National and Midwest Workforce/Job Market Data

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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
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

Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)
Actively Practicing Pharmacists’ Employment Settings

2009

- Independent: 27%
- Chain: 25%
- Mass Merchandizer: 14%
- Supermarket: 10%
- Hospital: 9%
- Other Patient Care: 10%
- Other Non-Patient Care: 5%

2014

- Independent: 29%
- Chain: 17%
- Mass Merchandizer: 10%
- Supermarket: 10%
- Hospital: 8%
- Other Patient Care: 7%
- Other Non-Patient Care: 19%

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

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

Source: 2014 National Pharmacist Workforce Survey Report (with data from previous surveys)
Age of Licensed Pharmacists

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

<table>
<thead>
<tr>
<th>Region</th>
<th>Division</th>
<th>2016 Class</th>
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<tbody>
<tr>
<td>M</td>
<td>ENC</td>
<td>2,157</td>
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<tr>
<td>M</td>
<td>WNC</td>
<td>1,274</td>
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<td>N</td>
<td>MA</td>
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<td>S</td>
<td>WSC</td>
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<tr>
<td>W</td>
<td>M</td>
<td>1,032</td>
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<tr>
<td>W</td>
<td>P</td>
<td>1,410</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Entry Year</th>
<th>Current Year</th>
<th>Entry</th>
<th>Exit</th>
<th>&quot;Gain&quot;</th>
<th>Cumulative &quot;Gain&quot;</th>
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<td>1960 2002</td>
<td>7,573</td>
<td>3,526</td>
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<td>7,488</td>
<td>3,445</td>
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<td>3,728</td>
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<td>3,360</td>
<td>6,452</td>
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<td>3,659</td>
<td>6,841</td>
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<td>93,335</td>
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<td>5,957</td>
<td>8,556</td>
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<td>8,393</td>
<td>110,284</td>
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<td>1976 2018</td>
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<td>7,464</td>
<td>8,283</td>
<td>118,567</td>
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<td>1977 2019</td>
<td>14,146</td>
<td>8,011</td>
<td>6,135</td>
<td>124,702</td>
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<tr>
<td>1978 2020</td>
<td>14,146</td>
<td>7,785</td>
<td>6,361</td>
<td>131,063</td>
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<tr>
<td>1979 2021</td>
<td>14,146</td>
<td>7,556</td>
<td>6,590</td>
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<td>6,823</td>
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<td>6,859</td>
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<td>14,146</td>
<td>6,374</td>
<td>7,772</td>
<td>166,249</td>
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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)

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

Modeling

HRSA projections

Dispensing Function-based Demand
• Implicit demand function, with assumptions about dispensing productivity
• Projected RX volume with population, utilization, and efficiency assumptions

PWC Aggregate Demand Index; 2014 ASHP Staffing Survey Results, ASHP, 2015; The Adequacy of Pharmacist Supply: 2004 to 2030, DHHS, HRSA, Dec 2008
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

- Non-patient Care
  - Estimated FTEs Doing Services
    - Prevalence and time estimates for activities extended to accommodate unmet need

Projections from Assumptions by Panel
- For industry, academia, regulatory/government policy, pharmacy informatics, PBM

Source: Knapp, DA. AJPE, 2002
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

- Restructuring of Pharmacist Work Schedules
- Early Retirement Incentives
- Mandatory Reduction in Pharmacist Hours
- Pharmacist Lay Offs

2014 vs 2009

- 0% 5% 10% 15% 20% 25% 30% 35% 40%
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

<table>
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</thead>
<tbody>
<tr>
<td>Midwest</td>
<td>3.83</td>
<td>3.73</td>
<td>3.76</td>
<td>3.43</td>
<td>3.13</td>
<td>3.55</td>
<td>2.87</td>
<td>2.88</td>
<td>3.04</td>
<td>3.41</td>
<td>2.98</td>
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<tr>
<td>Northeast</td>
<td>4.03</td>
<td>3.92</td>
<td>3.77</td>
<td>3.26</td>
<td>3.12</td>
<td>3.40</td>
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<td>2.14</td>
<td>2.34</td>
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<td>South</td>
<td>4.17</td>
<td>4.00</td>
<td>4.02</td>
<td>3.67</td>
<td>3.27</td>
<td>3.65</td>
<td>2.98</td>
<td>3.00</td>
<td>3.08</td>
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<td>West</td>
<td>4.07</td>
<td>4.21</td>
<td>4.05</td>
<td>3.72</td>
<td>3.29</td>
<td>3.78</td>
<td>3.21</td>
<td>3.31</td>
<td>3.25</td>
<td>3.66</td>
<td>3.25</td>
</tr>
</tbody>
</table>

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

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

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C. The proportion of women pharmacists working part-time has remained relatively constant
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B. Having early retirement incentives
C. Pharmacist lay offs
D. All of the above
Questions?
Supplemental Resources for Continuing Professional Development


3. Aggregate Demand Index, Pharmacy Workforce Center (www.pharmacymanpower.com/)