Pharmacy Workforce Trends in North Carolina

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Overview

• NC Pharmacist Workforce Trends
  – Supply and Demand
  – Distribution
  – Demographics
  – Education
• New & Emerging Roles
  – Care Coordination and Boundary Spanners in the Health System
  – What’s Happening in Pharmacy?

Who we are and what we do

North Carolina Health Professions Data System (HPDS)

Mission: to provide timely, objective data and analysis to inform health workforce policy in North Carolina and the United States

• Based at Cecil G. Sheps Center for Health Services Research at UNC-CH, but mission is statewide
• A collaboration between the Sheps Center, NC AHEC and the health professions licensing boards
• System is independent of government and health care professionals

North Carolina’s health workforce data are the envy of the other 49 states

• 35 years of continuous, complete licensure (not survey) data on 19 health professions from 12 boards
• Data are provided voluntarily by the boards—there is no legislation that requires this, there is no appropriation
• Data housed at Sheps but remain property of licensing board, permission sought for each “new” use
  System would not exist without data and support of licensure boards

Supply & Demand
So, how many pharmacists are there?

Licensed, active, instate pharmacists in North Carolina:

10,546
in 2014

North Carolina has consistently outpaced the US average in supply of pharmacists

High Growth in PharmD Programs in NC & US

- North Carolina
  - All 3 pharmacy schools have expanded enrollment since 2011
  - New pharmacy school at High Point University opens in 2016
- United States
  - Between 2000 and 2014:
    - the annual number of PharmD grads doubled
    - the number of accredited pharmacy schools increased by 73%

Demand has been in balance with supply in NC and nationally, with a recent uptick

Are More NC Retail Pharmacists Doing Less?

Annual Retail Prescriptions Dispensed per Active, Instate Retail Pharmacist in North Carolina, 1992 to 2012

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<th>Year</th>
<th>Prescriptions per Retail Pharmacist</th>
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<tbody>
<tr>
<td>1992</td>
<td>15,817</td>
</tr>
<tr>
<td>1999</td>
<td>24,062</td>
</tr>
<tr>
<td>2006</td>
<td>25,251</td>
</tr>
<tr>
<td>2012</td>
<td>22,509</td>
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Source: North Carolina Health Professions Data System, with data derived from the North Carolina Board of Pharmacy, 2012. Data include all active, instate pharmacists.

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About one-quarter of counties in NC have a pharmacist supply above national average.

**Pharmacists per 10,000 Population, North Carolina, 2013**

N=10,026
NC Ratio=10.2

Note: Data include, active, instate pharmacists licensed in North Carolina as of October 31, 2013. Based on primary practice location.

**Demographics**

Future supply of pharmacist workforce is strong.

Average hours worked by sex has converged over time.

Pharmacists are less diverse than other health professions.

**Pharmacist workforce has been slow to diversify**

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>2000</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>93.6%</td>
<td>84.6%</td>
</tr>
<tr>
<td>Black</td>
<td>3.3%</td>
<td>6.0%</td>
</tr>
<tr>
<td>American Indian</td>
<td>0.4%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Asian</td>
<td>2.6%</td>
<td>7.4%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.1%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Other</td>
<td>0.04%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Total Pharmacists</td>
<td>6,917</td>
<td>10,542*</td>
</tr>
</tbody>
</table>

*4 pharmacists did not report race data in 2014 and are omitted from the total.

Source: North Carolina Health Professions Data System, 2000 and 2014. Figures include all licensed, active, in-state pharmacists. Numbers may not add up to 100% due to rounding.
**Education**

Over half of pharmacists in NC and 67% of those in rural counties were educated in-state

- **56%** (5,928 of 10,546) of all active, licensed pharmacists in NC in 2014 graduated from an NC school of pharmacy
- **67%** (1,200 of 1,784) of pharmacists in non-metropolitan areas in 2014 graduated from an NC school of pharmacy

**To sum up thus far...**

- Supply is strong & growing
- Pharmacists are mostly female & mostly white
- Urban/rural distribution is relatively good
- Demand for pharmacists has declined over the past decade

**New & Emerging Roles**

Over half of in-state PharmD grads from 2008–2012 stayed in North Carolina

NC training but not retaining a more diverse workforce
Accountable Care Organizations & Patient Centered Medical Homes

Key characteristics
• Emphasis on primary and preventative care
• Health care is integrated:
  – Across medical sub-specialties, facilities, & systems
  – Over time and between visits
• Technology used to monitor health outcomes
• Designed to lower cost, increase quality, improve patient experience
• Care based on value, not volume

Sheps study synthesized evidence on workforce implications of new models of care

Study to identify:
1. task shifting occurring in the delivery of traditional health care services;
2. new staff roles emerging to provide enhanced care services;
3. how employers are “putting it all together”; and
4. implications for health workforce research and policy

New roles emerging to provide enhanced care functions
• May be filled by existing staff or new hires
• It’s complicated:
  – Some roles have similar functions but different titles
  – Other roles have different functions but same name
  – Many roles are filled by different types of providers
• Two of most common:
  1. Roles that focus on coordinating care within the health care system
  2. “Boundary spanning” roles that address patient care needs between home and health care settings

Reframing the questions we ask: From provider type to provider role

Old School
• How many of x, y, z health professional type will we need?

New School
• What roles are needed and how can different skill mix configurations meet patients’ needs in different geographies and practice settings?

Significant task shifting to deliver traditional health care services

<table>
<thead>
<tr>
<th>Examples</th>
<th>Medical Assistants</th>
<th>Registered Nurses</th>
<th>NPs and PAs</th>
<th>Pharmacists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>rapidly morphing,</td>
<td>refilling</td>
<td>managing</td>
<td>coordinating</td>
</tr>
<tr>
<td></td>
<td>taking patient</td>
<td>prescriptions</td>
<td>own patient</td>
<td>drug therapies,</td>
</tr>
<tr>
<td></td>
<td>histories, giving</td>
<td>under protocols,</td>
<td>panels and</td>
<td>developing</td>
</tr>
<tr>
<td></td>
<td>immunizations,</td>
<td>entering</td>
<td>providing</td>
<td>medication</td>
</tr>
<tr>
<td></td>
<td>providing</td>
<td>and interpreting</td>
<td>care for</td>
<td>management</td>
</tr>
<tr>
<td></td>
<td>preventive care</td>
<td>data from EHRs,</td>
<td>bulk of</td>
<td>plans and</td>
</tr>
<tr>
<td></td>
<td>services and</td>
<td>creating care</td>
<td>patients</td>
<td>educating</td>
</tr>
<tr>
<td></td>
<td>scribing</td>
<td>plans and</td>
<td>with</td>
<td>patients. Some</td>
</tr>
<tr>
<td></td>
<td></td>
<td>providing patient</td>
<td>uncomplicated</td>
<td>states (CA, MT,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>education</td>
<td>acute, chronic</td>
<td>NM and NC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>care needs</td>
<td>created</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>advanced practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pharmacists</td>
</tr>
</tbody>
</table>

Care coordination is big

• Increased incentives to keep patients out of hospital
• In January 2015, Medicare began paying $42/month for managing care for patients with two or more chronic conditions
• Nurses most often taking on roles as care coordinators, case managers and transition specialists
Workforce models need to capture plasticity of practice

- Literature demonstrates heterogeneity in who provides what health services
- Need to move away from specialty-specific projections
- Need to acknowledge plasticity—health providers will adjust their scopes of services to meet patients needs
- Patients’ health care needs will be met by different workforce configurations in different settings and geographies

How do we get there from here?

How do we redesign structures to support these roles? ➔ Education

Need to redesign education system so workers can flexibly gain new skills and competencies
- Training must be convenient – timing, location, and financial incentives must be taken into consideration
- Need to prepare faculty to teach new roles and functions
- Clinical rotations need to include “purposeful exposure” to high-performing teams

How do we redesign structures to support these roles? ➔ Regulation

To create a more dynamic regulatory system, we need:
- To develop evidence to support regulatory changes, especially for new roles
- Better evaluation of pilot workforce interventions to understand if interventions improve health, lower costs and enhance satisfaction
- To establish a national clearinghouse to provide up-to-date and reliable information about scope of practice changes in other states

How do we redesign structures to support these roles? ➔ Practice

Need to minimize role confusion by clearly defining and training for new functions
- Job descriptions have to be rewritten or created
- Work flows have to be redesigned
- Lack of standardized training and funds to support training is big obstacle
- Existing staff won’t delegate or share roles if don’t trust other staff members are competent
- Time spent training is not spent on billable services

Who is going to pay for all the retooling we need to do? ➔ $

- Adequate and sustainable payment models to retool and redeploy the workforce are lacking
- Many workforce innovations are supported by one-time funds. If payment models don’t change rapidly enough, will these interventions be sustainable?
- Are adequate dollars available to conduct research and evaluations necessary to develop evidence base needed to support workforce redesign?
Where do pharmacists fit in?

- Scope of practice regulations limit pharmacist roles in direct patient care.
- Payment model reimburses for dispensing fees, while “cognitive services” not fully reimbursed.

But...


Pharmacist workforce is primed for new roles in a changing health system

NC Example: MAHEC Pharmacotherapy & Wellness Clinics

- Ambulatory Care Services
  - Medication Therapy Management (MTM) services
  - Wellness visits
  - Diabetes
  - Pain Management

...but need larger scale payment mechanisms and state-level regulatory changes to broadly expand this model

In NC, Clinical Pharmacist Practitioners provide direct patient care, but they are few

| Form of Employment of Active Pharmacists, North Carolina, 2014 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| [PERCENTAGE]    | Pharmacist       | Manager/Employee| Staff Pharmacist | Clinical Pharmacist | Other |
| active, in NC   | Physician        | Patient         | Pharmacist      | Practitioner       | Group |
| 1%              | 1%               | 1.5%            | 0.7%            | 3%                | 0.5% |

Source: North Carolina Health Professions Data with data derived from the North Carolina Board of Pharmacy. Figures include all licensed, active, in-state pharmacists as of October 31, 2014.

Are CPPs most effective for certain types of patients?

<table>
<thead>
<tr>
<th>Area of Therapeutic Practice</th>
<th>Active CPPs (N=124)</th>
<th>Inactive CPPs (N=122)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticoagulation</td>
<td>34 (27.4%)</td>
<td>15 (12.3%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>27 (21.8%)</td>
<td>44 (35.8%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>29 (23.4%)</td>
<td>32 (26.4%)</td>
</tr>
<tr>
<td>Respiratory Diseases</td>
<td>29 (23.4%)</td>
<td>6 (4.9%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>38 (30.6%)</td>
<td>39 (31.5%)</td>
</tr>
<tr>
<td>Medication therapy management</td>
<td>14 (11.3%)</td>
<td>3 (2.5%)</td>
</tr>
<tr>
<td>Smoking cessation</td>
<td>14 (11.3%)</td>
<td>2 (1.6%)</td>
</tr>
<tr>
<td>Hematology/oncology</td>
<td>8 (6.5%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Pain management</td>
<td>8 (6.5%)</td>
<td>2 (1.6%)</td>
</tr>
<tr>
<td>Diabetes and obesity</td>
<td>7 (5.6%)</td>
<td>3 (2.5%)</td>
</tr>
<tr>
<td>Obesity</td>
<td>5 (4.1%)</td>
<td>3 (2.5%)</td>
</tr>
<tr>
<td>Heart failure</td>
<td>5 (4.1%)</td>
<td>2 (1.6%)</td>
</tr>
<tr>
<td>Mental Health</td>
<td>4 (3.3%)</td>
<td>1 (0.8%)</td>
</tr>
</tbody>
</table>


Will retail clinics become the ‘front door’ for primary care?

- Walgreens, CVS, Rite Aid are opening clinics, offering health coaching and MTM services
  - Business case to bundle clinical services, pharmacy services, nutrition, lifestyle, and obesity management
  - Will high foot traffic increase access to care, esp. in underserved areas?
- What will retail clinic roles look like for pharmacists, NPs, PAs, others?
  - Scope of practice regulation varies by state
  - How to coordinate care with the larger health system?

What are new roles for Pharmacy Technicians?

- Roughly 49% of pharmacist’s day spent on work related to dispensing
- If/when pharmacists take on new roles, potential to concurrently expand role of pharmacy technicians
  - Tech-Check-Tech data demonstrate safety
  - New roles as care coordinators
    - Use knowledge for medication reconciliation
  - Other expanded roles for pharmacy techs? Career ladders?

Thank you

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