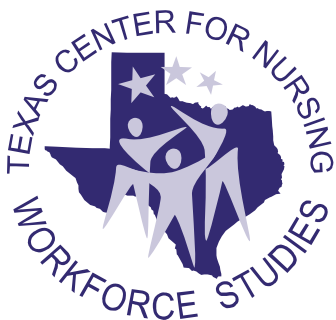


Texas Center for Nursing Workforce Studies

Nursing Workforce Disparities on the U.S.-Mexico Border

Allison Dubin, MPH
Pamela Lauer, MPH
Joanne Delk, MS
Matt Turner, PhD



Introduction

The health needs of the population residing along the U.S.-Mexico border are unique to the area due to high rates of poverty, lower rates of health insurance coverage¹, poor environmental conditions such as high levels of air pollution and pesticide contamination², and limited public health infrastructure³. The U.S-Mexico border experiences a higher incidence of certain infectious diseases and a greater prevalence of some chronic diseases including^{4,5}:

- Hepatitis A
- Diphtheria
- Measles
- Mumps
- Rubella
- Shigellosis
- Brucellosis
- Human Rabies
- Tuberculosis
- Type II diabetes
- High blood pressure
- Heart disease

The greater prevalence of certain diseases along the U.S.-Mexico border demands specialized health care professionals to treat the population and prevent future outbreaks. However, with the current shortage of professional nurses across the nation, the U.S.-Mexico border region is being disproportionately affected. Additionally, the unique ethnic/racial distribution along the border region necessitates a culturally competent nursing workforce. The current ethnic/racial makeup of the nursing workforce in the border region does not match that of the population it serves.

In 2012, the Health Resources and Services Administration (HRSA) designated all Texas-Mexico border counties as primary medical care health professional shortage areas (HPSAs). The HRSA defines HPSAs as geographic areas that do not have enough primary care providers to meet the demand of the population⁶. The HPSAs account only for primary care physicians, but the shortage extends to other health care provider types including registered nurses. This white paper describes the current shortage of nurses along the Texas-Mexico border as compared to non-border areas of the state.

Methods

All analyses were conducted on the 2012 Texas Board of Nursing (BoN) registered nurse (RN), advanced practice registered nurse (APRN), and licensed vocational nurse (LVN) licensure renewal datasets. These datasets include all RNs, APRNs and LVNs who are licensed in Texas, including active, inactive, and retired nurses. Only RNs, APRNs, and LVNs with active licenses who were currently employed in a nursing position in Texas were included in these analyses. Variables in the dataset applicable to this paper include nurses' practice county, mailing address county, race and ethnicity. Using the practice county variable, or when not available the mailing address county, all active nurses were designated as working in either a border or non-border county. The border and non-border designation for Texas counties refers to an area comprised of 32 counties within 100 kilometers of the US-Mexico border as defined by the "La Paz Agreement".

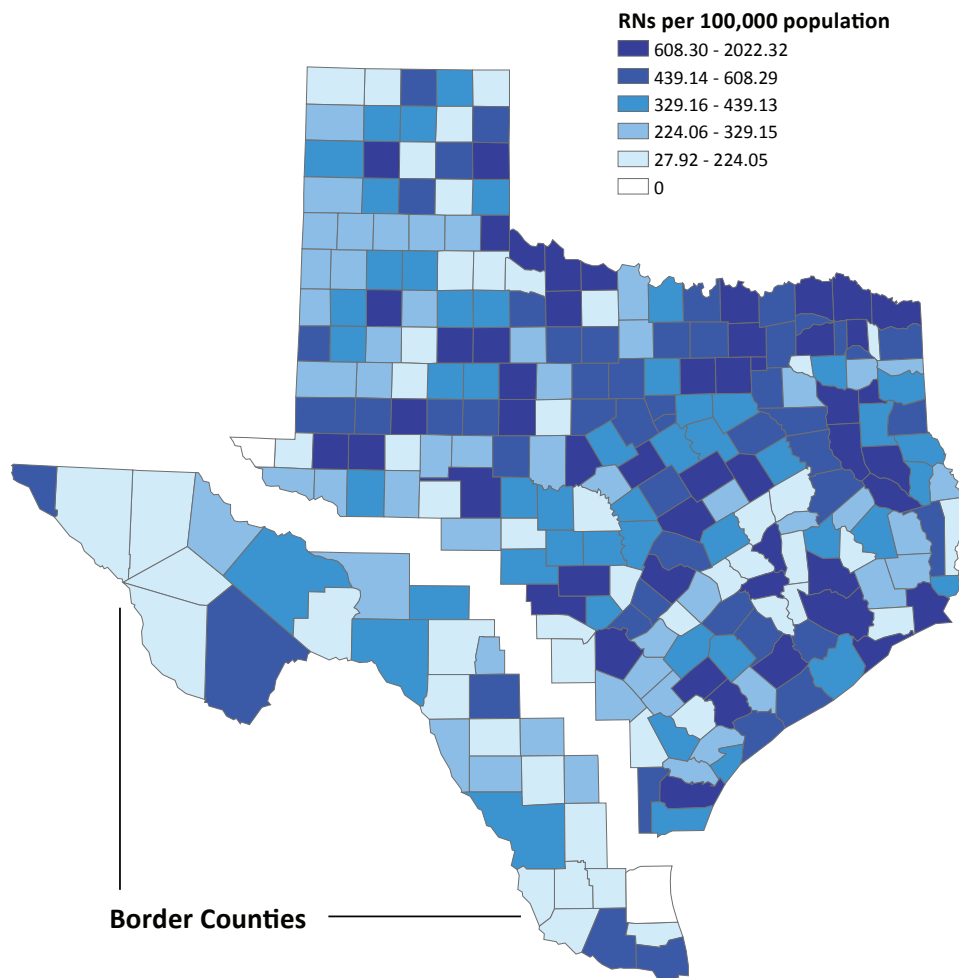
Ratios of the number of nurses per 100,000 people were calculated by dividing the number of nurses practicing

in a county by that county's population and multiplying by 100,000. The ratios of nurses in the border and non-border counties of the state were then compared. Texas population data for the year 2012 were based on the U.S. Census and were extracted from the Texas State Data Center population projections tool. The projections, released in February of 2009, are based on migration patterns from the 2000-2007 postcensus period. Demographics were compared using frequencies and cross-tabulations.

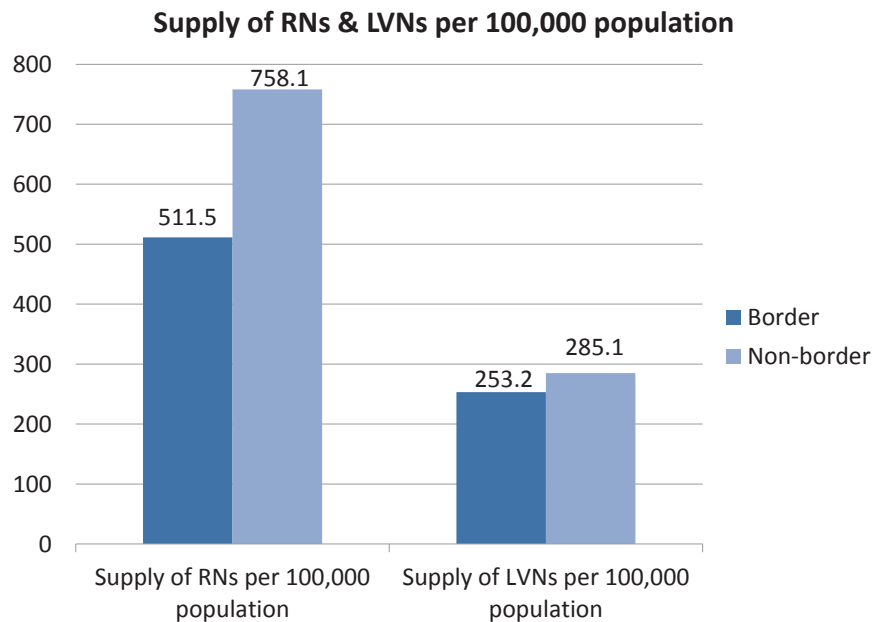
Results

As of 2012, there were 511.5 RNs per 100,000 people in the U.S.-Mexico border region of Texas. In contrast, there were 732.8 RNs per 100,000 people in the non-border region of Texas and 758.1 RNs per 100,000 people in the state of Texas. Both in border and non-border areas, there were counties with no practicing RNs. El Paso county was the border county with the most RNs per 100,000 population (602.1) and Hudspeth county had the least with 27.9 RNs per 100,000 population.

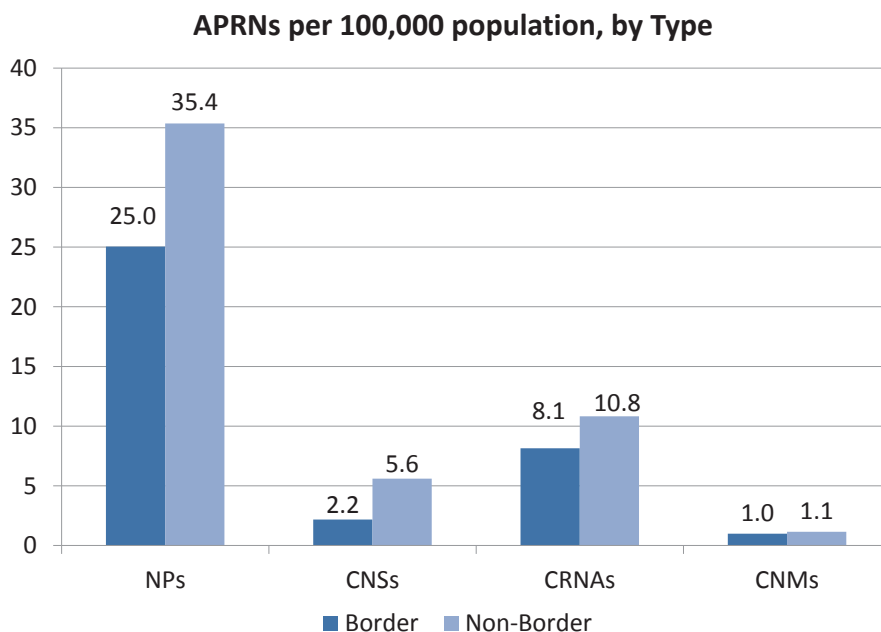
Disparities in the Supply of RNs in Border and Non-Border Counties



There were 252.3 LVNs per 100,000 people in the Texas-Mexico border region and 285.2 LVNs per 100,000 people in the non-border region of Texas. The gap between the number of nurses in the border and non-border regions is less pronounced among LVNs than RNs, as shown in the chart below.



There was also a disparity in the ratio of APRNs between border and non-border counties. While non-border counties had an average of 50.1 practicing APRNs per 100,000 people, border counties had only 34.9. Specifically, as shown below, border counties had far fewer Nurse Practitioners, Clinical Nurse Specialists, Nurse Anesthetists, and slightly fewer Nurse Midwives than non-border counties.



Although there were more Hispanic/Latino registered nurses working in border counties (57.0%) compared to non-border counties (9.2%), the ethnic and racial distribution of nurses in border counties still did not match that of the population. Hispanics/Latinos made up 88.3% of the Texas population in border regions, while only 57.0% of registered nurses on the border reported being Hispanic/Latino.

Race	% Registered Nurses Border Counties	% Registered Nurses Non-Border Counties
Caucasian/white	24.9%	66.7%
African American/black	2.6%	11.7%
Hispanic/Latino	57.0%	9.2%
Other	15.5%	12.4%

Although still not at all representative of the general population, the percentage of males working as registered nurses was greater in border counties (20.0% of RNs are male) compared to non-border counties (10.8% of RNs are male). The median age of RNs on the border (43 years) was slightly younger than the median age of non-border RNs (46 years), which aligns with the slightly younger population on the border⁴.

Interestingly, educational background, including basic and highest degrees, did not differ considerably between border and non-border county RNs. A slightly larger percentage of RNs in the border counties reported having a baccalaureate degree; 40.9% of border county RNs had a bachelor’s degree in nursing (BSN) as their highest degree, compared to 41.0% of non-border county RNs.

Discussion

From 2006 to 2012, the RN population practicing along the Texas-Mexico border grew by 36.3% compared to a growth in the RN population of 27.1% in non-border regions of the state, while the general population on the border region grew by an estimated 11.9%⁷. Over the same time period, the number of APRNs working in the border region grew by 50.9% from 627 to 946 while the number of APRNs in the non-border region grew by 49.9% from 7,838 to 11,752.

Although the nursing workforce has been increasing at a faster rate in the border region than the non-border region, there is still a considerable disparity in the number of RNs and APRNs in the Texas-Mexico border region compared to the non-border region of Texas. Additional action should be taken in order to increase the number of highly trained nurses along the U.S.-Mexico border. Additionally, steps should be taken to increase the percentage of Hispanic/Latino registered nurses practicing in the border region. A nursing workforce that mirrors the racial/ethnic diversity of the region will improve patient-provider interactions and lead to a more

culturally competent healthcare system^{4,8,9}. Suggested recommendations to increase the number of nurses practicing along the Texas-Mexico border include:

- Leverage the existing U.S.-Mexico Border Health Commission to implement programming to increase the number of registered nurses along the U.S.-Mexico border¹⁰.
- Develop nursing curricula that increases cultural competency among nurses and proficiency in Spanish¹¹.
- Develop programming to help nurses educated in Mexico that are residing in the U.S to pass the National Council Licensing Examination for Registered Nurses⁸.

Future studies should examine the potential reasons for the current nursing workforce shortage along the Texas-Mexico border and the effect of such a shortage on the health of the population. The data from Texas should also be compared with data from other border states to determine the overall distribution of nurses along the U.S.-Mexico border.

References

1. Su, D., Richardson, C., Wen, M., & Pagan, J.A. (2011). Cross-border utilization of health care: Evidence from a population-based study in south Texas. *Health Research and Educational Trust*, 46(3), 859-876.
2. Zuniga, G.C., Donnelly, K.C., Cortes, D.E., Olivares, E., Gonzalez, H., & Cizmas, L.H. (2009). Border health 2012: Binational collaboration to develop an outreach environmental educational program. *Public Health Reports*, 124, 466-470.
3. Weinberg, M., Waterman, S., Lucas, C.A., Falcon, V.F. (2003). The U.S.-Mexico Border Infectious Disease Surveillance Project: Establishing Binational Border Surveillance. *Emerging Infectious Diseases Journal*, 9(1). Retrieved from http://wwwnc.cdc.gov/eid/article/9/1/02-0047_article.htm.
4. United States-Mexico Border Health Commission (USMBHC). (2010). Border lives: Health status in the United States-Mexico border region. Retrieved from: http://www.borderhealth.org/files/res_2213.pdf.
5. Doyle, T.J. & Bryan, R.T. (2000). Infectious Disease Morbidity in the US Region Bordering Mexico, 1990–1998. *Journal of Infectious Disease*, 182(5), 1503-1510.
6. Health Resources and Services Administration. (2012). Primary Medical Care Health Professional Shortage Areas (HPSAs). Retrieved from: <http://bhpr.hrsa.gov/shortage/updateddesignations/2012June29/primarycarehpsas06292012.pdf>
7. Texas State Data Center. (2011). Texas Estimated Population by Area, 2006. Retrieved on April 19, 2012 from <http://www.dshs.state.tx.us/chs/popdat/ST2006.shtm>.
8. Lujan, J., & Little, K. (2010). Preparing Underemployed Latino U.S. Nurses Through the Mexico NCLEX-RN Success Program. *Journal Of Nursing Education*, 49(12), 704-707.
9. Sullivan Commission on Diversity in the Health Workforce. (2004). *Missing Persons: Minorities in the Health Professions*. Washington, DC.
10. Bell, C.E. (2001). *Barriers to Binational Cooperation in Public Health between Texas and Mexico*. Texas Department of Health, Office of Border Health.
11. Jones, P.E. & Mulitalo, K.E. (2010). Physician Assistant Distribution in Texas-Mexico Border Counties: Public Health Implications. *Journal of Environmental and Public Health*, 2010, 1-4.