



NATIONAL PHARMACIST WORKFORCE SURVEY

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**FINAL REPORT OF THE NATIONAL SAMPLE SURVEY
OF THE PHARMACIST WORKFORCE TO DETERMINE
COMTEMPORARY DEMOGRAPHIC AND PRACTICE
CHARACTERISTICS**

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EXECUTIVE SUMMARY

INTRODUCTION

This study was undertaken to provide an update on the pharmacist workforce in 2004 and examine changes since 2000 when the last national assessment of the pharmacist workforce was conducted by the same group of researchers.

Several factors in the market for pharmacists changed between 2000 and 2004 that likely have affected decisions that pharmacists make about working, the level and type of work pharmacists do, characteristics of environments in which pharmacists work, and how pharmacists react to their work (i.e. quality of worklife). Between 2000 and 2004 dispensed prescription volume in retail settings increased while the number of retail pharmacies remained relatively stable. Countering the increased demand for pharmacists was an increase in the number of pharmacy schools and graduates from pharmacy schools (and, beginning in 2002, all graduates from pharmacy schools earned Pharm.D. degrees). Dispensing technology improved and generally, states allowed increased technician to pharmacist staffing ratios, promoting the use of more technicians in pharmacies. Lastly, the pharmacy profession continued to advocate pharmacists' roles in direct patient care, including the expansion of collaborative practice agreements and pharmacists providing immunizations. Demonstration projects such as Project IMPACT, the Ashville project and replications of the Ashville project, and recent legislation for Medication Therapy Management Services (MTMS) as part of the Medicare Modernization Act (MMA) suggest new sources of demand for pharmacists.

This current investigation was commissioned by the Pharmacy Manpower Project (PMP). The PMP is comprised of Academy of Managed Care Pharmacy (AMCP), American Association of Colleges of Pharmacy (AACCP), American College of Apothecaries (ACA), American Pharmacists Association (APhA), American Society of Consultant Pharmacists (ASCP), American Society of Health-System Pharmacists (ASHP), Bureau of Health Professions (BHPr), National Association of Chain Drug Stores (NACDS), National Council of State Pharmacy Association Executives (NCSPA), National Pharmaceutical Association (NPhA), Pharmaceutical Research and Manufacturers Association (PhRMA), and Pharmacy Technician Certification Board (PTCB). The American Association of Colleges of Pharmacy serves as secretariat to the PMP.

Design and analysis of the project was conducted by members of the Midwest Pharmacy Workforce Research Consortium consisting of six principal investigators from five universities:

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Project materials and data are housed at the Sonderegger Research Center at the University of Wisconsin School of Pharmacy.

OBJECTIVES

The primary purpose of this project was to collect reliable information on demographic and work characteristics of the pharmacist workforce in the United States during 2004. The project obtained information from a nationally representative sample of pharmacists. Specific objectives included the following:

1. Describe the pharmacist workforce in the United States in terms of demographic and work characteristics.
2. Examine hours worked annually by pharmacists and factors influencing the decision to work.
3. Describe pharmacists' attitudes toward work and their quality of work life.
4. Describe pharmacists' work histories and reasons for staying at current jobs and reasons for leaving current and past jobs.

METHODS

Questionnaire Design: To meet the objectives of this project, a seven-page core survey questionnaire was developed that included questions covering employment status and situation (working or not, setting, position, years employed and in current position), compensation and hours worked, work environment (hours the prescription department is staffed, time spent in professional activities, number of staff working, workload, and perceptions of workload and workload impact), future work plans (leave or stay with current employment and reasons therefore), and individual demographic background information.

A four-page supplemental survey questionnaire was developed for each of three additional content areas (i.e., pharmacist careers, quality of worklife, and workplace characteristics). For each survey form, most questions were taken or adapted from previous workforce surveys, including many that were conducted by the principal investigators.

Sample selection: A random sample of 6,000 pharmacists was obtained from KM Lists (a national medical marketing data warehouse). From this list, we randomly chose a sample of 5,000 pharmacists and retained a hold-back sampling frame of 1,000 pharmacists. The 5,000 selected pharmacists were randomly assigned to one of five groups of 1,000 pharmacists. One group received only the core survey. Three groups received the core survey and one of the three supplements (career, quality of worklife, or workplace). The remaining group received the core survey and a composite supplement form that included the questions from all three supplements.

Survey Mailings: Survey procedures included five subject contacts; a pre-notification postcard, the main initial survey mailing, a follow-up postcard sent to non-responders, a second mailing of the survey packet, and either a telephone call or a mailed final reminder to pharmacists who did not respond to the second mailing of the survey form. As part of the fifth contact, sampled pharmacists were given the option of completing a six-question, non-respondent survey form instead of completing the workforce survey and any supplements.

Replacement Sampling: A significant number of pre-notification postcards were returned due to bad addresses. To compensate for these bad addresses in the sampling frame, a replacement sample of 435 pharmacists was selected randomly from the 1,000 extra hold-back pharmacist names not selected for the initial sample. Pharmacists in the replacement sample were mailed materials according to the survey mailing procedures. As the project proceeded, additional bad addresses were discovered throughout the contact waves but no additional replacement sampling was conducted.

Data Analysis: Descriptive statistics including frequencies, percentages, and means were computed for variables contained in the core and supplement survey forms. Where applicable, data from the national survey of pharmacists conducted in 2000 are included with the current data to provide insight into trends in variables.

RESULTS

Section One: Response

Overall Response Rate: Of 4,719 surveys assumed to be delivered, a total of 97 sampled subjects were either deceased ($n = 15$) or reported they were not pharmacists ($n = 82$) leaving a total of 4,622 subjects who were pharmacists and eligible to complete the survey. Of these eligible pharmacists, 129 refused to participate, 285 completed the non-respondent interview form and 1,564 returned a survey form for a response rate of 33.8%. A total of 1,470 core survey forms were used for analysis after accounting for three respondents who did not complete the core survey form and 91 survey forms where the respondent failed to report employment status ($N = 16$) or information for a minimum set of demographic variables (gender, age, hours worked, and practice setting) was missing ($N = 75$).

Assessment of Response: We assessed non-response bias by examining specific pharmacist characteristics between respondents to the first and second mailings of the survey forms and comparing characteristics of pharmacists who responded to the workforce survey to characteristics of pharmacists who decided not to participate but completed the non-respondent survey form. The final method used to examine non-response bias was to compare characteristics of the respondents to national data.

Overall, the assessment of non-response bias suggests that respondents may under-represent younger pharmacists and over-represent older pharmacists. Further, the age group differences appear to be more prevalent for the female respondents. It appears that the second wave of the survey may have reminded younger pharmacists to respond since respondents to the second mailing of the workforce survey were younger than respondents to the first mailing of the workforce survey.

Section Two: Characteristics of Pharmacists

Licensed Pharmacists: Overall, 86.0% of licensed pharmacists responding to the survey in 2004 were actively practicing pharmacy (working full-time or part-time as a pharmacist or in a pharmacy-related field), slightly less than the 88.2% that responded in the 2000 workforce survey. The difference in the proportion of actively practicing pharmacists results from more survey respondents in 2004 being retired or not working, which could reflect increased retirement or migration out of the practicing workforce.

Actively Practicing Pharmacists: Overall, 45.9% of pharmacists actively practicing in 2004 were female, a slight increase from 2000. The proportion of actively practicing pharmacists working in chain settings increased from 23.5% in 2000 to 27.7% in 2004. The proportion of pharmacists working in traditional community pharmacy practice settings (independent, chain, mass merchandiser, and supermarket pharmacies) remained relatively stable between 2000 (55.4%) and 2004 (56.4%). The proportion of pharmacists in hospital settings remained stable but the proportion in other patient care settings decreased between 2000 and 2004. The proportion of pharmacists in management positions that were female increased from 37.0% to 41.2% between 2000 and 2004.

Comparisons of full-time pharmacists across practice settings revealed that in independent, chain, and mass merchandiser pharmacies, the ratio of men to women pharmacists was roughly 2:1 but in other settings there was an equal or nearly equal ratio of men to women. Chain pharmacy was the most common employment setting for men and hospital pharmacy was the most common setting for women.

Over one-fourth of female pharmacists worked part-time and 15.4% of males worked part-time. For both men and women, the proportions of older pharmacists working part time increased in 2004; 83.8% of male pharmacists over age 55 worked part time in 2004 as opposed to 70.0% in 2000. The proportion of women between the ages of 31 and 45 working part time decreased in 2004 (71.0% to 54.2%), but the proportion of women aged 46 to 50 working part-time increased (9.3% to 20.0%). In 2004, the proportion of part-time pharmacists overall working in chains was considerably higher than in 2000 (29.0% versus 16.1%) and fewer part-time pharmacists were in independent settings (25.9% versus 30.9%).

Hours Worked: Compared to 2000, pharmacists working full-time in 2004 worked fewer hours weekly and pharmacists in ownership and management positions had the largest decreases. In 2004, among pharmacists working full-time, males worked 2.1 hours more per week compared to females. However, the difference in hours worked between males and females working full-time remained stable between 2000 and 2004. Female pharmacists working part-time worked more hours per week than males working part-time (20.3 vs. 17.3). Between 2000 and 2004 the number of hours worked weekly by part-time pharmacists remained fairly stable but the difference in hours worked between males and females increased. In 2004, pharmacists were contributing an average of 0.87 FTE to the workforce. This was a decline from 2000, when pharmacists were providing 0.93 FTE on average to the workforce.

Hourly Wage Rate: Males working full-time earned a higher wage (\$45.56) compared to females (\$43.47). Interestingly, pharmacists working part-time earned a wage (\$44.43) similar to pharmacists working full-time (\$44.61). Relative to 2000, wage rates for pharmacists working full-time in 2004 were less variable across practice settings. The nominal wage growth between 2000 and 2004 was 38% (8.4% growth rate per year) for both full-time and part-time pharmacists. Pharmacists working full-time in management positions earned over \$4 more per hour than pharmacists working in staff positions.

Work History: Pharmacists in independent and chain settings reported being with their employers longer than pharmacists in other practice settings. Pharmacists reported they worked for 3.9 employers and spent 6.8 years per employer. Overall, pharmacists in 2004 have had longer tenure with their current employer compared to 2000.

Debt Load: Pharmacists reported current student loan debt of \$3,132 compared to \$11,772 when they graduated from pharmacy school. Student loan debt amount at time of graduation was \$10,975 for pharmacists with 11 to 15 years of experience and was \$42,600 for pharmacists with 0 to 5 years of experience. Current student loan debt was \$28,854 for pharmacists with 0 to 5 years of experience and \$6,822 for pharmacists with 6 to 10 years of experience. Over 90% of pharmacists with 11 to 15 years of experience, 69% of pharmacists with 6 to 10 years of experience, and 28% of pharmacists with 0 to 5 years of experience currently had no student loan debt.

Section Three: Pharmacists' Work Environments and Work

Prescription Volume and Hours of Operation: It was most common (33%) for pharmacists to work in settings dispensing between 100 and 200 prescriptions daily. Over 75% of pharmacists working in supermarket pharmacies worked in settings that dispensed 200 or fewer prescriptions daily. Conversely, 61% of pharmacists working in chain settings worked in settings that dispensed over 200 prescriptions daily. The distribution of pharmacists according to the prescription volume at their practice settings generally was similar between 2000 and 2004. Overall, in both 2000 and 2004, a majority of pharmacists worked at settings that are staffed between 41 and 80 hours per week, but slightly more pharmacists in 2004 worked in settings staffed more than 80 hours per week.

Pharmacy Staffing: In 2004, 63% of pharmacists overall reported they worked with one or more pharmacists during a majority of their workday and a higher proportion of pharmacists in hospital settings (87%) worked with other pharmacists. More than half of pharmacists in independent settings (52%), chains (52%) and supermarkets (61%) did not work with another pharmacist. The proportion of pharmacists working with three or more technicians increased from 33% to 46% between 2000 and 2004. The largest changes between 2000 and 2004 in the proportion of pharmacists working with three or more technicians were for pharmacists working in independent, chain and mass merchandiser settings.

Technology Present in Practice Setting: With a few exceptions, equipment related to facilitating the dispensing process was more common than equipment related to patient care activities. The most common types of dispensing-related equipment in community pharmacies were automated patient refill request phone systems, bar coding for prescriptions, and tablet/capsule counters. This equipment was present in at least half of the chain pharmacy respondents' practice sites and next most common in mass merchandiser and supermarket pharmacies. Hospital pharmacists reported the highest rate of automated dispensing systems being available in their practice sites. The most common patient care-related equipment was a blood pressure cuff, with over half of all respondents practicing in community pharmacy settings reporting having them available. Among the community pharmacy respondents, there was a tendency for more patient care-related equipment in independent and supermarket pharmacy settings.

In terms of information technology present in pharmacies, 76.1% of respondents had internet access and 65.1% had drug information software in their practice sites. Pharmaceutical care profile or documentation systems were least often reported available in independent pharmacies, and in about 60% of cases when documentation systems were available they were computerized.

More than 60% of respondent pharmacists reported that equipment and/or technology increased the level of their productivity and the quality of care provided to patients, and about half of respondents reported that equipment and technology increased their level of job satisfaction. More pharmacists reported that equipment and technology increased versus decreased demands on their time in the pharmacy, whereas the converse was true for time spent in the dispensing process; more pharmacists reported a decrease versus an increase in time spent in dispensing due to equipment and technology.

Current and Potential Service Provision at Practice Settings: Respondents were asked to check from a list of professional and specialty services which ones were offered at their practice sites. The list included a services related to prescriptions or specialty products such as general and specialty compounding, mailed refill reminders, home infusion, veterinary pharmacy, and durable medical equipment, plus patient care services such as immunization, nutritional support, health and wellness screening, pharmacokinetic dosing, and disease state management.

Across all setting types, no services (other than general/simple compounding and drug information services) were offered in more than one-fourth of pharmacists' sites. Among community settings, independent and supermarket pharmacies tended to have a higher profile of services offered (e.g., durable medical equipment was available in nearly two-thirds of independent pharmacies), however some services were more available in chain or mass merchandiser pharmacies. Pharmacokinetic dosing, nutritional support, and a pharmacy newsletter were more prevalent in hospital pharmacy settings, as well as smoking cessation and medication therapy management services. Disease state management programs were most frequently reported offered by respondent pharmacists from hospital settings, followed by independent and supermarket pharmacies. The most common therapeutic areas for which disease state management programs were offered included diabetes, anticoagulation, hypertension, and asthma/COPD.

Overall, 12.9% of pharmacists reported receiving payment for non-dispensing patient services in their pharmacies. The lowest rates of occurrence were in mass merchandiser and chain pharmacies. For pharmacies where payment was reported, the most common source of payment was patients themselves (51%), followed by government programs (33%), and health insurance plans (31%).

Pharmacists were asked to rate (excellent, very good, good, fair, poor) their practice sites on the adequacy of resources to develop and provide pharmacist and/or pharmacy services. Only one item, skills to provide services, was rated as at least good on average (3.3 where good was the midpoint at 3.0). Staffing levels, resources to obtain payment, marketing skills, financial resources, and expertise were rated fair to good (2.4 to 2.9, in order). With few exceptions, across settings, average ratings for the adequacy of resources and characteristics were highest for pharmacists in independent settings. Mass merchandiser and hospital settings tended to have the lowest average ratings on adequacy of resources for pharmacist services.

Prescriptions Personally Dispensed: Just over half of responding pharmacists reported personally dispensing 120 or more prescriptions daily. Relative to other practice settings, a greater proportion of pharmacists working in chains (45%) personally dispensed greater than 160 prescriptions daily. Overall, between 2000 and 2004 the proportion of pharmacists personally dispensing more than 160 prescriptions daily increased from 23% to 36% and these proportions increased in each practice setting except mass merchandiser pharmacies.

Selected Patient Care Activities: Approximately equal proportions of pharmacists served 10 or fewer patients daily (27%) and served greater than 50 patients per day (25%). The typical hospital pharmacist was more likely to serve fewer patients daily, evaluate one or more drug levels daily and review one or more patient charts daily than a typical pharmacist in the other practice settings. In terms of position, a higher proportion of staff pharmacists evaluated at least one drug level (43%) and reviewed at least one patient chart (43%) compared to pharmacists in management positions (33% and 35%, respectively).

Interactions with Others: Pharmacists were asked to report the average numbers of different individuals that they personally have contact with or provide care for daily, categorized into different modes of communication (face-to-face, via telephone, via facsimile, and via e-mail). Community pharmacists, as compared to hospital pharmacists, had higher numbers of daily interactions with patients or caregivers via face-to-face and telephone contact, but fewer, even rare, face-to-face interactions with nurses. Except for facsimile interactions with prescribers, telephone interactions were the most frequent basis of interactions for non-patient (prescriber, nurse, pharmacist, and third-party payer) contacts by pharmacists. The use of e-mail was very low for all types of interactions reported by pharmacist respondents.

Allocation of Time: In regards to time spent in work activities, there was similarity across the various settings in terms of where pharmacists actually spent their time; pharmacists spent the most time dispensing medication (49% of their time) followed by patient consultation (19% of their time) and business management (16% of their time) or drug use management (13% of their time). There has been little change between 2000 and 2004 in terms of where pharmacists

actually spent their time during the day. Generally, pharmacists actually spent less than their desired amount of time in consultation and drug use management and actually spent more time than they desire in dispensing and business management.

Ratings of Workload: Over one-half of pharmacists (54%) rated the workload at their settings as high or excessively high and 58% reported that workload increased or increased greatly compared to one year ago. The ratings differed across practice settings as 35% of pharmacists working in supermarkets reported workload at their setting was high or excessively high compared to 59% of chain pharmacists and 61% of hospital pharmacists.

Section Four: Pharmacists' Reaction to Their Work

Work Attitudes: In 2004, over two-thirds of pharmacists overall reported scores above the midpoint for role overload, with chain and hospital settings having the highest percents of pharmacists with higher ratings. However, in general, attitudes in 2004 were better than in 2000. Job satisfaction, organizational commitment and career commitment were particularly high for pharmacists in independent settings and lower in the mass merchandiser, chain and supermarket settings. Work attitudes across gender were similar. Pharmacists in management positions had higher levels of job satisfaction, career commitment, and especially organizational commitment than staff in 2004, and these ratings were improved over those in 2000.

Job Stress: Five items were rated as highly stressful by a third or more of all pharmacists. Inadequate staffing (technicians especially, but also pharmacists) and "being interrupted by phone calls or people" were the most highly rated stress generators and more chain, mass merchandiser and hospital pharmacists rated these items as highly stressful. "Dealing with difficult patients" and "having so much work to do that everything cannot be done well," were the other items rated highly stressful by a third of all pharmacists; pharmacists in chain, mass merchandiser, and supermarket pharmacy settings more often rated these items as highly stressful. More women than men rated individual stressor items as highly stressful with the exception of paperwork. The patterns of responses in results on the stress measures generally were similar in 2000 and 2004.

Effect of Workload: Pharmacists were asked to report how the current workload in their pharmacy affected various outcomes that we categorized as job-related, pharmacist health-related and patient care-related. One job-related item, "opportunity to take adequate breaks" had the largest proportion (48%) of pharmacists rating the effect of workload as negative. However, as a group, patient care-related outcomes had the most pharmacists rating the effect of workload as negative. Fewer pharmacists in independent and supermarket pharmacy settings rated the effect of workload as negative; this is consistent with lower prescription volumes in those pharmacies.

Future Work Plans: Overall, 32% of pharmacists in 2004 reported that it would be difficult or very difficult to find an acceptable job within the year compared to 29% in 2000. Fewer pharmacists in chain, mass merchandiser and supermarket pharmacies reported it would be difficult or very difficult to find an acceptable job within the next year (19 to 18% in these settings versus 35 to 48% in all other settings). Roughly equal proportions of males (30%) and

females (33%) reported it would be difficult or very difficult to find an acceptable job within the year. For both males and females, a better work schedule was the most difficult characteristic to find.

In terms of intention to leave their current job, overall, 23% of pharmacists reported they were likely to leave in the next year. Across practice settings, 15% of pharmacists in hospitals reported they were likely to leave compared to 38% of pharmacists in supermarkets. Between 2000 and 2004, the rate of turnover intention decreased in all practice settings except supermarkets; the overall rate of turnover intention decreased from 31% to 23%. The turnover intention rates were similar for males and females.

Pharmacists who reported being likely to leave were asked to report the importance of potential reasons for leaving. The reasons for leaving rated "very important" most commonly were work schedule (55%) followed by salary (43%) and benefits (42%). The reason least often reported as "very important" was amount of patient contact. In terms of reasons for staying, the three most common very important reasons were work schedule (52%), benefits (41%) and spouse/family relocation (37%).

CONCLUSIONS

This report provides a descriptive overview of pharmacist characteristics, characteristics of pharmacists' work environments and pharmacists' reactions to their work for a sample of pharmacists in the United States in 2004. A key feature of this report is the comparison of data in 2004 with similar data collected in 2000. The responses to the 2004 survey suggest that pharmacists generally are working less, being paid more, and have a better perspective toward their work and careers than in 2000. Although pharmacists work fewer hours per week, they are personally responsible for more prescriptions each day and they have more non-pharmacist personnel working with them. Their activities and equipment in their practice settings continue to have an emphasis on dispensing prescriptions. More favorable opinions among pharmacists were reflected in their work attitudes, decreased turnover intention, and higher reports of difficulty in finding a job with better characteristics than their present position.