




**EY Impact**

June 2024

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The better the question. The better the answer.  
The better the world works.



**EY**  
Building a better  
working world

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## Introductions


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**Nooj Bains**, *Data Analytics Manager, EY*

Nooj Bains is a Manager in the Government and Public Sector practice of Ernst & Young, LLP, currently based in the DC area out of the Tysons, VA office. Nooj has have over 7 years of client experience predominantly serving large Federal accounts such as DHS, DOD, and DOJ. As of April 2024, Nooj took over as Product Manager of EY Impact, a new solution focused on helping states optimize health outcomes for their populations using advanced analytics and generative AI.

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## EY Impact

**1** Review your community's progress and compare against similar localities to determine areas of greatest need

**2** Formulate relevant action plans using database of evidence-based intervention strategies

**3** Identify available grant funding to fund these initiatives

**4** Use Generative AI to draft persuasive, evidence-based grant applications quickly and effectively

**What are the top opportunities?**

The biggest opportunity for a county to increase health outcomes is to focus on health factors where it is underperforming peers. Identify areas and increase capacity by focusing on the underperforming health factors in these underperforming counties.

This left section below shows the various health factors in **Wayland** that have opportunities for improvement based on their absolute 100-year average. The color indicates the proportion of the overall opportunity that health factor represents. The larger the percentage, the greater the need. Selecting a health factor will display the counties within **Wayland** that have the opportunities for improvement within that factor.

The sliders across the top of the chart allow you to select which dataset to use for comparison, whether to adjust for population, and to turn the health factor weighting on or off. Clicking on a bar will take you to that county's view with all of its health factor details.

**Opportunities for Improvement**

Number of reported violence cases (adjusted per 100,000 population)

**9.43%** of opportunity

Number of reported violence cases (adjusted per 100,000 population)

**7.78%** of opportunity

Number of reported violence cases (adjusted per 100,000 population)

**7.51%** of opportunity

Number of reported violence cases (adjusted per 100,000 population)

**6.73%** of opportunity

**Demographic Disparity for Homicides per 100K Population**

**Adult smoking**

Percentage of adults who are current smokers (age-adjusted).

**Smoke-free policies for indoor areas**

Evidence being Scientifically supported

Implement private sector rules or public sector regulations that prohibit smoking indoors or restrict it to designated, off-premise areas and resources.

**Statewide comprehensive tobacco programs**

Evidence being Scientifically supported

Coordinate state and community-level cessation and prevention interventions and provide information on the dangers and economic strategies.

**Tobacco cessation therapy affordability**

Evidence being Scientifically supported

Reduce patients' out-of-pocket costs for tobacco cessation therapies such as nicotine replacement therapy (NRT) and varenicline.

**Tobacco quitlines**

Evidence being Scientifically supported

Deliver phone-based counseling to tobacco users who want to quit, usually with follow-up calls proactively scheduled at the user's request.

**Explore Grant Opportunities**

Using insight gained from health outcomes and disparity information about greatest areas of opportunity, we've qualified CDC grants that match with community needs... and therefore are high-priority. Download a fact sheet that summarizes locally or State or County opportunities and savings in health factor or overall.

**Grant Opportunities**

Customize your grant search based on existing agencies and community programs and/or areas of opportunity. Once you are ready to grant itself, you will have the option to generate the strongest applications based on your own internal ratings, weighted and/or customized opportunities, and eligibility.

**99-19-0327**

**Assessable Institutions and Behavior**

Level: Medium | Award Floor: \$675,000 | Award Ceiling: \$12,000,000 | Period Start: 06/01/2023 | Closing Date: 08/15/2023

**70817204750801**

**Domestic Violence Rights and Accountability Act**

Level: Medium | Award Floor: \$675,000 | Award Ceiling: \$12,000,000 | Period Start: 09/01/2023 | Closing Date: 03/28/2024

**PA18-0187**

**Security and Preparedness**

Level: Low | Award Floor: \$12,000,000 | Award Ceiling: \$12,000,000 | Period Start: 04/15/2023 | Closing Date: 12/15/2023

[Your Name]  
[Your Title]  
(State of Tennessee Health Department)

**Executive Summary**

The State of Tennessee Health Department recognizes the urgent need to address adult smoking in the state. Tennessee has a high smoking rate of 24.76%, compared to the national average of 20.42%. This places Tennessee as the 9th worst state for adult smoking. Out of the 95 counties in Tennessee, 88 have higher smoking rates than their CDC peers, indicating a widespread issue. However, there is potential for improvement, with a 6.55% opportunity to improve Tennessee's health ranking. While there is minimal disparity geographically, Lake County has a significantly higher smoking rate of 30.96%.

Smoking has profound consequences, leading to preventable diseases and placing a burden on healthcare and the economy. To combat this issue, evidence-based strategies and programs are necessary. Coordinating state and community-level interventions, implementing minimum legal tobacco age laws, and utilizing technology-based support can be effective. Phone-based counseling and text or video messages have shown promising results in increasing quit rates, especially for individuals facing barriers to traditional cessation services.

Addressing adult smoking in Tennessee is crucial for improving overall health and well-being. By implementing evidence-based strategies, such as coordinated interventions, MTA laws, and technology-based support, significant progress can be made in reducing smoking rates and improving community health outcomes. The State of Tennessee Health Department seeks funding through the Pathway to Independence Award in Tobacco Regulatory Research to support their efforts in tobacco control and prevention.

**Background**

**Background Introduction**

**SECTION: Importance of Addressing Adult Smoking in the State of Tennessee**

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## EY Impact Exposition: Concept To Execution

Why we created EY Impact - addressing the "Fantasy Equation"

**What is the optimal balance of investment ...**

(e.g., dollars, time, policies)

**in the multiple determinants of health ...**

(e.g., behavior, environment, socioeconomic status, medical care)

**that will optimize health outcomes and inequities at the population level?**

(e.g., improve health outcomes and increase health equity)

The EY Impact Solution was created to identify where health officials should focus to optimize health outcomes and equity.

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## EY Impact Exposition: Concept To Execution

Why we created EY Impact - what we hope EY Impact can do for your agency

**EY IMPACT** is an end-to-end platform that uses public data to enable policy and programming and identify new funding sources. Impact enables states to address multiple domains of population needs to improve outcomes and minimize disparities with county level insights. The modules to the right can be accessed by users in the EY Impact tool:

### Research Open Grants

- Improved ability to identify open grants that map directly to Factors and Health Outcomes
- Utilizes needs assessment findings to identify grants that are most applicable to needs
- Assess grants based on peer ranking data, evaluating ability to pursue grant opportunities
- Aggregates relevant grants; prioritized by impact to state/ community. Analysis of current versus potential funding from grants

### Programs and Strategies

- Continuous evaluation and training creates the blueprint to successful grant writing
- Transparent monitoring capabilities; clear progress tracking creates the ability to make meaningful programmatic updates
- Establish accountability procedures to create the blueprint for successful grant writing
- Provide document management system to ensure records are available for reviews.

### Grant Application Development

- Generative AI develops grant application with user inputs to facilitate process
- Generative AI and Large Language model aggregates data deemed relevant to grant listing
- Defines objectives of the grant, articulating intended outcomes. GAI/LLM combine model intelligence with user input to create narrative
- User customizes portions of grant response, allowing for a more tailored response

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## EY Impact Exposition: Concept To Execution

Why we created EY Impact - what we hope EY Impact can do for your agency

### Behavioral Health Data Set

The National Survey on Drug Use and Health (NSDUH), conducted annually by the Substance Abuse and Mental Health Services Administration (SAMHSA), provides nationally representative data on the use of tobacco, alcohol, and drugs; substance use disorders; mental health issues; and receipt of substance use and mental health treatment among the civilian, noninstitutionalized population aged 12 or older in the United States.

### Public Health Data Set

A consolidated dataset using public data provided to the CDC and other federal agencies (e.g., United States Census Bureau, United States Bureau of Labor and Statistics, et al.; full list in Supplemental Table) was developed to apply multiple statistical regression models and identify the independent weights for thirty (30) health factors to five (5) health outcomes across 3,143 counties. We used Linear, Linear with regularization (Ridge and Lasso), and Random Forest regression methodologies to minimize collinearity and establish independent factor weights.



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# EY Impact Exposition: Concept To Execution

Why we created EY Impact - what we hope EY Impact can do for your agency

Drug Use and Perceived Risk		Alcohol	
<ul style="list-style-type: none"> <li>• Illicit Drug Use in the Past Month</li> </ul>	<ul style="list-style-type: none"> <li>• Perceptions of Great Risk from using Cocaine Once a Month</li> </ul>	<ul style="list-style-type: none"> <li>• Alcohol Use in the Past Month</li> </ul>	<ul style="list-style-type: none"> <li>• Binge Alcohol Use in the Past Month</li> </ul>
<ul style="list-style-type: none"> <li>• Marijuana Use in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Heroin Use in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Alcohol Use, Binge Alcohol Use in the Past Month, and Perceptions of Great Risk from Having Five or More Drinks of an Alcoholic Beverage Once or Twice a Week (among people aged 12 to 20)</li> </ul>	<ul style="list-style-type: none"> <li>• Perceptions of Great Risk from Having Five or More Drinks of an Alcoholic Beverage Once or Twice a Week</li> </ul>
<ul style="list-style-type: none"> <li>• Marijuana Use in the Past Month</li> </ul>	<ul style="list-style-type: none"> <li>• Perceptions of Great Risk from Trying Heroin Once or Twice</li> </ul>	<h3>Suicidality</h3>	
<ul style="list-style-type: none"> <li>• Perceptions of Great Risk from Smoking Marijuana Once a Month</li> </ul>	<ul style="list-style-type: none"> <li>• Hallucinogen Use in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Had Serious Thoughts of Suicide in the Past Year</li> </ul>	
<ul style="list-style-type: none"> <li>• First Use of Marijuana in the Past Year (among those at risk for initiation)</li> </ul>	<ul style="list-style-type: none"> <li>• Methamphetamine Use in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Made Any Suicide Plans in the Past Year</li> </ul>	
<ul style="list-style-type: none"> <li>• Illicit Drug Use other than Marijuana in the Past Month</li> </ul>	<ul style="list-style-type: none"> <li>• Prescription Pain Reliever Misuse in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Attempted Suicide in the Past Year</li> </ul>	
<ul style="list-style-type: none"> <li>• Cocaine Use in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Opioid Misuse in the Past Year</li> </ul>	<h3>Substance Use Treatment</h3>	
		<ul style="list-style-type: none"> <li>• Received Substance Use Treatment in the Past Year</li> </ul>	
		<ul style="list-style-type: none"> <li>• Classified as Needing Substance Use Treatment in the Past Year</li> </ul>	
		<ul style="list-style-type: none"> <li>• Did Not Receive Substance Use Treatment in the Past Year among those Classified as Needing Substance Use Treatment</li> </ul>	



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# EY Impact Exposition: Concept To Execution

Why we created EY Impact - what we hope EY Impact can do for your agency

Substance Use Disorders		Mental Illness	
<ul style="list-style-type: none"> <li>• Substance Use Disorder in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Drug Use Disorder in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Any Mental Illness in the Past Year</li> </ul>	
<ul style="list-style-type: none"> <li>• Alcohol Use Disorder in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Pain Reliever Use Disorder in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Serious Mental Illness In the Past Year</li> </ul>	
<ul style="list-style-type: none"> <li>• Alcohol Use Disorder in the Past Year (among people aged 12 to 20)</li> </ul>	<ul style="list-style-type: none"> <li>• Opioid Use Disorder in the Past Year</li> </ul>	<ul style="list-style-type: none"> <li>• Major Depressive Episode in the Past Year</li> </ul>	
		<ul style="list-style-type: none"> <li>• Received Mental Health Treatment in the Past Year</li> </ul>	
		<h3>Tobacco</h3>	
		<ul style="list-style-type: none"> <li>• Tobacco Use in the Past Month</li> </ul>	
		<ul style="list-style-type: none"> <li>• Cigarette Use in the Past Month</li> </ul>	
		<ul style="list-style-type: none"> <li>• Perceptions of Great Risk from Smoking One or More Packs of Cigarettes per Day</li> </ul>	



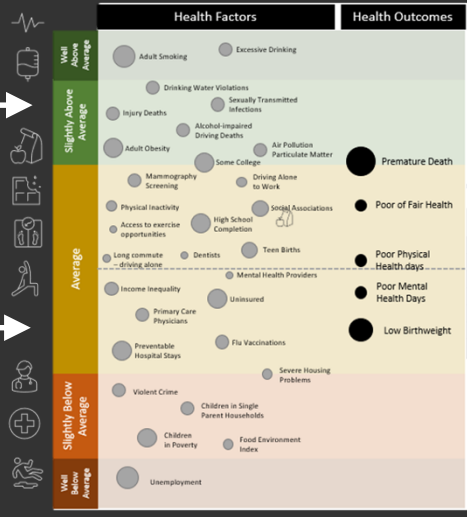
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# EY Impact Exposition: Concept To Execution

How we created EY Impact

EY clustered all 3,143 U.S. census tracts into "peer" groups to allow "like-to-like" comparisons.

Using publicly available data on health factors, compare the performance of any U.S. county / census tract against its "peer group"



Health Factors represent the context of people's lives that determine their health.

Health Outcomes are the aggregation of Health Factors.

Health factors where a county is UNDERPERFORMING their peers represent the biggest opportunities for improvement in health outcomes.

Similarly, States can increase equity by focusing on the underperforming health factors in their 1/3<sup>rd</sup> most vulnerable counties.



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## Comparative Analytics Overview – Community Health Status Indicators (CHSI)

Comparative analytics is the process of comparing an organization's performance metrics, operations, or processes against those of other organizations, particularly the best performers or industry leaders. This can help identify gaps, determine best practices, set targets, and guide strategic decision-making.

The Community Health Status Indicators web application (CHSI) produces health profiles for each county in the United States. Since its first release in 2000, CHSI has provided peer county groupings that allow explicit comparisons among counties nationwide to assess how they perform on health indicators relative to their peers.

The Centers for Disease Control and Prevention (CDC) re-launched the CHSI web application in 2015 with an updated set of indicators, and a new population health framework that was adapted from the framework used by County Health Rankings & Roadmaps. Updated peer groupings were needed to reflect the new framework and more recent data describing county characteristics.



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## Comparative Analytics Overview – County Level Variables

Population size	Receipt of government financial assistance*	Median home value	Percent owner-occupied housing units
Percent foreign born	Population density	Overall poverty	Unemployment
Median household income	Single parent households*	Percent children	Sex ratio
Population growth	Gini Index of Income Inequality	Elderly poverty	Housing stress*
Percent high school graduates	Population mobility	Percent elderly	

Peer groups were defined using 19 county-level variables. These variables include demographics and social and economic determinants of health. Direct measures of health were not included (so that a dependent health outcome variable would not drive the peer grouping). County-level data were extracted for all 3,143 counties from the Census 2012 QuickFacts File and the American Community Survey (ACS) 2007-2011 five-year estimates tables. Three new variables were created from ACS variables (identified with \*).

All 3,143 counties were stratified by 2006 National Center for Health Statistics urban-rural codes, and six separate cluster analyses were run. Eighty-nine peer county groupings were created, with an average of 35 counties and at least three states per group.