

Analysis of Postgraduate Year One (PGY1) Community Pharmacy Residency Opportunities

MIS-64060 Final Exam

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Problem Statement and Objectives

In the pharmacy profession there is an increased need and competition for pharmacist graduates to complete a postgraduate pharmacy residency. This advanced training program opens more career opportunities for pharmacists outside of traditional dispensing roles. According to the National Matching Services, in 2022 there were 1,451 pharmacy graduates that wanted to pursue a residency but were unable to match with a program.¹

Offering a residency program requires a significant investment in regards to time and labor resources for a healthcare organization, but doing so could help advance pharmacy services and create a pipeline of well-trained employees. In order to be competitive in the market, a pharmacy department should understand the potential applicant pool and competition they may face from other programs.

The objective of this analysis is to provide insight to a pharmacy department offering a Postgraduate Year One (PGY1) Community-Based Pharmacy Residency Program by:

1. Describing potential pharmacy resident applicant pool and similar programs in the market
2. Creating a model that can be easily updated as annual data is made available by national organizations

Approach and Methodology

Meeting the objective of this analysis requires real and accurate data both on pharmacy graduates and available residency programs. The American Association of Colleges of Pharmacy (AACP), provides an annual profile of pharmacy student degrees conferred. The “Fall 2021 Degree Conferred – Profile of Pharmacy Students” report was used for this analysis.² The American Society of Health-System Pharmacists (ASHP) provides a directory of pharmacy resident program that are available across the nation.³ The directory chosen was category of “PGY1” and sub-category of “Community-Based Pharmacy.” Once selected, this directory can be exported to a CVS file. Once this real-world pharmacy

data from both AACP and ASHP was identified, the data was then imported into R Studio for analysis.

Machine learning techniques were used to describe the data and develop the results.

Results

In describing the AACP reported data of Pharmacy degrees conferred, it was found that there were 14,223 graduates in 2021. The top 20 states with the most pharmacy graduates is listed below in Table 1. When analyzing community residency program availability, it was found that there were 182 programs with 379 total positions available on an annual basis as of 2022. There is average of two positions available per program with a national median of one position available per program. The maximum number of residency positions available for one program was 48, but this is an outlier considering the third quartile is two positions. Looking at state distribution, 16 states have five or more residency programs with Ohio having the most (Table 2).

Table 1 – Top 20 Number of Pharmacy Graduates by State (2021)

State	Total # Graduates
California	1306
New York	948
Pennsylvania	915
Texas	806
Florida	795
Illinois	770
Massachusetts	654
Ohio	597
Tennessee	480
Georgia	451
North Carolina	397
Missouri	384
Michigan	328
Indiana	315
Wisconsin	275
Alabama	274
Washington	271
New Jersey	266
Virginia	262
South Carolina	237

Table 2 – Total Number of Residency Program by State (minimum of 5)

State	Total # Programs
Ohio	16
Arizona	9
California	9
North Carolina	9
Illinois	8
Massachusetts	7
Missouri	7
Texas	7
Florida	6
Indiana	6
Pennsylvania	6
Tennessee	6
Idaho	5
Michigan	5
Oregon	5
Wisconsin	5

Conclusions

Though the number of residency positions available to pharmacy graduates is relatively low at 2.7% (379/14,223), programs that are in competitive locations may need to look at other states to recruit candidates. For example, Ohio is arguably in the most competitive state to recruit future candidates based on its 16 programs. Therefore, a program in Ohio may need to market toward another state, such as New York, that has a high number of annual pharmacy graduates but a proportionally low offering for community residency programs.

References:

1. National Matching Services. ASHP Match Statistics. Available at <https://natmatch.com/ashprmp/stats.html>
2. American Association of Colleges of Pharmacy. AACP Fall 2021 Degrees conferred – Profile of Pharmacy students. Available at <https://www.aacp.org/node/2705>
3. American Society of Health-System Pharmacists. ASHP Residency Directory. Available at <https://accreditation.ashp.org/directory/#/program/residency>