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Projecting Pharmacy Practice in 2035

Summary of the Student Experience in the Course
“Conversations on Critical Challenges in Pharmacy”
Fall 2025 Offering

¹ Cover image was generated using an artificial intelligence system (ChatGPT with DALL-E, OpenAI) based on the system’s interpretation of the report’s content.

Course Instructors/Forecasting Guides

Todd D. Sorensen, PharmD

Andrew Traynor, PharmD

Joyce Hu, PharmD

Student Participants/Forecast Survey Authors

Owen Brummel

Sten Bulander

Ethan Chase

Cameron Dietrich

Jayda Goldschmidt

Steven Hilton

Ashley Holton

Simon Krystosek

Terrence Moyo

Ben Nash

Bryan Padilla

Laura Pena Jimenez

Stella Qualick

Andrew Racine

Plus three additional participants opting to be unidentified

Introduction

When reimagining the University of Minnesota (UMN) College of Pharmacy's Doctor of Pharmacy curriculum (titled "MNspire"), designers adopted several instructional strategies recognized as "High-Impact Learning Practices."¹ These practices are evidence-based in terms of creating significant educational benefits for students. One such practice is the use of "First-Year Seminars and Experiences." In MNspire, the course "Conversations on Critical Challenges in Pharmacy" (referred to as "3C") reflects this practice and is a requirement for all first-year students in both fall and spring semesters. Students are enrolled in one of several thematic seminars for the duration of a semester so that they are engaged in a small group learning environment and have the opportunity to form collegial relationships with a group of peers (<20 students per section) and one or more faculty members.

The Student Learning Experience

In Fall Semester 2025, seven 3C sections were offered, one of which was "Projecting Pharmacy Practice in 2035." Seventeen students enrolled in this section. The section was designed to use the forecasting research methodology employed by two national pharmacy organizations - American Society of Health-Systems Pharmacists (ASHP) Foundation,² and the American Association of Colleges of Pharmacy (AACP).³ These methods provided a structure to immerse students in exploration and critical thinking focused on how the profession may evolve between their first year of pharmacy school and a point early in their professional career.

We (the instructors) used the forecast survey development process primarily as a learning experience for students. During the first half of the semester, students completed a set of activities designed to introduce them to the profession and explore current trends in pharmacy and health care. This included:

- Exploration of roles played by pharmacists across many settings;
- Reviewing and providing peer instruction on future-oriented readings (for example, the 2024 and 2025 ASHP Forecast reports were included on the reading list);
- Conducting interviews with pharmacists to explore trends in the profession;
- Preparing a brief research paper on a specific trend in pharmacy.

Following these activities, students drafted survey themes and items as a cohort. Instructors intended that the survey instrument would be "owned" by the students, thus encouraged them to develop themes and items based on what they found to be of most interest. Instructors guided learners through the process of drafting, prioritizing, and refining items, but did not influence the determination of the themes selected. Originally, the class identified 12 potential themes for the survey instrument, but through a group prioritization process, selected the following six themes:

- Evolution of Payment for Patient Care Delivery
- Opportunities Created by Scope of Practice Change
- Future Roles and Responsibilities of Pharmacy Technicians
- PBM Reform and Future Influence
- Integration of Artificial Intelligence in Pharmacy
- Advancements of Pharmacogenomics and Precision Medicine

Because the primary objective of this effort was to provide a meaningful learning experience to students rather than produce or disseminate a set of results intended to support organizational decision making (which is the purpose of traditional forecasting reports), there are some limitations that we did not attempt to address in the context of prioritizing student learning about trends in the profession:

- Survey themes addressed within the instrument were not targeted to a specific audience such as health-system pharmacists (ASHP Foundation) or academic pharmacy leaders (AACP Argus Commission). Instead, they highlight the issues determined to be of greatest interest to this cohort of 17 P1 students.

- We found that the 10-year horizon was challenging for P1 students to consider, and some of the items developed by the class likely will play out over a shorter timeframe than 10 years.
- The invited respondents were not vetted or necessarily expected to represent a group with insights on specific themes included in the survey. We distributed the survey to all University of Minnesota registered preceptors due to their engagement in student learning and representation across professional settings. We also anticipated that the results from this group could inform future preceptor development programming.

Appendix A provides an infographic summarizing survey results related to thematic areas and survey items of high confidence and high concern. *Appendix B* provides survey results across all themes and items developed. Given the focus on student growth, the remainder of this summary will focus on results related to student reflections.

Student Reflections on the Forecasting Experience

Students completed a structured written reflection assignment at the conclusion of the semester. The following narrative is a summary of the common themes shared by students via this assignment. These themes were produced via a multimodal Generative AI model (Google Gemini, UMN Enterprise version with data protection). Student submissions were uploaded to Gemini with prompts requesting identification of common themes, emphasizing the description of themes that highlighted professional growth. Prompting requested a summary that did not exceed 300 words and included a conclusion that summarized the general student perspective on the course as a whole.

Summary of Professional Development Themes from Student Reflections

Navigating Professional Ambiguity

The core of the student experience involved transitioning from a foundational understanding of pharmacy—often shaped by prior roles as pharmacy technicians—to a comprehensive view of a complex, multi-faceted profession. Students described the process of developing a 10-year forecast as a valuable exercise in navigating ambiguity. They moved beyond day-to-day tasks to analyze long-term drivers of change, such as legislative shifts and technology integration. This required a rigorous "critical eye" to translate information gathered from readings, personal research and practitioner interviews into a clear, actionable survey instrument.

Professional Growth and Identity

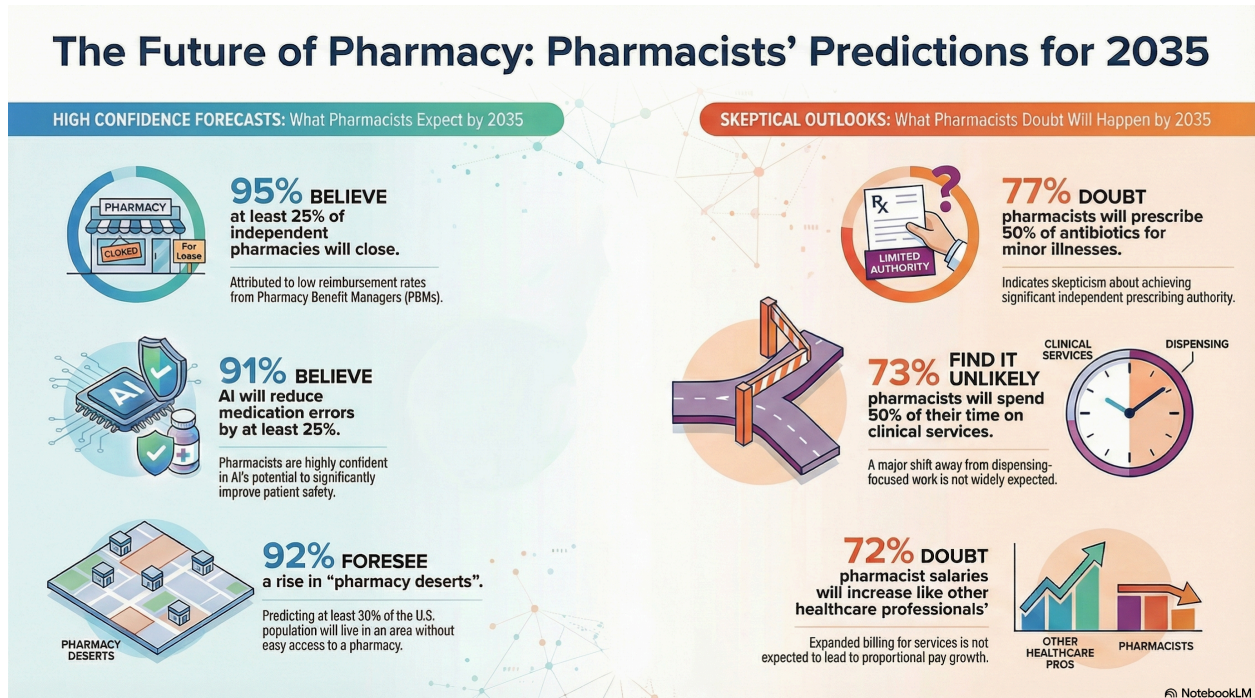
A primary outcome of the course was maturation of the students' understanding of the profession. By engaging directly with preceptors and analyzing their survey responses, students validated their own perceptions against real-world data. This dialogue fostered a sense of professional confidence and "metacognition," as students recognized their own knowledge gaps and the necessity of lifelong learning. They identified that future success depends less on static knowledge and more on the ability to remain adaptable and proactive. Many students reported a shift from being passive observers of the profession to feeling like "harbingers of change" who are responsible for steering the industry toward better patient outcomes.

Conclusion

The consensus among the cohort was that this course provided a vital connection to the "outside world" that is often missing from early didactic curriculum. Students expressed an appreciation for the collaborative nature of the project, noting that the experience reframed their view of the profession from a set of job functions to a dynamic career path. They leave the course not only better informed about the landscape of 2035 but also more excited and prepared to lead within it.

Appendix A: Summary of Survey Results - Infographic

The following image is a high-level summary of the 3C Pharmacy 2035 Forecast Results. This was produced via Google NotebookLM based on summarized responses to all Forecast survey items.

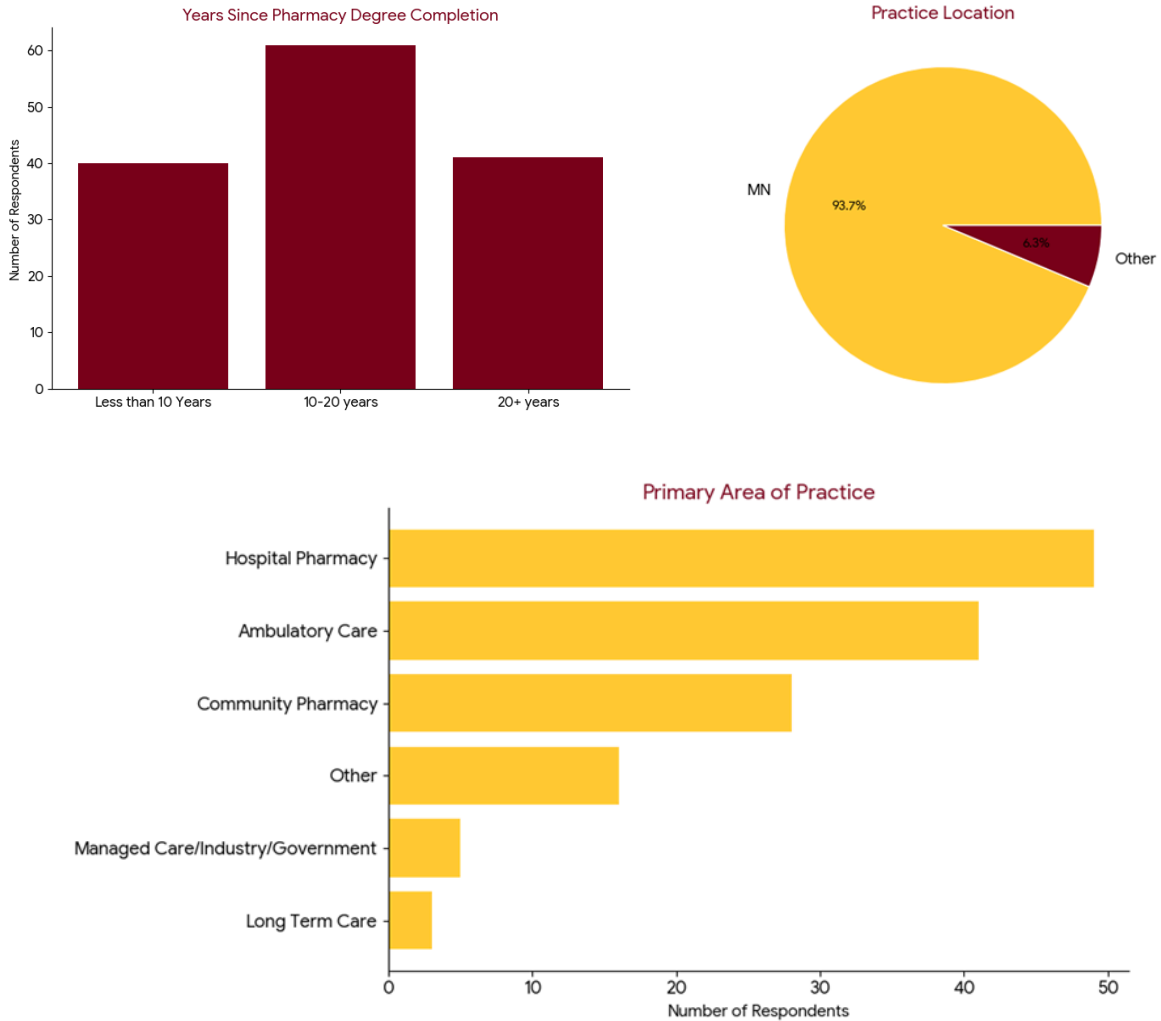


*Produced by Google NotebookLM.

Appendix B: Survey Results

Demographics

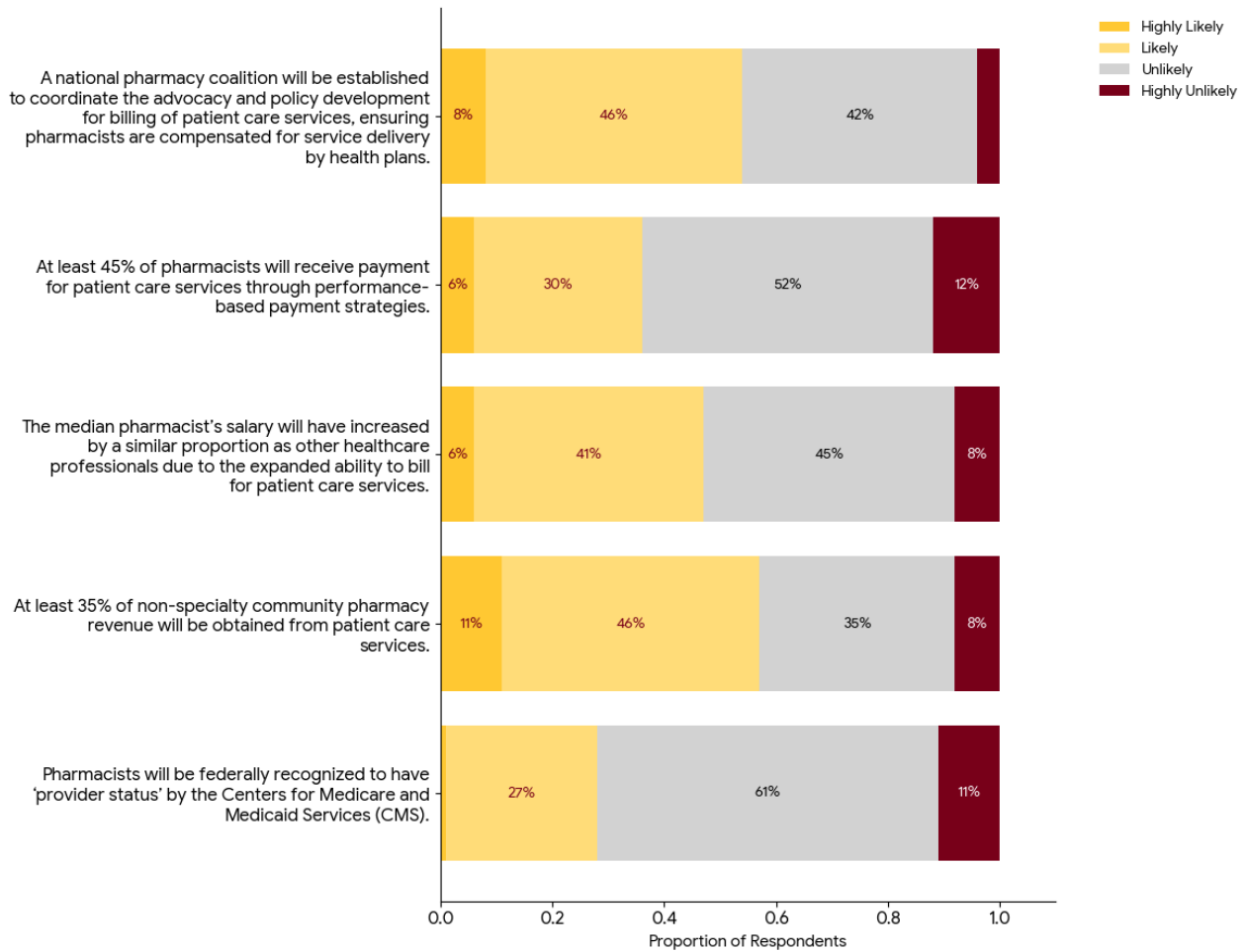
Across the 142 respondents, those who received their PharmD degree between 10-20 years prior represented the largest group of respondents and nearly all currently practice in Minnesota. Distribution across practice settings is also displayed.



Evolution of Payment for Patient Care Delivery

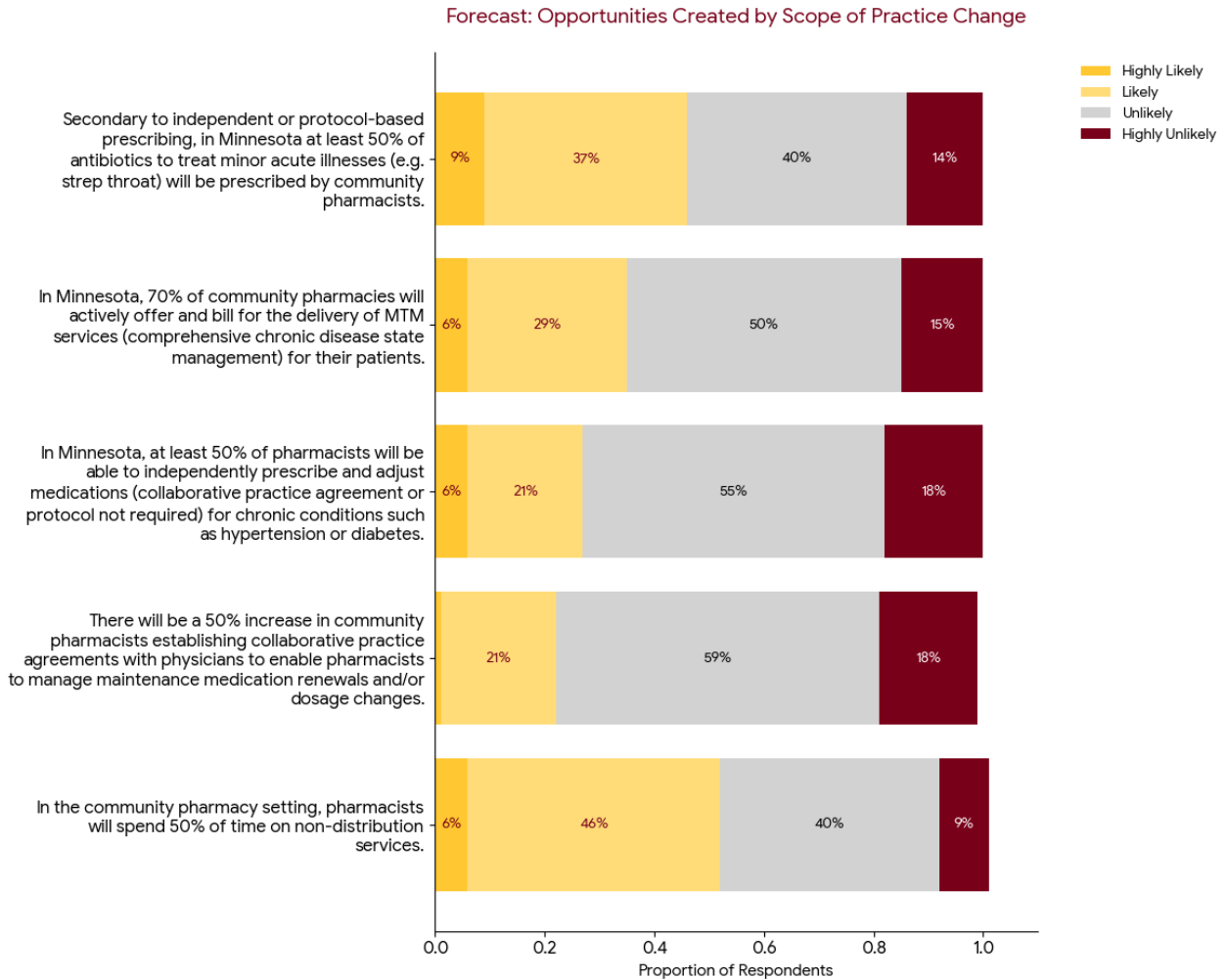
While respondents express moderate optimism that a national coalition will secure billing compensation for patient care services, there remains significant skepticism regarding whether these changes will result in salary increases proportional to other healthcare professionals. Overall, the findings suggest a cautious outlook on the financial sustainability of new payment models, with less than half of pharmacists expecting a major shift toward performance-based revenue or federal provider status.

Forecast: Evolution of Payment For Patient Care Delivery



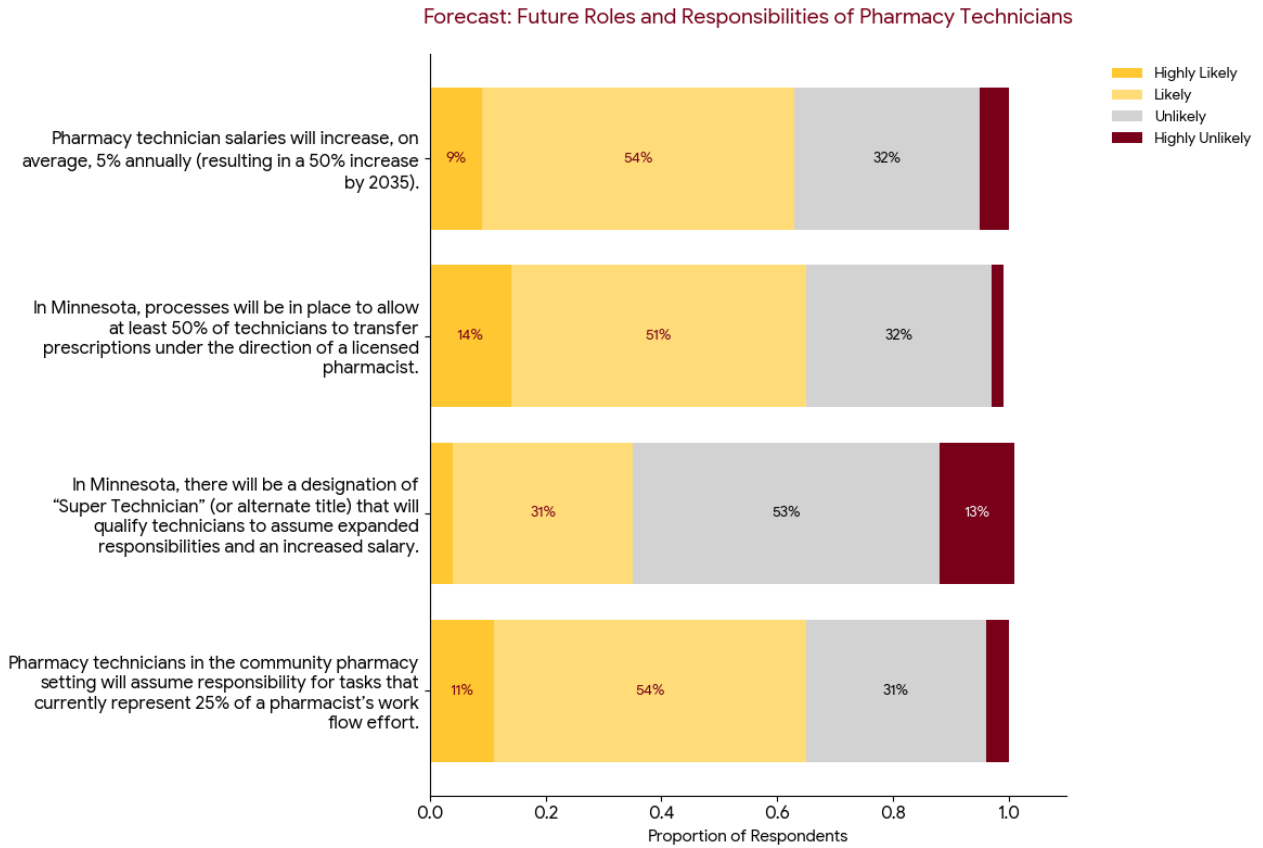
Opportunities Created by Scope of Practice Change

Respondents generally anticipate an expansion in pharmacist autonomy, specifically predicting that a majority of pharmacists will independently prescribe and adjust medications under collaborative models within the next decade.



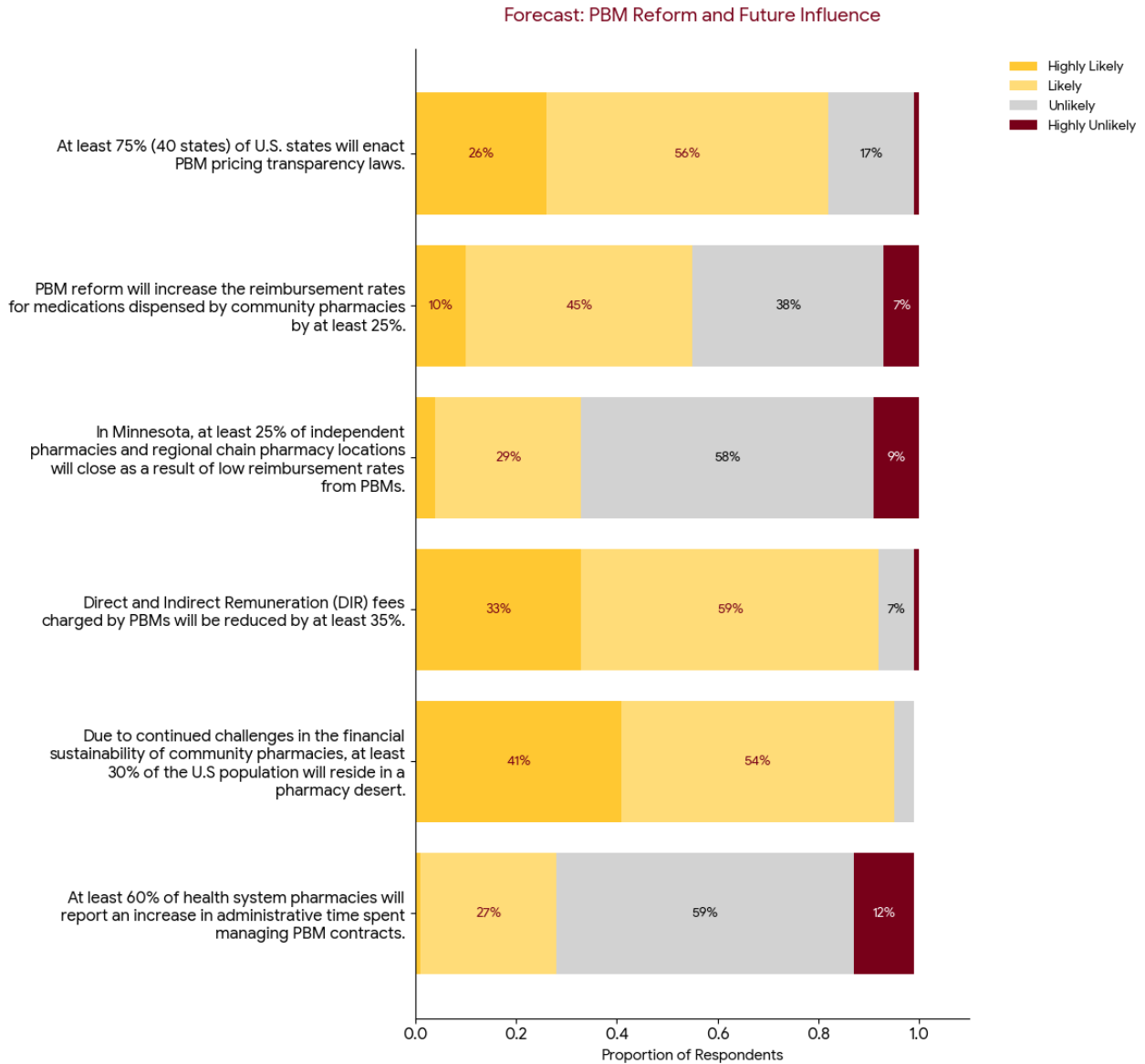
Future Roles and Responsibilities of Pharmacy Technicians

There is a strong consensus that the sustainability of the profession depends on elevating technician roles, with high expectations for significant salary increases and the establishment of advanced "Super Technician" designations to manage higher-level tasks.



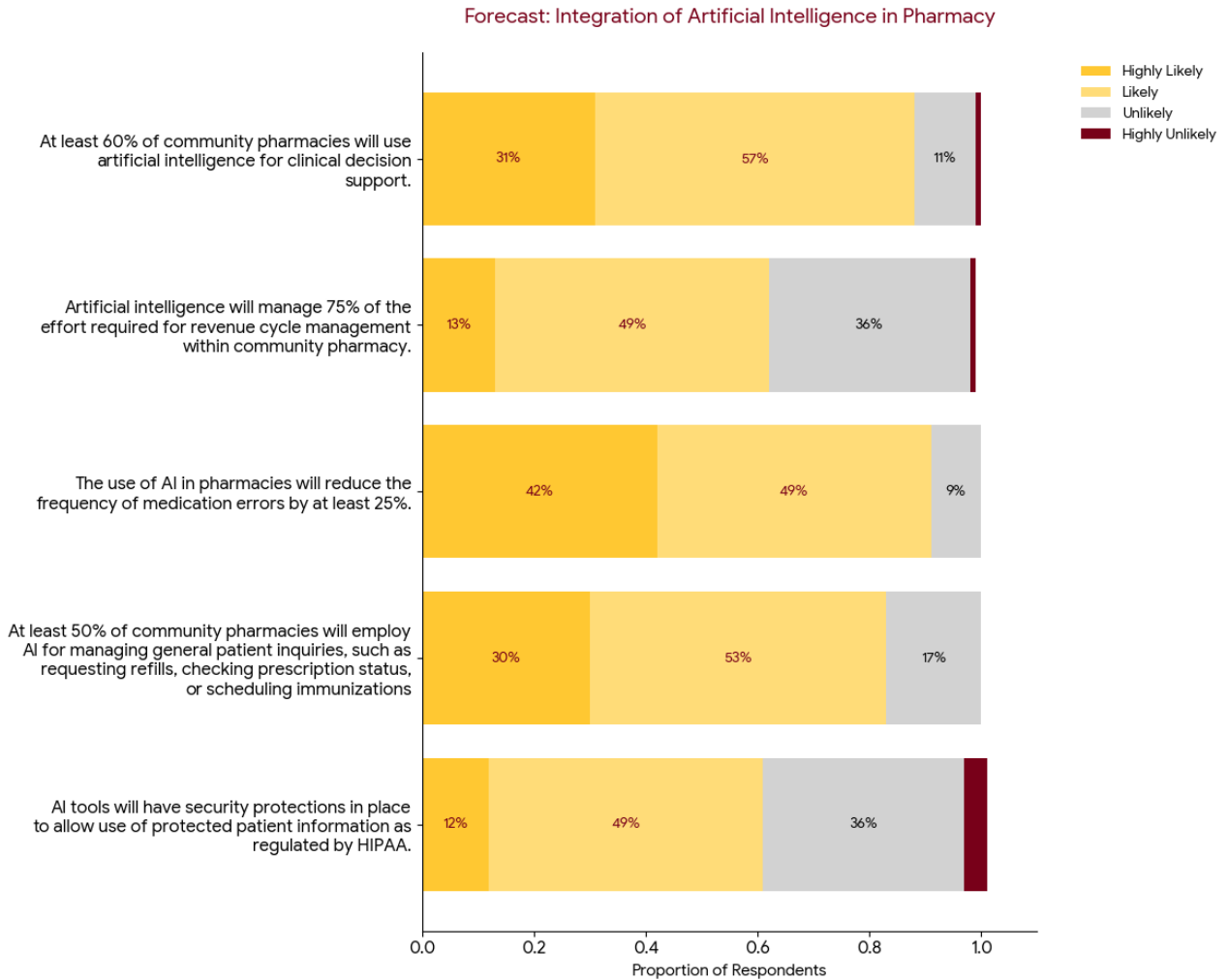
PBM Reform and Future Influence

The results highlight a profession under financial duress, with many practitioners fearing that a quarter of independent pharmacies may close by 2035, while simultaneously expecting rigorous state-level transparency laws to curb PBM influence.



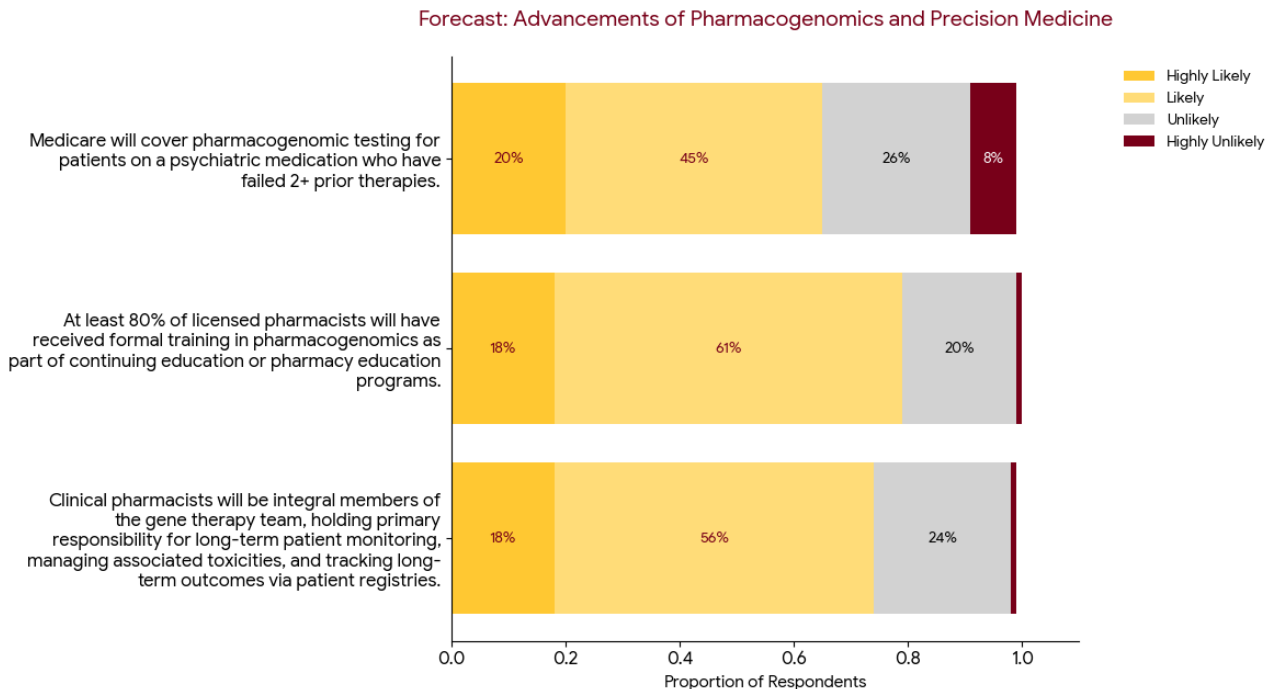
Integration of Artificial Intelligence in Pharmacy

Practitioners largely view AI as a vital tool for the near future, specifically forecasting its widespread use in clinical decision support and revenue cycle management to reduce medication errors and administrative burdens.



Advancements of Pharmacogenomics and Precision Medicine

The cohort predicts that pharmacogenomics will move into the mainstream, with the vast majority of pharmacists having completed formal training related to pharmacogenomics. Respondents predict that clinical pharmacy specialists will play a lead role in managing long-term outcomes for complex gene therapies.



Conclusion

The survey results underscore a profession at a critical juncture, characterized by high expectations for technological and clinical advancement tempered by concerns over financial sustainability. Pharmacists foresee a future where Artificial Intelligence and Pharmacogenomics are standard in clinical decision-making and precision medicine. Respondents generally believe that pharmacy technician roles will evolve, as will prescribing authority by pharmacists to support expanding patient care roles. However, the skepticism regarding equitable compensation and the threat of PBM-driven closures highlights an urgent need for structural reform to bridge the gap between expanded clinical capabilities and professional sustainability.

References

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3. Sorensen TD, Lin AYF, Matsumoto, RR, Melchert RB, Ellingrod V, Farland, MZ, et al. AACP Argus Commission Forecast 2025. *Am J Pharm Ed.* 2025;89(8).
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