“Lungers”

‘Everyone comes here to die.’ That is what residents of Arizona thought about many of the people who moved here in the late 1800’s, early 1900’s. Why would they think that? Most people who came to Arizona during this time came because they were told that the fresh, dry air, and warm temperatures would help them recover from, or at least ease their symptoms of tuberculosis.

Tuberculosis, also called TB, is a highly contagious lung disease. One seventh to one fourth of all the people that died in the United States in the early 1900’s died from Tuberculosis. TB is spread by inhaling the tuberculosis germ. The germ is sent out into the air from the person coughing, sneezing, or even talking. At the time, there were no medications for tuberculosis, so most people died from the disease. People suffered with tuberculosis. They ran high fevers, had sever coughs, the sweats, but the worst symptom was lesions in their lungs. Lesions are sores that split or blister and then bleed. So, when they coughed, they would cough up blood. This symptom made it easy for other people to identify those who had tuberculosis. The name, “Lunger” came from this symptom. This was not a nice thing to call them, but people did not like those who had tuberculosis. People were terrified they would get TB. As a matter of fact, they were so scared some cities also had Preventoriums. A Preventorium was where they sent groups of children who were at risk of catching TB, even if they did have it at the time.

During the tuberculosis epidemic, cities in Arizona advertised the state as an ideal place for treatment of TB. The population of Arizona began to increase due to all of the tuberculosis patients looking for a place to be treated and cured. There were many Sanatoriums in the state of Arizona, because of the advertising and our climate. Sanatoriums are what they called the facilities were people were treated for serious and contagious diseases. They had doctors and nurses who used different methods of treating the patients and their diseases. But all of them stressed clean air, healthy food, and lots of rest. They were modeled after European resorts of the time. The sanatoriums had beautiful buildings, courtyards, and individual rooms. Some sanatoriums even offered cottages, tennis courts, and special treatments. They were also expensive.

Because TB was so contagious, the Sanatoriums were usually isolated out and away from the cities. Prescott had a sanatorium called, The Pines. They were able to take care of 120 people. There were a few sanitariums in Phoenix, one in Sunnyslope held 100 people. But by far the biggest sanatorium was in Tucson. Tucson had over a dozen sanitariums. These sanitariums were like hotels.

By 1920 Tucson had 7,000 people who had come for treatment of their tuberculosis. So many people came to the west that there was not enough housing for them all. Tent cities began to pop up in different areas. One of the people who lived in a tent city, Dick Hall, described it like this, "...place of squalor shunned by most citizens." He talked about what it was like to live there in 1910, " possessed of a wood floor, steel roof, outside water faucet and a one-hole outhouse thirty-five feet to the rear. . . the nights were heartbreaking, as one walked along the dark streets, he heard coughing from every tent. It was truly a place of lost souls and lingering death. Sometimes life was too hard to bear and a victim would end it. He was soon replaced, however, by others who hoped for a cure." (1) Because people were so desperate to be cured and there was such a shortage of housing, they began sleeping in the desert.

People continued to die from this disease until a medication was developed in the 1940’s. Arizona took care of people with TB for over 50 years before this was a treatment and then it was only effective if the disease was caught early.

What Do We Know?

We have very little data (mathematical information) about tuberculosis in the 1900’s. At the time the Federal Government did not collect or keep information about why people died, nor did they keep very good records about large scale diseases. These records were typically kept by doctors and maybe the state. Many cases were not reported to anyone collecting information. So the data we have are only of the people who were reported to the government. There may have been many, many more cases that went unreported. Here is a collection of data about TB in the early 1900’s.

**National Statistics – Deaths from Tuberculosis**

(Statistics are conjectures or educated guesses/statements made from examining data)

1.) In 1920 1/7th to 1/4th of all the people that died in the United States died from tuberculosis.
2.) In 1900-1904, tuberculosis was causing roughly 185 deaths per 100,000 a year in the United States, by 1944 the death rate was down to 43 per 100,000.
5.) In 1923, there were 500 deaths per 100,000 in Arizona.

<table>
<thead>
<tr>
<th>CITY</th>
<th>COUNTY</th>
<th>YEAR</th>
<th>POPULATION OF LUNGERS</th>
<th>CITY POPULATION</th>
<th>% OF LUNGERS IN THE CITY</th>
<th># OF DEATHS IN THE CITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tucson</td>
<td>Pinal</td>
<td>1920</td>
<td>7,000</td>
<td>20,053</td>
<td>34%</td>
<td>100</td>
</tr>
<tr>
<td>Sunnyslope</td>
<td>Maricopa</td>
<td>1930</td>
<td>*100</td>
<td>700</td>
<td>14%</td>
<td>4</td>
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<tr>
<td>Prescott</td>
<td>Yavapai</td>
<td>1913</td>
<td>120</td>
<td>5,010</td>
<td>2%</td>
<td>25</td>
</tr>
<tr>
<td>Cave Creek</td>
<td>Maricopa</td>
<td>1920</td>
<td>*30</td>
<td>(-) 100</td>
<td>30%</td>
<td>1/2</td>
</tr>
<tr>
<td></td>
<td>Maricopa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Castle Hot Springs</td>
<td>Yavapai</td>
<td>1920</td>
<td>10</td>
<td>(-) 100</td>
<td>10%</td>
<td>1/2</td>
</tr>
<tr>
<td>Tempe community</td>
<td>Maricopa</td>
<td>1920</td>
<td>*31</td>
<td>1,962</td>
<td>2%</td>
<td>10</td>
</tr>
<tr>
<td>Phoenix</td>
<td>Maricopa</td>
<td>1920</td>
<td>941</td>
<td>29,053</td>
<td>32%</td>
<td>145</td>
</tr>
<tr>
<td>Arizona</td>
<td>Maricopa</td>
<td>1920</td>
<td></td>
<td>334,162</td>
<td></td>
<td>1,671</td>
</tr>
<tr>
<td>New York</td>
<td>Maricopa</td>
<td>1920</td>
<td></td>
<td>10,385,227</td>
<td></td>
<td>10385</td>
</tr>
<tr>
<td>United States</td>
<td>Maricopa</td>
<td>1920</td>
<td></td>
<td>106,021,537</td>
<td></td>
<td>196140</td>
</tr>
</tbody>
</table>

* also included in Phoenix data

(-) = less than 100 people
Lungers Lab Sheet

1. With your group, examine the tables on the What Do We Know? handout.

2. Answer the following questions on a separate sheet of paper; you can use your reading and the data tables.
   a. If you look at the data for Cave Creek and Castle Hot Springs it says of a person died, how could a half of a person die?
   b. If you had tuberculosis where would you live? Why?
   c. If you had to pick Arizona or New York where would you live? Why?
   d. Which data tells you the most? Why?
   e. What do you think happened in 1944 that lowered the death rate so dramatically?

3. On a large piece of chart paper, make a visual representation that you think would help people decide where they might want to live in the 1920’s.

4. The Arizona Historic Society has museums and websites that people from all over the country visit to find out about our history. Write a letter to the Arizona Historic Society that explains the visual representation you made with your group. In your letter explain how this information would be important or helpful to other students learning about tuberculosis camps in Arizona. Make sure you support your points from your data, findings and reading.

5. Answer the self-assessment questions on a separate piece of paper.

   Self Assessment:
   a. Did your group work as a team? Did you share the work?
   b. Were all your thoughts and writing complete?
   c. How well did your visual representation show your data show your data and make your point?
   d. After seeing other group's representations, would you change your visual representation? If so, what would you change? Why?
## Lunger Rubric

<table>
<thead>
<tr>
<th></th>
<th>4 pts.</th>
<th>3 pts.</th>
<th>2 pts.</th>
<th>1 pt.</th>
<th>0 pts.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Presentation</strong></td>
<td>Rich demonstration showing the relationship of the data to the populations. (Oral or written)</td>
<td>Adequate demonstration showing the relationship of the data to the populations. (Oral or written)</td>
<td>Limited demonstration showing the relationship of the data to the populations. (Oral or written)</td>
<td>Lacking demonstration showing the relationship of the data to the populations. (Oral or written)</td>
<td>No presentation.</td>
</tr>
<tr>
<td><strong>Visual Representation</strong></td>
<td>Exemplary representation that clearly conveys and reflects the group's conjectures.</td>
<td>Effective representation that conveys and reflects the group's argument.</td>
<td>A representation that conveys and/or reflects the group's argument in a very limited manner.</td>
<td>A representation that does not convey and/or reflect the group's argument.</td>
<td>No representation.</td>
</tr>
<tr>
<td><strong>Data Analysis (During group work)</strong></td>
<td>Exemplary explanation of representation and conjecture that is based on the data.</td>
<td>Effective explanation of representation and conjecture that is based on the data.</td>
<td>Limited explanation of representation and conjecture that is based on the data.</td>
<td>Inability to explain the representation and conjecture based on the data.</td>
<td>No analysis.</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Combined Total</strong></td>
</tr>
</tbody>
</table>
1. With your group, examine the tables on the What Do We Know? handout. As the students are working on #1-4 you will want to move between the groups and ask questions. This time can be used to make some informal assessments about the students understanding of the data. This is also a time to question student’s methods and thoughts, to help them clarify their reasoning.

2. Answer the following questions on a separate sheet of paper; you can use your reading and the data tables.
   a. If you look at the data for Cave Creek and Castle Hot Springs it says _ of a person died, how could a half of a person die?
   b. If you had tuberculosis where would you live? Why? You will receive a variety of answers. Prompt the students to support their answers from the data or story.
   c. If you had to pick Arizona or New York where would you live? Why? You will receive a variety of answers. Prompt the students to support their answers from the data or story.
   d. Which data tells you the most? Why? You will receive a variety of answers. Prompt the students to support their answers from the data or story.
   e. What do you think happened in 1944 that lowered the death rate so dramatically? Medications were discovered to treat tuberculosis.

3. On a large piece of chart paper, make a visual representation that you think would help people decide where they might want to live in the 1920’s. You will receive a variety of responses including bar graph, circle graphs, and some restructured tables. See the rubric provided.

4. The Arizona Historic Society has museums and webs sites that people from all over the country visit to find out about our history. Write a letter to the Arizona Historic Society that explains the visual representation you made with your group. In your letter explain how this information would be important or helpful to other students learning about tuberculosis camps in Arizona. Make sure you support your points from your data, findings and reading. See the rubric provided.

5. Answer the self-assessment questions on a separate piece of paper. These can be used as an addition assessment if you stress that they supply you with complete thoughts. C and D are excellent tools to see if the students view on the data or representing the data has shifted.

Self Assessment:
   a. Did your group work as a team? Did you share the work?
   b. Were all your thoughts and writing complete?
   c. How well did your visual representation show your data and make your point?
   d. After seeing other group's representations, would you change your visual representation? If so, what would you change? Why?
Circle graph blackline