

PHARMACY FORECAST 2013-2017:

STRATEGIC PLANNING ADVICE

FOR PHARMACY DEPARTMENTS IN HOSPITALS AND HEALTH SYSTEMS



*A trends report from the Center for
Health-System Pharmacy Leadership,
ASHP Research and Education Foundation*

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PHARMACY FORECAST

2013-2017:

STRATEGIC PLANNING ADVICE FOR
PHARMACY DEPARTMENTS IN
HOSPITALS AND HEALTH SYSTEMS

William A. Zellmer, Editor

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Foreword

Effective leadership in today's ever-changing health care environment requires pharmacists to be aware of emerging trends that will influence the pharmacy enterprise. Helping build that awareness is the mission of *Pharmacy Forecast 2013-2017*.

Pharmacy Forecast 2013-2017 was developed at the urging of David A. Zilz, a visionary thinker and passionate advocate for advancing health-system pharmacy practice. He challenged us to develop a report on environmental factors that will influence pharmacy's future direction—a report that could be used by pharmacy departments for smart, well-informed strategic planning.

This report is based on a survey of pharmacy trend-watchers who work in a variety of clinical, operational, informatics, and managerial positions. Coming from multiple perspectives, they made predictions on trends that could affect the future of all pharmacists. The related strategic recommendations in each chapter are an important feature of this report that can guide you in contributing to planning decisions in your department.

We encourage you to use the comment feature of this report to offer your viewpoint on how the report's predictions and recommendations complement or contrast with your own strategic planning efforts. We also encourage you to share this report with other health care colleagues; we welcome comments from them as well. Through this dialogue, we will gain a better understanding of the challenges we all face as health care professionals who want to plan well for the future.

Pharmacy Forecast 2013-2017 complements the ASHP Foundation Center for Health-System Pharmacy Leadership's portfolio of programs addressing leadership issues in our field. The Center's mission is to encourage the development of effective leaders at all levels in health-system pharmacy through educational programs and resources. We invite you to visit the Center's Web site to discover the various resources and educational opportunities available to pharmacy practitioners.

We wish you well in your use of *Pharmacy Forecast 2013-2017*.

Richard S. Walling, B.S.Pharm, M.H.A.

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Pharmacy Forecast 2013–2017:

AN ENVIRONMENTAL LENS FOR PHARMACY DEPARTMENT PLANNING IN HOSPITALS AND HEALTH SYSTEMS

WILLIAM A. ZELLMER AND RICHARD S. WALLING

INTRODUCTION

In this time of general economic uncertainty and turmoil in health care, it would be unthinkable for a hospital or health system not to plan for the future. The same can be said for the components of health care institutions, including the pharmacy department.

From the perspective of the pharmacy enterprise, what should be the driving imperative in strategic planning? If immediate operational challenges are the only issues that receive attention, there is great risk that the department will miss opportunities to prepare for important developments that have not yet come into focus at the institution. However, few pharmacy departments have the time or resources to systematically identify and assess the external environment as part of their ongoing planning process.

Wouldn't it be helpful if there were a group of insightful trend-watchers in health-system pharmacy who filtered all the background signals and amplified those that are likely to have a major bearing on pharmacy within the next few years? If pharmacy practice leaders had ready access to the wisdom of such a group, they could supplement their internal inputs in strategic planning with rich, timely, and relevant external information.

Recognition of the value of a trends assessment of this nature led the Center for Health-System Pharmacy Leadership to create *Pharmacy Forecast 2013-2017*, which identifies and analyzes developments that may affect pharmacy practice over the next five years and offers related planning advice.

HOW PHARMACY FORECAST 2013-2017 WAS CREATED

The forecast report is based on the results of a survey that was developed under the guidance of an advisory committee, which selected eight topic areas (domains) for the survey. The domains are: (1) health care delivery and financing, (2) pharmacy practice model, (3) pharmacy work force, (4) technology, (5) drug development and therapeutics, (6) pharmaceutical marketplace, (7) physician and nurse work forces, and (8) consumer-driven health care. The advisory committee assisted in writing eight questions for each domain. The survey was pilot tested with a few health-system pharmacists and refined before launch.

The 64 survey items asked about the likelihood ("very likely," "somewhat likely," "somewhat unlikely," or "very unlikely") of certain developments occurring by the year 2017. For most survey items, the point of reference was "the geographic region where you work." This approach encouraged responses based on firsthand knowledge, observations, or experience rather than conjecture about the situation nationwide. For three items in the survey that dealt with state laws, the point of reference was "the state in which you primarily practice."

The survey was sent to a 150-member forecast panel. Each executive committee of the five ASHP sections^a nominated 30 individuals for the panel. Criteria for

^a ASHP sections are membership component groups that cover the following areas of hospital and health-system pharmacy practice: (1) management, (2) inpatient care, (3) ambulatory care, (4) clinical specialty practice, and (5) informatics and technology.

nomination were (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. The persons who accepted an invitation to serve on the forecast panel were invited to take the Web-based survey on March 28, 2012. The survey closed on April 17, 2012, after four reminders to nonrespondents.

Of the 150 Forecast Panelists (FPs), 118 (79%) completed the survey. Thirty-nine states were represented among the respondents. Some form of practice management was the primary position of 38% of FPs; clinical practice, 24%; faculty member, 20%; informatics/technology specialist, 17%.

After the survey was fielded, experts were recruited to write a brief chapter for each domain of the report. In addition to presenting the survey results, these chapters comment on the forecast panelists' predictions and offer strategic recommendations for pharmacy practice leaders.

COMMON THEMES AMONG THE REPORT'S STRATEGIC RECOMMENDATIONS

Several common themes emerged from the eight sets of strategic recommendations presented by chapter authors. A prominent theme was competency assurance:

- Determining what practitioner competencies are needed for a particular role (such as in team-based patient care)
- Documenting objectively that individual practitioners have the competencies required for their job responsibilities
- Mandating that practitioners engage in continuous professional development
- Ensuring that executive and clinical leaders in the institution are aware of the pharmacy department's efforts in competency assurance.

This array of activities related to competency assurance may well be one of the

keys in broadening support for pharmacists assuming a larger role in patient care and for pharmacy technicians assuming major responsibility for the preparation and distribution of medications.

Other common themes among the report's recommendations:

- Engaging pharmacists more deeply in improving patient outcomes and continuity of care
- Fostering pharmacist participation on patient-care teams
- Building pharmacist accountability for medication therapy outcomes
- Documenting how the pharmacy department contributes to achieving institutional priorities
- Leadership development
- Patient communications
- Pharmacy involvement in programs to improve the health of the community served by the hospital.

HOW YOU CAN USE THE REPORT

The forecast report offers timely strategic planning advice that will be of interest to all staff members in pharmacy departments who have a stake in the destiny of the pharmacy enterprise at their institutions. 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 forecast panelists' responses. These responses carry substantial weight in that they reflect the composite thinking of a national panel of trend trackers in health-system pharmacy—individuals who were nominated by their peers for this forecasting role. 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 tracking this issue? If not, should it be?

After reviewing the data, read what the chapter authors have to say about the forecast panelists' predictions. Reflect on the strategic recommendations in the chapter.

Pharmacy Forecast 2013-2017 can be assigned as required reading for staff members who participate in your department's planning exercises. Staff members, residents, or students can be asked to make a presentation to the department on the report or on individual chapters.

We encourage you to use this Web-based report's interactivity feature. Here are a few examples of topics that you might want to comment on: Did a particular prediction or recommendation push one of your hot buttons or stimulate a strong response in your department? Overall, is the report helpful or not in your department's planning process? How could future editions be improved? Do you have suggested questions that should be asked in the survey next time?

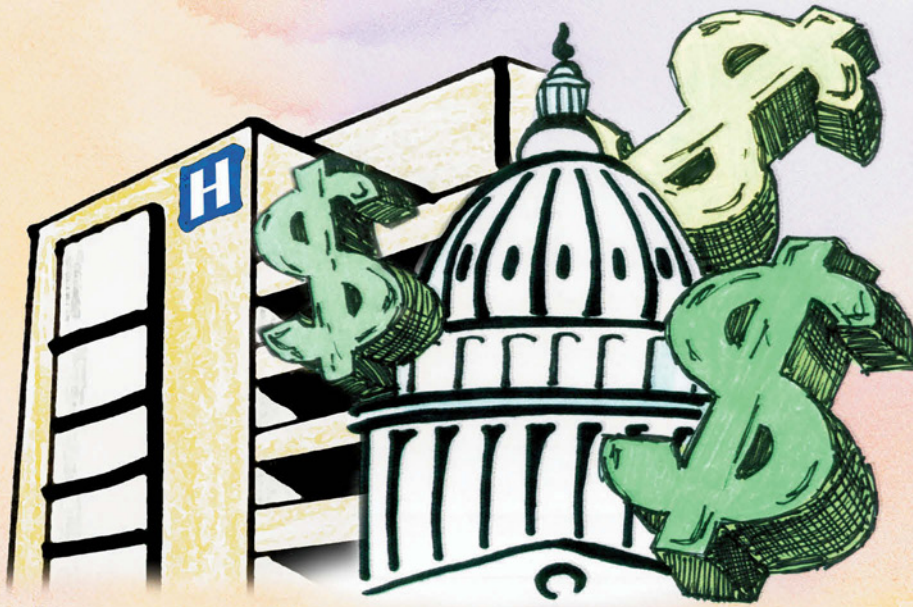
CONCLUSION

Effective strategic planning requires environmental scanning, not only of the immediate surroundings but also of the horizon. *Pharmacy Forecast 2013-2017* will help your pharmacy department with this essential part of looking and planning ahead.

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Health Care Delivery and Financing:

REFORM, INTEGRATION, INCENTIVES, AND RISK

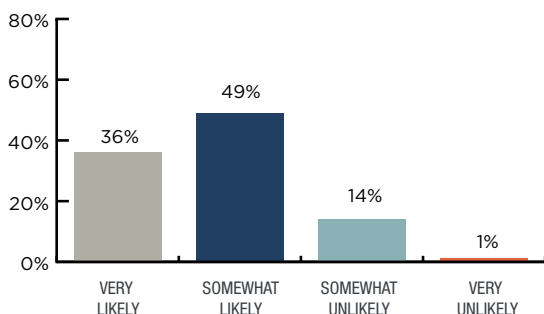
LEE C. VERMEULEN

IMPLICATIONS OF HEALTH CARE REFORM

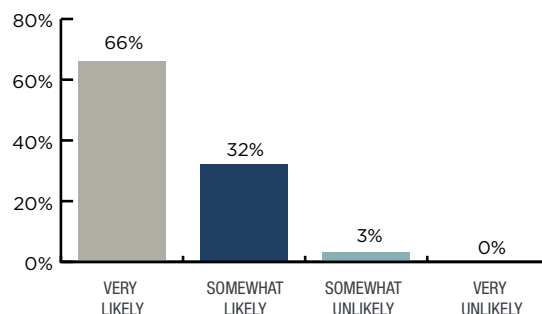
On June 28, 2012, the United States Supreme Court upheld the constitutionality of the Affordable Care Act (ACA), the most important and contentious legislative effort related to health care and U.S. health policy since the creation of Medicare and Medicaid in 1965.¹ While disagreements about implementation of the ACA will not be resolved until well after the November 2012 Presidential and Congressional elections, providers, insurers, employers, and patient groups continue to work toward implementation of key components of the Act. Achieving the aims of the ACA—primarily expanding health insurance coverage and improving the quality of care—will pose immense challenges for health care providers. Further, there will be many efforts in the coming years by both public and private payers to contain health care spending.²

How likely is it that the following will occur, by the year 2017, in the geographic region where you work?

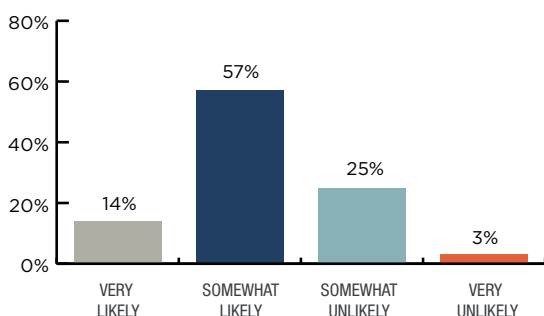
- 1 At least 50% of the revenue of most hospitals in the region will come from “at risk” payments, including various types of global payments such as for episodes of care (encompassing both inpatient and outpatient services) and fixed per capita payments.



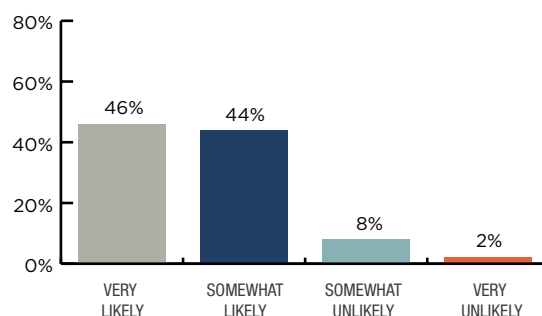
- 2 More than 75% of hospitals in the region will be under significantly greater financial stress in 2017 than they were in 2012.



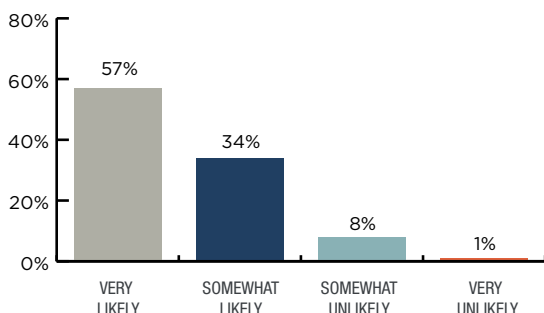
- 3 For expensive therapies, in more than 50% of hospitals in the region, concerted efforts will be made to treat patients who are most likely to benefit before treating those who are less likely to benefit.



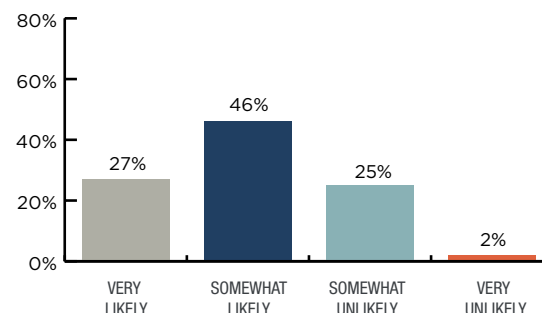
- 4 More than 50% of the hospitals in the region that were independent in 2012 will have merged with other institutions or become part of an integrated health system (or both) by 2017.



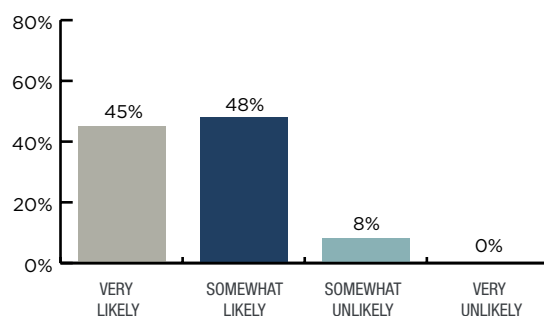
- 5 At least 50% of people living in the region will receive essentially all of their routine and acute health care services from a provider that is part of an integrated health system.



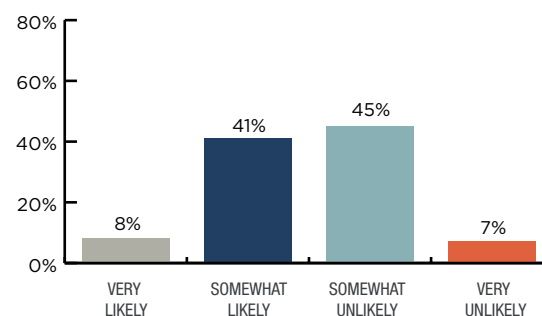
- 6 At least 25% of the compensation of hospital pharmacy managers in the region will be based on their institution's quality-of-care scorecard.



- 7 Pharmacists will have a significant patient-care role in at least one “medical home” organization in the region.



- 8 Health systems that provide pharmacist drug therapy management services for ambulatory patients will recover essentially all of the cost of those services through third-party billing.



The formation of **accountable care organizations (ACOs)** and bundling of payments for specific diagnoses are two key components of the ACA that will challenge hospitals and health systems to succeed under health care reform.³

Value-based reimbursement (also known as pay-for-performance) offers greater payment (or at least lower reductions in payments) to providers who improve patient outcomes. Substantial penalties will face providers who do not improve outcomes. Financial incentives for expanding the meaningful use of electronic health records will add to the challenges.

In the near-term future, hospitals and health systems will clearly face **higher patient volume**, greater demands for **improved quality**, and **reductions in reimbursement**. These changes will not be limited to patients covered by publicly funded insurance programs; commercial insurers will also demand more of providers.

Forecast Panelists (FPs) agree that significant financial challenges are on the horizon; 98% predicted that over the next five years more than three-fourths of hospitals will be under significantly greater **financial stress** than they are currently (item 2 in table). This stress will inexorably work its way down to all departments in the hospital, including the pharmacy.

PROVIDERS AT GREATER RISK

The creation of an ACO requires providers to accept responsibility for the cost of care of specific cohorts of patients. The ACO must collaborate with the full array of providers to ensure high quality and efficient use of resources. As noted in item 4, 90% of FPs believe that expansion of integrated systems is likely in the coming years, and 91% believe that most patients will receive their care from those systems (item 5).

ACOs require excellence in **transitions of care** between inpatient and ambulatory-care settings, and providers in those settings collectively must accept respon-

sibility for patient outcomes that extend beyond their individual scopes of clinical responsibility.⁴ This will be a challenge for many hospitals and health systems in which walls and silos have long characterized their behaviors. ACOs that have a strong primary-care infrastructure, particularly those that qualify for **patient-centered medical home** recognition,⁵ will clearly have an advantage over other provider organizations that have placed more emphasis on inpatient care or specialty ambulatory care.

Overall, 85% of FPs felt that greater **capitation and payment bundling** would be likely in the future (item 1). Currently, bundled payment is being explored in end-stage renal disease and certain surgical procedures such as knee replacement and organ transplantation. In order to succeed under payment systems that shift financial risk to providers, hospitals and health systems must clearly understand their costs, and they must have data that can identify opportunities for reducing those costs by improving care-delivery efficiencies. These imperatives have clear implications for the pharmacy department.

Provider organizations must also understand their **market position** in order to compete for patients covered by bundled reimbursement. Hospitals and health systems interested in achieving or maintaining distinction in their markets, particularly in tertiary and quaternary care, will need to be prepared to take on risk.

LINKING QUALITY TO REIMBURSEMENT

Seventy-three percent of FPs (item 6) predicted that it is likely that the compensation of pharmacy practice managers will be tied to quality performance. As quality of care becomes more clearly tied to reimbursement, and as organizations recognize the importance of leadership in improving quality, we can expect that hospital department managers (including those in pharmacy) will be rewarded for their ability to improve outcomes.⁶

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Instill among the staff of the pharmacy department a deep understanding of the growing **financial stress** and the escalated imperative for **improving quality of care** that will face your institution in the coming years. Encourage an environment within the department that fosters open, creative discussion about how the pharmacy team can contribute to the hospital's survival.
2. Study your hospital's plans for connecting with the **patient-centered medical home** and **accountable care organization** concepts. Your institution's executives will be deeply occupied with dealing with the challenges of new health care delivery and payment methodologies. It is vital that you know those plans and align the pharmacy enterprise accordingly.
3. Give priority to identifying specific ways in which the pharmacy department can help the hospital improve **patient-care outcomes**. Develop an assertive plan for engaging pharmacy more broadly in achieving this institutional imperative. Document the results of the department's efforts.
4. Develop specific plans for stepping up the pharmacy department's efforts to improve the **continuity of care** for patients discharged from the hospital, with special focus on patients with diagnoses that are covered (or may be covered in the future) by bundled payment to providers. Include in your plans how you will document the results of pharmacy's efforts in this area.
5. Plan for how the pharmacy department will contribute to a greater focus by your hospital on **community health** and **management of chronic diseases**. Take advantage of the greater availability of clinical pharmacists to improve the capacity of the pharmacy team in this regard.

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Pharmacy Practice Model:

OPTIMIZING MEDICATION USE AND ADVANCING PHARMACY PRACTICE

DANIEL J. COBAUGH AND DAVID CHEN

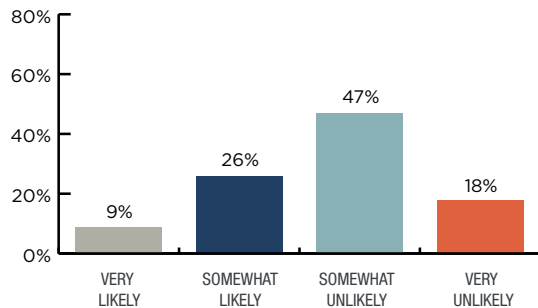
ENVIRONMENT FOR PRACTICE MODEL CHANGE

The U.S. health care system is undergoing transformative change because of the confluence of many factors, including unsustainable health care costs, continued patient safety and quality-of-care problems, increased prevalence of individuals with multiple comorbidities, an aging population, increased use of high-risk and high-cost medicines, and an insufficient number of primary care physicians.¹ Team-based care, patient-centered medical homes, accountable care organizations, and value-based purchasing are facets of the response to these system stressors.

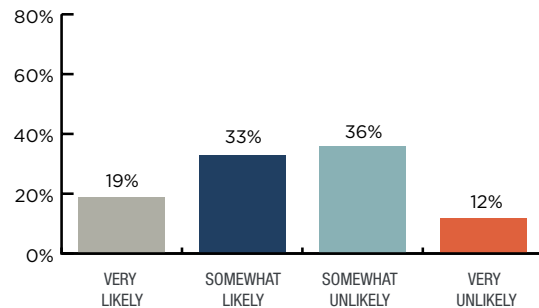
Pharmacy practice in hospitals and health systems has changed dramatically over the last 25 years and, given an abundance of evidence that demonstrates pharmacists' beneficial effects on patient outcomes,² pharmacists are well positioned to support institutional efforts designed to improve patient care. If pharmacists fail to take a leadership role in responding to the challenges in 21st century health care, changes will be imposed upon them by other decision makers.

How likely is it that the following will occur, by the year 2017 (in the state in which you primarily practice [charts 1–3]) (in the geographic region in which you work [charts 4–8])?

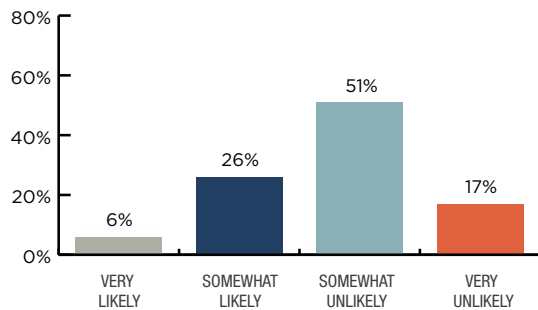
- 1 In the inpatient setting (when there is documentation of safe systems in place), laws and accreditation requirements will permit new medication orders to be verified solely through information-technology applications without direct or immediate pharmacist engagement.



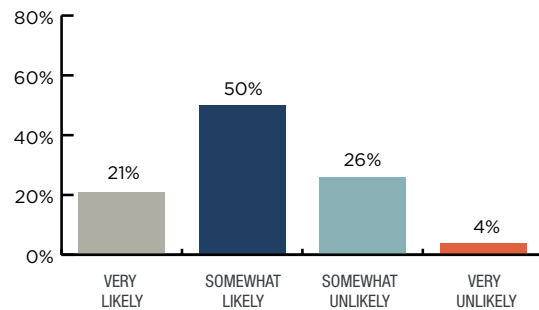
- 2 Pharmacists who have specific credentials or documented competence (as specified in state law) will be authorized to independently prescribe medicines.



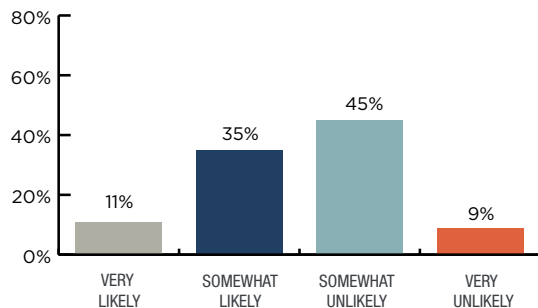
- 3 Laws will permit certified pharmacy technicians in a hospital to handle all of the tasks in drug product preparation and distribution, without direct or immediate supervision by pharmacists, in compliance with procedures and protocols approved by the hospital's pharmacy department management.



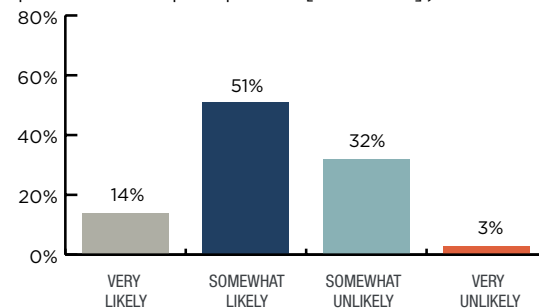
- 4 At least 50% of hospital pharmacists will spend essentially all of their time as members of patient-care teams handling complex medication-use issues (versus time devoted to product preparation, distribution-related, or order-verification-related tasks).



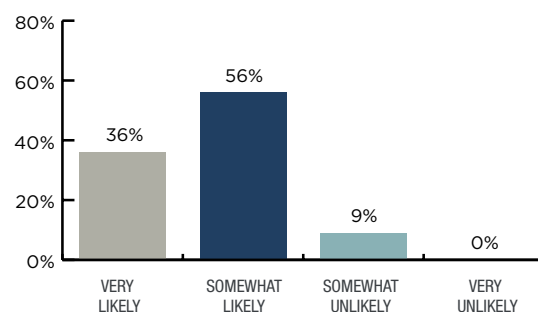
- 5 Pharmacists will be responsible for prescribing medication therapy, based on medical diagnoses made by physicians, in at least 25% of hospitals in the region.



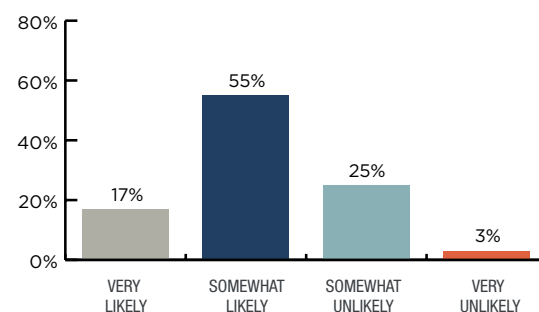
- 6 In at least 50% of hospitals in the region, the pharmacy department will have a well-developed, explicit process for ensuring the competency of individual pharmacists within their scope of responsibility. (In 2011, about 16% of hospitals had a credentialing and privileging process in place for pharmacists that defined and authorized an individual pharmacist's scope of practice [ASHP data].)



- 7 In at least 50% of hospitals in the region, pharmacists will be responsible for developing and ensuring compliance with evidenced-based prescribing criteria for most high-cost and high-risk medicines.



- 8 In at least 25% of hospitals in the region, for patients discharged on a new medication, pharmacists from the discharging institution will interact with patients and their health professionals outside the hospital (including community pharmacists) to ensure continuity of drug therapy and monitoring of outcomes. (In 2009, pharmacists at 7% of hospitals followed up on high-risk patients post-discharge [ASHP data].)



At the November 2010 Pharmacy Practice Model Initiative (PPMI) Summit, participants reached consensus on numerous recommendations related to the advancement of medication use and pharmacy practice in hospitals and health systems.³ The overarching goal of these recommendations was to ensure that pharmacists participate as the interdisciplinary team members who are responsible and accountable for patients' medication-related outcomes.

ASHP and the ASHP Research and Education Foundation are developing tools and educational resources to support practice model change. These include a Hospital Self-Assessment (HSA) that enables comparisons of current services to the PPMI recommendations and supports strategic planning that considers organizational priorities and resources.⁴

PREDICTIONS RELATED TO PRACTICE MODEL CHANGE

Seventy-one percent of Forecast Panelists (FPs) predicted that by 2017 at least 50% of hospital pharmacists will spend essentially all of their time **handling complex medication-related issues** as members of the patient care team (item 4 in the table). If this projection comes to fruition, it will represent a major accomplishment in practice model reform.

Consistent with FPs' views on pharmacists' participation on patient care teams, 92% indicated that pharmacists in half of the hospitals will be responsible for developing and ensuring compliance with **evidence-based prescribing criteria** (item 7). In addition, 72% predicted that pharmacists in at least 25% of hospitals will be engaged in communications with patients and outpatient providers following discharge to ensure **continuity of medication therapy** and monitoring outcomes (item 8). Recent increased emphasis on enhancing transitions of patient care provides a new opportunity for pharmacists to affect the quality of patients' care and health-system performance.

FPs suggested that there will be **regulatory barriers** to some key changes in the pharmacy practice model. Sixty-five

percent indicated that it is unlikely that verification of inpatient orders through the use of technology applications, without direct or immediate pharmacist engagement, will be permissible under the laws and accreditation requirements that will be in place over the next five years (item 1). Similarly, 68% said it is unlikely that pharmacy technicians will be permitted by law to handle all of the tasks in drug product preparation and distribution without immediate supervision by pharmacists (item 3). While order verification can be integrated into the activities of a pharmacist who is also addressing complex medication management needs, it is unlikely that advanced pharmacist practice can be achieved without delegation of preparation and distributive activities to competent pharmacy technicians who are supported by technology systems.

Among PPMI Summit participants, 90% agreed that **team-based pharmacists** should include **prescribing** in their scope of practice.⁵ In contrast, FPs were split fairly evenly as to whether credentialed pharmacists in their state will have authority to independently prescribe medications (52% said it is likely within the next five years, 48% said unlikely) (item 2). Forty-six percent of FPs predicted that in at least 25% of hospitals in their region pharmacists will have responsibility for prescribing based on a medical diagnosis (item 5). Hard work lies ahead in obtaining physician buy-in at the institutional level and amending state practice acts with respect to pharmacist prescribing.

Survey item 6 on pharmacy departments' establishment of well-developed and explicit processes for ensuring the **competency of individual pharmacists** relates directly to pharmacists' aspirations for expanded roles in drug therapy management. Sixty-five percent of FPs indicated that it was likely that at least half of hospitals will have these processes in place. Establishment of such processes is critical to pharmacy practice leaders' efforts to change institutional policies and pharmacy organizations' ability to influence policy makers to change state laws.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Identify specific steps that the pharmacy department will take to support your institution's imperatives related to improving **quality, safety, patient satisfaction, and economic performance**. Engage executive and patient-care leaders in identifying and supporting these pharmacy initiatives.
2. Use the ASHP/ASHP Foundation Hospital Self-Assessment (HSA) tool⁴ to help your department create a **customized action plan** for practice model reform.
3. Collaborate with patient-care leaders at your institution to develop a specific plan for establishing (or enhancing) a role for **pharmacists on patient-care teams**.
4. Plan to involve pharmacists in **post-discharge care coordination**, giving priority to patients whose adherence to drug therapy will affect the rate of readmissions. Include in your plan a means for documenting the pharmacy department's contribution to the institution's performance on managing readmissions.
5. Establish a sound process for (a) identifying the **competency requirements** of pharmacists and technicians for specific responsibilities, (b) assessing every staff member for compliance with competency requirements, and (c) continuous professional development of each pharmacist and technician related to competency requirements.⁶ Ensure that executive and patient-care leaders in your institution are aware of this process and how it relates to plans for advancing the roles of pharmacists and technicians.

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Pharmacy Work Force:

OPPORTUNITIES RELATED TO IMPROVED SUPPLY OF CLINICAL PRACTITIONERS

WILLIAM A. ZELLMER AND DOUGLAS J. SCHECKELHOFF

SHIFTING LANDSCAPE OF PHARMACIST SUPPLY

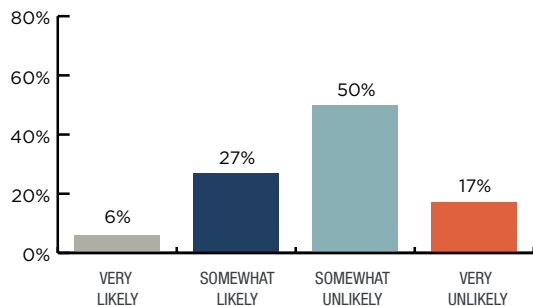
A decade ago, a shortage of pharmacists in all sectors of practice, including hospital pharmacy, was a serious problem. Staff vacancies sometimes made it difficult to conduct basic hospital pharmacy operations and implement new services. The shortage has now largely disappeared for entry-level hospital pharmacist positions: While in 2002 the overall vacancy rate for hospital pharmacists was 7.2%, by 2011 it had declined to 2.4%.¹ The reduction in vacancy rate is particularly remarkable because the estimated number of hospital pharmacist positions grew by 34% between 2002 and 2011 (from 42,700 to 57,300) (estimated from ASHP national surveys). The expanded output of pharmacy education, which began in the early 2000s,² has probably been the largest factor in this reversal of the supply-demand equation for the pharmacist work force.

Notwithstanding abatement of the national shortage of pharmacists, regional shortages still exist, and there remains a serious shortage of pharmacy managers and clinical coordinators. Although gains have been made in the availability of clinical specialists and experienced front-line pharmacists, many pharmacy directors continue to report shortages in these categories.¹

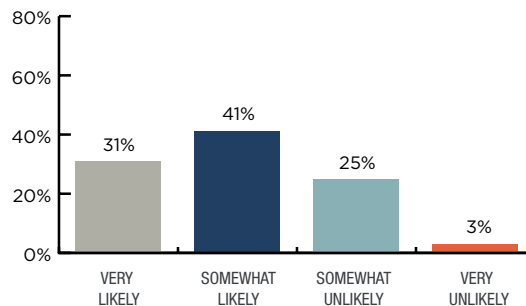


How likely is it that the following will occur, by the year 2017, in the geographic region where you work?

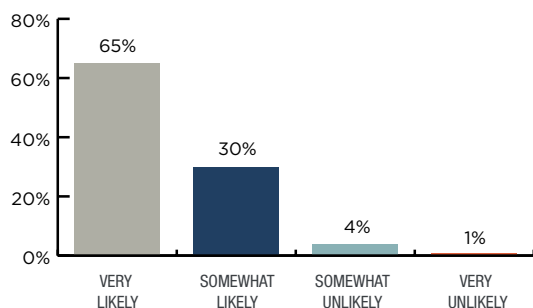
- 1 There will be an ample supply of qualified applicants for openings in **senior management positions** (including department directors) in health-system pharmacy practice.



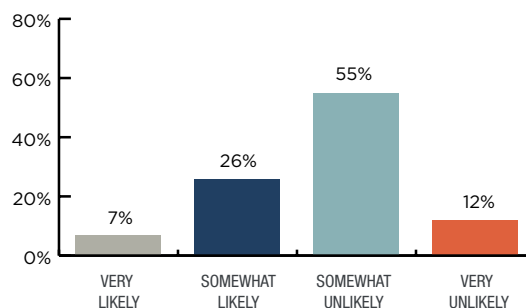
- 2 There will be an ample supply of qualified applicants for openings in **specialty clinical practice** positions in health-system pharmacy.



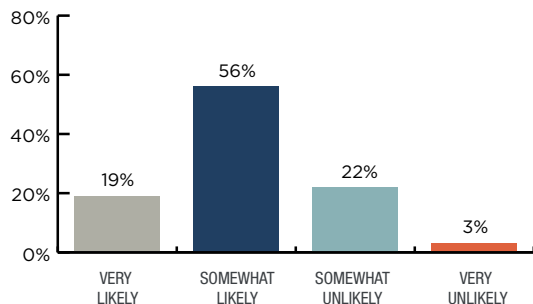
- 3 There will be an ample supply of qualified pharmacists for openings in **entry-level clinical** positions in health-system pharmacy practice.



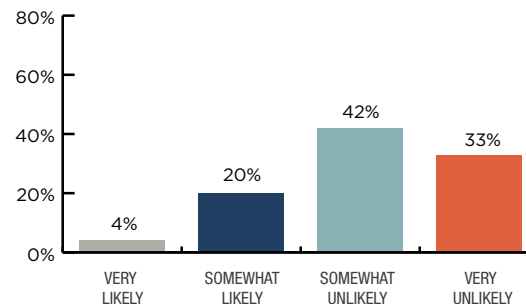
- 4 There will be an ample supply of qualified pharmacists for openings in **information technology** positions in health-system pharmacy practice.



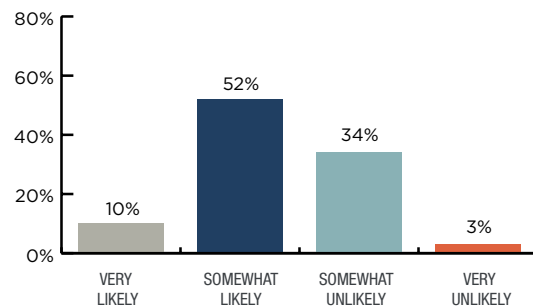
- 5 There will be an ample supply of **qualified pharmacy technicians** for openings in technical positions in health-system pharmacy practice.



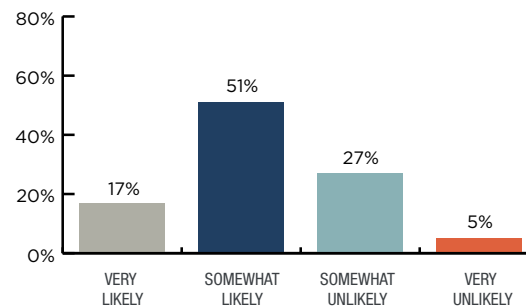
- 6 The number of **PGY1 residency positions** will be sufficient to meet at least 90% of the demand from applicants for such training.



- 7 There will be at least 50% more accredited pharmacy **technician training programs** than existed in 2012.



- 8 Compared with 2012, by 2017 there will be at least a 75% increase in the number of **pharmacists affiliated with ambulatory-care clinics and medical offices** who work directly with patients for the purpose of providing drug therapy management services.



PREDICTIONS RELATED TO PHARMACISTS

As shown in the results for item 1 in the table, 67% of Forecast Panelists (FPs) believe there is unlikely to be much if any improvement over the next four years in the availability of qualified applicants for openings in **senior management positions** in health-system pharmacy. This projection should be a powerful inducement to the ASHP Foundation's Center for Health-System Pharmacy Leadership and others to continue innovative career-development programs in leadership and management for pharmacists.

There is likely to be an ample supply of qualified applicants for **clinical specialist positions** over the next four years according to 72% of FPs (item 2). This prediction should be encouraging to pharmacy directors who are currently evenly divided in perceiving a shortage or a balance between supply and demand for clinical specialists.¹

Ninety-five percent of FPs said it is likely that there will be an ample supply of pharmacists for **entry-level clinical positions** over the next four years (item 3), consistent with current perceptions of pharmacy directors.¹

Attracting pharmacist applicants for positions in **information technology (IT)** will be a challenge for practice leaders; 67% of FPs said that it is unlikely there will be an adequate supply of qualified applicants for openings in this area over the next four years (item 4). This negative outlook suggests a serious barrier to the efforts of pharmacy departments to apply IT solutions to the logistical and patient-safety facets of the medication-use process.

There is likely to be a large increase in the number of **ambulatory-care pharmacists** in health systems that work directly with patients, according to 68% of FPs (item 8). The 2010 ASHP national survey showed that many larger hospitals have pharmacists involved in ambulatory-care or primary-care clinics (in hospitals with 300-399 beds, 41% have pharmacists in clinics; 400-599 beds, 57%; > 600 beds, 67%).³ Given the projected greater

availability of clinical specialists and the profession's newly recognized specialty in ambulatory care,⁴ pharmacy practice leaders have an exceptional opportunity to expand pharmacy's contribution to patient care in institutions that serve ambulatory patients.

There continues to be a shortage of **PGY1 residency positions**,⁵ and 75% of FPs predicted that this situation will not ease over the next four years (item 6). An opposing view might prevail if practitioner organizations, colleges of pharmacy, and practice leaders are successful in implementing consensus recommendations for expanding pharmacy residency training.⁶

PROJECTIONS RELATED TO PHARMACY TECHNICIANS

There likely will be an "ample supply of qualified pharmacy technicians for openings in technical positions" according to 75% of FPs (item 5). A majority of FPs also predicted that there will be at least 50% more accredited pharmacy technician training programs over the next four years (item 7). This is an important projection because significant reform of the hospital pharmacy practice model depends on pharmacy departments increasing the training requirements and scope of practice of technicians.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Capitalize on the growing availability of **clinically competent pharmacists**. Assume that you will be able to (a) be more selective than in the past in hiring top clinical talent and (b) make aggressive plans for expanding the contributions of pharmacists to improved outcomes of your patient population.
2. Proactively plan for **succession in key management positions**, recognizing that the supply of qualified applicants might be limited when those positions become vacant.

- Identify latent leadership and management talent among students, residents, and staff and systematically nurture development of that talent.
3. Develop a focused plan to **retrain or retool pharmacy staff members** to ensure that they have the skills needed as pharmacy practice and patient care evolve. Some staff members may benefit from individualized training or traineeships, while others might be good candidates for nontraditional residency training, designed for those five to ten years post-graduation.
 4. Recognize that there will be a continuing shortage of **IT pharmacists**, and seek creative solutions to the situation. For example, consider job redesign and reclassification to make IT positions more attractive, seek opportunities to collaborate with other health systems in aligning IT requirements and pooling technology human resources, and support staff in obtaining IT training.
 5. Upgrade competency requirements and task assignments for **technicians** in recognition that your department will require a higher level of performance from this vital component of your staff in order to advance your practice model.
 6. Foster the creation or expansion of **accredited pharmacy technician training** in your geographic region in recognition that the technician competency requirements that will be needed in your department in the future will be difficult or impossible to achieve through on-the-job training.

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Technology:

CHALLENGES IN AN ERA OF IMPLEMENTATION

ALLEN J. FLYNN AND KARL F. GUMPPER

NAVIGATING THE INFORMATION TECHNOLOGY REVOLUTION

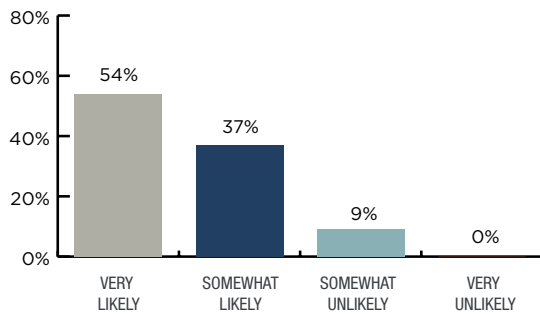
Growth in computer power is transforming the entire health care industry. Between 1940 and 2010, annual growth in computer power averaged nearly 50%, and it climbed more than a trillion-fold.¹ Hospital care in the U.S. has benefited from the invention of the relational database, the Internet, and wireless networking, and it is now rapidly finding applications for smart phones and touch-screen tablets. Information and communication technologies are mobile, use less energy, and cost less per unit of computer power than ever before.

The American Recovery and Reinvestment Act, adopted in the wake of the recession of 2008, made available nearly \$26 billion for health information technology (IT). As of April 2012, more than 2,800 hospitals received nearly \$3.4 billion in electronic health record (EHR) incentive payments based upon demonstrated meaningful use.² However, it is uncertain whether the federal investment in IT infrastructure will be sufficient to result in health care providers becoming meaningful users of IT.³

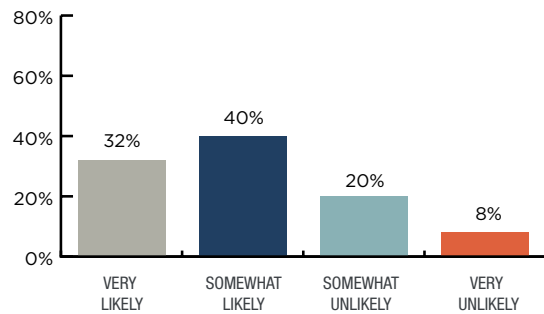
Some pharmacy practice leaders become concerned when, inevitably, EHR implementation forces the relinquishment of a highly functional standalone pharmacy information management system in favor of an integrated system. With a new integrated system, the pharmacy department often must adopt software, workflows, and software-enhancement priorities over which it has less influence than with a standalone system.

How likely is it that the following will occur, by the year 2017, in the geographic region where you work?

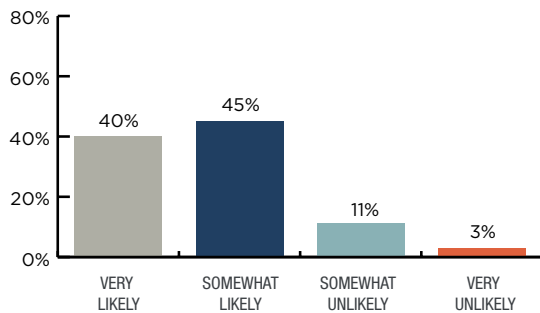
- 1** Among the hospitals in the region, at least 75% will have converted completely to electronic health records.



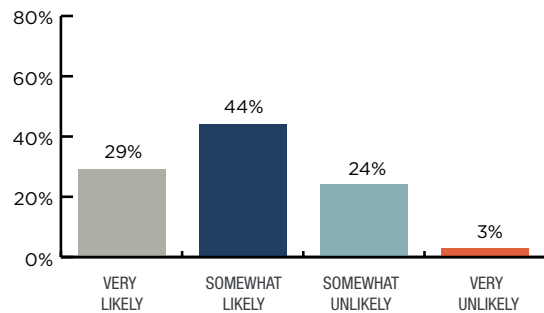
- 2** In at least 50% of hospitals, integrated, comprehensive information technology* will ensure essentially perfect accuracy (right patient, right drug, right dose, right route, right time) throughout the medication-use process.
*CPOE, scanning-technology applied to dose dispensing and administration, intelligent infusion devices, and electronic medication administration record.



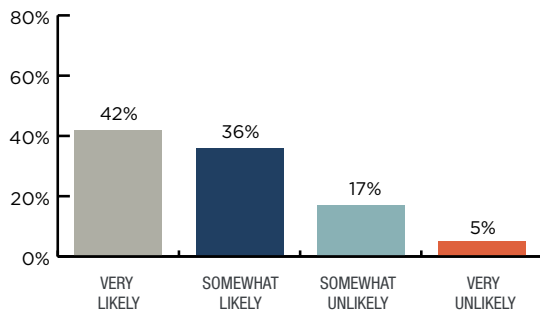
- 3** In 75% of hospitals, essentially all medication orders will be entered electronically by the prescriber.



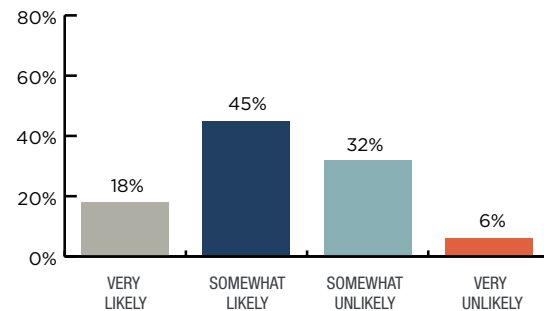
- 4** In hospitals at which the prescriber enters medication orders electronically, at least 75% of applicable medication orders will be informed by a clinical decision support rule.



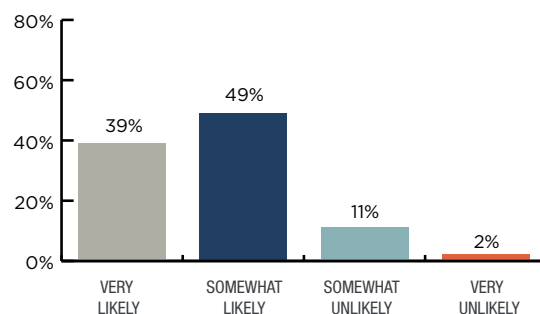
- 5** In at least 75% of hospitals, essentially all non-compounded medication doses throughout the institution will be dispensed by an automated technology (e.g., robotics, automated dispensing cabinets).



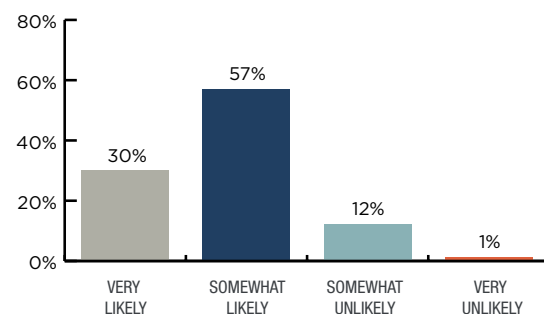
- 6** In 2017, because of technology applications, the amount of time that medical, nursing, and pharmacy personnel devote to routine management of the hospital medication-use process will be reduced by at least 25% compared to the time that was required in 2012 for the same number of doses administered.



- 7** In at least 75% of hospitals, medication administration of essentially all doses will be documented using machine-readable coding.



- 8** In at least 25% of hospitals, automated surveillance tools will identify high-risk patients that are top-priority candidates for monitoring by pharmacists.



Nevertheless, pharmacy department leaders should adopt a long-term perspective and commit themselves to achieving the patient-safety innovations made feasible by EHRs: Computerized provider order entry (CPOE), clinical decision support (CDS), automated medication reconciliation, and bar-coded medication administration (BCMA). The most successful pharmacy directors in EHR implementation will be those who use the project to develop departmental leaders, foster energized and efficient implementation, seek ways to advance pharmacists' clinical practice, and inspire institution-wide enthusiasm for the goal of improving patient care through implementation of the EHR.

PROJECTIONS RELATED TO TECHNOLOGY

Forecast Panelists (FPs) confirm that this is an Era of Implementation with respect to IT in health-system pharmacy. According to 91% of FPs, by the year 2017, it is likely that most hospitals will have converted completely to **EHRs** (item 1 in table). Also, 85% of FPs anticipate that **CPOE** will be the method for medication ordering in most hospitals (item 3), while 88% believe **BCMA** will be used during the administration of essentially all medication doses in most hospitals (item 7). Current data indicate 86% of U.S. hospitals have EHRs^a but only 30% use CPOE^a while 50% use BCMA.⁴

The majority of FPs predict that it is at least somewhat likely that 50% of hospitals will achieve “**essentially perfect accuracy**” in the medication-use process through the application of integrated, comprehensive IT (item 2). However, 28% remain skeptical that this will be achieved. With respect to **clinical decision support** rules, FPs share mixed opinions. Only 29% believe it is very likely

that CDS rules will be widely applied in CPOE (item 4). Almost as many, 27%, believe it is somewhat or very unlikely that CDS rules will be widely used. These predictions probably reflect ongoing difficulties in configuring CDS rules and dissatisfaction with medication-related alerts in current systems.

Especially noteworthy are FPs' projections on the **outcomes of EHR implementation**. For example, 38% of FPs doubt that in the next five years technology will substantially reduce the amount of time devoted to routine management of the medication-use process (item 6). Only 18% of FPs believe such an efficiency gain is very likely.

A large majority (87%) of FPs believe it is at least somewhat likely that hospitals will begin adopting automated surveillance tools to **identify high-risk patients** in urgent need of monitoring by pharmacists (item 8). A belief that EHR data will help guide workload management and improve benchmarking is well founded.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Develop and share a **positive vision** of how pharmacy will use the EHR to improve patient care. It is unproductive to lament the loss of control associated with the EHR. Successful leaders must be **health IT champions** capable of adapting methods and workflows to derive optimum patient value from the EHR.
2. Establish an enterprise-wide **medication-use system strategic plan** that includes short-term and long-term objectives toward achieving an ideal medication-use process.⁵ Define measures of success in advance for all medication-use system projects. Objectives to consider for a strategic plan include (a) collaborate with other institutions using the same EHR software to develop a **prioritized list of enhancements** specifically for pharmacy and (b) institute a safe, technology-enabled, **technician-**

^aEMR and CPOE figures reported as “Q1, 2012” data under “current EMR adoption model scores” at http://www.himssanalytics.org/hc_providers/emr_adoption.asp.

- operated distribution system with the goal of having at least 50% of pharmacist work hours devoted to patient-care activities.
3. Devote a larger share of resources to ensuring the safety of frequently used **high-alert medications**. Most hospitals do not have sufficient resources to build safety features into the EHR for all medications. Prioritize safety efforts and expect technology always to be complemented in practice by thoughtful clinician-users.
 4. Use EHR project teams to develop resilient, trusted **new pharmacy leaders** capable of partnering with nurses and physicians to support ongoing medication-use process improvement.
 5. Recognize that pharmacy personnel need **new skills** to adapt to new health information technologies. Provide staff with education in written communication, information retrieval, data analysis, and relational database management systems.
 6. **Apply EHR medication-use data** in providing pharmacist care for patients. Pharmacists should be proficient at documenting care in the EHR and querying EHR databases to provide information about past medication-use practices and outcomes. Physicians expect EHR data to inform difficult **real-time clinical decisions** about medication treatments.⁶

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Drug Development and Therapeutics:

TARGETED THERAPIES WILL HAVE MAJOR IMPACT ON HEALTH-SYSTEM PHARMACY

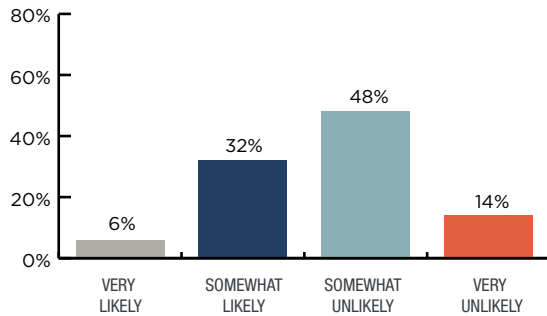
JILL M. KOLESAR

GENETICALLY TARGETED AND SELF-ADMINISTERED ONCOLOGY THERAPIES

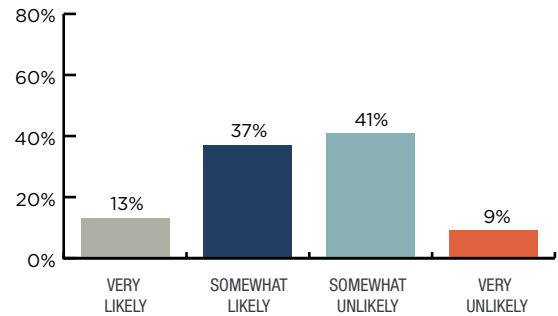
While the leading cause of death in the U.S. is cardiovascular disease (616,000 deaths annually), it is followed closely by cancer (577,000 deaths), a disease characterized by intensive new-drug development that will have a major impact on pharmacy departments in hospitals and health systems.¹ Advances in understanding molecular events of carcinogenesis have led to the development of **genetically targeted therapies**. Of the 20 new molecular entities (NMEs) approved for marketing by the FDA in the 12-month period ending May 2012, six were classified as advances over available therapies, and four of these were for cancer.² Three of the new agents require a genetic test to select patients for treatment, and two others require a genetic test to diagnose the condition. As item 1 in the table shows, 38% of Forecast Panelists (FPs) predicted it is at least somewhat likely that 25% or more of NMEs over the next five years will have an accompanying genetic diagnostic test.

How likely is it that the following will occur by the year 2017?

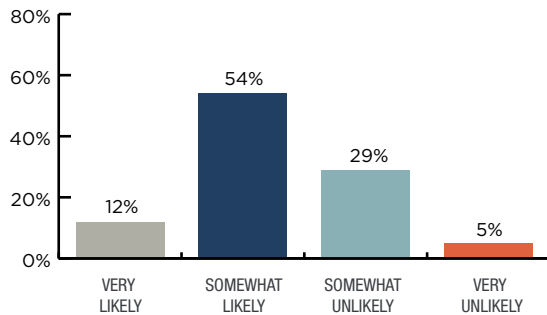
- 1 At least 25% of new molecular entities entering the market every year will have an accompanying diagnostic test that will enable patient selection or optimal dosing (or both) based on the patient's genetic characteristics.



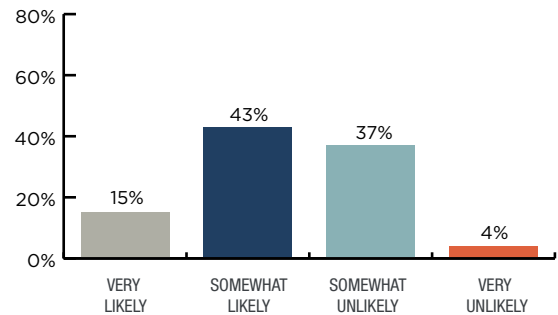
- 2 Comparative effectiveness studies (new agent vs. existing therapy) will be required for all applications for marketing approval of new medicines submitted to the Food and Drug Administration (except when there is no existing therapy).



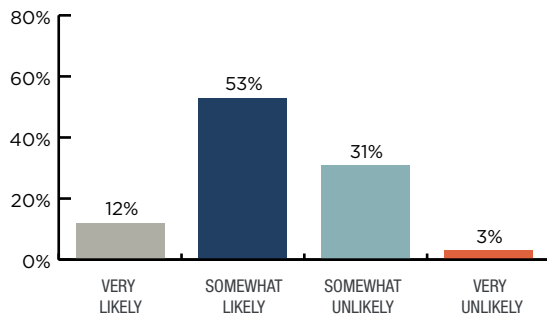
- 3 Drug-treatment outcomes data from large integrated health systems will flow directly into postmarketing surveillance systems for the purpose of identifying clinically important patterns of safety and effectiveness.



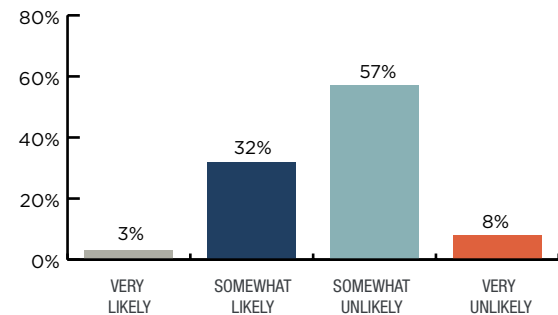
- 4 Between 2012 and 2017, increased incidence of multi-drug-resistant infections will result in a 50% increase in mortality of hospitalized patients with infections.



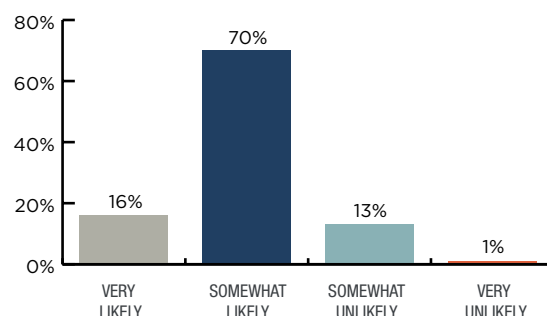
- 5 For 25% of cancer patients, whole genome sequencing will be used to inform therapeutic decision making, successfully identifying a specific genetic abnormality* for which a drug exists that would target that abnormality.
*Genetic abnormalities include mutations, methylation abnormalities, altered RNA expression patterns, etc.



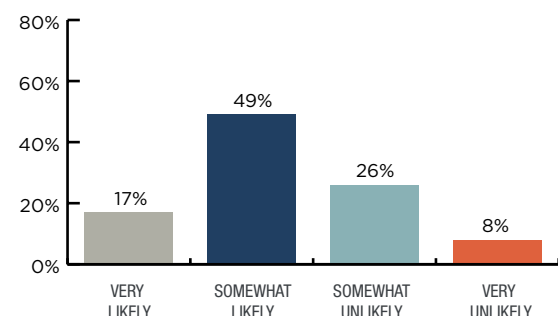
- 6 The primary cancer chemotherapy agent will be administered as an oral medicine in the ambulatory-care setting in 50% of cancer patients.



- 7 Between 2012 and 2017, there will be an **annual average** of at least two biosimilars (generic biologic agents) approved for marketing in the United States.



- 8 At least 75% of all new medicines approved for marketing by the Food and Drug Administration will have a Risk Evaluation and Mitigation Strategy (REMS) requirement.



A major trend in the development of new **cancer drugs** is **oral administration**. All four of the cancer drugs approved in the past year are administered orally. Currently, the 45,000 lung cancer patients with activating mutations are managed almost exclusively with oral targeted therapies. All 5,500 chronic myelogenous leukemia patients are treated solely with oral targeted therapy. Oral agents are also commonly combined with intravenously administered chemotherapy. As seen in item 6, 35% of FPs predicted that self-administration of an oral chemotherapy agent will be the primary treatment for half of cancer patients.

The majority (65%) of FPs felt it is at least somewhat likely that **whole-genome sequencing** will be used to select therapy in at least 25% of cancer patients (see item 5). Indeed, this is an emerging reality. Direct-to-consumer genotyping for more than 200 genetic traits is commercially available for \$299 and whole-genome sequencing is available from three firms for about \$1,000 per genome.³

CARROT OR STICK FOR DRUG DEVELOPMENT?

Pharmaceutical companies have an important **incentive to develop genetically targeted therapies**.⁴ While standard drug development typically requires 10 to 12 years of clinical testing before marketing approval,⁵ targeted agents can enter the market in two to five years because they can be tested in smaller populations and often approved on the basis of a single Phase II trial.

Comparative effectiveness evaluations, which 50% of FPs thought will be required for approval of a new drug (see item 2), poses an entirely different set of considerations in drug development. Since legislation would be needed to impose a comparative effectiveness requirement on new drug applications, this is unlikely to happen within the next five years. Moreover, if comparative effectiveness studies were required, the net result might be the development of fewer agents with indications similar to those

of existing products and an even greater focus on developing targeted therapies.

Other regulatory issues related to drug development include the FDA's **Risk Evaluation and Mitigation Strategies (REMS)** program⁶ and the advent of **biosimilars**. Two-thirds of FPs predicted that 75% of NMEs over the next five years will have a REMS requirement (see item 8). It is worth noting that although four of 20 NMEs approved in a recent 12-month period have REMS requirements, they involve only a medication guide or communication plan (or both), which has minimal or no impact in the inpatient setting. A large majority (86%) of FPs felt it is likely that an average of two biosimilars will be approved annually between 2012 and 2017 (see item 7). Given that there is now an abbreviated licensure pathway for biosimilars, it does seem likely that at least 10 biosimilars will be approved between now and 2017.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Move promptly to ensure that a high level of **expertise in pharmacogenomics** resides within the pharmacy department. Apply that expertise in (a) leading the education of institutional staff (including executive leaders), (b) the inclusion of genetic information in treatment pathways and clinical decision support rules, and (c) becoming a vital stakeholder in the genetic testing process for patient selection and dosage adjustment of applicable therapies.
2. Proactively assess the **effect of growth in the number of genetically targeted therapies** on the institution's process for formulary management, the number of items in drug inventory, and the overall medication-use system (including drug distribution). More targeted therapies means that a larger number of agents will each be used in a smaller number of patients.

3. Plan to **track the outcomes** of new oncology therapies and genetically targeted therapies to assess their clinical impact in terms of efficacy and toxicity. Be prepared to answer the following question from executive leaders: Is the promise of these newer agents being fulfilled at our institution?
4. Recognize that **cost savings from biosimilars** are not likely to offset the **higher cost of genetically targeted therapies**.
5. It follows from the previous point that the most viable long-term approach to managing the high cost of drug therapy is **disease prevention and health promotion**. Hence, the pharmacy department should become fully engaged with institutional efforts focused on improving the **health status of the community**.

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Pharmaceutical Marketplace:

SHIFTING DYNAMICS BRING CHALLENGES AND OPPORTUNITIES

JAMES M. HOFFMAN

POWERFUL EXTERNAL FORCE

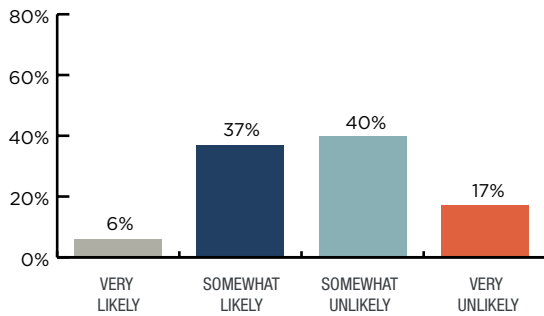
The pharmaceutical marketplace is a powerful external force that shapes priorities for health-system pharmacy practice leaders. Practice leaders are challenged when they must devote resources to activities that add little or no value to patient care, such as managing drug shortages and responding to distribution-channel changes.

Although the pharmaceutical industry has faced a variety of challenges in recent years, including cost containment pressure, declines in research and development productivity, and patent expirations,¹ its sales have continued to expand. In 2011, the U.S. health care system spent \$320 billion on medications, a 12% increase over 2007 expenditures.² Spending growth occurred during this period despite \$65 billion in savings from the introduction of first-time generics.²

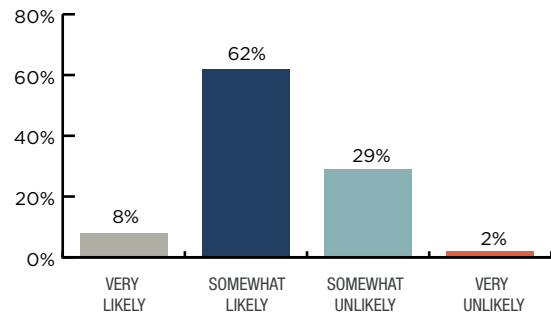
Introduction of new drugs has declined over the last decade, but there are signals that this trend may be reversed in the coming years.¹ There were more new molecular entities (NMEs)—34—brought to market in 2011 than in any year over the past decade.² One recent analysis predicted there will be 35 NMEs approved annually through 2016.³

How likely is it that the following will occur by the year 2017?

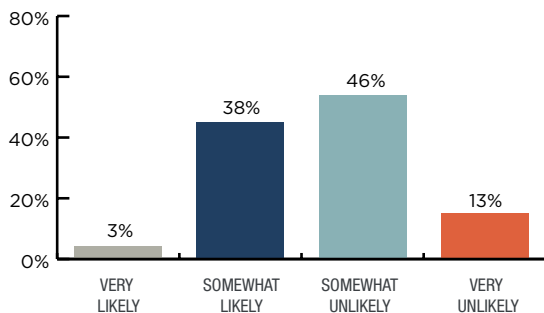
- 1 The number of drug products in short supply will decline by at least 50% between 2012 and 2017.



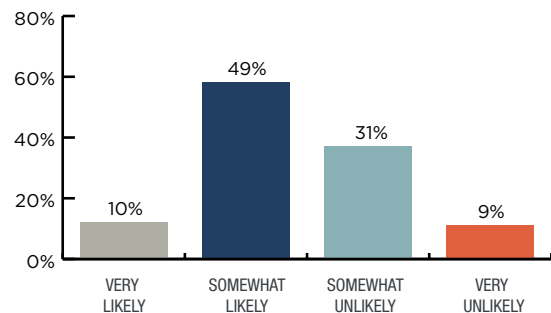
- 2 Market introduction of biosimilars (generic biologic agents) will reduce the per-treatment cost for the affected therapies by at least 25%.



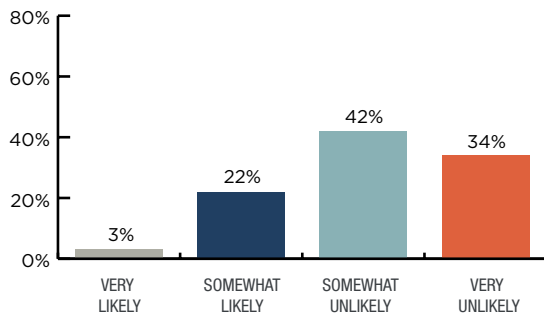
- 3 Annual price increases on essentially all drug products that have been on the market for more than one year will remain 2% or less.



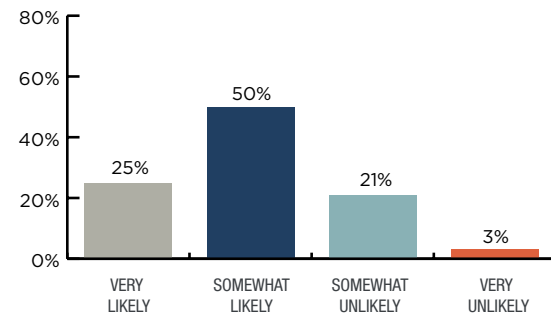
- 4 Federal-government reimbursement rates for high-cost products will be based on the value of the product (using data from cost-effectiveness analyses) rather than on the supplier's selling price.



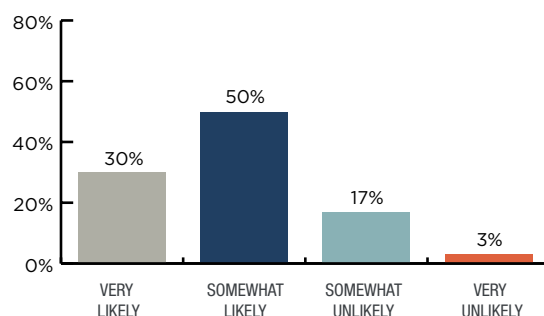
- 5 There will be at least two examples of recently marketed high-cost drug products in which the supplier offers a "money-back guarantee" if the desired therapeutic outcome is not achieved and there is proof that patient selection and medicine use were consistent with FDA-approved labeling.



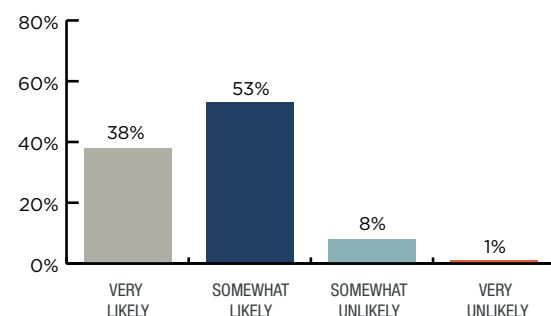
- 6 The number of drug products available only through specialty pharmacies and other closed distribution channels will increase by at least 50% between 2012 and 2017.



- 7 Industry expenditures on the marketing of prescription medicines **directly to consumers** will increase by at least 50% between 2012 and 2017.



- 8 Compared with the situation in 2012, in 2017 pharmaceutical companies will devote substantially more marketing attention to nurse practitioners and other non-physician prescribers.



PREDICTIONS RELATED TO THE PHARMACEUTICAL MARKETPLACE

Fewer than half of Forecast Panelists (FPs) (see item 1 in the table) predicted that **drug shortages** will be substantially resolved by 2017; pharmacy departments will need to plan to continue to devote resources to efficient processes to ensure access to drugs in short supply and to identify alternative therapies. According to the Food and Drug Administration (FDA), more than half of drug shortages are due to **serious product quality issues**, including particulates, contaminants, and impurities.⁴ Because shortages enhance the opportunity for gray market and counterfeit drugs, pharmacy departments must monitor and assure the integrity of the hospital's drug supply.

Biosimilars are copies of biological agents not manufactured by the innovator that are approved for marketing through an abbreviated process. With 70% of FPs predicting that the introduction of biosimilars will reduce the per-treatment cost by at least 25% (item 2), biosimilars will represent an important cost savings opportunity for some of the most expensive drugs used in hospitals and health systems.

While the details of the FDA approval process are still emerging, biosimilars can be approved with differing levels of evidence, and the law allows for two standards—biosimilars and interchangeable biosimilars. Some concern exists that **unique adverse events** may emerge for biosimilars compared to the innovator product, and it has been suggested that biosimilars should have **specific nonproprietary names** in order to track their use and safety.⁵ Pharmacists will need to be aware of final naming designations for biosimilars and be engaged in pharmacovigilance related to these products. These challenges and others will require pharmacists to carefully lead the introduction of biosimilars

through the formulary system. Group purchasing organizations (GPOs) have the opportunity to support this analysis and decision making process.

Most FPs predicted that **drug prices** will increase at a rate greater than 2% annually for drugs that have been on the market for more than one year (item 3). Looking at expenditures (combining volume of purchases and price), recent trends show **two patterns**. Largely because of the introduction of generics, moderate growth, often 2% or less per year, has been common for widely used small-molecule drugs. However, expenditure growth has been substantially greater for specialized therapies. These two patterns of drug expenditures will continue, and practice leaders must plan accordingly.

With 75% of FPs predicting that growth of **specialty pharmacies** and other closed **distribution channels** are likely to increase substantially (item 6), distribution channels will demand attention from practice leaders. The existing drug procurement model that is based primarily on relationships with GPOs and wholesalers will erode. At a minimum, practice leaders must position their department to procure medications from a variety of sources. An overall specialty drug strategy that goes beyond procurement should be developed. Monitoring GPO and wholesaler response to these shifts will be essential.

Although FPs predicted that **direct-to-consumer (DTC) promotion** will increase substantially (item 7), it should be noted that between 2006 and 2010 total promotional spending by the pharmaceutical industry and DTC promotion specifically each declined about 17%.⁶ New and specialized therapies (probably prescribed primarily by physicians) are expected to be the focus of pharmaceutical marketing, which suggests a countervailing view to FPs' response to item 8 dealing with non-physician prescribers.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Continue to dedicate resources and establish standard procedures for **managing the drug supply**. Maintain vigilance for counterfeit and other substandard drugs and ensure that the institution's clinical and executive leaders are aware of pharmacy's diligent oversight in this area.
2. Carefully monitor the **market formation for biosimilars**, which are likely to reach the U.S. market in 2014 or 2015. Meaningful cost savings are expected, but the introduction of biosimilars will require careful analysis and evaluation through the formulary system.
3. Establish departmental expertise in understanding **medication expenditure patterns and reimbursement trends**, including the potential development of value-based approaches to pharmaceutical reimbursement.
4. Ensure that the pharmacy department has the expertise to manage the clinical and financial implications of **specialty medications** and is prepared to acquire them through **multiple distribution channels** that may exclude wholesalers and GPOs.
5. Firmly establish the pharmacy department as the institution's go-to source of **authoritative drug information** for patients and all types of prescribers, regardless of how industry promotional practices may shift.

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Physician and Nurse Work Forces:

MOVING TOWARD TEAM-BASED PATIENT CARE

ROSS W. THOMPSON, MICHAEL WAGNER, AND NANCY SHENDELL-FALIK

PRACTITIONER SUPPLY AND SHIFTING ROLES

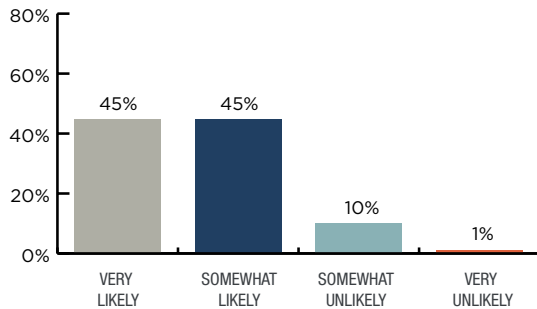
The physician and nurse work forces—both in quantity and in scope of practice—will materially shape the design of health care delivery and the evolving role of pharmacists. There is growing recognition in medicine and nursing that pharmacists have unique expertise that complements services provided by physicians and nurses in the areas of patient medication adherence and medication therapy optimization.

The current model of health care delivery is not sustainable for several reasons, including growth and aging of the population, which is projected to **increase demand for physician services** by 22% between the years 2005 and 2020.¹ During the same 15-year period, only a 13% increase is projected in the number of physicians providing patient care.

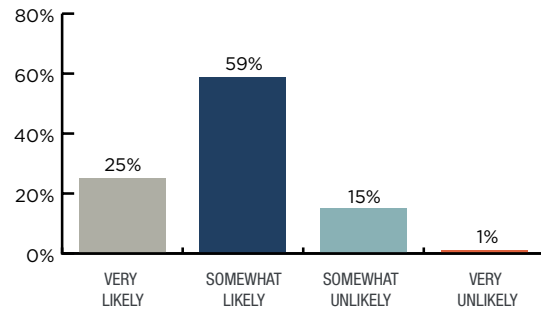
The number of employed nurses increased 3.5% faster than population growth between 2004 and 2008.² However, this growth rate is probably insufficient to serve the needs of the aging population, especially in view of **increasing demand for nurses** in areas such as care coordination. Additionally, advanced practice registered nurses (APRNs) (e.g., nurse practitioners, nurse midwives, nurse anesthetists, and clinical nurse specialists) will be in higher demand because of the impending physician shortage.

How likely is it that the following will occur, by the year 2017, in the geographic region where you work?

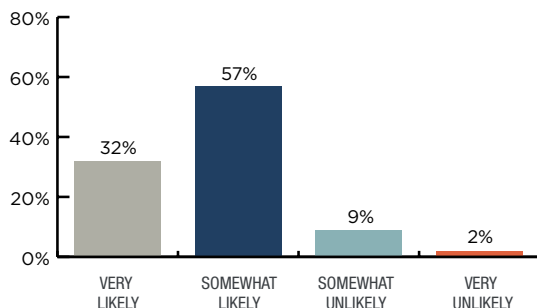
- 1 Compared with the situation in 2012, in 2017 a substantially higher percentage of **primary-care physicians** in the region will be employed by hospitals and health systems.



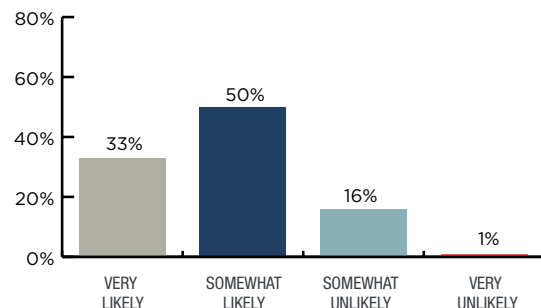
- 2 At least 50% of the income of primary care physicians will come from **global or per-capita payments** rather than fee-for-service payments.



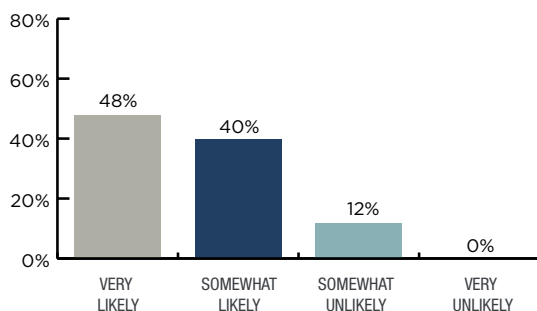
- 3 Compared with the situation in 2012, in 2017 a substantially higher percentage of specialty-practice physicians in the region will be employed by hospitals and health systems.



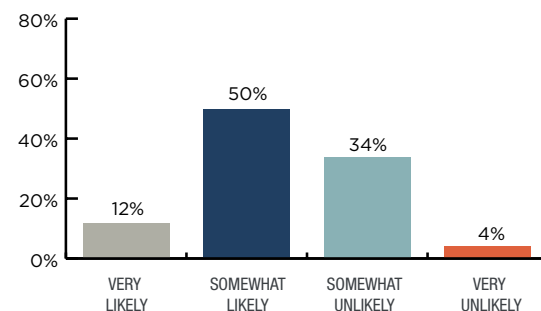
- 4 More than 50% of the chronic-care related needs of ambulatory patients will be provided by non-physician clinicians (including physician assistants and nurse practitioners).



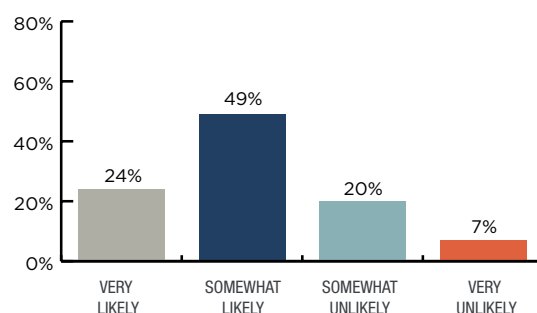
- 5 Hospitalists will manage the care of at least 50% of inpatients in the hospitals in the region.



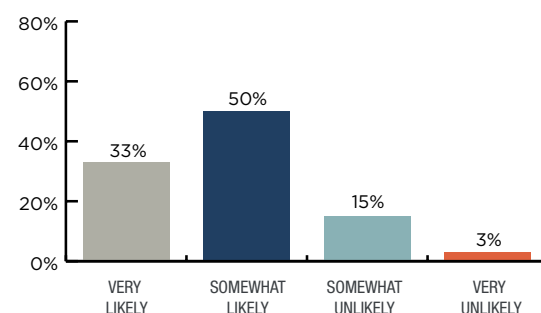
- 6 The drug therapy of at least 50% of the inpatients cared for by hospitalists will be managed by pharmacists (i.e., pharmacists will initiate, modify, and monitor the drug therapy and take responsibility for the drug therapy's outcome).



- 7 At essentially all hospitals, the executive in charge of patient care services will be a nurse.



- 8 Among hospitals in the region, more than 50% of Registered Nurses (RNs) will have a Bachelor of Science in Nursing (BSN) or higher degree. (In 2011, 34% of RNs in the typical hospital had the BSN or higher degree; in the 6.6% of the nation's hospitals recognized by the Magnet Nursing Services Recognition program, 59% of RNs were BSN-prepared nurses.)



Both medicine and nursing are looking for efficiencies in delivering care. This will occur through more effective use of technology and greater collaboration among members of interprofessional teams. Broader collaboration and shared responsibility will be features of **team-based care delivery models**, especially in acute care.³ Educators in medicine, nursing, pharmacy, dentistry, and public health have made a commitment to the development of **interprofessional competencies** by students in the health professions “so that they enter the work force ready to practice effective team work and team-based care.”⁴

In many institutions, the patient-care role of pharmacists will evolve from that of consultation to prescribers to gradual assumption of responsibility for **protocol-based medication-therapy management**. This evolution will be supported by shifts in health policy that grant pharmacists prescribing authority and provider recognition.

IMPLICATIONS FOR PHARMACY
Forecast Panelists (FPs) believe it is likely that more **primary-care physicians** will be employed by hospitals over the next five years (see item 1 in the table). By employing physicians, hospitals more effectively align incentives and gain operational efficiencies through standardization of care processes and streamlining communications. Pressures created by value-based purchasing of health care and accountable care organizations will force hospitals and physicians to make fundamental changes in their relationship and reexamine their respective priorities.

FPs predicted that **hospitalists** will manage the care of at least 50% of inpatients (item 5) and that hospitals will employ a substantially higher percentage of **specialty-practice physicians** (item 3). As more physicians become hospital employees, their interests and priorities will align more closely with the pharmacy department with respect to utilization management and process improvement. The hos-

pitalist model will increase opportunities for pharmacists to engage in team-based rounds and care planning. Pharmacist participation in team-based rounds with hospitalists is more efficient and practical than rounding with community-based or faculty-based medical staff.

Hospitalists facilitate implementation of **evidence-based practices** using protocols and guidelines. Pharmacists will be viewed by hospitalists as a specialist when caring for patients with complex drug therapy needs. By collaborating with hospitalists in this fashion, pharmacists will evolve toward assuming accountability for medication-related outcomes of patients managed by hospitalists, as predicted by FPs (item 6).

Physician assistants and nurse practitioners are likely to increase in number and assume additional responsibility for the care of **ambulatory patients**. Eighty-three percent of FPs indicated it is likely that more than 50% of the chronic-care needs of ambulatory patients will be provided by nonphysician clinicians (item 4). These nonphysician clinicians will probably concentrate on patient assessment, patient education, and coordination of the patient’s treatment. Complex diseases will be managed in collaboration with physicians while medication therapy management (including efforts to motivate patient adherence) will occur in collaboration with pharmacists. Their relatively high salaries may sometimes prevent pharmacists from being hired in clinic settings when other nonphysician clinicians are perceived as providing broader benefits. However, the value of pharmacists in **managing complex medication therapies** has been clearly demonstrated.⁵

Other patient-care practitioners might show **reluctance to share responsibility** with pharmacists. Nevertheless, we should expect that pharmacists will emerge over time as an integral resource on patient-care teams and become increasingly responsible for medication-related outcomes, consistent with the overall thrust of predictions by FPs.

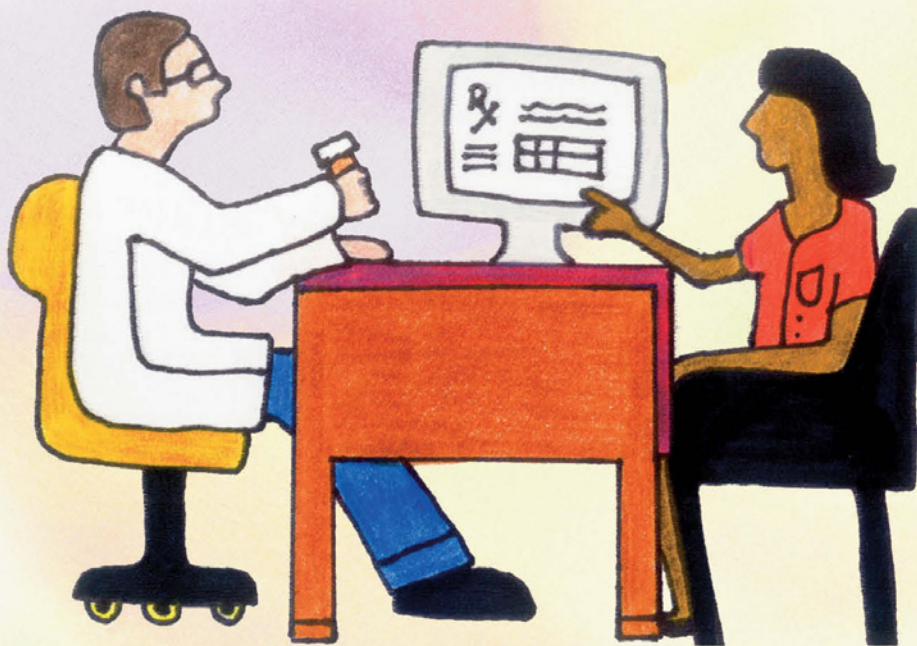
STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Engage actively in the design and implementation of **team-based care delivery** within your institution. Advocate for the unique expertise of pharmacists in optimizing medication regimens during hospitalization and in ambulatory care.
2. Develop a clear understanding with clinical leaders at your institution about **each discipline's unique contributions** to patient-care teams, including the pharmacist's expertise in selecting and dosing medications and monitoring patient response.
3. Develop a mechanism to (a) identify the **competencies** needed by pharmacists in team-based care at your institution, (b) assess if individual pharmacists have the competencies required for their responsibilities in patient care, and (c) apply the principles of continuous professional development to patient-care pharmacists.
4. Develop expertise in the pharmacy department in improving medication adherence among ambulatory patients, focusing on competency in **motivational interviewing**.⁶
5. As pharmacists expand their role in medication therapy management and improving patient adherence, maintain a sharp focus on **complementing, not competing with**, the patient assessment and care coordination roles of hospitalists and advanced practice nurses.

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Consumer-Driven Health Care:

GREATER TRANSPARENCY, ACCESS TO INFORMATION, AND REIMBURSEMENT REFORMS WILL INFLUENCE CONSUMER DECISIONS

BRIAN J. ISETTS

SHIFTING LANDSCAPE OF CONSUMER-DRIVEN HEALTH CARE

"We would all be far better off if we professionals recalibrated our work with patients and families not as hosts in the care system, but as guests in their lives."

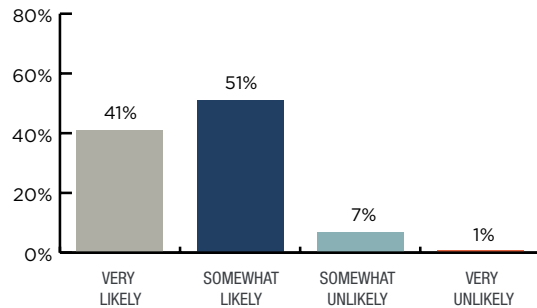
—DONALD BERWICK, M.D. (FORMER ADMINISTRATOR, CENTER FOR MEDICARE AND MEDICAID SERVICES)

Three key trends in consumer-driven health care are relevant to pharmacy practice leaders: (1) consumer demand for ownership of **personal data**, (2) support for an effective medication-use system that reduces **drug-related morbidity and mortality**, and (3) **value-based reimbursement** that rewards providers for achieving patient-centered health outcomes across transitions of care.

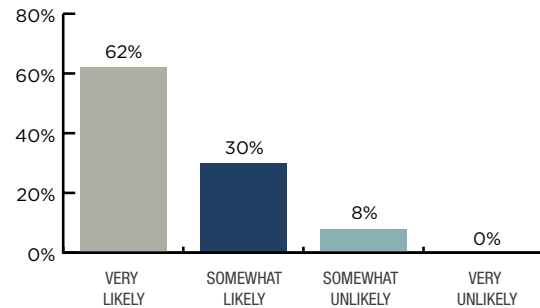
Promotion of consumers' interests in health care (sometimes referred to as "**health care consumerism**") is evolving rapidly as individuals want access to information that allows them to make their own choices. The number of patient and caregiver organizations and related social media forums devoted to health care consumerism is impressive. Regina "Reggie" Holliday, who was inspired by arrogant providers who denied access to her dying husband's medical records, is leading a worldwide movement for consumer ownership of their personal data.¹ The U.S. Department of Veterans Affairs "Blue Button Initiative," which allows veterans to download their personal health information, is one notable example of the shift away from provider or insurance-industry ownership of a patient's data.²

How likely is it that the following will occur, by the year 2017, in the geographic region where you work?

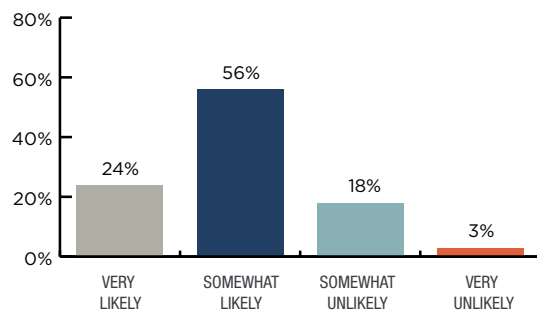
- 1** At least 50% of consumers who have employer-sponsored health insurance will be enrolled in plans in which the employer contributes a fixed-dollar amount toward the premium and workers contribute variable amounts depending on their selection from a menu of coverage options.



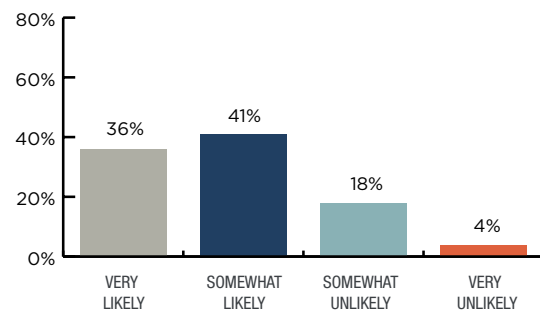
- 2** At least 50% of consumers will have financial incentives (e.g., by employers or health insurance plans) to engage in healthful behaviors.



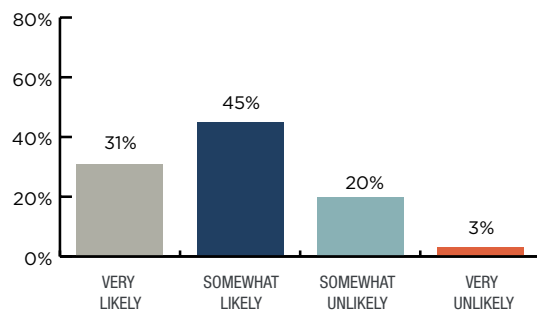
- 3** At least 25% of consumers will routinely decide which health care providers to use based on quality-of-care data that are readily available on the Web.



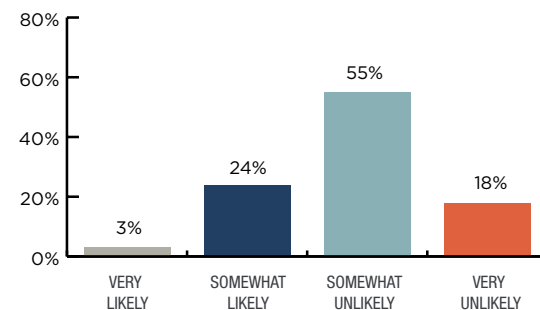
- 4** At least 50% of consumers will insist on having Internet access to their personal health care data (e.g., laboratory test results, radiographic reports).



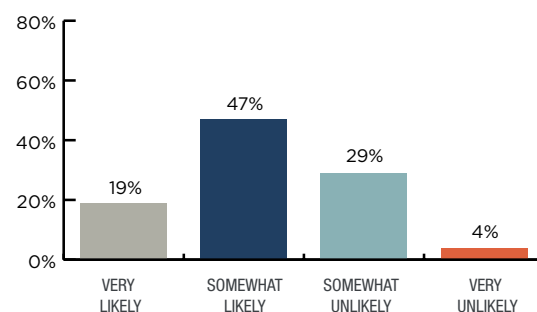
- 5** At least 50% of adults who have a primary care provider will communicate routinely with their provider via email or other electronic means.



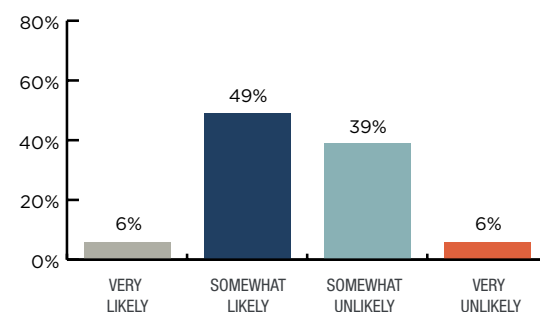
- 6** At least 25% of hospitalized consumers will pay out-of-pocket for a personal health care advocate.



- 7** At least 50% of non-acute and preventive health care services will be delivered at non-traditional provider locations such as walk-in clinics and instant-care clinics.



- 8** Among elderly individuals, at least 75% will have prepared an advance care plan to ensure that the care provided at the end of life complies with the individual's wishes. (The Agency for Healthcare Research and Quality reported in 2003 that less than 50% of severely or terminally ill patients had an advance directive in their medical record.)



Unshrouding the mysteries of health care will dramatically change the way consumers manage their medication regimens. The immense cost of drug-related morbidity and mortality is evidence of a **dysfunctional medication-use system**, and consumers will demand that preventable adverse drug events be eliminated.

CONSUMER INCENTIVES, ACCESS TO DATA, AND COMMUNICATIONS

Four survey items highlight the trends of increased consumer access to information, expectations of shared decision-making, and alignment of incentives for healthful behaviors. As shown in item 2 in the table, 92% of Forecast Panelists (FPs) believe that most consumers will have **financial incentives** from employers or health insurance plans to engage in **healthful behaviors**. Patient-centered medical homes and employer and payer wellness programs are examples of initiatives that relate to empowerment of patients. If patient-centered medical homes are to be rewarded for achieving outcomes, it makes sense to reward the patient who is in the center of this redesigned reimbursement system.

As shown in item 3, 80% of FPs believe that at least one-fourth of consumers will routinely decide which health care providers to use based on **quality-of-care data** that are readily available on the Web. Public reporting of meaningful health outcomes has been a central focus of national business groups for many years. Consumers can be expected to reach far beyond the information in public-reporting programs such as the CAHPS Hospital Survey³ (which measures patients' perspectives on hospital care) and the Medicare star ratings of health and prescription drug plans.⁴ Consumers already seek peer-reported information and patient reports in social media about providers' level of compassion and capacity to care.

As shown in item 4, 77% of FPs believe that most consumers will insist on **Internet access to their personal health care data**. The VA Blue Button Initiative,² the

Microsoft Home,⁵ and cloud computing will permit consumers to have ready access to their health information and data whenever they need it and to share their health data with caregivers in real time.

FPs predicted that over the next five years most adults who have a primary care provider will **communicate routinely with providers through electronic means** (item 5). Many health systems currently use secure patient communication portals to provide a safe space for dialogue with caregivers and to exchange clinical test results. This trend is expected to accelerate, and health care providers will need a reorientation to the delicate nuances of patient communication generally and electronic interactions with patients specifically.

STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. When contemplating the implications of consumer-driven health care, think globally and act locally. **Think globally** in the sense of building awareness about broad trends in consumer empowerment and assessing connections with the pharmacy enterprise. **Act locally** in the sense of addressing the specific health needs of consumers in the community the institution serves.
2. Take concrete steps to ensure that pharmacists in the department are **highly skilled at communicating with patients**. Do not assume that all pharmacists have this skill set. Test individual pharmacist competency in patient communications, including cultural competency and fluency in social media. Formulate individual professional development plans designed to continuously improve the department's overall patient-communication performance.
3. Identify and implement specific ways that the pharmacy department can contribute to **patients' positive experiences** related to the care they

receive upon admission, during hospitalization, and at discharge.

4. Recognizing that consumers' interest in information on the quality of care at your institution will penetrate to the departmental level, seek ways for the pharmacy department to help distinguish the institution through a level of **service that exceeds the community norm**. For example, consider how pharmacists can improve the use of anticoagulants or hypoglycemic agents, which are known to have a high incidence of adverse events that cause extended hospital stays.
5. Develop an assertive program to **reduce drug-related hospital readmissions**. Tap into inpatients' downtime to educate them about appropriate use of medicines they will be taking after discharge. Determine how pharmacists will contribute to effective care transitions to decrease the burden of reimbursement penalties because of avoidable readmissions.
6. Make a commitment to continuously improve your institution's **medication reconciliation** process. There is value in comprehensive medication management⁶ consultation at critical transitions of care for patients treated with complex or high-risk drug therapies.

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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 on environmental issues and trends that will affect the pharmacy enterprise in hospitals and health systems.

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- Projecting Future Drug Expenditures—2012. Hoffman JM, Li E, Doloresco F, et al. *Am J Health-Syst Pharm*. 2012; 69:405-21. <http://ajhp.org/content/69/5/405.full.pdf+html?sid=15a7d733-e935-4014-810e-3780a4d6d737>.

HEALTH INFORMATION TECHNOLOGY

- Transforming Health Care: The Role of Health IT. January 2012. Bipartisan Policy Center Task Force on Delivery System Reform and Health IT. <http://bipartisanpolicy.org/sites/default/files/Transforming%20Health%20Care.pdf>.

HOSPITAL PHARMACY

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