Possible Clients

- Stakeholders:
    - Dr. Peterman (Chair of the South Cumberland Health Network)
    - Policy-makers
    - Investors
    - People who want to be more informed about the state of Tennessee's public health .
    - Healthcare Professionals.
    - Patients.

Summary Of The Project

3 subprojects:

1. Analyze all of Tennessee's general public health information by county in order to see correlations and trends.
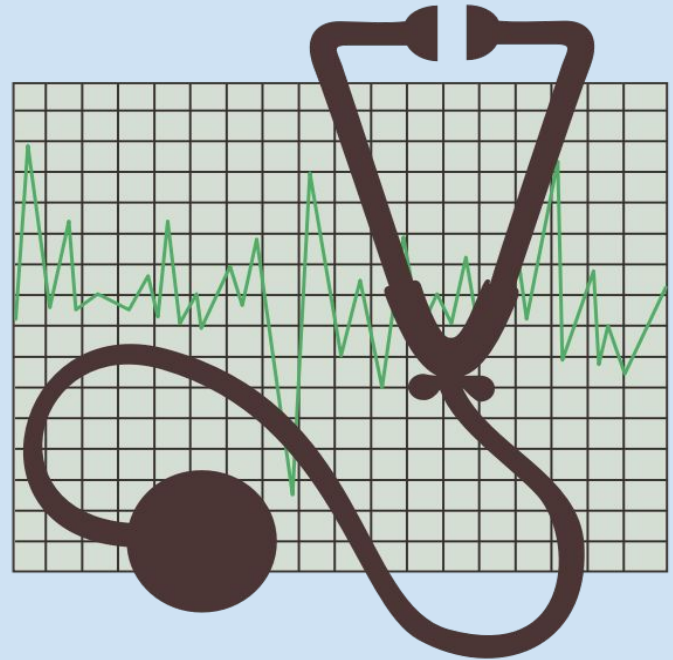
2. Analyze the low-income penetration by Federally Qualified Health Centers (FQHCs) and Look Alikes (LAL's).

3. Analyze the quality of and types of services that Ocoee Regional Health provides in comparison to other nonprofits and FQHCs.

What is the Problem and Why is it Important?

Problem: Some counties in Tennessee are highly underserved in comparison to others likely due to poor performance by current healthcare facilities such as hospitals, FQHCs, and medical clinics alike.

1. Numerous TN health-related information is dispersed across the internet making it difficult to find reliable information quickly.
2. Policy-makers, investors, and other stakeholders need a reliable resource to analyze those disparities to make informed decisions and help solve the big problem at hand.
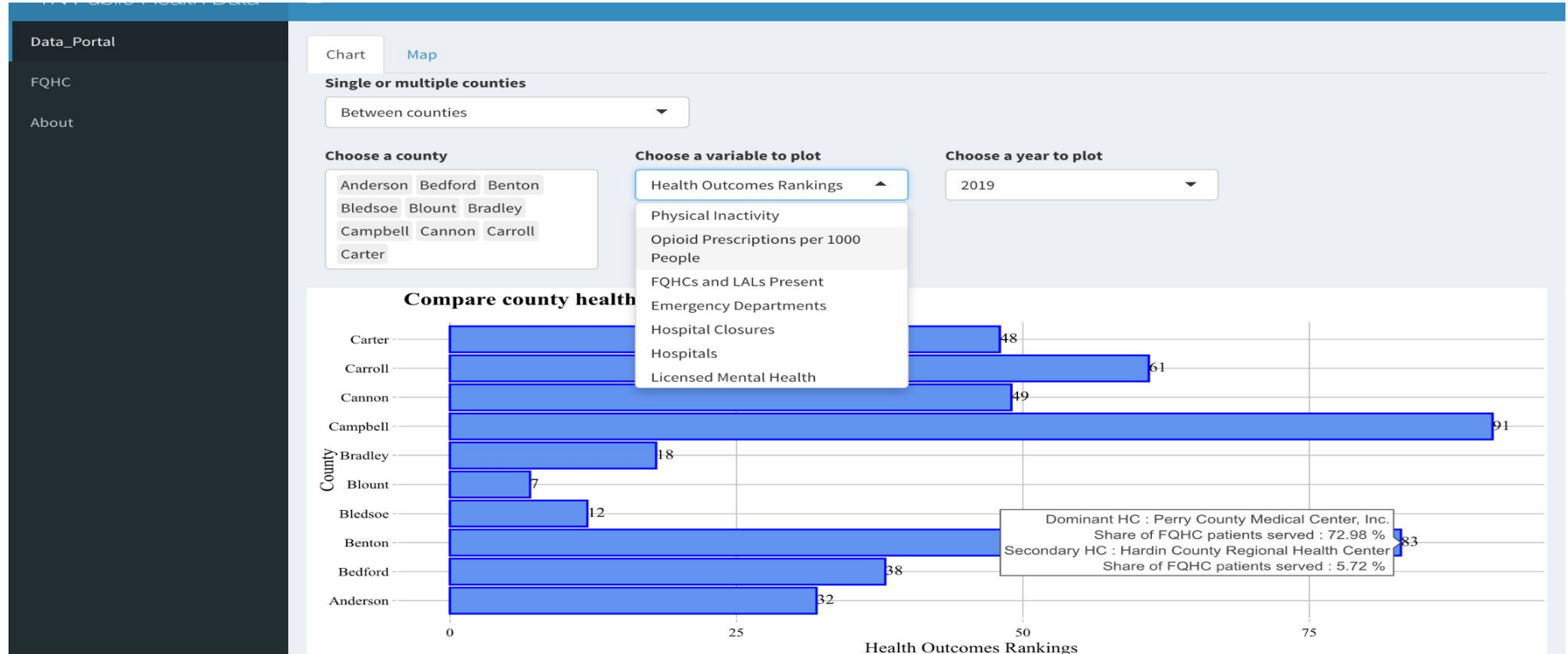
Tackling the Problem

1. Collected health- related data from a plethora of reliable resources (CDC, TN.gov, County Health Rankings, etc.).
2. Compiled the data into a spreadsheet.
3. Ran the data through R Studio to sort the information and analyze trends and correlations.
4. Created an interactive web application (Shiny) easily accessible for users with all of the data in one place.
5. Created a wireframe for a website that will be used to inform the public about the state of Tennessee's public health.

Outcome Part 1 : Data Spreadsheet

County	Year	Total_Population	Alcohol_impaired_Driving_Deaths_per_1000_people	Driving_Deaths	Driving_Deaths_per_1000_people	Uninsured	Uninsured_pe	Number_of_Primary_Care_Physicians	Number_of_Primary_Care_Physicians_per_1000_people	Dentist_Providers	Dentist_Providers	Mental_Health_Providers	Mental_Health_Providers_per_1000_people	Flu_Vs_Me_rolle
Anderson	2019	76,061	17.09154494	49	64.4219771	5,550	7,297	46	60.47777442	56	73.62511668	72	94.66086431	
Bedford	2019	48,292	37.27325437	43	89.04166322	5,173	10,712	18	37.27325437	13	26.9195726	34	70.40503603	
Benton	2019	16,140	49.56629492	20	123.9157373	1,431	8,866	3	18.58736059	3	18.58736059	7	43.37050805	
Bledsoe	2019	14,836	33.70180642	14	94.36505797	1,331	8,971	1	6.740361283	3	20.22108385	4	26.96144513	
Blount	2019	129,927	23.08988894	105	80.81461128	10,388	7,995	92	70.80899274	77	59.26404827	176	135.4606818	
Bradley	2019	105,749	16.07580214	63	59.57503144	11,037	10,437	59	55.79248976	54	51.06431266	110	104.0198962	
Campbell	2019	39,797	20.10201774	41	103.0228409	3,616	9,086	20	50.25504435	11	27.64027439	20	50.25504435	
Cannon	2019	14,178	70.53180985	23	162.2231626	1,339	9,444	4	28.21272394	4	28.21272394	2	14.10636197	
Carroll	2019	27,886	10.7580865	20	71.72057663	2,102	7,538	14	50.20440364	8	28.68823065	14	50.20440364	
Carter	2019	56,433	23.03616678	38	67.33648752	5,004	8,867	22	38.98428225	15	26.58019244	17	30.1242181	
Cheatham	2019	40,181	19.90990767	35	87.10584605	3,197	7,956	20	49.77476917	8	19.90990767	30	74.66215375	
Chester	2019	17,190	17.45200698	13	75.62536358	1,538	8,947	5	29.0866783	5	29.0866783	15	87.2600349	
Clairborne	2019	31,732	18.90835749	27	85.08760872	2,461	7,756	20	63.02785831	6	18.90835749	6	18.90835749	
Clay	2019	7,654	39.19519206	9	117.5855762	714	9,328	3	39.19519206	1	13.06506402	NA	#VALUE!	
Cocke	2019	35,552	56.25562556	43	120.949595	3,002	8,444	18	50.63006301	7	19.68946895	15	42.19171917	
Coffee	2019	55,209	34.41467877	66	119.5457262	4,851	8,787	38	68.82935753	45	81.50844971	127	230.0349581	
Crocket	2019	14,399	20.83478019	16	111.1188277	1,620	11,251	1	6.944926731	7	48.61448712	1	6.944926731	
Cumberland	2019	59,216	27.0197244	69	116.5225615	5,013	8,466	42	70.92677655	18	30.39718995	20	33.7746555	
Davidson	2019	687,488	16.7275647	407	59.20103333	73,272	10,658	642	93.38344815	563	81.89233848	2,327	338.4786353	
Decatur	2019	11,686	42.78623995	19	162.5877118	1,084	9,276	5	42.78623995	5	42.78623995	11	94.12972788	
Dekalb	2019	19,847	20.15417947	21	105.8094422	2,007	10,112	8	40.30835895	4	20.15417947	10	50.38544868	
Dickson	2019	52,680	24.67729689	70	132.8777525	4,878	9,260	19	36.06681853	38	72.13363705	55	104.4039484	
Dyer	2019	37,416	21.38122728	40	106.9061364	3,029	8,095	17	45.43510798	21	56.12572162	20	53.45306821	
Fayette	2019	40,164	27.38771039	38	94.61209043	2,904	7,230	15	37.3468778	12	29.87750224	4	9.959167414	

Outcome Part 2: Interactive Web App (Shiny App)

TN Public Health Data

Chart | Map

Single or multiple counties

Within counties

Choose percent or gross variables

Percent

Choose a county

Rutherford

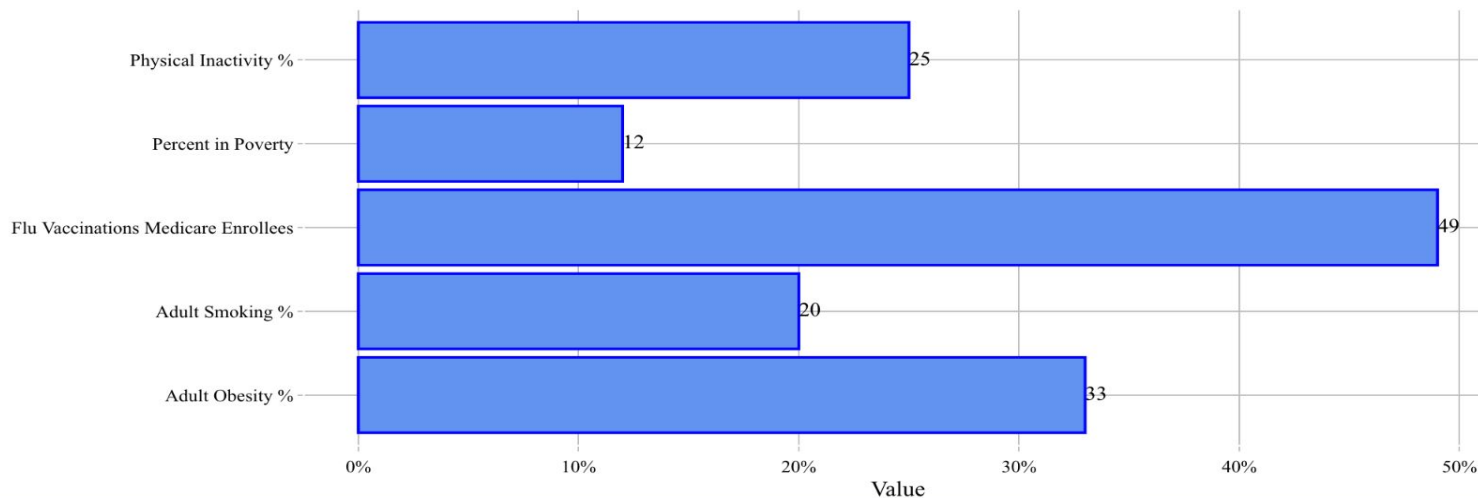**Choose a variable to plot**

Adult_Smoking %
Adult_Obesity %
Flu_Vaccinations_Medicare_Enrollee
Physical Inactivity %
Percent_in_Poverty

Choose a year to plot

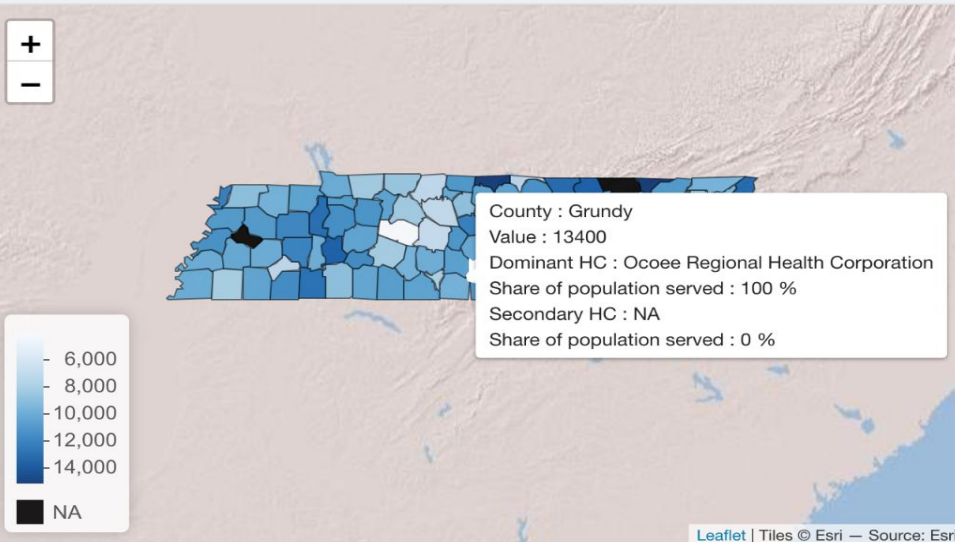2019

Compare county health

Horizontal bar chart showing values by category:
- Physical Inactivity %: 25
- Percent in Poverty: 12
- Flu Vaccinations Medicare Enrollees: 49
- Adult Smoking %: 20
- Adult Obesity %: 33

X-axis: Value (0% to 50%)

TN Public Health Data

☰

Data_Portal

FQHC

About

Chart   Map

Choose a variable to plot

Premature Deaths   ▼

Choose a year to plot

2019   ▼

County : Grundy
Value : 13400
Dominant HC : Ocoee Regional Health Corporation
Share of population served : 100 %
Secondary HC : NA
Share of population served : 0 %

6,000
8,000
10,000
12,000
14,000
NA

TN Public Health Data

Data_Portal

FQHC

About

Choose a health center

CHATTANOOGA-HAMILTON COUNTY HEALTH DEPARTMENT

CHEROKEE HEALTH SYSTEMS

CHOTA COMMUNITY HEALTH SERVICES

CHRIST COMMUNITY HEALTH SERVICES, INC.

CITIZENS OF LAKE COUNTY FOR HEALTH

Choose a type of variable

Services ▲

Demographics
Patient Characteristics
Services
Clinical
Cost

Show 10 entries

Search:

	Health Center	City	State	Medical	Dental	Mental Health	Substance Abuse	Vision	Enabling
1	CHATTANOOGA-HAMILTON COUNTY HEALTH DEPARTMENT	CHATTANOOGA	TN	40.09	7.45	16.73	3	1.69	87.61
2	CHEROKEE HEALTH SYSTEMS	KNOXVILLE	TN	74.28	4.33	43.17	7.88		16.8
3	CHOTA COMMUNITY HEALTH SERVICES	VONORE	TN	97.93	0	6.33	0	0	
4	CHRIST COMMUNITY HEALTH SERVICES, INC.	MEMPHIS	TN	85.31	23.02	7.51	0	0	4.04
5	CITIZENS OF LAKE COUNTY FOR HEALTH	TIPTONVILLE	TN	100	0	1.11	0	0	0
6	COMMUNITY HEALTH OF EAST TENNESSEE	JACKSBORO	TN	98.01	0.4	8.82	0	0	2.05
7	DAYSPRING FAMILY HEALTH CENTER, INC.	JELLICO	TN	95.09	14.03	6.58	1.63		35.91
8	EAST TENNESSEE STATE UNIVERSITY	JOHNSON CITY	TN	89.61	10.36	4.99	1.64		11.38
9	ERLANGER MEDICAL CENTER	CHATTANOOGA	TN	86.35	17.28	0.44			0.81
10	HARDEMAN COUNTY COMMUNITY HEALTH CENTER	BOLIVAR	TN	100	1.59	5.59	3.29	0.52	4.86

Showing 1 to 10 of 29 entries

Previous 1 2 3 Next

How Can This Product Be Utilized?

- Policy-makers and investors can use this to make more informed investments and decisions in relation to healthcare.
- Civically engaged citizens can use this information to help push for the betterment of certain regions of Tennessee that are suffering.
- People who are looking for information about Tennessee's state of public health can find all of the information they need in one location.

Future Explorations in Public Health

- Illustrates the prevalence of an ailment to the community.
  - Incidence rates of diabetes, HIV, etc.

- Determining what a county or region needs in terms of healthcare or public health.
  - Is vaccination outreach and distribution being adequately utilized? etc.

- Analyzing if those in rural areas have immediate access to services such as mental health physicians, emergency care, and other healthcare resources.

Future Explorations in Public Health

- Aid in determining if FQHCs, or medical clinics alike in nature are properly serving their respective populations.

  - Is proper outreach being utilized to make sure as many individuals are aware of services, or receiving the services?

- Analyze if certain activities such as smoking or alcohol drinking is more prevalent in certain areas to determine need for regulation or programs that help with addiction.
  - Many deaths can be related to both activities causing a decrease in a quality of life or life expectancy.

- Help analyze demographics and why regions may be experiencing different degrees of healthcare.

- And so much more...

Thank you!