

National and Midwest Workforce/Job Market Data

David H. Kreling, Ph.D.

Sonderegger Research Center

School of Pharmacy

University of Wisconsin - Madison

83rd NABP/AACP District IV Meeting

2 November 2016

Disclosure

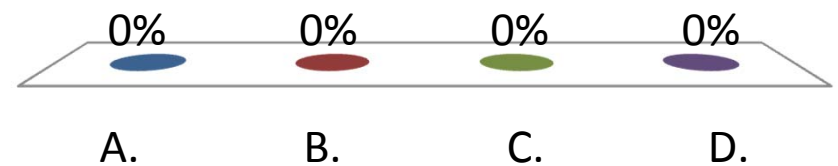
- I have received grant/research support from Pharmacy Workforce Center (Aggregate Demand Index) in the past 12 months.

Objectives

- Recognize changes in the composition of the pharmacist workforce and factors related to the changes.
- Describe recent trends in the supply of pharmacists and variables contributing to the changes in supply.
- Describe current levels of demand for pharmacists, how they are determined, and implications of changes in demand.

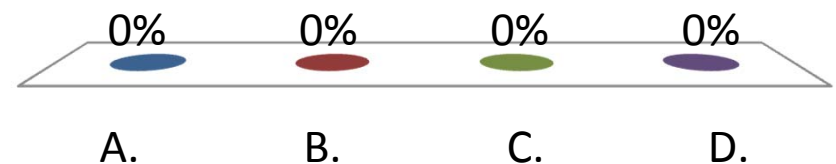
Pre-Test #1. With women comprising more than half of the pharmacists in the U.S. as reported in the 2014 National Pharmacist Workforce Survey results, which of the following has occurred?

- A. The overall proportion of pharmacists working part-time has increased
- B. The proportion of women pharmacists working part time has increased
- C. The proportion of women pharmacists working part-time has remained relatively constant
- D. The proportion of women pharmacists working part-time has decreased



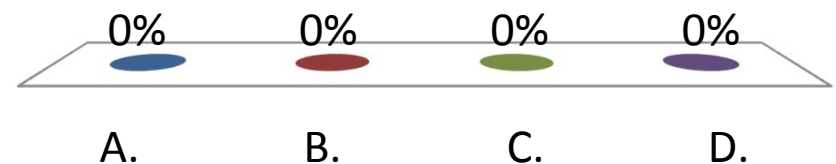
Pre-Test #2. Anticipated change in the supply of pharmacists over the next five years will be: _____.

- A. Consistent continued increase overall from new pharmacy schools and graduates
- B. Accelerated increase overall from pharmacy schools with 'fast-track' curricula
- C. Some attenuation in the growth rate from decreased applicants to pharmacy schools
- D. Some attenuation in the growth rate from 'capitation era' graduates retiring



Pre-Test #3. According to reports of pharmacists in national surveys, there has been a decrease in the demand for pharmacists between 2009 and 2014 due to increased occurrences of employers:

- A. Restructuring pharmacist work schedules
- B. Having early retirement incentives
- C. Pharmacist lay offs
- D. All of the above



Workforce Parameters

Overall Methods of the National Pharmacist Workforce Surveys



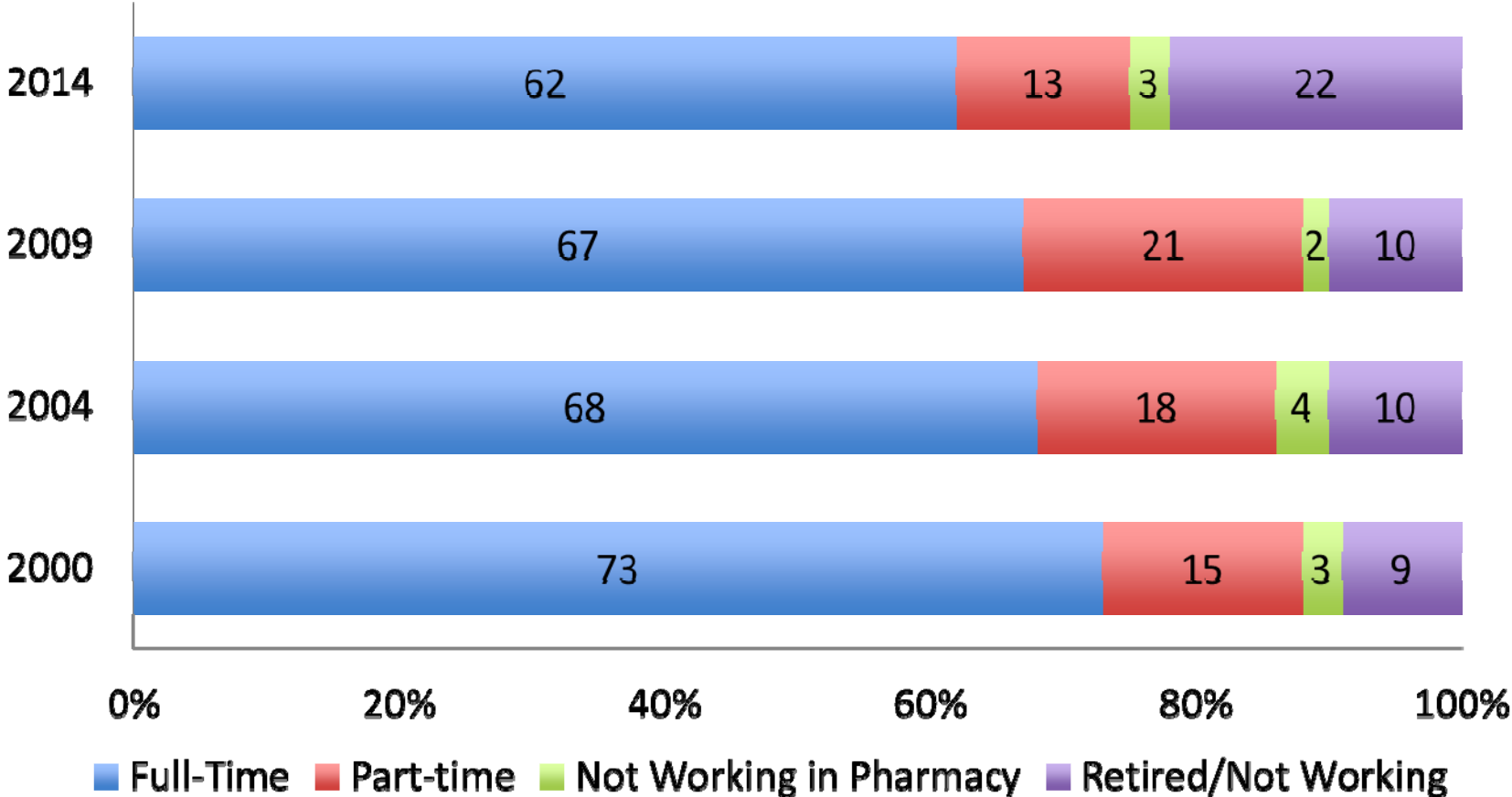
- Cross-sectional, descriptive survey design
- Survey instrument (4 – 11 pages) mailed to the home addresses of licensed pharmacists
- Sampling frame obtained from a national medical marketing data warehouse
- Random samples of 3,000-5,200 pharmacists were drawn
- Each subject contacted up to five times
- Responses rates: 52% (2009), 44% (2004), 46% (2000), and 48% (2014)

According to the most recent national workforce survey, men and women pharmacists make equal contributions to the workforce in terms of full-time equivalents (FTEs).

- A. True
- B. False

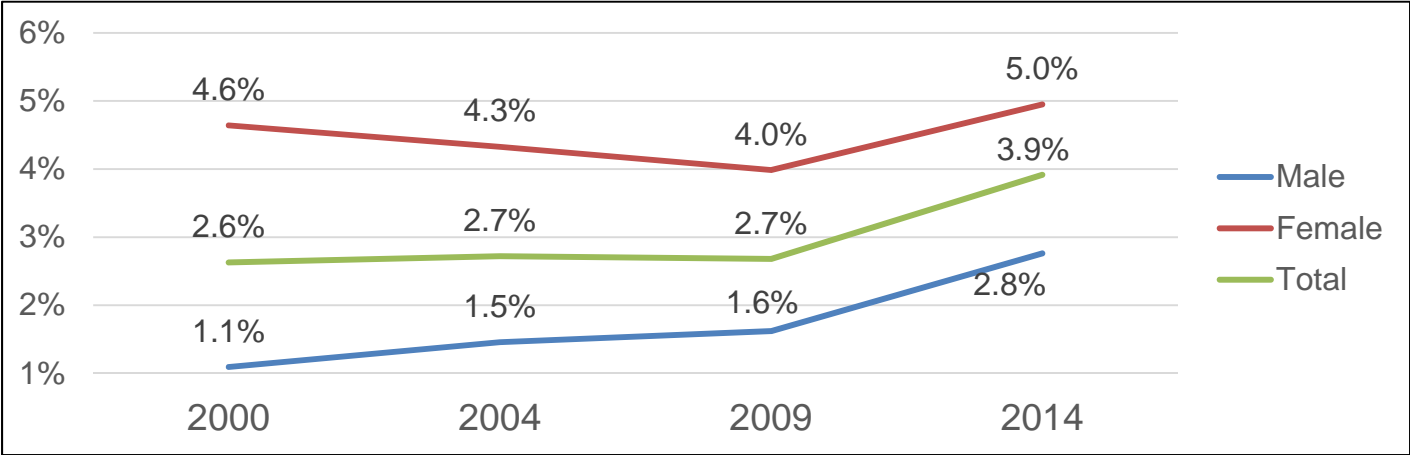


Work Status of Licensed Pharmacists

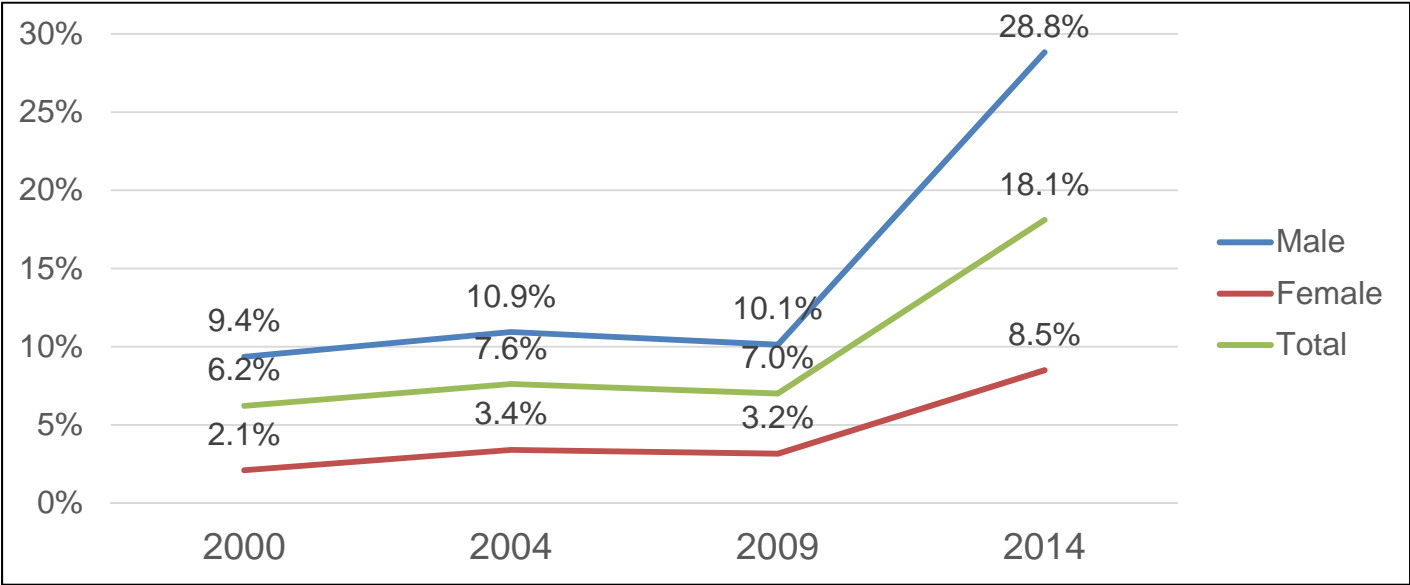


Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)

Percent of Pharmacists Not Retired, Not Working



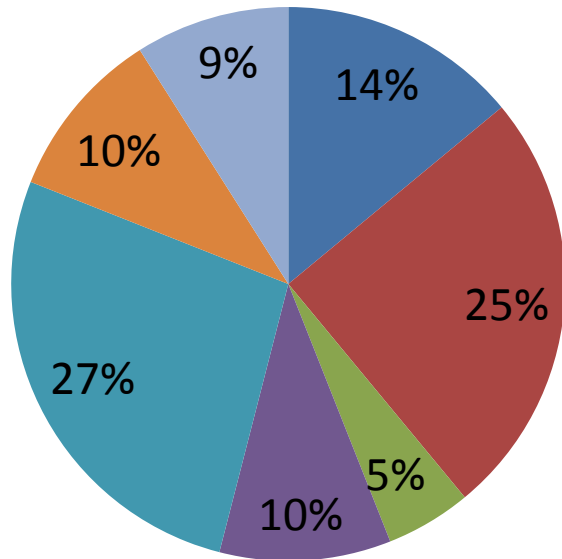
Percent of Pharmacists Retired



Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)

Actively Practicing Pharmacists' Employment Settings

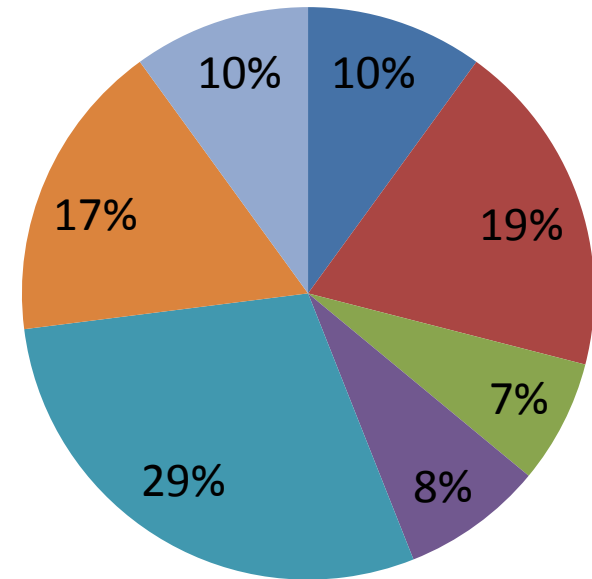
2009



Other Pt Care = mail, am care, LTC, infusion, specialty, etc.

- Independent
- Chain
- Mass Merchandizer
- Supermarket
- Hospital
- Other Patient Care
- Other Non-Patient Care

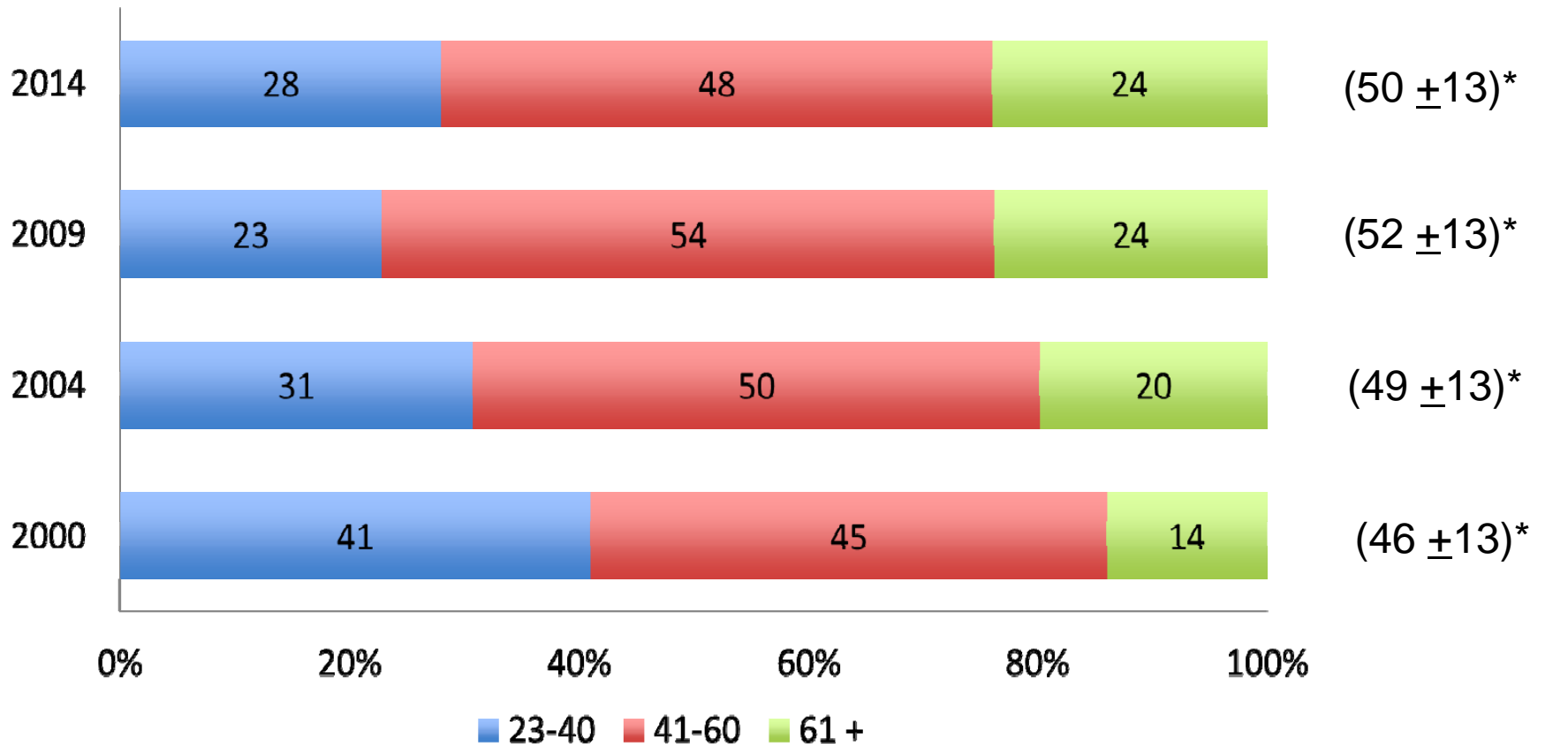
2014



Other Non-Pt Care = PBMs, education, etc.

Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)

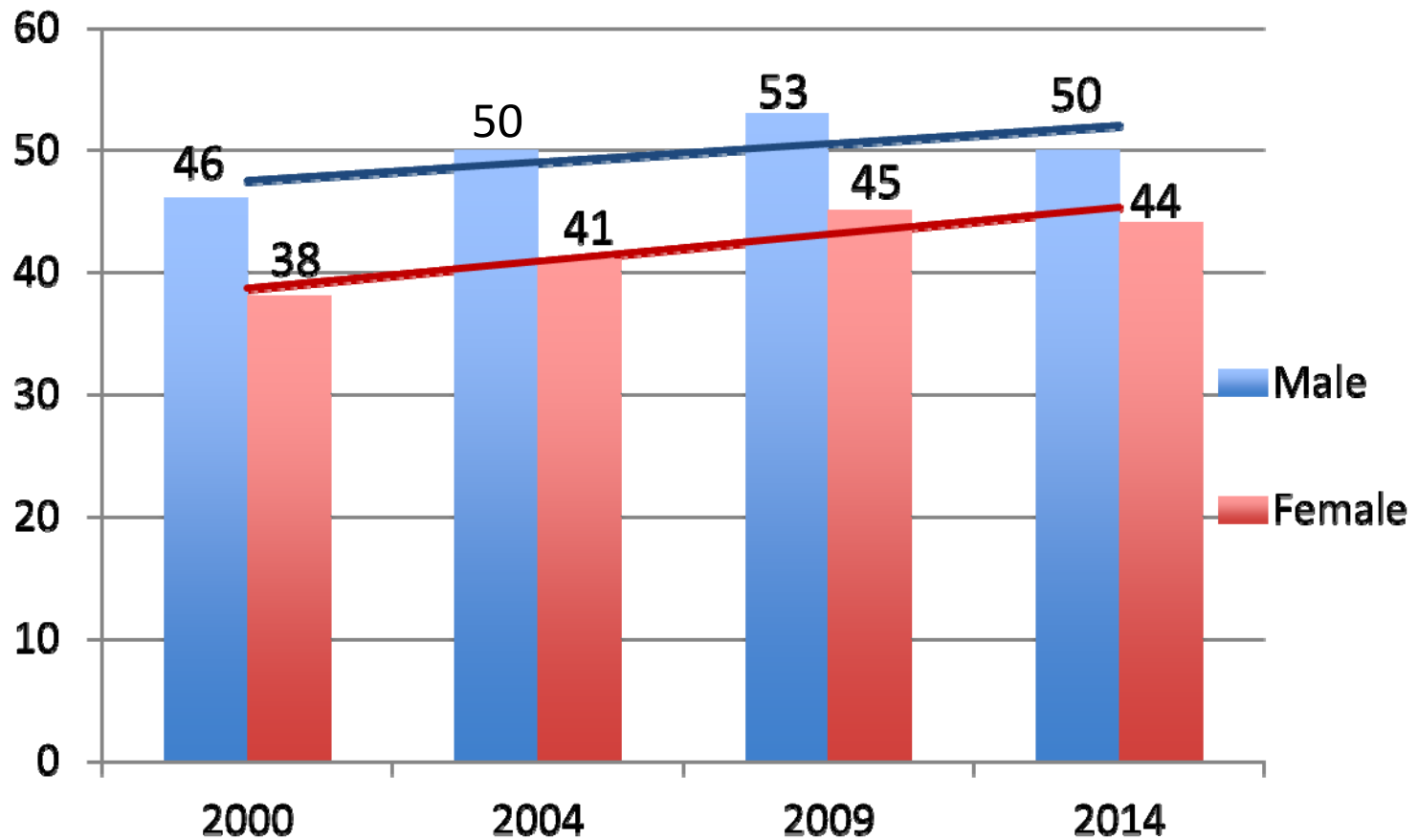
Age of Licensed Pharmacists



*mean (SD)

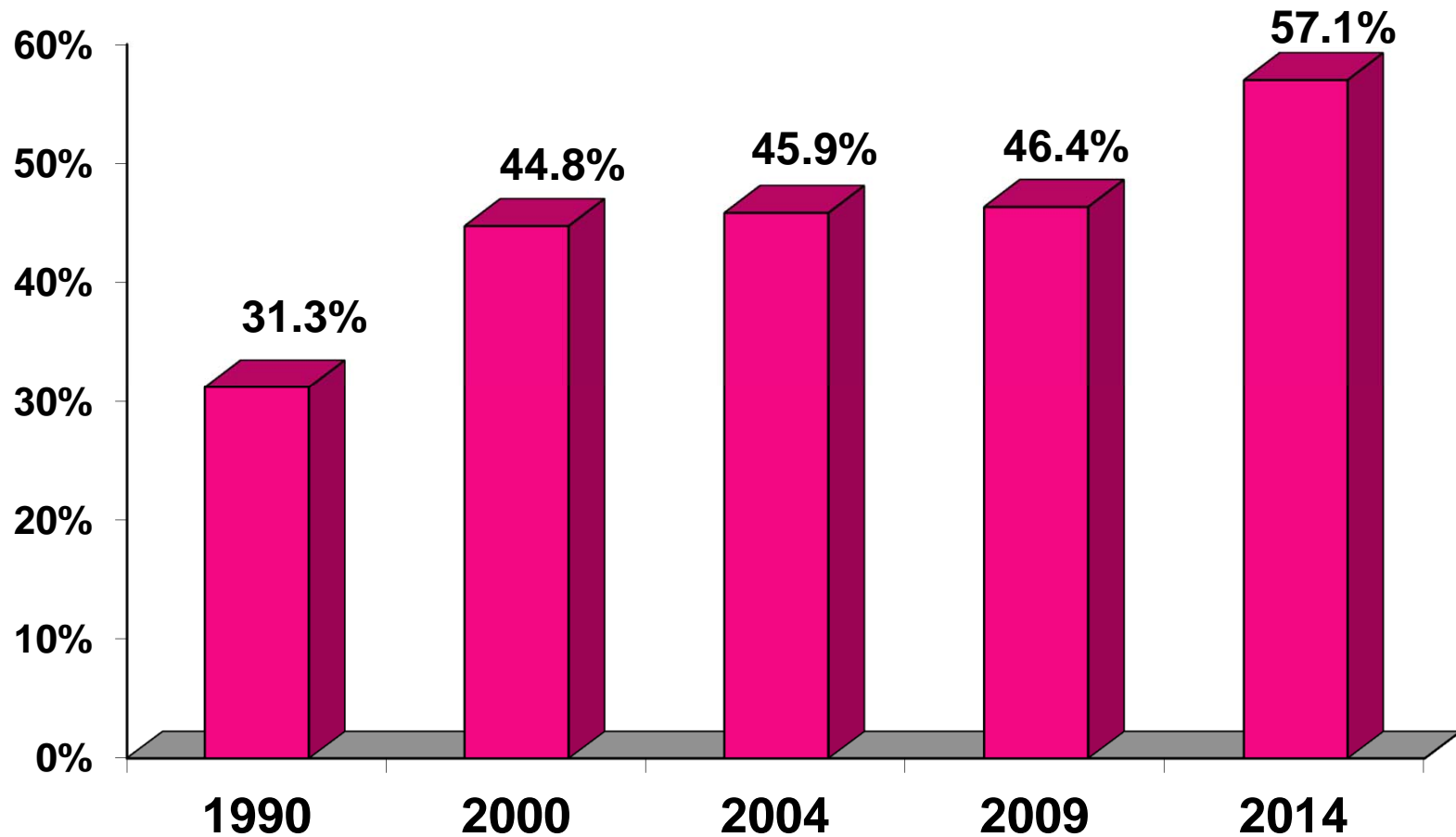
Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)

Mean Age by Gender: 2000-2014*



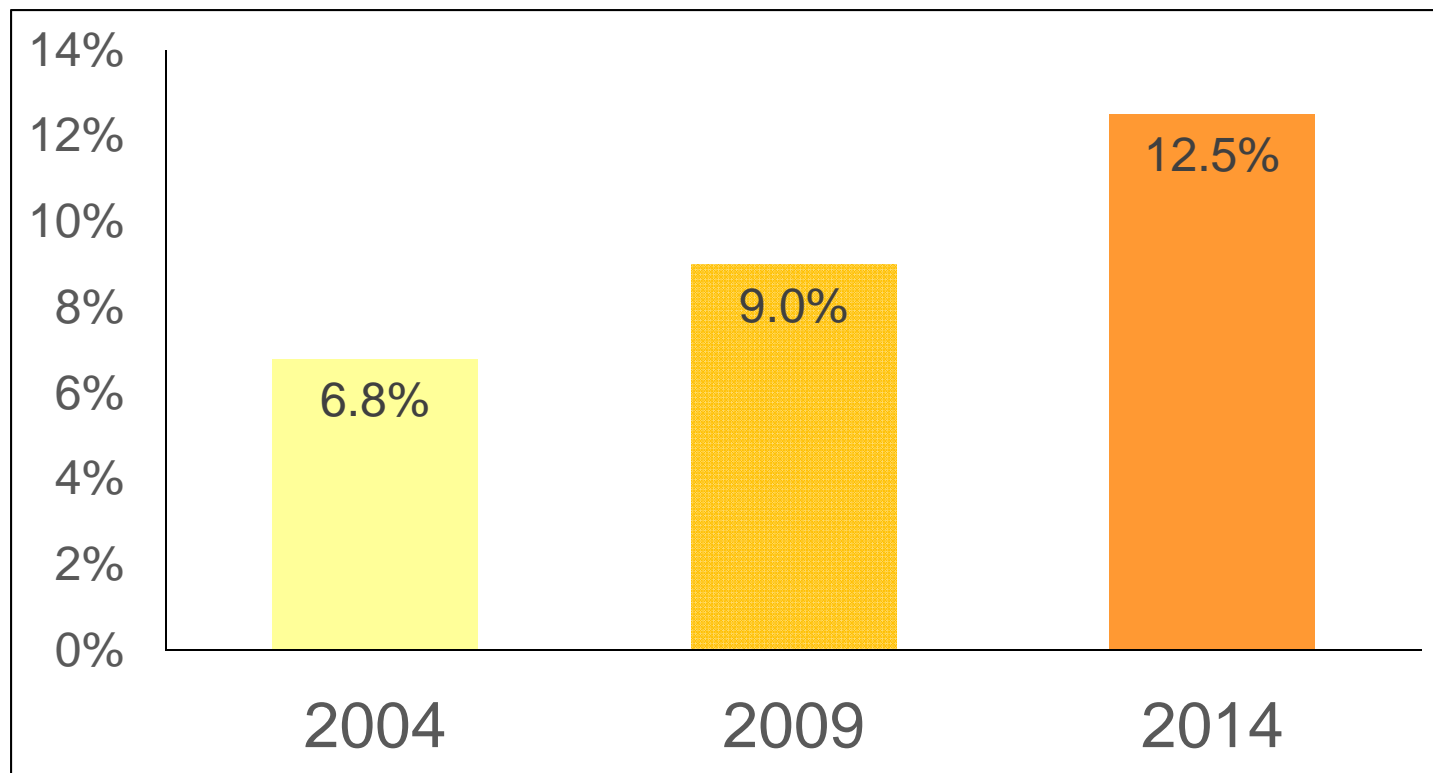
* Actively Practicing Pharmacists

Percent of Actively Practicing Pharmacists that are Female: 1990-2014



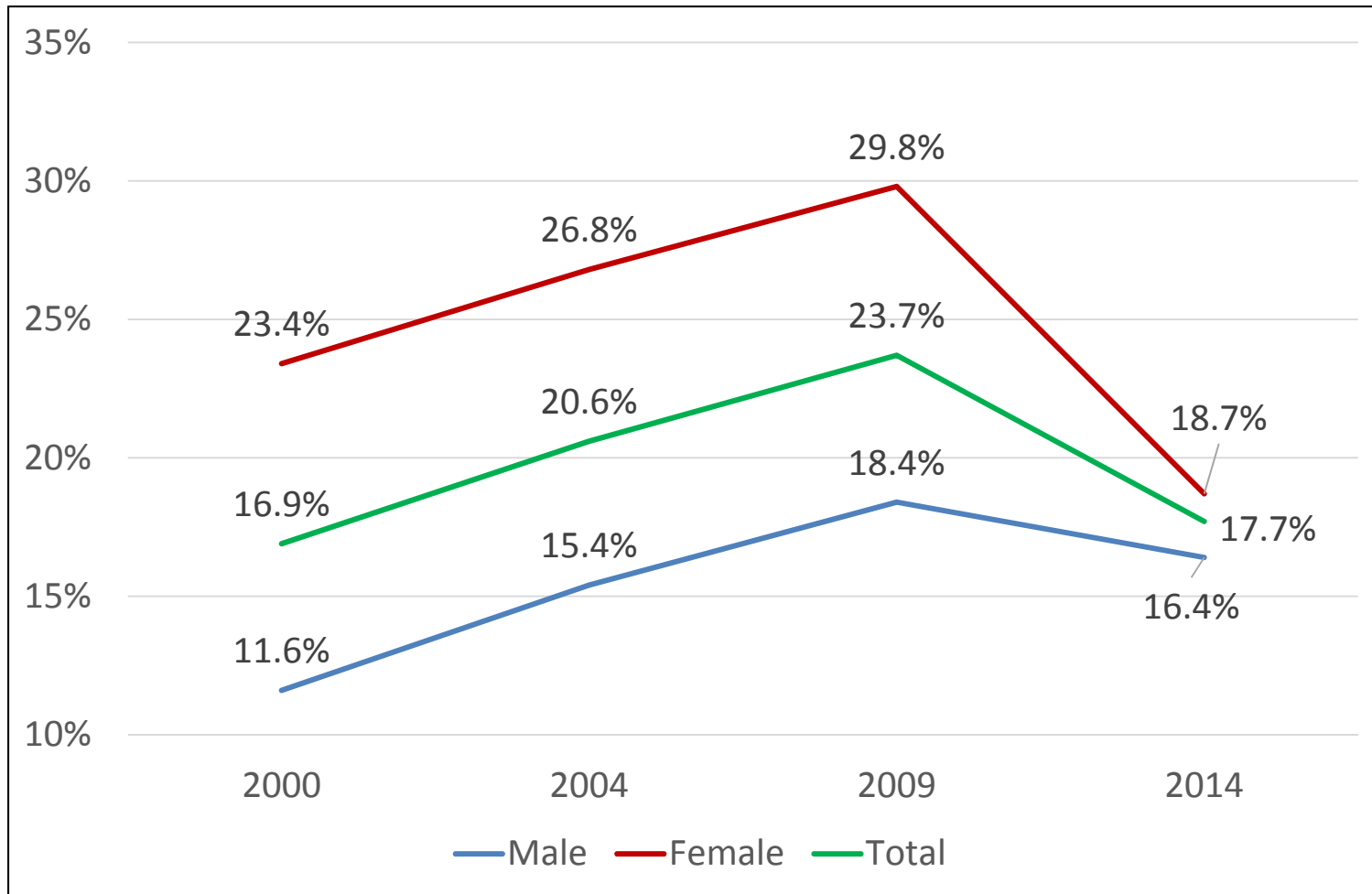
Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)

Residency Training of Actively Practicing Pharmacists



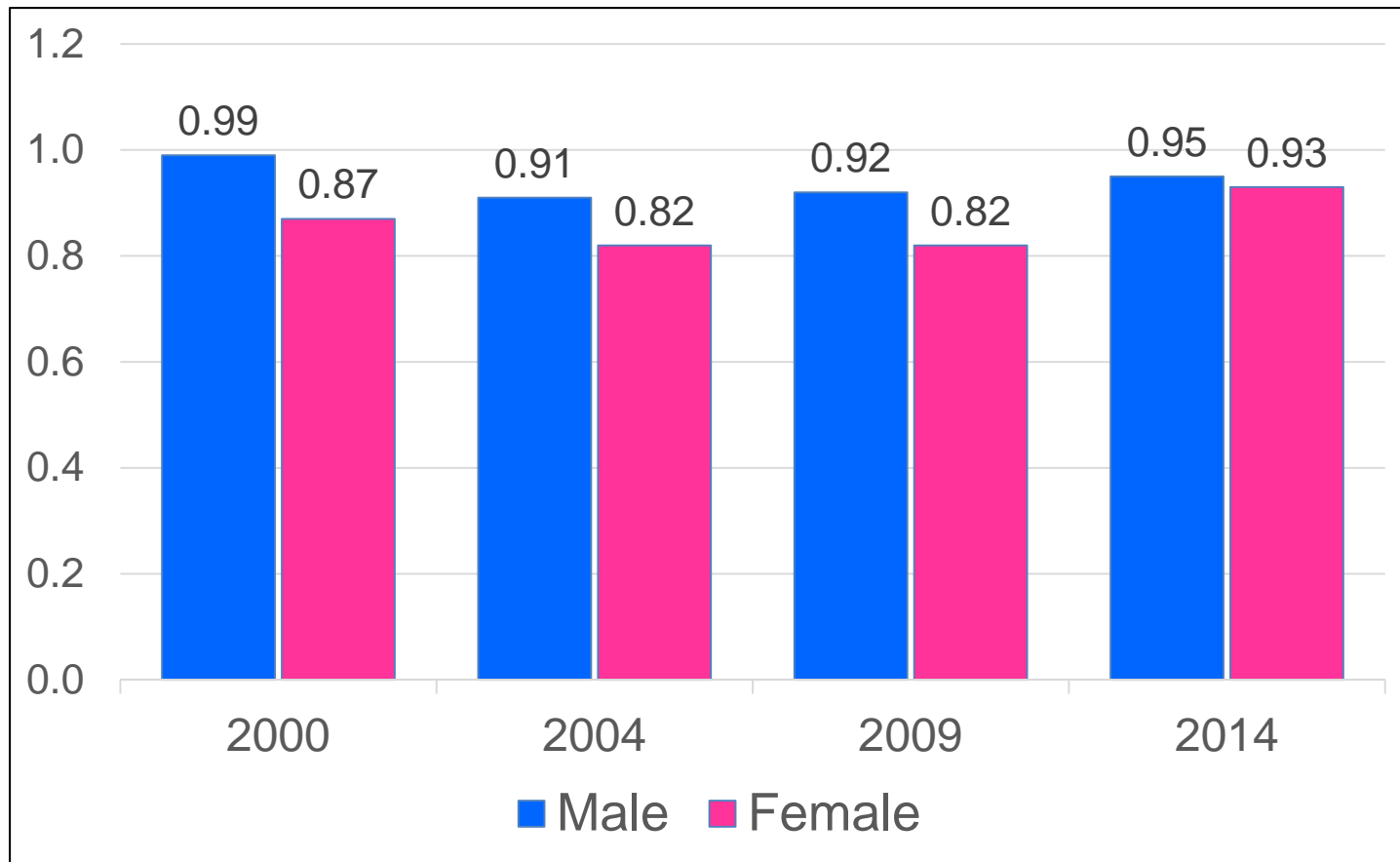
Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)

Percent of Practicing Pharmacists Working Part-Time



Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)

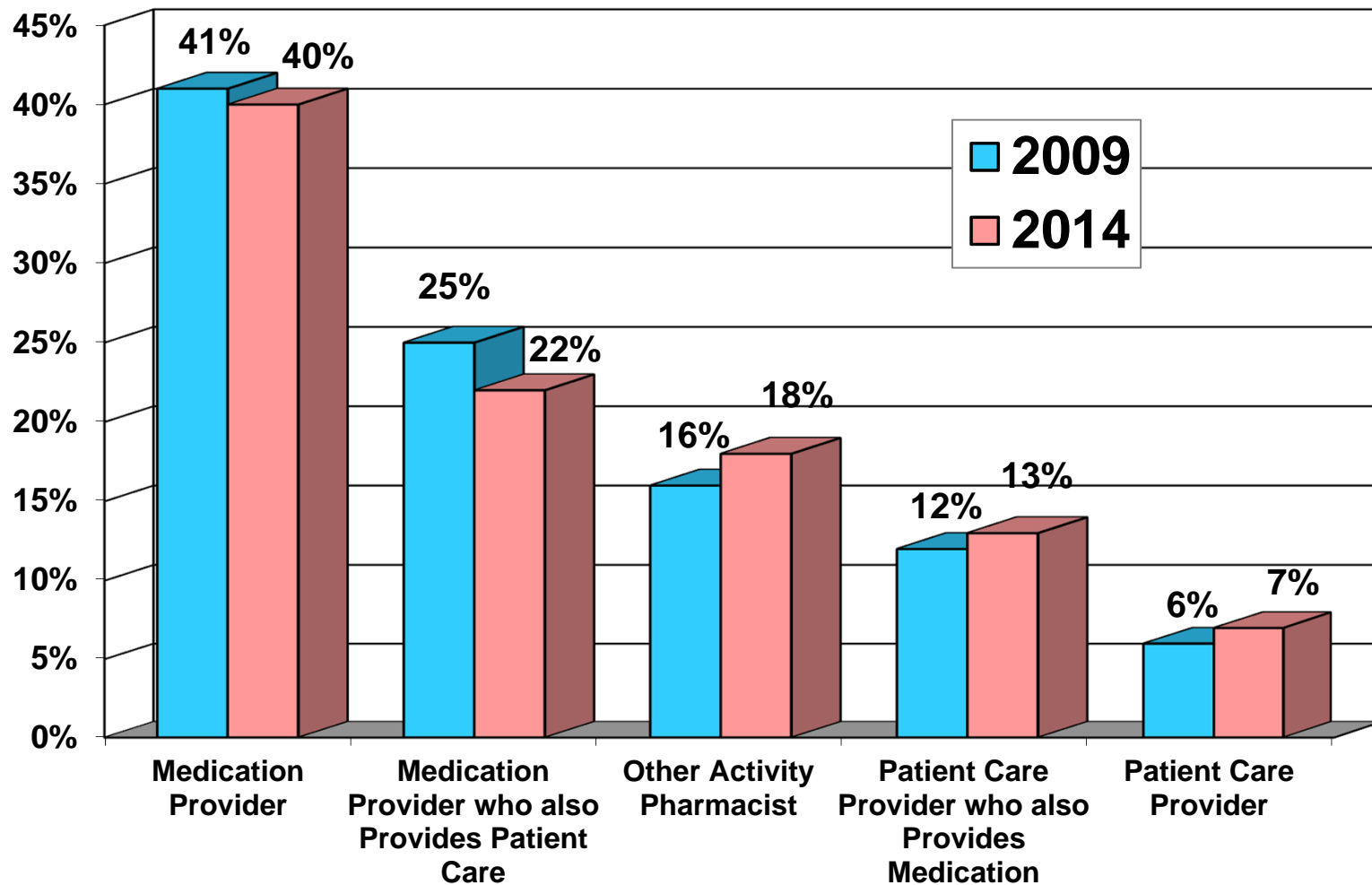
Full Time Equivalent (FTE) Contributions by Gender



* Actively Practicing Pharmacists (all, full-time & part-time)

Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)

Proportion of U.S. Pharmacists by Segment in Descending Size



Source: 2014 and 2009 National Pharmacist Workforce Survey Report (analysis based on time spent in dispensing and patient care activities)

Supply of Pharmacists

Think-Pair-Share

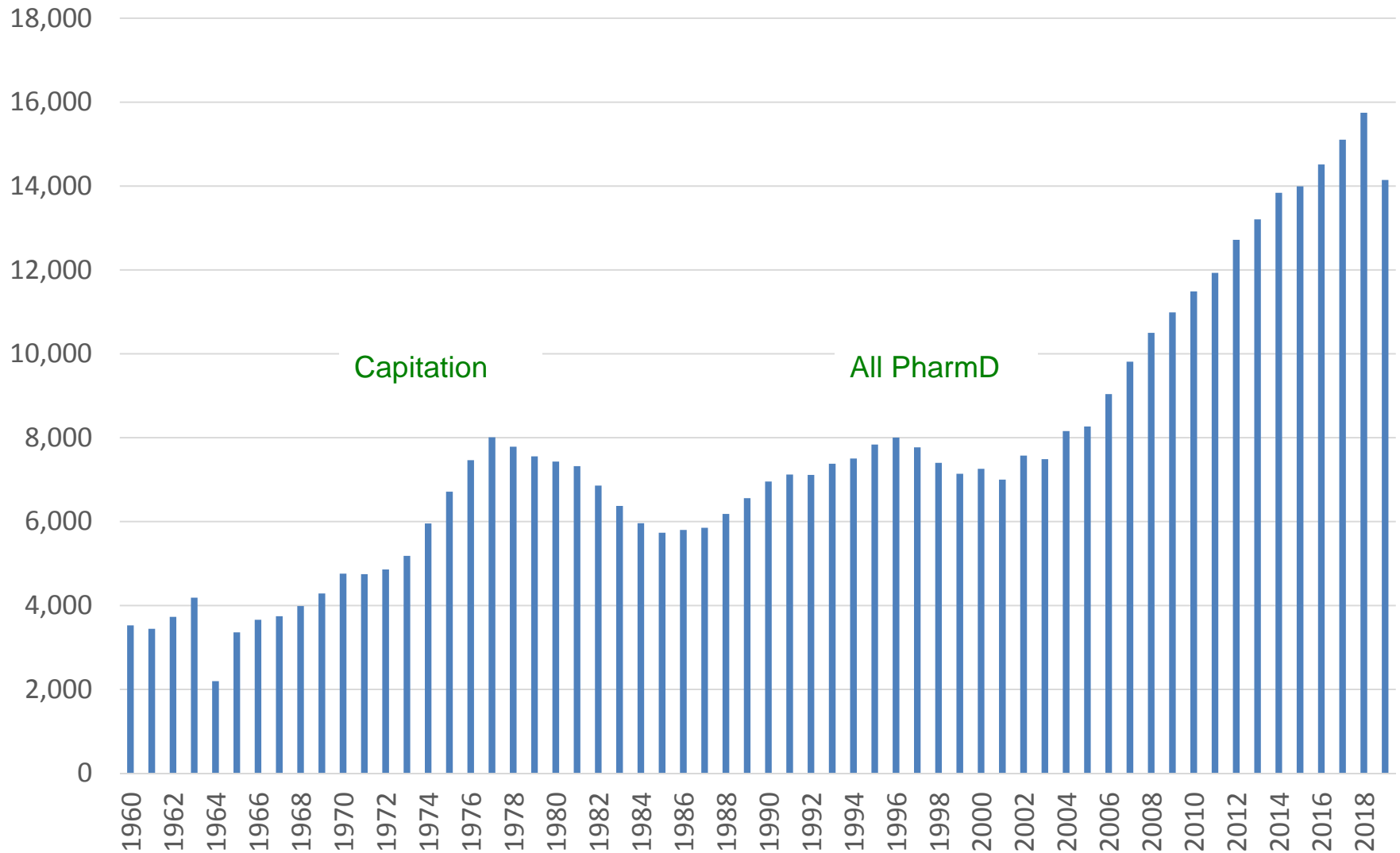
1. Why is the supply of pharmacists changing (or why has it changed)?
2. What will affect future changes in the supply of pharmacists? (key factor(s))
3. What are the most important positives and negatives from a changing/changed supply of pharmacists?

Estimating Supply

Current Level - FTEs (BLS & other estimates)

- Additions (graduates)
- Deletions/Losses (retirement, voluntary, involuntary losses)
- Adjustments (gender/age contribution to workforce, etc.)

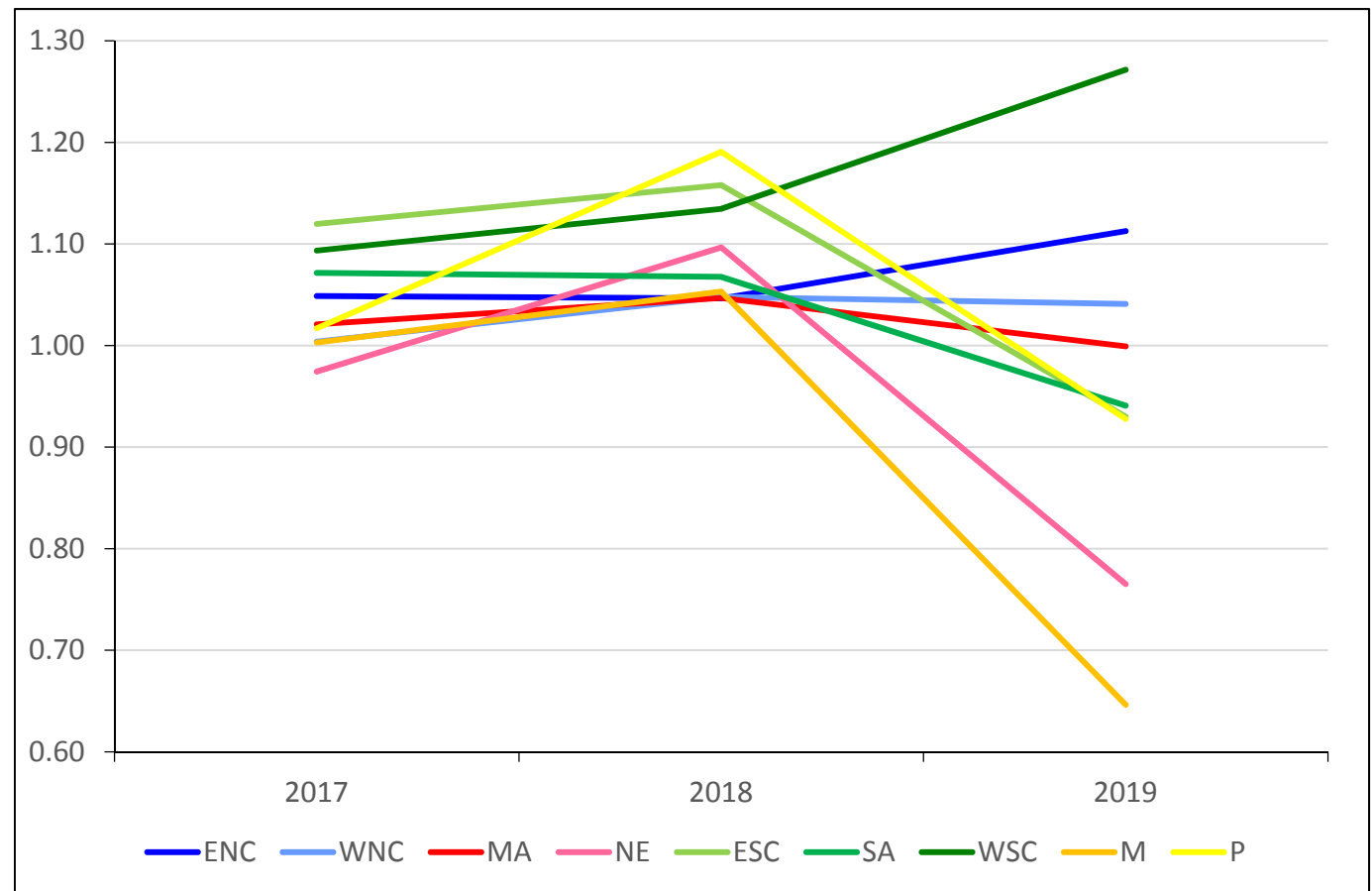
First Professional Degree Graduates: 1960 – 2017



Source: AACP graduate and enrollment reports, AJPE. 2016 through 2019 estimated based on first year enrollments published in 2016

Upcoming Change in Degree Graduates

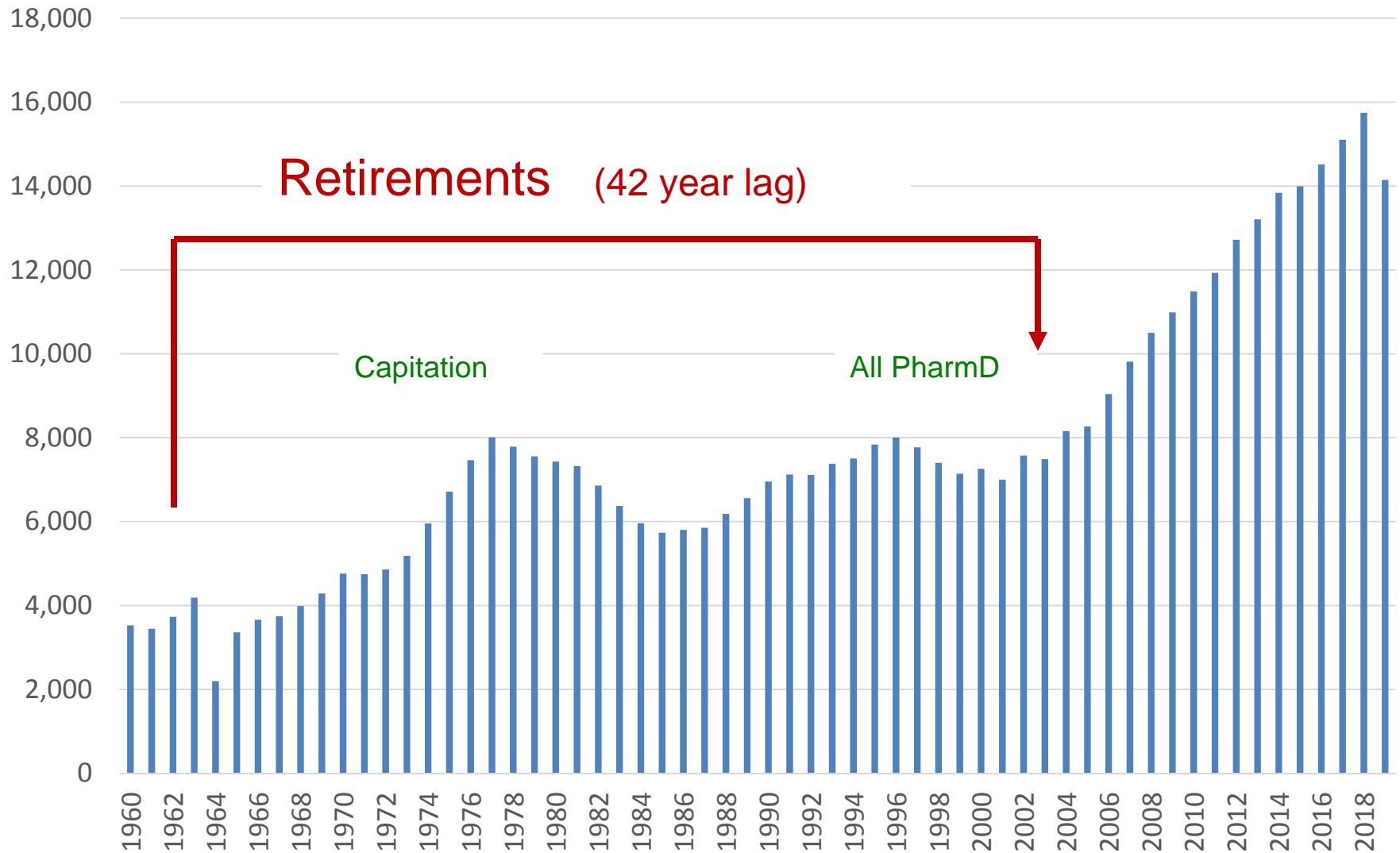
Region	Division	2016 Class
M	ENC	2,157
M	WNC	1,274
N	MA	2,350
N	NE	1,252
S	ESC	1,044
S	SA	2,753
S	WSC	1,241
W	M	1,032
W	P	1,410



Relative change in enrollment from 2016 class size.

Source: AACP enrollment reports, AJPE 2016

First Professional Degree Graduates: 1960 – 2017



Source: AACP graduate and enrollment reports, AJPE. 2016 through 2019 estimated based on first year enrollments published in 2016

Simple Simulation Model of Supply Growth

Entry Year	Current Year	Entry	Exit	"Gain"	Cumulative "Gain"
1960	2002	7,573	3,526	4,047	4,047
1961	2003	7,488	3,445	4,043	8,090
1962	2004	8,158	3,728	4,430	12,520
1963	2005	8,268	4,188	4,080	16,600
1964	2006	9,040	2,195	6,845	23,445
1965	2007	9,812	3,360	6,452	29,897
1966	2008	10,500	3,659	6,841	36,738
1967	2009	10,988	3,744	7,244	43,982
1968	2010	11,487	3,988	7,499	51,481
1969	2011	11,931	4,288	7,643	59,124
1970	2012	12,719	4,758	7,961	67,085
1971	2013	13,207	4,747	8,460	75,545
1972	2014	13,838	4,858	8,980	84,525
1973	2015	13,994	5,184	8,810	93,335
1974	2016	14,513	5,957	8,556	101,891
1975	2017	15,105	6,712	8,393	110,284
1976	2018	15,747	7,464	8,283	118,567
1977	2019	14,146	8,011	6,135	124,702
1978	2020	14,146	7,785	6,361	131,063
1979	2021	14,146	7,556	6,590	137,653
1980	2022	14,146	7,432	6,714	144,367
1981	2023	14,146	7,323	6,823	151,190
1982	2024	14,146	6,859	7,287	158,477
1983	2025	14,146	6,374	7,772	166,249

2016 through 2019 estimated based on enrollments; entry after 2019 held constant

Demand for Pharmacists

Current Indicators and Methods for Estimating Demand

Primary Data Collection

Perceptions

Aggregate Demand Index (ADI)

ASHP Staffing Survey

'Objective' Measures

ASHP Staffing Survey

Number of vacant FTEs (direct)

Time to fill open positions (indirect)

Modeling

HRSA projections

Demand Categories

- 5 = High demand: difficult to fill open positions
- 4 = Moderate demand: some difficulty filling
- 3 = Demand in balance with supply
- 2 = Demand is less than supply available
- 1 = Demand is much less than supply

Perceptions of Supply and Demand

- Perceived Shortage
- Perceived Balance
- Perceived Excess

Dispensing Function-based Demand

- Implicit demand function, with assumptions about dispensing productivity
- Projected RX volume with population, utilization, and efficiency assumptions

Need-based Approach for Estimating Demand

Estimated Pharmacist FTE Needs in 4 Domains

- **Dispensing**

Dispensed RXs/year/RPh

- Adjusted for growth & efficiency/automation

- **Primary Care Services**

FTE per population for services

- FTE/population derived from existing supply in this domain
- population/RPh ratio in existing health system

- **Institution-based Tertiary Care**

Estimated FTEs Doing Services

- Prevalence and time estimates for activities extended to accommodate unmet need

- **Non-patient Care**

Projections from Assumptions by Panel

- For industry, academia, regulatory/government policy, pharmacy informatics, PBM

Other Parameters – Demand (Future)

Latent Demand

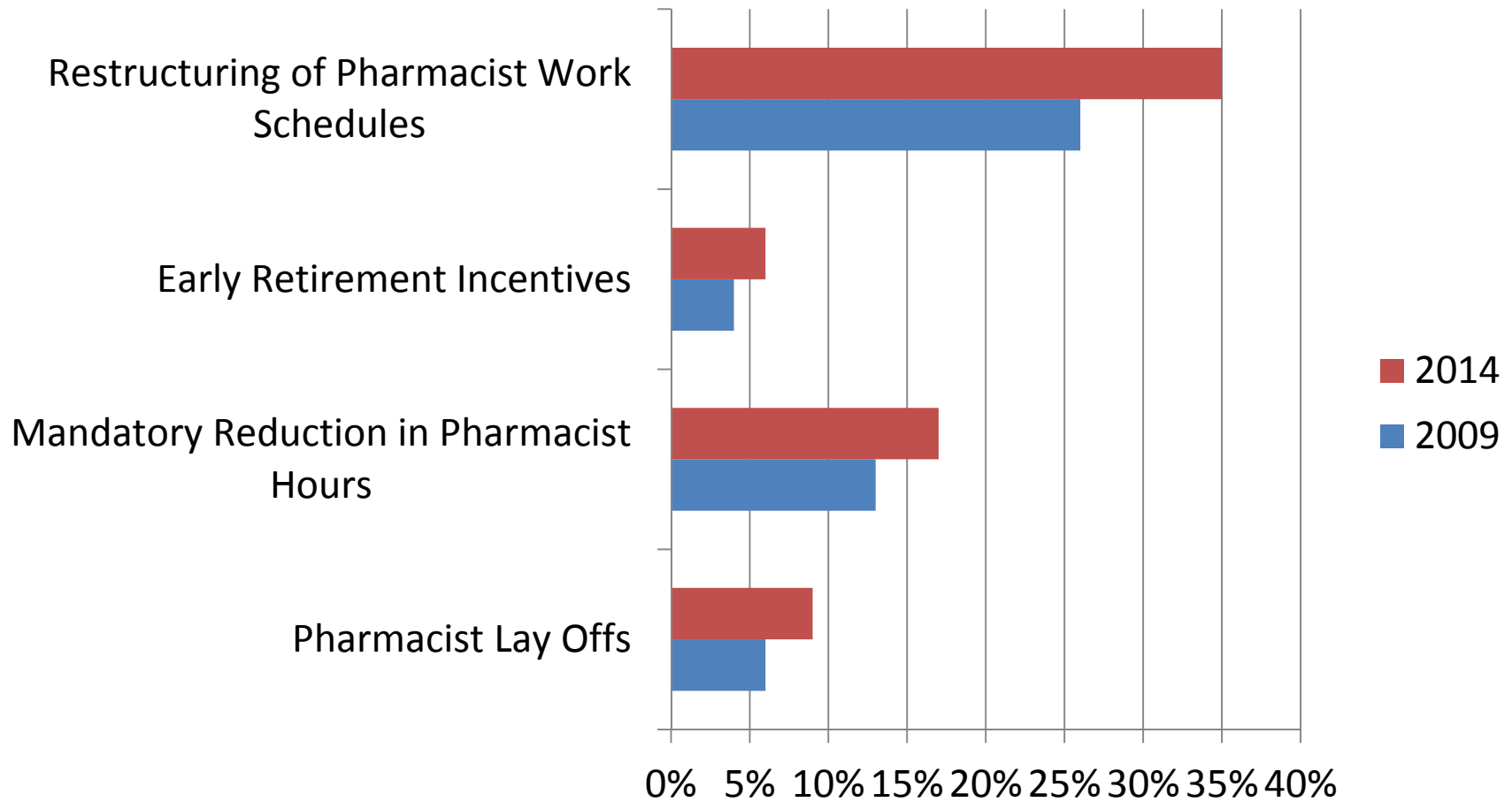
- Positions if resources available

New Roles/Services/Activities*

- MTM
- Vaccinations
- Ambulatory Care Integration
- Etc.

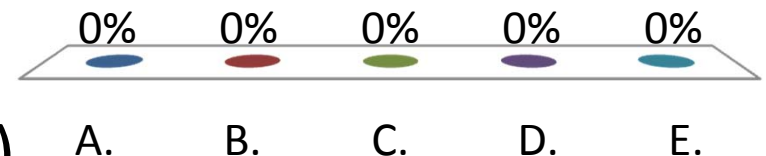
* Need-based approach ala' Knapp (2002)

Workplace Labor Reductions: 2009 & 2014

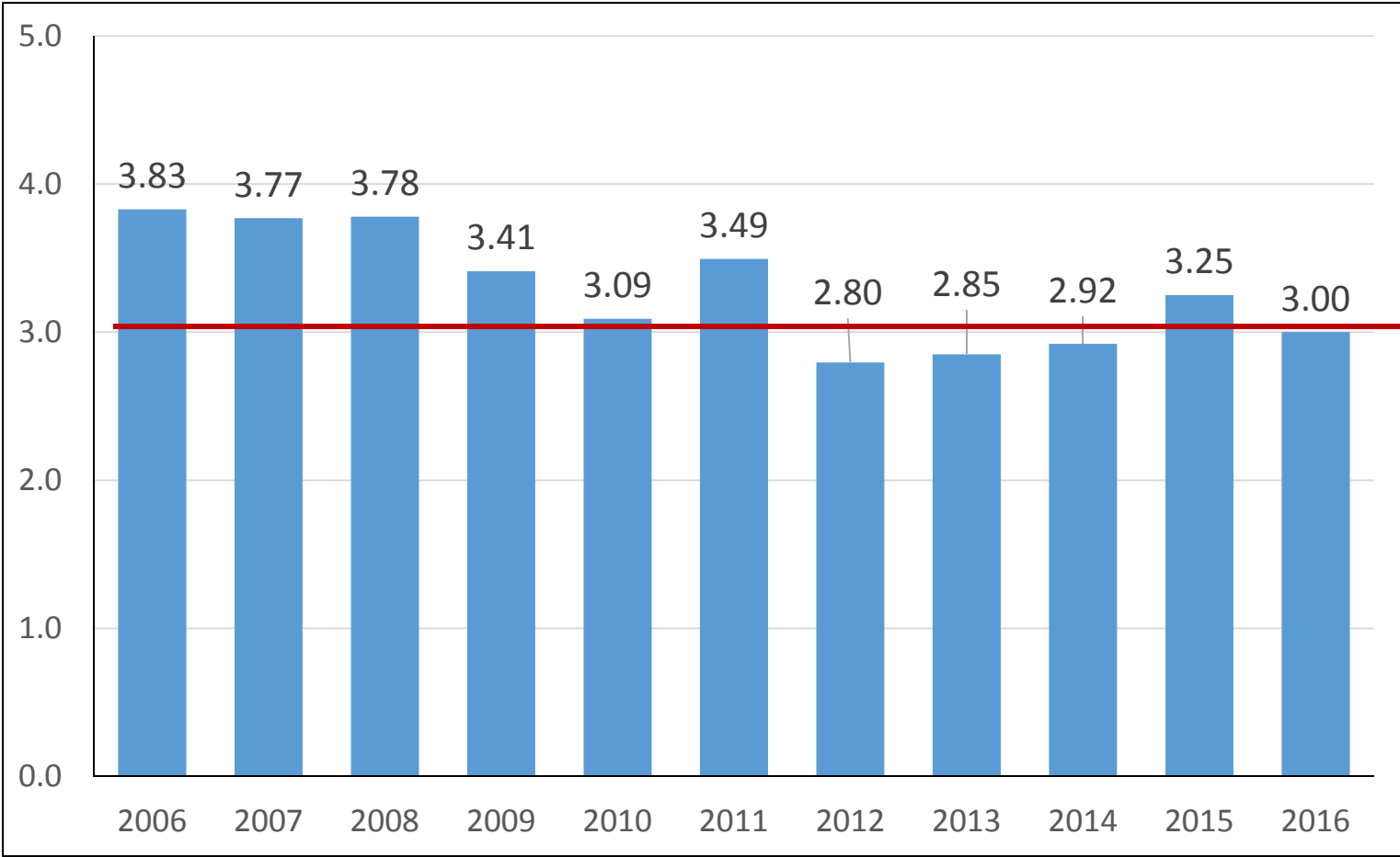


Compared to the other regions in the U.S., the Midwest ratings for the Aggregate Demand Index (ADI) have been:

- A. lower than the Northeast region
- B. higher than the South region
- C. lower than the West region
- D. following an upward trend since 2010
- E. consistently below 3.0 (balance) since 2012



Aggregate Demand Index: National Average* Ratings

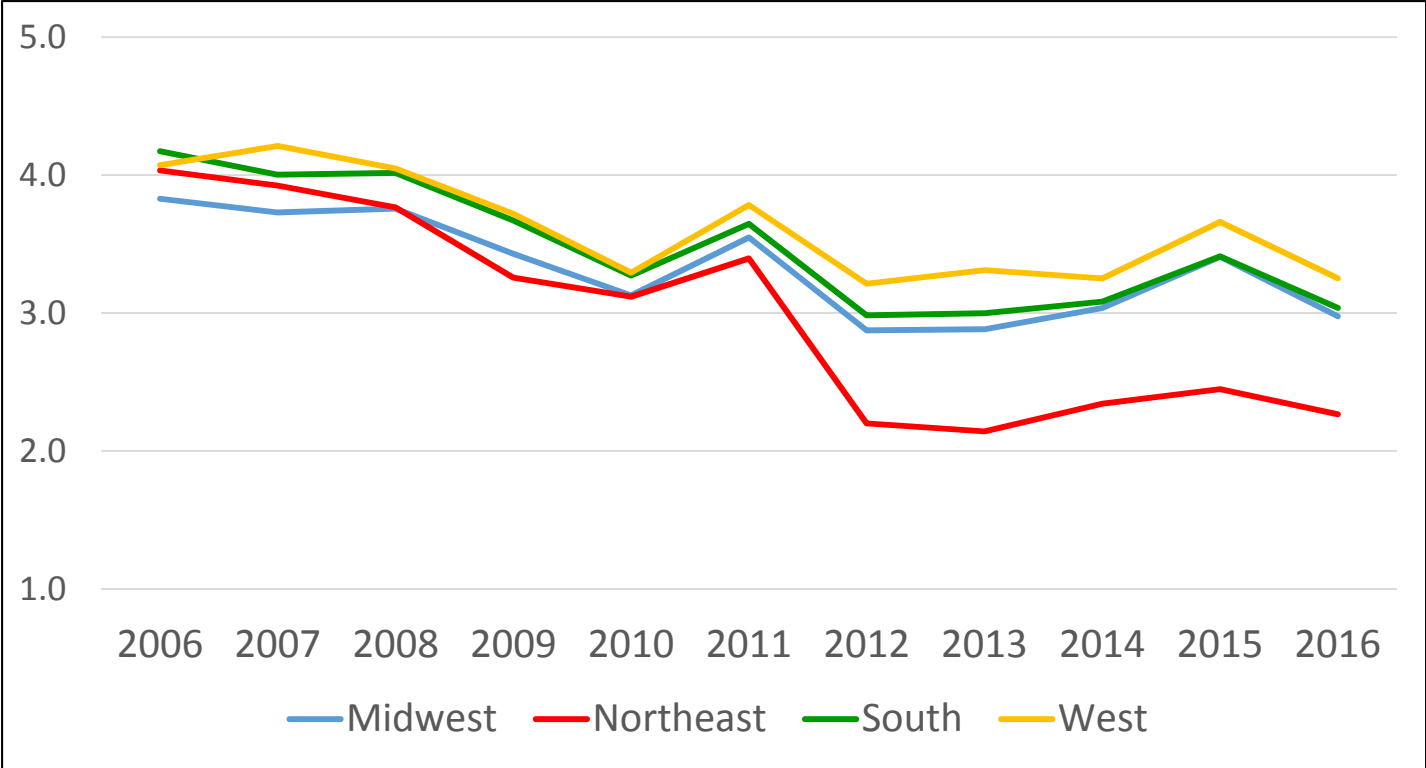


* Unweighted average across all states

Source: ADI Data for March

Demand categories 5 = High demand: difficult to fill open positions 3 = Demand in balance with supply 1 = Demand is much less than the supply available

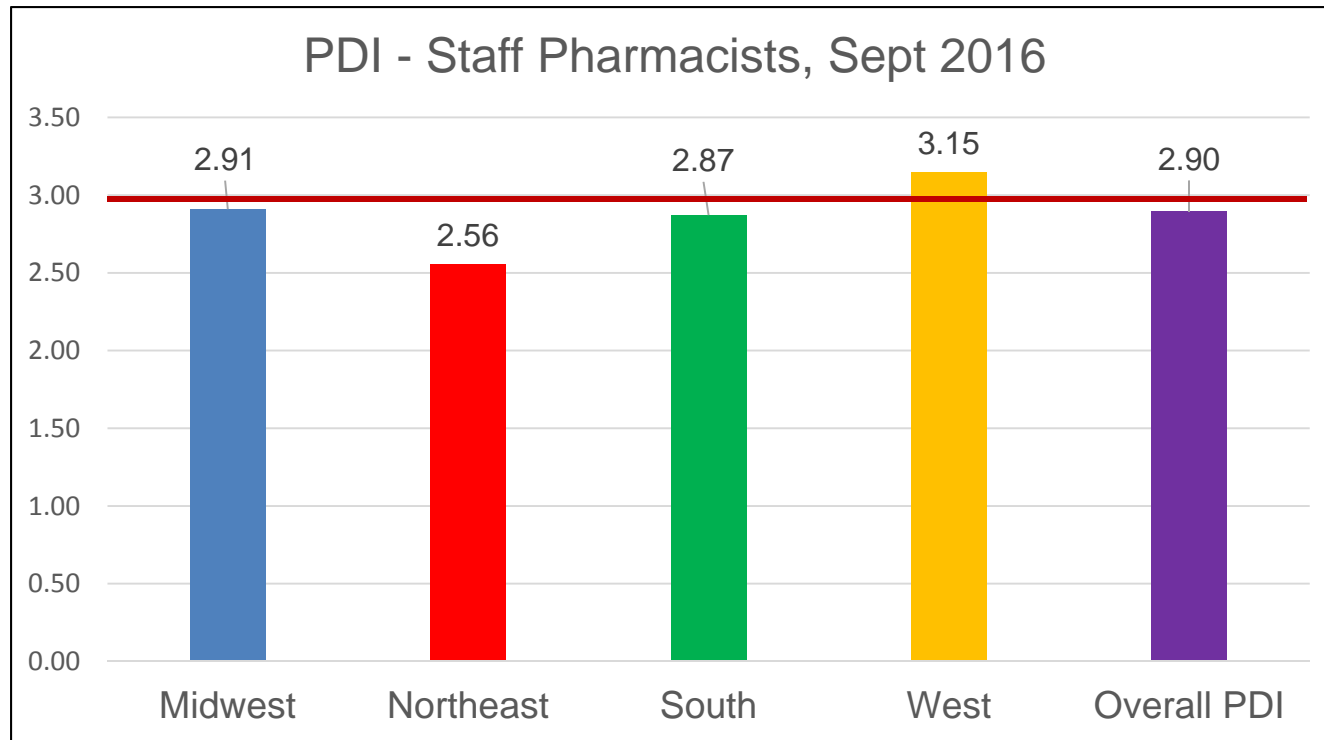
Aggregate Demand Index Regional Ratings



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Midwest	3.83	3.73	3.76	3.43	3.13	3.55	2.87	2.88	3.04	3.41	2.98
Northeast	4.03	3.92	3.77	3.26	3.12	3.40	2.20	2.14	2.34	2.45	2.27
South	4.17	4.00	4.02	3.67	3.27	3.65	2.98	3.00	3.08	3.41	3.04
West	4.07	4.21	4.05	3.72	3.29	3.78	3.21	3.31	3.25	3.66	3.25

Source: ADI Data for March, adjusted for population weighting and responses

Pharmacist Demand Indicator Ratings – Sept 2016



ENC (IL, IN, MI, OH, WI): 2.65
WNC (IA, KS, MN, MO, NE, ND, SD): 3.10

Source: Preliminary PDI Data for September 2016

Pharmacist Demand Indicator (PDI)

The PDI reports perceptions of the demand for pharmacists among a panel of individuals that participate in the hiring of pharmacists on a direct and regular basis.

The PDI includes ratings on the demand for:

- 1) staff or generalist pharmacists
- 2) managers or managerial pharmacists
- 3) specialized (such as critical care, informatics, MTM, nuclear, etc.) pharmacists.

Rating scale:

5 = High demand: difficult to fill open positions

4 = Moderate demand: some difficulty filling open positions

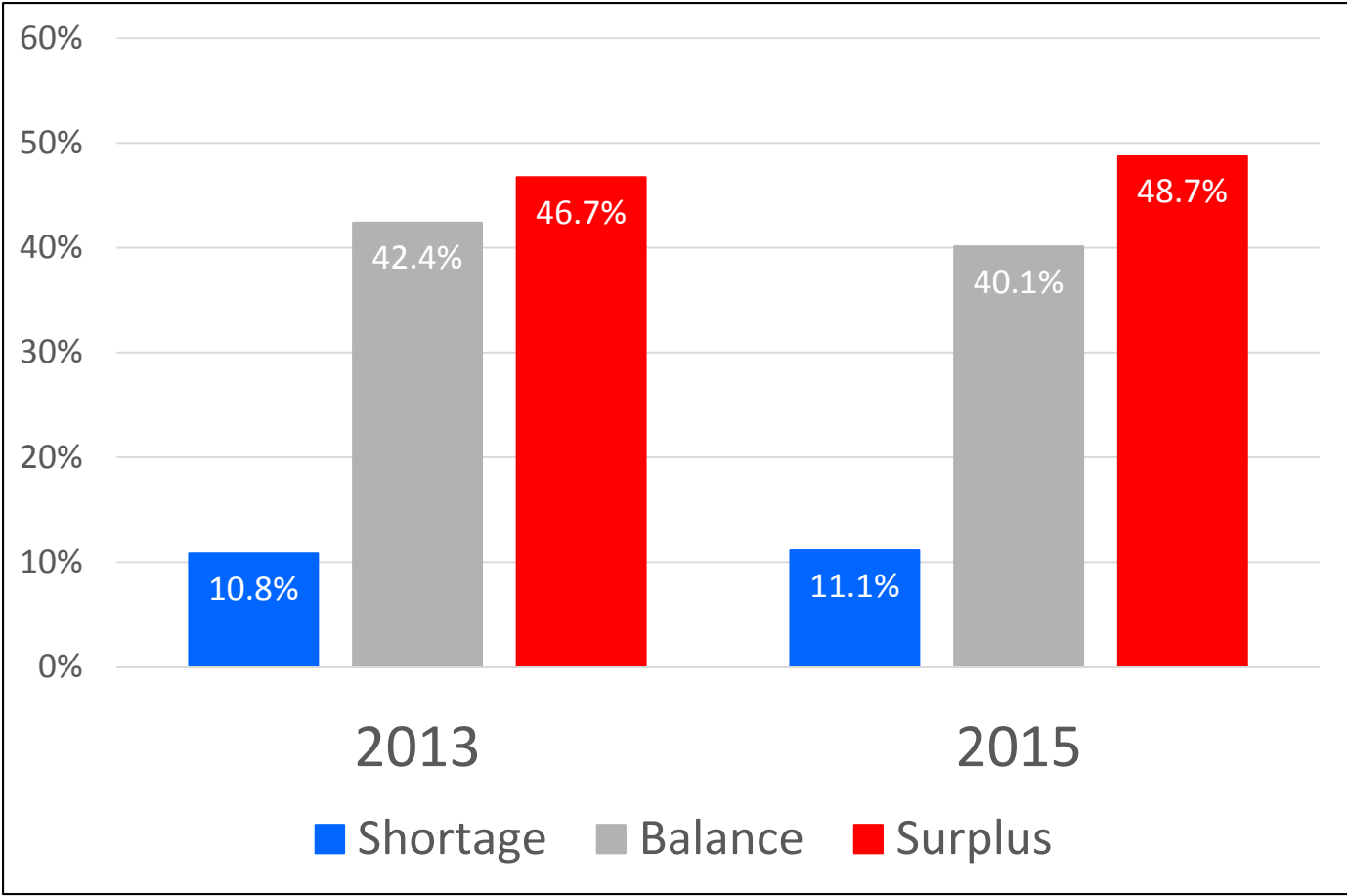
3 = Demand in balance with supply

2 = Demand is less than the pharmacist supply available

1 = Demand is much less than the pharmacist supply available

The PDI was developed based on the Aggregate Demand Index (ADI) initiated by Professor Kathy Knapp in 1999.

Shortage/Surplus Perceptions of WI Pharmacists



Source: WI Workforce Surveys, 2013 & 2015

Job Market Indicators



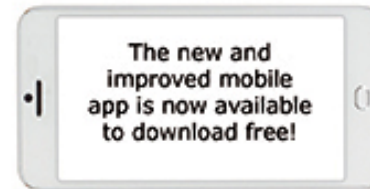
New Careers

New Careers

We support the advancement of your career by bringing to you the latest available openings within your profession. View this week's featured careers below, or [view all](#).

Clinical Pharmacist -
Oncology
Baptist Health
Jacksonville, FL
[Read More & Apply](#)

Pharmacist - Inpatient -
Night Shift
Einstein Healthcare Network
Philadelphia, PA
[Read More & Apply](#)



Clinical Pharmacist
Specialist - Oncology
St. Joseph Health - Northern California
Santa Rosa, CA
[Read More & Apply](#)

Clinical Pharmacist
(Bilingual)
Clover Health
Jersey City, NJ
[Read More & Apply](#)

Source: Recent email feeds from PharmacistSociety.com (26 Oct 2016)

PharmacyWeek

Find a Job Worth Smiling About

~ 1,800 RPh & Tech positions
posted nationwide, with
multiple titles

Search jobs

Enter keywords (e.g. Pharmacist)

Location (City or State)

Reset

Search

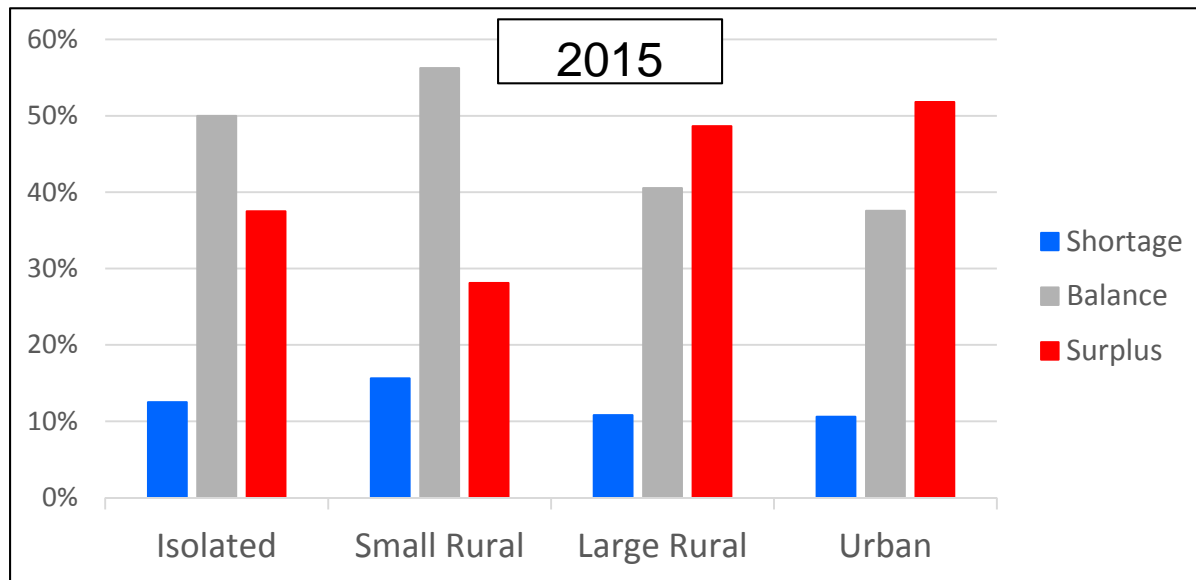
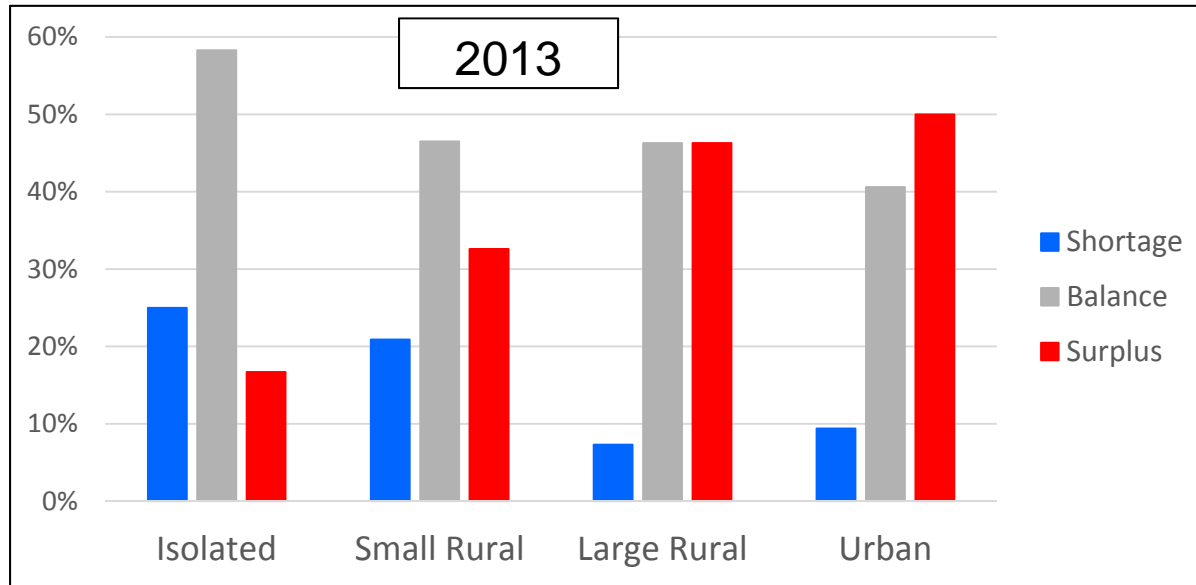
[Advanced search](#)



**Ask
Kevin** blog

Pharmacy Employment News & Jobs

Perceptions of Pharmacists - Wisconsin



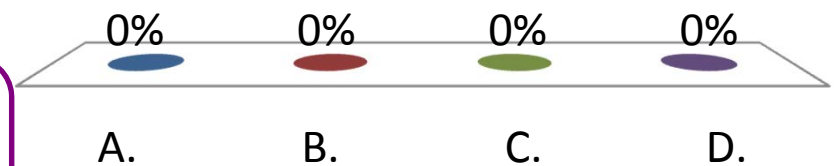
Source: WI Workforce Surveys, 2013 & 2015

Implications of changes in demand?

- for colleges of pharmacy?
- for the profession?
- for society?

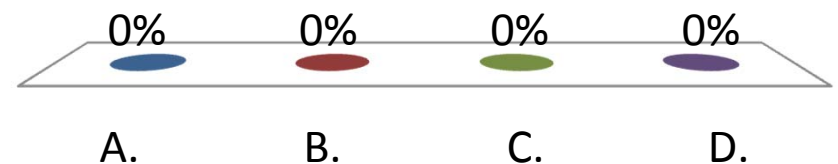
Post-Test #1. With women comprising more than half of the pharmacists in the U.S. as reported in the 2014 National Pharmacist Workforce Survey results, which of the following has occurred?

- A. The overall proportion of pharmacists working part-time has increased
- B. The proportion of women pharmacists working part time has increased
- C. The proportion of women pharmacists working part-time has remained relatively constant
- D. The proportion of women pharmacists working part-time has decreased



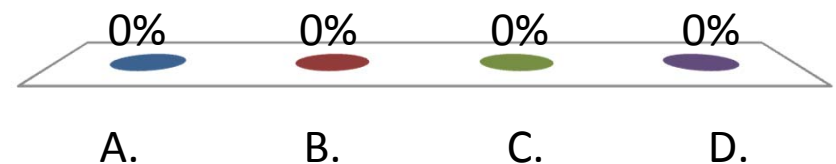
Post-Test #2. Anticipated change in the supply of pharmacists over the next five years will be: _____.

- A. Consistent continued increase overall from new pharmacy schools and graduates
- B. Accelerated increase overall from pharmacy schools with 'fast-track' curricula
- C. Some attenuation in the growth rate from decreased applicants to pharmacy schools
- D. Some attenuation in the growth rate from 'capitation era' graduates retiring



Post-Test #3. According to reports of pharmacists in national surveys, there has been a decrease in the demand for pharmacists between 2009 and 2014 due to increased occurrences of employers:

- A. Restructuring pharmacist work schedules
- B. Having early retirement incentives
- C. Pharmacist lay offs
- D. All of the above



Questions?

Supplemental Resources for Continuing Professional Development

1. Gaither, C.A., Doucette, W.R., Kreling, D.H., Mott, D.A., Schommer, J.C. *Final Report of the 2014 National Sample Survey of the Pharmacist Workforce to Determine Contemporary Demographic and Practice Characteristics*, Pharmacy Manpower Project, Inc., 31 January 2015.
2. Brown D.L. A Looming Joblessness Crisis for New Pharmacy Graduates and the Implications It Holds for the Academy *Am J Pharm Educ* 2013; 77 (5) Article 90
3. Aggregate Demand Index, Pharmacy Workforce Center (www.pharmacymanpower.com/)