



**2009 NATIONAL
PHARMACIST
WORKFORCE SURVEY
Executive Summary**

**FINAL REPORT OF THE 2009 NATIONAL SAMPLE
SURVEY OF THE PHARMACIST WORKFORCE TO
DETERMINE CONTEMPORARY DEMOGRAPHIC AND
PRACTICE CHARACTERISTICS**

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Repository for Project Materials and Data

Project materials and data are stored at University of Minnesota, College of Pharmacy, Department of Pharmaceutical Care & Health Systems, 308 Harvard Street, S.E., Minneapolis, MN 55455.

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Finally, and most importantly, we thank the nation's pharmacists who received and responded to the survey. We appreciate their time and effort in providing requested information. Without their assistance, the report would not be possible.

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Fact Sheet

The Pharmacy Manpower Project, Inc. (PMP) was established in 1989 as a nonprofit corporation comprised of major national pharmacy professional and trade organizations. Its mission is to serve the public and the profession by collecting, analyzing, and disseminating data regarding the size and demography of the pharmacy practitioner workforce and conducting and supporting research in areas related to that workforce.

Data from the PMP-developed and sponsored ¹*Aggregate Demand Index* (www.pharmacymanpower.com) and results from the PMP-sponsored ²*National Pharmacist Workforce Survey: 2009* (report available March 1, 2010 at: www.aacp.org) are made available to the public and are reported and discussed at multiple government agencies and conferences each year. The *Aggregate Demand Index* (www.pharmacymanpower.com) is an ongoing project supported by the PMP since 2000, which provides regional, state and practice setting indices of national demand for pharmacist positions. The *National Pharmacist Workforce Survey* is conducted every five years to capture the demographic and work characteristics of the pharmacist workforce.

PMP-sponsored projects have provided important information toward the development of several HHS reports including, *The Adequacy of Pharmacists Supply: 2004-2030* and *The Pharmacist Workforce: A Study of the Supply and Demand for Pharmacists*. Project directors for the PMP have provided pharmacy workforce data and valuable research assistance to workforce analysis teams at Health and Human Services, Health Research and Services Administration, the Bureau of Labor Statistics, the Bureau of Health Professions, Veterans Health Administration, Kaiser Permanente, the Health Workforce Information Center (www.healthworkforceinfo.org), and other agencies and organizations.

In 2006, PMP released the ³*Final Report of the National Sample Survey of the Pharmacist Workforce to Determine Contemporary Demographic and Practice Characteristics* (report available at www.aacp.org, Resources, Pharmacy Manpower, Inc.). Conducted by the Midwest Pharmacy Workforce Research Consortium, the study provides an update of the demographic and work characteristics of the pharmacist workforce in 2004. The study also examines changes in the workforce since 2000 when the first national assessment was conducted.

In 2001-02 PMP member organizations contributed to the HRSA-sponsored *Tenth Report on Health Personnel in the U.S.: 2000-2015*. The PMP also conducted a conference on ⁴*Professionally Determined Need for Pharmacy Services in 2020* in October 2001. Conference proceedings were published in the *American Journal of Pharmaceutical Education*, 2002; 66: 421-429 (available at www.ajpe.org). The most recent national pharmacist census, sponsored by the PMP, was conducted in 1989-1991.

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EXECUTIVE SUMMARY

The purpose of this study was to collect reliable information on demographic characteristics and work contributions of the pharmacist workforce in the United States during 2009. Specific objectives were to describe:

1. demographic and work characteristics of the pharmacist workforce in the United States during 2009, and
2. work contributions of the pharmacist workforce in the United States during 2009.

Data were collected from a random sample of 3,000 individuals selected from a list of 249,381 licensed pharmacists in the United States. Of the 2,667 surveys that were presumed to be delivered to a pharmacist, 1,395 were returned yielding a response rate of 52%.

Findings from 2009 were compared with findings obtained in the 2000 [1] and 2004 [2] surveys whenever possible.

Key Findings

Our results suggest that there was an increase in the proportion of licensed pharmacists actively practicing pharmacy between 2004 and 2009 and the proportion increased to a level that was similar to pharmacist work participation levels seen in 2000. Although a greater proportion of pharmacists were actively practicing pharmacy, the FTE contribution of pharmacists did not increase between 2004 and 2009 mainly due to increasing rates of part-time work among male and female pharmacists and no significant increase in hours worked among pharmacists working full-time and part-time.

One explanation for the increase in the proportion of pharmacists actively practicing pharmacy was the economic downturn in 2008 and 2009. As the economy impacted other business sectors, pharmacists working in other fields or not working at all may have decided to enter the pharmacy workforce, either on a full or part-time basis, to shield themselves and their families from the impact of the bad economy.

The prevalence of part-time work by actively practicing pharmacists has been an increasing trend since 2000. Working part-time has been an attractive option for male and female pharmacists because the demand for pharmacists has been high, allowing pharmacists to choose the amount they will work. In 2009, the economic downturn and reactions from pharmacist employers likely contributed to the rate of part-time work by pharmacists. Roughly one-third of hospitals and chain settings restructured schedules and some settings reduced hours in reaction to the economy. It will be important for workforce researchers to track the rate of part-time work among pharmacists as the number of new pharmacy graduates increases and the economy rebounds.

An important characteristic of the pharmacist workforce is the proportion of pharmacists age 60 and older that are actively practicing pharmacy. High wages help older pharmacists deal with downturns in the stock market, the nature of trends in funding pension plans, availability of health insurance, and out-of-pocket costs associated with health insurance. The work contribution of retirement age pharmacists has been a significant factor in the dynamics of the pharmacist workforce.

Regarding work contributions, full-time pharmacists in 2009 devoted 55% of their time to medication dispensing, 16% to patient care services, 14% to business/organization management, 5% to education, 4% to research, and 5% to other activities. Sixty-eight percent of pharmacists rated their workload level at their place of practice as high or excessively high, which is an increase of 14 percentage points compared to 2004 (54%).

SELECTED HIGHLIGHTS

Characteristics of Licensed Pharmacists

- 88.3% (67.4% full-time and 20.9% part-time) of licensed pharmacists responding to the survey in 2009 were actively practicing pharmacy. In 2004, 86.0% of pharmacists were actively practicing pharmacy and in 2000, 88.2% were actively practicing pharmacy.
- Between 2000, 2004, and 2009 the proportion of pharmacists working full-time decreased (73.3%, 68.3%, 67.4%, respectively) and the proportion of pharmacists working part-time increased (14.9%, 17.7%, 20.9%, respectively).
- The proportion of both male and female pharmacists working part-time increased between 2000, 2004, and 2009. For females, the rate increased from 21.3% in 2000, to 24.0% in 2004, to 27.2% in 2009. For males, the proportions were: 9.9%, 12.8%, and 15.8% for the years 2000, 2004, and 2009, respectively.
- The proportion of licensed pharmacists who held a Pharm.D. as their highest degree increased from 13.9% in 2000, to 18.6% in 2005, and 21.6% in 2009.
- The racial diversity of licensed pharmacists in the U.S. did not change significantly between 2000, 2004, and 2009. For the 2009 survey, we collected information for the proportion of respondents who were American Indian (n=5; 0.4% of all respondents) and Hispanic/Latino (n=23; 1.7% of all respondents).
- Results reveal an aging population of pharmacists with 37.1% over age 55 in 2009 compared to 30.7% in 2004, and 21.6% in 2000.

Characteristics of Actively Practicing Pharmacists

- The proportion of actively practicing pharmacists who are female has increased from 44.8% in 2000, to 45.9% in 2004, to 46.4% in 2009.
- Among respondents who were actively practicing as pharmacists, the proportion of both male and female pharmacists working part-time increased between 2000, 2004, and 2009. For females, the rate increased from 23.4% in 2000, to 26.8% in 2004, to 29.8% in 2009. For males, the proportions were: 11.6%, 15.4%, and 18.4% for the years 2000, 2004, and 2009, respectively.
- In 2000, 44.1% of practicing pharmacists were age 40 or younger. This proportion decreased to 33.0% in 2004, and in 2009 it was only 24.4%. Conversely, in 2000 16.7% of practicing pharmacists were over age 55, and this proportion increased to 24.6% in 2004, and to 32.5% in 2009.
- The proportion of actively practicing pharmacists working in traditional community pharmacy practice settings (independent, chain, mass merchandiser, and supermarket pharmacies) remained relatively stable between 2000 (55.4%), 2004 (56.4%), and 2009 (53.8%).
- In 2000, 10.9% of actively practicing male pharmacists were in owner/partner positions compared to only 2.3% of females. This gap was similar in 2004 (10.3% of males compared to 2.1% of

females were in owner/partner positions). However, the gap was significantly less in 2009 when 11.6% of males and 8.1% of females were in owner/partner positions.

- The patterns of part-time work for males in the 2000, 2004, and 2009 surveys were similar in that relatively few men aged 60 and younger worked part-time. At age 61 and older, men are more likely to work part-time. Patterns of part-time work for females in the 2000, 2004, and 2009 surveys showed that they typically were more likely than males to work part-time at ages 65 and younger.
- The proportion of actively practicing pharmacists who were male decreased only slightly between 2000 (58.7% male), 2004 (57.7% male), and 2009 (57.3% male). Findings from 2004 showed that hospital pharmacy, industry, and Other (non-patient care) settings had a majority of females working full-time. However, the 2009 data showed that all practice settings had a majority of male pharmacists working full-time in them.
- For males working part-time, the most common employment practice setting was independent pharmacy (35.0%) followed by chain pharmacy (27.4%). For females working part-time, the most common practice setting was hospital (31.1%) followed by chain pharmacy (22.6%).

Hours Worked by Actively Practicing Pharmacists

- Among pharmacists working full-time, males worked 2.4 hours more per week compared to females. In 2004, the difference was 2.1 hours and in 2000 the difference was 4.4 hours.
- Overall, pharmacists working full-time worked an average of 44.2 hours per week in 2000, 43.4 hours per week in 2004, and 43.8 hours per week in 2009.
- For part-time pharmacists, average hours worked per week did not change significantly either (19.0 hours per week in 2000, 19.1 hours per week in 2004, and 19.4 hours per week in 2009).
- A full-time equivalent (FTE) was calculated using the number of reported total hours worked in primary employment and the number of weeks worked annually. We defined 1.0 FTE as a pharmacist working 40 hours per week, 52 weeks per year, or 2080 hours. In 2000, pharmacists were contributing an average of 0.93 FTE to the workforce. In 2004, pharmacists contributed an average of 0.87 FTE and in 2009 they also contributed an average of 0.87 FTE.
- In 2009, actively practicing male pharmacists contributed an average of 0.92 FTE compared to 0.82 FTE for females. This difference is almost identical to the results from 2004 (0.91 and 0.82, respectively).

Work History of Actively Practicing Pharmacists

- For 2009, the work settings with the highest proportion of full time pharmacists working for less than three years at their current place of employment were: industry (34.3%), other-non patient care (28.8%), and other patient care practice (25.3%). The proportion of pharmacists who have been with their employer for less than three years may be an indication of turnover, but also could reflect job expansion and new hiring in certain sectors.
- For hospital pharmacy settings, the proportion of full-time pharmacists working for less than three years at their current place of employment declined from 26% in 2000 to 21% in 2004, and only 13% in 2009.

- There was a decrease in the proportion of full-time pharmacists working for less than three years at their current place of employment for pharmacists overall (31% in 2000, 20% in 2004, and 16% in 2009).
- The mean number of employers reported by actively practicing full-time pharmacists did not change significantly between 2000 (3.7 employers), 2004 (3.9 employers), and 2009 (3.8 employers).
- However, the mean years per employer did increase (6.5 years per employer in 2000, 6.8 years in 2004, and 8.2 years in 2009).
- Pharmacists who worked in independent and chain settings worked the longest per employer. This finding was consistent in 2000, 2004, and 2009.

Debt Load for Pharmacists Working Full-Time

- In 2009, pharmacists reported an average current student loan debt of \$4,224 compared to \$14,936 when they graduated from pharmacy school.
- Pharmacists with five years or less years of experience reported an average of \$79,895 of student debt at the time of graduation from pharmacy school and a current student loan debt of \$61,667. Only 5% of respondents in this group reported having zero student loan debt at time of graduation and 17% reported no student loan debt currently. For this group, average total household debt (not including student loan debt) was \$221,280 (with 12% reporting no household debt).
- It should be noted that our survey did not include any graduates from 2007 onward. A recent “Graduating Pharmacy Student Survey” conducted by the American Association of Colleges of Pharmacy during July 2009 [3] showed that for the 6,578 graduating students who responded to the survey in 2009, 87.4% of the respondents reported having a debt load upon graduation. The mean amount of the debt load in 2009 was \$101,892. This finding for 2009 is consistent with the trend identified in our survey if one considers that the “ ≤ 5 years” category in our study only included graduates from 2004 – 2006.

Ratings of Workload by Pharmacists Working Full-Time

- In 2009, 68% of pharmacists rated their workload level at their place of practice as high or excessively high. This is an increase of 14 percentage points compared to 2004 (54%).
- Furthermore, 61% of pharmacists working full-time in 2009 reported that workload increased or greatly increased compared to a year ago. This proportion is similar to 2004 (58%).
- Unlike findings from the 2004 survey, all practice settings in 2009 had 64% or more of their pharmacists rate work level at their pharmacy as high or excessively high (mean = 68; range from 64 to 72). In comparison, none of the practice sites in 2004 were greater than 61% (mean = 54; range from 35 to 61). The largest increases between 2004 and 2009 were for supermarket (from 35% in 2004 to 69% in 2009), mass merchandiser (42% to 67%), and independent pharmacies (43% to 66%).
- Males and females rated their workload level similarly. In terms of position, workload also was rated similarly by management and staff pharmacists.

- However, the effects of current workload on pharmacists did differ between male and female pharmacists. In both 2004 and in 2009, males were more likely to report that their current level of workload had a negative or very negative effect on job-related issues (job performance, motivation to work at their pharmacy, and job satisfaction) and patient care-related issues: (time spent in contact with patients, quality of care provided to patients, and opportunity to solve drug therapy problems).
- In 2009, over 50% of independent pharmacists reported that current level of workload had a negative or very negative effect on their opportunity to take breaks. Over 50% of chain pharmacists reported this as well, and also 52% of chain pharmacists reported negative or very negative effects on time spent in contact with patients. Over 50% of mass merchandiser respondents reported negative or very negative effects on three items: mental/emotional health, opportunity to take breaks, and time spent in contact with patients. Supermarket pharmacists were similar to chain pharmacists in that over 50% reported negative or very negative effects on: opportunity to take breaks and time spent in contact with patients. Hospital, Other Patient Care, and Other pharmacists did not report over 50% negative or very negative effects for any of the items we studied.

Work Activities for Pharmacists Working Full-Time

For the 2009 survey, definitions for work activities were updated to better reflect pharmacists' contributions to patient care, health care, education, and medication discovery, development, and utilization research. One limitation of the update was that we could not directly compare the findings from 2009 with other years' findings.

- Full-time pharmacists in 2009 devoted 55% of their time to medication dispensing, 16% to patient care services, 14% to business/organization management, 5% to education, 4% to research, and 5% to other activities.
- Pharmacists practicing in community pharmacy settings (independent, chain, mass merchandiser, or supermarket pharmacies), devoted at least 70% of their time to medication dispensing. Hospital and Other Patient Care pharmacists devoted less than half their time to medication dispensing and each of these pharmacist categories devoted 27% of their time to patient care on average. Pharmacists in Other (non-patient care) settings exhibited a different pattern of work activities including business/organization management (27% of their time, on average), research (27%), and other activities (23%).
- Fifty-two percent of responders to this set of questions worked in community pharmacy settings (independent, chain, mass merchandiser, or supermarket pharmacies). In these settings pharmacists typically devoted 70% or more of their time to medication dispensing activities and approximately 10% of their time to patient care services.
- In comparison, 38% of responders worked in hospital or other patient care settings. In these settings, pharmacists typically devoted 43% of their time to medication dispensing and 27% of their time to patient care services.
- Pharmacists in Other (non-patient care) settings comprised just 10% of the responders and devoted relatively little time to either medication dispensing (4%) or patient care services (7%).

- For every practice setting in 2009, pharmacists would like to spend less time in medication dispensing and business/organization management and more time in patient care services, education, and research activities.
- We suggest that future research should describe and monitor the expected shifts in which less pharmacist time will be devoted to traditional medication dispensing and more time devoted to: patient care services including specialty pharmaceuticals, management of people / information / organizations / systems, education, and research.

Workplace Labor Reductions Reported By Pharmacists Working Full-Time

The 2009 National Pharmacist Workforce Survey was conducted during an economic recession in the United States which included declines in employment, gross domestic product, and trade that had been ongoing since December 2007.

According to the Bureau of Labor Statistics [4], the number of unemployed persons had risen by 7.4 million, and the unemployment rate had grown by 4.8 percentage points between the beginning of the recession in December 2007 and August 2009. However, the health care sector added 544,000 jobs in that time period, with gains during 2009 being mostly in ambulatory care, nursing, and residential care.

Little, however, was known about the pharmacist workforce and how it was affected by the recession. According to the IMS National Prescription Audit, change in number of prescriptions dispensed in the United States had slowed in its growth and, for part of 2008, there were months when the change was negative. Corresponding to these trends in the change in number of prescriptions dispensed, the National Aggregate Demand Index (ADI) for pharmacists declined from 4.09 in 2007, to 3.96 in 2008, to 3.79 in 2009 [5]. The ADI is rated on a scale where: 1 = supply exceeds demand, 2 = some excess of supply, 3 = balance, 4 = moderate difficulty in filling vacancies, 5 = difficulty in filling vacancies.

In order to learn more about the pharmacist workforce within the time period of the 2009 economic recession, questions were added for the 2009 survey that asked pharmacists to report changes at their place of employment related to staffing or operations during the year prior to the survey, including: (1) pharmacist lay offs, (2) mandatory reductions in pharmacist hours, (3) early retirement incentives for pharmacists, and (4) restructuring of pharmacist work schedules to save labor costs.

- Out of four workforce adjustments we described in this study, the most common was restructuring of pharmacist work schedules to save labor costs (26%), followed by mandatory reductions in pharmacist hours (13%), pharmacist layoffs (6%), and early retirement incentives for pharmacists (4%).
- “Restructuring of pharmacist work schedules” was more commonly seen in chain and hospital type pharmacies.
- “Mandatory reductions in pharmacist hours” was more common in chain pharmacies.
- These differences may be reflective of organizational sizes, staff sizes, adjustments in prescription dispensing volumes, adjustments in dispensing processes, or adjustments in service offerings.
- The pattern of the four workforce adjustments was similar for pharmacists categorized by gender and by position.

- Future monitoring of these variables will be useful for determining the extent to which our findings were (1) a result of the economic recession of 2009, (2) typical for the profession as it continually adjusts to other economic and professional developments, or (3) early indicators of changes still to come in the pharmacist workforce.

Work Contributions (Hours per Week) and Career Plans Expected in Three Years

- The majority of pharmacists expected to be working about the same or more amount of hours per week three years from the time of the survey (i.e. in 2012).
- Independent pharmacists were less likely than other respondent types to report that they planned to work about the same or more hours per week. These differences may be reflective of the age distribution and future plans of pharmacists working in independent pharmacies.
- The pattern of responses to this question was similar for pharmacists categorized by gender and by position.
- The majority of pharmacists expected to be working with their current employer three years from the time of the survey (i.e. in 2012).
- Pharmacists currently working at independent pharmacies had the highest proportion reporting that they planned to be retired or out of the workplace (11%) and chain pharmacies had the lowest proportion (5%).
- Regarding the expectation that the respondent would be working with a different employer in the next three years, 20% of the respondents currently working in supermarket pharmacies reported this compared to only 6% of chain pharmacists.
- 10% of male pharmacists and 4% of female pharmacists expect to be retired by 2012.

Limitations

The results and our interpretation of them should be tempered with the limitations of the study. The results are based on respondents' self reports, raising questions regarding the extent to which respondents gave socially desirable responses.

Our findings showed that we achieved a geographically diverse sample of pharmacists for this study in that all regions of the United States were represented in proportion to the U.S. population and in proportion to our sampling frame. However, some individual states were over-represented (e.g. Montana) and some states were under-represented (e.g. New Mexico). Thus, while we achieved good geographic coverage, some states were disproportionately represented in this study. To overcome this limitation, we report aggregate data and not state- or region-specific findings.

Non-response bias is another limitation. It is possible that responders were more interested in the topic we studied or had stronger opinions about the questions we asked than those who chose not to respond. Our findings showed that late responders were more likely to be: working as a pharmacist, younger, and having a PharmD degree than early responders. These same characteristics are likely to be reflected in the non-responders to this study and should be considered when interpreting the reported findings.

Finally, all of the respondents to this survey were first licensed before 2007. Therefore, even though our survey was conducted in 2009, our sampling frame had a lag time so that pharmacists newly licensed from 2007 through the present were not included in the sample. This limitation must be considered, especially when interpreting findings related to year of licensure, age, or other time dependent variable.

References

1. Pedersen, Craig A., William R. Doucette, Caroline A. Gaither, David A. Mott, and Jon C. Schommer, "National Pharmacist Workforce Survey: 2000," Presented to Pharmacy Manpower Project, Inc., August 1, 2000, accessible at <http://www.aacp.org/resources/research/pharmacymanpower/>.
2. Mott, David A., William R. Doucette, Caroline A. Gaither, David H. Kreling, Craig A. Pedersen, and Jon C. Schommer, "Final Report of the 2004 National Sample Survey of the Pharmacist Workforce to Determine Contemporary Demographic and Practice Characteristics," Presented to Pharmacy Manpower Project, Inc., June 27, 2005, accessible at <http://www.aacp.org/resources/research/pharmacymanpower/>.
3. American Association of Colleges of Pharmacy, Graduating Pharmacy Student Survey Summary Report – 2009, accessible at:
http://www.aacp.org/resources/research/institutionalresearch/Documents/2009_GSS_Summary%20Report_all%20schools_83.pdf
4. Bureau of Labor Statistics, "Employment Situation Summary," accessed January 10, 2010, <http://www.bls.gov/news.release/empsit.nr0.htm>.
5. Knapp, Katherine K. "Aggregate Demand Index," accessible at www.pharmacymanpower.com.