

Pharmacy Managers' Views of Job Responsibilities for Student Interns and Pharmacy Technicians^{1,2}

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Recent Montana legislation permits pharmacy technicians to perform selected pharmacy duties previously restricted to pharmacists and pharmacy interns. Hiring pharmacy technicians in lieu of student interns could reduce the number of paid student internship positions in Montana, forcing students to seek paying internship positions in other states or to obtain hours in Montana without pay and placing additional financial or time burdens on students. Montana pharmacy owners and managers were surveyed concerning their attitudes towards job responsibilities which might be delegated to store clerks, pharmacy technicians and student interns, and their plans to employ pharmacy technicians and student interns in the future. Surveys were mailed to all 269 pharmacy managers in Montana. An overall response rate of 80.3 percent was obtained. Survey results suggest that 13 Montana pharmacies were lost in 1994 to students hoping to obtain paid intern hours in Montana.

INTRODUCTION

Increasing pressures to contain pharmacy operating expenses combined with attempts to translate the concept of pharmaceutical care into daily practice is anticipated to lead to greater use of pharmacy technicians(1). The expanded use of technicians to perform nonprofessional pharmacy activities is gaining acceptance by pharmacists(2), and is necessary to move the profession forward(1). However, this increased employment of pharmacy technicians may have the unintended effect of making it more difficult for pharmacy students to locate paying student internships.

Pharmacy students seeking licensure as pharmacists in any of the 50 states, the District of Columbia and Puerto Rico are required to complete from 400 to 2,080 clock hours of internship before receiving licensure as a pharmacist(3). As schools of pharmacy move towards offering the PharmD as the sole entry-level degree, the substantially longer clerkship requirements of PharmD curricula may obviate the need for non-school intern hours throughout the country; however, the conversion to PharmD-only programs is still a number of years away for many schools. Moreover, 36 of the 52 boards of pharmacy in the U.S. (including Puerto Rico and the District of Columbia) currently require pharmacy students to obtain additional internship hours outside of the hours obtained in school-supervised learning experiences, regardless of entry-level degree awarded(3). Therefore, the

need for pharmacy students to obtain extracurricular internship hours will likely remain an issue for many years to come.

Reflecting a nationwide trend(4), the Montana Legislature recently passed legislation permitting pharmacy technicians to perform selected pharmacy duties previously restricted to pharmacists and pharmacy student interns(5). A pharmacy technician is defined in Montana as any person at least 18 years of age who holds a high school diploma (or equivalent) and has received Board of Pharmacy-approved on-the-job training. Under the direct supervision of a licensed pharmacist, technicians are permitted to perform the tasks listed in Table I. Student interns, pharmacy students who have completed their first professional year of pharmacy school and have registered as interns with the Board of Pharmacy, are permitted to perform these same tasks, but may also accept oral prescription orders, substitute generic drugs and counsel patients under a pharmacist's supervision.

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Table I. Tasks and functions of pharmacy technicians permitted by Montana Pharmacy Technician Act^a

Remove a stock bottle of drugs from the shelf ^b
Count and pour the contents of the stock bottle into a suitable container ^b
Type a prescription label and affix it to a prescription bottle ^b
Enter prescription information into a data processing system ^b
Maintain prescription records on the patient profile system ^b
Prepackage unit dose drugs for internal distribution
Sell nonprescription drugs in their original containers without engaging in patient counseling
Receive and check in pharmaceuticals, including controlled substances
Participate in the biennial inventory of controlled substances
Compound parenteral solutions, irrigations and other sterile solutions ^b

^aFrom reference 5.

^bTask restricted to licensed pharmacist or intern prior to passage of technician legislation.

This formal recognition and delineation of pharmacy technician functions has given rise to student fears that pharmacies which had previously employed student interns would hire pharmacy technicians instead, worsening an already existing employment problem for student interns. University of Montana pharmacy students have long reported difficulties in locating paying student internships within the state. Each summer, more and more students find it necessary to relocate to Montana communities where they do not normally domicile or to other states to obtain paying internship positions. This increases these students' financial burdens for travel and living expenses during the summer months, leaving fewer funds available to cover educational expenses.

To investigate the potential impact of Montana's pharmacy technician legislation on pharmacy job opportunities for student interns in the state, members of The University of Montana Chapter of APhA-ASP conducted a survey of Montana pharmacy owners and managers concerning assignment of job responsibilities to store clerks, pharmacy technicians and student interns. Respondents' future plans to employ pharmacy technicians and student interns were also examined.

METHODOLOGY

Six months after Montana's Pharmacy Technician Act went into effect, a three page survey addressed to the pharmacist-in-charge was mailed to the state's entire population of 311 pharmacies listed with the Montana State Pharmacy Association. Pharmacy managers were asked to provide demographic information about themselves and their practice sites (e.g., daily prescription volume). Respondents were also asked about their pharmacy's history of employing student interns and pharmacy technicians, and their future plans regarding such employment of student interns and pharmacy technicians. Finally, the pharmacy managers were asked to indicate which pharmacy personnel (pharmacist, student intern, pharmacy technician and/or clerk) should perform each of 31 pharmacy tasks (Table II). The total number of tasks designated by respondents for each job title were summed to arrive at "task scores" for each job title to

determine if task delegation varied across practice settings.

The mail survey was conducted using the guidelines of Berdie and Anderson(6). Included with the survey was a cover letter printed on School of Pharmacy letterhead and signed by the investigators explaining the nature of the project and assuring the confidentiality of responses. A stamped and addressed return envelope was also included. Two weeks after the first mailing, a second copy of the survey, a follow-up cover letter and another stamped and addressed return envelope were mailed to nonresponders. Two weeks later still, pharmacy students conducted scripted telephone calls to pharmacist managers who failed to respond after the second mailing to solicit the participation of these managers in the project and to answer any questions.

Appropriate descriptive, parametric and nonparametric statistical tests were conducted using the SPSS for Windows statistical program(7). An alpha level of 0.05 was selected to define significance for all statistical analyses.

RESULTS

Response Rate

Of the 312 surveys mailed, 43 addresses were found to be invalid because of duplication (multiple business addresses for the same pharmacy), because the pharmacies were no longer in business or were based in clinics which did not utilize a pharmacist, or because pharmacies based in small hospitals or long-term care facilities were managed by local community pharmacists. Excluding the above pharmacy addresses resulted in a valid population of 269 pharmacist managers (124 independent retail pharmacies, 80 chain pharmacies, 31 hospital pharmacies and 34 "other" practice sites such as family planning clinics, state residential homes, long term care consultancies or home infusion pharmacies).

A total of 219 (81.4 percent) surveys were returned. Three of the 219 surveys returned were discarded as unusable, resulting in an overall response rate of 80.3 percent.

A demographic breakdown of respondents is provided in Table III. Respondent demographics and geographies were analyzed for non-response bias. Independent retail pharmacies appeared to be underrepresented with a return rate of 67 percent, while hospital pharmacies and pharmacists practicing in "other" sites were overrepresented with 97 and 100 percent returning surveys, respectively. These differences in return rates were not considered to be a source of bias, however, as the total number of surveys received from independent pharmacies exceeded the numbers received within any other practice site category. No geographical bias was identified.

Survey Findings

Pharmacy manager responses to which of the 31 tasks listed should be performed by each job title (pharmacist, student intern, pharmacy technician and clerk) are provided in Table II. Overall task scores for each job title (Table IV) were compared across practice settings (independent retail, chain or hospital) using MANOVA because of the nonindependent nature of the error terms across job title categories. Only the task scores for "pharmacist" differed significantly across practice settings ($P = 0.031$), the Bonferroni posteriori test indicating that managers of hospital pharmacies were less likely than independent retail pharmacy managers to assign pharmacists to tasks requiring little professional expertise (e.g., completing insurance

Table II. Montana pharmacy managers' opinions about who should perform particular tasks in a pharmacy by pharmacy practice setting^a

Job title ^b	Retail				Hospital				Other							
	Independent (n=84)		Chain (n=68)		Hospital (n=30)		Other (n=34)									
	P	SI	T	C	P	SI	T	C	P	SI	I	C	P	SI	T	C
Answer telephone	80	78	73	66	80	77	91	56	67	73	73	67	82	82	82	50
Take a telephoned refill request	80	85	74	41	81	86	93	30	73	80	57	20	94	91	54	24
Take a telephoned new prescription	98	62	21	3	99	59	6	1	97	63	3	3	97	71	6	0
Receive a written prescription from a patient	88	82	69	34	84	84	80	22	80	83	70	23	94	82	76	12
Respond to a prescription pricing request	94	47	29	5	84	59	69	10	73	67	57	10	76	59	68	29
Obtain patient profile information	91	80	58	14	87	81	80	29	90	87	57	20	94	85	59	12
Enter or update patient profile information in computer	87	86	68	6	83	84	90	22	80	80	70	10	94	82	65	6
Call up refill prescriptions on computer	89	83	73	3	81	81	88	7	73	90	80	7	88	91	79	6
Enter new prescription information on computer	93	78	56	3	84	83	70	3	90	87	73	3	91	82	41	0
Select prescription drug product from pharmacy shelves for dispensing	93	80	60	4	90	86	70	3	73	90	83	7	91	88	76	3
Count or measure out needed amount of drug for a prescription	88	88	74	6	88	87	71	0	73	90	90	3	91	88	71	3
Compound prescription medications	93	74	22	2	99	77	10	0	90	80	30	0	94	76	15	0
Prepare IV admixtures, other drug solutions	94	61	71	2	87	68	86	0	93	83	63	0	91	79	35	0
Prepare unit doses of bulk medications	80	80	66	8	81	78	67	1	63	73	93	13	76	79	68	6
Affix prescription labels to container for patient use	87	85	64	5	91	83	62	3	90	83	73	3	91	79	62	0
Complete insurance forms	66	69	71	62	68	71	93	58	43	43	73	73	71	74	88	59
Counsel patients about prescriptions	96	69	6	5	98	74	1	0	97	63	0	0	94	79	9	0
Counsel patients about OTC medications	96	68	19	11	99	75	9	0	97	77	3	3	94	79	12	0
Counsel patients about health aids and home diagnostic kits	96	74	28	11	99	74	13	1	97	73	13	3	91	79	18	0
Provide recommendations about OTC products	99	72	32	12	99	75	19	0	93	80	13	7	91	79	15	0
Phone refill requests to physician offices	91	85	53	8	81	83	59	6	87	80	47	7	91	85	44	3
Take refill authorizations from physician offices	89	82	59	8	90	81	48	4	90	90	37	3	94	85	29	0
Provide drug information to physicians, nurses or other health professionals	99	64	12	1	99	59	3	0	97	70	7	0	97	79	9	3
Operate cash register	72	74	73	89	67	67	90	88	43	43	80	80	65	68	82	79
Maintain inventory records	79	78	72	57	86	70	75	39	53	67	90	63	76	79	73	47
Order needed inventory	78	72	68	46	87	71	75	30	53	63	93	60	82	76	68	47
Receive and check in orders	71	81	82	67	72	75	96	59	40	53	90	63	76	74	88	56
Stock inventory on shelves	74	80	81	54	72	77	96	41	40	47	87	63	79	76	85	53
Obtain prescription copies from other pharmacies	96	65	16	0	99	68	7	0	93	70	17	0	85	71	6	0
Provide prescription copies to other pharmacies	98	55	15	0	99	65	6	0	97	70	13	0	85	68	9	3
Perform general cleaning duties	68	72	78	87	70	75	93	86	33	43	73	80	65	65	82	82

^a Percentage of respondents indicating each task; each task could be assigned to multiple job titles.

^b P = Pharmacist; SI = Student Intern; T = Technician; C = Clerk.

Table III. Demographics of Montana pharmacy managers and their practice sites

Demographic characteristic	Practice setting			
	Retail		Hospital	Other
	Independent	Chain		
Gender	91% male 8% female (n = 84)	72% male 23% female (n = 65)	90% male 10% female (n = 30)	62% male 38% female (n = 34)
Job title	80% owner 18% manager 0% director 1% other (n = 83)	1% owner 90% manager 0% director 7% other (n = 65)	0% owner 23% manager 63% director 13% other (n = 30)	12% owner 41% manager 18% director 29% other (n = 34)
Years in practice at present site	Range = 0.5-43 Mean = 15.54 SD = 10.83 (n = 83)	Range=0.1-45 Mean = 6.69 SD = 7.72 (n = 67)	Range = 0.5-28 Mean = 9.46 SD = 7.98 (n = 30)	Range=0.2-35 Mean = 8.50 SD = 8.19 (n = 32)
Prescription volume ³	31% low 63% moderate 6% high (n = 84)	11% low 64% moderate 25% high (n = 67)	59% low 17% moderate 14% high (n = 26)	36% low 42% moderate 15% high (n = 31)

³Low volume: < 50 prescriptions/day; Moderate volume: 50-150 prescriptions/day; High volume: > 150 prescriptions/day.

Table IV. Mean overall task scores^a (\pm SD) assigned by Montana pharmacy managers to different pharmacy personnel by practice setting

Practice setting	Job title			
	Pharmacist	Student Intern	Pharmacy Tech	Clerk
Independent retail (n = 84)	27.05 \pm 5.90	23.00 \pm 9.05	15.90 \pm 7.57	7.12 \pm 4.40
Chain retail (n = 68)	26.87 \pm 6.45	23.36 \pm 9.36	17.43 \pm 3.70	6.32 \pm 4.08
Hospital (n = 30)	23.57 \pm 7.60 ^b	22.36 \pm 8.02	17.10 \pm 4.66	7.03 \pm 4.29
Other (n = 34)	26.85 \pm 6.81	24.42 \pm 8.77	15.79 \pm 6.45	5.85 \pm 3.89

^aTask score calculated by summing the number of duties from a list of 31 tasks which pharmacy managers indicated should be performed by pharmacists, student interns, pharmacy technicians and/or clerks.

^bStatistically different from managers of independent retail pharmacies by MANOVA (F = 3.54, df = 2,179, P = 0.031) followed by Bonferroni Test.

forms). A significant negative correlation was found to exist between the number of years a respondent had been practicing at their present site and the overall task score assigned to pharmacy technicians ($r = -0.1514$, $P = 0.026$, $n = 215$). The longer a respondent had been practicing at their present site, the fewer tasks that respondent would permit technicians to perform.

To determine if a relationship existed between a respondent's years of practice, history of working with pharmacy technicians and plans to employ technicians in the future, a two-way ANOVA was conducted with years of practice serving as the dependent variable. Managers who had worked with technicians previously had significantly more practice experience than did managers who had not worked with technicians; however, no difference in years of experience was found to exist between managers planning to hire technicians and those who had no plans to do so. The interaction term between the two categorical variables was also nonsignificant.

The plans of the 58 pharmacies which anticipated employing pharmacy technicians, student interns or both dur-

ing 1994 and beyond were examined. Most pharmacies which had employed student interns within the five years prior to the survey were planning to do so again in 1994. Seven of the pharmacies which had employed students in the past, however, indicated that they would not be employing students in 1994; rather, they planned to employ one or more pharmacy technicians. Six of these seven pharmacies reported employing a pharmacy technician during 1993. Of the 28 pharmacies which had not employed a student intern between 1989 and 1993, two expressed intentions to do so in 1994. These findings result in a net loss to pharmacy students of five pharmacies. The remaining 26 pharmacies which had not employed student interns in the recent past planned to employ one or more pharmacy technicians in 1994, but still no student interns. As eight of these pharmacies had employed neither a student intern nor a technician during 1993, these eight pharmacies are also considered to have been lost to student interns. In total then, 13 Montana pharmacies were lost to students who had hoped to gain paid internship hours in Montana during 1994.

Almost 75 percent of pharmacy managers indicated

that the recent passage of Montana's pharmacy technician legislation had little influence on their hiring plans, while approximately eight percent indicated that the legislation definitely influenced their plans.

DISCUSSION AND CONCLUSIONS

Although a return rate in excess of 80 percent has been obtained by other pharmacy researchers who mail surveyed large samples of pharmacists (8-10), the high return rate (81 percent) obtained in the present study is particularly noteworthy. The timing of the present study could have proven disastrous to the return rate, as the busiest time of the year for most pharmacies is in the late fall leading up to the holiday season, precisely when the mailings occurred. Retail pharmacies usually experience an increase in business both in the prescription department (from patients with acute illnesses) and in the front store (from holiday shoppers). Most hospitals also experience an increase in patient census during the fall, as patients are admitted with complications from influenza, etc. During the telephone follow-up, pharmacy managers commented on the inopportune timing of the survey. The telephone follow-up netted seven percent of all the surveys mailed; the marginal value of this technique should be examined in a future study.

The negative correlation between the years that a respondent had practiced at their current site and the overall task score assigned to technicians suggests that pharmacy managers who have been in practice longer felt that technicians should not be assigned as much responsibility as did less-experienced pharmacy managers. This is a surprising finding in that it was also respondents who had been practicing for a longer period of time who were more likely to have worked with technicians. Had these managers had a negative experience working with technicians? Does relinquishing additional duties to technicians represent such a major paradigm shift for more experienced pharmacists that these pharmacists are uncomfortable with expanding the technician's role? These questions were not examined in the survey.

The results from the ANOVA suggest that previous experience working with technicians influences the attitudes of pharmacy managers towards a technician's capabilities; however, positive attitudes do not necessarily translate into plans to employ a technician in the near future. Other factors, such as economic outlook, may play a greater role in managers' hiring decisions.

Hospital pharmacy managers appear less inclined to assign technical duties to pharmacists than are managers of independent retail pharmacies. Hospital pharmacy managers also appear less likely to assign student interns to such duties, although this inclination was not found to differ significantly from managers in other practice settings.

It is possible that several of the pharmacies not planning to employ an intern in 1994 are located in communities in which no pharmacy student lives. Another possibility is that many stores do not have the prescription volume to justify employment of an intern; many managers noted this on their surveys. Some respondents from low-volume pharmacies questioned the value of the internship experience obtainable in such settings.

Another reason that a pharmacy may be reluctant to employ a student intern is the part-time (during the school year) or temporary full-time (during Summer and Christmas holidays) availability of most pharmacy students. Anec-

dotal reports from some of our students who have interviewed for positions with potential Montana employers suggest that many pharmacies would rather hire a permanent part-time technician than a temporary part-time or temporary full-time student intern. A variation on this theme are reports of chain pharmacies willing to hire student interns instead of technicians if the students are willing to work full time (even throughout the school year). This part-time/full-time employee issue was not addressed in the survey.

Finally, several pharmacist respondents indicated that the economic climate prevented them from hiring student interns. This may help explain a trend in Montana which pharmacy students find to be particularly disturbing: more and more of the state's pharmacies will accept only those student interns who are willing to volunteer their time in the pharmacy. Although it is not possible to generalize the results from Montana to the rest of the United States, many students from around the country who visited the poster session at the 1994 Annual Meeting of the American Pharmaceutical Association arising from this project⁽¹¹⁾ expressed that they were facing similar concerns regarding paid internships in their states.

In light of Montana's recently passed pharmacy technician legislation, there appears to be more competition for pharmacy positions previously filled by student interns. The economic realities faced by the pharmacy profession today have resulted in many pharmacy students facing the prospect of volunteering in a pharmacy in addition to working in a paying, non-pharmacy job. Unfortunately, there is little that schools of pharmacy can do directly to alter this situation. Students' education-related expenses continue to climb to cover increasing program costs, and controlling these increases is usually out of the hands of pharmacy schools, short of decreasing tuition. Schools of pharmacy should work with state pharmacy boards to maximize the hours of school-supervised practice experiences which count towards the completion of internship requirements. Faculty also need to accept that an increasing percentage of their students will have to work in non-pharmacy positions to pay for their educations, and ensure that school policies regarding outside work do not unduly impede this reality. Increased efforts by schools to obtain private and public monies to distribute as scholarships or low interest (or no interest) loans may also help relieve these financial pressures for students.

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