## 2009 ASHP Pharmacy Staffing Survey Results

### Background

ASHP has surveyed pharmacy directors since 1999 to determine the supply of and demand for pharmacists and pharmacy technicians in hospitals and health systems, and to measure perceptions about pharmacist workforce shortages. A core set of questions was designed to measure trends, and other questions were added as needed to gather information on staffing-related issues. Beginning in 2007, ASHP discontinued the standalone staffing survey and instead

## **Key Findings**

- The reported vacancy rate for pharmacist positions in hospitals and health systems was 3.7%, while the vacancy rate for pharmacy technicians was 4.1%.
- The average turnover rate in 2009 was 6.6% for pharmacists and 13.4% for pharmacy technicians.
- Turnover and vacancy rates for pharmacy technicians remained relatively equivalent regardless of hospital size.
- The number of integrated pharmacist FTE positions per 100 occupied beds rose significantly in the past year, from 6.71 in 2008 to 9.87 in 2009.

included the core questions in the more comprehensive ASHP National Survey of Pharmacy Practice in Hospitals. This report reflects only the information specific to staffing from that survey. A more complete reporting of data, methodology, and results can be found in the *American Journal of Health-System Pharmacy* (Pedersen CA, Schneider PJ, Scheckelhoff DJ. ASHP National Survey of Pharmacy Practice in Hospital Settings: Monitoring and Patient Education —2009. *Am J Health-Syst Pharm.* 2010: in press).

Since 2007, the staffing survey data have been weighted to represent all general and children's medical surgical hospitals in the United States. This is a different method than what was used in previous staffing surveys (straight averages); therefore, for consistency, data from 2002-2006 were reanalyzed using the method adopted in 2007. Because of this, comparison to previously published reports may show slight differences.

## **Detailed Results**

## **Vacancy Rates**

The average pharmacist vacancy rate in health systems in 2009 was 3.7%. This is a significant decrease from the previous year's rate of 5.9% (Tables 1 and 2). The average pharmacy technician vacancy rate in 2009 was 4.1%, similar to the previous year's rate of 4.7%. The average vacancy rate was calculated by dividing the number of vacant full-time equivalent (FTE) positions by the total number of FTE positions.

Smaller hospitals had a greater percentage of vacant pharmacist positions compared with larger hospitals. However, pharmacy technician vacancy rates remained relatively equivalent regardless of hospital size (Table 1).

The current recession has resulted in elimination of positions, inability to hire, and other budgetary actions to control human resource costs. Because of this, the survey also collected data on the percentage of vacant positions that were being actively recruited. Of the vacant pharmacist and pharmacy technician positions, 2.7% and 2.8%, respectively, are authorized to be recruited and hired (Table 3). In contrast, 0.9% and 1.4% of the pharmacist and pharmacy technician positions were frozen (not authorized to be recruited or hired).

	Mean ± S.E.									
Characteristic	No. FTE Pharmacists per 100 Occupied Beds	% Vacant FTE Pharmacist Positions <sup>a</sup>	No. FTE Technicians per 100 Occupied Beds	% Vacant FTE Technician Positions						
Number of staffed beds										
<50 (n = 84)	23.6±2.9	5.2	22.2±3.2	4.1						
50-99 (n = 72)	25.8±13.2	3.4	26.7±14.7	1.2						
100-199 (n = 73)	16.4±4.7	4.0	13.1±3.1	5.7						
200-299 (n = 90)	9.0±0.4	3.5	$8.2 \pm 0.4$	4.2						
300-399 (n = 79)	10.4±0.5	3.0	9.0±0.4	3.6						
400-599 (n = 82)	12.4±1.6	3.5	9.1±0.6	4.0						
$\geq 600 \ (n = 58)$	10.9±0.5	3.7	8.6±0.5	3.9						
All hospitals–2009 ( $n = 538$ )	18.4±2.4	3.7	16.9±2.5	4.1						

## Table 1. Inpatient Pharmacy Staffing in Prior Fiscal Year

<sup>a</sup>FTE = full-time equivalent.

Table 2. Comparison of Vacancy Rates for Pharmacists and Pharmacy Technicians fro	m 2002 to 2009
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	2009	2008	2007	2006 <sup>a</sup>	2005 <sup>a</sup>	2004 <sup>a</sup>	2003 <sup>a</sup>	2002 <sup>a</sup>
Pharmacists	3.7	5.9	6.3	5.7	6.3	5.7	4.7	7.2
Pharmacy technicians	4.1	4.7	4.1	-	-	-	-	-

<sup>a</sup> Data from 2002 to 2006 were reanalyzed using the method adopted in 2007 for consistency. The rate is calculated as number of vacant FTE positions / total FTE positions. All data reported are from the ASHP National Surveys.

	% Vac	ant FTE Phari	nacist Positions <sup>a</sup>	% Vacant FTE Technician Positions <sup>a</sup>				
Characteristic	Total	Authorized to recruit and hire	Frozen, not authorized to recruit and hire	Total	Authorized to recruit and hire	Frozen, not authorized to recruit and hire		
Number of staffed beds								
<50 ( <i>n</i> = 84)	5.2	4.7	0.5	4.1	3.1	1.0		
50-99 ( <i>n</i> = 72)	3.4	3.1	0.3	1.2	0.6	0.6		
100-199 ( <i>n</i> = 73)	4.0	2.8	1.2	5.7	2.9	2.8		
200-299 ( <i>n</i> = 90)	3.5	2.3	1.1	4.2	2.8	1.4		
300-399 ( <i>n</i> = 79)	3.0	2.2	0.8	3.6	2.8	0.8		
400-599 ( <i>n</i> = 82)	3.5	2.5	0.9	4.0	3.1	1.0		
$\geq 600 \ (n = 58)$	3.7	2.9	0.8	3.9	3.0	1.0		
All hospitals $-2009 (n = 538)$	3.7	2.7	0.9	4.1	2.8	1.4		

 Table 3. Pharmacist and Pharmacy Technician Positions Authorized for Recruitment and Hire

<sup>a</sup> Calculated as number of vacant FTE positions / total FTE positions.

## **Turnover Rates**

The turnover rate for health-system pharmacist positions in 2009 was 6.6%, and the rate was 13.4% for pharmacy technicians (Table 4). Although there was a decrease in turnover rate for pharmacist's in 2009, the turnover rates for both pharmacists and pharmacy technicians were comparable with the rates for recent years (Table 5). The turnover rate for pharmacists and pharmacy technicians was calculated by dividing the number of FTE resignations by the total number of FTE positions.

Similar to 2008, larger hospitals reported less pharmacist turnover compared with smaller hospitals. However, turnover rates for pharmacy technician remained relatively equivalent regardless of hospital size (Table 4).

Charactoristia	Pharmacist Turnover Rate <sup>a</sup>	Pharmacy Technician Turnover Rate <sup>a</sup>
Characteristic	%	%
Number of staffed beds		
<50	9.9	13.2
50–99	8.9	11.0
100–199	6.6	14.3
200–299	7.5	13.4
300-399	5.4	13.1
400–599	5.7	13.4
≥600	5.9	13.8
All hospitals - 2009	6.6	13.4

 Table 4. Hospital Pharmacy Staff Turnover in Prior Fiscal Year

<sup>a</sup> Calculated as the number of FTE resignations divided by the total number of FTE positions.

	2009 <sup>b</sup>	2008 <sup>b</sup>	2007 <sup>b</sup>	2006 <sup>c</sup>	2005 <sup>c</sup>	2004 <sup>c</sup>	2003 <sup>c</sup>	2002 <sup>c</sup>
Pharmacists	6.6	8.6	7.6	9.0	8.5	7.5	7.5	8.5
Pharmacy technicians	13.4	13.8	13.6	12.4	12.9	11.8	13.3	12.3

#### Table 5. Pharmacist and Pharmacy Technician Turnover Rates from 2002 to 2008<sup>a</sup>

<sup>a</sup> Calculated as the mean number of resignations divided by the number of currently budgeted positions.

<sup>b</sup> Weighted to represent all U.S. general and children's medical surgical hospitals.

<sup>c</sup> Data from 2002 to 2006 used a different method for analysis (straight averages); therefore, direct statistical comparison is impossible.

## **Time Required to Fill Vacancies**

Hospitals were able to fill vacancies of pharmacist and pharmacy technician positions at relatively the same rate regardless of hospital size (Table 6). The number of months required to fill vacancies of both pharmacist and pharmacy technician positions has also remained relatively stable over recent years (Table 7).

#### Table 6. Mean Time Required to Fill Vacancies

Characteristic	Time to Fill Vacant Pharmacist Positions (months)	Time to Fill Vacant Pharmacy Technician Positions (months)
Number of staffed beds		
<50	5.0	1.5
50–99	7.1	2.1
100–199	4.8	1.8
200–299	4.8	1.8
300–399	4.5	1.5
400–599	4.2	1.9
≥600	4.6	1.8
All hospitals – 2009	5.1	1.8

#### Table 7. Time Required to Fill Pharmacist and Pharmacy Technician Vacancies from 2002 to 2008

	2009 <sup>a</sup>	2008 <sup>a</sup>	2007 <sup>b</sup>	2006	2005	2004	2003	2002
Pharmacists	5.1	7.0	-	6.0	6.5	5.3	5.8	5.7
Pharmacy technicians	1.8	2.0	-	1.8	1.8	1.8	1.9	1.8

<sup>a</sup> Weighted to represent all U.S. general and children's medical surgical hospitals.

<sup>b</sup> Data was not collected.

## Perceptions of Supply and Demand

Subjective answers from pharmacy directors when questioned about the relative availability of pharmacists and pharmacy technicians show that there continues to be a perception of an overall shortage (Tables 8 and 9). Table 8 shows that the positions reflecting the most significant level of perceived shortage were pharmacy management positions (over 80%) and experienced frontline pharmacist positions (75%). Clinical positions, entry-level frontline pharmacists, and experienced pharmacy technicians were considered to be in a shortage situation by 45–66% of pharmacy directors, while entry-level pharmacy technician positions were considered more balanced. Based on the rate of moderate to severe perceived shortage that has been reported over recent years, filling pharmacy manager positions continues to be difficult, while pharmacy technician positions have eased slightly in their difficulty to fill (Table 9). It is notable, however, that the percentage of respondents who report moderate or severe shortage was less for each type of position in 2009 as compared to 2008, consistent with the vacancy rate data reported.

Pharmacy Position	Perceived Shortage %	Perceived Balance %	Perceived Excess %
Manager <sup>a</sup>	82	17	1
Clinical coordinator	66	28	6
Clinical specialist	63	29	8
Entry-level frontline pharmacist	45	42	13
Experienced frontline pharmacist	75	23	2
Entry-level pharmacy technician	16 <sup>b</sup>	47 <sup>b</sup>	37 <sup>b</sup>
Experienced pharmacy technician	58 <sup>c</sup>	34 <sup>c</sup>	8 <sup>c</sup>

#### Table 8. Pharmacy Directors' Perceptions of Availability

<sup>a</sup> The term "manager" encompasses director/assistant director/supervisor.

<sup>b</sup> Uncorrected  $X^2 = 39.3322$ , d.f. = 12, Design-based F (7.78, 4090.08) = 3.9939, p = 0.0001.

<sup>c</sup> Uncorrected  $X^2 = 26.4223$ , d.f. = 12, Design-based F (7.73, 4068.12) = 2.5649, p = 0.0001.

#### Table 9. Comparison of Pharmacy Directors' Perceptions of Availability from 2002 to 2009<sup>a</sup>

Pharmacy Position	2009	2008	2007 <sup>c</sup>	2006	2005	2004	2003	2002
Manager <sup>b</sup>	82	90	-	87	84	74	74	74
Clinical coordinator <sup>d</sup>	66	72	-	65	67	-	-	-
Clinical specialist	63	70	-	63	64	67	71	71
Entry-level frontline pharmacist	45	75	-	71	71	75	84	84
Experienced frontline pharmacist	75	89	-	93	89	90	93	93
Entry-level pharmacy technician	16	25	-	17	21	22	31	31
Experienced pharmacy technician	58	67	-	87	69	74	77	77

<sup>a</sup> Represents responses of a perceived "moderate" or "severe" shortage combined.

<sup>b</sup> The term "manager" encompasses director/assistant director/supervisor.

<sup>c</sup> Data was not collected.

<sup>d</sup> The position of clinical coordinator was added to the survey in 2005.

## **FTE Positions for Pharmacy**

The number of pharmacists, pharmacy technicians, and other support staff positions classified as FTE per every 100 occupied beds is shown in Table 10. It is noteworthy that while clinical and distributive pharmacist positions have not changed appreciably in the past year, the number of management, informatics, and integrated pharmacist positions has increased. Also, the number of pharmacy resident positions has increased. These findings are consistent with anecdotal data on how pharmacists are being deployed in individual hospital practice models and consistent with residency accreditation data.

### Table 10. Number of FTE Pharmacy Positions per 100 Occupied Beds by Type of Position<sup>a</sup>

	Management Pharmacists	Clinical Pharmacists	Distributive Pharmacists	Integrated Pharmacists	Informatics Pharmacists	Medication-Use Safety Coordinator Pharmacist	Other Pharmacists	Residents	TOTAL Pharmacists	TOTAL Pharmacy Technicians	TOTAL Other Support Staff
Characteristic				Me	an FTE'	s per 100	Occupi	ed Beds	1	1	
Number of staffed beds											
<50 ( <i>n</i> = 80)	6.9	1.1	2.8	12.2	0.31	0.02	0.03	0.24	23.6	22.2	0.26
50–99 ( <i>n</i> = 67)	3.2	0.7	5.0	16.7	0.13	0.10	0.00	0.00	25.8	26.7	0.70
100–199 ( <i>n</i> = 70)	2.0	1.1	3.0	8.8	0.51	0.09	0.12	0.71	16.4	13.1	1.22
200–299 ( <i>n</i> = 87)	1.1	0.9	2.2	4.4	0.17	0.05	0.04	0.16	9.0	8.2	0.55
300–399 ( <i>n</i> = 78)	1.1	1.9	2.8	3.8	0.28	0.08	0.08	0.42	10.4	9.0	0.66
400–599 ( <i>n</i> = 80)	1.4	1.2	2.8	5.9	0.25	0.11	0.16	0.60	12.4	9.1	0.68
≥600 ( <i>n</i> = 58)	1.0	2.0	2.4	4.1	0.23	0.12	0.22	0.89	10.9	8.6	0.68
All hospitals $-2009 (n = 520)$	3.60 <sup>b</sup>	1.10	3.07	9.87	0.30	0.06	0.06	0.35	18.41	16.90	0.64
All hospitals $-2008 (n = 516)$	2.67	1.15	2.99	6.71	0.18	0.09	0.07	0.23	14.20	13.10	0.71
All hospitals $-2007 (n = 501)$	2.66	1.14	3.26	5.51	0.26	0.13	0.13	0.11	13.20	13.00	1.05
All hospitals $-2006 (n = 434)$	2.60	1.04	3.09	7.94	0.21	0.08	0.03	0.13	15.10	11.80	0.31
All hospitals – 2005 ( $n = 505$ )	2.50	1.00	3.40	5.10	0.20	0.00	0.40	0.30	13.10	12.30	0.70

<sup>a</sup> Standard errors are available upon request from the authors of the study.

<sup>b</sup> Design-based F (1,513) = 8.82, p = 0.0031.

# For more information regarding this survey and other workforce/staffing data from ASHP, please email quality@ashp.org.