

Accessibility of Board-Certified Pharmacists for Patients Living in Rural Areas of Texas

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Introduction

- Equitable access to healthcare is a significant problem in the United States, particularly in non-metropolitan areas.
- Clinical pharmacists functioning in advanced practice roles are well-positioned to improve medication-related outcomes and may assist in bridging the gap of healthcare disparities in rural and underserved areas.
- Board certification is often considered “the gold standard for determining which pharmacists are qualified to contribute at advanced practice levels”¹ and may serve as a valuable tool for characterizing the distribution and accessibility of advanced practice pharmacists.
- We sought to characterize the geographic representation of board-certified pharmacists (BCPs) practicing in Texas based on rurality and the demography of healthcare populations.
- Identification and characterization of the accessibility of advanced-practice pharmacists may inform future payment, legislation, advocacy, training, and credentialing efforts.

Objectives

- Objective 1:** Characterize board-certification of pharmacists in Texas based on geographical location, including rural and nonrural areas of Texas
- Objective 2:** Determine specific areas of underrepresentation and unique attributes of certain areas of Texas
- Objective 3:** Identify and evaluate the role board-certified pharmacists serve in rural practice settings

Methods

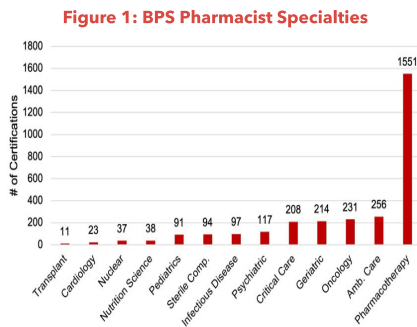
- Cross-sectional, county-level analysis
- Board-certified pharmacists were identified from the Board of Pharmacy Specialties (BPS) public database by location and cross-referenced with Texas State Board of Pharmacy (TSBP) data.
- Pharmacist practice location was categorized by Rural-Urban Commuting Area (RUCA) code based on ZIP code.
- Missing practice ZIP codes were identified from external sources (e.g., LinkedIn, organizational directories) when available.
- Pharmacists no longer residing in Texas, in non-practice-based employment, or where physical practice location could not be determined were excluded from Geographic analysis.
- Choropleth maps were constructed by county and per 100,000 population based on 2020 US Census Bureau data.
- Pharmacist and practice characteristics were described.

Table 1: Characteristics of BCPs

	n (%)
Sex	
Male	747 (29)
Female	1815 (70.5)
Not available	14 (0.5)
Years from Graduation	
<5 years	252 (9.8)
5-10 years	923 (35.8)
11-20 years	909 (35.3)
21-30 years	282 (10.9)
>30 years	184 (7.1)
Not available	26 (1)
Workplace	
Hospital	1734 (67.3)
Non-government	1283 (49.8)
Government	451 (17.5)
Community	151 (5.8)
Chain	65 (2.5)
Independent	45 (1.7)
Government	41 (1.6)
Education	124 (4.8)
Government/Armed Services	63 (2.4)
Long Term Care/Home Health	57 (2.2)
Pharmacy Management	33 (1.3)
Nuclear	27 (1)
Sterile Pharmaceuticals	25 (1)
Industry	21 (0.8)
Retired/Unemployed	21 (0.8)
Other	320 (12.4)

3,276 certificants identified through BPS public data with 2,576 included after cross-reference to TSBP data set. Of those, 518 were excluded (primarily due to lack of documented practice ZIP).

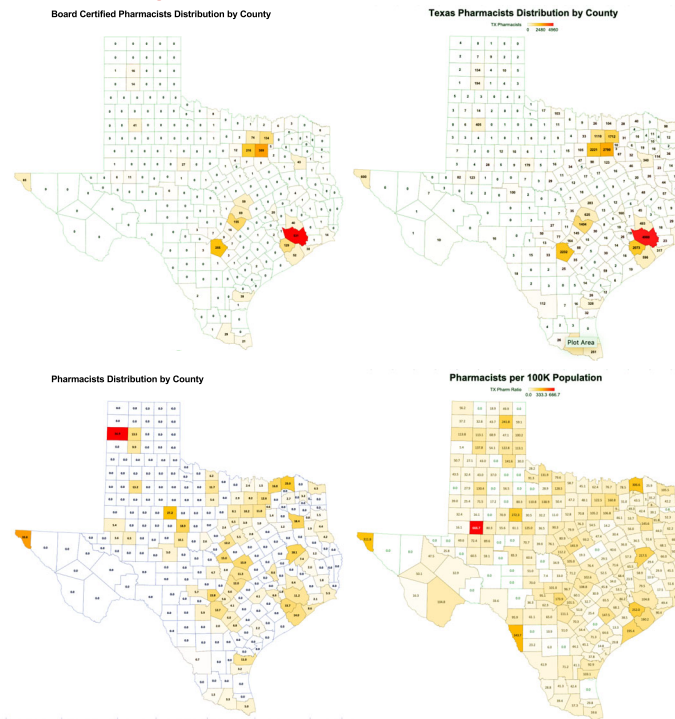
Of 20,614 actively licensed pharmacists, 3,276 (15.9%) are board-certified. BCPs are primarily employed in hospital, government, and educational settings.



Results

Table 1: Characteristics of BCPs

Figure 2: Board-Certified Pharmacists Distribution



Board-certified pharmacists are clustered in major population centers. 70% of counties have no certified pharmacists.

Table 2: Distribution by RUCA Code

RUCA Code	Definition	Number of Pharmacists (%)
1-3 Metropolitan area	Urbanized Areas of 50,000 or more people plus commuting areas	2011 (97.7)
4-6 Micropolitan area	Large urban clusters of 10,000 - 50,000 people plus commuting areas	41 (2)
7-9 Small town	Small urban clusters of 2,500 - 10,000 people plus commuting areas	6 (0.3%)
10 Rural area	All population, housing, and territory not included within an urbanized area	0

Collaborative drug therapy management (CDTM)

- 289 pharmacists in Texas have one or more registered collaborated practice agreements
- 50.5% of CDTM pharmacists are board-certified
- Based on available practice ZIP codes, all but one CDTM pharmacist practice in large metropolitan areas

Limitations

- Self-report bias has a potentially significant impact on the analysis of geographic distribution of BCPs as some key information was not included in several individuals, which may account for certain discrepancies in varying analyses.
- The use of geographic distribution may only be suggestive as a surrogate for access to care.

Conclusions

- BCPs are heavily distributed in metropolitan areas with less than 2.5% providing representation in micropolitan or small-town areas.
- No BCPs were characterized to be providing care in rural areas.
- County distributions of BCPs vs. all licensed Texas pharmacists follow similar patterns of geographic location.
- Patients in rural Texas do not have access to advanced trained certified pharmacists
- Additional workforce data, including role delineation are needed to fully characterize the certified workforce.
- Further research is needed to evaluate healthcare disparities and access to care provided by BCPs.

Citations

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Additional Information:

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