

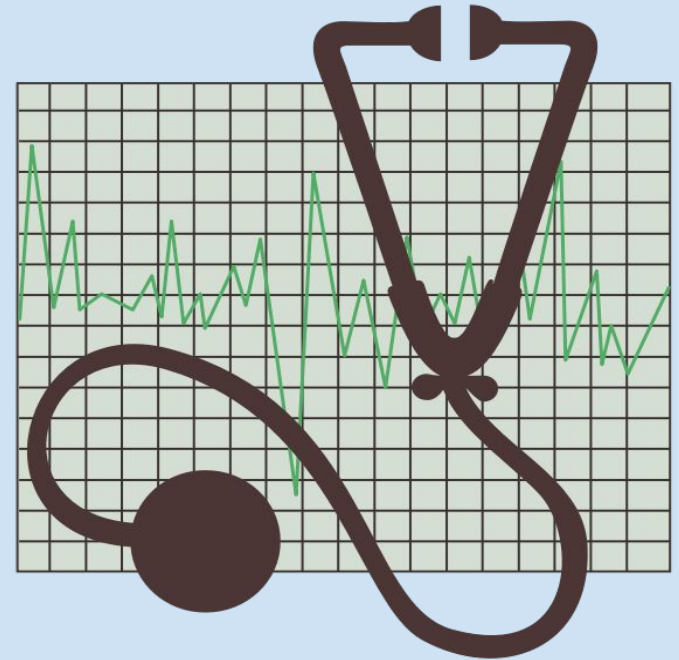
Public Health

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What is the Problem and Why is it Important?

- Some counties in Tennessee are highly underserved due to poor performance by current healthcare facilities such as hospitals, Federally Qualified Health Centers (FQHCs), and medical clinics.
- Wide range of TN health-related information is dispersed across the internet.
- Stakeholders need a reliable resource to analyze those disparities.





Summary Of The Project

3 subprojects:

1. Aggregate Tennessee's general public health information by county into a scalable framework to see correlations and trends.
(can be expanded on in future DataLab iterations)

2. Analyze low-income penetration by FQHCs and Look Alikes (LALs).

3. Analyze the quality of and types of services that different nonprofits and FQHCs provide in various counties.



Partners

- The South Cumberland Health Network, represented by Dr. James Peterman
- Stakeholders:
 - Policy-makers
 - Investors
 - Healthcare Professionals
 - Patients
 - Tennessee's civically engaged citizens





Tackling the Problem

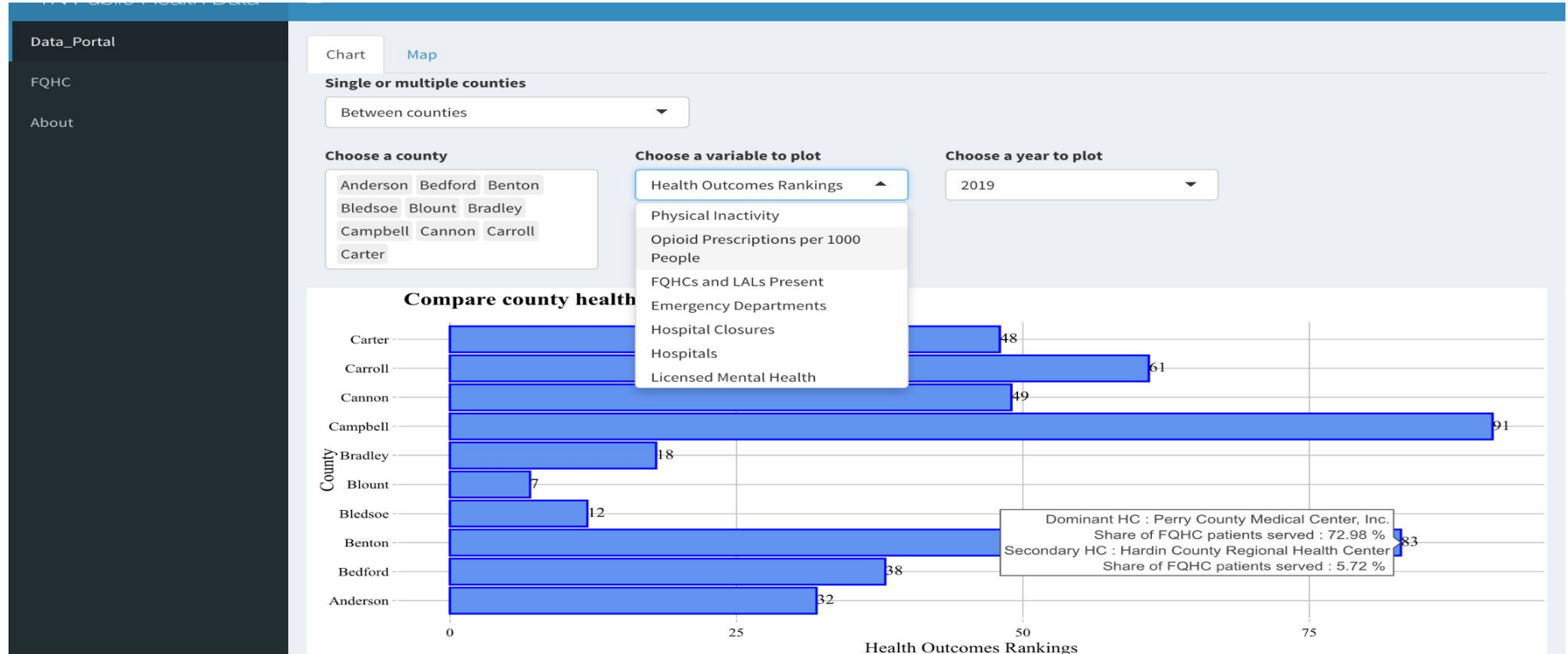
1. Collected health - related data from a plethora of reliable resources.
2. Consolidated the data into a database.
3. Sorted the information and analyzed trends and correlations.
4. Created an accessible interactive web application (Shiny)



Outcome Part 1 : Database

County	Year	Total_Population	Alcohol_impaired_Driving_Deaths_per_1000_people	Driving_Deaths	Driving_Deaths_per_1000_people	Uninsured	Uninsured_people	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_Vaccine_Rate
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)





Data_Portal

FQHC

About

Chart

Map

Single or multiple counties

Within counties

Choose percent or gross variables

Percent

Choose a county

Rutherford

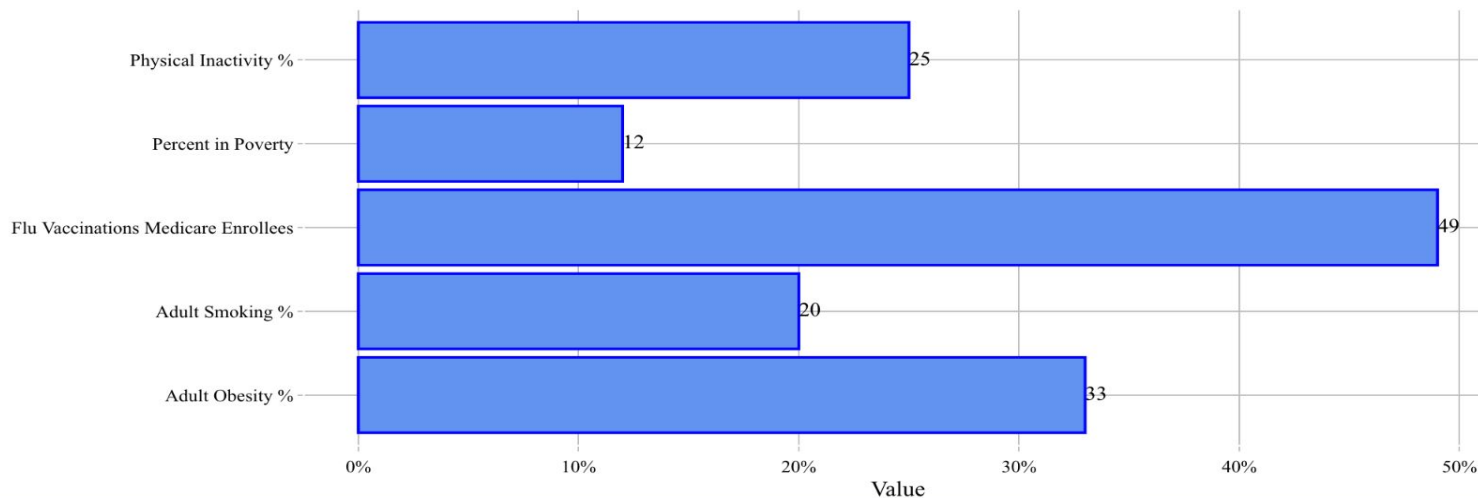
Choose a variable to plot

- Adult_Smoking %
- Adult_Obesity %
- Flu_Vaccinations_Medicare_Enrollees
- Physical Inactivity %
- Percent_in_Poverty

Choose a year to plot

2019

Compare county health





Data_Portal

FQHC

About

Chart

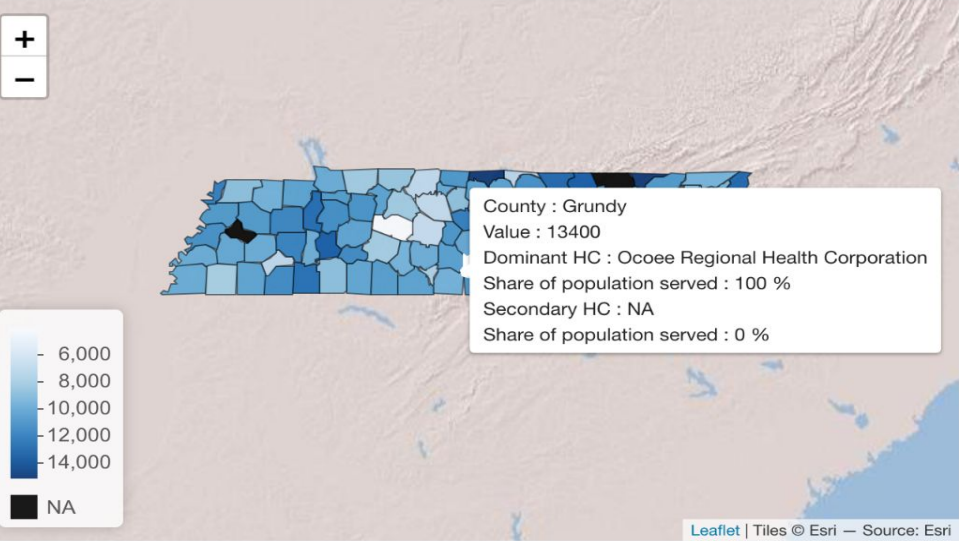
Map

Choose a variable to plot

Premature Deaths

Choose a year to plot

2019



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

Show 10 entries

Choose a type of variable

Services

Demographics

Patient Characteristics

Services

Clinical

Cost

Search:

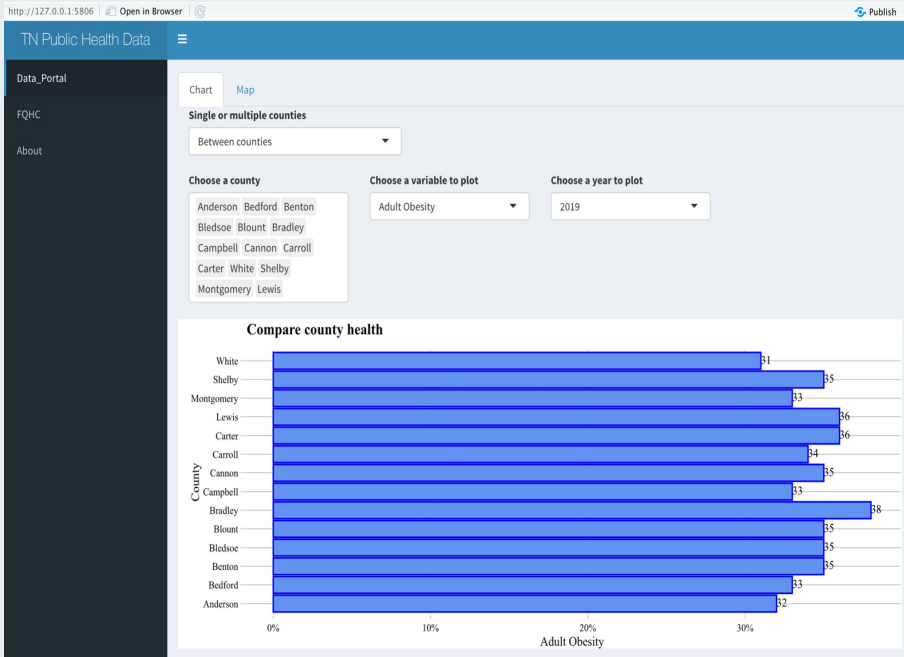
	Health Center	City	State	Medical	Dental	Mental Health	Substance Abuse	Vision	Enabling
1	CHATTANOOGA-HAMILTON COUNTY HEALTH DEPARTMENT	CHATTANOOGA	TN	40.09	7.45	16.73	3	1.69	87.61
2	CHEROKEE HEALTH SYSTEMS	KNOXVILLE	TN	74.28	4.33	43.17	7.88		16.8
3	CHOTA COMMUNITY HEALTH SERVICES	VONORE	TN	97.93	0	6.33	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.	JELICO	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

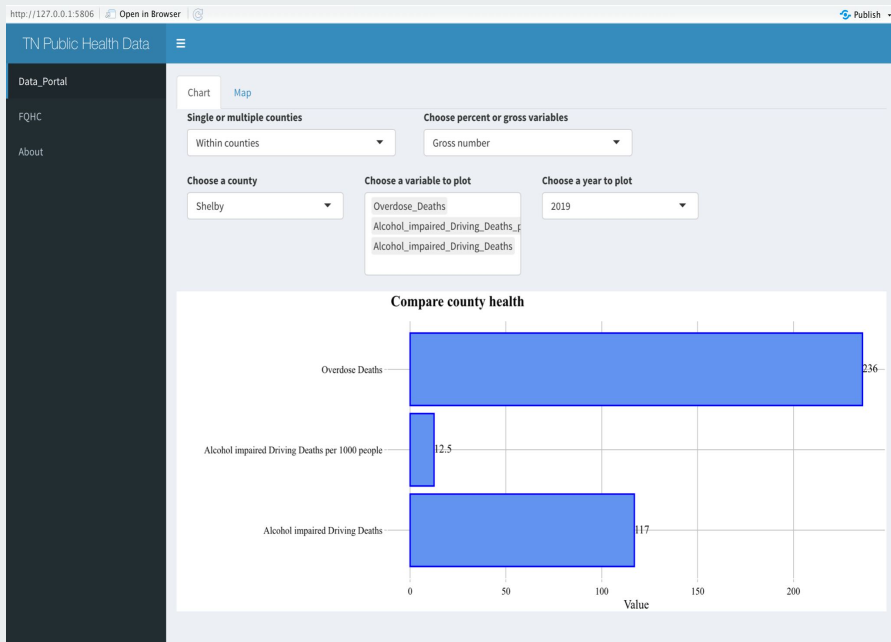
Explorations in Public Health



- Illustrate the prevalence of an ailment to the community.
 - STDs, obesity, HIV, etc.
- Determine what a county or region needs in terms of healthcare or public health.
 - Are vaccines adequately distributed?
- Determine if FQHCs, or medical clinics in nature are properly serving their respective populations.
 - Are populations aware of the services offered in their nearby clinics?



Explorations in Public Health



- Are activities such as drug use or alcohol drinking more prevalent in certain areas?
 - Determine need for regulation or programs that help with addiction.
- Analyze demographics and why regions may be experiencing different degrees of healthcare.
 - Race
 - Percent of Population in Poverty
- And More...



Thank you

Thank you again to our partners and we hope our project can be of great use in your future health endeavors.

Please feel free to meet with us for questions and to explore our interactive website!

