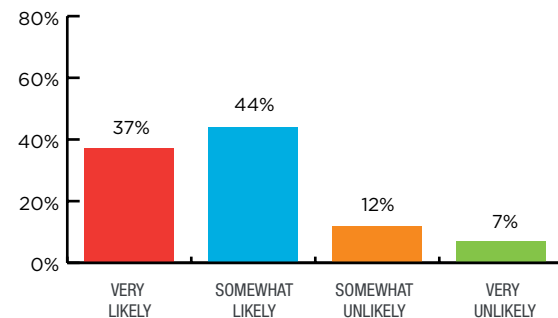
- 4** In at least 50% of hospitals, pharmacy students will provide essential patient care services (i.e., if the students were not there, additional pharmacist staff would have to be hired for these essential services).



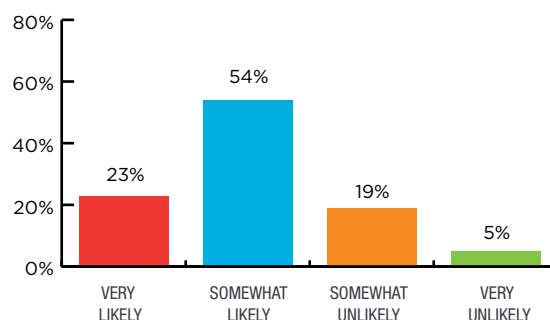
- 5** At least 25% of hospitals will designate specific standing orders for medications that will be checked for accuracy and appropriateness only by a computer program and do not require verification by a pharmacist (i.e., standing orders that are pre-verified).



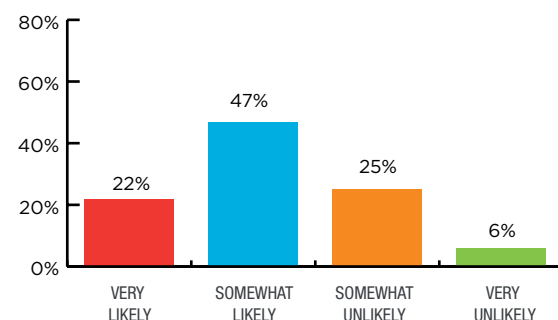
- 6** At least 25% of hospital pharmacy departments will use technicians to check the accuracy of dispensing by other technicians ("tech-check-tech").



- 7** At least 50% of hospitals will have a formal process of career-advancement for pharmacy technicians who attain competency and responsibility for roles beyond entry-level practice.



- 8** There will be at least twice as many accredited pharmacy technician training programs as existed in 2013.



issues (item 1 in the table). (This is consistent with a prediction in last year's survey.^a) There is a gap between this prediction and the PPMI recommendation related to provision of drug therapy management for all hospitalized inpatients, which suggests that it is unlikely that the PPMI recommendation will be completely implemented in the near future without continued strong leadership in hospitals of all sizes. It is imperative that pharmacy practice leaders ensure that their departments complete the **PPMI Hospital Self-Assessment** (www.ppmiassessment.org), undertake strategic planning that aligns departmental and institutional priorities, and develop solid business cases that ensure commitment of resources to advancing pharmacy practice.

STUDENTS AND RESIDENTS

Fifty-eight percent of FPs predicted that in at least 50% of hospitals, **pharmacy students** will provide essential patient care services (item 4). The use of pharmacy students in appropriate patient care activities can enable pharmacists to allocate their time to patients with complex medication-use needs. In addition, this will enrich students' educational experiences and support development of a pharmacy work force that is better prepared for provision of patient care.

There are more than 3,000 **pharmacy residency positions** in accredited programs in the U.S.; in 2013, these programs graduated more than 2,700 PGY1 and PGY2 residents—a number that is expected to grow in future years.⁶ Post-graduate residency training has become a core component of the preparation of health-system pharmacists. However, in the 2013 residency match, more than 1,400 individuals did not obtain a PGY1 training spot because of an insufficient number of available positions. Only 29% of FPs predicted that by 2018 the number of PGY1 positions will be sufficient to meet at least

90% of the demand (item 3). This raises concerns about the profession's capacity to prepare enough pharmacists to provide drug therapy management for ambulatory and hospitalized patients as well as participate in population health initiatives. On a somewhat more optimistic note, 42% of FPs predicted that by 2018 there will be at least one pharmacist in 25% or more of hospitals who will be the departmental expert on **applying pharmacogenomics** in patient care (item 2).

TECHNICIANS AND TECHNOLOGY

Optimal use of appropriately trained and credentialed **pharmacy technicians** is imperative for practice-model advancement. The predictions of FPs related to formal processes for career advancement and the availability of accredited training programs for pharmacy technicians (items 7 and 8) are in line with the PPMI vision for the technician work force. The prediction by 69% of FPs regarding doubling of accredited pharmacy technician training programs over the next five years is in harmony with plans of the Pharmacy Technician Certification Board (PTCB) for requiring completion of an accredited training program as a prerequisite for the PTCB exam. In the 2013-2017 *Pharmacy Forecast*, we recommended that practice leaders establish processes for competency assessment of pharmacy staff, including technicians. This will be important to achieve **advanced roles for technicians** such as tech-check-tech, which 81% of FPs predicted will be implemented in 25% of hospitals by 2018 (item 6).

PPMI Summit participants identified technology as a critical enabler for practice-model advancement. In last year's *Pharmacy Forecast* report, only 35% of FPs predicted that applicable laws and accreditation requirements will allow verification of new inpatient orders by technology alone by the year 2017. This year, 60% of FPs predicted that 25% of hospitals will designate standing orders for medications that will be checked for accuracy and appropriateness by technology alone (item 5). While a majority of

^aSee item 4 in the Pharmacy Practice Model chapter in *Pharmacy Forecast 2013-2017*.

panelists agreed that **delegation of order verification to technology** will begin, as we discussed in the previous report, this will require modifications in regulatory and accreditation requirements.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Identify patient care priorities in your institution that can be advanced by redeployment of pharmacists to **patient care teams** and develop business cases to garner the support of executive and clinical leaders for allocation of resources to pharmacy practice advancement. This planning should be preceded by completion of the PPMI Hospital Self-Assessment and review of its accompanying action plan.
2. Ensure that an adequate number of pharmacists in the department become qualified to **incorporate scientific advances** (e.g., pharmacogenomic assessments) into patient care and population health initiatives.
3. Plan to use **pharmacy students**, both employed and rotational, in clinical activities such as obtaining medication histories, medication reconciliation, and patient care activities that can be completed with pharmacist supervision.
4. If your department conducts **residency training**, find ways to expand the number of positions for residents. This may include the use of “attending pharmacists” and “practitioner learners” or “layered learning” models in which clinical pharmacy specialists, generalists, residents, students, and technicians participate on pharmacy teams that collaborate with interprofessional patient care teams.⁶
5. Establish a structured **career-advancement process for pharmacy technicians** that includes a requirement for recruitment of graduates of accredited pharmacy technician training programs and successful completion of PTCB certification.

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Ambulatory Care:

UNPRECEDENTED OPPORTUNITIES TO EXPAND THE CONTRIBUTIONS OF PHARMACISTS

JAMES G. STEVENSON AND HAE MI CHOE

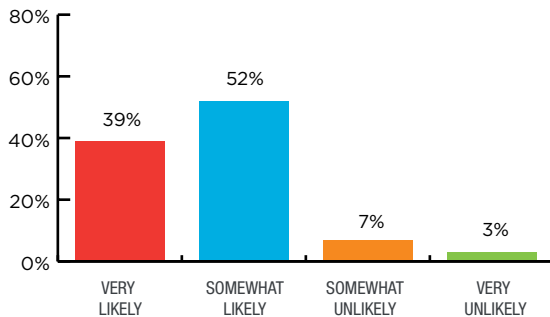
EXTERNAL INFLUENCES

For many years, the focus of health-system pharmacy practice has been on serving inpatients. Advancement in the role of health-system pharmacists in ambulatory care has lagged, largely because of existing payment models. This is changing now because new modes of health care delivery such as patient-centered medical homes (PCMHs) and accountable care organizations (ACOs)¹ have strong incentives to optimize medication management as a way of improving patient outcomes. PCMHs and ACOs have created an economic environment that favors the development of pharmacist services in ambulatory care.² Further, the current emphasis on improving transitions of care has made it important for practitioners in all settings to coordinate care more effectively.^{3,a}

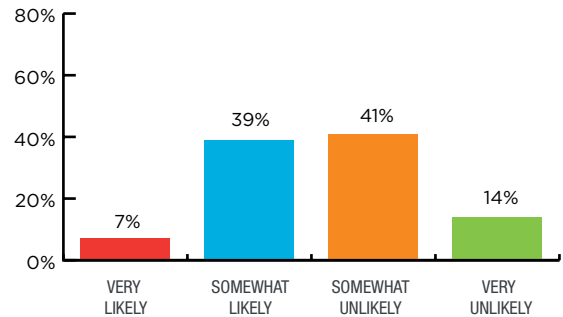
^aIt is noteworthy that ASHP is leading a consensus-building process on expanding pharmacists' roles in ambulatory care (connect.ashp.org/ambulatorycareconference14/summit).

How likely is it that the following will occur, by the year 2018, in the geographic region where you work?

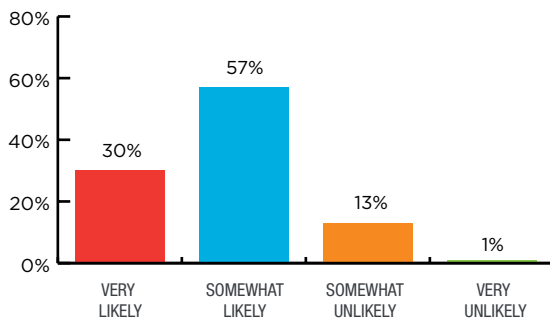
- 1** At least 50% of hospitals will have at least one pharmacist dedicated to working with patients on drug therapy management (including outcomes monitoring and coaching on adherence) after they are discharged from the hospital.



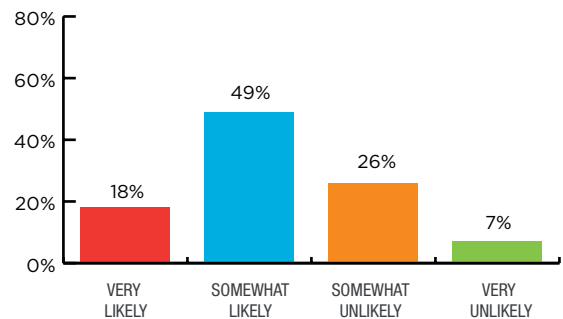
- 2** Health systems that provide pharmacist drug therapy management services for ambulatory patients will recover essentially all of the cost of those services through billings to third party payers or health plans.



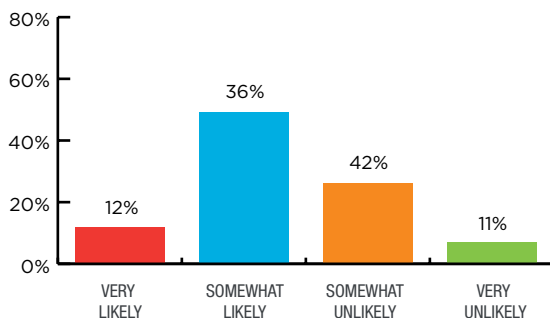
- 3** In at least 25% of health systems, pharmacists will provide medication therapy management (MTM) services for ambulatory patients designated by the system for MTM coverage (because of, for example, their chronic illnesses or extensive use of medications).



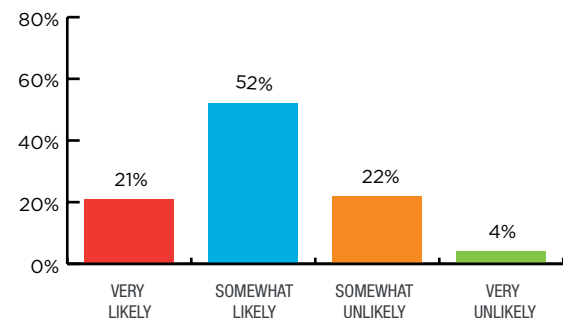
- 4** The number of hospitals that provide an outpatient (dispensing) pharmacy service will increase by at least 25% compared with 2013.



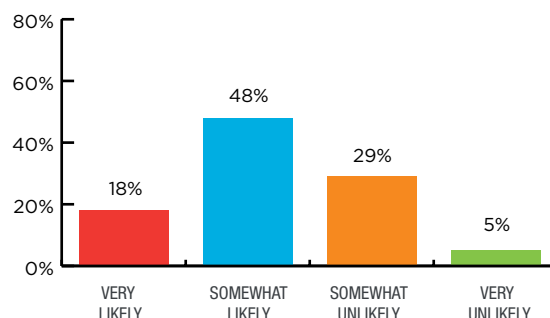
- 5** At least 50% of hospitals that have an outpatient (dispensing) pharmacy will contract with a corporate entity (e.g., a chain drugstore company) to operate that pharmacy.



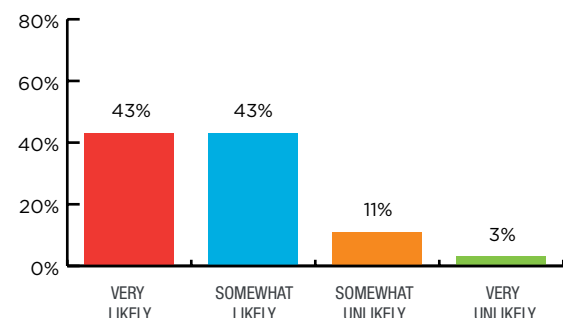
- 6** At least two major drug-benefit plans for ambulatory patients will impose quality requirements on participating pharmacies beyond state licensure (e.g., accreditation by an appropriate organization).



- 7** At least 10% of health-system outpatient (dispensing) pharmacies will be accredited by an organization that has specific standards for such pharmacies.



- 8** At least two major employers in the region will sponsor on-site or near-site clinics for primary care and urgent care of its workers.



Other trends that will affect ambulatory-care pharmacy include (1) growth in the number and cost of specialty pharmaceuticals, which will create opportunities for pharmacists to improve continuity of care and outcomes of patients treated with these products, (2) the shortage of primary care physicians, which will create opportunities for pharmacists in team-based care, (3) the creation of health information exchanges, which will enable broader collaboration among providers, including community and health-system pharmacists, (4) increased point-of-care diagnostic testing, which will enable more treatment protocols and collaborative practice agreements to be executed in the ambulatory-care pharmacy setting, and (5) increased use of biosensors and other devices, which will enhance the ability of pharmacists to monitor and communicate with patients.

MEDICATION THERAPY MANAGEMENT

As shown in the results for item 1 in the table, 91% of Forecast Panelists (FPs) predicted that at least 50% of hospitals will have at least one pharmacist dedicated to working with patients on **drug therapy management after discharge**. Health-system pharmacy leaders should actively engage in initiatives around organized systems of care and understand the metrics and financial incentives associated with them.

Despite the projected increase in drug therapy management services, the majority of FPs (55%) predicted that health systems will not recover the costs of these services through billings to third party payers or health plans (item 2). This prediction might reflect recognition that fee-for-service billing is decreasing and that payment systems based on quality metrics and cost control are increasing.

The vast majority of FPs (87%) predicted that pharmacists in at least 25% of health systems will provide medication therapy management (MTM) services for ambulatory patients designated by the

system for MTM coverage (item 3). This would be consistent with the goals of PCMHs and ACOs and reflects recognition of the challenges associated with poly-pharmacy and medication adherence.

OUTPATIENT DISPENSING

Items 4 and 5 address the provision of outpatient (dispensing) pharmacy services by hospitals and health systems. Two-thirds of FPs predicted that there will be at least a 25% increase in the number of hospitals providing outpatient pharmacy services. A major driver of this predicted growth could be the 340B drug pricing program. For outpatient pharmacies not eligible for 340B, margins are often very thin. This likely is reflected in item 5 in which nearly half of FPs predicted that at least 50% of hospitals that have an outpatient pharmacy will contract with a corporate entity to operate that pharmacy. External pharmacies are already providing bedside delivery of discharge medications and medication reconciliation/transition-of-care services for some hospitals.

QUALITY-OF-CARE STANDARDS

Increased accountability is a trend that is predicted for ambulatory-care pharmacy services as shown in item 6. Seventy-three percent of FPs said that it is likely that at least two major drug-benefit plans will require participating pharmacies to comply with quality requirements beyond state licensure.

In item 7, two-thirds of FPs predicted that by 2018 at least 10% of health-system outpatient (dispensing) pharmacies will be accredited by an organization that has specific standards for such pharmacies. Interest by health insurance plans in accreditation of outpatient pharmacies is likely to increase as insurance coverage expands for pharmacist patient care activities such as medication therapy management, medication reconciliation, transitions-of-care programs, vaccine administration, and specialty pharmacy services. The recently created Center for Pharmacy Practice Accreditation (<http://www.pharmacypracticeaccredit.org>) has published its standards and plans to begin

accepting applications for accreditation. URAC (www.urac.com) has a number of pharmacy-related accreditation programs.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Be an **active participant** in your institution's engagement with patient-centered medical homes and accountable care organizations. Identify, justify, and implement pharmacist services that will improve patient outcomes and lower costs in these health care delivery models.
2. Develop an assertive strategy for engaging pharmacists in **collaborative practice** agreements and other modes of team-based care for ambulatory patients in your organization.
3. Actively pursue **collaborations with community pharmacists** in your region in programs designed to improve continuity of care and outcomes for high-risk patients discharged from the hospital.
4. Begin planning how to optimize the use of emerging **point-of-care diagnostics** in the ambulatory-care pharmacy setting, thereby improving access to care and reducing costs. Include in your plans how pharmacists will communicate with patients' primary care providers about the results of point-of-care testing and changes in treatment based on test results.
5. Begin planning how your pharmacists will monitor drug therapy and patient adherence in the home through the use of **biosensors, telecommunications, social media**, and other emerging technologies.

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Pharmacy Department Operations:

EXTERNAL DEVELOPMENTS DEMAND ATTENTION

JOYCE A. TIPTON

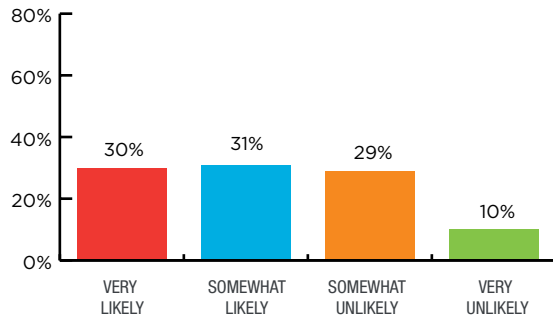
WIDE RANGE OF OUTSIDE INFLUENCES

External factors are having a major influence on hospital pharmacy operations and will drive the strategies needed for the success of the department over the next five years. These factors include the tragic and widely publicized contamination of compounded sterile products (CSPs), health care reform, and the impending marketing of biosimilars.

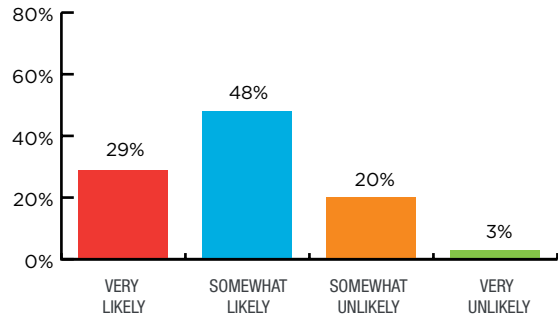
The Institute for Safe Medication Practices reported that in the past 20 years there have been 200 adverse events involving 71 compounded products.¹ A 2009 survey showed that 30% of hospitals experienced a patient event involving a compounding error in the previous five years.² The magnitude of a 2012 outbreak of meningitis caused by contaminated CSPs has raised the awareness of the risk associated with CSPs to a new level.³

How likely is it that the following will occur, by the year 2018, in the geographic region where you work?

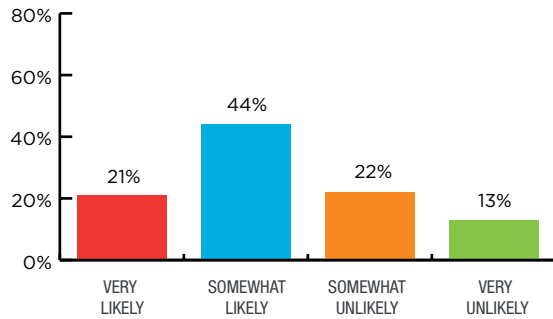
1 The pharmacy departments in at least 50% of hospitals will be responsible for compounding all high-risk sterile products needed by the hospitals' patients (versus outsourcing this function).



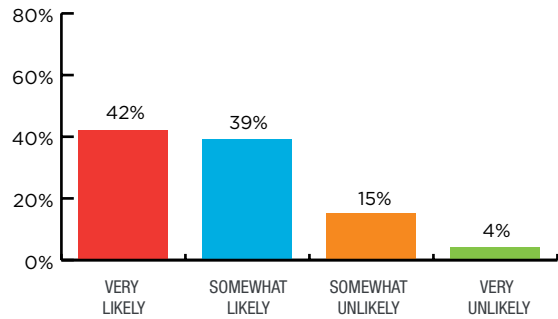
2 At least 25% of hospital-based sterile compounding operations will be accredited by a quality-improvement organization that has a specific program for sterile compounding (e.g., Pharmacy Compounding Accreditation Board).



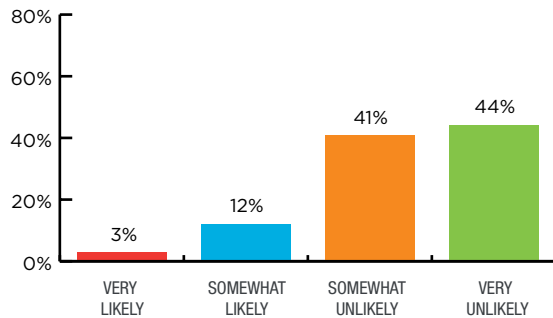
3 At least 25% of hospital-based sterile compounding operations will contract to provide this service to other hospitals.



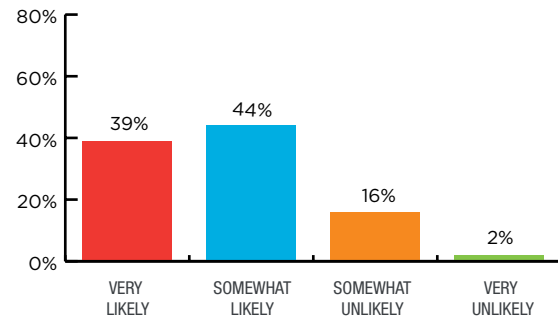
4 At least 50% of health systems will conduct centralized drug preparation, repackaging, and distribution for multiple hospitals within their system.



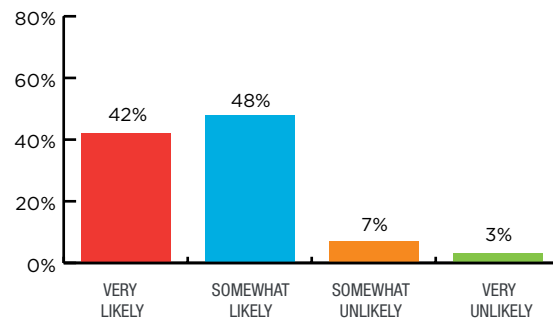
5 In at least 25% of hospitals, individuals employed by the pharmacy department will be responsible for administration of medications to patients and for documentation of administration.



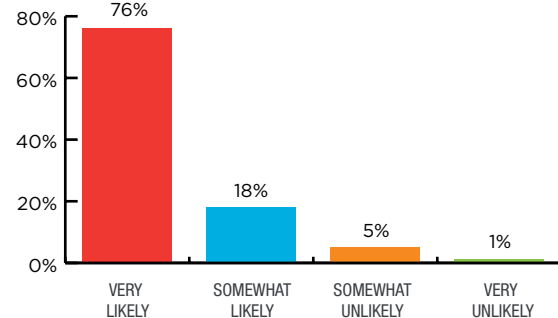
6 At least 50% of small hospitals (50 or fewer beds) will have a contractual relationship with a pharmacy department of a larger institution to provide operational advice and support (including after-hours order verification).



7 The pharmacy and therapeutics committee in at least 50% of hospitals will have a formal process for evaluating biosimilars.



8 At least 75% of hospitals will require conflict of interest disclosures by members of pharmacy and therapeutics committees and by clinicians who propose new agents for formulary addition.



The 2012 tragedy associated with an outsourced CSP has resulted in a tidal wave of change in pharmacy operations. Organizations are re-evaluating outsourcing versus insourcing decisions. State boards of pharmacy and the FDA are changing inspection strategies and rules. Congress is considering bipartisan legislation that would create the category “outsourcing facility” for voluntary FDA registration of commercial compounders. Pharmacy practice leaders are evaluating centralization of certain activities within multihospital systems and among unrelated organizations. (It is noteworthy that last year’s *Pharmacy Forecast* report predicted that more than 50% of independent hospitals would merge with other institutions or become part of an integrated system within the next five years.^a)

The creation of an approval pathway for biosimilars in the Affordable Care Act presents the prospect of new issues that will have to be addressed by hospital formulary committees.

CHALLENGES IN STERILE COMPOUNDING

Item 1 in the table shows that 61% of Forecast Panelists (FPs) predicted that at least half of hospitals will **compound all high-risk sterile products** for their patients. This would be a significant change. A 2012 survey by the Office of Inspector General in the federal Department of Health and Human Services found that 77% of hospitals purchased some sterile-to-sterile compounded products and 85% purchased nonsterile-to-sterile compounded products from an outside pharmacy.⁴ Pharmacy practice leaders must fully understand the full range of requirements and risks associated with CSPs and educate institutional leaders about these points as the **insourcing versus outsourcing decision** is made. The ASHP Foundation’s contractor assessment tool⁵ and full on-site inspections should

be considered when vetting outside compounding vendors.

A well-trained staff and a significant investment in equipment and facilities are required for safely conducting large-scale sterile compounding. In item 3, 65% of FPs predicted that 25% of insourcing hospitals will contract to provide sterile-compounding service to other hospitals. While defraying some of the costs for a sterile-compounding operation, contracting with others will increase liability.

Item 2 shows that 77% of FPs predicted that hospitals will look to external validation of their sterile-compounding operations via **accreditation**. Pharmacy practice leaders must evaluate the rigor and credibility of the accrediting organizations considered for this purpose.

CENTRALIZED PRODUCT HANDLING

A move toward **centralized drug preparation, repackaging, and distribution** for multiple hospitals within a system was predicted by FPs; 81% said this is at least somewhat likely to occur in half or more of health systems (item 4). Centralization may minimize the number of staff members within the system required to have specific skills.

MEDICATION ADMINISTRATION

Although hospital pharmacy departments continue to expand their purview and influence over the entire medication-use process, 85% of FPs said it is unlikely that individuals employed by the pharmacy department will be responsible for **administration of medications** to patients in at least 25% of hospitals (item 5). The survey item in itself poses an opportunity for a philosophical discussion about potential broad changes to the historical division of labor and scope of practice within hospitals.

FORMULARY ISSUES

In item 7, 90% of FPs predicted that pharmacy and therapeutics (P&T) committees in at least 50% of hospitals within the next five years will have a **formal**

^aSee item 4 in the Health Care Delivery and Financing chapter in *Pharmacy Forecast 2013–2017*.

process for evaluating biosimilars. As biosimilars begin to reach the market, it will behoove pharmacists to proactively educate P&T committee members about these medications and establish a valid process for evaluating them. In item 8, 94% of FPs predicted that 75% of hospitals will **require conflict of interest disclosures** by P&T committee members and by clinicians who propose formulary additions. In addition to physician and pharmacist perspectives, the input of legal and risk-management staff should be engaged in this process.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Objectively assess the available **options for serving your institution's need for sterile-compounding services.** This assessment should encompass (a) the pharmacy department's capacity to produce (with existing or newly acquired staff and other resources) high-quality CSPs in the volume needed by your patients, (b) the prospect of marketing a CSP service to other institutions, and (c) the prospect of establishing a robust and thorough evaluation process for vendors of CSPs, possibly in collaboration with other institutions or consortia (or the state board of pharmacy, if permitted by law).
2. Strongly encourage nearby colleges of pharmacy and technician training programs to offer more extensive **specialized training in sterile compounding.** Explore opportunities to increase the focus of pharmacy residencies on establishing and managing sterile-compounding services.
3. If your department contemplates participation in **centralized packaging/preparation services,** or offering services such as compounding sterile products to other institutions, thoroughly assess, as part of due diligence, any barriers that might exist in state law or board of pharmacy regulations.

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Leadership:

MEETING THE CHALLENGES IN CHANGE MANAGEMENT

RITA SHANE AND SARA J. WHITE

INTEGRATING PHARMACY INTO TEAM-BASED PATIENT CARE

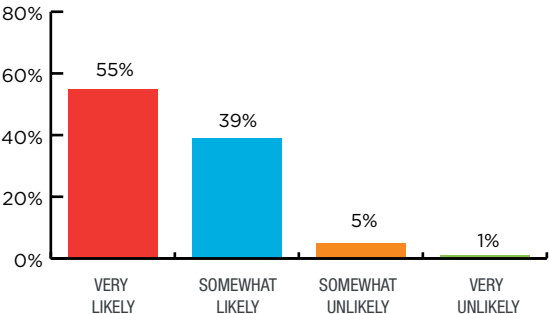
The relentless pressure on health systems to meet financial, regulatory, and quality imperatives imposes immense change-management challenges on all hospital departments. Pharmacy practice leaders must translate health care and organizational priorities into strategies, tactics, and actions that allow pharmacists to contribute fully to the safe, effective, and cost-conscious use of medications.^{1,2} The long-term objective is to transform the pharmacy staff into essential participants in team-based care that optimizes patient outcomes. Pharmacy practice leaders must also bring their particular knowledge of pharmacy-related trends into the strategic planning process of the institution as a whole.

SYSTEM-WIDE RESPONSIBILITY

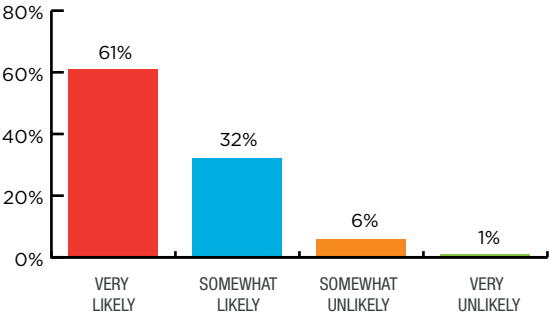
Most health systems, within the next five years, will have a single pharmacist responsible for **medication-use issues across the enterprise**, according to 94% of Forecast Panelists (FPs) (item 1 in the table). This prediction is consistent with both the concept of the chief pharmacy officer³ and the establishment of medication safety officers (MSOs). (Pharmacists make ideal MSOs because of their knowledge of the entire medication-use process.) The FPs' prediction reflects the clinical, administrative, and economic benefits that can be attained through consistent enterprise-wide approaches to medication-use issues.

How likely is it that the following will occur, by the year 2018, in the geographic region where you work?

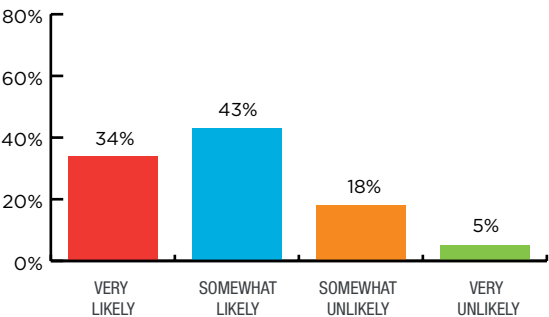
1 At least 50% of health systems and hospital networks will assign to a specific pharmacy leader/manager responsibility for managing medication-use issues (including formulary and purchasing issues) for the entire system or network.



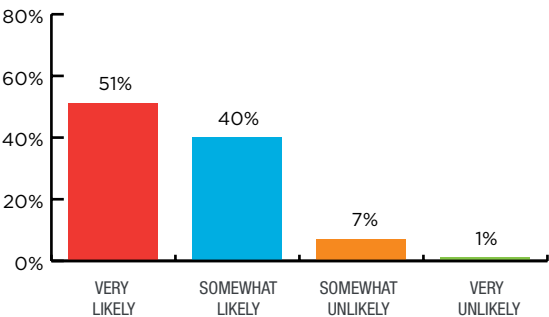
2 Systematic strategic planning (including establishment of explicit goals for the next 2-5 years) will be conducted by at least 50% of hospital pharmacy departments.



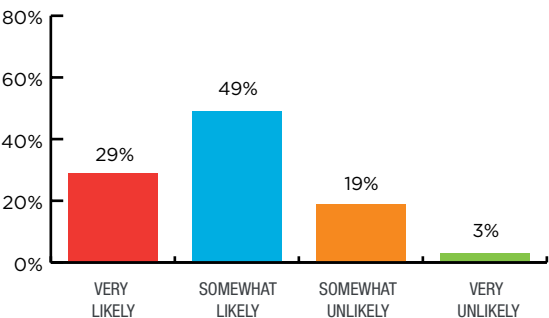
3 In at least 50% of hospitals, pharmacy leaders will be evaluated and financially incentivized based primarily upon the pharmacy department's contribution to successful achievement of organizational long-range strategic objectives (rather than based primarily upon departmental success in routine operations).



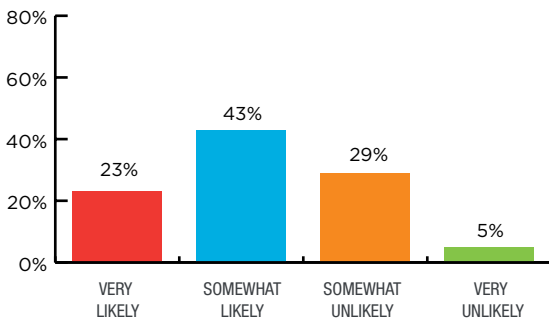
4 At least 75% of hospital pharmacy department leaders will be "fiscally literate" in the sense that they understand and can clearly discuss the fundamental financial challenges facing their institution and department.



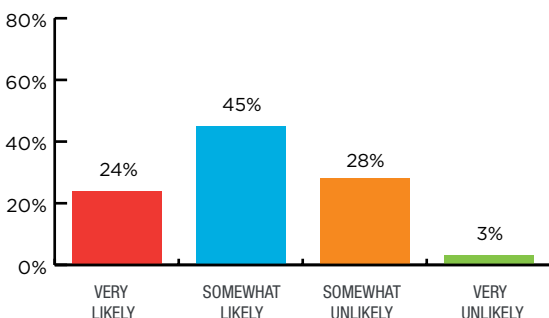
5 In at least 50% of hospitals, brochures that describe the institution's services to patients and visitors will mention the patient care services of pharmacists.



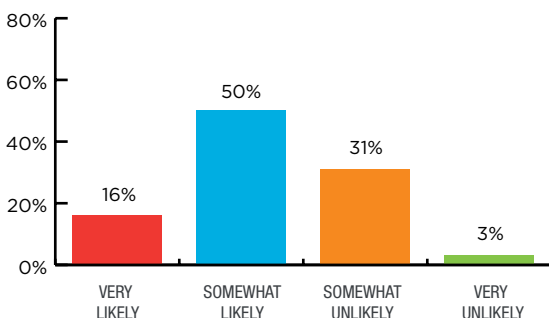
6 At least 50% of hospital pharmacy departments will assertively ensure that patients accurately recall if they interacted with a pharmacist.



7 The pharmacy department in at least 50% of hospitals will have made contingency plans for potential future downsizing of staff.



8 At least 25% of pharmacy departments in hospitals will have a succession plan for key leadership positions.



AUTHENTIC STRATEGIC PLANNING

Most pharmacy departments will conduct **systematic strategic planning**, including the establishment of specific goals for the next two to five years, according to 93% of FPs (item 2). This prediction is encouraging because good planning will be required to address the introduction of costly diagnostic and therapeutic advances and the pressure to reduce readmissions and overuse of services. There is an important distinction between *strategic* planning (focused on long-range issues with an eye on emerging trends) and *operational* planning (focused on fixing immediate problems). Most pharmacy department planning seems to concentrate on immediate operational issues, and it will be a challenge to take a longer view.

Seventy-seven percent of FPs predicted that pharmacy leaders in most hospitals will be **evaluated and incentivized** based primarily on their department's contribution to achieving the organization's long-range strategic objectives (item 3). Explicit integration of broad organizational goals into the performance expectations of pharmacy practice leaders would signal recognition of the department's vital contributions to the overall success of the institution.

FISCAL LITERACY

According to 91% of FPs, the vast majority of pharmacy practice leaders will be **"fiscally literate"** (item 4), which we would define as having the knowledge and skills to make informed and effective decisions related to the budget; managing wage, non-wage, and capital expenses; and understanding reimbursement in inpatient and outpatient settings. Pharmacy practice leaders should view their operations as a "big business" and apply best practices to the management of that business.

BUILDING AWARENESS OF PHARMACY'S CONTRIBUTIONS

According to 78% of FPs, the pharmacy department in most hospitals will deliberately brand and market pharmacy

services to ensure **visibility to patients and visitors** (item 5). Moreover, 66% of FPs predicted that most pharmacy departments will assertively ensure that **patients accurately recall if they interacted with a pharmacist** (item 6). Although the pharmacy department may not have sufficient resources to educate all patients about their medications, it should cover at least a subset of high-risk patients, which could increase patients' awareness of the role of pharmacists.

CONTINGENCY PLANNING

With potential reductions in hospital revenue on the horizon, pharmacy must engage in contingency planning to ensure that **essential patient care services** are maintained in the event of downsizing. Sixty-nine percent of FPs predicted that most pharmacy departments will do this type of planning over the next five years (item 7). Downsizing is already occurring in a number of major institutions in several large states.

Two-thirds of FPs predicted that at least 25% of pharmacy departments will use **succession planning** for key leadership positions (item 8). In 2011, 75% of pharmacy directors did not anticipate being in their positions in 10 years, which makes apparent the critical need for succession planning.⁴

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Evaluate the **current management of each step in the medication-use process** in all patient care areas, including diagnostic, procedural, and ambulatory-care sites. Identify any gaps using tools such as ISMP Self Assessments,⁵ and exert assertive leadership to close those gaps.
2. Conduct an environmental scan of **health care trends**, using *Pharmacy Forecast* reports and other sources in the health care and business literature, and determine the implications for your institution and department over the next three to five years. Engage pharmacy staff

and organizational executive and clinical leaders in discussions about future pharmacy priorities.

3. Create and implement a **staff development curriculum on financial issues** that must be understood to ensure the future success of the institution and the pharmacy department. Vital topics in this curriculum include changes in reimbursement methodologies, accountability in budgeting, productivity measurement, and accuracy in billing and coding. Assign parts of the curriculum to individual pharmacy managers, supervisors, and residents, and involve finance department leaders as teachers.
4. Develop a **portfolio describing pharmacists' patient care activities** related to improving quality, safety, and financial management, and share this information with your organization's executive leaders. Include compelling cases in which pharmacists prevented medication errors and readmissions, reduced drug expenditures, and improved patient outcomes. Work with your institution's public relations and community relations departments to cover the patient care role of pharmacists in informational materials, including the organization's Web site.
5. Develop a plan to annually **increase pharmacists' patient care activities** across the continuum of care. If not already in place, start by having a pharmacist visit each patient during the hospital admission process. Conduct post-discharge follow-up calls to high-risk patients for the purpose of preventing drug-related problems and readmissions.
6. Engage the pharmacy staff in **contingency planning for downsizing** by developing scenarios for different levels of cutbacks (e.g., 5% reduction in staffing, 10% reduction, etc.). For each level of reduction, determine the impact on patients, members of the health care team, and the institution's strategic imperatives.

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4. White SJ, Enright SM. Is there still a pharmacy leadership crisis? A seven-year follow-up assessment. *Am J Health-Syst Pharm.* 2013;79:443-7.
5. Institute for Safe Medication Practices. ISMP self assessments. <http://www.ismp.org/selfassessments/default.asp> (accessed 5 October 2013).

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Additional Resources for Environmental Scanning

In addition to the references cited in the chapters in this report, the following resources contain useful information for environmental issues that will affect the pharmacy enterprise in hospitals and health systems. See the 2013 Pharmacy Forecast for additional resources.

HEALTH CARE DELIVERY AND FINANCING

- **Futurescan 2013: Healthcare Trends and Implications 2012-2018.** The Society for Healthcare Strategy and Market Development. Health Administration Press. <http://www.ache.org/Publications/Product.aspx?pc=2236>. (Note: New editions of the annual Futurescan report are typically issued in December.)
- **Avoidable Costs in U.S. Healthcare.** June 2013. IMS Institute for Healthcare Informatics. <http://www.imshealth.com/portal/site/imshealth/menuitem.762a961826aad98f53c753c71ad8c22a/?vgnextoid=bb321cbfa3401410VgnVCM10000076192ca2RCRD&vgnnextchannel=a64de5fda6370410VgnVCM10000076192ca2RCRD&vgnnextfmt=default>.
- **Delivering High-Quality Cancer Care—Charting a New Course for a System in Crisis.** September 2013. Institute of Medicine. http://www.iom.edu/~media/Files/Report%20Files/2013/Quality-Cancer-Care/qualitycancercare_rb.pdf.
- **Workforce Roles in a Redesigned Primary Care Model.** January 2013. American Hospital Association. <http://www.aha.org/content/13/13-0110-wf-primary-care.pdf>.
- **Leading Improvement across the Continuum: Skills, Tools and Teams for Success.** October 2013. Health Research & Educational Trust. http://www.hpoe.org/improvement_continuum_october2013.
- **Report of the 2012 ASHP Task Force on Accountable Care Organizations.** *Am J Health-Syst Pharm.* 2013; 70:66-76. <http://ajhp.org/content/70/1/66.full.pdf+html?sid=19b8ab49-b744-4ed0-8742-178a6becd8f7>.

HOSPITALS

- **2013 AHA Environmental Scan.** American Hospital Association. http://www.hhnmag.com/hhnmag/jsp/articledisplay.jsp?dcrpath=HHNMAG/Article/data/09SEP2012/0912HHN_FEA_Gatefold0912&domain=HHNMAG.

PHARMACEUTICALS

- **Declining Medicine Use and Costs: For Better or Worse?** May 2013. IMS Institute for Healthcare Informatics. <http://www.imshealth.com/portal/site/imshealth/menuitem.762a961826aad98f53c753c71ad8c22a/?vgnextoid=5b21ee0a8e631410VgnVCM10000076192ca2RCRD&vgnnextchannel=736de5fda6370410VgnVCM10000076192ca2RCRD&vgnnextfmt=default>.

- **Express Scripts 2012 Drug Trend Report.** March 2013. <http://www.drugtrendreport.com>.
- **The Safety Risks of Innovation—The FDA's Expedited Drug Development Pathway.** Moore TJ, Furberg CD. *JAMA.* 2012; 308:869-70.

HEALTH INFORMATION TECHNOLOGY

- **2013 HIMSS Leadership Survey—Senior IT Executive Results.** March 4, 2013. http://himss.files.cms-plus.com/HIMSSorg/Content/files/leadership_FINAL_REPORT_022813.pdf.
- **Patient Apps for Improved Healthcare—From Novelty to Mainstream.** October 2013. IMS Institute for Healthcare Informatics. http://www.imshealth.com/deployedfiles/imshealth/Global/Content/Corporate/IMS%20Health%20Institute/Reports/Patient_Apps/IIHI_Patient_Apps_Report.pdf.
- **Draft FDA Safety and Innovation Act Committee Report (2013).** http://www.healthit.gov/facas/sites/faca/files/FDA-SIARRecommendationsDraft030913_v2.pdf.

HOSPITAL PHARMACY

- **ASHP National Survey of Pharmacy Practice in Hospital Settings: Monitoring and Patient Education—2012.** Pedersen CA, Schneider PJ, Scheckelhoff DJ. *Am J Health-Syst Pharm.* 2013; 70:787-803. <http://ajhp.org/content/70/9/787.full.pdf+html?sid=9458e5df-32bf-466c-a2d8-9f0552412020>.
- **ASHP National Survey of Pharmacy Practice in Hospital Settings: Dispensing and Administration—2011.** Pedersen CA, Schneider PJ, Scheckelhoff DJ. *Am J Health-Syst Pharm.* 2012;69:768-85. <http://ajhp.org/content/69/9/768.full.pdf+html?sid=b069b16d-4db5-482d-ac4e-4208f0e56c9e>.
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