Student Pharmacy Forecast Workshop: *Trends that Will Shape Your Future*

Presented by ASHP’s Section of Pharmacy Practice Leaders
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- Conner Ball, PharmD, MBA
  HSPAL Resident
  University of Michigan Health – Ann Arbor, MI

- Mary Jane Braham, PharmD
  HSPAL Resident
  WVU Medicine – Morgantown, WV

- Michelle Carrasquillo, PharmD, MS
  Pharmacy Manager
  BayCare Health System – Lutz, FL

- Nicholas Senne, PharmD
  HSPAL Resident
  Abbott Northwestern Hospital/Allina Health – Minneapolis, MN

- Ashley Sidebottom, PharmD, MBA
  HSPAL Resident
  Baylor St. Luke’s Medical Center – Houston, TX
Objectives

1. Introduce and provide background on the Pharmacy Forecast Report
2. Discuss survey questions and results from each domain of the report
3. Apply key trends to case study activities
To improve the effectiveness of leaders in hospital and health-system pharmacy practice

ASHP Foundation.
http://www.ashpfoundation.org/MainMenuCategories/CenterForPharmacyLeadership/Pharmacy-Forecast (accessed 2023 Mar 03).
Pharmacy Forecast: Overview

- Predicts developments in general themes likely to challenge pharmacy leaders in hospitals and health-systems over the coming 5 years
- Presents authoritative, actionable strategic recommendations to pharmacy practice leaders
- Reports survey results of trend watchers and leaders in health-system pharmacy and analyzes predicted trends
- Trend reports from ASHP Research and Education Foundation’s Center for Health-System Pharmacy Leadership

Pharmacy Forecast: Methodology

Appointed Forecast Panel (FP) completes a questionnaire

Survey asks likelihood of certain trends occurring over next five years

Experts recruited to write a brief chapter for each domain

Each chapter presents the survey results, authors assessment of predictions and strategic recommendations

# Pharmacy Forecast: Representation

**Table 1.** Forecast Survey Responses by Region

<table>
<thead>
<tr>
<th>Region</th>
<th>% Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England (ME, NH, VT, MA, RI, and CT)</td>
<td>7</td>
</tr>
<tr>
<td>Mid-Atlantic (DE, NY, NJ, and PA)</td>
<td>9</td>
</tr>
<tr>
<td>South Atlantic (MD, DC, VA, WV, NC, SC, GA, and FL)</td>
<td>16</td>
</tr>
<tr>
<td>Southeast (KY, TN, AL, and MS)</td>
<td>9</td>
</tr>
<tr>
<td>Great Lakes (OH, IN, IL, MI, and WI)</td>
<td>21</td>
</tr>
<tr>
<td>Western Plains (MN, IA, MO, ND, SD, NE, and KS)</td>
<td>13</td>
</tr>
<tr>
<td>Middle South (AR, LA, OK, and TX)</td>
<td>6</td>
</tr>
<tr>
<td>Mountain (MT, ID, WY, CO, NM, AZ, UT, and NV)</td>
<td>10</td>
</tr>
<tr>
<td>Pacific (WA, OR, CA, AK, and HI)</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
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</tbody>
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Plus 2 respondents from Puerto Rico

2023 Forecast Themes

1. COVID-19: Lessons Learned Across the Pandemic
2. Regaining Trust in Public Health
3. Addressing Health Disparities in Health Systems: From Awareness to Action
4. Patient-Centric Healthcare Delivery
5. Reliance on Technology: Opportunities and Risk
6. Strengthening the Foundation of the Pharmacy Enterprise: Workforce Planning and Optimization
Student Professional Development

How is the forecast relevant for pharmacy students?

- Recognizing emerging trends in pharmacy
- Providing insights into expected challenges in pharmacy
- Promote thought-provoking discussion and research
- Serve as topics for journal clubs, topic discussions, presentations, and interview questions
Theme 1: COVID-19: Lessons Learned Across the Pandemic
COVID-19: Lessons Learned Across the Pandemic

- Coronavirus disease 2019 (COVID-19) pandemic exacerbated and revealed critical issues for health systems
- COVID-19 is transitioning from an acute pandemic to a chronic endemic phase
  - Health systems must prepare for the next unforeseen threat utilizing lessons learned during the COVID-19 pandemic
- Identified challenges have been associated with:
  - Emergency preparedness
  - Supply chain disruptions
  - Workforce shortages
  - Leadership vacancies
Theme 1: Forecast

Question 1

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

25% of health systems will expand drills to prepare for a prolonged state of emergency (e.g. electrical grid collapse, natural disaster, chemical spill).

1. Very Likely
2. Somewhat Likely
3. Somewhat Unlikely
4. Very Unlikely
Emergency Preparedness and Cybersecurity

- The duration of the COVID-19 pandemic heightened health-system leadership concern for prolonged states of emergency (e.g. electrical grid collapse, natural disasters, chemical spills)
- External threats such as ransomware attacks increased at the beginning of the pandemic
- Prolonged system downtimes are complex and impactful in today’s environment with a broad adoption of electronic health record (EHR) systems and the necessary interfaces with a variety of platforms including:
  - Drug libraries and formularies
  - Billing systems
  - Automated dispensing cabinets
Forecast Response

25% of health systems will expand drills to prepare for a prolonged state of emergency (e.g., electrical grid collapse, natural disaster, chemical spill).

- **Very Unlikely**: 3%
- **Somewhat Unlikely**: 17%
- **Somewhat Likely**: 47%
- **Very Likely**: 33%
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Health systems will budget 25% more to purchase drugs wholly manufactured (e.g., including active pharmaceutical ingredients), in the United States.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Health systems will increase their drug and medical supply inventories by 25% to develop and maintain an “emergency stockpile.”

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

To mitigate shortages and reduce waste, the FDA will require and evaluate extended stability data for all approved drugs.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Pharmaceutical Supply Chain

- Pharmaceutical Supply Chain disruptions have existed for decades, and health systems routinely monitor and manage inevitable strategies.
- Drug shortages increased in frequency and duration during the pandemic.
- Increased likelihood health systems will invest greater resources to develop strategies to mitigate threats:
  - Increased domestic production
  - Emergency stockpiles
  - Research for extending drug stability data
- New technologies may lessen or even obviate the need to make assumptions about specific shortages such as:
  - Continuous flow production
  - 3-D Printing
Forecast Response

Health systems will budget 25% more to purchase drugs wholly manufactured (e.g., including active pharmaceutical ingredients), in the United States.

- VERY UNLIKELY: 11%
- SOMewhat UNLIKELY: 43%
- SOMewhat LIKELY: 37%
- VERY LIKELY: 10%
Forecast Response

Health systems will increase their drug and medical supply inventories by 25% to develop and maintain an “emergency stockpile.”

- **Very unlikely**: 9%
- **Somewhat unlikely**: 41%
- **Somewhat likely**: 38%
- **Very likely**: 12%
To mitigate shortages and reduce waste, the FDA will require and evaluate extended stability data for all approved drugs.
Theme 1: Forecast
Question 5

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

At least 25% of seasoned leaders of pharmacy health-system enterprises will leave their positions earlier than expected because of increasing stress and complexity of their role.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Health systems will invest in expanded programs that support behavioral health of their employees.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Leadership and Succession Planning

- The COVID-19 pandemic has led many healthcare professionals to reexamine their purpose and the connection to the mission of organizations.
- The rise in multiple hospital systems has increased the breadth of responsibilities for healthcare executives while the quest for lean operating has consolidated many organizational leadership structures.
- Forward-looking work such as strategic planning is a critical element to preserve and engage leaders.
At least 25% of seasoned leaders of pharmacy health-system enterprises will leave their positions earlier than expected because of increasing stress and complexity of their role.
Forecast Response

Health systems will invest in expanded programs that support behavioral health of their employees.

3% 13% 51% 33%

VERY UNLIKELY  SOMewhat UNLIKELY  SOMEWHAT LIKELY  VERY LIKELY
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

50% of health systems will have specialized pharmacy staff dedicated to medication management for patients with substance use disorders.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Patient Care Challenges: Substance Use Disorder Services

- Drug overdose deaths in the United States increased by 12.5% from January 2021 to January 2022
- Organizations have started offering acute care consultative services for patients during admission with longitudinal outpatient follow-up
- Availability of services has not kept pace with the need and demand
  - Elimination of the need for clinicians to apply for an X waiver from the Substance Abuse and Mental Health Services Administration to prescribe and administer medications for opioid use will expand availability therapy to patients
Forecast Response

50% of health systems will have specialized pharmacy staff dedicated to medication management for patients with substance use disorders.

11% 39% 38% 12%

VERY UNLIKELY  SOMETHAT UNLIKELY  SOMETHAT LIKELY  VERY LIKELY
Strategic Recommendations for Practice Leaders

1. Develop and apply predictive data analytics capabilities to prospectively monitor drug utilization, predict future consumption, and direct purchasing decisions.

2. Plan to allocate resources for evolving, advanced manufacturing technology to expand supply chain resiliency and to maximize flexibility in responding to drug shortages.

3. Consciously engage and monitor teams to ensure work brings individual fulfillment and is aligned with their personal mission, vision, and values and those of the organization.

4. Optimize pharmacy executive leaders while fostering growth for the next generation of leaders by facilitating effective delegation of operational responsibilities.

5. Assess gaps and resource allocation needed to adequately address SUD management, and invest in specialized pharmacy staff for interprofessional teams.
Theme 2: Regaining Trust in Public Health
Trust in public health institutions has been declining over the past decades

- Early 1900s: Bubonic plague outbreak
- 1918: Influenza pandemic
- 2019: COVID-19 pandemic

Reasons for mistrust include:

- Lack of confidence in the government
- Misinformation and conspiracy theories spread through traditional and social media
- Suspect profit motivates of healthcare companies
- Political polarization
- Misinformation propagated by individuals including health professionals

Health systems and health professionals shaping the future of the United States public health system must work diligently to address the lack of trust
Theme 2: Forecast

Question 1

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Health systems will invest in a systematic effort or program to regain consumer trust in scientific evidence, healthcare professionals, and the healthcare system itself.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Theme 2: Forecast
Question 5

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

At least 50% of state health professional licensing boards will develop and exercise regulations to discipline professionals that spread medical misinformation.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Distribution of Accurate Medical Information

- Dissemination of inaccurate information prevalent in the COVID-19 pandemic
- Coordinated campaigns organized to disseminate inaccurate information about vaccines
- Dramatic increase in the dissemination of COVID-19 vaccine misinformation by physicians and other healthcare professionals

Next Steps:
- Health system partnerships with public health departments, health plans, and other health systems to promptly provide succinct and practical responses to health misinformation
- Provider and facilitate access to fact-based information in easy-to-understand and translated formats that are easy for consumers to access
- Continued health system efforts to curb the spread of medical misinformation by clinicians in their system
Forecast Response

Health systems will invest in a systematic effort or program to regain consumer trust in scientific evidence, healthcare professionals, and the healthcare system itself.

- Very unlikely: 8%
- Somewhat unlikely: 30%
- Somewhat likely: 46%
- Very likely: 15%
Forecast Response

At least 50% of state health professional licensing boards will develop and exercise regulations to discipline professionals that spread medical misinformation.

- **Very Unlikely**: 15%
- **Somewhat Unlikely**: 42%
- **Somewhat Likely**: 33%
- **Very Likely**: 9%
Theme 2: Forecast Question 2

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Health systems will form or partner with a new entity to serve as a centralized clearing house, independent of the FDA, to gather real-world evidence and conduct evidence-based evaluations of approved drugs used for unapproved indications.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

There will be a restructuring of the FDA to increase autonomy and shield the agency from outside influences (e.g., political interests, patient lobbying groups, and the pharmaceutical industry).

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Perceptions of Government Regulatory Bodies and Public Health Agencies

- Partnerships with health systems and new (non-FDA) entities exist and increased during the COVID-19 pandemic (e.g., FDA and CDC collaboration with Kaiser Permanente, the Department of Veterans Affairs, and Marshfield Clinic)
- Conducted studies on FDA-approved agents for repurposed indications related to the COVID-19 pandemic
- Necessary to address external influencers that could sway the FDA’s decision-making processes including:
  - Special interest groups
  - Pharmaceutical industry
  - For-profit healthcare systems
Forecast Response

Health systems will form or partner with a new entity to serve as a centralized clearing house, independent of the FDA, to gather real-world evidence and conduct evidence-based evaluations of approved drugs used for unapproved indications.

- **26%** Very Unlikely
- **49%** Somewhat Unlikely
- **22%** Somewhat Likely
- **3%** Very Likely
Forecast Response

There will be a restructuring of the FDA to increase autonomy and shield the agency from outside influences (e.g., political interests, patient lobbying groups, and the pharmaceutical industry).

22% VERY UNLIKELY  46% SOMEWHAT UNLIKELY  27% SOMEWHAT LIKELY  5% VERY LIKELY
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

The Supreme Court will address the right of healthcare professionals to exercise professional judgement and discretion.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Theme 2: Forecast
Question 4

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

50% of health systems will have a defined grievance process for when a physician declines to prescribe or dispense, respectively, a medication based on their professional judgement and discretion.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Theme 2: Forecast
Question 7

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

75% of health systems will execute strategies (e.g. code of conduct rules) to ensure accurate health information is conveyed by its providers.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Medical Decision-Making

Health systems must:
- Defend the value of healthcare providers’ professional expertise and judgement
- Enhance access of programs that support evidence-based practices for prescribing medications for given disease states to patient populations
- Provide evidence supporting a provider or pharmacist decision to decline to prescribe or dispense an agent that should be readily available for people in society to view
- Develop systems that receive and address patient grievances to ensure that patients are heard while still addressing medical misinformation
The Supreme Court will address the right of healthcare professionals to exercise professional judgment and discretion.

- **17%** Very Unlikely
- **45%** Somewhat Unlikely
- **31%** Somewhat Likely
- **7%** Very Likely
Forecast Response

50% of health systems will have a defined grievance process for when a physician or pharmacist declines to prescribe or dispense, respectively, a medication based on their professional judgment and discretion.

Very unlikely: 9%
Somewhat unlikely: 32%
Somewhat likely: 46%
Very likely: 13%
Forecast Response

75% of health systems will execute strategies (e.g., code of conduct rules) to ensure accurate health information is conveyed by its providers.

- **Very Unlikely**: 8%
- **Somewhat Unlikely**: 27%
- **Somewhat Likely**: 51%
- **Very Likely**: 14%
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

75% of health systems will partner with or expand partnerships with community organizations to increase trust in public health measures to prevent disease (e.g., the importance of childhood vaccinations).

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Partnerships with Community Organizations

- Pharmacists are well positioned to partner with local and state health departments and community organizations.

- Benefits of partnerships:
  - Improve public trust of healthcare providers by increasing interactions between providers and community members
  - Address specific areas to improve public health
  - Promote good exercise, nutrition, and preventative care
75% of health systems will partner with or expand partnerships with community organizations to increase trust in public health measures to prevent disease (e.g., the importance of childhood vaccinations).
Strategic Recommendations for Practice Leaders

1. Strengthen partnerships with local, state, and federal health programs to develop or expand public health programs to address health misinformation.

2. Ensure that providers have access to up-to-date public health recommendations and related medical information.

3. Utilize existing technology and media platforms for broader visibility as a trusted source of health information to the community to combat medical disinformation.

4. Implement programs to rapidly identify medical misinformation and enforce grounds for discipline when misinformation is promoted by health-system employees.

5. Take steps to ensure that providers are trusted messengers. Patients want a bidirectional relationship with their care teams, and they want clinicians to act in their best interests.

6. Proactively address patient concerns resulting from medical misinformation (e.g., requesting that providers prescribe inappropriate treatments) and devise better methods to engage patients.
Theme 3: Addressing Health Disparities in Health Systems: From Awareness to Action
Addressing Health Disparities in Health Systems: From Awareness to Action

- Health disparities are commonplace among historically marginalized groups
  - Racial and Ethnic Minorities
  - LGBTQ+
  - Rural Communities
  - Women

- Health systems must acknowledge, understand, and mitigate:
  - The social determinants of health
  - Barriers to healthcare contributing to inequities in patient outcomes
Theme 3: Forecast

Question 1

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Health systems will double their capacity (e.g. the number of providers and available appointments) to deliver mental health services.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

The demand for pharmacists with advanced training in mental health (e.g. board certified in psychiatry) will increase.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Mental Health

- Approximately 20% of American adults experience mental health disorders each year.
- The prevalence of anxiety and/or depressive symptoms has substantially increased during the COVID-19 pandemic.
- Nearly 40% of the US population faces a shortage of mental health professionals.
Forecast Response

Health systems will double their capacity (e.g., number of providers and available appointments) to deliver mental health services.

- 18% VERY UNLIKELY
- 40% SOMEWHAT UNLIKELY
- 34% SOMEWHAT LIKELY
- 8% VERY LIKELY
Forecast Response

Demand for pharmacists with advanced training in mental health (e.g., board certified in psychiatry) will increase.

- VERY UNLIKELY
- SOMewhat UNLIKELY
- SOMEWHAT LIKELY
- VERY LIKELY
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

All healthcare providers will be required to screen and refer patients who may be potential victims of human trafficking.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Theme 3: Forecast
Question 4

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

50% of health systems will be actively engaged in providing substantial resources to address social determinants of health (e.g. tangible support for unhoused individuals or those with food insecurity).

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

That community-level social determinants of health data (e.g. socioeconomic status, education, neighborhood and physical environment, and employment statistics) will be integrated into electronic health record and routinely used to support optimal implementation into the care plan.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Social Determinants of Health (SDOH)

Conditions in the environment that affect a wide range of health, functioning, and quality-of-life outcomes and risks

- Home environment
- Community environment
- Work environment
- Social environment
- Schooling
- Age
Forecast Response

All healthcare providers will be required to screen and refer patients who may be potential victims of human trafficking.

8% VERY UNLIKELY  28% SOMEWHAT UNLIKELY  47% SOMEWHAT LIKELY  17% VERY LIKELY
Forecast Response

50% of health systems will be actively engaged in providing substantial resources to address social determinants of health (e.g., tangible support for unhoused individuals or those with food insecurity).

- **4%** VERY UNLIKELY
- **28%** SOMewhat UNLIKELY
- **44%** SOMewhat LIKELY
- **24%** VERY LIKELY
Forecast Response

Community-level social determinants of health data (e.g., socioeconomic status, education, neighborhood and physical environment, and employment statistics) will be integrated into electronic health record and routinely used to support optimal implementation of the care plan.

- **VERY UNLIKELY**
- **SOMETHAT UNLIKELY**
- **SOMETHAT LIKELY**
- **VERY LIKELY**
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

That health system leadership and workforce diversity is representative of the community where care is delivered.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Workforce Diversity

- Racial and ethnic minorities are generally underrepresented in healthcare professions and health-system leadership
  - Racial/ethnic concordance between providers and patients is associated with improved communication and patient satisfaction
  - Diverse workforce and C-suite is vital to improving access and quality of care
- Innovative recruitment, retention, and development strategies are needed to diversify the future workforce
Forecast Response

Health-system leadership and workforce diversity is representative of the community where care is delivered.

13% VERY UNLIKELY  26% SOMEWHAT UNLIKELY  47% SOMEWHAT LIKELY  14% VERY LIKELY
1. Create and implement a proactive, multimodal plan to eliminate health disparities and promote health equity in their communities.

2. Training of healthcare professionals should include utilization of SDOH to reduce health disparities and improve patient outcomes.

3. Develop and implement standardized SDOH data collection and ongoing use, including integration into the EHR.

4. Expand mental health provider recruitment and training opportunities.

5. Provide training to healthcare providers on how to screen and refer patients who may be potential victims of human trafficking.

6. Develop and implement innovative strategies to recruit, retain, and develop a pipeline of diverse talent across healthcare professions.
Theme 4: Patient-Centric Healthcare Delivery
Patient-centric healthcare is the delivery of safe, effective, efficient care based on patients’ needs and agnostic sites of care, or simply stated: healthcare without walls.

Driving Forces:
- Aging of baby boomer population
- Increased chronic disease prevalence
- Increased healthcare costs
- Consumer preference for stakeholdership in their care
- Vertical integration of healthcare systems
- Payer policy and drive for non-traditional care
Theme 4: Forecast

Question 4

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Payers will shift 50% of hospital- and health system-based infusion services (e.g., chemotherapy, chronic infusion treatment) to other, lower cost of care settings (e.g., physician practice, private, network infusion center, and infusions at home).

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Healthcare Without Boundaries and Pharmacy Without Walls

- Alternative sites of care such as home infusion and ambulatory surgery centers have growing bodies of literature demonstrating positive outcomes with hospital-at-home care
- Expanding innovation in health care delivery and business relationships to deliver healthcare services
- Increased pressure from insurance reimbursement trends to transition care to outpatient settings
Forecast Response

Payers will shift 50% of hospital- and health system-based infusion services (e.g., chemotherapy, chronic infusion treatment) to other, lower cost of care settings (e.g., physician practice, private, network infusion center, and infusions at home).
Theme 4: Forecast
Question 7

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

With the expanded use of aging in place, there will be an increased demand for team-based pharmacy services for homebound individuals.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Telehealth

- Growing evidence supports positive clinical, quality, and financial outcomes from pharmacy telehealth services.
- While it is unlikely that consumers will expect access to pharmacist-provided telehealth services 24/7, telehealth is a platform that can be leveraged for providing services to homebound individuals.
- Growing number of service line models have been explored for telehealth services, including:
  - Emergency medicine
  - Remote patient monitoring
  - Transitions of care
With expanded use of aging in place, there will be an increased demand for team-based pharmacy services for homebound individuals.
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

25% of health systems will establish a pharmacogenomics service.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Pharmacogenomics

- Pharmacogenomics has the potential to optimize therapy, decrease treatment failures, improve outcomes, and decrease potential adverse effects.
- Pharmacists are uniquely positioned and qualified to incorporate pharmacogenomics into comprehensive medication management.
- Current improvements to pharmacogenomic payer coverage and reimbursement are ongoing to support program development.
Forecast Response

25% of health systems will establish a pharmacogenomics service.
Strategic Recommendations for Practice Leaders

1. Engage staff, executive leaders, and payers in demonstrating pharmacy’s roles in medication management regardless of site of care.

2. Create relationships with post-acute care providers and community pharmacies to ensure safe medication transitions.

3. Health-system and pharmacy school leaders should collaborate on operational and clinical workforce needs to support acute hospital-at-home services.

4. Expand patient-centered care to seamlessly provide 24/7 access to pharmacists via telehealth platforms for the spectrum of consumers (e.g., patients, nurses, providers).

5. Establish pharmacogenomics as a strategic priority and recognize pharmacists as subject matter experts. Establish pharmacogenomics services, in collaboration with other providers, laboratory professionals, and genetic counselors.

6. Engage in strategic planning for pharmacy services without walls.
Theme 5: Reliance on Technology: Opportunities and Risks
Reliance on Technology: Opportunities and Risks

- Technology is ubiquitous with healthcare and impacts most, if not all, aspects of the 2023 Pharmacy Forecast report.
- Expanding technology provides opportunities to advance clinical practice, improve patient care, patient safety, and financial viability.

Challenges and Opportunities

- Artificial intelligence safety and effectiveness
- Advanced clinical decision support
- Cybersecurity
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

The FDA will develop standards that regulate the safety and efficacy of clinical decision support driven by artificial intelligence software.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Artificial Intelligence (AI) Safety and Effectiveness

- AI has been defined as “theory and development of computer systems to perform tasks that regularly require human cognition”
- Challenges: In clinical decision making there has been issues with accuracy and bias in models leading to errors and inequities in populations less represented, such as children and minorities
- The FDA proposed a framework to monitor pre and post marketing performance and allow iterative improvement of algorithms
Forecast Response

The FDA will develop standards that regulate the safety and efficacy of clinical decision support driven by artificial intelligence software.

- **7%** Very Unlikely
- **35%** Somewhat Unlikely
- **45%** Somewhat Likely
- **13%** Very Likely
Healthcare Systems Responsibility with Artificial Intelligence

- Validate safety and effectiveness of AI tools
  - 73% of respondents say health systems will be required to do this
  - Only 37% of respondents reported they are prepared to perform this validation

- Healthcare systems are responsible for considering diversity in model development and evaluate performance to ensure accuracy is not compromised over time

- There will be a need to employ individuals who understand how to assess model performance and error
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Health systems will implement AI software that provides relevant medication-related alerts in lieu of a human clinical review and assessment.

A. Very Likely  
B. Somewhat Likely  
C. Somewhat Unlikely  
D. Very Unlikely
Advanced Clinical Decision Support

- Increased AI adoption can support clinical practice, potentially analyzing additional context and patient factors including pharmacogenetic data
- This may lead to more relevant medication alerts and limit alert fatigue by improving the positive predictive value of alerts
- AI may be utilized in the future for verification or evaluation of low risk and routine orders such as those medications in order sets. This would allow pharmacists to focus more time on clinically complex and high-risk orders
Forecast Response

Health systems will implement artificial intelligence software that provides relevant medication-related alerts in lieu of a human clinical review and assessment.

- **7%** VERY UNLIKELY
- **30%** SOMewhat UNLIKELY
- **48%** SOMewhat LIKELY
- **15%** VERY LIKELY
Theme 5: Forecast
Question 6

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

There will be a critical health-system supply chain shortage as the result of an infrastructure disruption due to a cyber-attack or malware.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Cybersecurity

- Technology provides exciting opportunities but the reliance on technology brings additional risks. Cyberattacks on healthcare systems have increased and continue to grow exponentially.
- Cyberattacks have put patients' health at risk and cost healthcare organizations millions worldwide.
- Cybersecurity must be a top priority for any organization.
Forecast Response

There will be a critical health-system supply chain shortage as the result of an infrastructure disruption due to a cyber-attack or malware.

- VERY UNLIKELY: 2%
- SOMewhat UNlikely: 19%
- SOMEWHAT LIKELY: 55%
- VERY LIKELY: 24%
Strategic Recommendations for Practice Leaders

1. Prepare departments and professional practice to leverage technology such as AI to continue to advance patient care and pharmacy services.

2. Achieving this requires expertise the potential benefit and harm to result from new technology as well as persistent evaluation and monitoring of the systems.

3. Pharmacy systems must be integrated into the organization's broader cyber security effort to ensure preparedness in identifying and responding to the emergence of new threats.
Theme 6: Strengthening the Foundation of the Pharmacy Enterprise: Workforce Planning and Optimization
Strengthening the Foundation of the Pharmacy Enterprise: Workforce Planning and Optimization

- Workforce optimization is an important strategic element for any successful health system pharmacy.
- Challenges and opportunities:
  - Projecting workforce supply/demand during a period of unprecedented workforce vacancies
  - Anticipating and responding to pharmacy practice model changes resulting from staffing shortages
  - Changing attitudes about work
  - Expectations that pharmacy staff will fulfill new, nontraditional pharmacy workforce roles and gaps
Theme 6: Forecast
Question 1

How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Sustained pharmacy enterprise leadership vacancies will drive health systems to fill these roles with non-pharmacists.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
A Changing Workforce

- In addition to the ongoing COVID-19 vacancies, trends point to a surge in retirement for those workers who delayed due to the COVID crisis.
- A surge in leadership vacancies has prompted consideration of non-pharmacists for leadership roles.
- Professional, regulatory, and operational expertise are key assets for pharmacy executives.
- Without a pharmacy background, leaders may lack credibility and trust.
Forecast Response

Sustained pharmacy enterprise leadership vacancies will drive health systems to fill these roles with nonpharmacists.

- **12%**: VERY UNLIKELY
- **37%**: SOMewhat UNLIKELY
- **40%**: SOMewhat LIKELY
- **11%**: VERY LIKELY
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

Healthcare organizations will be required to implement enhanced recruitment incentives that compete with other employment sectors (i.e. outside of health systems)

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Recruitment and Development

Technician shortages continue to overshadow pharmacist shortages, but recruitment, retention, and development of pharmacists is also necessary.

- Pharmacy leaders should engage HR and health-system leaders to develop innovative recruitment strategies
- Foster active succession planning through recruiting and hiring pharmacists with potential as future leaders
- Growth and development of pharmacists remains a priority
Forecast Response

Healthcare organizations will be required to implement enhanced recruitment incentives that compete with other employment sectors (i.e., outside of health systems).

- **VERY UNLIKELY**
- **SOMewhat UNLIKELY**
- **SOMewhat LIKELY**
- **VERY LIKELY**
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

The reduction in applicants to schools and colleges of pharmacy, combined with accelerated pharmacist attrition, will result in a severe shortage of pharmacists.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Pharmacist Vacancies and Decreasing Pharmacy School Enrollment

National pharmacy school enrollment has declined in recent years to levels not seen since 2003, even though the number of pharmacy schools has more than tripled since that time.

- Declining applicant pool has resulted in pressure to reduce enrollment
- Fewer graduates may reduce health-system and residency applicants
- Health systems must develop effective, long-term strategies to partner with schools/colleges of pharmacy to recruit qualified individuals into pharmacy
Forecast Response

The reduction in applicants to schools and colleges of pharmacy, combined with accelerated pharmacist attrition, will result in a severe shortage of pharmacists.
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

In 30% of health systems, advanced pharmacy practice models will regress because of the pharmacy technician shortage.

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Pharmacy Workforce Model Changes

Administrators are reporting turnover rates of at least 21% in 2021.

- Rising wages for competing entry-level positions continue to make recruitment and retention of technicians more difficult
- Health systems must develop an infrastructure that supports long-term sustainability of technician roles
- Consider creating novel opportunities, expanding roles, and launching career ladders to support technician growth
- Developing novel paths of access to pharmacy school (perhaps through work-and-learn arrangements) may offer new workforce opportunities
In 30% of health systems, advanced pharmacy practice models will regress because of the pharmacy technician shortage.
How likely is it that the following will occur, by the year 2027, in the geographic region where you work?

In response to staffing shortages, health system pharmacy personnel will be required to perform cross-functional duties traditionally managed by other departments (e.g., patient medication education, care coordination, diabetes education)

A. Very Likely
B. Somewhat Likely
C. Somewhat Unlikely
D. Very Unlikely
Pharmacy Workforce Model Changes

Projected shortages of nurses, physicians, and hospital staff may require even further expanded roles of pharmacists.

- Pharmacists will likely be expected to do more with less, including medication education, care coordination, and diabetes education
- Telepharmacy will likely grow, especially in therapy monitoring, transitions of care, and patient consultations
Forecast Response

In response to staffing shortages, health-system pharmacy personnel will be required to perform cross-functional duties traditionally managed by other departments (e.g., patient medication education, care coordination, diabetes education).
A Sustainable Model for Job Satisfaction

Society’s changing attitudes toward how and where we work will continue to impact pharmacy.

- Innovative scheduling and remote work solutions are necessary to maintain quality pharmacy services and to mitigate healthcare burnout
- Health systems must balance workplace needs with employee wellbeing
Strategic Recommendations for Practice Leaders

1. Focus on salaries, worker wellness and resilience, and workforce shortages.
2. Innovative post-pandemic models of care are critical to recruit, retain, and engage students, technicians, and pharmacists.
3. Modernize talent recruitment with market-competitive salaries for all pharmacy positions.
4. Develop succession plans for pharmacists and leaders to address current and future pharmacy practice needs.
5. Create and/or expand training pathways, competencies, and skill sets for specialization in practice areas or leadership roles.
6. Encourage flexible scheduling and hybrid work models to help address employee satisfaction.
7. Establish telehealth care delivery for pharmacy services and ensure pharmacists are directly involved during remote care planning and development.
Pharmacy Preparedness

Identifying Gaps
(For Presenters – optional slides for wrap up discussion)
Are We Prepared for Change?
(Selected Questions from Themes) (Presenter see notes)

1—An increased demand for pharmacists with advanced training in mental health (e.g., board certified in psychiatry).

2— Routinely use community-level social determinants of health data (e.g., socioeconomic status, education, neighborhood and physical environment, and employment statistics) that are integrated into electronic health record to support optimal implementation of the care plan.

3— Expand drills to prepare for a prolonged state of emergency (e.g., electrical grid collapse, natural disaster, chemical spill).

PREPARED  LIKELY
## Are We Prepared for Change?

(Selected Questions from Themes)  *(Presenter see notes)*

<table>
<thead>
<tr>
<th>Question</th>
<th>Prepared</th>
<th>Likely</th>
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<tbody>
<tr>
<td>4—Invest in expanded programs that support behavioral health of their employees.</td>
<td>71%</td>
<td>84%</td>
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<tr>
<td>5—Expanded use of aging in place and an increased demand for team-based, pharmacy services for homebound individuals.</td>
<td>54%</td>
<td>83%</td>
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<tr>
<td>6—Establish a pharmacogenomics service.</td>
<td>49%</td>
<td>65%</td>
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<tr>
<td>7—Support systematic efforts or programs to regain consumer trust in scientific evidence, healthcare professionals, and the healthcare system itself.</td>
<td>61%</td>
<td>61%</td>
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<tr>
<td>8—State health professional licensing boards development of and exercising regulations to discipline professionals that spread medical misinformation.</td>
<td>36%</td>
<td>42%</td>
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</table>

*Note: PREPARED and LIKELY percentages represent the readiness and likelihood of implementation.*
Are We Prepared for Change?
(Selected Questions from Themes) (Presenter see notes)

9—Validate safety and efficacy of artificial intelligence algorithms before their use in patient care.

10—A critical health system supply chain shortage as the result of an infrastructure disruption due to a cyber-attack or malware.

11—Regression of advanced pharmacy practice models because of a pharmacy technician shortage.

12—Implement enhanced recruitment incentives that compete with other employment sectors (i.e., outside of health systems).

PREPARED  LIKELY
Case Study Transition
- 30 minutes to work on assigned case and answer questions in a small group (4-8 people)
- 5 minutes per group to present the scenario and answer the questions from the case
- Each group should select:
  - A person to lead or facilitate discussion among the group
  - A person to record discussions/decisions made
  - A timekeeper to keep the group on task
  - One or two presenters
Large Group Wrap-Up
Conclusion

- The pharmacy forecast improves the effectiveness of leaders in hospital and health-system pharmacy practice.
- The forecast allows for students or other pharmacy professionals to better understand the emerging trends and predicted challenges.
- Pharmacists are positioned to improve access to care on multiple fronts associated with population health, technology and data, and virtual services.
Group Q&A