Wisconsin Pharmacy Workforce Study Final Report - 2020

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Editors Note:

The full report can be found on the PSW website here: https://www.pswi.org/Resources/Resources-for-Your-Practice/Wisconsin-Pharmacy-Workforce-Reports

Pharmacists are integral practitioners in assuring safe, effective and affordable medication therapy for millions of patients in the U.S. They are able to provide expertise to patients, providers, payers and policymakers. As the healthcare system evolves toward value-based payments and greater care coordination across the providers and settings, pharmacists are being asked to develop and deliver new services, even as their practice settings evolve. As pharmacists take on new, expanded services, the roles and responsibilities of pharmacy technicians have also started to evolve. Pharmacy technicians are taking on more operational responsibilities, participating in expanded "tech-check-tech" activities, and are being integrated into new patient care services. While this evolving pharmacy landscape is creating new opportunities for both pharmacists and technicians, it also may have challenges such as stress, burnout and job turnover.

Given this dynamic situation, it is vital to assess the demographics, workplace characteristics, work activities, and quality of work life of both pharmacists and technicians. There is a history of conducting national pharmacist workforce studies, which have been conducted in 2000, 2004, 2009, 2014, and 2019 by the Midwest Pharmacy Workforce Research Consortium (MPWRC). This work, supported by the Pharmacy Workforce Center (previously the Pharmacy Manpower Project), is the only national systematic workforce study focused on licensed pharmacists. A focused Wisconsin Workforce Survey will allow for focused questions that are specific to pharmacy practice characteristics, trends and issues specific to the state of Wisconsin. Given the recent unprecedented pandemic of COVID-19, the Wisconsin Workforce

FIGURE 1. Pharmacist & Technician Age, Gender, and Race/Ethnicity

	Pharmacists		Technicians		Total	
Age Category	***n***	***Column %***	***n***	***Column %***	***n***	***Column %***
<30	84	20.4	42	31.8	126	23.2
31-35	56	13.6	24	18.2	80	14.7
36-40	53	12.9	13	9.8	66	12.1
41-45	48	11.7	20	15.2	68	12.5
46-50	39	9.5	9	6.8	48	8.8
51-55	37	9.0	9	6.8	46	8.5
56-60	25	6.1	7	5.3	32	5.9
61-65	22	5.3	8	6.1	30	5.5
66-70	33	8.0	0	0.0	33	6.1
>70	15	3.6	0	0.0	15	2.8
Total	**412**		**132**		**544**	
Gender Identity	***n***	***Column %***	***n***	***Column %***	***n***	***Column %***
Male	171	41.5	19	14.4	190	34.9
Female	241	58.5	112	84.8	353	64.9
Non-Binary	0	0.0	1	0.8	1	0.2
Total	**412**		**132**		**544**	
Race/Ethnicity	***n***	***Column %***	***n***	***Column %***	***n***	***Column %***
American Indian	5	1.2	1	0.8	6	1.1
Asian	17	4.1	5	3.8	22	4.0
Black	9	2.2	7	5.3	16	2.9
White	372	90.3	108	81.8	480	88.2
Other	9	2.2	11	8.3	20	3.7
Total	**412**		**132**		**544**	
Hispanic, Spanish or Latino/ Latina	3	0.7	10	7.6	13	2.4

FIGURE 2. Pharmacists' Employment Status By Age, Gender Identity, and Race/Ethnicity

	Practicing Pharmacist	Not Practicing Pharmacy	Unemployed	Retired	Total	
Age	**Column %**				**n**	**Column %**
<30	21.3	0.0	0.0	0.0	68	19.3
31-35	14.1	16.7	14.3	0.0	47	13.4
36-40	14.7	16.7	28.6	0.0	50	14.2
41-45	13.1	0.0	14.3	0.0	43	12.2
46-50	11.3	0.0	14.3	0.0	37	10.5
51-55	8.4	50.0	0.0	0.0	30	8.5
56-60	5.3	16.7	14.3	10.5	21	6.0
61-65	5.3	0.0	14.3	21.1	22	6.3
66-70	4.4	0.0	0.0	42.1	22	6.3
>70	2.2	0.0	0.0	26.3	12	3.4
Total (n)	**320**	**6**	**7**	**19**	**352**	
Gender Identity	**Column %**				**n**	**Col %**
Male	35.9	50.0	28.6	94.7	138	39.2
Female	64.1	50.0	71.4	5.3	214	60.8
Non-Binary	0.0	0.0	0.0	0.0	0	0.0
Total (n)	**320**	**6**	**7**	**19**	**352**	
Race/Ethnicity	**Column %**				**n**	**Col %**
American Indian	0.9	0.0	0.0	0.0	3	0.9
Asian	4.1	0.0	0.0	0.0	13	3.7
Black	2.2	0.0	0.0	0.0	7	2.0
White	91.3	100.0	100.0	100.0	324	92.0
Other	1.6	0.0	0.0	0.0	5	1.4
Total (n)	**320**	**6**	**7**	**19**	**352**	
Hispanic, Spanish or Latino/Latina	0.9	0.0	0.0	0.0	352	0.9

survey will also ask questions to explore the impact of COVID-19 on pharmacists and technicians and their work environments.

Objectives

The purpose of this study was to conduct a Wisconsin Pharmacy Workforce Survey using a study design similar to the 2019 National Pharmacist Workforce Survey. The Wisconsin iteration was distributed to both pharmacists and technicians and will include new survey questions designed to measure relevant workforce demographics and practice characteristics for the profession of pharmacy in Wisconsin.

Methods

An online, cross-sectional, descriptive survey design was used to collect and analyze data obtained from pharmacists and technicians in the state of Wisconsin. Data was collected using an online Qualtrics survey (Qualtrics, Provo, UT, USA).

Survey Questionnaire

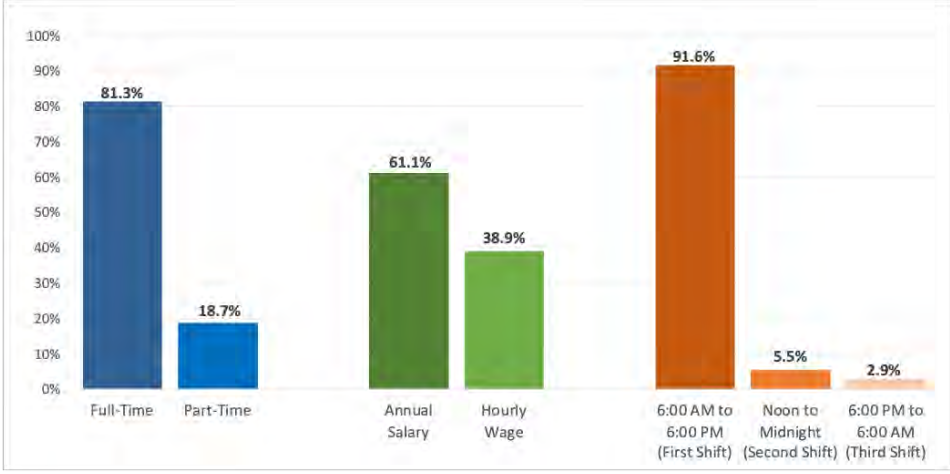
Questions comprising each section of the survey were primarily based on questions used in previous iterations of the National Pharmacy Workforce Survey and from other published work. New questions were created to assess the impact of the COVID-19 pandemic on the pharmacy workforce, as no previously validated or published questions were available.

The survey questionnaire included the following topic areas: (1) Demographics, (2) Education and Training, (3) Employment Status and Work Environment, (4) Supply and Demand, (5) Technician Regulations, and (6) Impact of COVID-19. Survey respondents were required to select their role as a Pharmacist or Technician, but were otherwise allowed to skip any of the other questions if they did not wish to answer or disclose the information requested.

Survey Administration

The email addresses of licensed pharmacists living in the state of Wisconsin were obtained from the Wisconsin Department of Health and Professional

FIGURE 3. Practicing Pharmacists' Employment Characteristics



Note: Pharmacists were classified as working part-time if they worked 30 hours or less per week in their primary employment.

FIGURE 4. Pharmacists' Age, Gender Identity & Race/Ethnicity By Practice Setting

	Community	Hospital	Ambulatory Care	Other
Age Category	**Column %**			
<30	17.8	20.5	28.1	23.9
31-35	15.0	15.2	15.6	8.7
36-40	8.4	21.2	6.3	15.2
41-45	14.0	15.2	3.1	13.0
46-50	11.2	12.9	18.8	0.0
51-55	11.2	4.5	9.4	15.2
56-60	7.5	4.5	3.1	4.3
61-65	7.5	3.8	12.5	0.0
66-70	6.5	0.8	3.1	10.9
>70	0.9	1.5	0.0	8.7
Total (n)	**107**	**132**	**32**	**46**
Gender Identity	**Column %**			
Male	42.1	34.1	25.0	37.0
Female	57.9	65.9	75.0	63.0
Non-Binary	0.0	0.0	0.0	0.0
Total (n)	**107**	**132**	**32**	**46**
Race/Ethnicity	**Column %**			
American Indian	1.9	0.0	0.0	2.2
Asian	3.7	3.0	3.1	6.5
Black	4.7	0.8	0.0	2.2
White	88.8	93.9	93.8	89.1
Other	0.9	2.3	3.1	0.0
Total (n)	**107**	**132**	**32**	**46**
Hispanic, Spanish or Latino/Latina	1.9	0.0	3.1	0.0

Note: Other included less common practice settings with less than 10% of pharmacists respondents, including nursing home/long-term care, academia, industry, mail order, managed care/PBMs, home health, and "other".

Services (WDHPS) database of in-state pharmacy licenses. Pharmacists with email addresses available in the database received three emails containing a hyperlink to the online survey. Pharmacists were asked to click on the survey link to access the survey. The three email prompts to pharmacists were distributed on the following dates: (1) August 25, 2020 (2) September 8, 2020 and (3) September 22, 2020.

Given there is no centralized organization that maintains a database of pharmacy technicians in Wisconsin, they were recruited using an alternative process. The email addresses of pharmacy license holders were obtained from the Wisconsin Department of Health and Professional Services (WDHPS) database. Pharmacy license holders received three emails informing them of the survey and asking their willingness to participate in the research study. Pharmacy license holders were asked to report the total number of technicians employed at their organization and were asked to send the hyperlink to those technicians. The three email prompts to pharmacy license holders were distributed on the following dates: (1) August 25, 2020 (2) September 8, 2020 and (3) September 22, 2020.

Data Analysis

Submitted surveys were available to researchers at the Medical College of Wisconsin through their Qualtrics account. On October 17, 2020 the survey data files were downloaded from Qualtrics and uploaded to SPSS Statistics Software (IBM Corp., Armonk, NY, USA) and Stata MP 15.0 (Stata Corp., College Station, TX, USA) for further analysis.

Results

Response Rate

The list of Wisconsin licensed pharmacists was obtained from WDPHS on July 23, 2020. The list included a total of 6,651 individuals of which 1,347 (20.3%) had email addresses provided. During survey distribution, 47 email addresses were determined to be faulty and were not able to be reached. A total of 1,300 pharmacists ultimately received the email containing the survey link.

The list of in-state pharmacies was also obtained from WDHS on July 23, 2020. The list included a total of 1,036

FIGURE 5. Pharmacists' License, Degrees & Residency Training By Practice Setting

	Community	Hospital	Ambulatory Care	Other
Year of First License	***Column %***			
1961 to 1970	0.0	0.0	0.0	4.3
1971 to 1980	11.2	3.0	6.3	8.7
1981 to 1990	15.9	7.6	15.6	10.9
1991 to 2000	20.6	21.2	21.9	17.4
2001 to 2010	12.1	25.8	18.8	19.6
2011 to 2020	38.3	40.2	37.5	34.8
Total (n)	**107**	**132**	**32**	**46**
Degrees Obtained	***Column %***			
BS Pharm	48.6	28.8	40.6	43.5
PharmD	55.1	80.3	68.8	65.2
Master's Degree (e.g. MS, MBA, MHA, MPH)	0.0	0.0	0.0	0.0
PhD	0.0	12.1	3.1	15.2
Total (n)	**107**	**132**	**32**	**46**
Residency Training	***Column %***			
PGY1	5.6	46.2	31.3	15.2
Pharmacy Practice	0.0	41.7	21.9	10.9
Community	5.6	4.5	9.4	4.3
Managed Care	0.0	0.0	0.0	0.0
PGY1/PGY2	0.0	8.3	0.0	0.0
Health-System Pharmacy Administration	0.0	5.3	0.0	0.0
Pharmacotherapy	0.0	2.3	0.0	0.0
Specialty Pharmacy Administration	0.0	0.8	0.0	0.0
PGY2	0.0	9.8	12.5	21.7
Ambulatory Care	0.0	0.0	9.4	6.5
Critical Care	0.0	3.0	0.0	0.0
Health-System Pharmacy Administration	0.0	2.3	0.0	0.0
Infectious Diseases	0.0	0.0	0.0	2.2
Internal Medicine	0.0	0.8	0.0	0.0
Oncology	0.0	0.8	3.1	0.0
Pediatric Pharmacy	0.0	3.0	0.0	2.2
Psychiatric Pharmacy	0.0	0.0	0.0	10.9
Board Certification	***Column %***			
BPS Board Certification (Any Kind)	4.7	36.4	28.1	32.6
Total (n)	**107**	**132**	**32**	**46**

Note: Other included less common practice settings with less than 10% of pharmacists respondents, including nursing home/long-term care, academia, industry, mail order, managed care/PBMs, home health, and "other".

in-state pharmacy licenses of which 579 (55.9%) had email addresses provided. After removing duplicate email addresses and email addresses determine to be faulty, 252 license holders were in the sample that received emails regarding the survey. A total of 360 technicians ultimately received the email containing the survey link from the license holder at their organization.

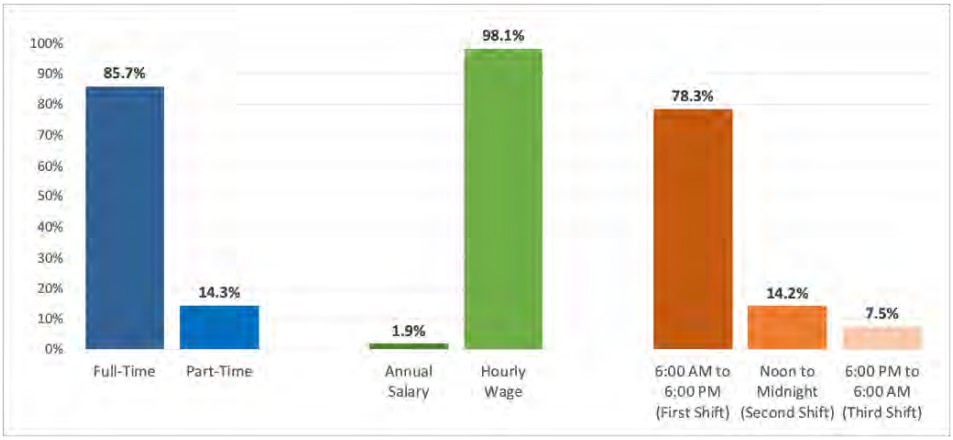
Three separate recruitment emails were sent on (1) August 25, 2020, (2) September 8, 2020, and (3) September 22, 2020. A total of 439 pharmacist responses and 142 technicians responses were received, resulting in an overall response rate of 35% (33.8% pharmacists, 39.4% technicians). Pharmacists and technicians were included in the sample for analysis if they provided responses to demographic questions for age, race, and gender. The resulting sample included 412 pharmacists (31.7%) and 132 technicians (36.7%), which are summarized in Figure 1 by age, gender identify, and race/ethnicity.

Pharmacists

By gender in 2020, 58.5% of licensed pharmacists responding to the survey identified as female, 41.5% identified as male and 0% identified as non-binary. By race in 2020, 90.3% of pharmacists were white, 4.1% were Asian, 2.2% Black, 1.2% American Indian, and 2.2% "Other". The racial diversity of licensed pharmacists in Wisconsin underrepresents the racial diversity of the general population in the United States.

Figure 2 contains a summary of Wisconsin licensed pharmacists based on their employment status. Overall, 90.9% of licensed pharmacists responding to the survey in 2020 were practicing as a pharmacist or working in a pharmacy-related field. The remaining 9.1% of pharmacists responding in 2020 included 5.4% retired pharmacists, 2.0% unemployed pharmacists, and 1.7% pharmacists working in fields other than pharmacy. By age in 2020, 50% of practicing pharmacists were age 40 years or younger, and 50% of practicing pharmacists were age 41 years or older. Furthermore, 11.9% of practicing pharmacists were age 61 years or older. In 2020, 66.7% of pharmacists practicing in fields other than pharmacy or healthcare were age 41 years or older. The number of unemployed

FIGURE 6. Pharmacy Technicians' Employment Characteristics



Note: Technicians were classified as working part-time if they worked 30 hours or less per week in their primary employment.

pharmacists responding in 2020 was low (n=7) and the age of unemployed pharmacists was variable. Of the 5.4% of retired pharmacists that responded in 2020, 89.5% of retired pharmacists were age 61 years or older. By gender in 2020, 64.1% of practicing pharmacists identified as female, 35.9% identified as male, and 0% identified as non-binary. Of the pharmacists that indicated they were unemployed in 2020, 71.4% identified as female and 28.6% identified as male. Of the pharmacists that indicated they were retired in 2020, 94.7% identified as male and 5.3% identified as female. Unemployed pharmacists responding in 2020 were 100% White. Retired pharmacists responding in 2020 were 100% White.

Practicing Pharmacists: Figure 3 shows the employment characteristics for practicing pharmacists. In 2020, 81.3% of practicing pharmacists were working full-time and 18.7% were working part-time (<30 hours per week). The payment structure for practicing pharmacists in 2020 included annual salaries (61.1%) and hourly wages (38.9%). In 2020, 91.6% of practicing pharmacists were primary working during first shift (between 6:00 AM to 6:00 PM). Only 5.5% of practicing pharmacists were primarily working second shift (between noon and midnight) and 2.9% were primarily working third shift (between 6:00 PM to 6:00 AM).

Figure 4 provides a demographic summary of actively practicing pharmacists in 2020 by practice setting. Of the pharmacists actively practicing in 2020, 41.6% reported employment in hospital/health-system practice settings (e.g. government and non-government hospitals and health-systems), 33.8% reported employment in community practice settings (e.g. independent, chain, supermarket), and 10.1% reported employment in ambulatory care practice settings (e.g. outpatient clinics, primary care clinics).

By education in 2020, 63.8% of practicing pharmacists had obtained a PharmD degree and 36.2% had obtained a BS Pharm degree (Figure 5). In community settings, 55.1% of pharmacists obtained a PharmD degree, 5.6% completed a PGY1 residency (any kind), 0% completed a PGY2 residency (any kind), and 4.7% completed BPS Board Certification (any kind). In hospital/health-system settings, 80.3% obtained a PharmD degree, 46.2% completed a PGY1 residency (any kind), 9.8% completed a PGY2 residency (any kind), 8.3% completed a PGY1/PGY2 residency (any kind), and 36.4% completed BPS Board Certification (any kind).

Technicians

In 2020, 85.7% of pharmacy technicians were working full-time and 14.3% were working part-time. (Figure 6) The payment structure for pharmacy technicians in 2020 included primarily hourly wages (98.1%) and very few with annual salaries (1.9%). In 2020, 78.3% of pharmacy technicians were primary working during first shift (between 6:00 AM to 6:00 PM), while 14.2% of pharmacy technicians were primarily working second shift (between noon and midnight) and 7.5% were primarily working third shift (between 6:00 PM to 6:00 AM).

In 2020, 84.3% of pharmacy technicians responding to the survey reported employment in hospital/health-system practice settings (e.g. government and non-government hospitals), 9.3% reported employment in community practice settings (e.g. independent, chain, supermarket), and 6.5% reported employment in other practice settings.

Figure 7 shows the breakdown of pharmacy technicians' age, gender, and race/ethnicity by practice setting. In 2020, 60.2% of pharmacy technicians were age 40 years or younger, and 39.8% of pharmacy technicians were age 41 years or older. Furthermore, only 5.6% of pharmacy technicians were age 61 years or older. In community settings, 70% of pharmacy technicians were under the age of 40 years. In hospital and health-system settings, 59.3% of pharmacy technicians were under age 40 years. By gender in 2020, 86.1% of pharmacy technicians identified as female, 13.0% identified as male, and 0.9% identified as non-binary. By race in 2020, pharmacy technicians self-identified as 81.5% White, 10.0% "Other", 3.7% Asian, 3.7% Black, and 0.9% American Indian or Alaska Native. Overall, 7.4% of pharmacy technicians identified as Hispanic.

Figure 8 provides a summary of the pharmacy technicians' education and training by practice setting. Overall in 2020, 60.2% of pharmacy technicians had received a high school diploma and 10.2% had completed a GED. Furthermore, 35.2% had completed some college, 23.1% received an Associate Degree, 16.7% received a Bachelor's Degree, and 2.8% received a Master's Degree. Overall, 24.1% of pharmacy technicians had completed a technician training program, 69.4% had completed basic technicians certification, and 10% had completed advanced Pharmacy Technician Certification Board (PTCB) certification.

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FIGURE 7. Technicians' Age, Gender Identity & Race/Ethnicity By Practice Setting

	Community	Hospital	Other
Age Category	***Column %***		
<30	0.0	36.3	28.6
31-35	30.0	15.4	28.6
36-40	40.0	7.7	0.0
41-45	10.0	14.3	14.3
46-50	10.0	6.6	0.0
51-55	10.0	7.7	0.0
56-60	0.0	6.6	14.3
61-65	0.0	5.5	14.3
66-70	0.0	0.0	0.0
>70	0.0	0.0	0.0
Total (n)	**10**	**91**	**7**
Gender Identity	***Column %***		
Male	10.0	14.3	0.0
Female	90.0	84.6	100.0
Non-Binary	0.0	1.1	0.0
Total (n)	**10**	**91**	**7**
Race/Ethnicity	***Column %***		
American Indian	0.0	1.1	0.0
Asian	0.0	4.4	0.0
Black	10.0	3.3	0.0
White	90.0	81.3	71.4
Other	0.0	9.9	28.6
Total (n)	**10**	**91**	**7**
Hispanic, Spanish or Latino/Latina	10.0	7.7	0.0

FIGURE 8. Technicians' Education, Training & Certification By Practice Setting

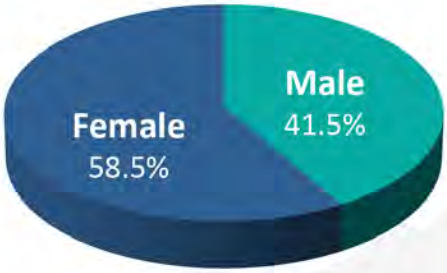
	Community	Hospital	Other
Education	***Column %***		
High School Diploma	40.0	61.5	71.4
GED	0.0	5.5	85.7
Some College, No Degree	40.0	35.2	28.6
Associate Degree	40.0	20.9	28.6
Bachelor's Degree	20.0	16.5	14.3
Master's Degree	0.0	3.3	0.0
Total (n)	**10**	**91**	**7**
Technician Training	***Column %***		
College-Based Technician Training Program	10.0	13.2	14
ASHP-Accredited Technician Training Program	0.0	6.6	0.0
Online Technician Training Program	20.0	4.4	0.0
Total (n)	**10**	**91**	**7**
Technician Certification	***Column %***		
National Healthcareer Association Certification	0.0	4.4	0.0
Pharmacy Technician Certification Board (PTCB) Certification	80.0	60.4	28.6
Other	10.0	5.5	0.0
Total (n)	**10**	**91**	**7**
Advanced Technician Certification	***Column %***		
PTCB Certified Compounded Sterile Preparation Technician	0.0	3.3	0.0
PTCB Advanced Certified Pharmacy Technician	0.0	0.0	0.0
PTCB Medication History Certificate	0.0	1.1	0.0
PTCB Technician Product Verification Certificate	30.0	2.2	0.0
PTCB Hazardous Drug Management Certificate	0.0	1.1	0.0
PTCB Billing and Reimbursement Certificate	10.0	0.0	0.0
Total (n)	**10**	**91**	**7**

The Wisconsin Pharmacy Workforce

Pharmacists

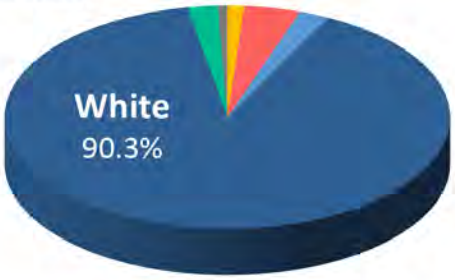
2020

Pharmacists' Gender



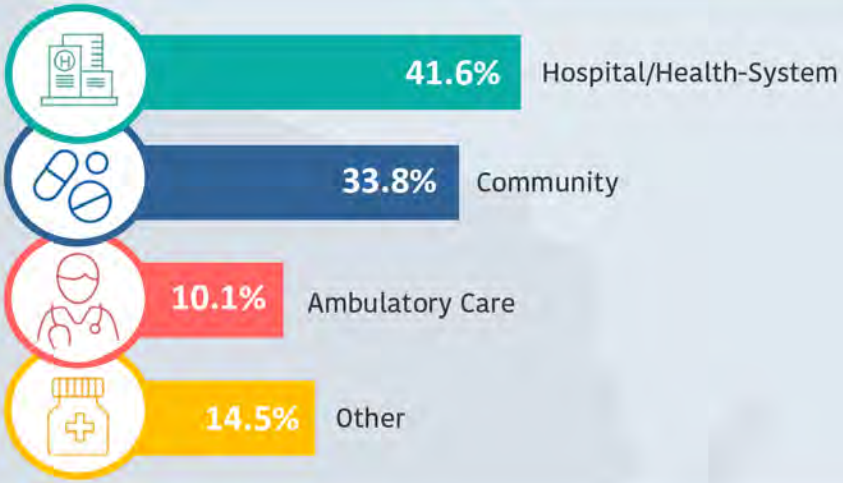
Pharmacists' Race/Ethnicity

- American Indian / Alaska Native
- Asian
- Black
- White
- Other
- Hispanic



PharmD = 63.8%

BS Pharm = 36.2%



81.3% of practicing pharmacists were working full-time (>30 hours per week)

61.1% of pharmacists were paid by annual salaries and 38.9% by hourly wages

91.6% of practicing pharmacists were working during first shift (6:00 AM to 6:00 PM)

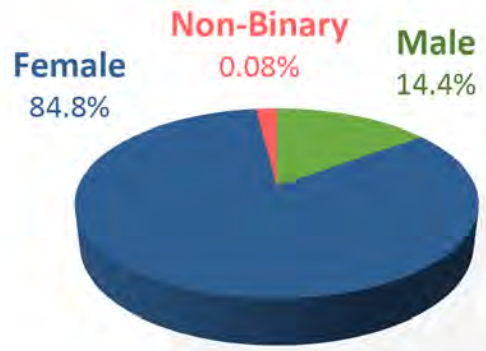
$135,271 Avg. student loan debt at graduation for recent graduates (2011-2020)

Brianne Bakken, PharmD, MHA

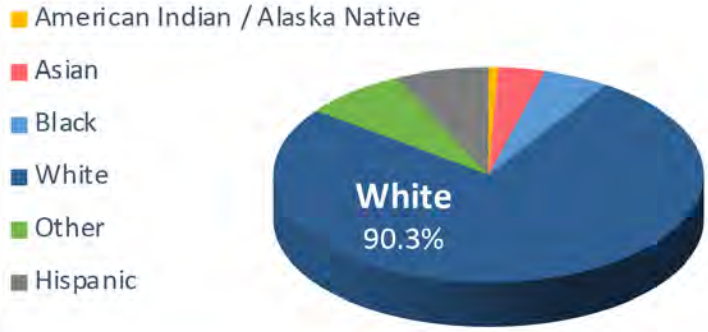
The Wisconsin Pharmacy Workforce 2020

Technicians

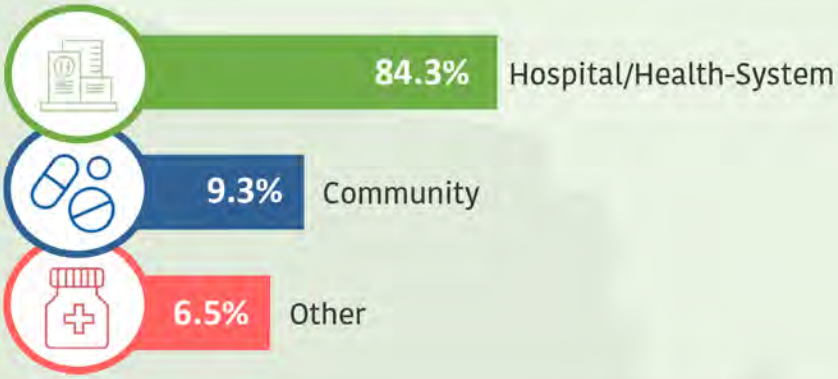
Technicians' Gender



Technicians' Race/Ethnicity



Technician Certification



85.7% of technicians were working full-time (>30 hours per week)

98.1% of technicians were paid by hourly wages and 1.9% by annual salaries

78.3% of technicians were working **first** shift (6:00 AM to 6:00 PM)

7.5% of technicians were working **third** shift (6:00 PM to 6:00 AM)

14.2% of technicians were working **second** shift

4.08 Overall demand rating, which indicates "moderate demand" for technicians

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