

Unique PharmD Career Options: A National Survey Examining Pharmaceutical Industry-Based Postgraduate Training Programs

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BACKGROUND

- The number of general and special pharmacy practice residencies and fellowships has steadily increased since 1990, and current graduating PharmD's have more diverse career options than ever before!
- Senior executive officers of 72 pharmaceutical companies, which are members of Pharmaceutical Research and Manufacturers' Association (PhRMA) identified 47 different areas where an entry-level pharmacy degree would be beneficial for management positions in pharmaceutical companies!
- Less than 20% of pharmacy graduates pursue post-graduate professional training in various disciplines!
- Of an estimated 206,000 licensed pharmacists, less than 3% currently work in the industry!
- Similarly, industry-based postgraduate training programs have been growing substantially since 1981!
- Since 1984, the Institute for Pharmaceutical Industry Fellowships at the Ernest Mario School of Pharmacy at Rutgers University has offered an increasing number of unique postgraduate fellowships affiliated with 13 different sponsoring companies in the industry, producing over 350 alumni working in various areas within the industry
- Pharmacy students often graduate without being exposed to many unique career and training opportunities!
- Little published data exists reporting the PharmD fellows and residents' experiences and peer perspectives of the overall value of postgraduate training programs

OBJECTIVES

- To assess the current pharmaceutical industry-based PharmD fellows' and residents':
 - Exposure to career and training opportunities in the pharmaceutical industry during pharmacy school
 - Level of satisfaction with their 1 or 2-year postgraduate training program in the industry
 - Perceptions of overall value of their respective programs in regards to the pharmacy profession and career advancement

METHODS

- 12-question, anonymous e-mail survey (collected Aug-Oct 2004)
- Sample: 88 pharmaceutical industry PharmD fellows or residents (68 fellows from Rutgers-affiliated programs; 20 from other programs across the U.S.)
- Inclusion Criteria:
 - Must have graduated from a School of Pharmacy with a PharmD
 - Must be enrolled in a 1 or 2-year residency, fellowship, or other industry-based postgraduate training program with or without an academic affiliation
- Survey Questions captured the following:
 - Level of exposure to and familiarity with career and training opportunities in the industry
 - Knowledge of various functions within a pharmaceutical company
 - Fellows/Residents' assessment of the program and its long-term value for career advancement and the profession of pharmacy
 - Extent to which PharmD clinical skills obtained in pharmacy school were utilized during the postgraduate training program
 - Likelihood of continuing to pursue a career in the pharmaceutical industry after program completion
- Descriptive statistics compiled with Microsoft Excel
- Subgroup analyses performed

RESULTS

- 82 of 88 met subjects met inclusion criteria
- 65 responded to the survey (79% response rate)
 - 51 from the Rutgers Pharmaceutical Industry Fellowship Program (17 different schools, 13 different companies)
 - 20 graduates from The Ernest Mario School of Pharmacy, Rutgers University
- Heterogeneous sample: respondents graduated from 23 different Schools of Pharmacy and worked at 16 different companies in the pharmaceutical industry (Table 1)
- Low exposure (44.6%) to industry career options (Fig. 1) and low familiarity with industry training options and functions within the industry (23%) prior to program initiation (Fig. 2)
 - Subgroup analysis: exposure by School of Pharmacy attended (Figs. 1a, 2a) - higher among Rutgers students (95%)
- Majority: Program beneficial (83.1%) to the profession of pharmacy (Figs. 3, 3a)
- Majority: Fellowship/Residency experience universally applicable for a career outside of the industry (Fig. 4)
- High degree of utilization of PharmD clinical skills (67.8%) during postgraduate program (Fig. 5)
 - Subgroup analysis: Likelihood to believe that experience gained from the postgraduate program may be utilized if pursuing a career outside of the industry among those who utilized PharmD training in postgraduate program (Fig. 5a)
- High degree (over 95%) of overall satisfaction with the program across all satisfaction endpoints/questions assessed: 1) program long-term benefit to career, 2) likelihood of pursuing career in the industry 3) level of respect as a fellow at the company 4) perception of being a part of the team at the company (Fig. 6)

Table 1 - Demographic data

RESPONDENT BACKGROUND DATA			
School of Pharmacy attended		Pharmaceutical Sponsors	
(n)	Percent	(n)	Percent
Rutgers	20	Roche	13
Philadelphia	9	BMS	12
St. John's	4	Novartis	6
Maryland	3	Eli Lilly	6
Albany	3	Ortho Biotech	3
Michigan	3	Ortho McNeil	3
Mass	2	Sanofi Aventis	3
Florida A&M	2	GSK	3
Purdue	2	TKL	2
Xavier, Louisiana	2	Sankyo	2
Northeast. Boston	1	J & J	2
U. of Colorado	1	Bimac	1
Texas Tech	1	EMD	1
Drake	1	Purdue	1
Duquesne	1	Astra Zeneca	1
Virginia	1	Schering Plough	1
UNC	1		
U of Mississippi	1		
U of Missouri	1		
Oregon State	1		
Temple	1		
Butler	1		
TOTAL	65		65

Figure 1 Q: Adequately Exposed to Career Options in the Pharmaceutical Industry?

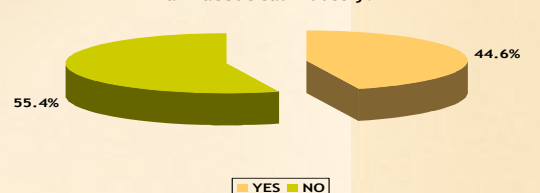


Figure 1a Rates of Adequate Exposure to Pharmaceutical Industry Career Options

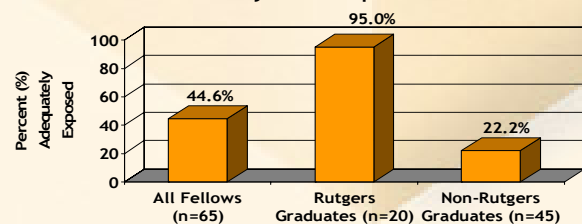
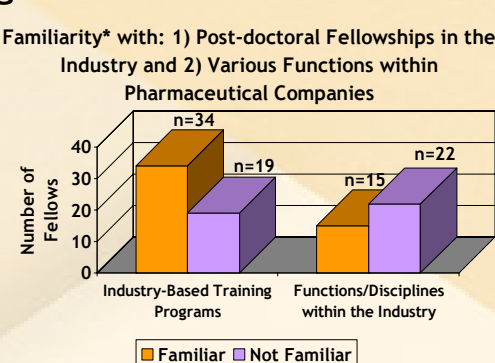
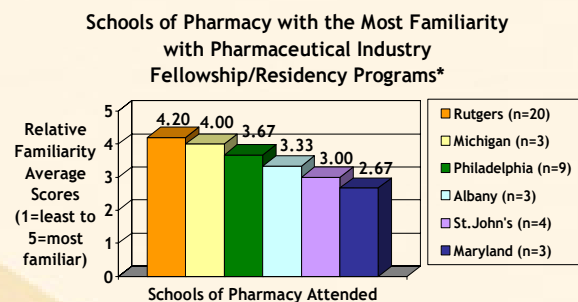


Figure 2 Familiarity* with: 1) Post-doctoral Fellowships in the Industry and 2) Various Functions within Pharmaceutical Companies



*Respondents asked to rank their familiarity from 1 to 5, 1=not at all familiar to 5=very familiar. Pre-defined scores: 1 or 2 = not familiar, 4 or 5 = familiar

Figure 2a Schools of Pharmacy with the Most Familiarity with Pharmaceutical Industry Fellowship/Residency Programs*



*Only the Schools of Pharmacy represented by at least 3 subjects in the sample were compared. Familiarity pre-defined: 1=not at all familiar, 5=very familiar

Figure 3 Do Pharmaceutical Industry-Based Fellowships/Residencies Increase the Value of the Profession of Pharmacy? Rank 1 to 5 (5=absolutely agree)

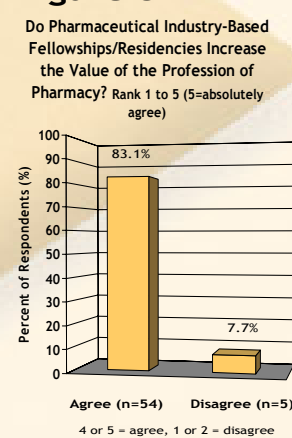


Figure 3a Q: Does Program Increase the Value of the Profession of Pharmacy?

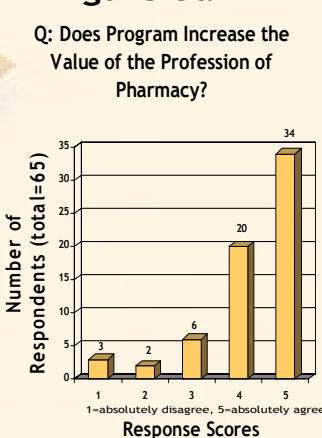
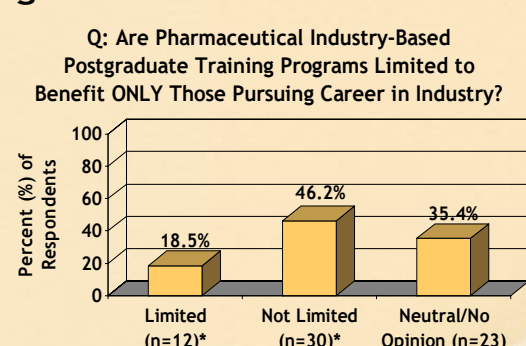


Figure 4 Q: Are Pharmaceutical Industry-Based Postgraduate Training Programs Limited to Benefit ONLY Those Pursuing Career in Industry?



*Respondents asked to rank response (1-absolutely agree with above statement to 5-absolutely disagree; pre-defined limited=1 or 2, neutral/no opinion=3, not limited=4 or 5)

Figure 5 Q: Did You Apply Your PharmD Skills Obtained In Pharmacy School During Postgraduate Training Program?

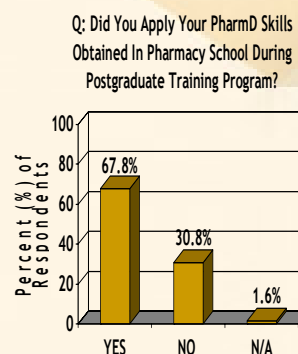


Figure 5a Subgroup Analysis - Q: Are Industry-based Postgraduate Programs Limited To Benefit Only Those Pursuing Career in Industry?

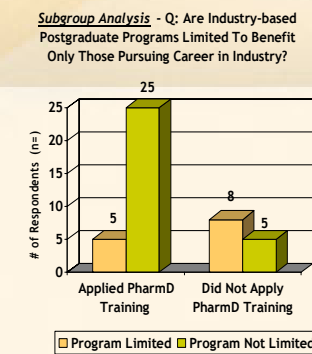
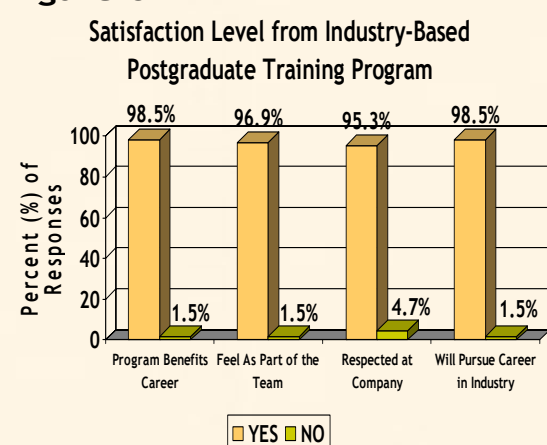


Figure 6 Satisfaction Level from Industry-Based Postgraduate Training Program



DISCUSSION

- Majority (55.6%) of surveyed PharmDs not adequately exposed to career options in the pharmaceutical industry, and only 23.1% are aware of the various specific disciplines within the industry
- Because only PharmDs in Industry-based Postgraduate Training Programs were studied, the lack of exposure rates may be higher if a larger PharmD population is surveyed
 - Graduates of Ernest Mario School of Pharmacy at Rutgers University had the highest rate of baseline exposure to pharmaceutical industry career options (95%) in this survey sample
- An overwhelming majority (>95%) of surveyed PharmDs in Industry-Based Postgraduate programs are highly satisfied with their respective fellowships/residencies overall, and perceive both short and long-term benefits from such programs
- Survey provides potentially useful results to be utilized by: 1) Current graduating pharmacy students 2) Preceptors and program directors of the industry-based postgraduate training programs, 3) Schools of Pharmacy across the United States, and 4) Sponsoring companies in the pharmaceutical industry
- Because only current, industry-based PharmD fellows or residents were surveyed, the total graduating PharmD population may be far less exposed to opportunities in the industry than reported by the population in this survey
- Results provide previously unpublished, important peer perspectives to current pharmacy students and PharmD's considering unique postgraduate training options
- Limitations:
 - Some of the respondents surveyed had entered their fellowship/residency only 1-2 months prior to survey collection, and because no follow-up surveys were collected from them, results may not have accurately captured long-term assessments
 - Disproportionately high number of fellows from the Rutgers-affiliated program, although this disparity reflects the growing size of the program in relation to others in the field

CONCLUSION

- Current PharmD fellows and residents are highly satisfied with the experience they gain from their pharmaceutical industry-based postgraduate training programs
- Pharmacy student exposure to training and career options in the pharmaceutical industry remains suboptimal and may require improvement
- Further, long-term, follow-up studies with larger samples assessing the overall impact of postgraduate training programs in the pharmaceutical industry from various perspectives are warranted

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DISCLOSURES

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

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