Foreword

The ASHP Research and Education Foundation (“the Foundation”) is pleased to present the fifth edition of the annual Pharmacy Forecast, which is being published for the first time in AJHP. As discussed in the editorial in this issue of AJHP, the Pharmacy Forecast is a vital component of the Foundation’s efforts to advance pharmacy practice leadership.

The Foundation is grateful to the many pharmacists and others who have contributed to the David A. Zilz Leaders for the Future Fund, which provides the resources for the work of the team responsible for the report. The Foundation collaborates with ASHP staff in two key facets of the Pharmacy Forecast: appointment of the Advisory Committee and selection of the Forecast Panelists.

We are indebted to the many individuals who had a direct hand in creating the 2017 edition. This group includes the report editors, members of the Advisory Committee, Forecast Panelists, and chapter authors.

In producing the Pharmacy Forecast report, which at its heart is a strategic analysis of trends that will affect our field in the coming years, the Foundation continues to concentrate on the needs of health-system pharmacists. We know, however, that the reach of the report is much broader. For example, many schools of pharmacy use the report to stimulate thinking and discussion by students about the field they are preparing to enter. Some pharmacists share the report with colleagues in medicine, nursing, and health-system administration to inform them about the implications of pharmacy-related trends. Many business entities that market products and services used in health-system pharmacy find that the Pharmacy Forecast helps them understand the perspective of pharmacy practice leaders.

We welcome your comments on the new edition and your suggestions for topics that should be considered for Pharmacy Forecast 2018.

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Strategic Planning Advice
for Pharmacy Departments in Hospitals and Health Systems

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Creation of the Pharmacy Forecast 2017 report was supported by an unrestricted grant from Omnicell, Inc., to the David A. Zilz Leaders for the Future Fund of the ASHP Research and Education Foundation.

Open access
DOI 10.2146/sp170001
Introduction:
A Foundation for Strategic Planning in Health-System Pharmacy

Introductions:
A Foundation for Strategic Planning in Health-System Pharmacy

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True to the core purpose of the Pharmacy Forecast, this fifth edition of the report continues to advise pharmacy leaders in hospitals and health systems on how to stay ahead of important trends affecting healthcare in the United States. This goal is of no small import, given the immense opportunities for pharmacists to advance healthcare value from the perspectives of patients and payers and, in the process, improve the sustainability of healthcare institutions.

The 2017 edition is distinguished by its publication, for the first time, in the American Journal of Health-System Pharmacy. Validation of the integrity and importance of the Pharmacy Forecast by a major biomedical journal will significantly expand the reach and influence of this service of the ASHP Research and Education Foundation.

Current Trends
The report’s 8 chapters assess 48 potential trends and offer 40 strategic recommendations related to those trends. When the 2017 report is read as a whole, several prominent themes emerge:

1. Continued pressure for macrolevel healthcare reform will stimulate health systems to systematically pursue microlevel operational improvements.
2. Many health systems will establish formal centers for pursuing breakthrough innovations in patient outcomes, operational efficiency, and revenue generation.
3. Substantially more attention will be given to assessing the incremental value of new therapies, which will put some much-needed downward pressure on the price of new pharmaceuticals.
4. Evaluation of alternative treatments will increasingly take into account patient deductibles and copayments (i.e., patient affordability).
5. Health systems will widely apply the concept of stewardship in dealing with two major public health issues: the overuse and misuse of opioids and antimicrobials.
6. Substantial progress will be made in integrating and standardizing information technology within health systems.

Many other topics in the 2017 report touch on current strategic concerns of pharmacy practice leaders. Examples include precision medicine, regulatory compliance, population health, shifting the locus of care to low-cost sites or providers, proliferation of treatment pathways, pharmacist prescribing authority, potential enrollment decline in Pharm.D. programs, and professionalization of pharmacy technicians.

Environmental Scanning in Strategic Planning
As previous editions of Pharmacy Forecast have discussed, most pharmacy departments engage in operational planning, focused on resolving immediate issues and improving existing services. Authentic strategic planning is different in that it considers how external trends will affect activities over the long term.

Conducting a comprehensive environmental scan, which is time-consuming and resource intensive, is beyond the capacity of many pharmacy departments. The resulting gap is what the Pharmacy Forecast aims to fill by spotlighting trends that are likely to have a significant impact on the pharmacy enterprise over the next several years. The Pharmacy Forecast gives practice leaders access to the insights of a national group of trend watchers, which can be used to stimulate critical thinking at the institutional level.

Creation of Pharmacy Forecast Reports
The methodology for the 2017 report, which was the same as for previous editions, drew on the book The Wisdom of Crowds. The predictions of “wise crowds” are generally as accurate or more accurate than the predictions of individual experts. Wise crowds, by definition, consist of independent, decentralized individuals who have a diversity of opinion and whose private judgments can be aggregated.

Forecast Panelists (FPs)—the wise crowd in the case of Pharmacy Forecast 2017—comprised 148 pharmacists nominated by the leaders of the five ASHP sections. Nominators were asked to identify individuals who have (1) expertise in health-system pharmacy, (2) knowledge of trends and new developments in the field, and (3) an ability to think analytically about the future. The composition of the panel was balanced across the census regions of the United States.

The project’s Advisory Committee guided the development of a questionnaire that was completed by the FPs. The survey instrument asked about the likelihood of various developments occurring over the next five years. FPs were asked to answer in terms of what they see unfolding
in the geographic region where they work; this fostered responses based on firsthand knowledge and observations rather than conjecture about the nationwide situation. FPs were instructed to give top-of-mind responses and not to do any extra reading or research.

Pharmacists with appropriate expertise were invited to write a chapter for each domain of the survey, following the report’s well-established pithy style. The chapters analyze survey responses and present related strategic recommendations for practice leaders.

**THE 2017 REPORT**

The following eight domains were selected by the Advisory Committee: (1) population health management, (2) health-system operations, (3) health information technology, (4) therapeutics, (5) managing medication costs, (6) regulatory requirements, (7) pharmacy work force, and (8) presidential election. Although some of these domains are similar to those in previous editions, all survey questions were new. The editors and the Advisory Committee collaborated in writing six questions for each domain. (In previous editions, each domain had eight questions.)

The first seven domains were surveyed in May 2016 (response rate, 86%). The survey on the presidential election was conducted in mid-August 2016 (response rate, 84%), after the Democratic and Republican parties concluded their nominating conventions in July. The latter survey asked the same questions for two contingencies—one assuming the Democratic candidate would win; the other, the Republican candidate. Only the results for the elected candidate are shown in this report.

**HOW TO USE PHARMACY FORECAST REPORTS**

This advice on using the report is the same as for previous editions. As a formal or informal leader in pharmacy practice, you should first scan the report to get a sense of its content and then conduct a more thorough review to assess implications 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 consider whether there is a clear consensus in one direction or another. Compare the FPs’ response to a particular question with your sense of what is happening 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 relation to your own department’s situation and plans. Pharmacy Forecast 2017 can be assigned as required reading for staff members who participate in the 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 the past four editions. (All editions are freely accessible at www.ashp foundation.org/pharmacyforecast.) For all reports, FPs were asked to think ahead five years in their predictions, so the previous editions complement the current report.

**ACKNOWLEDGMENTS**

The members of the Advisory Committee had an essential role in shaping Pharmacy Forecast 2017. Colleen Bush expertly guided fielding of the surveys. The key contribution of the health-system pharmacists who served as Forecast Panelists is gratefully acknowledged. Also acknowledged is the support of the following individuals in various facets of the project: Stephen J. Allen, Vicki Basalyga, Stephanie Brown, Daniel J. Cobaugh, Justine Coffey, Bethany Coulter, Michael Dejos, Erica Diamantides, Johnna Hershey, Lynn Hoffman, Mick Hunt, Anita Lonesome, Rohit Moghe, Maryam Mohassel, Barbara Nussbaum, Antoniette Parris, Abhay Patel, Douglas J. Scheckelhoff, Erika Lutz Thomas, Kasey Thompson, Yvonne Yirka, Allie D. Woods, and David Zilz.

**CONCLUSION**

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

**Disclosures**

Mr. Zellmer is a contributing editor of AJHP. He has declared no other potential conflicts of interest.

**Reference**

Population Health Management: Improving the Community to Heal the Patient

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INCENTIVIZED PATIENT WELLNESS

Population health management (PHM) continues to be a top strategic initiative for health-system pharmacy leaders because evolving payment models incentivize patient wellness. Last year’s Pharmacy Forecast report included a chapter on PHM that focused on financial incentives. This year’s chapter offers an expanded perspective on PHM and emphasizes health-related behavioral and societal issues.

Many health systems are learning from their experience in self-insuring their employees and assuming financial responsibility for keeping them healthy. These lessons can be extrapolated to other populations as the health system enters into at-risk contracts with health-benefit plans. Some health systems are experiencing decreased healthcare expenditures and increased employee productivity through wellness initiatives (e.g., premium reductions based on healthful weight maintenance, compliance with disease management programs, regular exercise encouraged by free access to fitness centers and free pedometers, avoiding tobacco use).

ACHIEVING HIGHEST QUALITY AT LOWEST COST

A large majority (84%) of Forecast Panelists (FPs) predicted that within the next five years, at least 75% of health systems will have formal programs aimed at achieving the highest quality at the lowest cost for specific patient populations (Figure 1, item 1). This suggests that pharmacy practice leaders will need to give a lot of attention to developing (and continuously refining) and enforcing data-driven treatment protocols for illnesses that are associated with substantial quality and cost issues.

COMMUNITY PARTNERSHIPS

Integral to managing population health is employing nonmedical strategies to make communities healthier. About three fourths of FPs predicted that at least 50% of health systems will expand nonmedical support services (Figure 1, item 2) and that at least 25% of health systems will heavily engage community leaders to manage nonmedical and social issues that affect health (Figure 1, item 3). This can be achieved by partnering with community governments to improve neighborhood walkability, make outdoor physical activities more accessible, promote healthy diets, eliminate smoking, ensure access to medical and mental health services, and reduce alcohol and substance abuse. Use of nontraditional support services that optimize caregiver labor costs (e.g., distance health programs using smartphone applications and video technology) is another important consideration.

MANAGING HIGH-RISK PATIENTS

As more states improve collaborative practice acts that allow pharmacists to add, modify, and discontinue medications, more opportunities exist to expand the health system’s primary care footprint in community pharmacies. Notably, 63% of FPs predicted that over the next five years, it is at least somewhat likely that 50% or more of health systems will serve high-risk patients through formal programs with community pharmacies (Figure 1, item 4). Electronic health records can be used to identify high-risk patients for pharmacist interventions, including education, blood pressure screening, medication adjustment, appointment facilitation, refill authorization, mail-order program enrollment, and compliance packaging programs such as for patients using multiple medications or those with dementia.

MANAGING MENTAL HEALTH

Last year, 70% of FPs predicted that at least 25% of health systems would integrate behavioral and mental health services with primary care. In this year’s survey, 67% of FPs predicted that at least 25% of health systems will achieve significantly improved outcomes from such integration within the next five years (Figure 1, item 5).

While it is generally beyond the pharmacy department’s ability to ensure that communities have adequate behavioral health services, the focus of pharmacy practice leaders is to ensure that pharmacists improve outcomes by participating in mental health teams in specialty and primary care clinics. As pharmacists integrate into PHM models such as the medical home, they must have the expertise to manage mental health disorders (including depression, dementia, and schizophrenia) as effectively as they manage hypertension and metabolic disorders. Medication nonadherence and untreated mental health symptoms guarantee increased visits to emergency rooms, productivity loss, and increased societal costs.
**Figure 1 (Population Health Management).** Forecast Panelists’ responses to the question, “How likely is it that the following will occur by the year 2021 in the geographic region where you work?”

1. At least 75% of health systems will have formal, assertive programs aimed at achieving the highest quality at the lowest cost for specific patient populations (e.g., oncology, diabetes, inflammatory and immune disorders) across the continuum of care.

2. At least 50% of health systems will significantly expand their nonmedical support services (e.g., transportation, health education, counseling, patient engagement) to address factors related to poor health.

3. At least 25% of health systems will be heavily engaged with community leaders in programs to manage the nonmedical/social determinants of health (e.g., environmental, cultural, and economic factors).

4. At least 50% of health systems will serve high-risk patients (e.g., those with cancer, congestive heart failure, HIV) through formal programs with community pharmacies (e.g., for adherence coaching, patient monitoring) that they own or are in partnership with.

5. Through the integration of behavioral health services with primary care, at least 25% of health systems will achieve significantly better outcomes related to comorbid conditions in patients who suffer from mental health disorders.

6. At least 75% of health systems will have a major campaign aimed at improving the prescribing of opioids.
STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Leverage the pharmacy enterprise to achieve **optimal medication adherence** by high-risk patients. In pursuit of this goal, include risk-stratification techniques, telehealth applications, collaborative practice in clinics and community pharmacies, refill authorization, compliance packaging, and bedside discharge-prescription delivery.

2. If your institution **self-insures** its employees for healthcare coverage, use that program to pilot innovative pharmacy services (such as targeted disease state management) that can be offered to other health-benefit plans.

3. Create a **pharmacy refill clinic** that allows physicians to optimize their time with patients while improving medication-use safety, adherence, and outcomes.

4. Identify and implement ways for the pharmacy enterprise to actively contribute to your health system’s **support services for high-risk patients**, including efforts in telehealth, patient education, and motivational interviewing for improving adherence.

5. Assertively incorporate a **behavioral health** component into pharmacist patient care, including chronic disease management and prescription assistance programs.

6. Ensure that your pharmacy enterprise is actively addressing the **opioid crisis** through means such as an opioid stewardship program, effective opioid-diversion prevention, support of prescription-medication disposal programs, and promotion of improved public access to naloxone.

THE OPIOID CRISIS

The United States is experiencing an unprecedented increase in morbidity and mortality associated with the misuse and abuse of opioids. This epidemic results in substantial treatment costs, decreased workplace performance, and devastating effects on families and communities. Congressional recognition of this crisis led to bipartisan passage of the Comprehensive Addiction and Recovery Act of 2016.

Two thirds of FPs predicted that within the next five years, it is very likely that at least 75% of health systems will have a major campaign aimed at improving the prescribing of opioids (Figure 1, item 6). These efforts will probably include opioid stewardship programs based on prescribing guidelines for chronic pain issued by the Centers for Disease Control and Prevention. It is important to partner with law enforcement, patient families, community pharmacies, and ambulance services to ensure naloxone access and expanded drug take-back programs.

**Diversion of controlled substances** can have a major financial impact on health systems, as reflected by the $2.3 million settlement paid to the United States by a major Boston institution to resolve drug diversion allegations. In addition to focusing on retail pharmacy chains and wholesalers, the Drug Enforcement Administration now targets health systems for diversion and compliance issues. A proactive health-system approach toward preventing diversion of controlled substances could integrate state-automated opioid reporting into electronic health records to monitor and improve prescriber compliance.

**Disclosures**

Dr. Knoer is a contributing editor of *AJHP*. He has declared no other potential conflicts of interest.

**References**


Health-System Operations: 
New Frontiers in Practice Change

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THE RISE OF INNOVATION

Health-system operations are 
changing rapidly in response to 
trends in healthcare payment, ambu-
laratory care, quality measurement, 
and patient empowerment. In this 
environment, many healthcare deliv-
ery organizations are devoting more 
resources to experimentation and 
innovation. They are seeking to iden-
tify approaches to care that offer the 
best value to patients, payers, and 
the health system and to develop new 
resources of revenue.

Nearly 70% of Forecast Panelists 
(FPs) predicted that it is at least some-
what likely over the next five years that 
25% of health systems will establish 
formal innovation centers for pursu-
ing breakthroughs in areas such as 
patient experience, clinical outcomes, 
operational efficiency, technology, 
and entrepreneurial revenue (Figure 1, 
item 1). Currently, innovation centers 
are concentrated in academic health 
centers. There might be opportunities 
for collaboration between such cen-
ters and community hospitals when 
their respective interests align and 
when multiple institutions bring nec-
essary scale to a project.1 2

REPURPOSING ACUTE CARE 
FACILITIES

FPs predicted that it is at least 
somewhat likely over the next five 
years that 50% of health systems will 
repurpose one or more acute care 
facilities to post–acute care facilities 
(Figure 1, item 2). Many hospitals have 
been successful in reducing admis-
sions and readmissions by establish-
ning ambulatory care surgery centers 
and quality-of-care initiatives,3 which 
suggests the need for pharmacy con-
tingency planning related to the po-
tential closure of inpatient units.

There is a trend in hospitals toward 
the use of “observation units,” where 
patients are put in a hold status pend-
ing diagnosis and determination of eli-
gerability for admission. It is essen-
tial for hospital pharmacy managers to 
understand reimbursement policies 
related to these patients.

EVIDENCE-BASED PRACTICE 
CHANGE

Nearly 80% of FPs predicted that it 
is at least somewhat likely that 75% 
of health systems will expand and ac-
celerate their analysis of how alterna-
tive interventions affect both cost per 
episode and quality of care (Figure 1, 
item 3). This prediction suggests that 
evidence-based practice change ini-
tiatives by health systems will be more 
forceful than in the past.

Although health systems are ac-
customed to measuring multiple 
processes, this has not necessarily 
translated into improved outcomes. 
Measurement has been driven by sub-
specialty care, whereas overall patient 
experience is shaped by both primary 
and specialty care provided by a vari-
ety of disciplines in various locations.

Donald Berwick4 of the Insti-
tute for Healthcare Improvement, a 
thought leader in healthcare qual-
ity, has called for a 50% reduction in 
mandatory measurements over three 
years, accelerated use of improvement 
science, and a shift in the business 
strategy of healthcare from revenue to 
quality. Implicit in Berwick’s recom-
mendations is more rigorous analysis 
of costs and quality associated with 
alternative approaches to patient care.

USE OF TELEHEALTH

A large majority of FPs predicted 
that in at least 25% of health systems, 
most high-cost chronic care patients 
will receive some of their care through 
telehealth applications (Figure 1, item 
4). Indeed, immense investments are 
being made in health-related applica-
tions on computer tablets and smart-
phones. Care via tablet and phones 
has the potential to transform care de-
livery, reducing costs associated with 
traditional office visits.

The advent of healthcare con-
sumerism changes the way in which 
patients choose to receive healthcare.5 
On the insurer side, technology will be 
designed to guide patient behaviors 
and reward patients for productive 
and healthful behaviors, including 
medication adherence. In the work-
place, employers will use telehealth 
to reduce absenteeism and promote 
healthy lifestyles. Finally, telehealth 
holds promise for giving patients in 
remote areas access to services previ-
ously unavailable.

ANTIMICROBIAL STEWARDSHIP

According to the Centers for Dis-
ease Control and Prevention (CDC), 
drug-resistant bacteria cause 23,000 
deaths and 2 million illnesses each year.6 
CDC estimates that 30–50% of 
antibiotics prescribed in the hospital 
are either inappropriate or unneces-
sary. FPs predicted that at least 50% of 
health systems will implement assertive 
behavior modification programs for 
both inpatients and outpa-

tients (Figure 1, item 5). Examples of behavior modification techniques
Figure 1 (Health-System Operations). Forecast Panelists’ responses to the question, “How likely is it that the following will occur by the year 2021 in the geographic region where you work?”

1. At least 25% of health systems will have formal innovation centers designed to pursue breakthroughs in areas such as patient experience, clinical outcomes, operational efficiency, technology, and revenue from entrepreneurial ventures and intellectual property.

2. At least 50% of health systems will repurpose one or more acute care facilities to post-acute care facilities.

3. At least 75% of health systems will expand and accelerate their analysis of how alternative interventions affect both cost per episode and quality of care.

4. In at least 25% of health systems, most high-cost chronic care patients will receive some of their ongoing care through telehealth applications.

5. At least 50% of health systems will implement assertive behavior modification programs for improving the prescribing of antimicrobials for both inpatients and outpatients.

6. The pharmacy enterprise in at least 50% of health systems will, through data analytics, measure its contribution to patient care outcomes.
include presenting alternatives within the computerized prescriber-order-entry system, requiring justification for therapy, conducting peer comparisons of prescribing habits, implementing automatic stop dates after three to seven days of therapy, using decision support to guide therapy, and tying compensation to antimicrobial prescribing metrics.7 Health systems will be challenged to recruit or develop pharmacists with appropriate expertise in antimicrobial stewardship, make available technology resources to build decision support, and advance the work of guideline development.

The Centers for Medicare and Medicaid Services has proposed requiring hospitals to have an antibiotic stewardship program led by individuals “qualified through education, training, experience, or certification.”9 Such a requirement would reinforce a leadership opportunity for pharmacists who specialize in antimicrobial therapy.

REAL-TIME DATA

FPs predicted that the pharmacy enterprise in at least 50% of health systems will measure its contribution to patient care outcomes through data analytics (Figure 1, item 6). Implied in this prediction is that real-time quantitative analytics will give the pharmacy enterprise a powerful tool for improving and assessing its contribution to patient care. Health system pharmacy leaders will need to ensure continuous availability of staff members who are adept at critical thinking and data interpretation.

Disclosures

The author has disclosed no potential conflicts of interest.

References


STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Investigate the nature of the innovation center at your health system or at other health systems in your region. Establish a relationship with the leaders of such centers and explore potential win-win collaborations related to opportunities or imperatives in the pharmacy enterprise.
2. Reach out to executive and clinical leaders at your health system and offer a pharmacy enterprise perspective on contingency planning for declining inpatient admissions. Give special attention to challenges and opportunities related to observation units and post-acute care facilities.
3. Assertively work toward transitioning from process-based quality measures to outcome measures. Structure outcome measures in a way that allows quantification of the impact of the pharmacy enterprise on patient care. Prepare pharmacists for the critical thinking skills needed to participate in real-time data-driven patient care changes.
4. Become engaged with your health system’s strategy on telehealth, particularly related to medication management issues including adherence. Develop competence in mobile device apps related to medication management and patient adherence.
5. Assertively pursue, through the pharmacy and therapeutics committee, the application of behavioral modification techniques as a means of improving antimicrobial use.
Health Information Technology: Integration, Patient Empowerment, and Security

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Evolving Focus of Attention

With the 2015 enactment of the Medicare Access and CHIP Reauthorization Act, beginning in 2018, there will be a shift from meaningful-use payment adjustments that emphasize use of an electronic health record (EHR) toward a merit-based incentive payment system (MIPS) that requires measurable improvements to care quality.\(^1\) Integration of health information technologies is essential in meeting MIPS goals. Continued advancements in technology and interoperability will expand healthcare device utilization in all care settings. At the same time, increased data security will require attention.

Integration of Health Information Technology

Consolidation of health systems has led to increased integration of health information technologies. A large majority (89%) of Forecast Panelists (FPs) predicted that at least half of health systems will significantly reorganize their information technology infrastructure to achieve true system-wide integration in the next five years (Figure 1, item 1). For pharmacy departments, such integration requires standardization of medication ordering, distribution, monitoring, documentation, and related processes. Without such standards, simple differences (e.g., with i.v. medication concentrations) will compromise integration by forcing the need for different order sets, smart pump libraries, and configurations of other automated systems. The integration of patients into the decision-making process for their care will be facilitated through EHR portals and secure messaging among care team members.\(^2\)

Advances in Medical Devices

Beyond patient EHR portals, ambulatory care data sources are evolving quickly. Wearable devices provide real-time data and encourage patient self-monitoring and therapy adherence. In addition, medication dispensing and reminder devices provide real-time medication adherence information. Sixty-five percent of FPs agreed that in at least 25% of health systems, health data generated by ambulatory care patients (such as from wearable devices) will be integrated into the patient’s EHR in real time (Figure 1, item 3). The design of patient-connected devices must be optimized, based on human factors and interoperability, to ensure safe and accurate diagnoses and appropriate treatments.\(^3,4\)

Achieving Interoperability

Integration of patient physiological data (e.g., vital signs) into the EHR through monitoring devices is commonplace. Opportunities abound to integrate these data into automated decision-support systems, but there is limited experience in achieving interoperability with medication administration devices. About three fourths of FPs predicted that at least 50% of hospitals will realize measurable improvements in patient outcomes and staff productivity through interoperability between EHRs and medical devices (Figure 1, item 2). This prediction may be too optimistic, with a recent study finding an error rate of 60% associated with the use of smart infusion pumps.\(^5\) Thus, caution must be exercised so that errors are not introduced or magnified in the pursuit of EHR-to-pump interoperability. Careful design of i.v. medication ordering and administration workflows is needed to address multiple pump-use variables, including medication concentrations, weight-based dosing, dose rounding, loading dose and bolus administration, titrations, and pump setup. EHR-to-device interoperability can support improved patient care but requires accurate configuration and coordination of all components.

Supporting Patient Care Plans

Most EHR systems support the creation and sharing of care plans, but updating by the patient and all care team members is not universally available. Almost two thirds of FPs predicted that patients in at least 25% of health systems within five years will have a single plan of care that is readily accessible at all points of care and can be updated by all healthcare professionals and the patient (Figure 1, item 4). Electronic care plans should support a team-based consensus process that includes the patient and provides access appropriate to the caregiver or patient. Pharmacists should be incorporated into the care planning process.\(^6\)

Transparency Through Provider Report Cards

Patient empowerment requires the provision of more information to patients to support their decision-making process. Public entities, payers, and employers will create elec-
Figure 1 (Health Information Technology). Forecast Panelists’ responses to the question, “How likely is it that the following will occur by the year 2021 in the geographic region where you work?”

1. At least 50% of health systems will have significantly reorganized their information technology infrastructure (including electronic health records) to achieve true systemwide integration.

2. In at least 50% of hospitals, interoperability between electronic health records and medical devices (e.g., infusion pumps, physiological monitoring systems) will lead to measurable improvements in patient outcomes and staff productivity.

3. In at least 25% of health systems, health data generated by ambulatory patients (such as from wearable devices) will be integrated into the patient’s electronic health record in real time.

4. Patients in at least 25% of health systems will have a single plan of care that is readily accessible at all points of care and can be updated by all healthcare professionals in the system and by the patient.

5. At least 10% of health systems will be the victim of a major cyberattack or unauthorized information system access that seriously compromises patient safety.

6. At least 50% of healthcare consumers will use an online provider report card to help decide where to seek medical care.
1. Assertively pursue **systemwide integration** of medication-related information technology using sound project management techniques (e.g., clear goals, accountability, deadlines). Establish system-wide standards for safety-related facets of medication use (e.g., i.v. drug concentrations) and workflow.

2. Through the pharmacy and therapeutics committee, establish policies that clearly assign responsibilities for **i.v. pump configuration, user training, support, and maintenance**. Ensure that the formulary and all medication-use processes are consistent with the i.v. pump configuration.

3. Ensure that pharmacy has a voice in your health system’s **preacquisition assessment of devices** that would affect medication use and monitoring. In those assessments, take into account human factors and interoperability with electronic health records.

4. If your health system has **centralized patient care plans**, ensure clarity in the process for pharmacists accessing and entering information into those plans.

5. Give priority to reviewing the **access security** of all pharmacy-managed technology systems. Test downtime workflow processes and procedures for each system, and make improvements as indicated.

6. Identify the pharmacy-specific metrics displayed (or likely to be displayed) on your health system’s **provider report card** and develop a continuous quality-improvement plan for those measures.

## MAINTAINING SECURITY

Healthcare data integration requires enhanced data access, which can increase susceptibility to hacking. Cyberattacks on health-system computers have occurred and can be costly due to downtime and the loss or release of patient data. Indeed, 79% of FPs predicted that at least 10% of health systems will be the victims of a major cyberattack or unauthorized information system access that seriously compromises patient safety (Figure 1, item 5). Electronic systems across the organization must be evaluated to ensure that they are secure from unauthorized access, are properly backed up, and have appropriately tested downtime processes.

## Disclosures

The author has declared no potential conflicts of interest.

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Therapeutics: Changing Practices to Meet New Demands

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INNOVATIVE PHARMACEUTICALS

Food and Drug Administration (FDA) approval of new pharmaceuticals continues at a record pace. The previous record of 41 approvals in 2014 was surpassed with 45 approvals in 2015. The innovative and often specialized nature of these pharmaceuticals will shape future pharmacy practice in many ways, including through their convergence with precision medicine. It is imperative for health-system pharmacy leaders to assess the cost of these agents in relation to their incremental benefit and increased administrative encumbrance.

PRECISION MEDICINE

Precision medicine focuses on maximizing disease treatment effectiveness and prevention by considering individual variability in genes, the environment, and lifestyle. The federal government’s Precision Medicine Initiative, which has attracted substantial public interest, seeks to enroll more than 1 million participants. Eighty percent of Forecast Panelists (FPs) predicted that over the next five years, it is at least somewhat likely that genetic information, environmental and lifestyle history, and data from monitoring devices will be used to individualize treatment plans (Figure 1, item 1) for at least 10% of patients. Genomics is a core component of precision medicine, and pharmacists should facilitate the implementation of pharmacogenomics into patient care.

Precision medicine also leverages the connection of various technologies to aggregate other patient-specific information to individualize treatment (e.g., automating glucose monitor data into the electronic health record), and it may ultimately improve population health.

The precision medicine paradigm and changes in FDA approval processes may result in lowering the strength of evidence required for new drug approvals. Eighty percent of FPs predicted that over the next five years, at least 25% of new specialty agents will be approved with limited clinical evidence (Figure 1, item 2), which may profoundly affect pharmacy and therapeutics committees and other medication-use policymakers.

CHALLENGES OF THERAPEUTIC ADVANCEMENT

Health systems might be required to adopt (as a condition for remuneration) payer-specific treatment pathways for costly pharmaceuticals. This trend will accelerate as payers increase their focus on site-of-care optimization and total cost of care (considering both medical and pharmacy spends). Consequently, administration of some specialized therapies will move from the hospital to home or physician office settings, influenced by payer-specific treatment pathways, with differential payments based on the site of administration and pathway adherence.

A majority of FPs (88%) predicted that over the next five years, at least 75% of health systems will develop treatment algorithms to manage the use of specialty medications across the continuum of care (Figure 1, item 3). Provider and payer treatment pathways may potentially misalign because of conflicts between evidence-based and cost-based considerations. In addition, manufacturer or regulator restrictions to medication access may limit the ability of health systems to move patients to preferred sites of care or integrate their care with payer- or health-system-preferred pathways.

Nearly all FPs (97%) predicted that over the next five years, at least 25% of health systems will enter into formal agreements with payers designed to enhance the cost-effective use of specialty medications (Figure 1, item 4). Pharmacy practice leaders must engage in payer negotiations to ensure full consideration of the complexities of treatment pathways. Health systems can retain a voice in treatment protocols and potentially generate additional revenue by investing resources in the management of pathways and shifting appropriate treatment to lower-cost sites of care. While fixed-payment structures for clinic-based therapies could incentivize administration of a product in the patient’s home or an alternative site without direct supervision of medication administration, some health systems might find this unacceptable if such administration is viewed as compromising patient adherence and outcomes.

FACILITY AND PERSONNEL CONSIDERATIONS

Therapeutic advances may create an incremental burden on health systems to store, prepare, manage, and administer innovative agents. Most FPs (94%) predicted that over the next five years, at least 10% of new medications used in health sys-

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Figure 1 (Therapeutics). Forecast Panelists’ responses to the question, “How likely is it that the following will occur by the year 2021 in the geographic region where you work?”

1. For at least 10% of patients, clinicians will use a combination of genomic information, lifestyle/environmental history, and information collected from medical devices (e.g., wearable or mobile applications) to individualize treatment plans.

2. At least 25% of specialty medications will be approved for marketing based on limited evidence (e.g., clinical trials with small sample sizes, narrowly defined target populations, preliminary clinical findings).

3. At least 75% of health systems will develop disease-specific treatment algorithms to manage the use of specialty medications across the patient’s continuum of care.

4. At least 25% of health systems will have a formal agreement with a payer designed to enhance cost-effective use of specialty medications.

5. At least 10% of new medications used in health systems will have unique requirements for storage, preparation, administration, or monitoring that necessitate distinct workflow processes.

6. At least three new antimicrobial agents will be approved by the Food and Drug Administration to treat infections that are resistant to currently available therapies.
tems will require a differential level of product management (Figure 1, item 5). Some immunotherapies and products with prolonged or complex preparations (e.g., selected liposomal and viral vector therapeutics) will complicate long-term facility and personnel planning. Health systems may need to invest resources to support access to these unique products. Organizations with the capacity to conduct clinical research on these therapies will be uniquely positioned to rapidly adopt them. Some therapeutics will be available only at health systems that have the infrastructure to handle them.

NEW ANTIMICROBIALS

Resistance to existing antimicrobials continues to emerge: new agents present one solution to this problem. With 80% agreement that at least three new antimicrobial agents will be approved by FDA within the next five years to treat infections currently resistant to available therapies, FPs were optimistic that the drug pipeline will be a source of new tools to fight challenging infections (Figure 1, item 6). This view should be tempered because some public health authorities consider the current situation dire enough to promote acceleration of the antimicrobial pipeline. For example, a new international public-private partnership with over $390 million in funding was formed in 2016 to prompt antimicrobial development.8

Disclosures

Dr. Hoffman is a member of the AJHP Editorial Board. The authors have declared no other potential conflicts of interest.

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STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Actively evaluate your health system’s opportunities to incorporate precision medicine approaches in patient care, with the aim of improving therapeutic selection, dosing, and patient outcomes.
2. Actively guide the pharmacy and therapeutics committee’s assessment of new products that were approved for marketing with limited clinical evidence. Assertively advocate a rational therapy perspective in cost management discussions about such products with third-party payers and health plans.
3. Actively support your health system’s executives in (a) assessing the risks and benefits of including medications in episode-of-care payment agreements and (b) negotiating alignment of health-system goals and payer goals in managing the cost of new medications.
4. Create an interprofessional task force to inventory the health system’s existing third-party payer treatment pathways for the purposes of (a) comparing the pathways to current evidence-based practices, (b) monitoring pathway adherence, (c) evaluating patient outcomes, and (d) when indicated, pursuing modifications to pathways.
5. Critically evaluate the site of care for high-cost medication administration, and transition patients to alternative sites of care when appropriate.
6. Strengthen health-system processes for reviewing antimicrobial resistance, utilization trends, and (when indicated) prescribing remediation, recognizing that near-term development of new antimicrobials might not solve the problem of resistance to existing agents.
Managing Medication Costs: Focusing on Value

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ESCALATING DRUG EXPENDITURES

The cost of specialty, oncology, and generic medications has been increasing dramatically over the past few years; from 2014 to 2015, total drug expenditures in the United States increased by 11.7%.¹ The largest driver of increasing drug expenditures is the shift toward specialty pharmacy products. Specialty drug costs are anticipated to represent 50% of total commercially insured drug costs by 2018. With an annual cost of $100,000 per patient per year for new cancer drugs, oncology is an area of focus for payers, health systems, and patients.² It is anticipated that oncology drug costs will rise 7.5–10.5% annually through 2020, fueled by innovative molecules (such as immunotherapies) and narrowing of the population in which new drugs are used.³

Also driving higher drug expenditures is the consolidation of manufacturers of traditionally low-cost generic medications; examples of egregious price increases have been widely reported in the news media. Further, patient assistance programs (or “pre-scription drug coupons”) for brand-name drugs contribute to increased drug expenditures.⁴ National discussions by providers, payers, and health policymakers have seriously considered various solutions for mitigating drug costs, with the ultimate goal of allowing patients to access appropriate and necessary treatments. Some of these strategies, such as bundled and alternative payment models, will increase pressure on health systems to manage medication costs.

MITIGATING COSTS

In a capitated reimbursement model, pharmacists have traditionally encouraged the use of lower-cost (but equally effective) medications to mitigate drug costs; this approach is more common in inpatient care than in ambulatory care (which operates under fee-for-service reimbursement). Ninety-two percent of Forecast Panelists (FPs) agreed that at least half of health systems, within the next five years, will require clinicians to first try low-cost treatments before allowing the use of high-cost therapies (Figure 1, item 5). With respect to specialty products administered in the outpatient setting, such action is likely a response to utilization management strategies imposed by payers. Payment models are changing the status of outpatient medications from being a source of revenue for the health system to being a cost that is not directly reimbursed.

Because of dramatic increases in the cost of specialty drugs (including chemotherapy), payers and providers increasingly scrutinize the clinical outcomes of these medications relative to their costs, including out-of-pocket costs to the patient. Notably, 70% of FPs predicted that in at least half of health systems, oncology treatment decisions over the next five years will take into account the patient’s financial obligations for the regimen (Figure 1, item 6). Integration of a “financial toxicity” assessment at the point of prescribing has been advocated in recent years, and tools such as the Value Framework of the American Society of Clinical Oncology and the Evidence Blocks of the National Comprehensive Cancer Network can facilitate a more comprehensive evaluation of treatment that incorporates efficacy, toxicity, and costs.⁵

ASSESSING VALUE

Several tools are available to assess a medication’s value (i.e., the clinical benefits in context with the associated costs), and some propose to incorporate value-based pricing into payment policies.⁶ FP responses to questions asking about the use of value-based approaches for determining medication utilization and payment policies were optimistic. Almost three fourths (72%) of FPs believed that over the next five years, at least half of health systems will apply the concept of “incremental value” when making formulary decisions (Figure 1, item 1). Incremental value can be objectively assessed by conducting or reviewing pharmacoeconomic analyses, in which a medication is evaluated not only whether there is an improvement in the outcome of interest but also how much it costs to obtain the benefit. Currently, the incremental cost-effectiveness ratio, based on a determination of cost per quality-adjusted life-year, is commonly used, especially for anticancer agents.⁷

Most FPs (82%) thought that it was at least somewhat likely over the next five years that expensive new medications will be reimbursed based on a pharmacy benefit manager’s assessment of value rather than on a
Figure 1 (Managing Medication Costs). Forecast Panelists’ responses to the question, “How likely is it that the following will occur by the year 2021 in the geographic region where you work?”

1. At least 50% of health systems will apply the concept of “incremental value” in formulary decisions and clinical guidelines through assessment of pharmacoeconomic data (i.e., cost per quality-adjusted life-years and incremental cost-effectiveness ratios).

2. At least 25% of health systems will have risk-sharing agreements with biopharmaceutical manufacturers that call for price discounts if a product’s performance fails to meet specified targets.

3. At least two major pharmacy benefit management companies will reimburse expensive new medications only up to the limit of their own (not the manufacturer’s) value-based pricing calculations.

4. At least 25% of health systems will be able to document that their formal programs for managing patients receiving specialty medications significantly improve patients’ disease-related outcomes.

5. At least 50% of health systems will require clinicians to first try low-cost treatments (when such treatments exist) before allowing the use of a new high-cost therapy.

6. In at least 50% of health systems, oncology treatment decisions will take into account the patient’s financial obligations for the treatment regimen.
price derived from the manufacturer’s value calculation (Figure 1, item 3). It is important to note that these assessments already occur at the national level in the United Kingdom through the National Institute for Health and Care Excellence, wherein the agency provides guidance about whether the societal cost of a medication is justified through its benefits.

The determination of a medication’s value will require the analysis of real-world clinical outcomes. According to 85% of FPs, it is at least somewhat likely over the next five years that up to one fourth of health systems will be able to document that their specialty medication management programs significantly improve patient outcomes (Figure 1, item 4).

RISK SHARING

In accordance with the interest in evaluating the value of medications, prescription benefit management companies and payers are beginning to hold pharmaceutical companies and payers to account for the cost of innovative new therapies. However, over half of FPs (52%) believed that risk-sharing agreements between health systems and biopharmaceutical companies are unlikely to occur within the next five years (Figure 1, item 2). This sentiment probably reflects health systems’ inability to collect the data necessary for implementing this type of program.

Disclosures

The authors have declared no potential conflicts of interest.

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Regulatory Requirements: Proliferation of Complex Demands

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A HIGHLY REGULATED FIELD

Healthcare is a highly regulated industry—encompassing devices, pharmaceuticals, other healthcare products, and the provision of and payment for patient care services. The breadth of regulations that apply to healthcare organizations is little understood by the general public and many who work in the healthcare field.

Federal regulations that affect pharmacy practice, which emanate from several cabinet-level departments, total more than 46 different sets of requirements. Many state regulations affect daily practice and sometimes conflict with federal requirements. There is a high level of concern among pharmacy practice leaders about the burden of compliance with the growing array of complex legal requirements.

INFRASTRUCTURE FOR REGULATORY COMPLIANCE

Forecast Panelists (FPs) were asked about critical infrastructure needs to meet proliferating regulations; about four fifths predicted that it is at least somewhat likely that there will be centralized regulatory compliance staff in at least 25% of health systems over the next five years (Figure 1, item 1). Centralization may challenge pharmacy practice leaders to ensure that pharmacy-specific issues receive appropriate attention among the health system’s many compliance priorities.

A majority of FPs predicted that over the next five years, the time spent by pharmacy personnel on regulatory compliance will increase by at least 25% (Figure 1, item 2); this percentage is probably a conservative estimate. Daily workflow must encompass regulatory compliance and accountability; all pharmacy staff will require increased training (with documentation to verify competence).

Organizational leaders must understand the increased resources required to meet new requirements in United States Pharmacopeia (USP) revised draft chapter 7971 and chapter 8000 that affect multiple parts of the health system. Previous USP standards focused mainly on activities within the purview of the pharmacy department, and health-system executives could look to the chief pharmacist for compliance. Newer USP requirements have a broader reach and must be communicated throughout the organization.

Noncompliance with regulations or standards poses significant risk to patients and health systems. For instance, hundreds of patients were infected and 64 died from the use of contaminated injections whose preparation did not conform to pharmacy compounding standards.3 One hospital paid a multimillion dollar settlement for alleged failure to meet controlled substances handling regulations.3 Noncompliance with 340B Drug Pricing Program rules can jeopardize an entire ambulatory care enterprise. Antimicrobial stewardship continues to be important in health systems; 60% of FPs predicted that it is very likely that 75% or more of health systems will have a pharmacist who specializes in sterile compounding oversee the quality and safety of this activity throughout the health system (Figure 1, item 3).3 Because of the dearth of pharmacist specialists in sterile compounding, health systems would be challenged to comply with the completely revised and more complex draft USP chapter 797 standards.3 Food and Drug Administration (FDA) draft compounding regulations would require significant effort for compliance, particularly in multihospital health systems with centralized compounding.3 If the draft guidance is adopted, health systems would select between establishing their own registered 503B facility or purchasing from a commercial 503B compounding. Few data are available on the quality track record of 503B compounders; FDA’s website posts warning letters and inspection reports but nothing about resolving quality issues.5

ORGANIZATIONAL COMMITMENT TO STEWARDSHIP

The concept of stewardship has recently been applied to pain management in addition to antimicrobial use. About three fourths of FPs predicted that over the next five years, at least 25% of health systems will have one or more pharmacists dedicated to appropriate control and use of pain medications, especially opioids (Figure 1, item 4). Clinical and regulatory management concepts must be merged, and interprofessional collaboration (including executive leadership, pharmacy, anesthesiology, nursing, oncology, and palliative care) is essential for preventing misuse and diversion of controlled substances.

RETHINKING COMPOUNDING

Eighty-three percent of FPs predicted that over the next five years, 25% of health systems will have a pharmacist who specializes in sterile compounding oversee the quality and safety of this activity throughout the health system (Figure 1, item 3).3 Because of the dearth of pharmacist specialists in sterile compounding, health systems would be challenged to comply with the completely revised and more complex draft USP chapter 797 standards.3 Food and Drug Administration (FDA) draft compounding regulations would require significant effort for compliance, particularly in multihospital health systems with centralized compounding.3 If the draft guidance is adopted, health systems would select between establishing their own registered 503B facility or purchasing from a commercial 503B compounding. Few data are available on the quality track record of 503B compounders; FDA’s website posts warning letters and inspection reports but nothing about resolving quality issues.5

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Figure 1 (Regulatory Requirements). Forecast Panelists’ responses to the question, “How likely is it that the following will occur by the year 2021 in the geographic region where you work?”

1. At least 25% of health systems will have a centralized multidisciplinary compliance staff to ensure consistent regulatory compliance throughout the system.

2. The amount of time that health-system pharmacy personnel devote to regulatory compliance will increase by at least 25%.

3. In at least 25% of health systems, a pharmacist who specializes in sterile compounding will oversee the quality and safety of this activity throughout the health system.

4. At least 25% of health systems will have at least one pharmacist position devoted to appropriate control and use of pain medications, especially opioids.

5. At least 75% of health systems will have at least one pharmacist position devoted to antimicrobial stewardship for both inpatients and outpatients.

6. State boards of pharmacy will assertively move toward a high level of nationwide uniformity in the regulation of health-system pharmacy practice, including the training and duties of pharmacy technicians.
systems will have at least one pharmacist position devoted to inpatient and outpatient antimicrobial stewardship over the next five years (Figure 1, item 5). While substantial progress has been made in improving inpatient antimicrobial use, more attention should be given to this issue in ambulatory care.²

NEED FOR REGULATORY HARMONIZATION

Many state requirements conflict with federal laws and rules (especially related to pharmacy compounding), and there is large variability among states in the regulation of pharmacy technicians. This discordance inhibits uniform safe practices in health systems, particularly when they operate in multiple states. However, only 24% of FP respondents predicted that it is very likely that state boards of pharmacy will assertively move toward a high level of nationwide uniformity in the regulation of health-system pharmacy practice over the next five years (Figure 1, item 6). This pessimistic outlook probably stems from perceptions of wide variability in the politics, culture, and priorities of boards of pharmacy.

Disclosures

Dr. Tyler and Dr. Fox are members of the AJHP Editorial Board. The authors have declared no other potential conflicts of interest.

References

Pharmacy Work Force: Shifts in Roles, Responsibilities, and Training

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OPPORTUNITIES TO OPTIMIZE SAFE MEDICATION USE

There will be significant shifts in the pharmacy work force in the coming years, most notably in the roles, training, and distribution of personnel. Pharmacy leaders should anticipate these changes and take action to ensure high-quality patient care, especially as it relates to the safe use of medications.

SHIFT IN ROLES

Patient care roles of pharmacists have been evolving for many years and will continue to do so in the foreseeable future. The allocation of pharmacists’ time will continue to move from dispensing and distributive tasks to clinical activities. As part of this transition, pharmacists in many states have been granted authority to modify medication therapy and order medication-related laboratory tests. These changes, coupled with a shortage of primary care physicians, will result in pharmacists routinely having prescribing authority in health systems. Thirty-five percent of Forecast Panelists (FPs) agreed that it is very likely that pharmacists in at least 75% of health systems will have prescribing authority within the next five years (Figure 1, item 1).

Leadership and management positions in health-system pharmacy departments have historically been held primarily by pharmacists. Many pharmacists are promoted into management roles after proving themselves in frontline practice and may or may not have formal management training. As pharmacy departments become more complex and operational budgets grow, there will likely be more management positions held by nonpharmacists who have training in business, accounting, logistics, and other areas. Fifty-eight percent of FPs felt that it is very likely or somewhat likely over the next five years that at least 10% of health systems will hire a nonpharmacist professional manager to assist the chief pharmacist in high-stakes management functions (Figure 1, item 2). This broadened view of manager qualifications will enable new approaches to developing a high-performance pharmacy enterprise.

CHANGES IN PHARMACY EDUCATION

There has been significant growth in the number of new pharmacy graduates in recent years, nearly doubling between 2001 (7,000) and 2015 (13,994). Reflecting growing concern about future job prospects for pharmacists, the number of applicants for admission to pharmacy schools appears to have plateaued. Sixty-one percent of FPs agreed that it is very likely or somewhat likely that there will be a reduction of at least 10% in overall enrollment in Pharm.D. programs over the next five years (Figure 1, item 3). If this prediction proves to be accurate, the likelihood of a surplus of pharmacists will be reduced.

Expansion of Pharm.D. education has created a greater need for pharmacy practice rotations for both introductory and advanced experiential education. Although hospitals have substantial unutilized capacity for pharmacy student rotations, many have designed educationally sound student experiences that yield a level of benefits to the institution that compensates for the staff time and effort devoted to experiential teaching. However, only 20% of FPs predicted that it is very likely that most health systems will have a formal plan within the next five years for achieving a cost–benefit balance in advanced experiential education; 38% felt that this is somewhat likely (Figure 1, item 4).

When building pharmacy practice models for health systems, forethought should be given to how students will be incorporated as productive members of the pharmacy team. Students should not simply be layered on top of existing operations without clearly defining how they will contribute to the work of the pharmacy department.

PHARMACY TECHNICIANS IN A NEW LIGHT

Pharmacy technicians constitute a large portion of the overall pharmacy work force; in hospitals, pharmacy technicians are similar in number to pharmacists. Pharmacy technician positions have often been at just one level, limiting opportunities for advancement in responsibilities and salaries. Hence, many technicians view their work as an interim position—they do not invest in training and often do not stay in the role for a long period of time. Some pharmacy enterprises have seen the value of developing technician career ladders and similar structures that provide opportunities for growth and the ability to maintain qualified individuals in these roles. Thirty percent of FPs predicted that it is very likely that at least half of health systems will have formal career lad-
**Figure 1 (Pharmacy Work Force).** Forecast Panelists’ responses to the question, “How likely is it that the following will occur by the year 2021 in the geographic region where you work?”

1. Some pharmacists in at least 75% of health systems will have prescribing authority (formally approved by the system) for both inpatients and discharged patients.

2. At least 10% of health systems will hire a nonpharmacist professional manager to assist the chief pharmacist in high-stakes management functions.

3. Overall enrollment in Pharm.D. education will decline by at least 10%.

4. At least 50% of health systems will have a formal plan for achieving an appropriate balance between (a) applying valid teaching methods in advanced pharmacy practice experience (APPE) education and (b) the productivity of Pharm.D. students on APPE rotations.

5. At least 50% of health systems will have formal career ladders for pharmacy technicians.

6. In at least 50% of health systems, specialized pharmacy technicians will assist pharmacists in providing patient care (e.g., by conducting medication reconciliation, taking medication histories, extracting data from health records).
STRATEGIC RECOMMENDATIONS FOR PRACTICE LEADERS

1. Identify the specific clinical knowledge, skills, and abilities that will be required of your pharmacist staff within the next several years (taking into account trends in therapeutics and healthcare delivery and financing). Formulate a staff development and recruitment plan to meet those needs.

2. Objectively assess the evolving requirements for management skills in your pharmacy enterprise and impartially evaluate to what extent, if any, those requirements could be met by nonpharmacist managers. Adjust your staff development and recruitment plans accordingly.

3. Give strategic priority to professionalizing the pharmacy technician staff, identifying and acting on opportunities for job enrichment, career advancement, salary alignment with expanded responsibility, and fostering career longevity.

4. Actively pursue opportunities to support expanded accredited pharmacy technician education and training in your region.

Pharmacy technicians routinely perform tasks related to medication preparation and distribution. In recent years, many hospitals have begun to utilize pharmacy technicians in more specialized or nontraditional roles.\(^1\) FPs predicted that these roles will grow in the future; 86% thought it was very likely or somewhat likely that at least half of health systems will employ pharmacy technicians in specialized roles assisting pharmacist in patient care over the next five years (Figure 1, item 6).

As pharmacy technicians take on expanded responsibilities and work with less direct supervision, there will be a more pressing need for them to have completed standardized, comprehensive education and training followed by certification that demonstrates competence. Currently, only about 18% of pharmacy technicians in hospitals have completed nationally accredited education and training; about 78% are certified by the Pharmacy Technician Certification Board.\(^1\) To help foster the expansion of standardized technician education and training, pharmacy practice leaders should support local accredited technician educational programs and make their practice sites available for experiential training.

Disclosures
Mr. Scheckelhoff is Senior Vice President, Office of Practice Advancement, ASHP. The author has declared no other potential conflicts of interest.

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Presidential Election: Republican Donald J. Trump Is the Surprising Victor

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CHANGING OF THE GUARD

Contrary to nearly all pollster predictions, celebrity businessman Donald J. Trump won the electoral vote in November and will become the new president of the United States. The Trump administration will have the benefit of Republican majorities in both the House of Representatives and Senate, though the number of Democratic and Independent senators is sufficient to block legislation that requires 60 votes to end a debate. Big corporations, including the biopharmaceutical industry, will continue to have a huge influence on congressional actions, executive orders, and agency regulations, and this will have important implications for health-system pharmacy.

HEALTHCARE REFORM

The majority (86%) of Forecast Panelists (FPs) predicted that the new president will propose to Congress an extensive revision or replacement of the Patient Protection and Affordable Care Act (ACA) (Figure 1, item 1). Some changes in the law (but not an outright repeal) could be passed through the budget reconciliation process, which requires only a majority vote in the Senate. As has been predicted elsewhere, Republicans are likely to reduce the scope of the ACA, pull back on enrollment mandates, decrease enrollment subsidies, and give more authority to states, even if that leads to less insurance coverage.1

Regardless of how the Washington politics of healthcare plays out, new healthcare technology and ever-rising costs will stimulate health systems to continually pursue transformational changes intended to improve patient outcomes and institutional sustainability.2 Pharmacy practice leaders must contribute to these efforts.

PROVIDER STATUS FOR PHARMACISTS

Most FPs (62%) predicted that President Trump is unlikely to support federal provider status for pharmacists (Figure 1, item 2). ASHP and other members of the broad-based pharmacy coalition that is pushing for provider status were very successful in signing up legislative sponsors during the 114th Congress.3 The best hope for gaining passage of this legislation has been to insert the bill into another health-related measure. Provider-status legislation certainly will be reintroduced in the new Congress, and pharmacy forces will continue to work hard for its passage. Further, the scope of practice of pharmacists will continue to be expanded by states and individual health systems.

ACTION ON DRUG PRICES

Although both Democratic voters (80%) and Republican voters (68%) believe that Medicare should be allowed to negotiate lower drug prices,1 FPs were split (54% likely, 46% unlikely) on whether the new president will seek this authority from Congress (Figure 1, item 3). It seems unlikely that the Trump administration will move in this direction given the biopharmaceutical industry’s opposition. It is worth noting that a California proposition to require state agencies to pay no more than the U.S. Department of Veterans Affairs pays for prescription drugs was defeated by a margin of 54% to 46% after intense opposition by “big pharma.”4

Two thirds of FPs indicated that President Trump is unlikely to seek involvement of the federal government in influencing the pricing of new pharmaceuticals (Figure 1, item 4). In a similar vein, 62% of FPs said that it is unlikely that the new administration will allow importation of drug products as a means of increasing price competition (Figure 1, item 5).

Some of the market-based solutions advocated by the Campaign for Sustainable Rx Pricing,5 of which ASHP is a member, could gain bipartisan support. Examples include speeding the approval of new generics and additional entrants into therapeutic areas where no competitors exist.

STATE BALLOT INITIATIVES

November ballot initiatives in several states supported legalization of restraints on marijuana, in sharp contrast to the position of the federal government.6 Legalization of recreational marijuana was approved in California, Maine, Massachusetts, and Nevada. Medical use of marijuana was approved or expanded in four conservative states—Arkansas, Florida, Montana, and North Dakota. More than one in five citizens now lives in a state that has legalized the recreational use of marijuana. Eventually, the federal government will probably accede to popular sentiment on marijuana—at least with respect to medical use—while attempting to apply lessons learned from the states.7 However, 78% of FPs predicted that it is unlikely that the new president will support such a change (Figure 1, item 6).
Figure 1 (Presidential Election). Forecast Panelists’ responses to the question, “How likely is it that the following will occur during the administration of the new president if the Republican candidate is elected?” (This part of the Forecast survey was conducted in mid-August 2016 after the two major political parties concluded their presidential nominating conventions.)

1. The new president will propose to Congress an extensive revision or replacement of the Patient Protection and Affordable Care Act.

2. The new president will actively support federal provider status for pharmacists.

3. The new president will seek congressional authority to negotiate drug prices for federal health programs (e.g., Medicare, Medicaid).

4. The new president will seek congressional approval of a federal mechanism to influence the pricing of new pharmaceuticals, drawing on the experience of countries such as the United Kingdom, Canada, and Australia.

5. The new president will propose legislation that allows the importation of quality-assured pharmaceuticals as a means of increasing price competition.

6. The new president will direct the Drug Enforcement Administration to reclassify marijuana from Schedule I to Schedule II under the Controlled Substances Act.
6), which seems plausible because of the law-and-order views held by his key advisers. Many health-system pharmacists in states that sanction recreational or medical use of marijuana have developed policies on the associated patient care issues.

In another citizen initiative important to pharmacists, Colorado voters approved, by a 30-point margin, physician-assisted suicide for terminally ill persons.\(^6\) California, Montana, Oregon, Vermont, and Washington also allow physician aid in dying.

THE WAY FORWARD

Given the divisiveness of the presidential election, the start of the new administration will be contentious on many levels. It is important for citizens across the political spectrum to speak up if new policies or proposals seem out of tune with the best interests of the nation as a whole. Pharmacists, as persons trained in reason and critical thinking, have a citizenship responsibility in this regard that complements their work in pursuing wellness, healing, and fairness.

Disclosures

Mr. Zellmer is a contributing editor for *AJHP*. The authors have declared no other potential conflicts of interest.

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