Educational Module

Border Health

Instructor packet

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Contents

I.   Instructor Overview

a. Introduction

This Border Health module was developed as part of the *Salud Para Usted y Su Familia* [Health for You and Your Family] project (USDA-NIFA #2015-68001-23234) as a stand-alone learning module intended to bring attention to border health issues and emphasize the use of data in understanding and addressing these issues. The lesson is designed for 100 and 200 level college classrooms and can be expected to fill a 1-2 hour class period, depending on time allotted for class and group discussions.

Included in this packet are materials to prepare the instructor to present the module, the lesson itself with instructor notes, two in-class exercises, an optional homework assignment (that would require an additional class period for follow-up), and supplementary resources.

After participating in this lesson, students should have a better understanding of unique characteristics of the US-Mexico border region and its population, health disparities in the region and characteristics that may contribute to them, and how data can be used to help identify disparities and assess efforts to reduce them.

b. Learning objectives

Upon completion of the Border Health Module, students should be able to:

- Describe what is meant by the "US-Mexico Border Region" and its history;

- Define key terms related to health in the border region;

- Name three population characteristics of the region;

- Interpret basic population data from a table or graph;

- Name two ways that the health of a population can be measured;

- Explain how to access health data about the border region;

- Describe one example each of how a health department can use data to

    o   Identify health disparities in the region.

    o   Evaluate impact of programs or policies on health.

c. **Key terms**

Students should keep an eye out for these terms throughout the module. Key terms are listed on slide 3, defined when they are first used, and bolded throughout the presentation. As the terms appear, students may take notes on the sheet provided in the student packet to participate in a review of key terms at the end of the module.

La Paz Agreement: Agreement signed in 1983 between the United States and Mexico. Its purpose is to protect, conserve, and improve the environment and health of the border region of both countries. The border region by this agreement is defined as the 100km north and south of the US Mexico border:
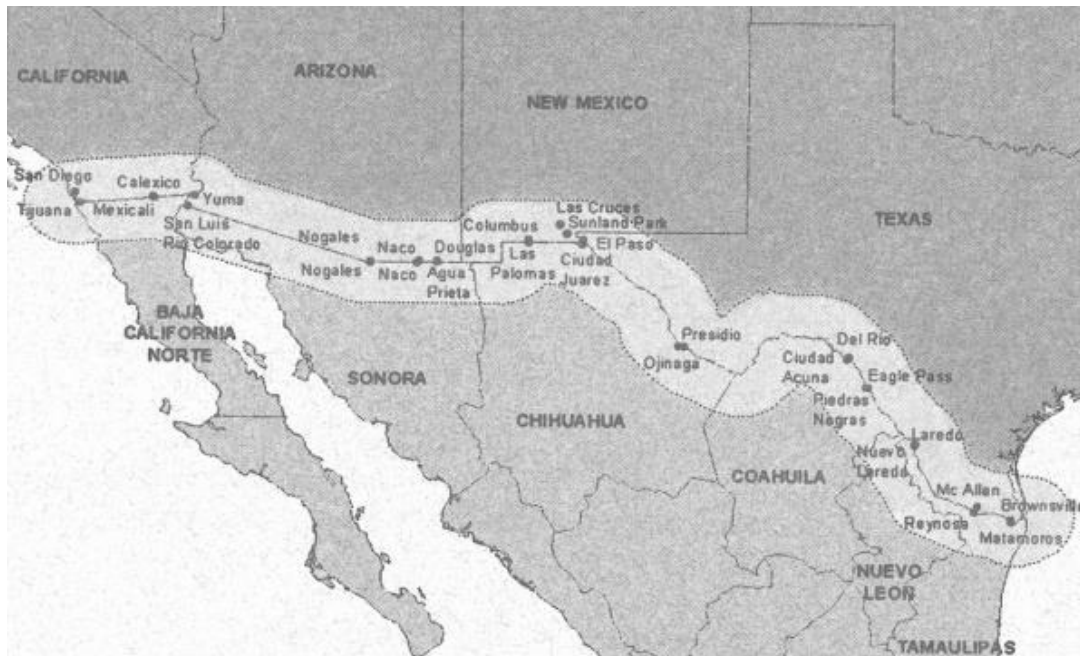
US-Mexico Border Health Commission: The U.S.-México Border Health Commission was established in July 2000 through an agreement between the governments of the United States and México for the purpose of identifying and assessing public health and healthcare challenges and needs affecting the border population, thereby facilitating actions and viable, evidence-based solutions. (Source: Healthy Border 2020)

US-Mexico Border Region: The area referred to as the US-Mexico Border Region is an approximately 2000-mile stretch of land along the border from California to Texas on the US side and from Tamaulipas to Baja California on the Mexican side. The area includes 44 US counties in the states of California, Arizona, New Mexico and Texas and 80 Mexican municipios in Baja California, Sonora, Chihuahua, Coahuila, Nuevo Leon, and Tamaulipas that fall within 100 km of the border. The area also contains 14 pairs of 'sister cities' that straddle the border

from Brownsville, TX – Matamoros, TAM to San Diego, CA – Tijuana, BC.
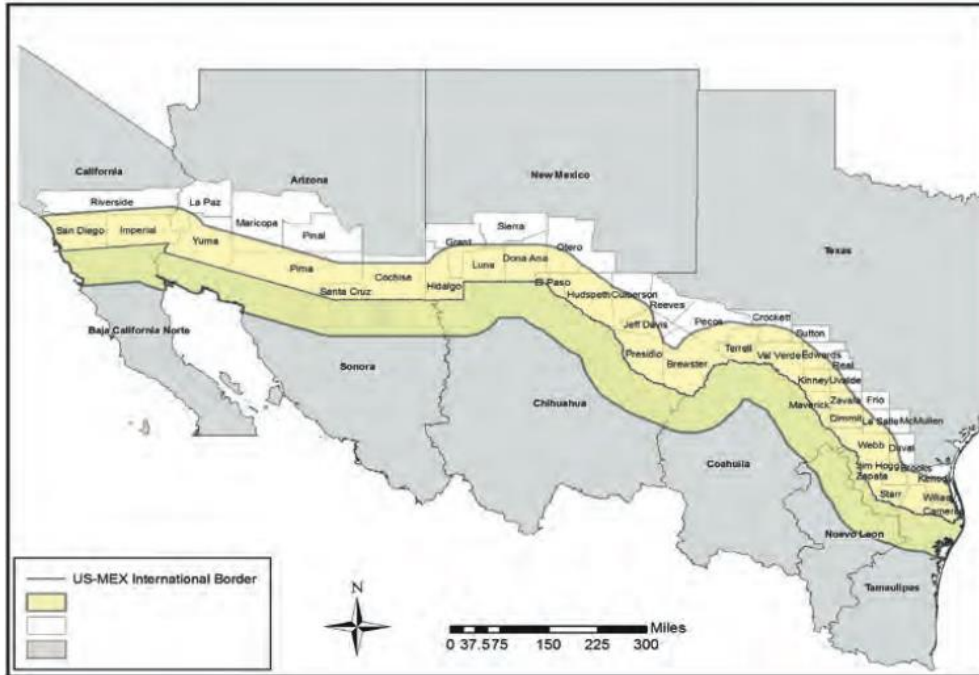
Demographics: The statistical characteristics of human populations. Demographic Factors: age, sex, education level, income, marital status, religion, ethnicity, etc. (dictionary.com)

Social Determinants: "The complex, integrated, and overlapping social structures and economic systems that are responsible for most health inequities. These social structures and economic systems include the social environment, physical environment, health services, and structural and societal factors. Social determinants of health are shaped by the distribution of money, power, and resources throughout local communities, nations, and the world." (CDC, Definitions)

Health Disparity: "A type of difference in health that is closely linked with social or economic disadvantage. Health disparities negatively affect groups of people who have systematically experienced greater social or economic obstacles to health. These obstacles stem from characteristics historically linked to discrimination or exclusion such as race or ethnicity, religion, socioeconomic status, gender, mental health, sexual orientation, or geographic location. Other characteristics include cognitive, sensory, or physical disability." (CDC, Definitions)

II.   Lesson Guidelines

a.   Structure and purpose

Introduction: Slides 1-3 introduce the module, learning objectives and key terms.

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Defining the US-Mexico Border Region: Slides 4-6 provide a brief history of how the binational border region was defined and why. Students should be able to identify the region on a map and describe it.

A key point to emphasize here is that while the region was originally defined geographically using distance from the border, the definition was difficult to put into practice to monitor health. The US Mexico Border Health Commission determined that the 44 US counties and 80 Mexican municipios that fall wholly or partly within 100 km of the border should be used instead because demographic, health and environmental data are collected at the county/municipio level. The availability of county/municipio level information allows researchers to monitor health and study its determinants.

Overview of the US border counties: Slides 7-12 provide details about the US side of the border region and its population in comparison to the US overall. Social and environmental factors that are important drivers of population health are introduced here. *Exercise 1* is a 3-part exercise focused on helping students interpret data presented in tables and graphs is included here. (*See notes on Exercise 1 below*.)

Health definitions and measures: Slides 13-16 introduce tools to prepare students for examining the health of the border region. The concept of social determinants of health builds on the students' understanding of the demographics of the region and provides a transition to understanding how those characteristics may influence health. Defining health and ways it is measured shows students how researchers study the health of a population.

Health in the Border Region: Slides 17-24. Using the foundation set above, students are now equipped to understand the health challenges in the border region. When looking at demographic characteristics through a health lens, students can now see how basic descriptors can point to health challenges. Because the border region has characteristics that are different from the US overall, it is possible to see how the region may also be faced with different health challenges.

The concept of disparities in health is introduced and defined here. A point to emphasize is that every health challenge or difference in health between populations is not necessarily a disparity. By using available health and demographic data (some resources and links to state-specific resources are provided), health researchers (and students) can begin to ask questions and identify health disparities in the border region.

Open a few of these links with the class to demonstrate the steps to access border county data. On the left hand side of the slide, links to the health information systems in each border state are listed; each system and the steps to access it vary.

Exercise 2 presents data obtained from New Mexico's Indicator Based Information System for Public Health Data (IBIS) derived through the link provided and other sources. Slides 23 and 24

show demographic and health outcome data from the border county of Grant in Mexico's southwest corner. Each map, table and graph should be discussed in small groups and/or with the full class, reinforcing the techniques to read tables and graphs that were presented earlier. (*See details for Exercise 2 below*.)

This discussion can serve as a jumping off point for an optional homework assignment where students select and research another county and present the results to the class (*see details for Optional Exercise 3 below*.)

Interventions and Future Action: Slides 25-26. As researchers continue to identify and monitor health disparities in the border region, action can be taken at various levels to improve border health. These levels of the "Health Impact Pyramid" range from one-on-one counseling and education to change health behavior to societal changes in socioeconomic factors and other social determinants of health, such as poverty (see reference materials for further information.)

To initiate discussion about these different approaches to improving health in the border region, ask students to think about Grant county's high heart disease death rate compared to the rest of New Mexico or its high teen birth rate compared to the rest of the US and think about ways these disparities could be reduced.

Also in this section, students can begin thinking about their role in border health and how governments, schools, families and communities can take action in different ways to address the issues found. It is important to emphasize that intervention can and should take place at every level and can have positive effects regardless of how small the intervention may seem. Knowing that a challenge to health exists in your community is a first and critical step in overcoming that challenge.

Conclusion and Review: Slides 27-29 promote discussion about what students have learned around the key terms presented in the module. Students with interest in becoming more involved in border health issues can take part in any of the suggested activities, delve deeper into the links on slide 22 and look further into the references on slide 29.

b. **Exercise 1**

Identifying specific differences between the US and border populations by reading and interpreting tables and graphs.

Overview:

Exercise 1 may be done in small groups or as a class. If students work in groups, the instructor may walk around and assist in the interpretation of the information on the tables and figures. Class can then reconvene and go through the slides (10-12) to discuss what was found and point out differences between the border and US populations. As a warm-up, instructor may guide students in reading the first table; break down components of the table, understand what is being discussed and interpret findings.

Purpose:

1. Practice reading and interpreting data graphically
2. Understand demographic composition of the border region

The following 5-step approach to interpreting tables and graphs (modified from Kemp and Kissane 2010 - see resources) may be helpful.

Step 1: Getting Started

Look at the title, axes, headings, legends, footnotes and source to find out the context and expected quality of the data.

Step 2: WHAT do the numbers mean?

Make sure you know what all the numbers in the table cells (tables) or on the graph axes (counts, percentages, rates, etc.) represent. Look for the largest and smallest values in one or more categories or years to get an impression of the data.

Step 3: HOW do they differ?

Look at the differences in the values of the data in a single row or column or part of a graph. This may involve changes over time, or comparison within a category, such as between male and female.

Step 4: WHERE are the differences?

What are the relationships in the table that connect the variables? Use information from Step 3 to help you make comparisons across two or more categories or time frames.

Step 5: WHY do they change?

Why are there differences? Look for reasons for the relationships in the data that you have found by considering social, environmental and economic factors.

1a.

Population by race and Hispanic or Latino Origin: 2010

	United States	Border Counties
White	72.4%	73.8%
Black or African American	12.6%	3.3%
Asian	4.8%	5.2%
American Indian and Alaska Native	0.9%	1.2%
Some other race	6.4%	12.9%
Hispanic or Latino	16.3%	54.5%
(Source: US Census Bureau)		

Possible discussion questions:

1. How does the racial/ethnic composition of the US border counties population compare with the US population overall?

2. Explain the differences in the racial makeup between the US and Border Counties. Where do the most significant differences lie?

3. What is the difference in Hispanic or Latino Origin between the US and the Border Counties?

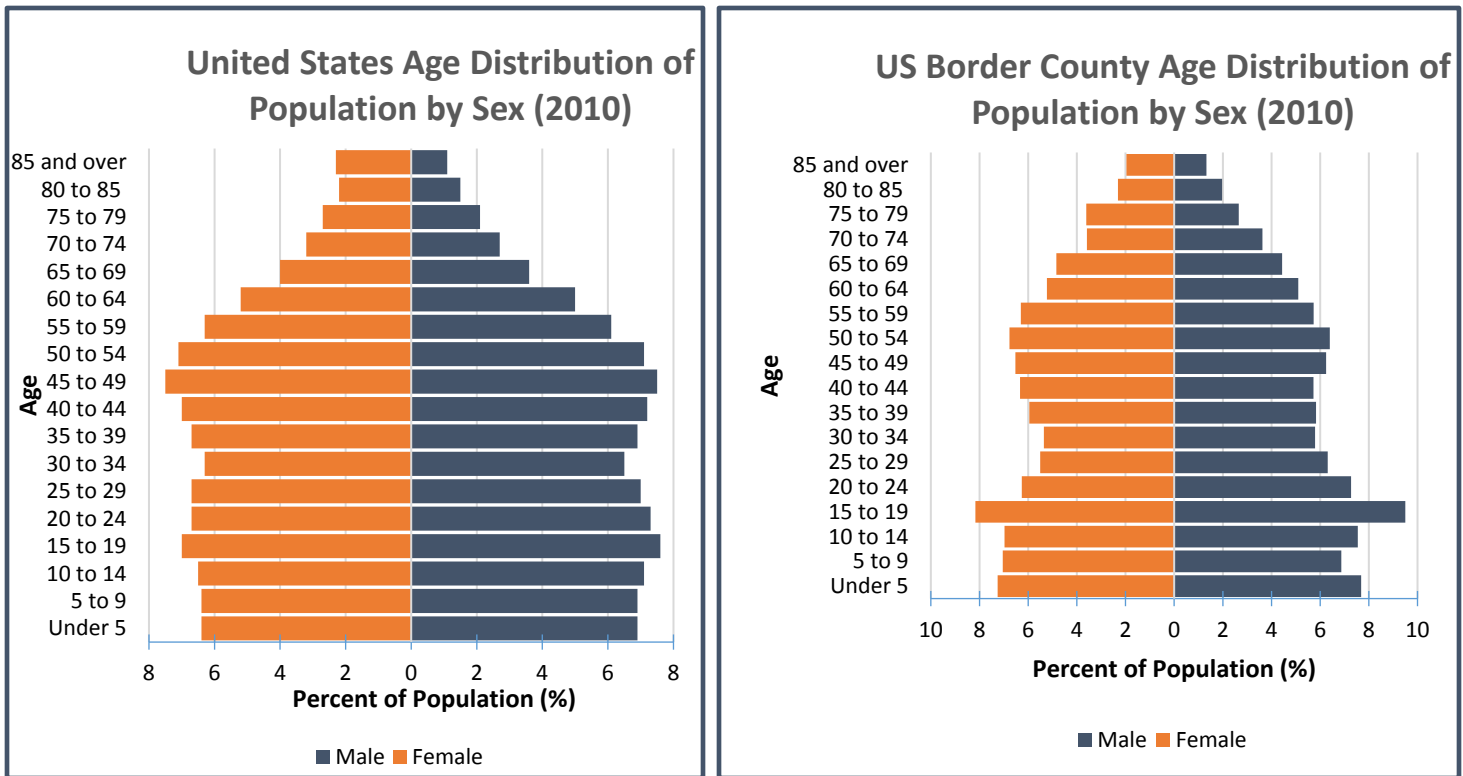4. How do you think these differences might impact health?

1b.
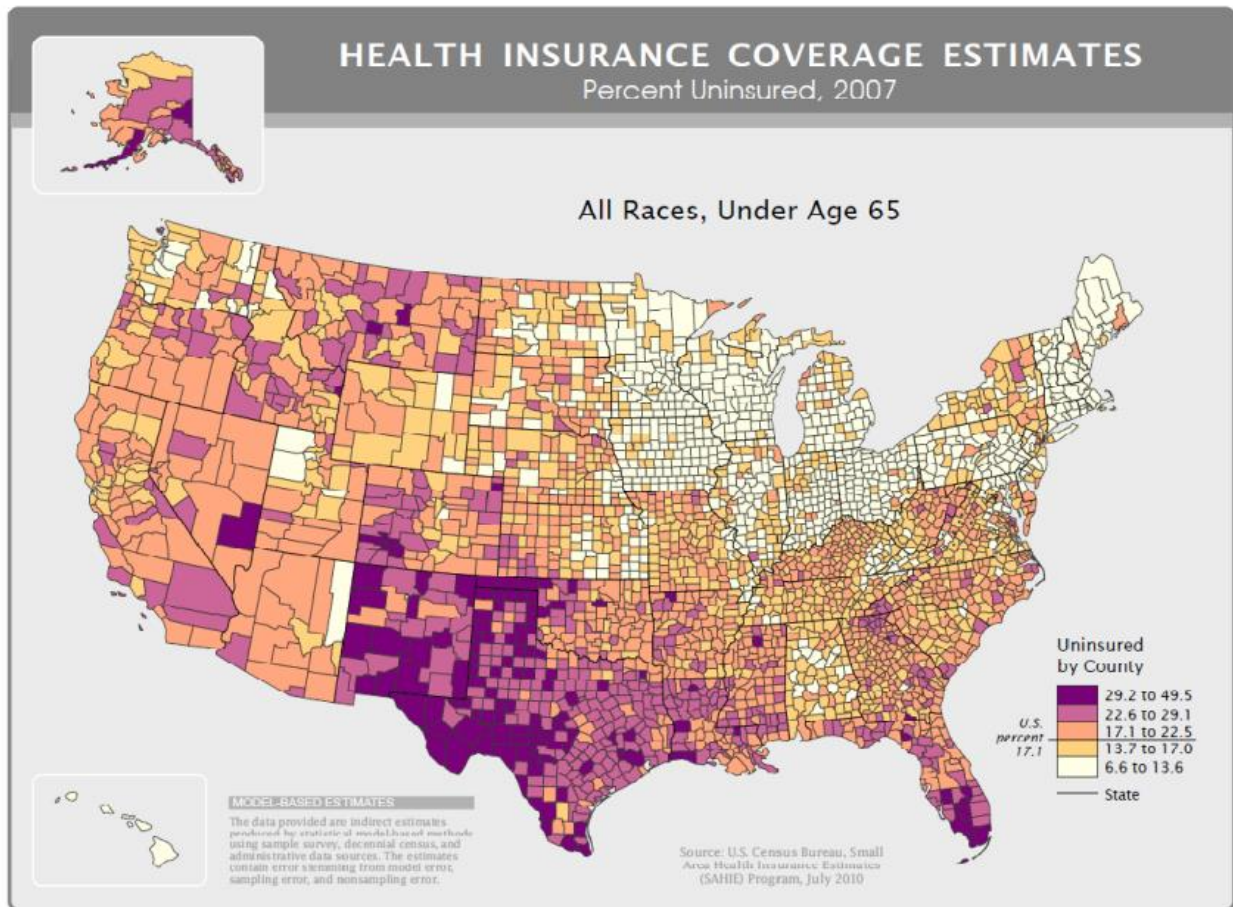
Possible discussion questions:

1. What do the darker colors on this map represent vs the lighter colors?

2. Where does the highest concentration of dark purple occur? What does this tell us?

3. Looking at the color-coded border counties compared to other US counties, what differences do you see?

5. How might these differences in health insurance coverage impact health in the border region?

1c.

United States Age Distribution of Population by Sex (2010)

US Border County Age Distribution of Population by Sex (2010)

Possible discussion questions:

1. What do these graphs represent? What are the x and y axis showing us? What does each color represent?

2. Look carefully to identify where the greatest differences in age distribution occur between all US and border counties? For example, what proportions of males and females in each population are under 25 years of age?

3. What impact might these different age distributions have on population health? What health challenges may a younger population face as compared to an older one and vice versa ?

   c. **Exercise 2**

**Exploring demographic and health data in a border county**

Overview:

   Exercise 2 may be done in small groups or as a class. If students work in groups, instructor may walk around and assist in understanding tables and figures. Class can then reconvene and go through the slides to discuss differences between Grant County, NM and all of New Mexico. As an introduction, instructor may guide students through the quick facts table to give an overview of the county.

Purpose:

   1. Practice reading and interpreting data graphically
   2. Introduce students to health concerns in the border region
   3. Compare a border county to its state and the US as a whole

Exercise 2a.

Quick Facts		
	Grant County	**New Mexico**
County Seat	Silver City	
Population (July 1, 2015)	29,288	2,099,856
% New Mexico Population	1.39%	100%
Land Area (Square miles)	3961.6	121,298
Persons per Sq. Mile (2015)	7.4	17.3
Resident Live Births (2015)	319	25,730
Deaths of NM Residents (2015)	342	17,687
Households (2011-2015)	14,644	909,565
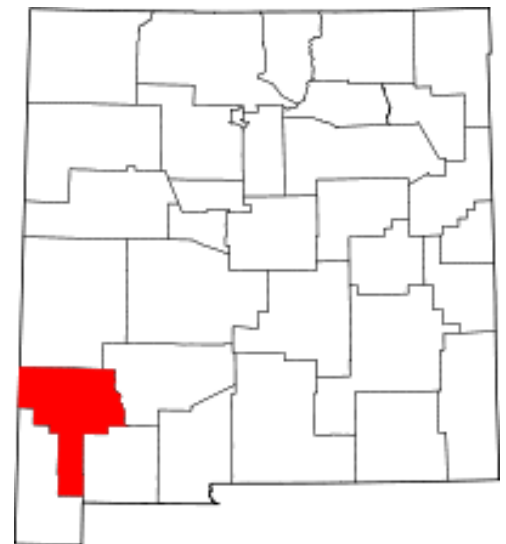
Possible discussion questions:

   1. What percent of the total New Mexico populations reside in Grant County?

   2. Geographically, where is Grant County situated in New Mexico?

   3. Looking at persons per square mile, is Grant County more densely or more sparsely populated than New Mexico as a whole?

Exercise 2b.

Leading Causes of Death 2013-2015

■ Grant County ▢ New Mexico
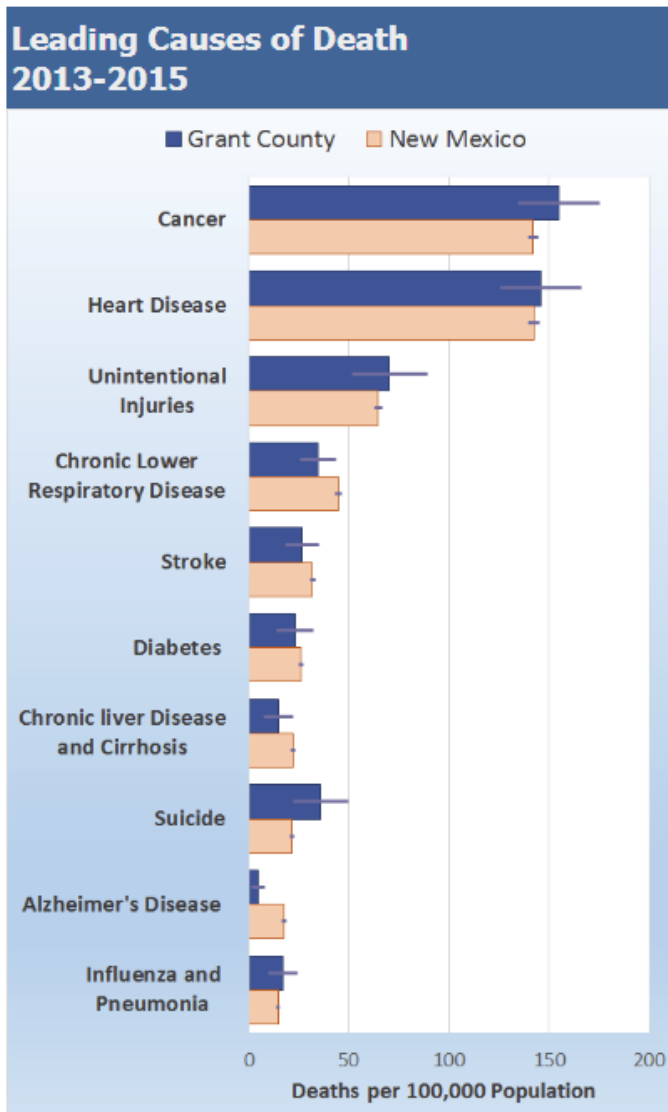
Age-adjusted to the U.S. 2000 population.
Source: New Mexico Death Certificate Database, Office of Vital

Life Expectancy From Birth: (Number of Years), 2014-2016

Grant County	78.4	
95% Confidence Interval	(78.2 - 78.6)	
Statistical Stability	Stable	
New Mexico	77.8	
U.S.	78.8	

Influenza and Pneumonia Deaths: Per 100,000 population, 2012 - 2016

Grant County	15.5	
95% Confidence Interval	(10.1 - 20.8)	
Statistical Stability	Stable	
New Mexico	14.2	
U.S.	15.2	

Teen Birth Rate: Births per 1,000 girls 13-19, 2014 - 2016

Grant County	35.9	
95% Confidence Interval	(28.7 - 43.1)	
Statistical Stability	Stable	
New Mexico	33.6	
U.S.	20.3	

Possible discussion questions:

1. From the graph on the left, what is the leading cause of death in New Mexico? In Grant County?

2. Based on the Leading Causes of Death Graph, discuss the differences between Grant County and New Mexico. In which areas does Grant County seem better or worse off than New Mexico?

3. Looking at the tables, discuss any similarities or differences between Grant County, New Mexico and the US for these three health indicators. How do Grant County and New Mexico Compare to the US?

4. With this information, in which areas does Grant County experience greater health challenges than the US or New Mexico?

d. Optional Exercise 3

Using county level data, students may explore another border county on their own and present results to the class. Information found may look similar to the data found in Exercise 2.

Purpose:

1. Practice accessing data on a specifically
2. Organize data in an easily readable and presentable format
3. Interpret graphs and charts

County data sources:

New Mexico: https://ibis.health.state.nm.us/

Arizona: http://www.azdhs.gov/prevention/health-systems-development/data-reports-maps/index.php

Texas: http://healthdata.dshs.texas.gov/Home

California: https://www.cdph.ca.gov/Programs/CHSI/Pages/County-Health-Status-Profiles.aspx

http://informaticsportal.cdph.ca.gov/chsi/vsqs/

e. PowerPoint presentation

In addition to the guidelines above, most slides have instructor notes included. [Import slides with instructor notes on the sides with space for note taking.]

f. Additional instructor resources

1. La Paz Agreement- https://www.epa.gov/sites/production/files/2015-09/documents/lapazagreement.pdf
2. US Mexico Border Region at a Glance- https://hsc.unm.edu/community/toolkit/docs2/10.USMBHC-TheBorderAtAGlance.pdf
3. Reading Graphs and Tables- http://www.statlit.org/pdf/2010kempkissaneicots.pdf
4. Border Lives- http://studylib.net/doc/18315450/border-lives--health-status-in-the-united-states
5. A Framework for Public Health Action: The Health Impact Pyramid - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2836340/