

Analysis of Direct-To-Industry Jobs Among 2021 PharmD Graduates

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Introduction

Historically, pharmacists have been the medication experts standing behind the pharmacy counter or consulting with the medical team in the health system setting. Recently, the role of the pharmacist has expanded to more non-traditional settings such as the pharmaceutical industry (defined as companies with business in development and commercialization of medicinal products and service provider companies supporting the process). Every year, an increasing number of newly minted pharmacy graduates enter the industry as either Post-Doctoral Fellows or directly through entry level positions.^{1,2}

The number of US pharmacy graduates continues to rise. Meanwhile, the number of job openings in traditional pharmacy practice settings has been stagnant, resulting in an oversupply of pharmacists.³ The Bureau of Labor Statistics (BLS) 2020 report forecasts a 2% decline in pharmacist jobs over the next decade, far below the anticipated overall growth in US employment.⁴

Recently reported IPhO research found that 82% of PharmDs working within the pharmaceutical industry (“industry”) were either “extremely” or “mostly” satisfied with their positions for various reasons, including compensation, opportunities for advancement, and autonomy.⁵ Similar research conducted with community and hospital pharmacists reported that only 31% of respondents were either “very” or “extremely” satisfied with their job and 35% reported that they were considering a job change.⁶ Based upon this current employment environment there is a growing number of students, recent post-graduates, and experienced traditional pharmacy providers who are examining opportunities to enter industry.

The purpose of our research is to i) identify Class of 2021 pharmacy graduates who obtained a Direct-To-Industry job (as defined below), ii) characterize the roles they obtained and the employers they now work for, iii) compare the results to similar research conducted in previous years, and iv) share the results to raise awareness of these roles.

Methods

Direct-To-Industry Job Definition:

A role in a Pharmaceutical/Biotechnology company or Industry Service Provider company obtained upon graduation without a prerequisite of completing a postdoctoral pharmaceutical industry fellowship.

Study Inclusion Criteria include US Class of 2021 PharmD graduates of an ACPE-accredited institution who were employed on or before December 31, 2021 by:

- Pharmaceutical companies (full time or contractor)
- Pharmaceutical advertising agencies or clinical research organizations
- Companies whose primary purpose is to provide a service to pharmaceutical companies (e.g. management consulting, medical information, msl contracting, HEOR consulting, medical communications agencies)
- Market access or global branding firms

Study Exclusion Criteria include pharmacists who are:

- Not graduates of the Class of 2021
- Not graduates with a PharmD degree from an ACPE-accredited institution
- Employed in a direct patient care setting (e.g. retail pharmacists, hospital pharmacists, ambulatory care pharmacists, specialty pharmacies)
- Employed at Long-term Infusion pharmacies, compounding pharmacies, or medical marijuana dispensaries
- Employed by Managed Care Organizations (e.g. PBM, Insurance Company)
- Employed by the FDA or the US government
- Currently participating in a clinical residency or postdoctoral fellowship program

Data collection methods included:

- LinkedIn (Basic) was utilized to search for pharmacists from the class of 2021 who are registered on the IPhO website to identify those who met the inclusion criteria.
- LinkedIn (Recruiter) search was conducted to identify other pharmacists from the class of 2021 who met the inclusion criteria but were not registered on the IPhO website.
- Various data including employer, employer type, position title, and functional area were recorded from publicly available LinkedIn profiles.

Results and Discussion

276 pharmacists from the class of 2021 met the inclusion criteria and were identified to have obtained a Direct-To-Industry role via a non-fellowship route.

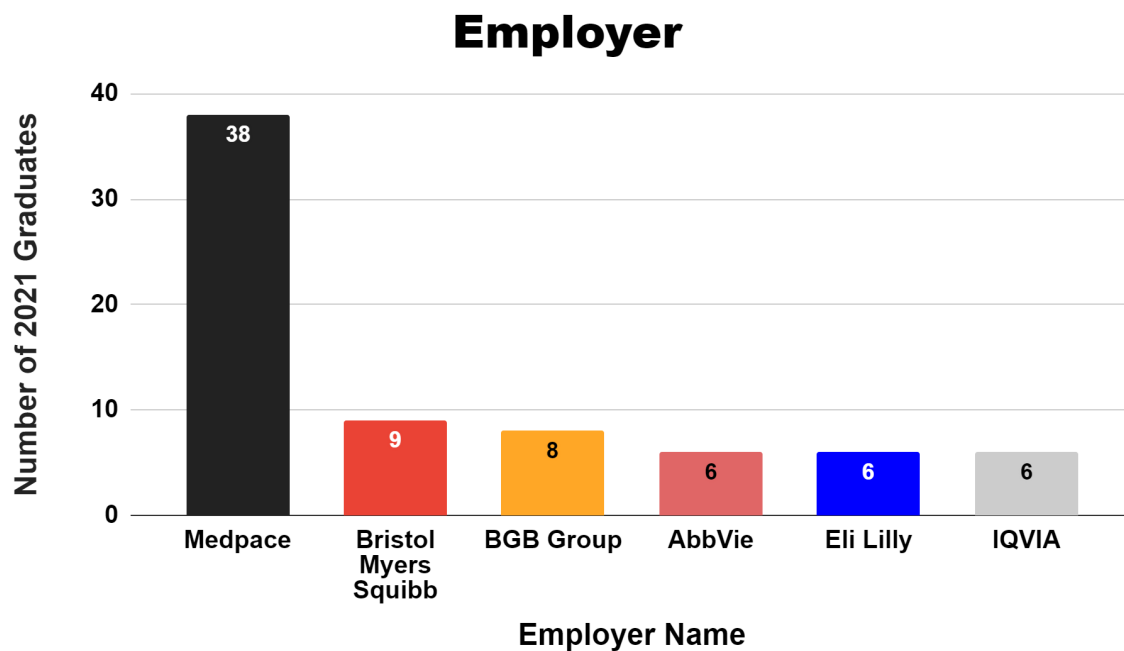
- Medpace, Inc. (n=38) employed a greater number of 2021 PharmD graduates in a Direct-To-Industry role than any other employer as seen in Figure 1.
- Approximately 1/3 of the 276 PharmDs were employed by Pharmaceutical/Biotechnology companies, while 2/3 were employed by “service industry” companies such as agencies and Clinical Research Organizations, as illustrated in Figure 2.
- The 276 pharmacists in this study cohort work in a variety of functional areas, the most common of which included Clinical Development (22%), Medical Writing (19%), Medical Affairs (16%), and Strategic Consulting (11%), as depicted in Figure 3.
- The most common alma maters included Rutgers University (11%, n=29), Massachusetts College of Pharmacy and Health Sciences (MCPHS) (9%, n=24), and others as shown in Figure 4.
- Data on “Position Title” was also collected, but due to the high degree of variability of position titles and nomenclature across employers, this data was difficult to summarize in a meaningful way. Overall, these positions could be best described as “entry level” for a pharmacist in these employer organizations.

Characterization of Direct-to-Industry Jobs Obtained by Class of 2021 PharmD Graduates

Breakdown of Employer

The 276 pharmacists represented in this study were able to obtain jobs at about 140 different employers. This figure depicts the companies that hired the most 2021 pharmacy school graduates in Direct-To-Industry roles. Medpace, Inc employed a greater number of 2021 pharmacy school graduates (n=38) in a Direct-To-Industry role than any other employer, just as they did in 2020 (n=22).

Figure 1. Top PharmD Class of 2021 Direct-To-Industry Employers (n=276)



*Other = 203 pharmacists employed by a variety of other employers are not depicted in Figure 1

Categorization of Employer Types

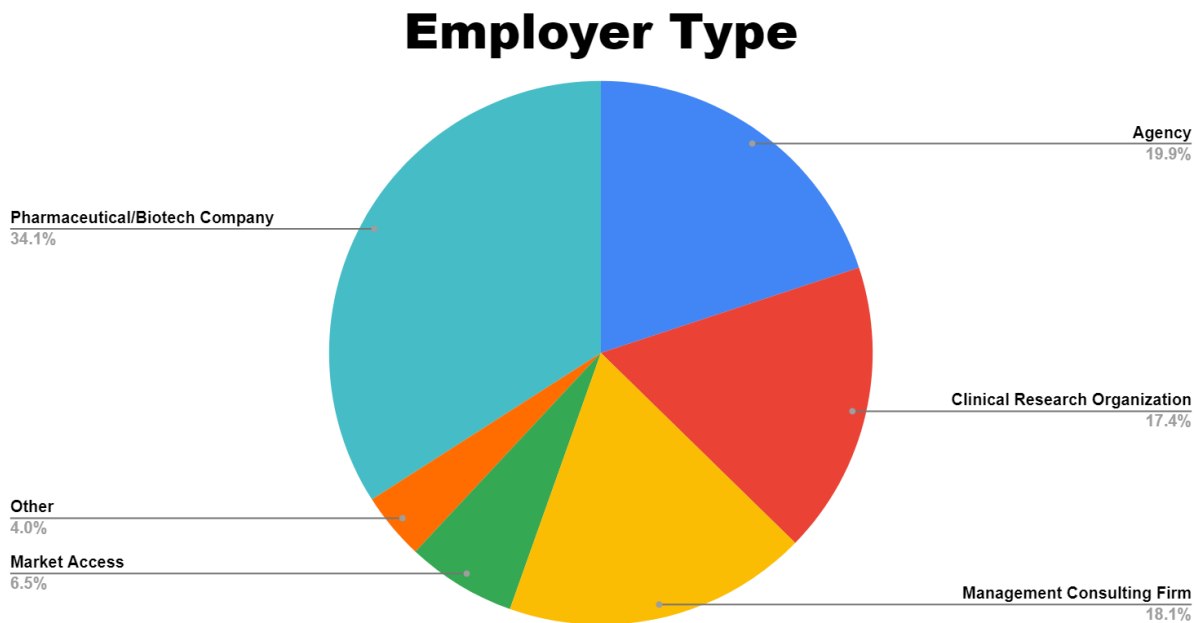
Approximately $\frac{1}{3}$ (34%) of the cohort of pharmacists represented in this study were employed by a Pharmaceutical/Biotechnology company. The remaining $\frac{2}{3}$ were employed by a service company supporting pharmaceutical industry clients.

Employer categories: The authors used their best judgment to define, categorize and group the employer types for the cohort of pharmacists represented in this study.

For the purposes of this study:

- “Pharmaceutical/Biotech Company” included employers that have a medicinal product on the market or are currently developing a medicinal product for the market.
- “Agency” included the following: Medical Training Agency, Medical Communications Agency, Medical Writing Agency, Advertising Agency or Medical Education Agency.
- “Management Consulting Firm” included consulting organizations that provide more than one major area of service to Pharmaceutical/Biotech/Healthcare companies.
- “Clinical Research Organization” included companies that focus their services primarily in Clinical Research.
- “Market Access” included agencies that focus their services primarily in Market Access.
- “Other” included the following: Diagnostics companies, Investment Firms, Imaging Companies, Contract Manufacturers or Medical Device Companies.

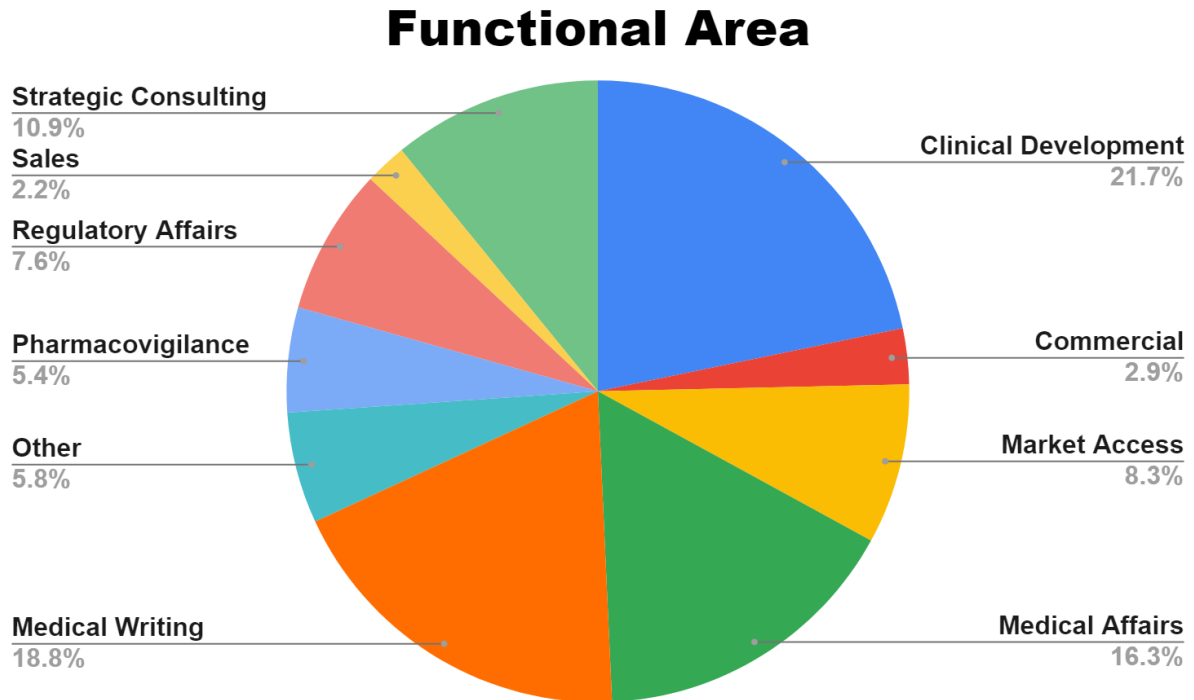
Figure 2. Breakdown of Employer Type, Class of 2021 PharmD Graduates (n= 276)



Categorization of Functional Areas

The cohort of pharmacists represented in this study were employed in a variety of functional areas, the most common of which was Clinical Development.

Figure 3. Breakdown of Functional Areas of Direct-To-Industry Roles, PharmD Class of 2021 (n=276)

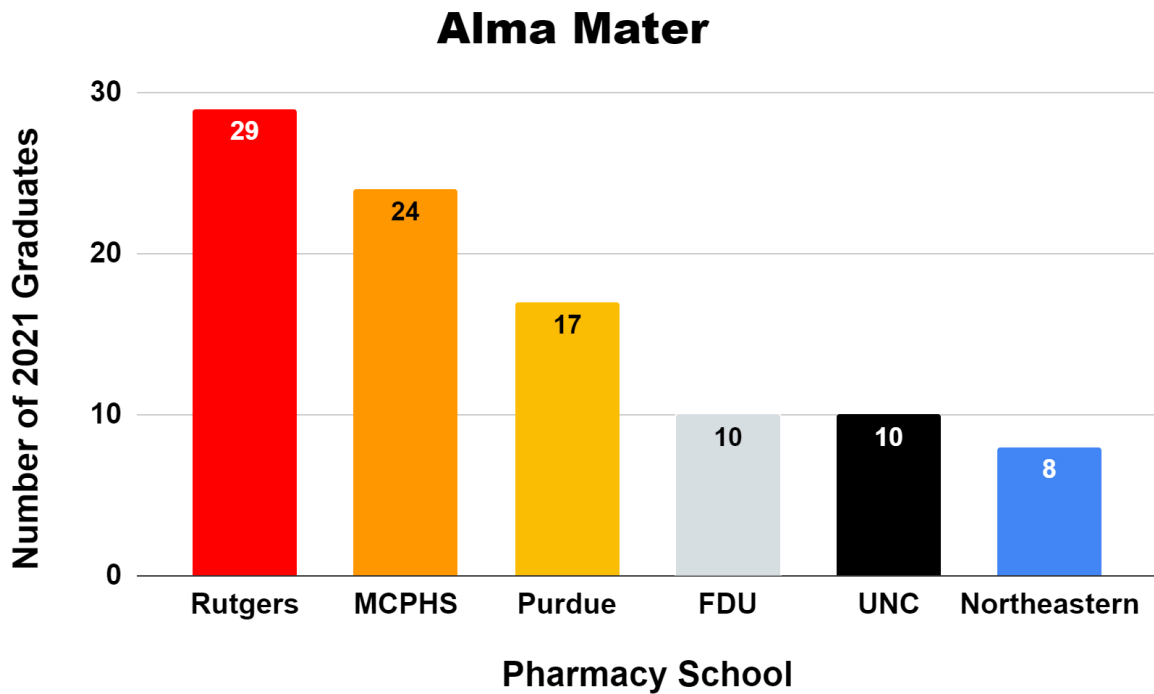


Note: the "Other" category includes device, diagnostics, and imaging companies, and other employers that did not align with one of the main functional areas

Breakdown by Alma Mater

The cohort of pharmacists represented in this study graduated from a wide variety of pharmacy schools, the most common of which was Rutgers University, followed closely by MCPHS. In all, more than 70 different pharmacy schools were represented.

Figure 4. Alma Mater, Direct-To-Industry PharmD Class of 2021 (n=276)



*Abbreviations: MCPHS: Massachusetts College of Pharmacy and Health Sciences; FDU: Fairleigh Dickinson University; UNC: University of North Carolina-Chapel Hill;

**Other = 178 pharmacists from >65 miscellaneous schools are not depicted in Figure 4

Limitations

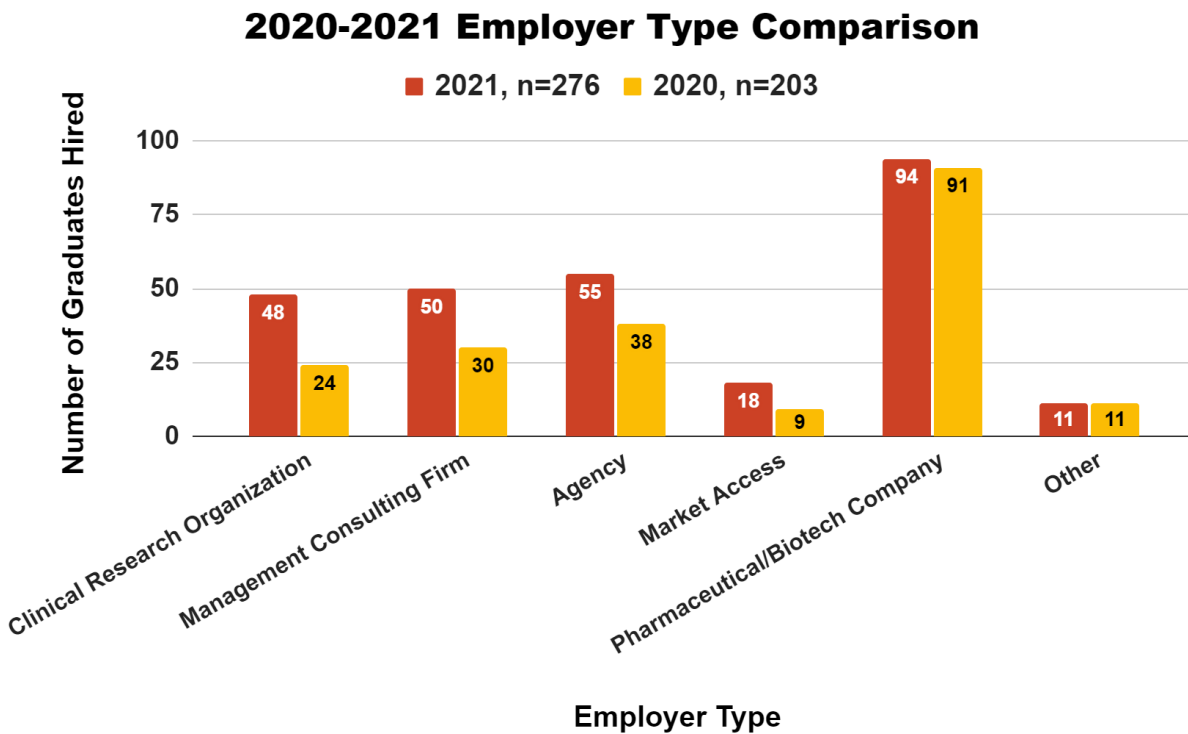
Functional areas were categorized at the discretion of the authors. Due to variability in titles across companies, positions were manually stratified into distinct functional area categories to allow for comparative analysis, but this categorization may have led to differences in distribution based on the stratification methodology. Another limitation was the difficulty in accurately categorizing service provider companies according to whether they make their business by providing i) multiple categories of services (a “Management Consulting Firm”) or ii) by providing only one primary service category.

The accuracy of self-reported data collected from a LinkedIn profile cannot be fully verified. Also, some individuals simply described themselves as “contractors” or “pharmacists” without further description of their responsibilities. Individuals might have changed their LinkedIn profile at any time after the data was collected. Despite these limitations, IPhO will endeavor to maintain the most complete and accurate database of Direct-To-Industry jobs in the future.

Comparative Analysis with 2020¹

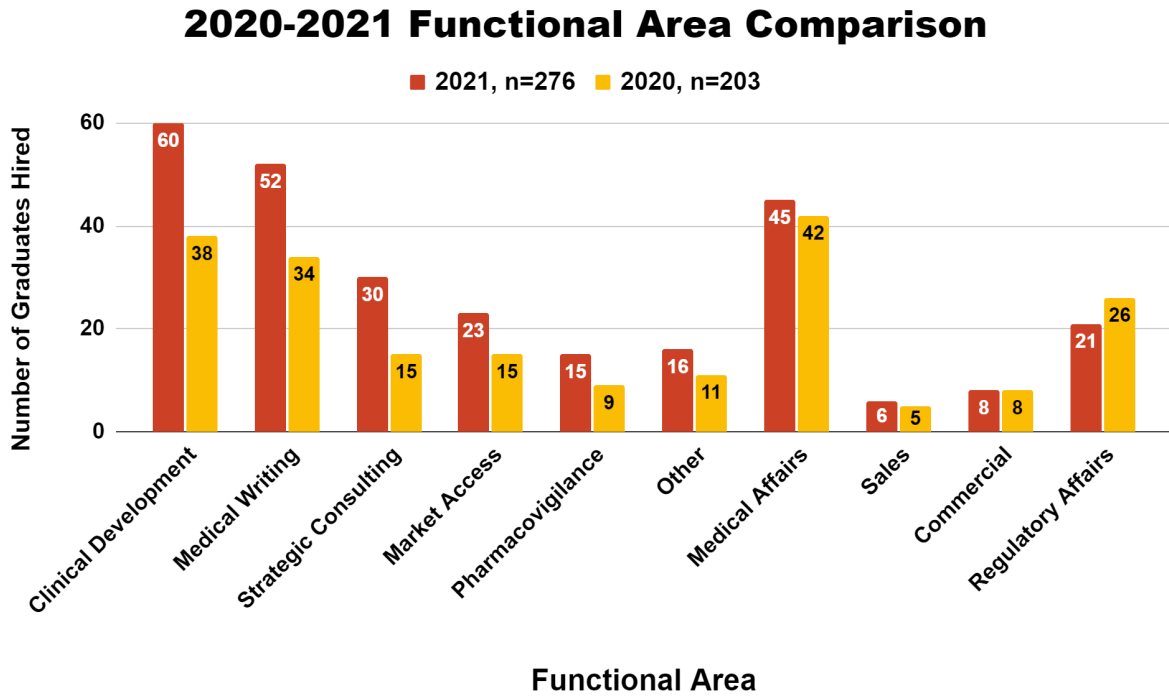
- **Total Number.** 276 PharmDs in the Class of 2021 were identified as having secured Direct-To-Industry jobs, compared with 203 from the Class of 2020.¹ This represents a 36% increase. Possible explanations for the increase include: i) more PharmDs are securing Direct-to-Industry roles, ii) increased recognition among industry employers of the value that pharmacists bring to their organization, iii) improved research methodology in identifying Direct-to-Industry 2021 pharmacist graduates, and/or iv) a general depression in hiring during mid-2020 due to the Covid-19 pandemic.
- **Employer Type.** As depicted in Figure 5 below, the number of PharmDs obtaining a role in a Pharmaceutical/Biotechnology company was similar in 2021 and 2020, while the number of PharmDs obtaining roles with other employer types increased.

Figure 5. Direct-To-Industry Employer Type Comparison
PharmD Graduating Classes of 2021 and 2020



- **Functional Area.** As depicted in Figure 6 below, the number of PharmDs obtaining a role in Medical Affairs was similar in 2021 and 2020. However, the number of PharmDs obtaining roles in other functional areas increased, including Clinical Development.

Figure 6. 2020-2021 Direct-To-Industry Functional Area Comparison
PharmD Graduating Classes of 2021 and 2020



Conclusion

More than 275 PharmD graduates from the class of 2021 secured a Direct-To-Industry position in pharmaceutical and related service companies, 36% more than were identified in 2020.

Although a greater number of 2021 graduates secured an Industry Fellowship (n=431)² than a Direct-to-Industry role, the findings of this study highlight a substantial, growing number of industry employment options for graduating pharmacists. Until IPhO began conducting research of this type, these Direct-To-Industry opportunities were not widely known or understood, and students who wanted to enter the Pharmaceutical Industry have focused on fellowships as the only available path to industry employment. Many unsuccessful fellowship applicants ask the question “what now?” and do not realize that they could be pursuing these types of employment opportunities.

About 1/3 of these Direct-to-Industry roles were in Pharmaceutical/Biotechnology companies, while about 2/3 of the positions were in Service Provider organizations, agencies and other related companies. This data is substantially different from fellowship programs; more than 95% of current fellows are gaining experience in Pharmaceutical/Biotechnology companies while just 5% are training with service companies.¹

Increasingly, employers are recognizing that there is a strong talent pool of graduating pharmacists who are industry-ready and do not need a fellowship to obtain an entry level role in their organization. Medpace, Inc is a good example, as they hired 38 pharmacists following their graduation in 2021. The results of this study will be shared with employers to help increase awareness of Direct-To-Industry roles for graduating pharmacists who are industry-ready.

This study will be repeated annually to track changes and trends related to industry employment for graduating pharmacists.

References

1. Alexander JG, Mathre S, Hu G. Analysis of Direct-To-Industry Jobs Among 2020 PharmD Graduates.
2. Alexander JG, Skersick P, Pradhan P, Tran M, Mullins A, Chilakamarri P. An Analysis of 2021-2022 PharmD Industry Fellowships. <https://www.industrypharmacist.org/publications.php>
3. Lebovitz L, Rudolph M. Update on Pharmacist Workforce Data, and Thoughts on How to Manage the Oversupply. *Am J Pharm Educ.* 2020 Oct;84(10):ajpe7889. doi: 10.5688/ajpe7889.
4. Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Pharmacists, at <https://www.bls.gov/ooh/healthcare/pharmacists.htm>
5. Park E, Downen S, Silverman J. Industry Pharmacist Job Satisfaction Research – Preliminary Analysis. Poster presented at: ASHP Annual Midyear Meeting; December 2021.
6. Pharmacy Salary Survey Results. *Drug Topics.* Vol.164. No.12. December 2020.