Manpower Trends and their Impact on Professional Practice

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ASHP

Conflicts of Interest

I have no conflicts of interest to disclose

Objectives - Pharmacists
- Describe the results of the 2014 National Pharmacy Workforce Study and the priorities of the Pharmacy Workforce Center.
- Identify issues related to accreditation of both pharmacy residency programs and the collaboration between ASHP and ACPE for accredited technician education and training programs.
- Review 2016 residency match statistics
- Discuss the alignment of the PTCB 2020 policies with ASHP policies and the goals of the ASHP/ACPE collaboration on technician education and training.

Objectives - Technicians
- Describe the results of the 2014 National Pharmacy Workforce Study and the priorities of the Pharmacy Workforce Center.
- Discuss the alignment of the PTCB 2020 policies with ASHP policies and the goals of the ASHP/ACPE collaboration on technician education and training.
- Describe the new collaboration between ASHP and ACPE for accredited technician education and training programs and the goals for this collaboration
- Describe what is happening with regulation of pharmacy technicians

National Pharmacist Workforce Study 2014

Pharmacy Workforce Center, Inc.
- American Association of Colleges of Pharmacy (AACP)
- American College of Clinical Pharmacy (ACCP)
- American Pharmacists Association (APhA)
- American Society of Health-System Pharmacists (ASHP)
- Board of Pharmacy Specialties (BPS)
- Bureau of Health Workforce (BHW)
- National Alliance of State Pharmacy Associations (NASPA)
- National Association of Boards of Pharmacy (NABP)
- National Association of Chain Drug Stores (NACDS) Foundation
- National Community Pharmacists Association (NCPA),
- Pharmacy Technician Certification Board (PTCB)
Overview
- What makes up the pharmacy workforce?
- What will determine supply?
  - Schools, Residencies
- What will determine demand?
  - Role of pharmacists in all settings
  - Technicians, technology
- What are the implications?
- What is happening with supply and demand for residency positions?
- What is happening with technicians?

Age of Licensed Pharmacists

Race/Ethnicity of Licensed Pharmacists

Work Status of Licensed Pharmacists

Highest Degree Earned by Licensed Pharmacists

Percent of Actively Practicing Pharmacists that are Female: 1990-2014
Mean Age by Gender: 2000-2014

![Age Distribution by Gender]

Mean Full-Time Equivalent (FTE) Contributions by Age & Gender

![FTE Contributions by Gender]

Hospital Pharmacy Progress Measures

**Goal 1: Care Team Integration**
- Hospitals using collaborative practice agreements
- Pharmacists involved in development of patient care plan
- Pharmacists facilitate continuity of care for transitions of care
- Prioritize inpatients based on patient medication complexity
- Pharmacists assigned to majority of patient care units
- Pharmacists document recommendations in medical record
- Pharmacists review medication order before first dose admin

![Care Team Integration Progress]

**Goal 2: Leveraging Pharmacy Technicians**
- Technicians provide support for IT and automation
- Technicians provide support for quality improvement
- Hospital uses "tech-check-tech" for routine medications
- Initiation of medication reconciliation assigned to technicians
- Distribution tasks assigned predominantly to technicians

![Technicians Usage Progress]

**Goal 3: Credentialing & Training**
- Percent of pharmacists providing drug therapy management who are board certified
- Percent of pharmacists providing drug therapy management who are residency trained
- Percent of pharmacists who are PTCB certified
- Percent of pharmacists who are FTCS certified

![Credentialing & Training Progress]
Goal 4: Automation and Technology

- Percent of hospitals using telepharmacy for remote supervision: 21% in 2015, 34% in 2011.
- Percent of hospitals using BCMA: 50% in 2015, 72% in 2011.
- Automated dispensing or robotics used for maintenance doses: 74% in 2015, 74% in 2011.
- Percent of Hospitals using barcodes for dispensing (with or without robotics): 14% in 2015, 84% in 2011.
- Percent of hospitals with inpatient CPOE implemented: 6% in 2015, 45% in 2011.

Goal 5: Leadership in Medication Use

- Organizational program for improvement of medication use safety: 70% in 2015, 77% in 2011.
- IT strategic plan developed to improve safety & quality: 77% in 2015, 76% in 2011.
- Leadership has direct line of communication to hospital admin: 80% in 2015, 88% in 2011.

Aggregate Demand Index 2016

- Duration: August 1999 to March 2016
- Demand Categories:
  - 5 = High demand: difficult to fill open positions (SHORTAGE)
  - 4 = Moderate demand: some difficulty filling open positions
  - 3 = Demand in balance with supply (BALANCED)
  - 2 = Demand is less than the pharmacist supply available
  - 1 = Demand is much less than the pharmacist supply available (SURPLUS)
- Participation:
  - >300 ratings/month for 90 successive months (>7.5 yr)
- Sponsored by Pharmacy Workforce Center

March 2016 Summary

- The overall ADI for March 2016 was 2.94, up slightly from 2.87 in February. These overall averages are 'population adjusted' to weight for individual state populations; the unweighted or unadjusted average of the state-level average ratings reported by panelists was 3.00.

Trend Charts
National Pharmacist Demand by Practice Setting
Mar 2016

<table>
<thead>
<tr>
<th>Setting</th>
<th>Demand Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>2.95</td>
</tr>
<tr>
<td>Institutional</td>
<td>2.99</td>
</tr>
<tr>
<td>Multiple</td>
<td>3.62</td>
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Region and Divisional Demand Index - March 2016

<table>
<thead>
<tr>
<th>Region and Division</th>
<th>States</th>
<th>Demand Index</th>
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<tbody>
<tr>
<td>Northeast</td>
<td>CT, MA, ME, NH, RI, VT</td>
<td>2.27</td>
</tr>
<tr>
<td>New England</td>
<td>ME, NH, RI</td>
<td>2.29</td>
</tr>
<tr>
<td>South</td>
<td>NC, SC, GA, MS, NC, SC, VA</td>
<td>2.63</td>
</tr>
<tr>
<td>East South Central</td>
<td>KY, TN</td>
<td>3.24</td>
</tr>
<tr>
<td>West South Central</td>
<td>OK, TX</td>
<td>3.46</td>
</tr>
<tr>
<td>Midwest</td>
<td>IL, MI, OH</td>
<td>2.98</td>
</tr>
<tr>
<td>East North Central</td>
<td>NY, PA</td>
<td>3.32</td>
</tr>
<tr>
<td>West North Central</td>
<td>IA, MN, ND, SD</td>
<td>3.40</td>
</tr>
<tr>
<td>West</td>
<td>WA, OR</td>
<td>3.25</td>
</tr>
<tr>
<td>Mountain</td>
<td>CO, ID, MT, WY</td>
<td>3.15</td>
</tr>
<tr>
<td>Pacific</td>
<td>CA, AZ, NV, WA</td>
<td>3.21</td>
</tr>
</tbody>
</table>

Growth of pharmacists practicing in U.S. hospitals

<table>
<thead>
<tr>
<th>Year</th>
<th>Total FTE</th>
</tr>
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<tbody>
<tr>
<td>2002</td>
<td>42,708</td>
</tr>
<tr>
<td>2003</td>
<td>46,906</td>
</tr>
<tr>
<td>2004</td>
<td>48,637</td>
</tr>
<tr>
<td>2005</td>
<td>49,995</td>
</tr>
<tr>
<td>2006</td>
<td>50,572</td>
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<td>2007</td>
<td>51,081</td>
</tr>
<tr>
<td>2008</td>
<td>51,674</td>
</tr>
<tr>
<td>2009</td>
<td>54,261</td>
</tr>
<tr>
<td>2010</td>
<td>54,968</td>
</tr>
<tr>
<td>2011</td>
<td>57,367</td>
</tr>
<tr>
<td>2012</td>
<td>59,207</td>
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<tr>
<td>2013</td>
<td>64,324</td>
</tr>
<tr>
<td>2014</td>
<td>65,026</td>
</tr>
<tr>
<td>2015</td>
<td>58,213</td>
</tr>
<tr>
<td>2016</td>
<td>56,213</td>
</tr>
<tr>
<td>2017</td>
<td>56,213</td>
</tr>
</tbody>
</table>

What does the future hold?
Pharmacist supply and demand by 2020

Practice Settings

Community: Independent, Chain, Mass Merchandiser, Supermarket

Hospital: In-patient or out-patient hospital settings

Other Patient Care Settings: nursing home, long term care, HMO, nuclear, clinic-based, mail service, central fill, home health/infusion, and specialty pharmacies

Other Non-Patient Care Settings: pharmacy benefit administration, academic, government administration, pharmaceutical industry, consulting, professional associations, and other organizations that were not licensed as a pharmacy

Assumptions: Includes only known new schools, BLS projection on demand.
Actively Practicing Pharmacists’ Employment Setting: 2009

- Independent: 10%
- Chain: 27%
- Mass Merchandiser: 5%
- Supermarket: 25%
- Hospital: 10%
- Other Patient Care: 19%
- Non Patient Care: 9%

Actively Practicing Pharmacists’ Employment Setting: 2014

- Independent: 10%
- Chain: 19%
- Mass Merchandiser: 44%
- Supermarket: 62%
- Hospital: 65%
- Other Patient Care: 30%
- Non Patient Care: 30%

Practice Settings 2009 and 2014

- Community: 54% (2009), 44% (2014)
- Hospital: 27% (2009), 22% (2014)
- Other, Pharmacy Setting: 10% (2009), 18% (2014)
- Other, Non-Pharmacy Setting: 9% (2009), 10% (2014)


- Management: 30% (2000), 29% (2004), 30% (2009), 30% (2014)
- Staff: 7% (2000), 9% (2004), 8% (2009), 6% (2014)

Services Offered At Practice Site: 2014

- Health Coaching/Screening: 40%
- Ordering Lab Tests: 36%
- Medication Reconciliation: 28%
- Adjusting Medication Therapy: 26%
- Immunizations: 24%
- Medication Therapy Management: 22%


* High is a summated score of five items (1 = strongly disagree to 5 = strongly agree) > midpoint (15)
Percentage of Time Spent in Patient Care by Community Pharmacists: 2000-2014

- Supermarket
- Mass Merchandiser
- Chain
- Independent

Percentage of Time Spent in Patient Care Activities by Hospital, Other Patient Care and Non-Patient Pharmacists: 2000-2014

- Other Non-Patient Care (ONPC)
- Other Patient Care (OPC)
- Hospital/Health System

Ratings of Workload as High or Excessively High* by Work Setting: 2004, 2009 & 2014

For example, Independent pharmacists reported a higher percentage of workload rated as high or excessively high in 2004 compared to 2009.

Pharmacists’ Ratings of Highly Stressful Events: 2004 & 2014

- Disagreement Concerning the Treatment of Patients
- Being Interrupted by Phone Calls or People While Performing Job Duties
- Having to Meet Quotas
- Not Being Staffed with an Adequate Number of Pharmacy Technicians
- Having so Much Work to do Everything Cannot be Done Well

Workplace Labor Reductions: 2009 & 2014

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

Work Activities

- Patient Care Services Not Associated with Medication Provision:
  - assessing and evaluating patient medication-related needs,
  - monitoring and adjusting patients’ treatments to attain desired outcome, and
  - other services designed for patient care management

- Patient Care Services Associated with Medication Provision:
  - preparing, distributing, and administering medication products, including associated consultation,
  - interacting with patients about selection and use of over-the-counter products, and
  - interactions with other professionals during the medication dispensing process
A lot of press on possible surplus of pharmacists

National Center for Health Workforce Analysis
Health Workforce Projection: Pharmacists
- Released December 2014
- Uses HRSA Health Workforce Simulation Model
- Accounts for changes in supply (new entrants, retirement, hours worked patterns)
- Accounts for changes in demand (ACA Rx coverage, population demographics, demand for prescription medications)
- Does not account for future growth in patient care services/roles of pharmacists, provider status, changes in part D coverage

Projected Supply for Pharmacists: 2012-2025

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>SUPPLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated supply in 2012</td>
<td>264,100</td>
</tr>
<tr>
<td>Total supply growth 2012-2025</td>
<td>91,200 (35%)</td>
</tr>
<tr>
<td>New entrants</td>
<td>160,500</td>
</tr>
<tr>
<td>Changing work patterns</td>
<td>(61,340)</td>
</tr>
<tr>
<td>Atrition</td>
<td>7,960</td>
</tr>
<tr>
<td>Projected supply, 2025</td>
<td>355,300</td>
</tr>
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</table>

Projected Demand for Pharmacists: 2012-2025

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>DEMAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated demand, 2012</td>
<td>264,100</td>
</tr>
<tr>
<td>Total demand growth 2012-2025</td>
<td>42,300 (16%)</td>
</tr>
<tr>
<td>Changing demographics impact</td>
<td>35,800 (14%)</td>
</tr>
<tr>
<td>ACA insurance coverage impact</td>
<td>6,500 (2%)</td>
</tr>
<tr>
<td>Projected demand, 2025</td>
<td>306,400</td>
</tr>
<tr>
<td>Adequacy of supply, 2025</td>
<td>355,300 - 306,400 = 48,900</td>
</tr>
</tbody>
</table>

Health Workforce Projections: Pharmacists; National Center for Health Workforce Analysis: May 2015
Current Pharmacy Workforce

Pharmacists
- 286,400 practicing pharmacists
- 57% are female
- 38% have Doctor of Pharmacy (Pharm.D.)
- In hospitals, 24% have completed residency, 17% are BPS certified

Pharmacy technicians
- 396,540 pharmacy technicians/pharmacy aides
- 17% work in hospitals/health systems
- 78% are PTCB certified
- In hospitals, just 15% have completed accredited training

Factors influencing the “supply”

- The number of pharmacy graduates (big, long term)
- State of the economy (big, short term)
  - Impact on the number of pharmacists retiring
  - Impact on part time to full time shift
- The gender mix (slowly growing)
- The number of international pharmacy graduates (minimal)

Factors influencing the “demand”

- The demand by employers
  - State of the economy
  - Prescription volume
  - NEW roles of pharmacists
  - Changing role of pharmacists
  - Changing role of pharmacy technicians
  - Impact of automation and technology

Changes in the healthcare workforce

- Projected shortage of physicians
  - 40% of practicing MDs are 55 years or older
  - 800,000 physicians, shortfall of 75,000+ by 2025
  - Shortage of primary care providers
- Projected shortage of nurses
  - 30% of RNs are 55 years or older
  - 3,000,000 nurses, extent of shortage difficult to measure
  - 200,000 Nurse Practitioners; most focused on primary care
- Aging population and corresponding patient care demands presents opportunity for expanding role of pharmacists

Conclusions

- We are living in dynamic times as a health care profession
- Pharmacists have taken a larger role in health care delivery by increasing access for patients through provision of expanded service offerings
- But, how do we determine the appropriate supply of and demand for pharmacists?
- Continued monitoring of the pharmacist workforce is crucial so the pharmacy profession is able respond to the rapidly changing landscape

Self-assessment Questions

1. The percentage of female practicing pharmacists is _____ compared to the previous study.
   a. Growing
   b. Decreasing
   c. Remaining constant
2. There are more workforce labor reductions in 2014 than in 2009
   a. True
   b. False
3. The HRSA workforce projection report from 2014 says that we will have a _____ of pharmacists by 2025.
   a. Deficit
   b. Surplus
Pharmacy Residencies 2016

2016 Two Phase Match

Going Into the Scramble

<table>
<thead>
<tr>
<th></th>
<th>End of Match or Phase II</th>
<th>End of Match or Phase II</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGY1</td>
<td>270</td>
<td>1547</td>
</tr>
<tr>
<td>PGY2</td>
<td>112</td>
<td>208</td>
</tr>
<tr>
<td>Total</td>
<td>382</td>
<td>1755</td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGY1</td>
<td>13</td>
<td>893</td>
</tr>
<tr>
<td>PGY2</td>
<td>24</td>
<td>76</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>969</td>
</tr>
</tbody>
</table>

Reduced Unfilled Positions by 90%
Reduced Unmatched Applicants by 45%
Overall position fill rate for PGY1 and PGY2 was 99.1%
ASHP Accredited Pharmacy Residency Program Growth in Last 30 Years

Pharmacy Graduates VS PGY1 Resident Positions

Emerging Pharmacy Technician Roles and Responsibilities

- Medication reconciliation
- Medication therapy management
- Immunization
- Indigent care prescription programs
- Sterile & non-sterile compounding
- Clinical technicians (e.g., chronic care, appt. scheduling, medication adherence, smoking cessation, vital signs measurements, data management, etc.)
- Tech-check-tech
- Prescription clarification
- Quality assurance and quality improvement initiatives
- ACA Marketplace Certified Application Counselors
- CMS-CMMI Grant Projects (Innovations Center)
- Community outreach programs
- DUE/ADR monitoring
- Informatics
- Medication safety initiatives
- Telepharmacy
Pharmacy Technician Training, Competency, Practice (CCP preferred state)

Council on Credentialing in Pharmacy
Pharmacy Technician Credentialing Framework Aug 09
http://www.pharmacycredentialing.org/files/CCP%20technician%20framework_08-09.pdf

Activities of Pharmacy Technicians

% Hospitals with technicians performing activity 2014

Traditional functions
- Restocking floor stock and/or ADGs
- Replenishing unit dose carts
- Purchasing
- Packaging activities
- Compounding sterile prep
- Billing
- Compounding chemotherapy prep
- Controlled substance system mgmt
- IT system management

Non-traditional functions
- Technician supervising other technicians
- Tech-check-tech
- Medication reconciliation (obtaining list)
- Order entry (for pharmacist verification)
- Medication assistance program mgmt
- Facilitating Transitions of Care
- Screening of medical records for MRPs
- Dispensing with remote video supervision

Source: 2014 ASHP National Survey of Hospitals

Non-traditional Activities of Pharmacy Technicians

% Hospitals with technicians performing activity

Areas of decline
- IT system management
- Technician supervising other technicians
- Order entry (for pharmacist verification)
- Preparation of clinical monitoring information
- Screening of medical records for MRPs

Areas of growth
- Tech-check-tech
- Medication reconciliation (obtaining list)
- Medication assistance program mgmt
- Facilitating Transitions of Care
- Dispensing with remote video supervision

Current and Future Time Allocation

Pharmacists

<table>
<thead>
<tr>
<th>Activity</th>
<th>Current</th>
<th>Future</th>
<th>Change</th>
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</thead>
<tbody>
<tr>
<td>Order processing / entry</td>
<td>3%</td>
<td>5%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Traditional drug preparation and distribution</td>
<td>78%</td>
<td>65%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Non-traditional activities</td>
<td>10%</td>
<td>20%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Administrative</td>
<td>9%</td>
<td>9%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Other</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

ASHP national survey of pharmacy practice in hospital settings - 2014

Pharmacy Technician Accreditation Commission

- Formed through ASHP/ACPE collaboration
- ACPE Board approved ASHP standards, guidelines, and procedures for PTAC
- PTAC recommendations require approval of both ASHP and ACPE Boards
- First PTAC recommendations to ASHP and ACPE boards for accreditation actions occurred June 2015

Ultimate Goal of ASHP-ACPE Collaboration

- A better qualified and trained workforce
- Improved patient safety
- Greater consistency in technician workforce
- Accreditation standards updated as needed to stay consistent with expanding roles and responsibilities of technicians
- Greater ability to delegate technical tasks from pharmacists
- Less turnover in pharmacy technician positions
ASHP/ACPE-Accredited Pharmacy Technician Training Programs

Pharmacy Technicians With Credentials

By The Numbers

Employment increase is 9% faster than average for all occupations

- 74% (275,000) of technicians are PTCB certified
- Increased demand for prescription medications will lead to more demand for pharmacy services


2014, Median Pay $14.33 hr / $29,810 yr
2014, Number of Jobs 372,500
Job Outlook, 2012-2023 9% growth
Employment Change, 2014-2024 34,700

Distance Education

- Bringing the availability and affordability of accredited pharmacy technician education and training anywhere
- Simulation and distance education
- First Accredited - Therapeutic Research Center

Other Related PTAC Issues

- PTCB has conducted a new technician task analysis (2016)
- February 2017 - pharmacy technician stakeholder consensus conference
  - gain consensus among the broader pharmacy community for a national standard in technician education, training, certification, and regulation.

Objectives of the Pharmacy Technician Stakeholders Consensus Conference

The objective of this invitational conference is to develop consensus in the following areas:

- The necessity of public confidence in pharmacy's process for ensuring the competency of pharmacy technicians.
- The entry-level ("generalist") knowledge, skills, and abilities that all pharmacy technicians must have regardless of practice site.
- The definition of entry-level ("generalist") pharmacy technician practice with respect to (a) legally recognized scope of practice; (b) educational requirements; (c) training requirements; (d) certification requirements; and (e) state board of pharmacy registration or licensure.
- The desirability and feasibility of developing a process for recognizing competencies of pharmacy technicians beyond entry-level.
- The desirability and feasibility of minimizing variability among the states in the definition and regulation of pharmacy technicians.
- The entities that optimally should take responsibility for any changes in pharmacy's process for ensuring the competency of pharmacy technicians.
Conclusions

We support standardized education, training and certification of technicians and we will all have to work together to get there.

We are hopeful that we can come to consensus at the stakeholders conference about requirements for entry level technicians.

Self-assessment Questions

1. The residency match is conducted in 2 phases
   a. True
   b. False

2. The number of graduates from pharmacy school is growing as fast as the number of residency programs
   a. True
   b. False

3. There are currently about _____ Accredited Technician Training Programs
   a. 350
   b. 275
   c. 425
   d. 500