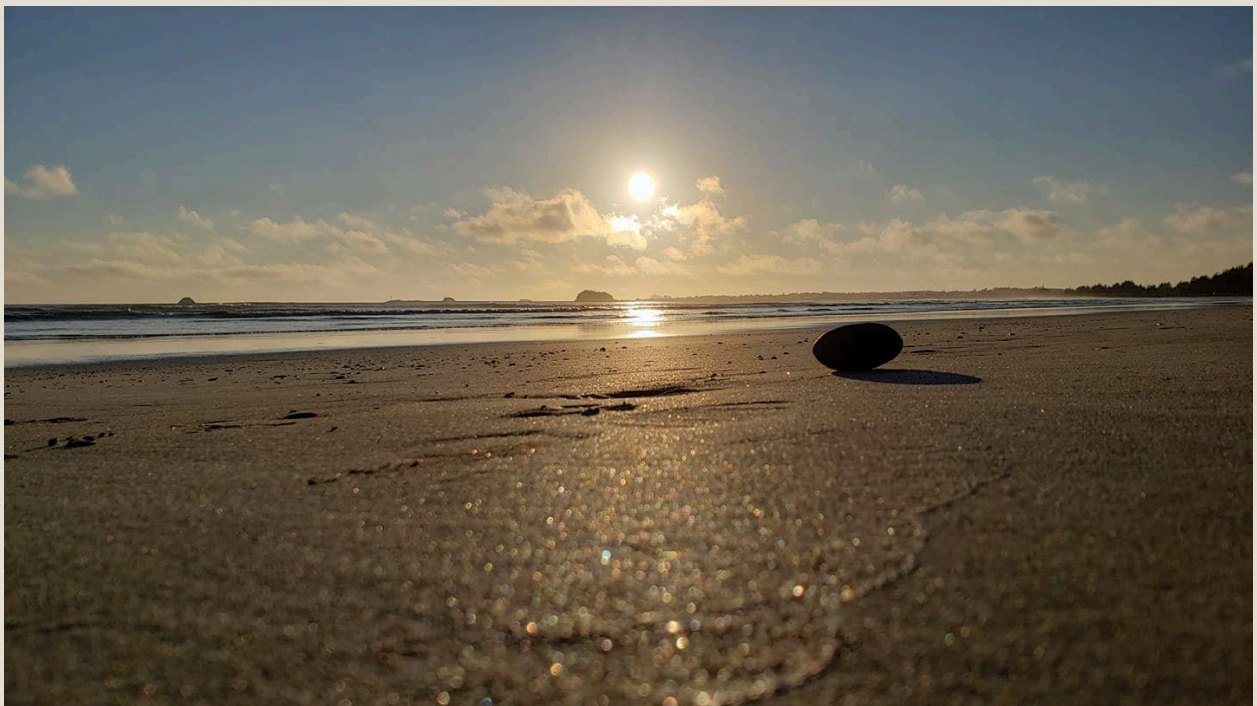


DEL NORTE COUNTY 2024 COMMUNITY HEALTH ASSESSMENT



Prepared By:

California Center for Rural Policy at Cal Poly Humboldt
&
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September 2024



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The California Center for Rural Policy at Cal Poly, Humboldt is a research and policy center committed to informing policy, building community, and promoting the health and wellbeing of rural people and environments.

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Executive Summary

The Del Norte County Community Health Assessment (CHA) presents a community-centered overview of the health conditions and opportunities for improvement in Del Norte County.

The objective of this Community Health Assessment (CHA) is to thoroughly examine and understand the health landscape of Del Norte County, focusing on identifying the most pressing health challenges faced by the community, as well as the at-risk populations that are most vulnerable to these challenges. By pinpointing key health-supporting resources and effective strategies, this assessment aims to lay a strong foundation for informed decision-making in the next phase of health planning, which will include development of the Community Health Improvement Plan (CHIP). The CHIP will be developed by partners across different sectors, thus serving as a strategic guide for local health initiatives by community partners as well as by public health, helping ensure that interventions are both targeted and effective in addressing the unique health needs of the county's residents.

Health disparities are prevalent in Del Norte County and will likely be a prominent challenge for local governments and agencies in the coming years. While some health disparities may be apparent between subpopulations of Del Norte residents, self-report data suggest health challenges are widespread, at least across age, gender, and race/ethnicity.¹ Del Norte County residents experience higher occurrences of premature death, disability, poor health status, and higher prevalence of behavioral risk factors than statewide rates. Nonetheless, these disparities may not differ considerably from other comparatively rural California counties. With this rural framework in mind, the current report will identify high-impact health determinants that contribute to health disparities between Del Norte County and the state of California.

Multiple data sources suggest these disparities in health outcomes may stem from **tobacco use, substance use, challenges with mental health, limitations in income, and depleted healthcare systems. Rates of Hepatitis C in Del Norte County are the highest in the state,** for example. Health disparities also likely contribute to higher premature death rates in the county relative to the statewide trend, which may especially affect American Indian/Alaska Native (AIAN) residents. **Death from drug use, including opioids and fentanyl, are higher in Del Norte relative to the state as well as comparatively rural counties; these rates are also disproportionately higher among AIAN residents.**

Oral health is likely a particular challenge for Del Norte residents, regardless of age, gender, or race/ethnicity, though overall health is a challenge as well given the fact the county is a **designated healthcare provider shortage area.** With an aging population, providing adequate

¹ Based on results from the 2024 Del Norte CHA Community Survey (DNCS).

healthcare options for residents will be a considerable challenge for the Del Norte County Health Care System as well as for County officials.

Social factors related to adverse health outcomes are particularly problematic for the county. Child abuse, domestic violence, adverse childhood experiences, and felony arrests are more prevalent in Del Norte County than the state or even other comparatively rural counties. These social factors, based on empirical data collected for this report, also seem to affect residents somewhat equally across age, gender, and race/ethnicity. Addressing these social factors issues may be a top priority for county officials as well as the future CHIP partnership and plan.

Poverty rates are somewhat higher in Del Norte County compared to the state, though on par with other rural California counties. However, statistically speaking, poverty is not expected to be equally distributed amongst population characteristics, and in addition to poverty being over concentrated in certain population subgroups, the downstream effects of poverty (i.e., such as health outcome disparities) may impact certain residents in particular, such as females, children, people with low education, those who are unemployed, and people of color.

The burden of income limitations may also be borne differently by residents in rural areas. Certain household expenditures, including healthcare and transportation, are higher in rural areas compared to the state overall. Many residents live in remote areas within the county, while provider shortages require residents to travel further distances to meet healthcare needs. This, in turn, likely functions as a barrier to seeking adequate healthcare for lower income and under/uninsured residents.

A critical aspect of this research focus is the recognition that rural areas like Del Norte County have distinct needs, challenges, and population characteristics that diverge sharply from those of more urbanized or less remote regions of the state. In rural health contexts, geographic remoteness plays a significant role in shaping health outcomes, as it introduces unique barriers to care that are not as prevalent in less isolated areas. For instance, the increased travel time required to access healthcare services in remote areas can act as a formidable obstacle, particularly for residents with limited transportation options or those with chronic health conditions that require frequent medical attention.

This remoteness exacerbates existing health disparities, as the physical distance from healthcare providers often results in delayed or foregone care, which can lead to more severe health issues over time. Moreover, the scarcity of healthcare providers and facilities in rural regions further compounds these challenges, making it difficult for residents to receive timely and adequate care. Therefore, the CHA not only aims to identify the immediate health needs of the population but also to explore long-term strategies that can mitigate the impact of these geographic barriers on health outcomes, ultimately contributing to a more equitable and accessible healthcare system for all residents of Del Norte County.

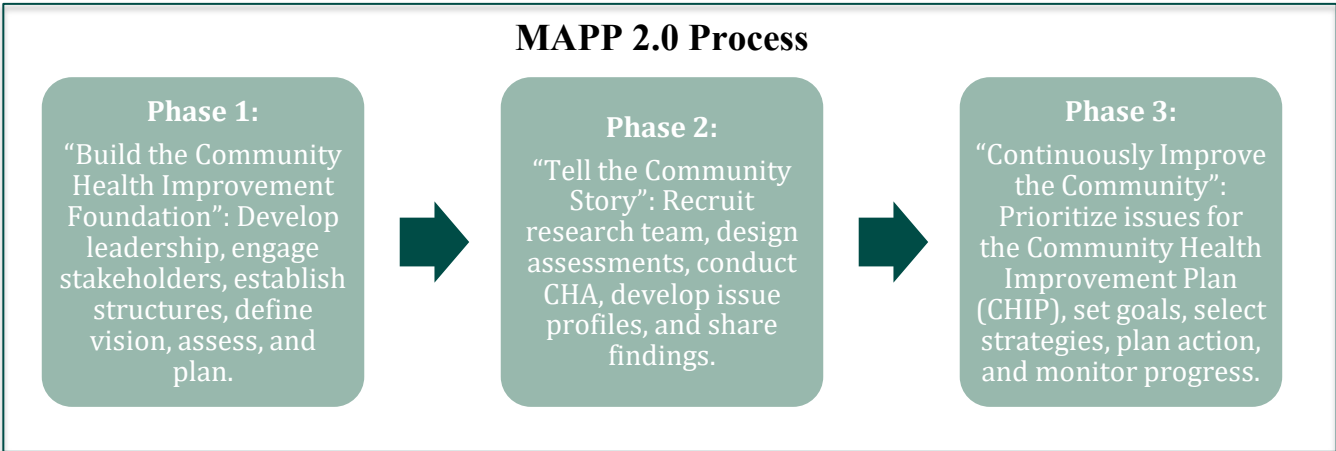
Del Norte County faces public health challenges and disparities, but it also boasts numerous strengths that enhance community well-being. The county's natural beauty and access to outdoor recreational activities promote physical and mental health for residents, while strong social connections and community help reduce isolation and support mental wellness. Del Norte County residents' resiliency and ability to adapt to adversity further bolster the county's strength. Collaborative efforts among local agencies provide a wide range of services and programs, and community partners are motivated to implement new strategies to promote healthy living for all residents, including initiatives focusing on Diversity, Equity, and Inclusion (DEI), healthcare access, education, and food security aim to address health inequities. By building on these strengths and fostering innovation, Del Norte County can foster a healthier and more inclusive environment for all residents.



Section 1. Objectives, Methodology & Data Sources



The Del Norte County Community Health Assessment (CHA) is part of Del Norte’s broader health planning strategy that is composed of three phases (outlined below) informed by the Mobilizing for Action Through Planning & Partnerships (MAPP 2.0) Handbook (National Association of County and City Health Officials [NACCHO], 2023) designed by the National Association of County and City Health Officials (NACCHO). This CHA is part of Phase 2 of the MAPP 2.0 process. It takes guidance from MAPP and is aligned with its overarching objectives to assure “conditions for best health for all people” by “identifying urgent health issues in a community and aligning community resources”. This objective in turn informs the primary research focus of this CHA: to identify key health challenges, at-risk populations, and pinpoint health-supporting resources and strategies to inform the next phase of the health planning strategy which includes the Community Health Improvement Plan (CHIP).



Guiding Questions

The objective of identifying key health challenges, at-risk populations, and local health-supporting resources is addressed through a series of guiding questions. These questions, pursued using the best available secondary and primary data sources, form the structure and focus of the CHA as outlined below.

Table 1.1

Guiding Questions and Report Organization

Q#	Section	Guiding Question
1	Section 3. Health Outcomes	For the population as a whole, which health outcomes in the region are substantially different from statewide trends? Which sub-populations have greater risk for these outcomes?
2	Section 4. Proximate Risk Factors	What risk factors potentially contribute to these outcomes (e.g. substance use)? How do these risk factors compare to state averages? Which sub-populations have greater risk for these factors?
3	Section 5. Economic, Social, Institutional & Environmental Factors	What economic, social, institutional, and environmental factors potentially contribute to these outcomes and factors? Which sub-populations have greater risk for these factors?
4	Section 6. Leveraging Community Strengths and Resources to Improve the Health of the Region	What protective factors (e.g. assets, strengths, resources) in our community support health and/or could be leveraged to improve the health of the region and at-risk populations?

Conceptual Framework

The conceptual framework of this report takes inspiration from the Bay Area Regional Health Inequities Initiative (BARHII) framework, which posits a flow from upstream factors such as social, living environment, and institutional inequities to downstream factors such as health behaviors, diseases, and ultimately mortality rates (BARHII, n.d.).

Figure 1.1

Conceptual Framework



To maintain focus on the most salient health determinants, this report works backwards from these upstream disparities in health outcomes (Guiding Question #1 above), looking first at regional disparities in mortality rates, diseases, and disability. This analysis produces a set of health outcomes where there are substantial and adverse health disparities to provide a focused approach to identify immediate or ‘proximate’ downstream factors contributing to these disparities, such as health behaviors including tobacco use (Guiding Question #2).

Subsequently, the report looks further upstream to identify the institutional, economic, and/or social factors that may contribute to these disparities in proximate risk factors, such as the role of poverty in tobacco use or Adverse Childhood Experiences (ACEs) in substance use (Guiding Question #3). The report also examines the potential health risks from environmental factors, such as lead paint in older housing structures.

By identifying health factors displaying substantial and adverse disparities between Del Norte and the state, the aim of this report is to uncover opportunities for directing focus and allocating resources towards high-priority challenges and at-risk populations. The report concludes with an analysis of community strengths and resources that may form the basis of strategies used in the CHIP (Guiding Question #4).

Methodology, Data Sources & Limitations

Methodology

In addressing questions such as Guiding Questions 1-3, a standard approach to CHAs and reports of this kind is to make comparisons between local statistics and the state average in order to identify adverse regional disparities. This comparison is important, but incomplete. Across a wide range of data sources, California statewide statistics are dominated by urban population centers that reflect conditions distinct from rural areas. Rural area needs, challenges, populations, and data diverge sharply from that of less rural or remote areas of the state. This motivates the need for a comparison that tells us how Del Norte relates to other regions of the state that have similar characteristics, conditions and challenges.

For the purpose of such comparison, we define a non-contiguous region of California as *Rural California*, which includes every county that is at least as rural as Del Norte County. To quantify this, we use the Index of Relative Rurality (IRR) (Waldorf & Kim, 2018). The IRR measures rurality based on four dimensions: population, population density, remoteness, and urbanized area. Table 1.2 below provides IRR for Del Norte County as well as counties that encompass Rural California.

The IRR is preferable to other indicators of rurality for several reasons. First, instead of being a binary or categorical variable, the IRR is a continuous value ranging from 0 (least rural) to 1 (most rural). This allows for more nuanced research into the relationship between different levels of rurality and facilitates comparisons between areas with similar rural characteristics (population size, density, remoteness, and built-up areas). Second, by accounting for both population and remoteness, the IRR captures the impact of isolation from metropolitan resources (e.g., medical services) in addition to population density. In the health context, remoteness is an especially critical factor where travel time is a critical barrier to care.

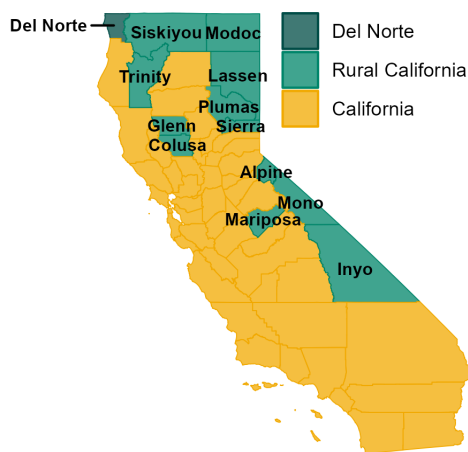
Table 1.2
 2010 IRR Scores for Del Norte and Rural California Counties

‘Rural’ California Counties	IRR
Alpine	0.65
Inyo	0.62
Modoc	0.61
Sierra	0.61
Mono	0.59
Trinity	0.59
Plumas	0.57
Lassen	0.56
Siskiyou	0.56
Mariposa	0.55
Colusa	0.54
Del Norte	0.53
Glenn	0.53

Note. Data sourced from the Index of Relative Rurality (IRR).

By this metric, Alpine County is the most “rural” and Del Norte is tied with Glenn for the 12th most rural county in the state with an IRR of 0.53. Every California county with an IRR of at least 0.53 is included in the Rural California definition for this report (including Del Norte). To construct aggregated statistics, we take a population-weighted average of all Rural California counties where data are available². This dual comparison allows us to determine whether disparities between the regions are typical to rural areas, or if these disparities are more unique to Del Norte.

Figure 1.2
 Del Norte and Rural California



Note. Data sourced from the Index of Relative Rurality (IRR).

² Often, data for extremely small population counties such as Alpine County are not available.

Data Sources

This report draws on a wide range of data sources to pursue the Guiding Questions. A wide array of secondary data sources (listed below) are used to pursue Guiding Questions 1-3 and to help identify at-risk populations. In addition, primary data was collected through a Community Survey, community brainstorming sessions, key informant interviews, and focus groups. The primary data collected helped to inform answers to Guiding Questions 4-5, as well as provide recommendations for the CHIP.

Secondary Data Sources

- U.S. Census Bureau American Community Survey (ACS)
- California Department of Finance (DOF)
- The California Health Information Survey (CHIS) AskCHIS
- The California Health Information Survey (CHIS) AskCHIS Neighborhood Edition
- County Health Rankings & Roadmaps (CHRR)
- U.S. Health Resources & Services Administration (HRSA)
- Center for Disease Control (CDC) PLACES Data
- California School Climate, Health, and Learning Surveys (CalSCHLS)
- Kidsdata.org
- California Department of Public Health (CDPH), County Health Status Profiles
- CDPH, California Community Burden of Disease Engine
- CDPH, Overdose Surveillance Dashboard
- CDPH, Chronic Hepatitis C California Surveillance Report
- California Office of Traffic Safety (OTS)
- UC Berkeley Transportation Injury Mapping System (TIMS)
- CalEnviroScreen 4.0
- Index of Relative Rurality (IRR)
- Partnership Health plan of California (PHC) Annual Data Reports

Key Data Methods and Limitations

- Confidence intervals show the level of uncertainty associated with a statistic. Wider confidence intervals indicate higher uncertainty³. 95% confidence intervals are presented wherever the necessary information is available. Generally, these are illustrated with horizontal bars.

³ A 95% confidence interval can be interpreted as follows: Suppose the true smoking prevalence is 22%. Based on a survey, we estimate the smoking prevalence to be 20%, with a 95% confidence interval ranging from 18% to 22%. This means that if we were to repeat the survey many times, 95% of the calculated confidence intervals would contain the true smoking prevalence of 22%. In other words, we are 95% confident that the true smoking prevalence lies within the range of 18% to 22%.

- Some data points are not shown either because they have been suppressed by the data provider or because of high levels of statistical uncertainty.⁴
- Data generated using statistical modeling (i.e. small area estimation techniques) are denoted as SAE. SAE data use regression techniques to make a best guess predicted value for a variable (such as smoking) based on other available data known to be associated with higher smoking rates, such as poverty. For instance, a region’s smoking prevalence may be predicted based on other available variables associated with smoking such as the poverty rate. SAE data should not be used to measure impacts of local area policy interventions or monitoring continuous improvement in MAPP Phase 3. It is important to highlight AskCHIS Neighborhood Edition and CDC PLACES data are both SAE data. In some cases, data users need to read data documentation or “fine print” to determine whether a data source is SAE data.
- In some cases, Risk Ratios (RR) are used to make comparisons between prevalence of certain conditions between regions. A RR is the ratio of two percentage rates between two regions. For example, roughly 6% of Del Norte 11th graders report cigarette use compared to 2% statewide⁵. This would constitute a RR of 3 (6% compared to 2%). RRs > 1 indicate higher prevalence and RRs < 1 indicate lower prevalence.
- To account for Del Norte's small sample sizes, the California Health Information Survey (CHIS) aggregates its data with a broader seven-county region, which includes Del Norte, Siskiyou, Lassen, Trinity, Modoc, Plumas, and Sierra counties. Consequently, the regionally aggregated data may be influenced by factors and trends that do not necessarily reflect the specific conditions in Del Norte.
- The term ‘significant’ is used deliberately throughout this report to indicate a statistically significant difference.

Del Norte Community Survey Data

The Del Norte Community Survey (DNCS) was developed and administered to identify subpopulations at risk for disadvantageous rates of health outcomes and proximate risk factors in Del Norte County. See Appendix A for a complete list of questions included in the DNCS. Throughout the "Populations at Risk" subsections in this report (within sections 3, 4, 5, and 6), we will consistently reference DNCS survey results to discuss health and risk factors across different demographics.

The DNCS was administered electronically from May 7, 2024, to June 10, 2024, via Del Norte County operated social media sites advertising a DNCS link and QR code. Paper-pencil versions

⁴ Usually because of extremely wide confidence intervals (e.g. a sample proportion that includes 0 or 100%) or because the data provider denotes the estimate as statistically unstable.

⁵ See Section 4.

of the DNCS were also completed during this time by attendees of several county-sponsored community events. A total of 420 surveys were validated and included in all analyses.⁶

Results from the DNCS are disaggregated by three demographic factors: age, gender, and race/ethnicity. Demographic factors were *collapsed* into two or three sub categorical levels, as noted in the table below. This was to ensure simple interpretation of results and to account for limited sample size.⁷ For the same reasons, responses for some survey questions were collapsed as well (e.g., ‘excellent’ and ‘good’ responses were collapsed together to represent ‘excellent/good’ responses). Results from DNCS data are compared to CHRR and CHIS data whenever possible for further interpretation quality.

⁶ A link/QR code to complete the DNCS was offered to individuals via social media, which inadvertently allowed non-Del Norte County residents to complete the survey. Residency was verified by asking for participants’ ZIP codes. Participants who did not provide a Del Norte County ZIP code were not included in analyses for the current report. See Appendix B for a list of Del Norte County ZIP codes DNCS participants reported.

⁷ For example, only three DNCS participants are African American; a sample of three would provide unreliable results.

Interpreting survey data tends to be complex when looking at responses by more than three or four factor levels. The more factor levels, the harder it is to make meaningful, relatively simple data interpretations.

Table 1.3

Consolidation of DNCS Participant Demographic Categories

Initial Demographic Factor		Collapsed Demographic Factor
Age (<i>N</i> = 420) <ul style="list-style-type: none"> • 18-24 (<i>n</i> = 30) • 25-34 (<i>n</i> = 78) • 35-44 (<i>n</i> = 102) • 45-54 (<i>n</i> = 77) • 55-64 (<i>n</i> = 67) • 65+ (<i>n</i> = 66) 	➔	Age (<i>N</i> = 420) <ul style="list-style-type: none"> • 18-34 (<i>n</i> = 108) • 35-54 (<i>n</i> = 179) • 55+ (<i>n</i> = 133)
Gender (<i>N</i> = 414) <ul style="list-style-type: none"> • Female (<i>n</i> = 312) • Male (<i>n</i> = 102) • Other (<i>n</i> = 6) 	➔	Gender (<i>N</i> = 414) <ul style="list-style-type: none"> • Female (<i>n</i> = 312) • Male (<i>n</i> = 102)
Race/Ethnicity (<i>N</i> = 414) <ul style="list-style-type: none"> • African American (<i>n</i> = 3) • American Indian/Alaska Native (<i>n</i> = 33) • Asian (<i>n</i> = 7) • Hispanic/Latino (<i>n</i> = 23) • NHOPI (<i>n</i> = 2) • White (Hispanic origin) (<i>n</i> = 8) • White (non-Hispanic origin) (<i>n</i> = 311) • Two or more races (<i>n</i> = 27) 	➔	Race/Ethnicity (<i>N</i> = 414) <ul style="list-style-type: none"> • White only (<i>n</i> = 103) • Non-White (<i>n</i> = 311)

Note. NHOPI = Native Hawaiian or Other Pacific Islander.

Qualitative Data Collection

Qualitative data were collected through a mix of community meetings, one-on-one interviews, and focus groups. The MAPP 2.0 Community Context Assessment tool was used to facilitate conversations with the Del Norte County Community Health Assessment Steering Committee, as well as the one-on-one interviews with key community partners. The tool provided questions around 3 domains: 1) Community Strengths & Assets, 2) Built Environment, and 3) Forces of Change.

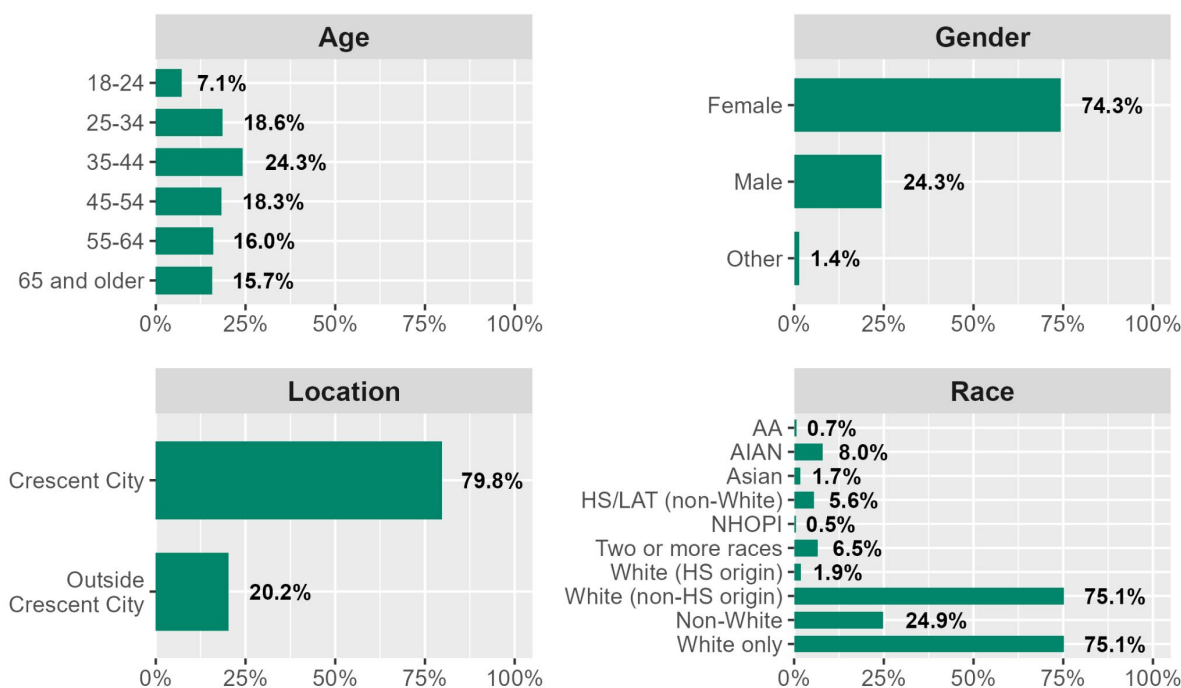
In addition to discussions with community partners, the County of Del Norte DHHS Public Health Branch conducted three focus groups with community members who identify as Native American, are experiencing homelessness, or are on a journey of recovery from substance use disorders. More information on the results of the Community Context Assessment and focus groups are described in Section 6 of this report.

Data Limitations

DNCS results are likely biased and may not be based on a representative sample of Del Norte County residents. A comparison of DNCS data with ACS data for Del Norte County by age, gender, and race/ethnicity reveals misrepresentation of county residents. For instance, only 5.6% of DNCS participants identified as Hispanic/Latino, compared to 20.4% in the most recent ACS estimate, while female participants made up 74.3% of the DNCS sample, significantly higher than the 46.1% reported in the ACS data. Therefore, results from DNCS data—including confidence intervals and all interpretations—may not be generalizable to all Del Norte County residents and should be taken with caution. See Appendix B for more details on the limitations of the DNCS. Initial DNCS participant demographics are provided in the figure below.

Figure 1.3

DNCS Participants Demographics

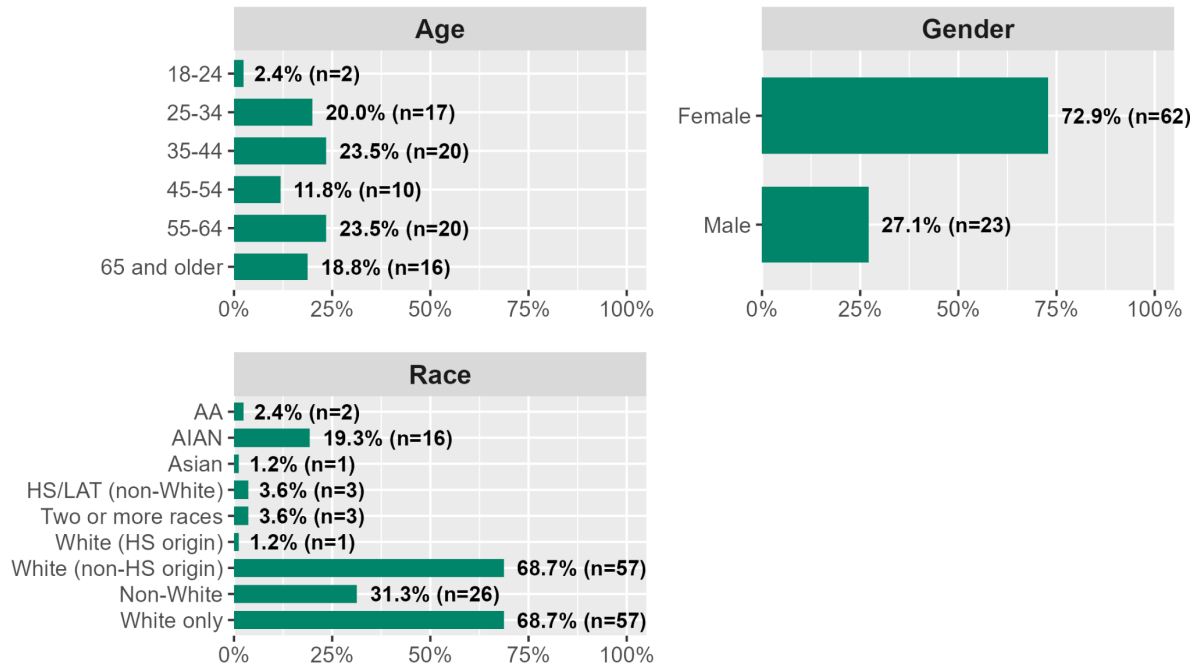


Note. AA = African American, AIAN = American Indian/Alaska Native, HS/LAT = Hispanic/Latino, NHOPI = Native Hawaiian or Other Pacific Islander. ‘White only’ excludes participants who also selected HS/LAT. Results are based on initial demographic categories.

Demographic data are also provided for residents who live outside of Crescent City in Figure 1.4 below. Age, gender, race/ethnicity, and corresponding sample sizes for each of these categories are provided for all subgroups.

Figure 1.4

DNCS Participant Demographics (Only non-Crescent City Residents)



Section 2. The Del Norte Community



The County at a Glance

Del Norte is situated in the far northwest corner of California, about a 6.5-hour drive north from San Francisco, CA. The county is among the 13 most rural and remote counties in California. The total population of the county is 27,462⁸ and the largest population center is in Crescent City with a population of 6,379⁹. It is important to note, however the Crescent City population of 6,379 includes an estimated 1,677 inmates at the Pelican Bay State Prison (PBSP) (California Department of Corrections and Rehabilitation Office of Research, 2024)¹⁰.

Like many rural areas in California, Del Norte has an aging population. Currently, about 40% of households in the county include at least one person aged 65 or older, up from 32% a decade ago. If trends continue, about half of Del Norte households will be directly impacted by the needs of an aging population. The county is designated as a Health Provider Shortage Area (HPSA), making it a significant public health challenge to meet these growing healthcare needs.

As shown below, Del Norte's demographic profile is similar to other rural counties in the state, though it is somewhat influenced by the population at Pelican Bay State Prison (PBSP). Despite this distortion, the data are consistent with other rural counties. The population is predominantly white, non-Hispanic individuals, making up 60.7% of the total population—significantly higher than the statewide proportion of 35.2%. Hispanic or Latino individuals constitute 20.4% of the population, a growing but relatively small share compared to the state population.



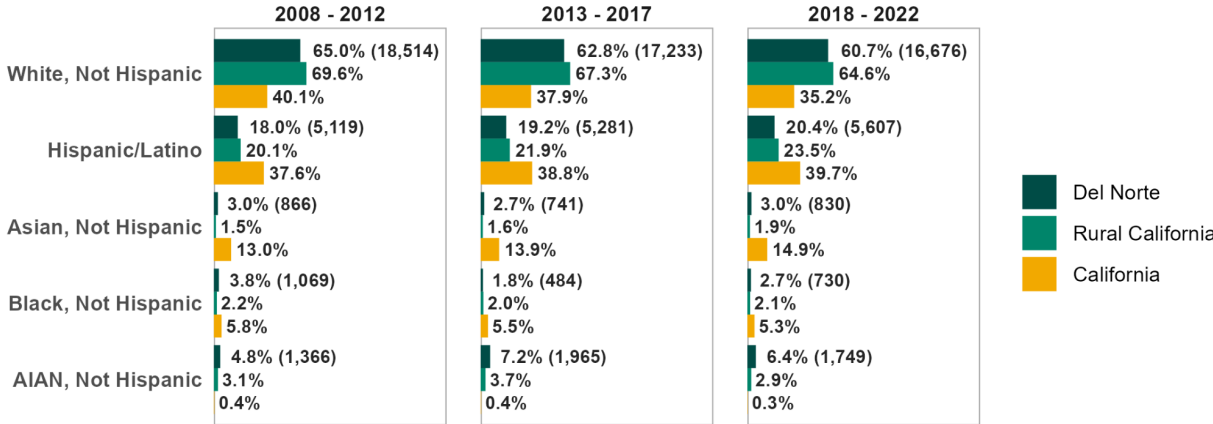
⁸ 2022 5 year ACS estimate.

⁹ Census population statistics for Crescent City and Del Norte County include the Pelican Bay State Prison population. The population of the prison has declined in recent years, and population estimates for the City and County have declined in proportion to these declines.

¹⁰ This prison population has the effect of distorting Crescent City and Del Norte ACS data. For instance, the PBSP has fallen sharply over the last few years from 2,648 (Fiscal Year 2019-20) to 1,524 (FY 2023-24). ACS data indicate the population of Crescent City has declined, but the decline in the prison population accounts for most of this decline.

The county is also the ancestral home to the Tolowa and Yurok people (Crescent City-Del Norte County Chamber of Commerce, 2024) and roughly 1,700 American Indians (about 6% of the population) live in the region, which is higher than the state average and even comparatively rural counties (I.e., Rural California).

Figure 2.1
Race and Ethnicity (2008 - 2022)



Note. Data sourced from ACS. Data are influenced by the Pelican Bay State Prison population.



Community Voices

Community participants of focus groups, surveys, and interviews shared many reasons for why they love the Del Norte County community!

“We live in this remarkable fresh aired community that has so many natural resources that we’re really fortunate... We have such a plethora of opportunities for us to be able to get outdoors.”

“We are surrounded by beauty and natural landscapes that are a huge benefit to living here, we have redwoods, oceans, and rivers that can sustain our mental, physical, spiritual needs. We have small community that cares and has relationships and networks for support.”

Section 3. Health Outcomes



Health Outcomes Guiding Questions: *For the population as a whole, which health outcomes in the region are substantially different from statewide trends? Which sub-populations have greater risk for these outcomes?*

Life Expectancy and Premature Death

Premature death (deaths occurring before age 75) is a fundamental metric that reflects a broad spectrum of health factors, indicating the cumulative influence of wide-ranging health determinants. Disparities in premature death, therefore, serve as a good starting point for uncovering signals of disparities in health determinants between geographies and populations.

Premature death is quantified using the Years of Potential Life Lost (YPLL) measure. This measure sums all years of life lost for descendants younger than age 75. For example, the death of a 40-year-old would constitute 35 YPLL, while the death of a 70-year-old would constitute 5 YPLL. As shown below, premature death in Del Norte County, indicated by YPLL per 100,000 population, is significantly higher than the statewide average and trends higher than comparable rural areas in California. Premature death has increased sharply in recent years, however, the trends is partially obscured by a methodological change in the 2020-2021 data release¹¹. The rising trend in premature death predates the methodology change. Moreover, other mortality indicators explored below strongly indicate the recent acceleration in premature death is not spurious¹².

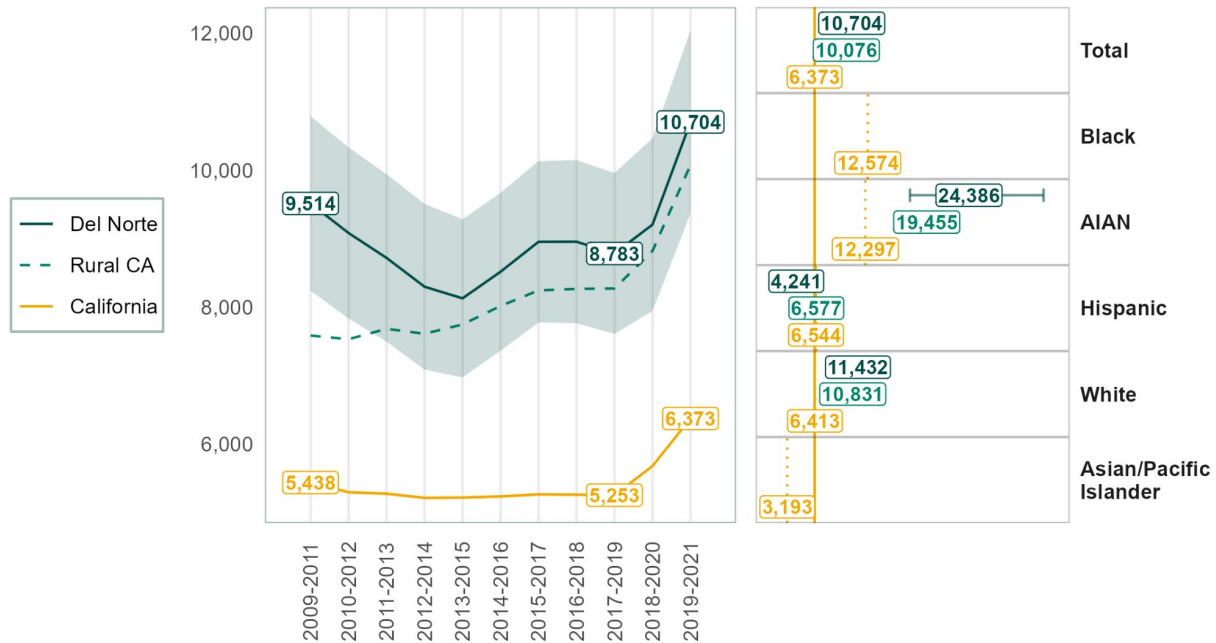
Disaggregated data for Del Norte County are limited, but available information indicates the American Indian/Alaska Native (AIAN) population faces a significantly higher risk of premature death compared to other racial populations. Statewide data (indicated in gold below) also show people of color are generally at greater risk for premature death.

¹¹ CHRR changed their methodology for estimating population for the 2020-2021 data years. They advise using caution when comparing 2019-2021 to previous periods (University of Wisconsin Population Health Institute, 2024a).

¹² California Department of Public Health, County Health Status Profiles data show that Del Norte's age-adjusted "All Cause" mortality rate increased to 944 in 2021-2019 up from 863 in 2018-2016. Statewide age-adjusted all cause mortality increased from 608 to 657 during the same period. These data are further explored below.

Figure 3.1

Premature Death (Years of Potential Life Lost) per 100,000 Population

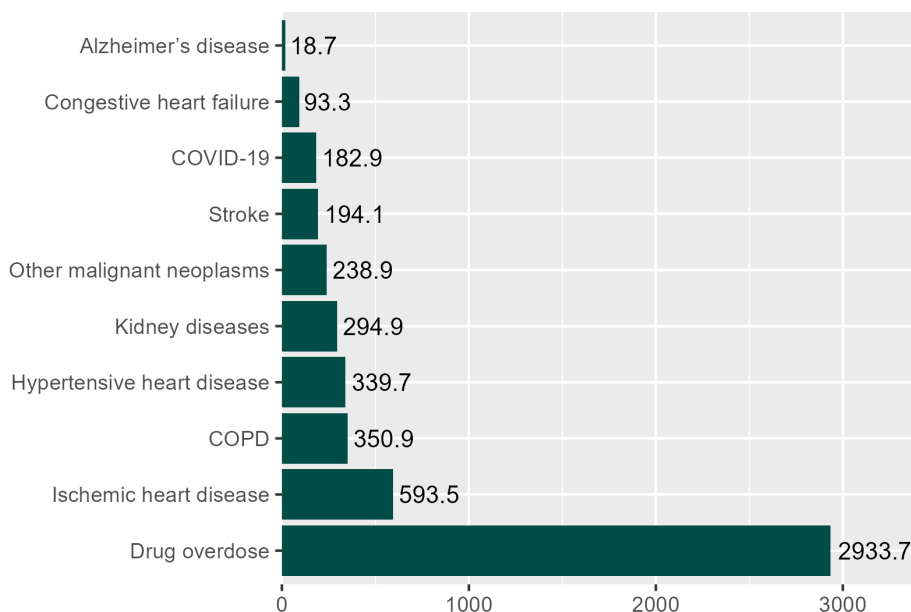


Note. Data sourced from California Health Rankings & Roadmaps. Years of Potential Life Lost (YPLL) is defined as the number of years of life lost due to deaths prior to age 75. For instance, the death of a 40-year-old would amount to 35 YPLL. Rural county data disaggregated by race include substantial missing data¹³.

Figure 3.2 below provides premature death rates per 100,000 population for the top 10 causes of death in Del Norte County in 2022. Drug overdoses, above all other top causes of death, account for the highest rate of premature death in Del Norte County with a rate nearly five times higher than the next leading cause (I.e., ischemic heart disease). This finding underscores the considerable impact of drug use on health outcomes in Del Norte County, highlighting the need to prioritize substance abuse prevention and intervention strategies in future public health planning.

¹³ For AIAN only Del Norte, Inyo, and Siskiyou counties have data and are included in the average. The Rural CA Hispanic calculation includes seven Rural CA counties.

Figure 3.2
Years of Life Lost by Cause of Death (2022)



Note. Data sourced from the California Community Burden of Disease Engine (California Department of Public Health, n.d.). These data represent Years of Life Lost (YLL) per 100,000 population.

Causes of Death

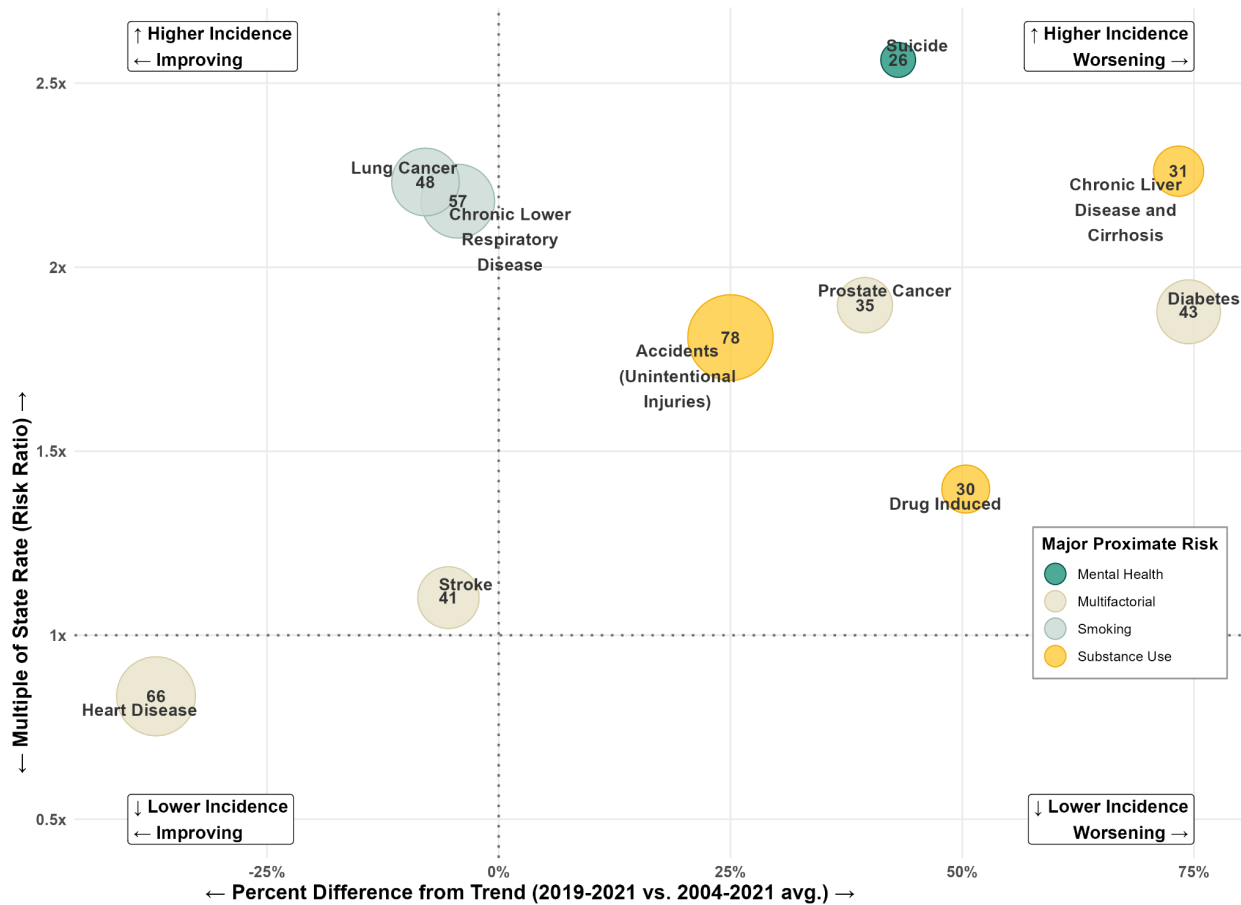
Disaggregating mortality rates by cause of death allows for a targeted examination of the determinants of health that contribute to the elevated causes of premature death within Del Norte County.

The figure below provides age-adjusted mortality rates per 100,000 population for 10 leading causes of death in Del Norte County. Data points above the dotted horizontal line indicate causes where the rate is higher than the state average. Data points to the right of the vertical dotted line indicate causes of death that have increased relative to their long-term averages. The size of each circle and label indicates the mortality rate and the color coding indicates related risk factors.

Del Norte County experiences higher age-adjusted mortality rates across most causes of death compared to state averages. Mortality rates associated with smoking (such as lung cancer and chronic lower respiratory disease) are higher than state averages but are not worsening. In contrast, mortality rates related to mental health and substance use are much higher than state averages and are worsening. These include suicides, chronic liver disease and cirrhosis, drug-

induced deaths, and accidents¹⁴. The role of these risk factors in producing these disparities is further explored in Section 4: Proximate Risk Factors. These trends are typical of rural California counties. The corresponding chart in Appendix C shows deaths associated with smoking, mental health, and substance use are higher than state averages, with substance use-related deaths rising and smoking-related deaths declining.

Figure 3.3
Age-Adjusted Mortality Rates per 100,000, Del Norte County



Note. Data sourced from the California Department of Public Health and the California Conference of Local Health’s *County Health Status Profiles* report data. None of these causes include deaths where COVID-19 is the

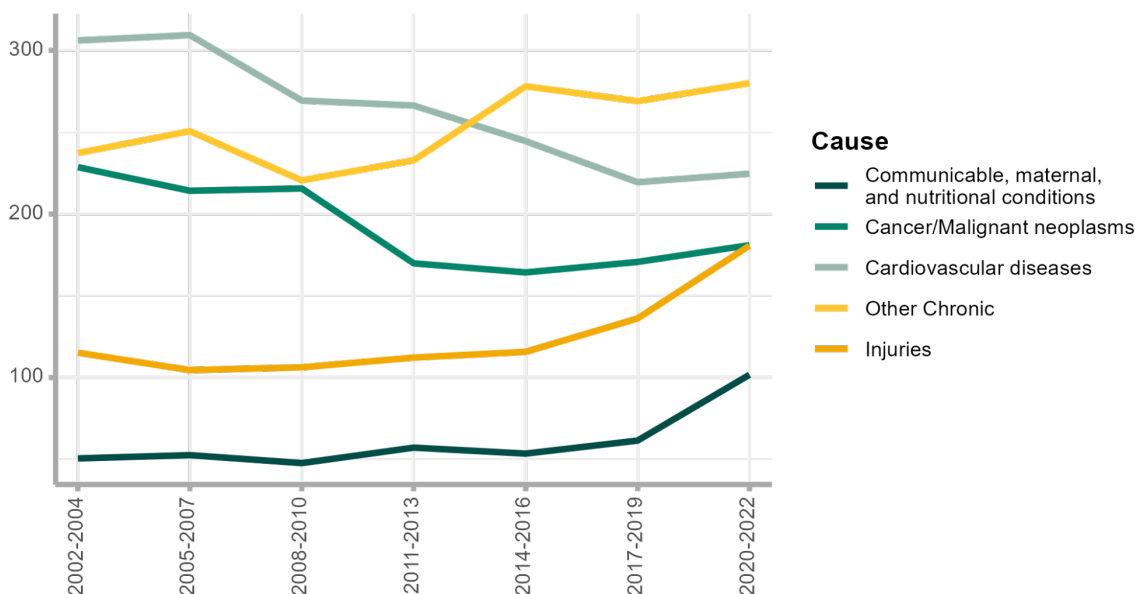
¹⁴ The category of accidents/unintentional injuries includes unintentional poisoning or drug overdose, alcohol poisoning, motor vehicle accidents, and other unintentional injuries. Nationally, unintentional poisoning, including drug overdose, has emerged as the leading cause of death within the unintentional injury category, a trend that began in the mid-1990s. However, since the mid-1990s and continuing to the present, unintentional poisoning deaths, particularly from drug overdoses, have risen sharply. As of 2021, nationwide data indicates that poisoning, such as drug overdoses, accounted for more than half of all unintentional injury deaths, followed by motor vehicle accidents (CDC). Consequently, the region's elevated rates of drug-induced and motor vehicle deaths likely contribute substantially to the higher prevalence of unintentional injury deaths within the region. Moreover, alcohol is a major contributor to motor vehicle deaths. Between 2017-2021, 27% of Del Norte vehicle deaths involved alcohol (University of Wisconsin Population Health Institute, 2024b).

underlying cause of death. See ICD-10 codes in Appendix B for how these causes of death are classified and aggregate¹⁵.

Figure 3.4 below reports trends in age-adjusted mortality rates across five causal categories for Del Norte County from 2002 to 2022, grouped into three-year intervals. Complementary to findings in Figure 3.3, incidences of deaths caused by cardiovascular diseases have been steadily declining, though recent years (2020 to 2022) have shown a slight increase in the number of deaths (see Table 3.1 below)¹⁶. Since 2014, 'Other chronic morbidities' (such as diabetes and respiratory diseases) have overtaken cardiovascular diseases as the leading cause of death in Del Norte County, though their rates have remained relatively consistent in recent years. Injury-related mortality rates (including overdose deaths) and rates due to communicable, maternal, and nutritional conditions (such as liver disease from Hepatitis C) have been increasing since 2014, more so than other causal factors.¹⁷ These high growth rates, also comparable to findings in Figure 3.3, are likely, at least in part, a function of the drug abuse epidemic occurring in Del Norte County.

Figure 3.4

Age-Adjusted Mortality Rates by Cause of Death (2002-2022)



¹⁵ According to CDPH, “Deaths where COVID-19 was coded as the underlying cause of death are only included for all causes of death and are not included in any of the specific mortality health indicators. However, deaths where COVID-19 was listed as a significant condition contributing to death but not the underlying cause of death may be included for these health indicators” (2022).

¹⁶ This does not necessarily indicate a trend.

¹⁷ These data do include COVID-19 causes of death, which had a mortality rate of 120.0 in 2021 to 37.6 in 2022, which is a 69% rate decrease.

Note. Data sourced from the California Community Burden of Disease Engine (California Department of Public Health, n.d.).

Table 3.1
Three-Year Percentage Growth Rates by Cause of Death (2020-2022)

Cause of Death	2020	2021	2022	Growth Rate
Communicable, maternal, and nutritional conditions	17	63	34	100.0
Injuries	50	53	58	16.0
Cardiovascular disease	82	81	91	11.0
Other chronic	105	100	113	7.6
Cancer/Malignant neoplasms	69	74	66	-4.3

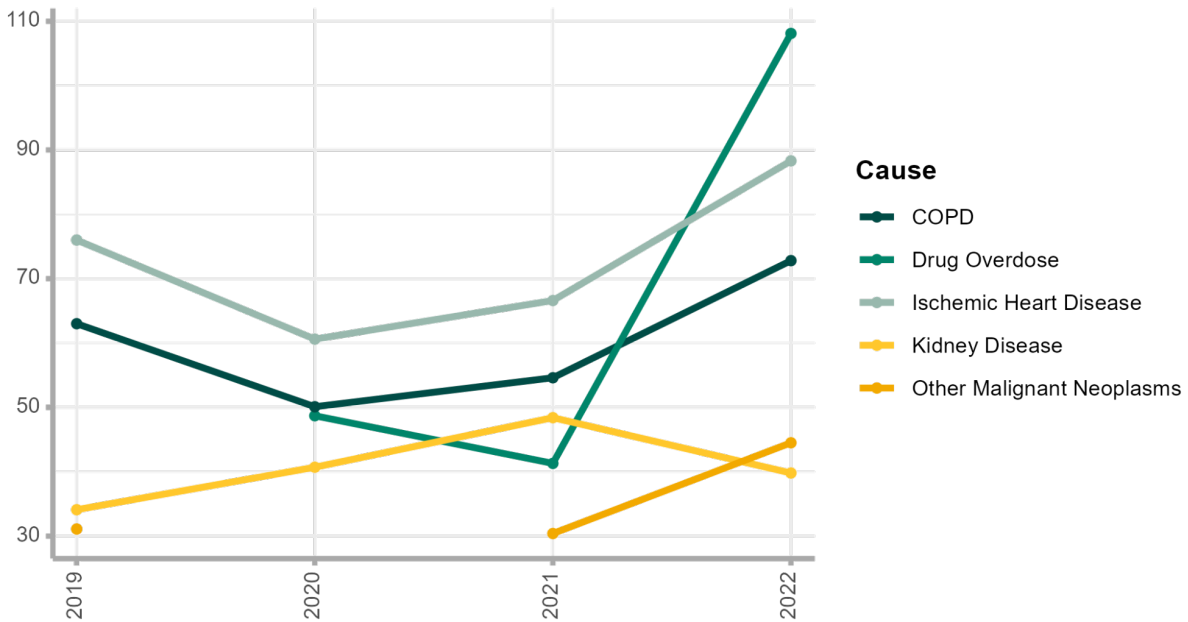
Note. Data sourced from the California Community Burden of Disease Engine (California Department of Public Health, n.d.). Data represent the number of deaths in Del Norte County by cause for 2020, 2021, and 2022.

Figure 3.5 illustrates four-year (2019-2022) age-adjusted mortality rates for the top five leading causes of death in Del Norte County in 2022. Mortality rates for COPD and Ischemic Heart disease have increased since 2020, which could be reflective of an aging population, increased exposure to risk factors like smoking, or potentially insufficient public health interventions targeting respiratory and cardiovascular conditions. The mortality rate for drug overdose has surged dramatically, with a 167% increase from 2021 to 2022, outpacing any other cause of death in the county, likely an indicator of the impact of the opioid crisis and the increasing presence of synthetic opioids like fentanyl. This spike in overdose deaths highlights an urgent need for enhanced drug prevention, treatment programs, and harm reduction strategies within Del Norte County. Meanwhile, the mortality rate for kidney disease declined from 2021 to 2022, following a steady increase since 2019. The mortality rate for ‘other’ malignant neoplasms increased by 46% from 2021 to 2022, though it had remained relatively stable in previous years.

Overall, the varying trends across these causes of death point to a complex public health landscape in Del Norte County, underscoring the importance of targeted health initiatives, especially those addressing the rising burden of chronic disease and drug-related mortality.

Figure 3.5

Four-Year Trends in Age-Adjusted Mortality Rates for the Top Five Causes of Death in 2022



Note. Data sourced from the California Community Burden of Disease Engine (California Department of Public Health, n.d.). Data points for 'Drug Overdose' in 2019 and 'Other Malignant Neoplasms' in 2020 are suppressed due to low sample sizes ($n < 11$).

Health Status and Conditions

County-level health status data are more limited when compared to mortality data, highlighting data gaps in understanding health disparities in rural areas. To address these limitations, we include small area estimation (SAE¹⁸) data to help provide an indication of likely health disparities experienced in Del Norte County.

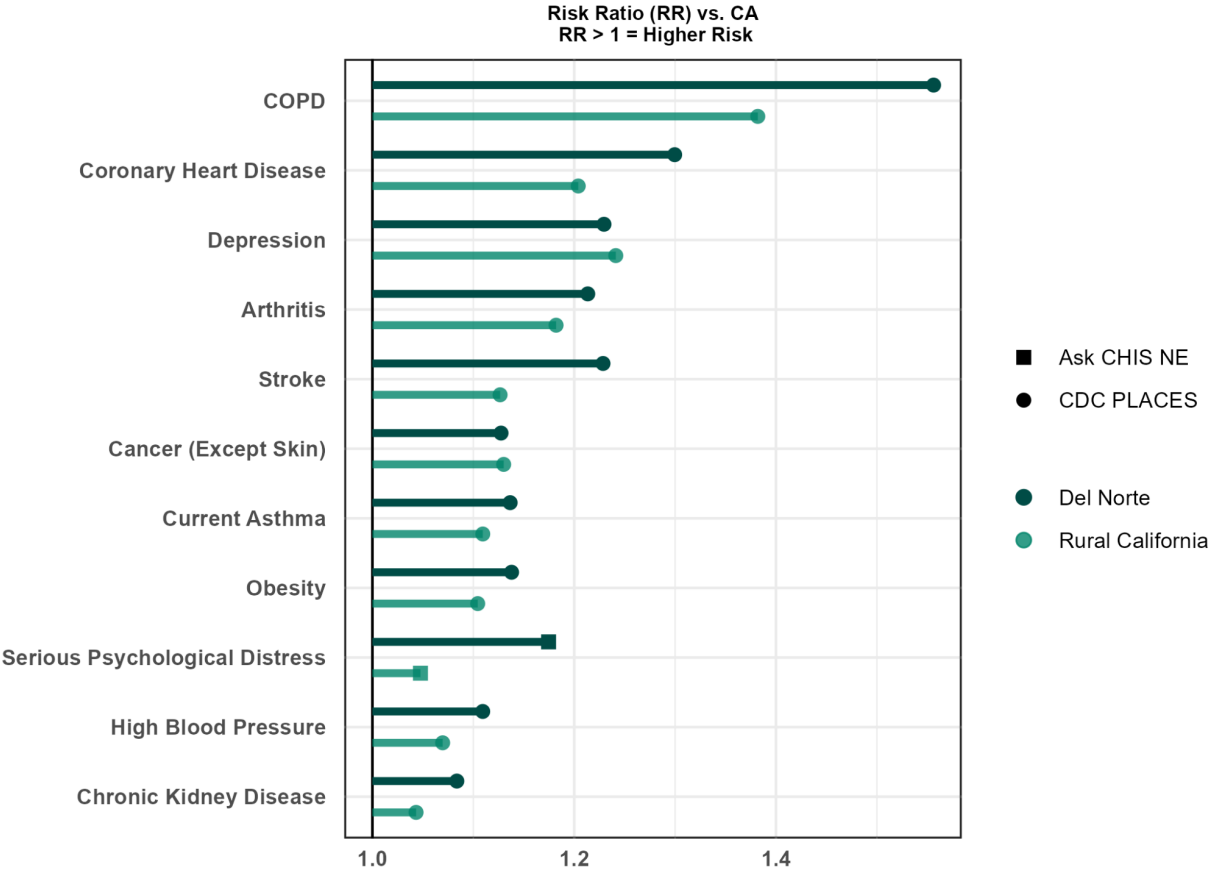
Figure 3.6 below shows risk ratios (RR) for Del Norte County and Rural California compared to California overall for 11 select health outcomes obtained from SAE datasets and rates of prevalence. The x-axis of this figure represents the RR for each morbidity (Del Norte is dark green; Rural California is light green) relative to the state; a RR greater than 1.0 indicates a higher risk in Del Norte County compared to California—a RR less than 1.0 would indicate lower risk.

¹⁸ As discussed in the Methodology, Data Sources & Limitations sections, SAE data are model-based predictions. Modeling errors or data gaps may result in errors that do not reflect health realities in Del Norte.

Del Norte County residents have a higher risk for all 11 morbidities noted below when compared to the state overall. For example, the rate of chronic obstructive pulmonary disease (COPD) is 1.6 times higher in Del Norte County compared to the statewide rate.

Changing from the broad state lens to examine how Del Norte County compares to other rural California areas indicates that Del Norte County has a higher risk for COPD, coronary heart disease, stroke, and psychological distress than other rural areas. Furthermore, compared to the broader state of California, the risks for the majority of these chronic health conditions are also elevated in Rural California.

Figure 3.6
Modeled Health Outcomes, Small Area Estimation Techniques¹⁹



Note. Two SAE data sources used. CDC PLACES data sourced from the Centers for Disease Control and Prevention’s 2022 release of the PLACES data set, *PLACES: Local Data for Better Health, County Data*. Ask CHIS NE data sourced from the California Health Information Survey Neighborhood Edition (UCLA Center for Health Policy Research, 2024b).

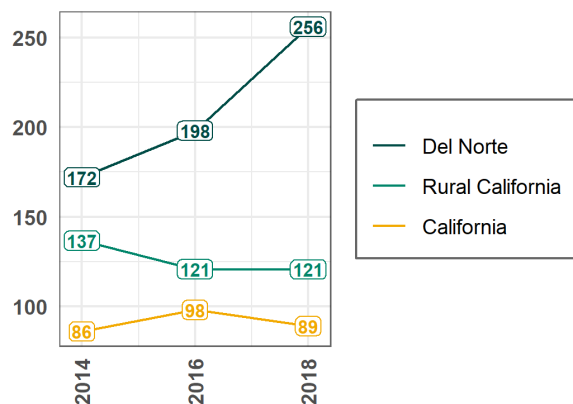
¹⁹ California estimates and not provided by the data source. California estimates were calculated by the author by taking a population-weighted average of all California counties using the population estimates provided in the dataset. Risk ratios (RR) calculated by taking the ratio of the local rate divided by the state rate. RR > 1 indicates higher risk relative to the state.

Another significant health condition warranting attention is hepatitis C. Hepatitis C is primarily transmitted through sharing needles and is a risk factor for liver disease (Mayo Clinic, n.d.). Drug overdoses stand out as the leading cause of premature death in Del Norte County, with a mortality rate nearly five times higher than that of ischemic heart disease, the next leading cause. This stark statistic highlights the profound impact of substance use on public health in the region. Mortality rates associated with mental health and substance use disorders, including suicides, chronic liver disease and cirrhosis, drug-induced deaths, and accidents, are significantly higher in Del Norte County compared to state averages, and these rates are worsening over time. Since 2014, there has been a marked increase in mortality due to communicable diseases, particularly those related to liver disease, such as hepatitis C. Notably, deaths from communicable diseases have doubled since 2020, rising from 17 to 34 per 100,000 population. The sharp increase in hepatitis C cases within the community is therefore not unexpected, given its strong association with intravenous drug use, which is intricately linked to mental health issues.

As illustrated below, exceptionally high rates of Hepatitis C are a critical health outcome disparity in Del Norte County. Rates of Hepatitis C are the highest in the state. These trends underscore the urgent need for integrated public health strategies that address the intertwined challenges of substance use, mental health, and communicable diseases in Del Norte County.

Figure 3.7

Newly Reported Chronic Hepatitis C per 100,000 Population (2014, 2016, and 2018)²⁰



Note. Data sourced from the CDPH. Rates are averaged over 2014, 2016, and 2018.

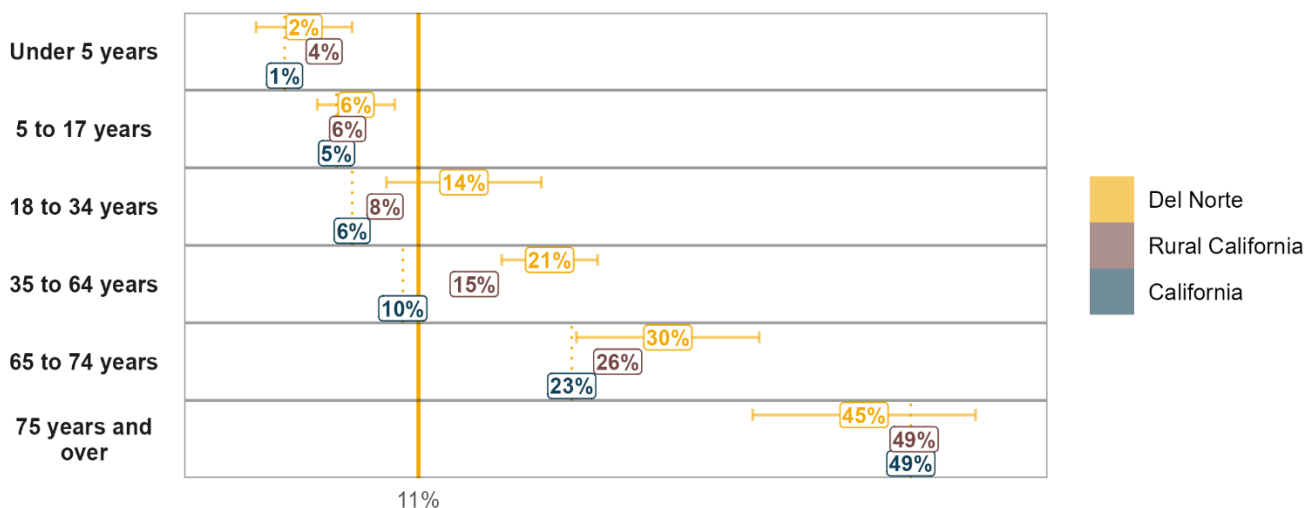
As shown in the figures below, disability rates in the region are higher than the state average and somewhat higher than in other rural counties. Because disability rates are higher among older populations, it is important to look at disability across age ranges rather than the overall aggregate average which can be heavily distorted by differences in age distribution between regions. As shown below, except for the youngest and oldest age groups, disability rates are

²⁰ Data sourced from the California Department of Public Health (2021). More recent data are unavailable at the time of preparing this analysis. Data do not include Pelican Bay State Prison population.

significantly higher than state rates. Among the 18 to 34 year old cohort, disability rates are more than twice the state rate for this age range. Mental health and substance use disorders are the leading causes of disability among adults younger than 35, accounting for over 35% of years lived with disability nationwide (U.S. Department of Health and Human Services, n.d.).

Disability

Figure 3.8
Disability Rates (2018 - 2022)



Note. Data sourced from the ACS. Civilian noninstitutionalized population only.

Populations at Risk

Del Norte Community Survey (DNCS)

As previously noted, the DNCS was designed and administered to Del Norte residents as a way of identifying, if any, disproportionate rates in health outcomes and proximate risk factors for certain subpopulations of Del Norte County. The following subsection provides a concise report of DNCS data related to health outcomes. Results are considered in the aggregate as well as disaggregate, breaking down survey responses by three main demographic factors—including age (18-34, 35-54, 55 and older), gender (female, male), and race/ethnicity (non-white, white).

Health Status

Overall Health

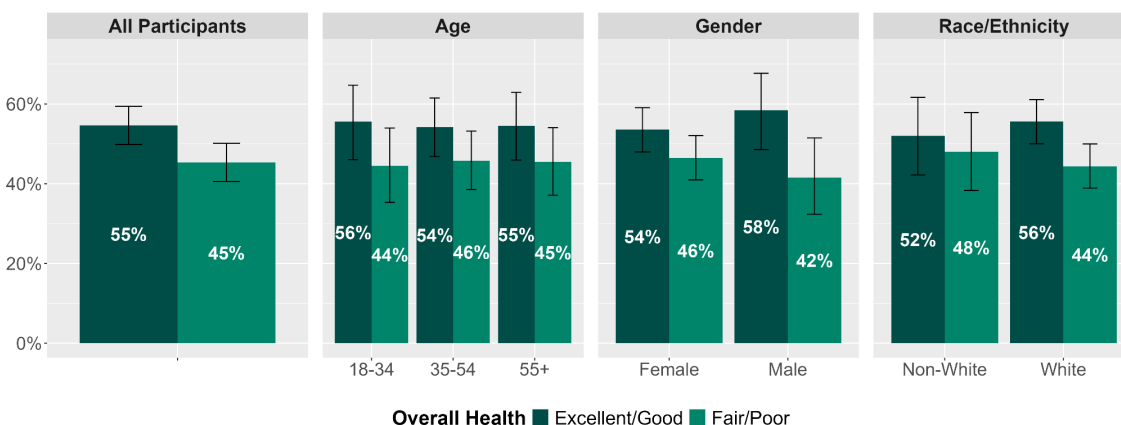
Figure 3.9 below shows the percentage of DNCS participants with *excellent/good* overall health and those with *fair/poor* overall health across the three demographic factors noted in the methodology section (i.e., age, gender, race/ethnicity). Fifty-five percent of DNCS participants have excellent-to-good overall health. Male participants report higher excellent/good health (58%) compared to female participants (54%). White participants report higher excellent-to-good

overall health (56%) compared to non-white participants (52%). Confidence intervals, however, indicate no statistically significant differences in overall health across age, gender, and race/ethnicity.

There is some discrepancy with DNCS results and past findings. The Community Health Interview Survey (CHIS) shows higher rates of excellent, very good, and good health (approximately 80%) across demographic factors when compared to DNCS data, both for the county and statewide (UCLA Center for Health Policy Research, 2024a). This may indicate considerably more Del Norte residents have low-quality overall health than CHIS data suggest, though it may also be due to methodological limitations for both datasets.

Figure 3.9

DNCS Participant Self-Reported Overall Health



DNCS participants were asked to rate how healthy a community Del Norte County is to live, in general. Most participants (58%) feel Del Norte is a healthy community. More male participants (72%) rated Del Norte as either a healthy or very healthy place to live compared to female participants (58%), as did white participants (63%) relative to non-white participants (55%).

Oral Health

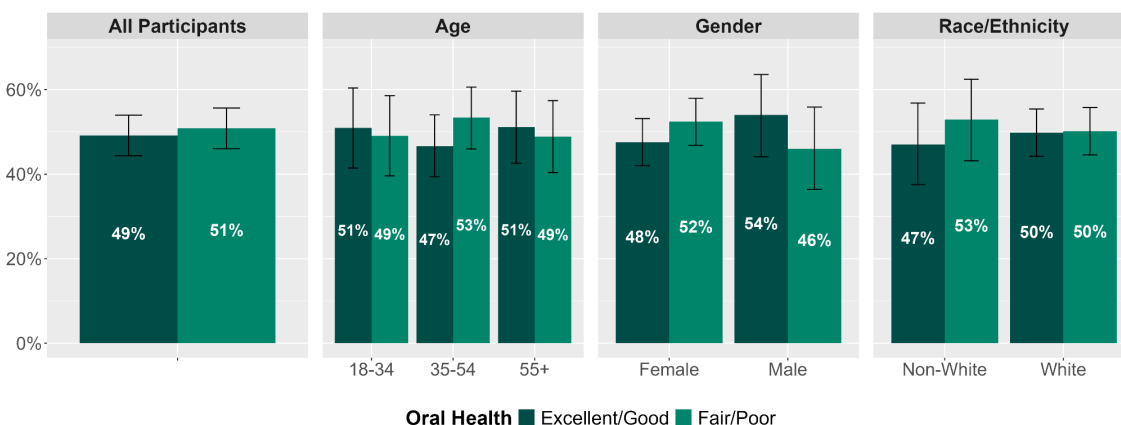
Figure 3.10 below shows DNCS participants’ level of oral health (excellent/good vs. fair/poor) by demographic factor. Fifty-one percent of participants have fair or poor oral health, lower than the estimates for Del Norte (69%) and the state (72%) reported in CHIS data. More male participants report adequate oral health (54%) compared to female participants (48%), as do white participants (50%) compared to non-white participants (47%), though these differences are not statistically significant, nor are comparative findings observed in CHIS data (UCLA Center for Health Policy Research, 2024a).

These findings may indicate a considerable number, perhaps encompassing a majority, of Del Norte residents are facing challenges with their oral health. It is possible female and non-white

residents face oral health challenges at a higher rate than other residents, though DNCS data do not statistically support this hypothesis, nor do comparative estimates from CHIS data (UCLA Center for Health Policy Research, 2024a).²¹ Limitations aside, adequate oral health may be a challenge for many, if not most, Del Norte residents. Forty-three percent of DNCS participants identified adequate dental care as one of the most important health challenges in the county. Such insights underscore the need for improved access to oral health care.

Figure 3.10

DNCS Participant Self-Reported Oral Health

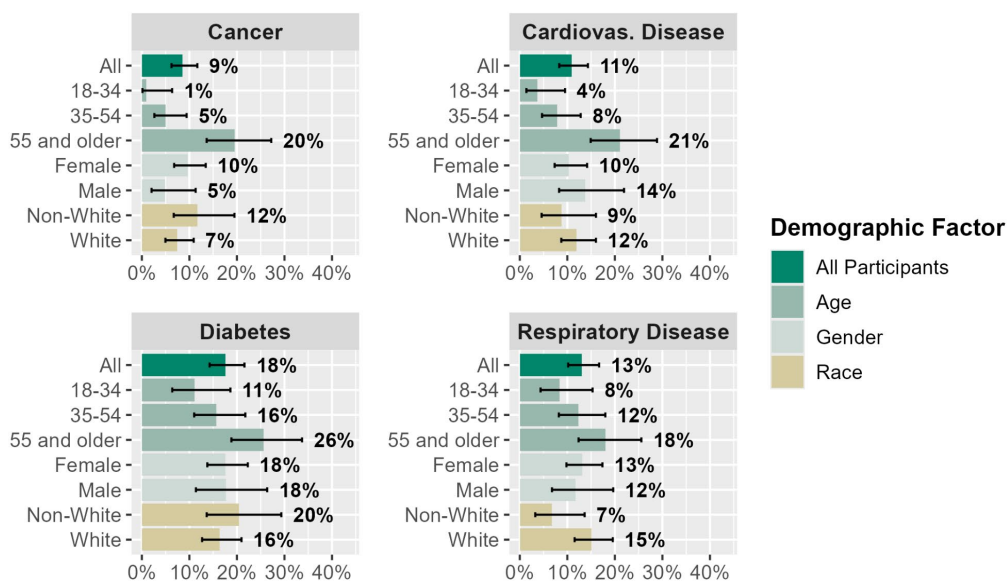


Disease and Illness

Figure 3.11 below shows incidences of four illnesses/diseases (cancer, cardiovascular disease, diabetes, respiratory disease) among DNCS participants. Cancer and cardiovascular disease are significantly higher among participants 55 years of age and older compared to younger participants. Reports of diabetes and respiratory disease are also higher among participants 55 years of age and older compared to younger participants, though these differences are not statistically significant. The observed increase in these illnesses among older adults within the Del Norte County population mirrors patterns seen elsewhere, suggesting that the rising prevalence of these conditions with age is not unique to this region. This finding underscores the importance of considering age as a critical factor when analyzing the health profiles of populations, particularly in the context of chronic disease management and prevention strategies.

²¹ Results from CHIS data estimate more Del Norte females (71%) have excellent/very good/good oral health compared to males (68%), though this difference is not statistically significant (UCLA Center for Health Policy Research, 2024a).

Figure 3.11
DNCS Participant Self-Reported Disease/Illness



Note. Cardiovas. = cardiovascular.

Cancer. DNCS results suggest the cancer incidence rate among non-White populations is higher compared to the White population, with reported rates of 12% and 7%, respectively. Although this difference did not reach statistical significance within our analysis, it is essential to consider these findings within the broader context of epidemiological data. According to the Cancer Statistics Fact Sheet (2024), the mortality rate due to cancer is higher among American Indian/Alaska Native (AIAN) populations compared to White populations, with death rates of 159.7 and 151.3 per 100,000 individuals, respectively. This trend aligns with existing literature, which suggests racial and ethnic minoritized populations in rural regions often experience higher cancer rates than non-Hispanic White populations (Zahnd, Murphy, Knoll, & Davis, 2021). These disparities may be attributed to factors such as limited access to healthcare, socioeconomic challenges, and environmental exposures that disproportionately affect minoritized communities in rural areas. Our survey findings echo these broader trends, underscoring the importance of addressing cancer disparities among non-White populations in rural regions.

Cardiovascular Disease. Analysis of DNCS data revealed a higher proportion of men are affected by cardiovascular disease (CVD) compared to women, with prevalence rates of 14% and 10%, respectively. This observation is consistent with the broader pattern of gender differences in CVD prevalence and outcomes. Cardiovascular disease remains the leading cause of morbidity and mortality worldwide, yet its impact varies significantly between men and women. Although women generally exhibit a lower prevalence of CVD, studies have consistently shown that women experience higher mortality rates and poorer prognosis following acute

cardiovascular events compared to men. These gender disparities in epidemiology, pathophysiology, and treatment outcomes can largely be attributed to differences in gene expression associated with sex chromosomes and the resulting variations in sex hormones. Notably, in Western societies, ischemic heart disease tends to develop 7-10 years later in women than in men, highlighting the complex interplay of biological factors in shaping the gendered experience of CVD (Suman et al., 2023).

Diabetes. According to the Centers for Disease Control and Prevention's National Diabetes Statistics Report, in 2018, approximately 26.9 million people in the United States, or 8.2% of the population, were diagnosed with diabetes. The prevalence of diabetes was notably higher in non-metropolitan counties, where 12.6% of the population had been diagnosed, compared to 9.9% in metropolitan areas in 2016. A specific region known as the "diabetes belt," covering 644 counties across 15 states, has an even higher diabetes prevalence at around 11.7% (Rural Health Information Hub, 2024). This belt includes more rural areas. Diabetes poses a greater concern in rural communities than in urban areas due to several prevalent risk factors, including higher rates of obesity and limited access to healthcare services and healthy foods. Rural populations, which are often older and include certain racial and ethnic groups such as Alaska Native, American Indian, African American, Hispanic, and Asian or Pacific Islander communities, are at an elevated risk of developing type 2 diabetes.

In California, the disparities in diabetes prevalence are particularly pronounced (California Department of Public Health, 2024). In 2021, non-Hispanic African Americans, non-Hispanic AIANs, and Hispanics had diabetes rates twice as high as those of non-Hispanic Whites. Non-Hispanic Asians also experienced a significantly elevated prevalence of diabetes, with rates one and a half times higher than those among non-Hispanic Whites. These statistics underscore the stark racial and ethnic disparities in diabetes within the state, reflecting broader trends observed nationwide. The DNCS findings are consistent with existing research, revealing that 20% of the non-White population reported having diabetes, compared to 16% of the White population. This disparity aligns with trends observed over the past several decades, where higher rates of diabetes have been consistently documented among non-White populations.

Respiratory Disease. Analysis of the community survey revealed that the prevalence of respiratory disease was higher among the White population compared to non-White populations, with rates of 15% and 7%, respectively. Although this difference was not statistically significant, it is consistent with trends observed in existing research literature. For instance, Kimberley et al. (2021) found that the AIAN racial identity was not independently associated with chronic respiratory disease. Instead, the study highlighted socioeconomic factors, particularly an annual household income of less than \$10,000 and having less than a high school education, were positively associated with the prevalence of respiratory disease. These findings suggest, while racial and ethnic disparities exist in respiratory disease prevalence, socioeconomic factors may play a more critical role in influencing these health outcomes. This underscores the complex

interplay between race, ethnicity, and socioeconomic status in determining health disparities within communities.

Health Outcomes Takeaways

Health Outcomes Guiding Questions: *For the population as a whole, which health outcomes in the region are substantially different from statewide trends? Which sub-populations have greater risk for these outcomes?*

- Rates of premature death are substantially higher than the state rate, significantly impacting people of color and the American Indian population.
- Mortality rates associated with tobacco use, substance use, and mental health are higher than state averages.
- Models suggest poorer health status across a wide range of outcomes including respiratory health, heart disease, obesity, mental health, and oral health.
- Rates of newly diagnosed cases of Hepatitis C are the highest in the state and have increased in recent years. Those who inject narcotics using unsanitary needles are at risk.
- Disability rates are substantially higher than state averages including among adults 18 to 34.
- Adequate overall health may be a challenge for some Del Norte County residents, though there is no evidence to suggest any specific group within the population experiences poor quality overall health more so than other groups.
- Sufficient oral health may be a particular challenge for many Del Norte residents, if not a majority. There is no clear evidence to suggest specific populations struggle with oral health more than other groups.

Section 4. Proximate Risk Factors

Risk Factors Guiding Questions: *What risk factors potentially contribute to these outcomes (e.g. substance use)? How do these risk factors compare to state averages? Which sub-populations have greater risk for these factors?*

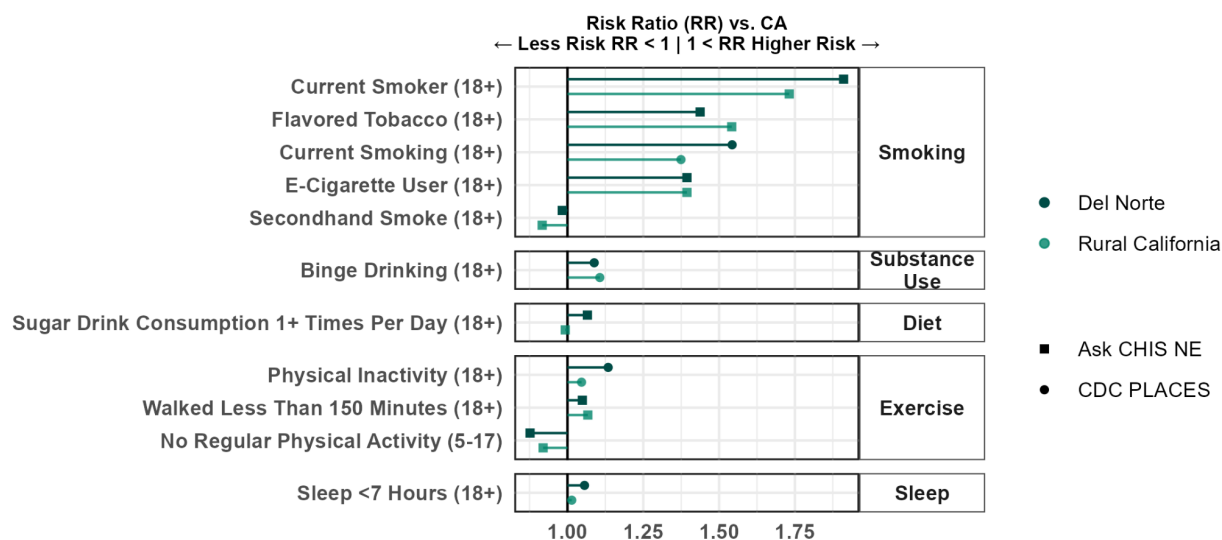
The aim of this section is to identify factors directly contributing to the health outcomes identified previously and to identify populations at risk. A deeper analysis of the underlying factors (e.g. poverty, trauma) potentially related to these proximate risk factors will be explored in the next section. Identifying proximate factors allows for a more focused approach to exploration of deeper factors as well as a more focused approach leveraging community resources to meet these challenges.

Risk Factors Contributing to Disparities in Health Outcomes

While the previous section found disparities in outcomes associated with tobacco use, substance use, and mental health challenges, multiple data sources presented below indicate that substance use, tobacco use, and suicide ideation and other mental health challenges are indeed elevated in Del Norte. As illustrated below SAE models clearly suggest higher adult tobacco use and binge drinking, while other risk factors such as diet, exercise, and sleep do not reveal such a clear trend.

Figure 4.1

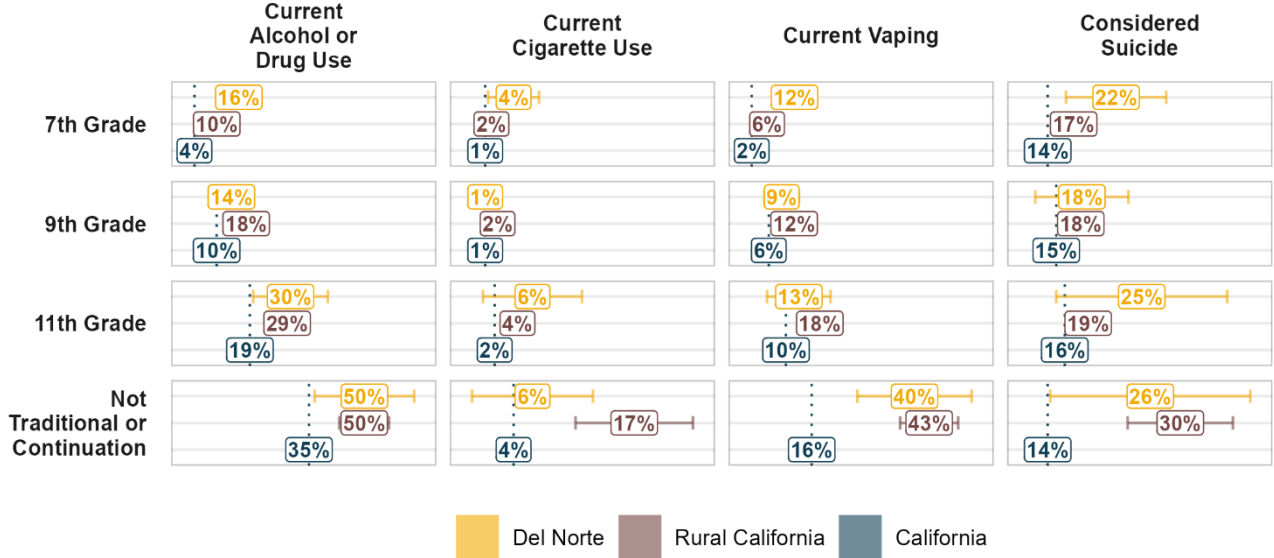
Modeled Health Outcomes, Small Area Estimation Techniques



Note. Two data sources used. CDC PLACES data sourced from the Centers for Disease Control and Prevention’s 2022 release of the PLACES data set, *PLACES: Local Data for Better Health, County Data*. Ask CHIS NE data sourced from the California Health Information Survey Neighborhood Edition (UCLA Center for Health Policy Research, 2024b).

As shown below youth survey data (not SAE data) corroborate SAE models, indicate higher rates of substance use, tobacco use, and suicide ideation— trends consistent with other rural counties in California.

Figure 4.2
Youth Substance Use, Tobacco Use, and Suicide Ideation



Note. Data sourced from CalSCHLS “Secondary Student: Substance Use” data portal.²²

Fentanyl

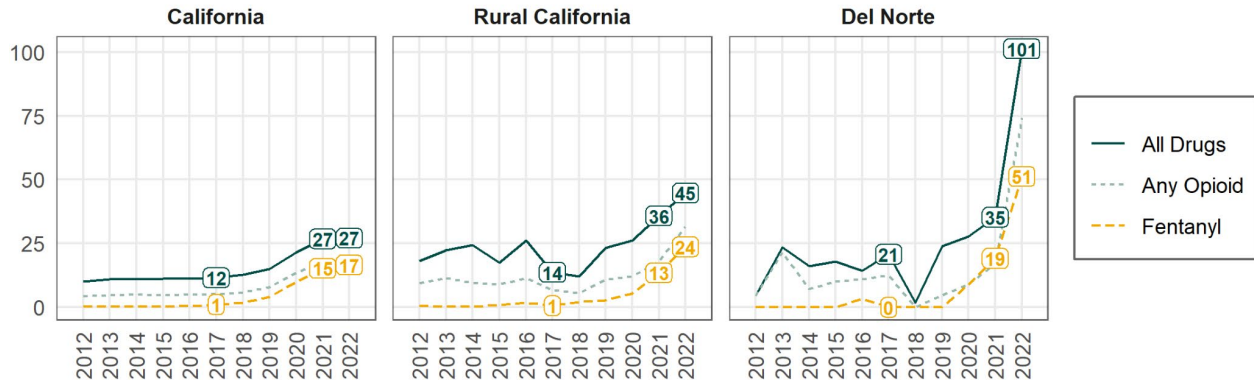
On a per capita basis, *Rural California* is the epicenter of the state’s fentanyl crisis. As illustrated below, fentanyl deaths in rural counties and Del Norte far exceed the state average. Fentanyl deaths have risen sharply in recent years—accounting for roughly half of all drug deaths. This rise is a clear contributing factor to the region’s rising premature deaths, drug-induced deaths, and accidental deaths. Regional data are limited, but statewide trends indicate that a Native American, Black, individuals between the ages of 30 and 34, and men are at the highest risk of fentanyl death (California Department of Public Health, 2024)²³.

²² Youth smoking data are based on surveys of 11th grade students in participating school districts within each county. Youth smoking is defined as students who responded that they had consumed cigarettes in the past 30 days. Confidence intervals were calculated by the author.

²³ Local data are too unstable or incomplete to make inferences.

Figure 4.3

All Drug, Opioid, and Fentanyl Deaths, Age-Adjusted Rate per 100,000 (2012 - 2022)



Note. Data sourced from the CDPH’s “California Overdose Surveillance Dashboard.” Rural California represents a population-weighted average of all California counties with an Index of Relative Rurality of at least 0.53.

Impaired Driving

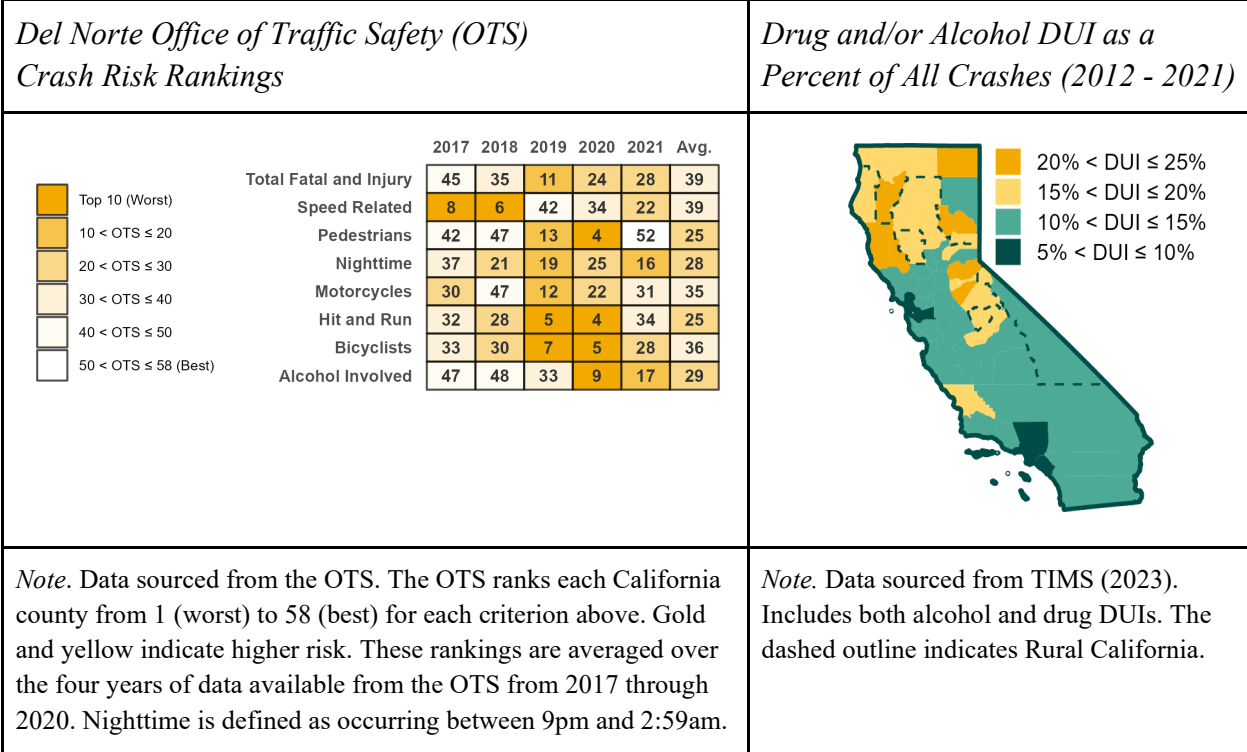
As shown in the previous section, motor vehicle crash mortality rates are higher than state averages in Del Norte. As shown below (right panel), driving under the influence (DUI) crashes account for a greater proportion of crashes in Northern and rural California counties including Del Norte.

Traffic safety ranking data from the California Office of Traffic Safety (OTS) reveal factors potentially contributing to the county’s elevated rates of motor vehicle traffic fatalities (2023). These data reveal elevated risk of pedestrian, hit-and-run, nighttime, and alcohol-involved crashes. A national study suggests a clustering of pedestrian, hit-and-run, and nighttime accidents around a common risk factor: late night alcohol use. This study also reveals that nearly one-fifth of pedestrian traffic fatalities in the United States are the result of a hit-and-run, and that fatal pedestrian hit-and-runs are far more likely to occur during the evening and involve alcohol use (Arnold et al., 2010).

Another factor particularly salient in the rural Redwood Coast context, is emergency medical service (EMS) response times. EMS response times are significantly associated with motor vehicle mortality rates (Byrne et al., 2019). Research indicates a 1.46 times greater risk of mortality for an EMS response time of 12 or more minutes compared to seven or fewer. A national study found that the median EMS response time is six minutes in urban or suburban regions and 13 minutes in rural areas. This study also found that 10% of EMS response times were 26 minutes or longer in rural areas (Carr et al., 2017)

While there are certainly other factors contributing to the county’s elevated motor vehicle crash fatalities, substance use appears to play a role in the county’s elevated motor vehicle deaths and— along with drug-induced deaths— unintentional injuries deaths as well.²⁴

Figure 4.4



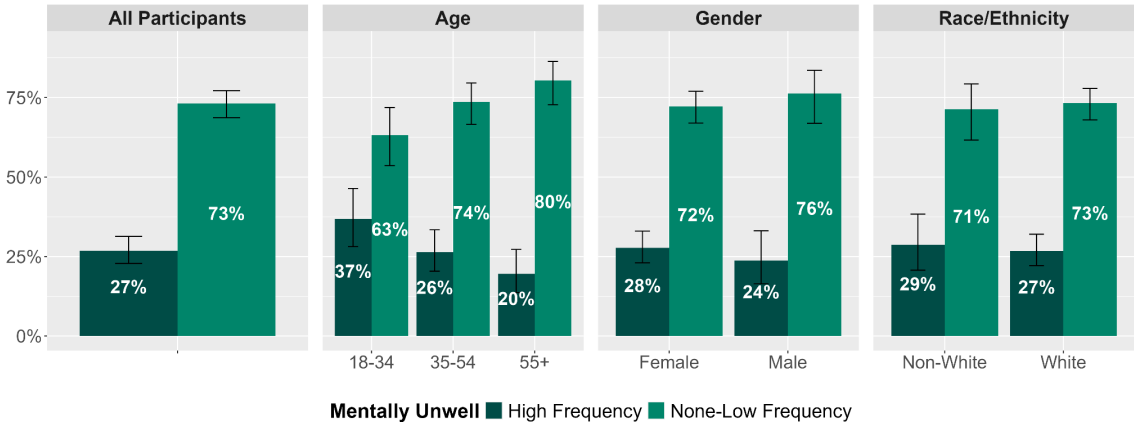
Populations at Risk

Mental Health

DNCS participants were asked to indicate the frequency (higher frequency vs. none-low frequency) in which they had felt ‘mentally unwell’ within the month prior to completing the survey.²⁵ The figure below provides DNCS rates on mental health disaggregated by demographic factor. Most participants (63%-80%), regardless of age, gender, and race/ethnicity, report no-or-low frequency of mental illness. Younger participants report high frequencies of mental illness compared to older participants, though these observations are not statistically significant. No other disproportionate estimates were observed across gender or race/ethnicity.

²⁴ Motor vehicle deaths are included in unintentional injury deaths.
²⁵ The term ‘mentally unwell’ is used to represent experiences of negative mental health symptoms, including depression, stress, and anxiety. Response factor levels were collapsed for this survey question. High frequency = ‘almost all the time’, ‘often’. None-low frequency = ‘none of the time’, ‘rarely’, ‘some of the time’.

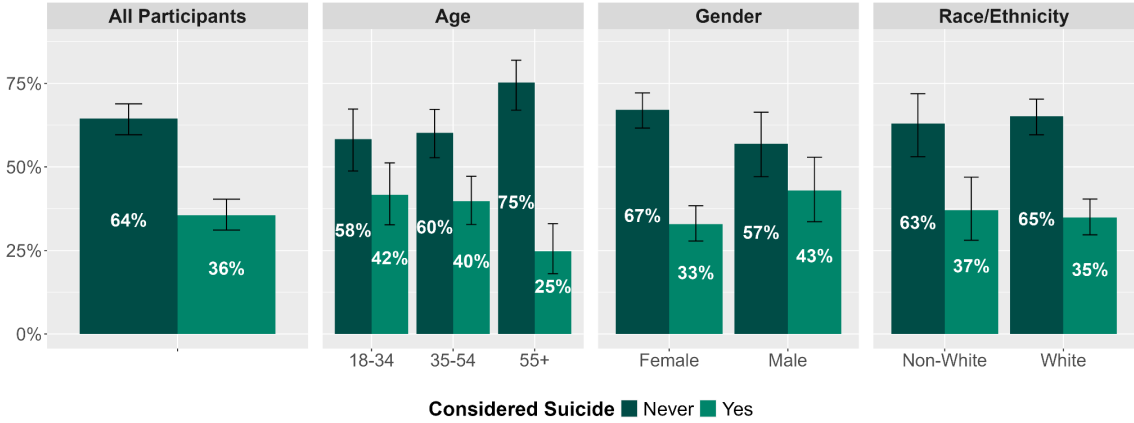
Figure 4.5
Del Norte CHA Community Survey Participant Self-Reported Mental Health



Suicide Ideation and Factors

Figure 4.6 below represents the rates DNCS participants have considered suicide at least once in their lifetime. Rates are also disaggregated by demographic factors. One-in-three (36%) DNCS participants have seriously considered suicide at least once in their lifetime. Approximately 40% of participants ages 18 to 54 have seriously considered suicide, while only 25% of those 55 and older have seriously considered suicide. This difference in suicide ideation is not statistically significant, however. Suicide ideation is 10% higher among male participants compared to female participants, though this difference is not statistically significant either.

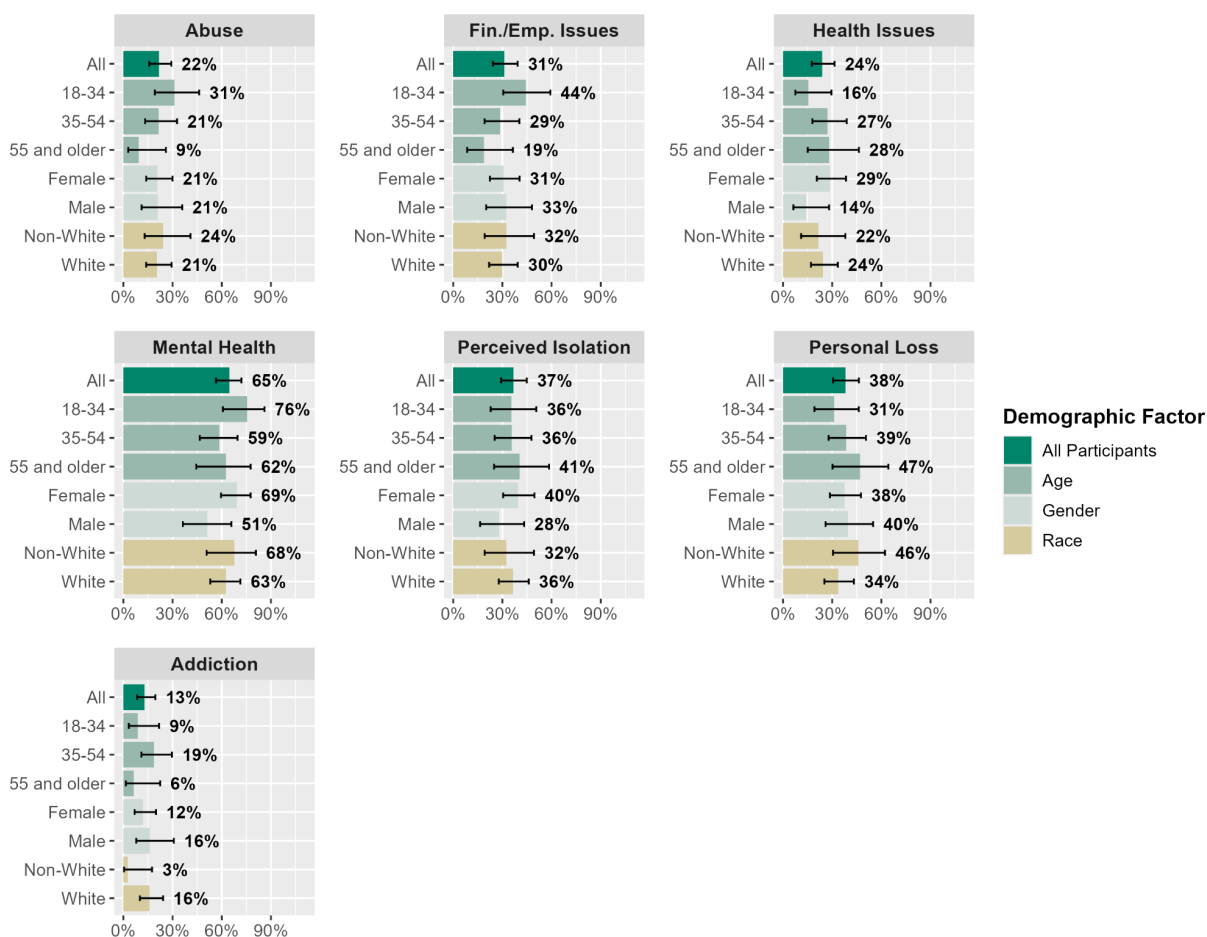
Figure 4.6
Del Norte CHA Community Survey Participant Suicide Ideation



Note. ‘Yes’ includes participants who selected ‘yes, once’ or ‘yes, more than once’.

DNCS participants who experienced thoughts of suicide identified several key contributing factors (see figure below), including struggles with mental illness (65%), personal loss (38%), perceived isolation (37%), financial/employment difficulties (31%), health issues (24%), abuse (22%), and addiction (13%). Differences in percentages by demographic factors are apparent, though none are statistically significant. Participants aged 18-34 years identified abuse and financial/employment issues more often than older participants. Perceived isolation and personal loss were identified more often by participants aged 55 years and older relative to younger participants. Non-white participants also identified personal loss more often than did white participants. It is difficult to interpret these differences in rates of identified contributing factors especially when considering possible DNCS sampling issues and wide confidence intervals for these data. Review and interpret the figure below with caution.

Figure 4.7
Del Norte CHA Community Survey Participant Suicide Ideation Factors



Note. Fin./Emp. = Financial/Employment. Participants were allowed to select all responses that applied to them.

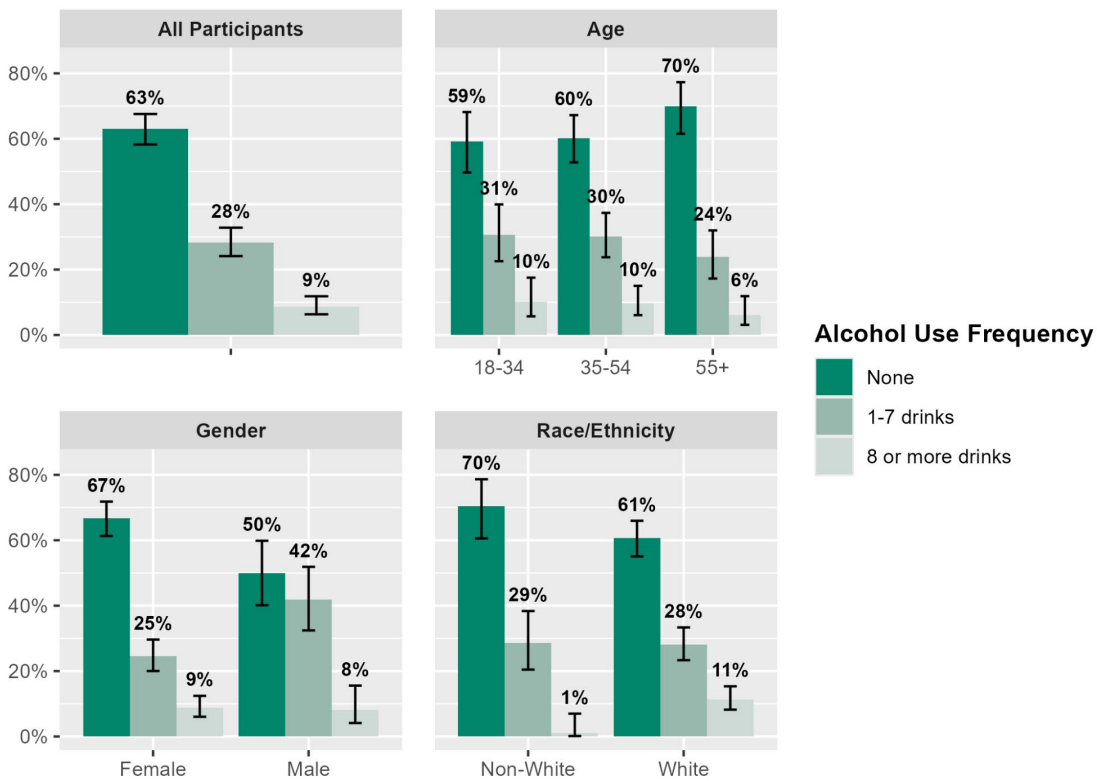
Alcohol, Drug, and Tobacco Use

Alcohol Consumption and Factors

DNCS participants were asked how much alcohol they consume on a weekly basis (number of drinks). To see this survey question in detail, refer to Appendix A. Most participants, across age, gender, and race/ethnicity, consume either no alcohol or one-to-seven drinks within any given week. Younger participants have higher rates of alcohol consumption relative to participants aged 55 and older. Male participants have higher rates of alcohol consumption compared to female participants, when it comes to non-excessive drinking (i.e., 1 to 7 drinks). White participants report a higher rate of alcohol consumption (8 or more drinks, which is considered excessive drinking according to Centers for Disease Control and Prevention) compared to non-white participants. These differences observed in consumption rates are, however, not statistically significant.

Figure 4.8

DNCS Participant Frequency of Alcohol Use by Demographic Factor



DNCS participants who drink 8 or more alcoholic drinks noted the main reasons for their amount of alcohol consumption.²⁶ These data were not disaggregated by demographic factors due to small sample sizes. Five motivational factors were identified by participants, including habit/routine (67%), relaxation/unwinding from work or stress (47%), to cope with emotional/psychological distress (42%), enjoyment of taste (42%), and social occasions/celebrations (36%). Based on these results, it seems habitual use and stress related consumption are the leading motivational factors for participants who drink 8 or more alcoholic beverages per week.

Drug Use and Type

DNCS participants were asked if they have used any recreational or non-prescribed drugs in the past year. Thirty-five percent of participants report using at least one drug recreationally. For a full list of substances participants could select, see Appendix A. Cannabis use was selected most often by participants (28%), while other substances were reported less frequently (2%-4%). Drug use frequency was observed and disaggregated by demographic factors. The figure below shows participants’ aggregated and disaggregated drug use frequency at three levels (occasionally-rarely, 1-4 times per month, daily/almost daily).²⁷

Sixty-five percent of DNCS participants reported no recreational drug use, representative of rates across age, gender, and race/ethnicity. Male participants report daily/almost daily drug use at a higher rate than female participants. Fewer non-white participants report using drugs one-to-four times per month compared to white participants. It is important to note these differences in rates are not statistically significant. Based on these results, it may be about one-in-three Del Norte County residents use at least one form of substance, most likely cannabis, and these individuals may be more likely to use substances rarely/occasionally or relatively frequently (i.e., daily/almost daily) compared to moderate use (i.e., 1-4 times per month).



Community Voices

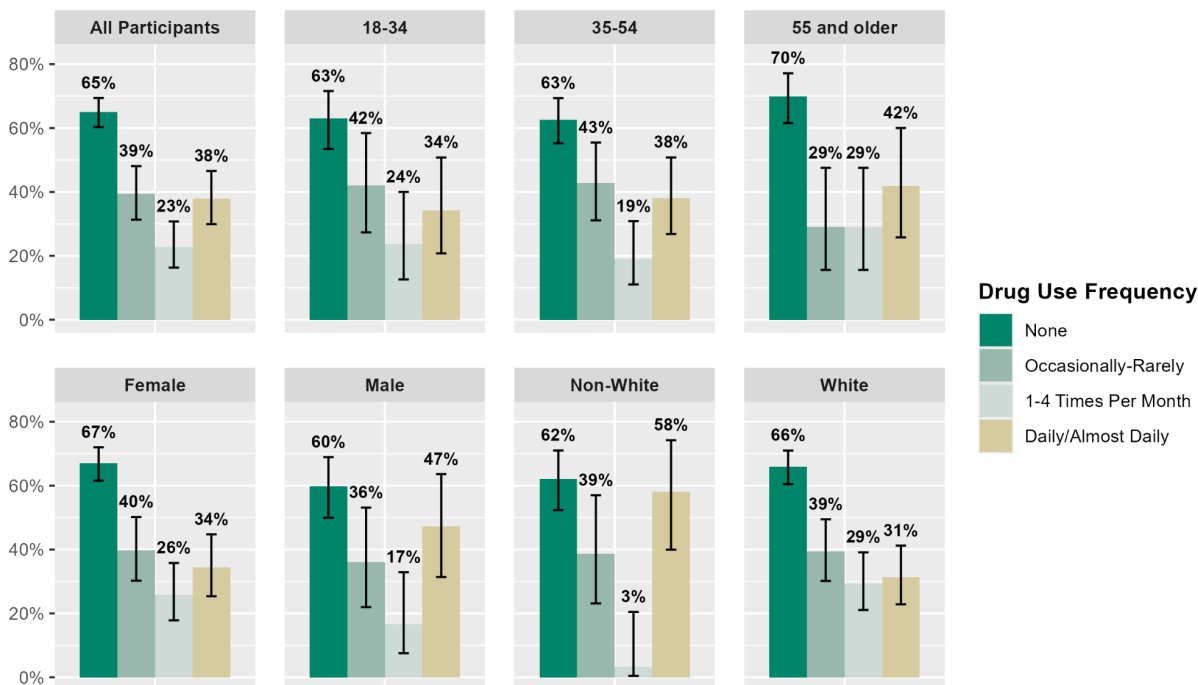
“It’s hard for any person with any kind of drug record to be seen or treated normally here in Crescent City. They are biased and prejudiced against people who have any kind of drug history...it is looked upon as if it is a kind of disease and not a social [barrier]. It’s like a rockstar show for us drug addicts...and it’s not. It’s a miserable suffering. There’s nothing else for us.”

²⁶ Participants were allowed to ‘select all that apply’ for this survey question.

²⁷ Responses to this survey question were collapsed to account for limited sample size. To see a full list of response options for this survey question, see Appendix A.

Figure 4.9

DNCS Participant Frequency of Drug Use by Demographic Factor



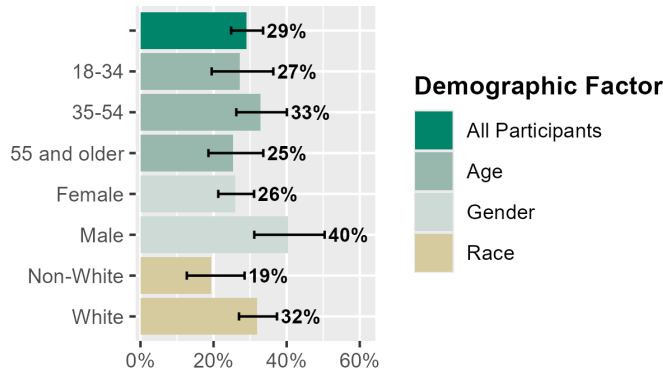
Drug Use for DNCS Participants Who Do Not Consume Alcohol

Drug use and frequency were analyzed among participants who reported no alcohol consumption ($n = 261$; 63% of participants). Nearly three-in-four participants (72%) who do not consume alcohol also abstain from recreational drug use altogether. The remaining participants most commonly report cannabis use.

Tobacco Use and Factors

The figure below shows DNCS participants who use nicotine products disaggregated by demographic factors. Nearly one-in-three (29%) DNCS participants use some form of nicotine/tobacco products. Refer to Appendix A for further review of this survey question. Both CHRR and CHIS data estimate about 17% of adults in Del Norte County are current cigarette smokers— about seven percent higher than the state overall (UCLA Center for Health Policy Research, 2024a; University of Wisconsin Population Health Institute, 2024b). These data, however, do not account for other nicotine/tobacco products, such as (vapes, pods, e-cigarettes, etc.) which may explain the higher estimate observed in the DNCS data. More male participants report nicotine use compared to females, though this difference is not statistically significant. More white participants report using nicotine products relative to non-white participants, though this difference is not statistically significant.

Figure 4.10
DNCS Participant Nicotine Use



When asked what motivates their nicotine use, participants most commonly noted habit/addiction and stress relief as important factors. Participants aged 18 to 34 noted social factors influence their nicotine use more so than participants aged 55 years and older, and this difference was statistically significant. Indeed, 54% of participants 18-34 say socializing influences their smoking compared to only 6% of participants 55 and older.

Proximate Risk Factors Takeaways

Proximate Risk Factors Guiding Questions: *What risk factors potentially contribute to these outcomes (e.g. substance use)? How do these risk factors compare to state averages? Which sub-populations have greater risk for these factors?*

- Multiple and diverse data sources indicate higher tobacco use, substance use, and mental health challenges. Both adults and children appear to be at risk. 11th graders and students in non-traditional (e.g. continuation schools) are at high risk of substance use and suicide ideation.
- Fentanyl deaths are exceptionally high in Del Norte. Statewide data indicate that Native American, Black, individuals between the ages of 30 and 34, and men are at the highest risk of fentanyl death (California Department of Public Health, 2024)²⁸.
- Based on DNCS data, about 27% of Del Norte County adults may experience frequent mental health struggles, and up to one-in-three Del Norte County adults may have experienced at least one instance of suicidal ideation in the past. There is no clear indication subpopulations experience mental health problems more so than other groups, though, male adults may experience suicidal thoughts more often than female adults.

²⁸ Local data are too unstable or incomplete to make inferences.

- Most DNCS participants (63%) report abstinence from alcohol consumption, while some (28%) have one to seven drinks weekly, and a small number (9%) have eight or more drinks weekly. Male adults in Del Norte County may have a higher rate of alcohol consumption compared to female participants.
- Based on DNCS data, it is possible up to one-in-three Del Norte County adults use at least one form of drug, most likely cannabis. Frequency of drug use may be polarized, where individuals either occasionally/rarely use substances, or they may use substances daily or nearly every day. No clear evidence from DNCS data suggests drug use characteristics differ significantly across demographic factors.
- DNCS data may suggest nearly one-in-three (29%) of Del Norte County adults use some form of nicotine, be it tobacco products or vaping. This number may be inflated when compared to previous data (CHIS; CHRR), though this is unclear. Males may use nicotine products at a higher rate than females, however, this is not statistically clear within DNCS data.

Section 5. Economic, Social, Institutional & Environmental Factors



Economic, Social, Institutional & Environmental Guiding Questions: *What economic, social, institutional, and environmental factors potentially contribute to these outcomes and factors? Which sub-populations have greater risk for these factors?*

Economic Factors and Access to Resources

In rural and remote California counties such as Del Norte, the intersection of poverty and the shortage or absence of essential services results in many households lacking adequate preventive care, nutritious food, and housing. It is critical to assess not only the monetary income and poverty rates but also the effectiveness of these financial resources in securing access to the limited tangible resources available in the region.

Poverty and Cost of Living

Economic conditions strongly influence health disparities. Poverty is linked to lower life expectancy and increased health risks related to obesity, smoking, substance use, and chronic stress (Healthy People 2030, n.d.-d). Child poverty is particularly detrimental to health and well-being. Children raised in low-income households face multiple adverse conditions that harm

their health and contribute to a cycle of economic disadvantage. These conditions include impaired early childhood brain development, obstacles to learning and social functioning, and increased behavioral problems (Damon, n.d.). Relative to their more affluent peers, children in poverty are more likely to suffer from lead poisoning, experience abuse, neglect, and hunger, drop out of high school, or become teenage parents (Aber et al., 2012)."

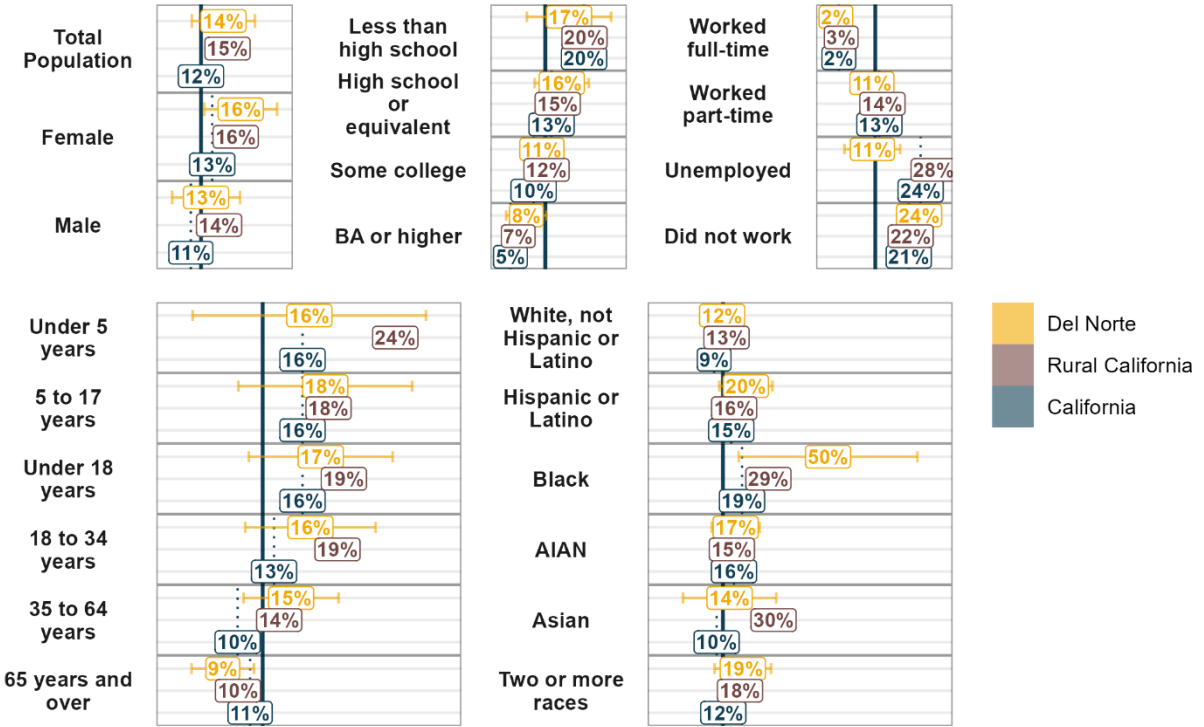


Community Voices

“I just feel like there’s this generational poverty...They’re comfortable, which I think creates resilience in people. But it’s just very different because there’s a huge level of poverty. The majority of people are in poverty in Del Norte County, and that just comes up in different ways. I think that does impact our health.”

As shown below, the poverty rate in Del Norte County trends higher than the state average, although the difference is not statistically significant. Women, children, people with less education, people who are not working, and persons of color experience higher poverty rates relative to their counterparts.

Figure 5.1
Del Norte Disaggregate Poverty Rates (2018 - 2022)



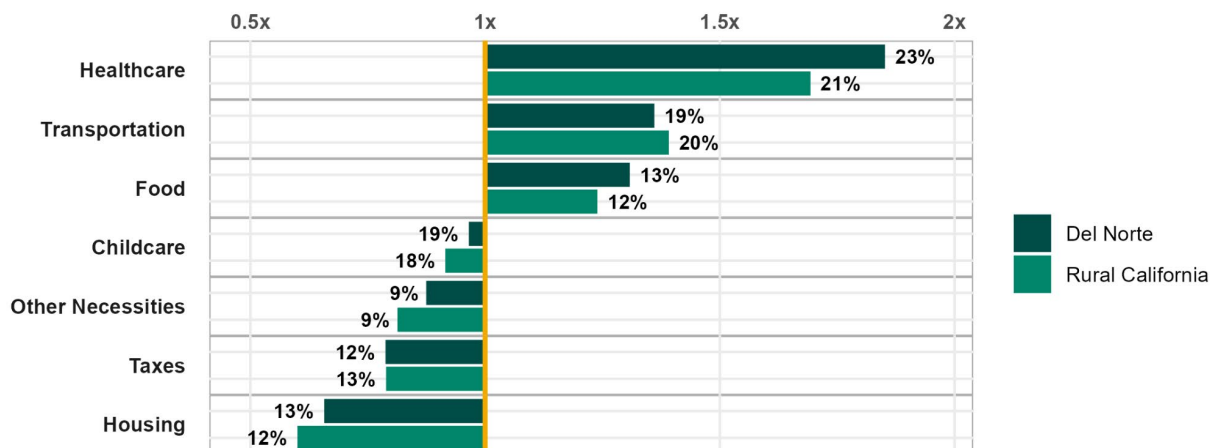
Note. Data sourced the American Community Survey.

Poverty rates are not the whole picture. The cost of living is structurally different in Del Norte and other rural areas compared to state averages. The overall cost of living—in absolute terms—is lower in rural areas of the state relative to non-rural areas. Notwithstanding, certain costs, including healthcare and transportation, are higher in comparison to non-rural areas. These higher costs, along with lower household income, result in substantially high household budget shares spent on healthcare, transportation, and food. For instance, a Del Norte family of two full-time working parents with two children can expect to spend about 23% of their income on healthcare—approaching twice that of the state average for the same family structure. Demand for healthcare services has been found to follow typical economic patterns; in response to higher healthcare prices, consumers seek fewer health services.²⁹

Figure 5.2

²⁹ Healthcare costs are price inelastic, meaning that for a given percentage increase in healthcare prices, consumers react with a less than proportionate decrease in health services purchased. Typically, a 10% increase in healthcare costs will result in a 1.7% decrease in healthcare services purchased (Dixon et al., 2005).

Share of Household Budget Relative to State Averages



Note. Cost of living data sourced from Family Budget Calculator. Median full-time earnings sourced from 2018-2022 ACS five year estimates. Values to the right of the gold line indicate costs that are less affordable compared to the state average. Values to the left indicate relatively affordable costs. Percent data labels indicate Health Resources and Service Administration Share of income for a household of two full-time working adults and two children.

Healthcare Access and Shortages

Provider shortages and high transportation costs create further barriers to healthcare access. As shown below in Figure 5.3, Del Norte County is a designated Health Provider Shortage Area (HPSA): regions or populations identified by the U.S. Department of Health and Human Services (HHS) as having a shortage of primary care, mental health, or dental health providers (Health Resources & Services Administration, n.d.).³⁰ Unfortunately, a lack of healthcare providers is common among Del Norte County’s neighboring regions.



Community Voices

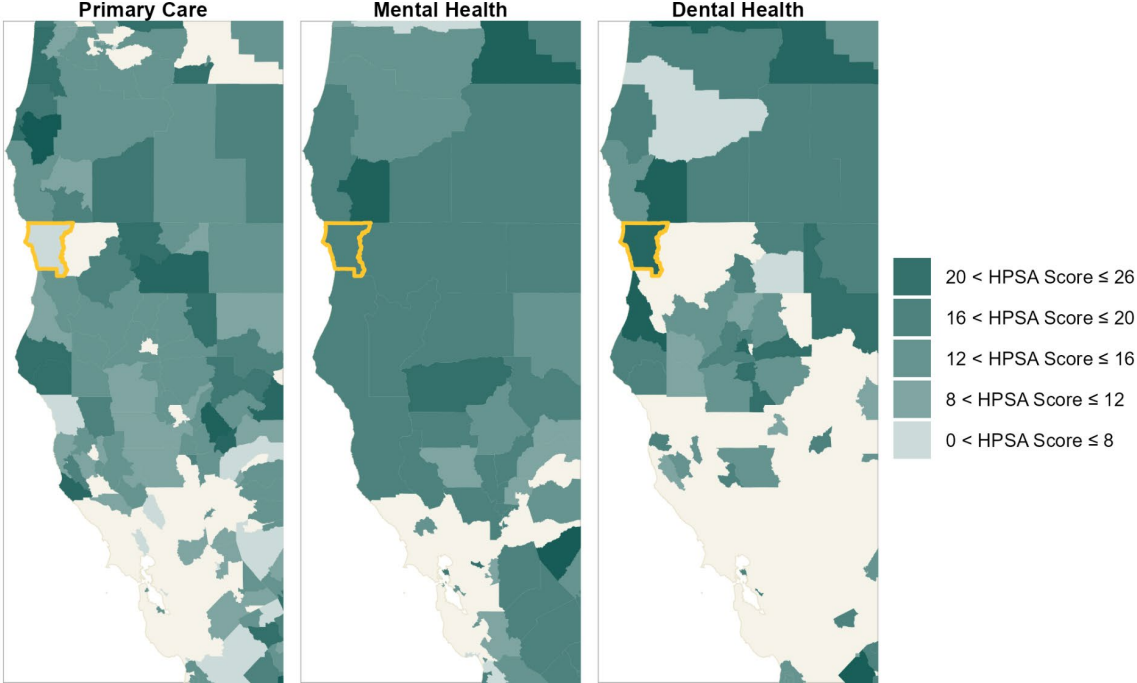
“You have to call Partnership if you want transportation. Several times I’ve had to go see doctors, and every time you have to call Partnership. You’ll be waiting and waiting for your transportation, and nobody shows up. And then the doctor tells you that you’re not supposed to be driving...and your transportation never shows up. You can’t go to a doctor’s appointment all frustrated.”

³⁰ These HPSAs are assigned a score, with scores ranging from 0 to 25 for Primary Care and Mental Health and from 0 to 26 for Dental Health, with higher scores indicating greater need. Factors considered in determining the score include the provider-to-population ratio, poverty rate, travel time to the nearest point of care outside of the region, and other factors relevant to the health field (Health Resources & Services Administration). HPSA scores for Primary Care also take into account indicators of infant health. Dental Health scores take into account water fluoridation status. Mental Health scores take into account the percentages of the population over 65 and under 18, alcohol abuse prevalence, and substance abuse prevalence.

Surrounding counties to the North, East, and South are HPSAs as well, which suggests adequate healthcare is geographically distant. Del Norte residents seeking healthcare unavailable in the county and surrounding areas consequently travel long distances to receive care. Travel time has been shown to be a barrier to healthcare-seeking, and transportation barriers are particularly critical among individuals with low income and those under or uninsured (Biswas et al., 2015; Syed, Gerber, & Sharp, 2013).

Figure 5.3

HPSAs, Northwestern California and Southwest Oregon (2023)³¹



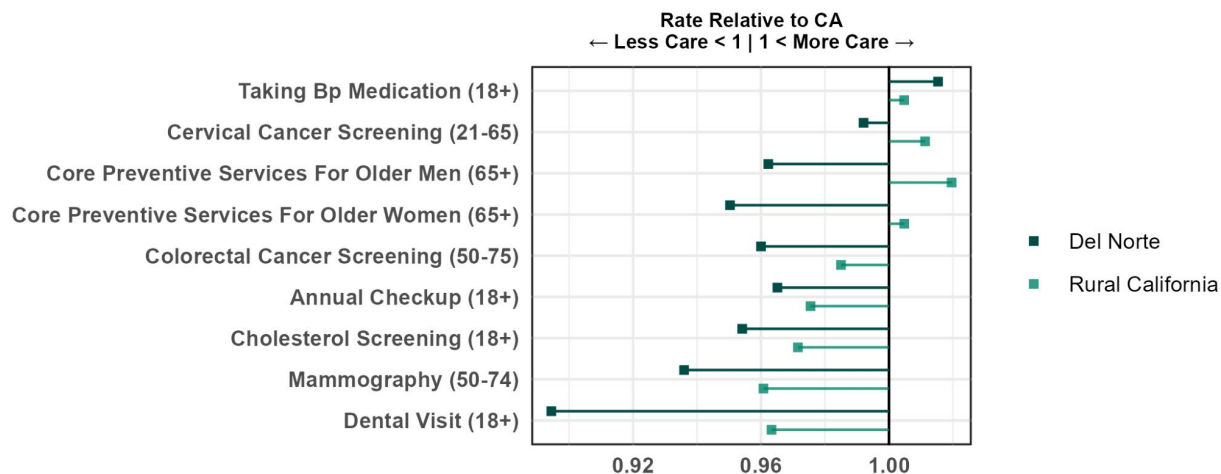
Note. Beige areas are not HPSAs. Blue areas are HPSAs; deeper hues indicate higher HPSA scores (or greater need). Del Norte is outlined in gold. Data sourced from the Health Resources and Service Administration’s data on shortage areas, measuring HPSA areas in primary care, dental health, and mental health.

Access to timely care can prevent occurrence or exacerbation of disease through the prevention of modifiable risk factors, early detection of illness, and management of existing illness to prevent worsening symptoms (Olsen et al., 2010). Improved access to preventive services, including screenings for tobacco, alcohol, depression, and cancer, can lower mortality rates (Centers for Medicare & Medicaid Services, 2010). Conversely, however, delays in healthcare access have been linked to increased mortality (Pizer and Prentice, 2007). CDC modeled data below indicate lower use of preventative care in Del Norte County compared to the state average and even other rural California counties, except for blood pressure medication. This trend is particularly evident in dental visits among residents aged 18 and older.

³¹ See national level maps made by the data provider located here: <https://data.hrsa.gov/maps/map-gallery>.

Figure 5.4

Modeled Health Outcomes, Small Area Estimation Techniques



Note. Data sourced from the Centers for Disease Control and Prevention’s 2022 release of the PLACES data set, *PLACES: Local Data for Better Health, County Data.*

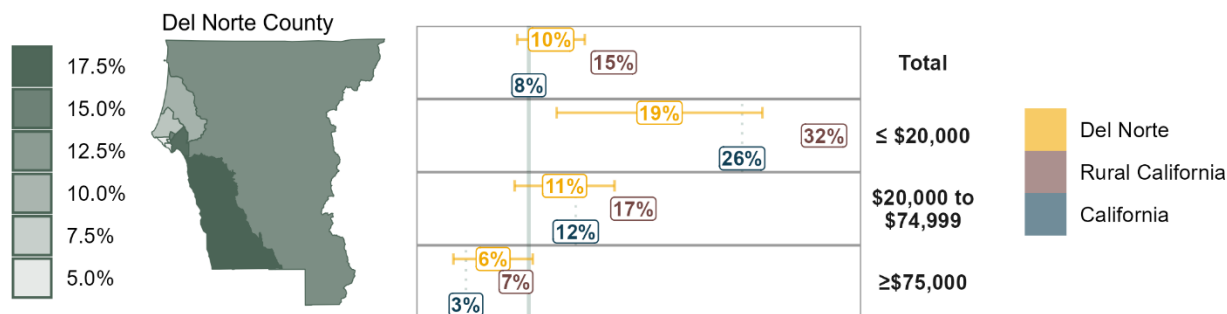
Internet Access & Telehealth

With the rise of telehealth services, access to the internet (particularly in a private setting) is an increasingly utilized tool for addressing barriers to care such as distance and transportation. Among Del Norte Medi-Cal patients, 49% of specialty 2023 visits were provided via telehealth, rising from 22% in 2021 during the height of COVID-19. Telehealth is especially critical for expanding availability to much-needed mental health services. Among Northern California Medi-Cal patients³², two-thirds of psychiatry visits were by telehealth (Partnership HealthPlan of California, 2024). Unfortunately, as shown below in Figure 5.5, Del Norte households most likely to benefit from telehealth—those with low incomes and/or living in remote areas—are less likely to have internet access at home. Improving broadband access and affordability may be a crucial step in reducing barriers to healthcare, particularly for mental health services.

³² Partnership Healthplan of California

Figure 5.5

Percent of Households without Internet Access by Census Tract and Income Level



Note. Data sourced from 2018-2022 ACS 5 Year Estimates.

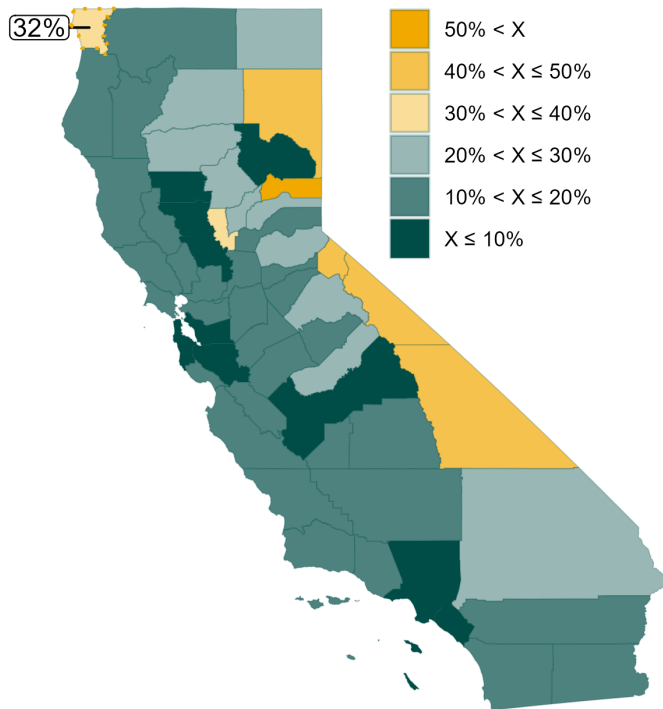
Food Access

A healthy diet composed of limited portions of vegetables, fruits, whole grains, low fat dairy, proteins, and healthy oils is associated with lower all-cause mortality, cardiovascular disease, obesity, diabetes, breast and colorectal cancer (Healthy People 2030, n.d.-c). Barriers that prevent access to a healthy diet, such as poverty, high prices, distance, lack of transportation, insufficient storage and cooking facilities, and lack of time, may have an adverse influence on these health outcomes. The 2019 Del Norte Community Health Assessment found high rates of food insecurity in Del Norte, disproportionately impacting children, and identified food access as a priority public health challenge (Egri Freedman et al., 2019).

As shown below in Figure 5.6, nearly one-third of the Del Norte population lives more than 10 miles from a grocery store. Although proximity in and of itself has been found to only have a moderate impact on diet, in the region’s remote, rural environments, distance and scarcity of options may compound with other factors (e.g., poverty), creating barriers to healthy food options that ultimately contribute to disease outcomes (Ver Ploeg & Rahkovsky, 2016). Such barriers may be contributing factors to adverse food-related health outcomes.

Figure 5.6

Percent of Population Living More than 10 Miles from a Grocery Store (2015)³³



Note. Data sourced from the USDA Food Environment Atlas.

Housing and Homelessness

People experiencing homelessness face a significantly higher risk of premature death, chronic disease, depression, and substance use (Collins 2016).³⁴ Homelessness is an exceptional public health issue in Del Norte. However, it is important to acknowledge that tracking and measuring homelessness is a complex task, leading to limitations and uncertainties in estimates of the incidence of homelessness. A 2023 report from the NorCal Continuum-of-Care (CoC)³⁵ region found 694 homeless in Del Norte (NorCal Continuum of Care, 2023). While there is uncertainty in these figures, a crude comparison can be made by comparing homelessness on a per capita basis. Del Norte County's rate implies 2,631 homeless individuals per 100,000 population, which

³³ USDA defines this as the “Percentage of people in a county living more than 1 mile from a supermarket or large grocery store if in an urban area, or more than 10 miles from a supermarket or large grocery store if in a rural area.”

³⁴ By some estimates 9 to 10 times higher than the general population.

³⁵ The NorCal Continuum-of-Care consortium includes Del Norte, Siskiyou, Modoc, Shasta, Lassen, Plumas, and Sierra counties. Except for Shasta, all of these counties are included in the Rural California region. As of the January 2023 count, 27.5% of this region’s total homeless count was located in Del Norte.

is more than five times higher than statewide rate of 465 per 100,000 during the same period.³⁶In the NorCal CoC, homelessness impacts all ages and crosses racial and ethnic lines; 12% of the region’s homeless population are under 18 years old, 39% are female, 76% are white, and 13% are AIAN (U.S. Department of Housing and Urban Development, n.d.). Common causes of homelessness are varied and include economic as well as social, institutional, and environmental factors. The NorCal CoC survey of Del Norte’s 694 homeless in 2023 asked respondents for the primary reason for their homelessness. Responses were varied and no single factor dominated the responses. Economic factors such as job loss, loss of income, or eviction accounted for about 15%. Social factors such as family breakup, domestic violence and child abuse accounted for 18%. Substance use and mental health appeared low at 9.5% and 4.4% respectively. Still many other factors contributed to homelessness such as fires and natural disasters (8.25%) (NorCal Continuum of Care, 2023). Community survey results indicate that 5% of respondents are currently homeless, and 29% have experienced homelessness in the past.



Community Voices

“The best way I could tell you to stay healthy is just to keep your feet dry, change your socks regularly...take showers, you know. Keep good hygiene...try to stay warm and dry. It gets cold during the winter, and wet. In the summertime, it’s nice. You can run around barefoot and wearing your shorts all summer long pretty much. But in the wintertime, it gets a little rough. You just got to stay dry...and that means having access to facilities to shower and help with that.”

Populations at Risk

The Del Norte Community Survey (DNCS) revealed several important aspects about economic factors and access to resources. Issues such as poverty, access to food and healthcare, and homelessness paint a dire picture for the population living in Del Norte County.

Health challenges. The DNCS identified the top five health challenges as alcohol and drug abuse (77%), lack of affordable housing (58%), emotional and mental health issues (56%), dental health concerns (43%), and child abuse (26%). Among respondents who identified the lack of affordable housing as a critical issue, females were disproportionately affected, demonstrating greater vulnerability compared to males. Similarly, a higher percentage of females than males reported emotional and mental health as a significant concern. These findings may indicate

³⁶ Based on the 2023 California Department of Finance estimated state population of 39,109,000 and Del Norte population of 26,382.

females experience these health challenges more acutely than males, with the differences being statistically significant.

Poverty. Nearly half (46%) of the DNCS participants reported daily struggles with basic needs. Among these individuals, 22% cited medical care, 20% cited food, and 15% cited housing as particularly challenging to access in the county. These findings underscored that individuals aged 18 to 34 face disproportionately high barriers in securing housing and medical care, a distinction supported by statistically significant differences. In our analysis, gender emerged as a possible factor affecting access to housing. Males reported significantly more challenges with housing access compared to females. Additionally, overall, younger individuals are less economically secure compared to adults aged 55 and above, with a statistically significant difference observed in our findings.

Food access. Fifty-six percent of DNCS participants reported consistent access to food, either always or most of the time. Among the remaining 44% who do not have consistent access, statistical analysis did not reveal significant differences based on age, gender, or race. This finding suggests issues related to food access affect a diverse cross-section of the surveyed sample equally, without notable demographic variations in reported food insecurity levels.

Homelessness. Sixty-four percent of DNCS participants reported never experiencing homelessness, while 7% are currently homeless and 29% have previously experienced homelessness. The most vulnerable age group is 35 to 54 years old, which has significantly higher rates of both current and historical homelessness compared to those aged 55 and above. Gender also plays a critical role, with more males currently experiencing homelessness than females. Furthermore, race is a factor in homelessness experiences, with a statistically significant difference showing that non-white populations have experienced homelessness more frequently in the past compared to the white population.

Social Factors: Abuse, Violence, Crime, Incarceration, & Risk of ACEs

Childhood experiences have profound and lasting effects on health behaviors and outcomes later in life. People who have multiple adverse childhood experiences (ACEs) are at far greater risk of poor health outcomes or behaviors including depression, substance use, and tobacco use (Center on the Developing Child, n.d.). ACEs include abuse and neglect as well as dysfunction in the household including mental illness, problematic substance use, violence against mothers, or imprisonment of a household member (Anda et al., 1998).

The probability of poor health outcomes increases with the number of ACEs in childhood in a dose-dependent fashion (as shown below in Table 5.1). For example, an individual with one ACE is approximately 1.3 times more likely to have ever injected drugs compared to an

individual with no ACEs. For an individual with four or more ACEs, however, this likelihood profoundly rises to 10.3 times. Studies show ACEs are strongly associated with a higher prevalence of all proximate risk factors identified in this report including tobacco use, substance abuse, and mental health challenges. Unfortunately, children in Del Norte County are at considerable risk of experiencing ACEs, including abuse & neglect, and witnessing domestic violence.

Table 5.1

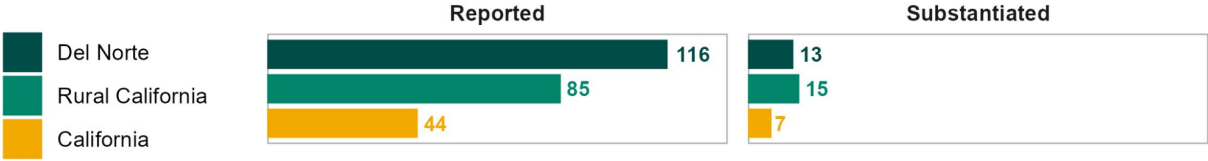
Odds Ratios, Adjusted for Age, Gender, Race, and Educational Attainment (Anda et al., 1998)

Number of ACEs	0	1	2	3	4 or More
Current smoker	1	1.1	1.5	2.0	2.2
Considers self an alcoholic	1	2.0	4	4.9	7.4
Ever used illicit drugs	1	1.7	2.9	3.6	4.7
Ever injected drugs	1	1.3	3.8	7.1	10.3
Two or more weeks of depressed mood in the past year	1	1.5	2.4	2.6	4.6
Ever attempted suicide	1	1.8	3	6.6	12.2

Child Abuse

As shown in the figures below, children in Del Norte and rural California are approximately twice as likely to suffer from abuse or neglect compared to the state overall. Additionally, the frequency of domestic violence calls in Del Norte is significantly and consistently higher than in other comparatively rural areas, indicating a particularly severe challenge unique to the county. The rate of felony arrests, including those for violent crimes and sex offenses, is also higher in Del Norte. This indicates children in the area are at greater risk of witnessing these crimes or potentially becoming victims themselves. Moreover, incarceration rates are higher, suggesting children are more likely to have a family member imprisoned compared to other regions in the state. Consequently, children in Del Norte face increased exposure to a broad spectrum of adverse childhood experiences (ACEs).

Figure 5.7
Reported or Substantiated Abuse or Neglect per 1,000 Children Aged 0 to 17 (2020)

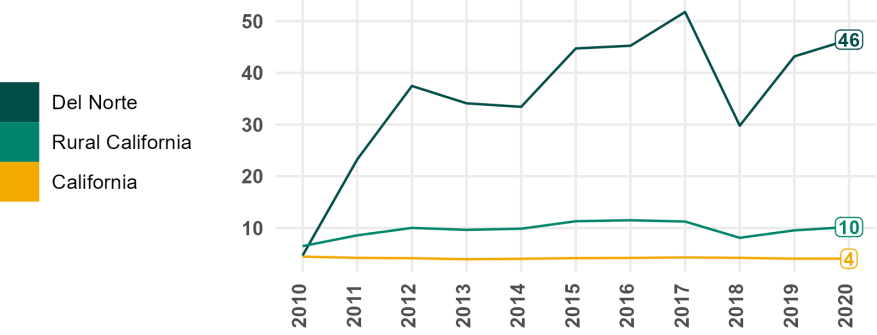


Note. For reported abuse, data are sourced from KidsData’s 2020 data set titled “Reports of Child Abuse and Neglect;” for substantiated abuse, data is sourced from KidsData’s 2020 data set titled “Substantiated Cases of Child Abuse and Neglect.”

Domestic Violence

Longitudinal data indicate domestic violence (DV) remains a critical and persistent public health issue in the county. As shown in the figure below, since 2010 the number of calls to law enforcement by residents for assistance related to DV per 1,000 population has been higher in Del Norte County than the state overall as well as rural California. The current rate for Del Norte County is nearly 12 times higher compared to the state and over four times higher than rural California. This disparity highlights the urgent need for targeted intervention and resources to address the alarmingly high rates of domestic violence in the county.

Figure 5.8
Domestic Violence Calls per 1,000 Population (2010-2020)



Note. Domestic violence call totals sourced from Kidsdata.org. Population data sourced from the California Department of Finance. Rates calculated by the author.

Felony Arrests

Felony crime has been on par or demonstrably worse in Del Norte County compared to the state over the past two decades. Rates for felony arrests related to drugs, sexual offenses, property crimes, and violent crime are higher in Del Norte than they are in the state overall, as well as across comparative rural California. Property crimes, violent crime, and sex offenses are particularly high in Del Norte when compared to the state and rural California.

Figure 5.9
Felony Arrests per 100,000 Population by Offense Type



Note. Arrest data sourced from the California Department of Justice. Population figures sourced from the California Department of Finance.

Incarceration Rates

Figure 5.10
State Incarceration Rate by County of Origin



Note. Data sourced from Prison Policy Institute (Prison Policy Initiative, 2020). These data indicate incarceration based on which county the prisoner is from. Thus, only PBSP prisoners included in this metric would be those coincidentally from Del Norte.

Populations at Risk

Findings from the Del Norte Community Survey (DNCS) indicate the population of Del Norte has been significantly exposed to domestic violence, adverse childhood experiences, and arrests.

Domestic Violence. Domestic violence encompasses a range of abusive behaviors within intimate relationships, including physical, emotional, psychological, sexual, and economic abuse. It is characterized by a pattern of coercive control exerted by one partner over the other, often resulting in significant harm and trauma to the victim. Fifty percent of DNCS participants have experienced domestic violence. This statistic underscores the pervasive nature of domestic violence within the surveyed community in Del Norte County. Importantly, the impact of domestic violence appears equally detrimental across gender, age, and race groups, highlighting its indiscriminate effects on individuals regardless of demographic factors.

Adverse Childhood Experiences. DNCS findings reveal a majority of participants (69%) have experienced Adverse Childhood Experiences (ACEs). Specifically, 40% reported emotional abuse, 32% reported emotional neglect, 33% reported parental separation or divorce, 29% reported exposure to substance abuse, and 28% reported exposure to mental illness within the household. These statistics highlight the multifaceted challenges faced by individuals during their formative years.

Arrests. Twenty-four percent of DNCS participants disclosed a history of past arrests. Analysis of the data revealed a significant gender disparity, with males being disproportionately represented among those who reported having been arrested compared to females. This finding underscores a notable gender imbalance in the prevalence of arrest experiences within the surveyed sample.

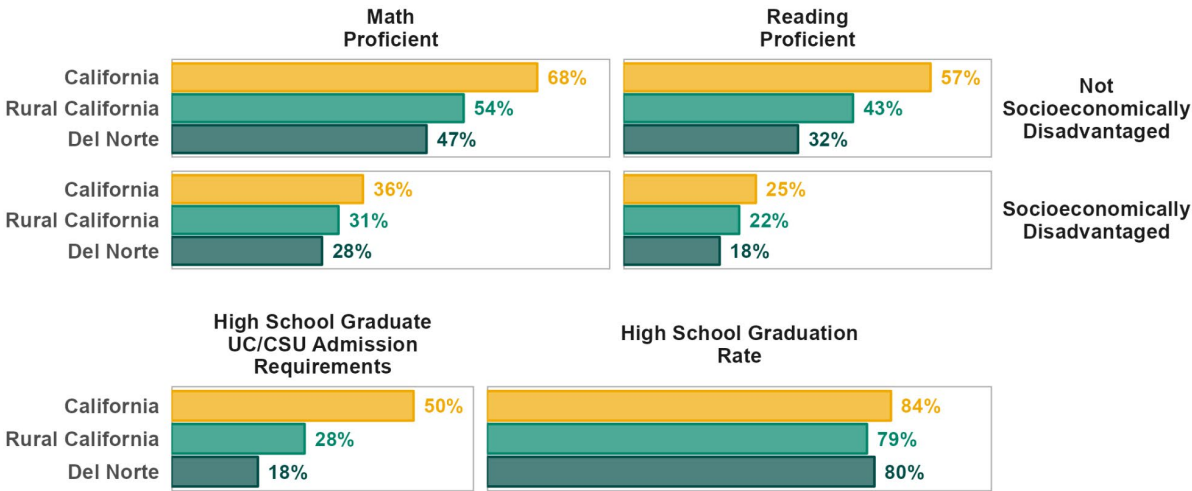
Institutional Factors: Access to Education and Educational Attainment

Individuals with higher levels of education tend to live longer and experience lower all-cause mortality rates. The connection between health and education, while still subject to debate, is supported by numerous studies suggesting higher educational attainment correlates with reduced risk of certain preventable illnesses and longer lifespans (Braveman et al., 2010; Goldman & Smith, 2011; Montez, Hummer, & Hayward, 2012; Olshansky et al., 2012). Specifically, education is strongly associated with decreased mortalities due to lung cancer, respiratory diseases, homicides, and certain accidents. However, the association is weaker for less preventable causes of death, such as cancers not related to the lung (Hernandez & Hummer, 2013). Over recent decades, smoking rates have also shown a strong correlation with education. In the late 1960s, about 40% of individuals with college degrees smoked, compared to 45% of those without. This gap widened substantially over time, with only 6.5% of college graduates

smoking by 2018, compared to 23.1% of those with only a high school diploma or less (Cahn et al., 2018). These trends underscore how preventable and behavioral risk factors influence the health-education relationship.

According to Healthy People 2030 (n.d. -a), target objectives for improving educational access include improving high school graduation rates, increasing college enrollment, and improving math and reading proficiencies in K-12 students. As shown below, there are substantial gaps in these indicators for Del Norte and rural counties, disparities which disproportionately impact students from disadvantaged households. Moreover, while high school graduation rates are not far behind the state rate, these graduates tend to be much less prepared for college admission compared to the state average. Just 18% of Del Norte high school graduates have completed the course requirements for admission to the University of California (UC) or California State University (CSU) systems (i.e. “A–G courses”) lagging behind the state rate of 50% and the Rural California comparison of 28%.

Figure 5.11
K-12 Math and Reading Proficiency, College Preparedness and H.S. Graduation Rates (2017 - 2021)



Note. Data sourced from Kidsdata.org. Reading and math proficiency includes grades 3, 4, 5, 6, 7, 8, and 11 and 2017-2019 school years. Proficiency based on California Assessment of Student Performance and Progress’s ‘Smarter Balanced Summative Assessment’. High school graduation rates include 2017-2021 data³⁷ all other indicators include only 2017-2019 data.

³⁷ High school graduation rate is defined as the percentage of public school students from the graduating class who receive a high school diploma. Admission requirements is defined as the percentage of high school graduates who complete all courses required for UC/CSU admission with a grade of “C” or better

A potential contributing factor to lower math and reading proficiency, as well as lower levels of college preparation, may stem from systemic challenges within the education system in rural counties like Del Norte. In many of these areas, the system often requires teachers to cover subjects without providing sufficient support or resources to ensure subject matter competency (see “Out-of-field” below). This issue is particularly evident in subjects like English and mathematics, where 15% of rural English teachers and 19% of rural math teachers are assigned to teach without demonstrating full competency in the subject area. Additionally, a significantly lower percentage of teachers in Del Norte and other rural counties have completed all state-required certifications, when compared to statewide averages, pointing to broader disparities in teacher support and development.

Table 5.2
K-12 Teacher Qualifications

	All Teachers			English Language Arts			Mathematics		
	California	Del Norte	Rural California	California	Del Norte	Rural California	California	Del Norte	Rural California
Out-of-Field	4%	11%	10%	6%	20%	15%	8%	18%	19%
Intern	2%	2%	3%	2%	0%	3%	2%	6%	1%
Clear	84%	69%	75%	79%	60%	70%	78%	35%	60%

Note. Data sourced from the California Department of Education (California Department of Education, n.d.). See footnote for definitions of terms. Out-of-field indicates that a teacher has not demonstrated subject matter competency³⁸. Interns have demonstrated subject matter competency, but are currently working on their credential. Teachers with a clear credential have completed all requirements.

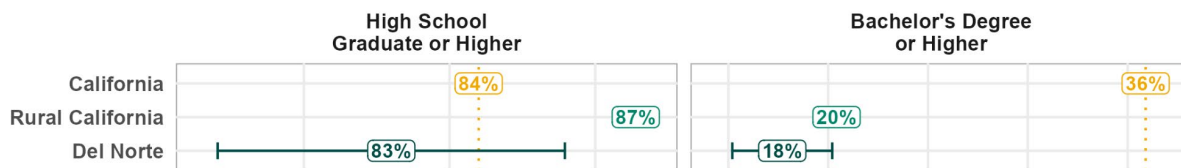
Del Norte lacks a four-year university but hosts a satellite campus of the College of the Redwoods, which is scheduled to offer 37 courses in Fall 2024. These include transfer-level English and math courses (College of the Redwoods, n.d.). However, a 2017 state law significantly curtailed the availability of remedial courses at community colleges, which are designed to help students bridge gaps in their high school education (California Community Colleges Chancellor's Office, n.d.). For the Fall 2024 semester, no remedial math or English courses are offered at the Del Norte campus.

Adult educational attainment corresponds with these barriers. Four-year degree attainment among the population 25 years or older is substantially lower than state averages in Del Norte and rural counties. Some care has to be taken when interpreting the figures for Del Norte County as these figures include the PBSP population. However, this trend is consistent with other rural counties.

³⁸ In California, teachers may demonstrate this either by completing an approved education program or by passing a series of exams.

Figure 5.12

Educational Attainment, Population 25 Years or Older (2018 - 2022)



Note. Data sourced from the ACS. Rural California estimate calculated by taking the population-weighted average (adults 25 years and older only) for rural counties.

Populations at Risk

Thirty percent of DNCS participants have a bachelor’s degree (BA) or higher, which likely suggests well educated residents were oversampled, especially considering ACS data estimate only approximately 18% of residents have a bachelor's degree or higher. It is worth noting fewer (42%) non-white participants have a BA or higher compared to white participants (52%), though this difference is not statistically significant. No clear evidence from DNCS data suggest differences in educational attainment across age, gender, and race/ethnicity. No clear indications of barriers to educational access can be inferred from DNCS data.

Environmental Factors

Healthy Places Index

Table 5.2 highlights key demographic and Healthy Places Index (HPI) data for Del Norte County and rural California. The HPI, which rates from -1 to 1, reflects the overall social determinants of health in a community, with lower scores indicating greater challenges. In regions with low HPI scores, like many rural counties, environmental degradation and lack of infrastructure can intensify social inequalities, leading to poor health outcomes. Del Norte County has one of the lowest HPI scores in the state—lower than rural California counties—at -0.53, placing it in the 5th percentile. This low score suggests Del Norte faces significant challenges across multiple factors, including economic stability, education, and access to healthcare. In contrast, counties like Inyo, with an HPI score of 0.17 and a ranking in the 77th percentile, enjoy relatively better conditions. Del Norte's low HPI ranking underscores the deep disparities in health outcomes compared to other areas, highlighting the need for targeted public health interventions to improve the well-being of its residents.

Table 5.2

2022 Healthy Places Index (HPI) Scores for Del Norte and Rural California

Rural County	Population	HPI	Percentile
Inyo	17,977	0.17	77th
Mono	14,310	0.14	71st
Plumas	18,660	-0.13	55th
Colusa	21,454	-0.24	36th
Siskiyou	43,468	-0.25	34th
Sierra	3,040	-0.25	32nd
Lassen	30,818	-0.30	29th
Mariposa	17,420	-0.31	27th
Glenn	27,976	-0.40	20th
Modoc	8,907	-0.50	11th
Trinity	12,700	-0.52	7th
Del Norte	27,495	-0.53	5th
Alpine	1,039	-	-

Note. Data sourced from the Public Health Alliance of Southern California (2022). Data for Alpine County are suppressed.

Environmental Quality Indicators (CalEnviroScreen 4.0)

The data presented below are sourced from CalEnviroScreen 4.0, a mapping tool developed by the California Office of Environmental Health Hazard Assessment (OEHHA) to identify communities in California disproportionately affected by pollution and other environmental risks. For each pollution indicator (13 in total), a score is calculated and ranked in percentiles. Lower percentiles represent acceptable pollution levels, while higher percentiles point to areas with more concerning environmental risks.

Table 5.3 provides an overview of pollution indicators and their respective percentiles for Del Norte County. Although some indicators initially appear problematic, percentiles can be misleading when viewed at a broader scale. Therefore, it is crucial to analyze these indicators at the neighborhood level, specifically by census tracts. OEHHA categorizes percentiles as: ‘good’ for the 0 to 25th percentiles, ‘acceptable’ for the 26th to 50th percentiles, ‘concerning’ for the 51st to 75th percentiles, and ‘bad’ for the 76th to 100th percentiles. The following analysis examines each indicator, with a focus on those areas (i.e., census tracts) where pollution and associated risks are particularly elevated.

Table 5.3

Del Norte County CalEnviroScreen 4.0 Risk Factors

Pollution Indicator	Percentile
Solid Waste	75th
Lead	46th
Groundwater Threats	44th
Drinking Water	34th
Hazardous Waste	34th
Cleanup Sites	26th
Pesticides	22nd
Impaired Bodies of Water	18th
Diesel PM	11th
Traffic	9th
Ozone Concentrations	3rd
PM 2.5	3rd
Toxic Releases	3rd

Note. Data sourced from CalEnviroScreen 4.0. CES 4.0 represents the overall CalEnviroScreen 4.0 pollution score percentile. Diesel PM = Diesel Particulate Matter.

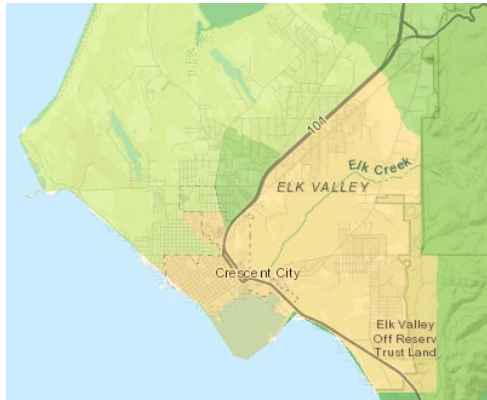


Figure 5.13

Overall Pollution (CES 4.0)

Figure 5.13 highlights the census tracts in Del Norte County with the highest levels of environmental risk, based on percentiles that combine both pollution burden and population vulnerability (e.g., high poverty rates, low education levels, poor housing conditions, and high unemployment). The percentiles represented in this figure compare census tracts in Del Norte to all other census tracts in California. Del Norte County ranks in the

40th percentile, meaning it has a moderate pollution burden compared to the rest of the state. However, certain areas, particularly in and around Crescent City, show deviations from this trend. Some census tracts in these areas rank high in percentiles, reflecting greater environmental concerns due to higher pollution and greater population sensitivity. In Figure 5.13, deeper colors represent tracts with higher percentiles, indicating these areas are more affected by pollution and population vulnerability relative to other census tracts across California. While the county’s overall pollution burden is moderate, these localized pockets of concern pose significant environmental risks and deserve focused intervention.

The discussion below covers the key pollution indicators contributing to these risks within Del Norte County: drinking water contaminants, children’s lead risk from housing, pesticide use, cleanup sites, groundwater threats, hazardous waste, impaired bodies of water, and solid waste sites. Each indicator is critical to understanding environmental and public health challenges within the county, particularly at the neighborhood/community (i.e., census tract) level.

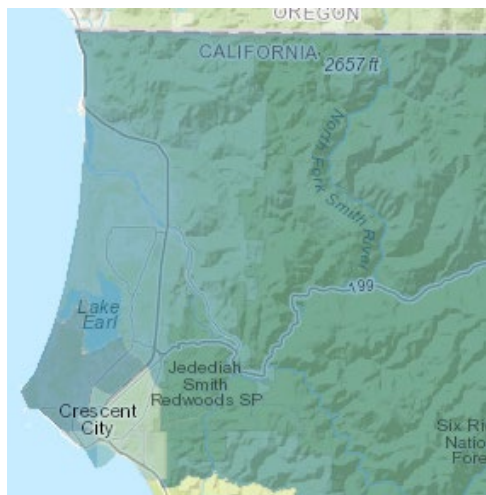


Figure 5.14
Drinking Water Contaminants

The drinking water contaminants indicator falls within the 34th percentile overall, which is considered acceptable by the California Office of Environmental Health Hazard Assessment (OEHHA). However, a closer examination of specific census tracts in Del Norte County reveals that one tract (6015000105) ranks in the 51st percentile, indicating a higher level of concern. This elevated percentile suggests the quality of drinking water in this area may pose greater environmental and public health risks relative to the other areas in the county.

Figure 5.15
Children’s Lead Risk from Housing

The "Children’s Lead Risk from Housing" indicator in Del Norte County ranks in the 46th percentile overall, suggesting an acceptable level of risk. However, a more detailed analysis reveals that three specific census tracts (6015000104, 6015000203, and 6015000101) rank in the 52nd, 53rd, and 55th percentiles, respectively, indicating a heightened risk of lead exposure in these areas. It is important to note that this variable does not directly measure lead exposure but infers risk based on factors such as child poverty rates and the age of housing structures³⁹. Compounding this concern, Medi-Cal testing rates from 2022 show that not enough children in Del Norte County were being tested for lead, reflecting a shortfall in critical health screening practices. Similarly, according to the Partnership HealthPlan of California (2024), only 204 children, or 38% of those enrolled in Medi-Cal, were tested for blood



³⁹ Exposure to lead-based paint in older homes is the most significant source of lead poisoning in children (California Office of Environmental Health Hazard Assessment, n.d.).

lead levels (BLL) in 2023—a rate considerably below national benchmarks and lower than other northern region counties. For comparison, the 25th percentile of the National Medicaid Benchmark includes testing 53% of the population, which is nearly twice as high as the rate in Del Norte, further underscoring the urgent need for improved lead testing in the area.

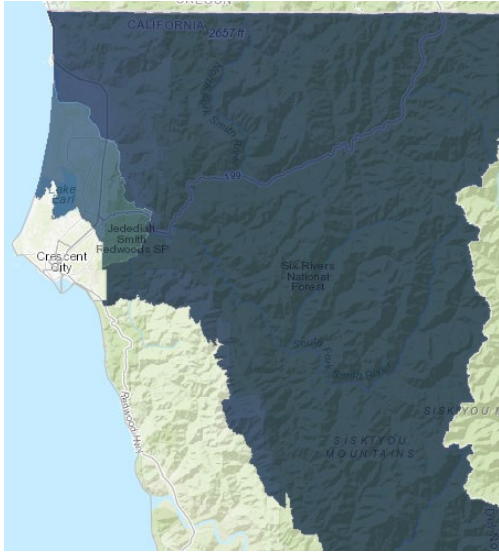
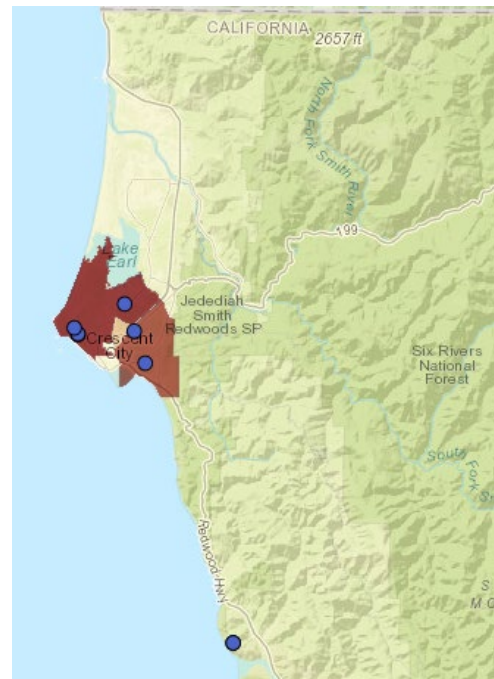


Figure 5.16
Pesticide Use

This pattern of localized concern is also evident in the Pesticide Use indicator. While the county’s overall ranking is favorable at the 22nd percentile, two specific census tracts (6015000201 and 6015000202) rank in the 76th and 82nd percentiles, categorizing them as ‘bad’ and raising significant environmental and health concerns due to elevated pesticide use.

Figure 5.17
Cleanup sites

A similar trend of elevated risks emerges with the cleanup site’s indicator. Although the county ranks in the 26th percentile overall, two tracts (6015000102 and 6015000105) pose significant challenges, ranking in the 72nd and 89th percentiles, respectively. These tracts are categorized as ‘concerning’ and ‘bad’, highlighting the presence of cleanup sites that may threaten local environmental and public health.



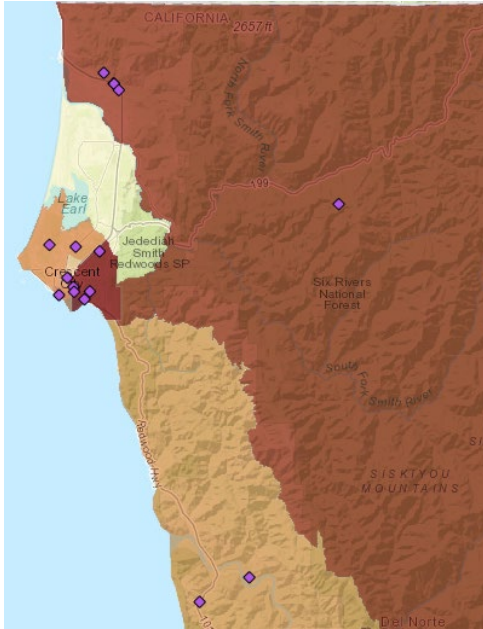
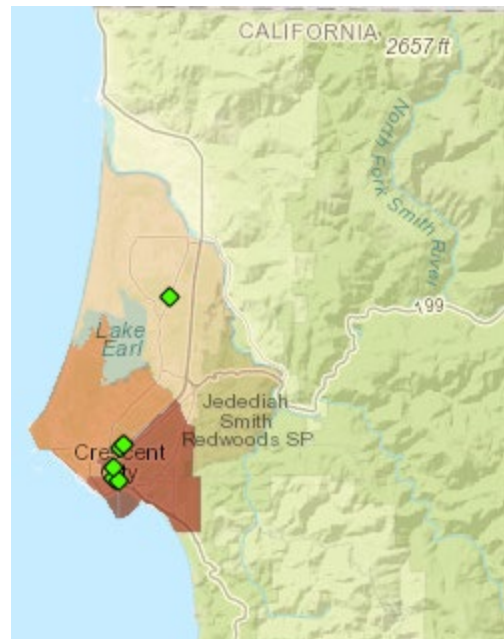


Figure 5.18
Groundwater Threats

Additionally, the groundwater threat indicator, despite an overall acceptable ranking at the 44th percentile, reveals three tracts (6015000101, 6015000202, and 6015000102) rank in the 55th, 74th, and 81st percentiles, with the latter tract falling into the ‘bad’ category, signaling the need for intervention to address groundwater contamination risks.

Figure 5.19
Hazardous Waste

Further evidence of localized environmental risks is seen with the hazardous waste indicator. Although it ranks in the 34th percentile overall, two tracts (6015000101 and 6015000102) rank in the 62nd and 69th percentiles, respectively, placing them in the concerning category due to hazardous waste site concentrations.



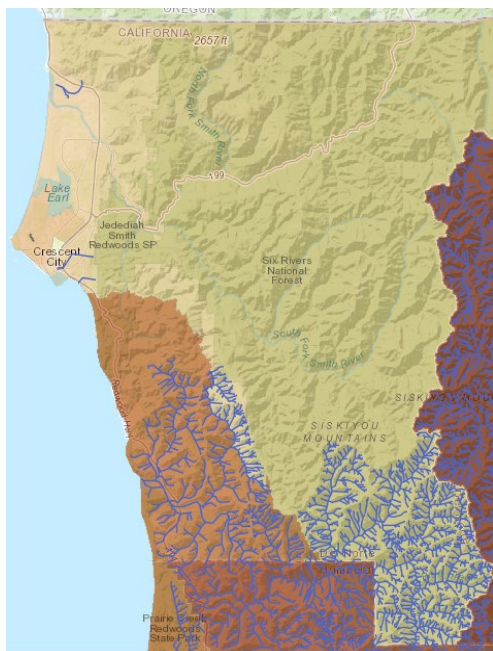
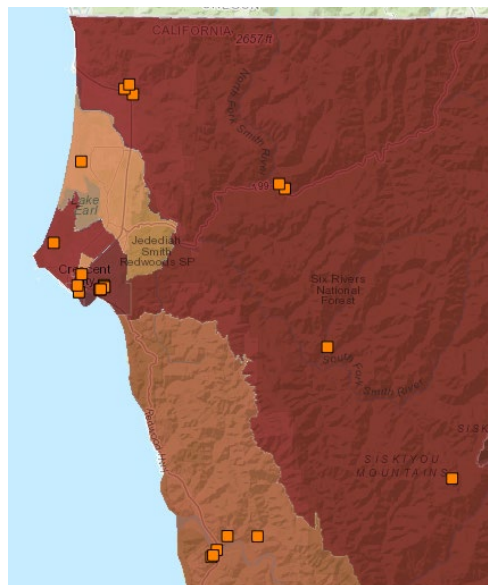


Figure 5.20
Impaired Bodies of Water

In contrast, the impaired bodies of water indicator ranks in the 18th percentile, reflecting minimal concern. However, one census tract (6015000203) stands out with a 51st percentile ranking, placing it on the borderline between acceptable and concerning categories, suggesting a potential need for closer water quality monitoring.

Figure 5.21
Solid Waste Sites

The most urgent issue emerges from the solid waste sites indicator, which ranks in the 75th percentile, signaling a significant concern for all Del Norte residents. Three census tracts (6015000104, 6015000201, and 6015000203) are categorized as concerning, while four tracts (6015000105, 6015000101, 6015000102, and 6015000202) fall into the bad category. This indicates critical challenges in solid waste management countywide, necessitating immediate action to mitigate the associated environmental and public health risks.



Environmental factors discussed in this section highlight both broad and localized challenges within Del Norte County. While the county's overall pollution burden may appear moderate, a deeper examination of specific census tracts reveals significant concerns related to drinking water contaminants, lead exposure, pesticide use, cleanup sites, groundwater threats, hazardous waste, and solid waste management. These localized environmental risks, particularly in areas in and around Crescent City, underscore the need for targeted interventions. The low Healthy Places Index (HPI) score for Del Norte further emphasizes the interplay between environmental degradation and social determinants of health, pointing to the necessity for comprehensive public

health strategies to address both environmental and social inequities. Immediate attention is required to mitigate risks in the most impacted areas, particularly those with alarming pollution indicators.

Economic, Social, Institutional & Environmental Factors

Takeaways

Economic, Social, Institutional & Environmental Guiding Questions: *What economic, social, institutional, and environmental factors potentially contribute to these outcomes and factors? Which sub-populations have greater risk for these factors?*

In summary, the economic, social, institutional, and environmental factors outlined above contribute to the current state of the population's overall health. These interconnected factors create complex challenges that resist singular or linear solutions.

- Females face more acute challenges in **accessing housing and mental health** services compared to males, with statistically significant differences.
- Individuals aged 18 to 34 encounter disproportionately high barriers in **securing housing and medical care**, with these distinctions being statistically significant.
- Only 30% of respondents reported **consuming three or more servings of fruits and vegetables daily**, falling short of the recommended five or more servings.
- The most vulnerable age group is 35 to 54 years old, experiencing significantly higher rates of both **current and historical homelessness** compared to those aged 55 and above.
- Race influences homelessness experiences, with **non-white populations having experienced homelessness more frequently than white populations**, a statistically significant difference.
- 50% of the survey participants have experienced **domestic violence**.
- A significant portion of the survey participants (69%) have encountered **Adverse Childhood Experiences (ACEs)**.
- Males are disproportionately represented among those who reported **having been arrested** compared to females.

Section 6. Leveraging Community Strengths and Resources to Improve the Health of the Region



Key Community Strengths, Assets, and Avenues to Improve Health

Del Norte Community Survey (DNCS) Results

In addressing the question of what constitutes the best aspect of living in Del Norte County, DNCS participants highlighted several key factors that enhance their quality of life. Parks and recreation were identified as the most valued feature, with 56% of respondents appreciating the county's outdoor amenities. A clean environment was the second most frequently mentioned benefit, valued by 44% of participants, particularly those aged 55 and above, who rated it more highly than other age groups. Community involvement was cited by 35% of participants, underscoring the importance of social engagement and a supportive community network. Additionally, 26% of participants considered Del Norte County a good place to raise children, reflecting the perceived safety and family-friendly atmosphere of the area. Lastly, arts and culture were important to 23% of participants, indicating an appreciation for the county's cultural offerings.

When asked what would have the greatest beneficial impact on their health, participants identified several key areas. Below are the top five responses participants noted. The first one—improved access to medical care (34%), indicating a strong need for enhanced healthcare services. Mental health support was the second most frequently cited factor (11%), underscoring the importance of addressing mental health issues within the community. Physical activity and fitness resources were highlighted by 10% of participants, reflecting a desire for more opportunities to engage in healthy lifestyles. Affordable and safe housing was mentioned by 9% of participants, pointing to housing security as a critical determinant of health. Lastly, 7% of participants indicated increased employment opportunities would have a positive impact on their health, emphasizing the role of economic stability in overall well-being.

Community Context Assessment Results

In addition to the DNCS, qualitative data were collected using the MAPP 2.0 Community Context Assessment tool. The tool provided questions around 3 domains: 1) Community Strengths & Assets, 2) Built Environment, and 3) Forces of Change. Some of the information gathered through the conversations around these domains is outlined in the section below, and these data will be foundational for in the next phase of the work with the Community Health Improvement Plan (CHIP).

Community Strengths & Assets

To gather information for the first domain, Community Strengths and Assets, an interactive brainstorming activity with the Del Norte Community Health Assessment Steering Committee, was conducted for the current report. Three questions were asked of the group: 1) What strengths and assets do community members have?; 2) How do these community strengths and assets contribute to community health?; and 3) Which strengths and assets can be used and strengthened to address health inequities? The results of the conversations around these questions are summarized below:

- Community Strengths and Assets:
 - Strong Collaborations, Partnerships, and Networks: Extensive network and collaboration among community groups.
 - Collective Compassion: Strong sense of community care and support.
 - Diverse Services and Programs: Over 170 services including health, transportation, and cultural resources.
 - Nature and Outdoor Access: Abundance of natural resources promoting mental and physical health.
 - Regional Support and Connections: Strong regional and Tribal connections.
 - Resilience: Ability to adapt in times of crisis or need.

- Contributions to Community Health:
 - Nature and Outdoor Access: Promotes mental and physical health through outdoor activities and clean air.
 - Social Connections: Community supports reduce isolation, improve mental health, and prevent neglect.
 - Healthcare Access: Local services and partnerships improve access to medical, behavioral health, and dental care.

- Addressing Health Inequities:
 - Equity and Inclusion: Focus on Diversity, Equity, and Inclusion (DEI) in coalition building and policy change.
 - Education and Workforce Development: Enhancing educational opportunities and job training to reduce poverty and increase workforce qualifications.
 - Healthcare Access: Targeted programs and partnerships to improve access to healthcare services and resources.
 - Community Support Systems: Strengthening social connections and support networks to address chronic disease, substance abuse, and mental health issues.
 - Food Security: Enhancing access to healthy food through local gardens and food pantry initiatives.

Built Environment

The second domain identified by the MAPP 2.0 tool is Built Environment which focuses on human-made surroundings that influence community health. The questions for this domain focus on the types of assets and resources that exist in the community, how the community interacts with those resources, and where there may be inequities or room for improvement.

Del Norte County has a wide range of physical assets and resources that contribute to the health of the community. Interview participants spoke primarily about the local health and behavioral health providers, emergency responders, and the various programs or services for food access, transportation, housing, education, and children and family support. Some participants also mentioned the natural environment and how certain areas of the county have been developed to enhance outdoor recreation and agriculture in farming or fishery. Participants reflected on how, despite being a small community, they have a considerable number of resources, many of which would not be possible without the strong relationships and networks built throughout the community.

However, even with the diversity of resources, the county does face challenges, many of which are similar to other rural areas across the United States. The first major challenge is a majority of programs and services are located in the largest population center, Crescent City. Those living in the more remote areas of the county have limited access, especially when it comes to healthy food options. This is especially true for those that do not have access to a reliable vehicle as public transportation options outside of the Crescent City limits are extremely limited. For those living outside of the main city center, interviewees shared that healthy food access can be a significant barrier to health as there are very limited options in the small convenience stores and prices are expensive. Within the city there are multiple grocery store options along with free food programs, however, without reliable transportation these can be hard to access, and the ability to transport heavier or more affordable large bulk purchases can be limited by the available transportation options. Though farmers markets are organized in some of the more remote areas, there are still limitations due to weather and new state requirements for CA Certified organic farming. Vendors, just twenty minutes away but across the state line, cannot participate, even though they are part of the local & regional food system.

The second major challenge discussed was lack of health care and behavioral health access. The county is designated as a Health Professional Shortage Area (HPSA) meaning even if the provider organizations exist, licensed providers are hard to recruit and retain. This leads to limited access for non-emergency services; community members either don't access primary or routine care, or they must leave the county for services, which isn't always an option for some residents. This lack of access may help to explain the health outcomes which were outlined above in Section 3 of this report.

The third major challenge discussed was the shortage of affordable housing. Existing housing in Del Norte is often at full capacity, resulting in high rental and purchase prices. Although there are plans to construct new housing, the options are limited due to high building costs and scarcity of land suitable for development. Though this has been an issue for many years in Del Norte, it became even more problematic in recent years. Interviewees spoke to the idea that a lack of safe housing can lead to numerous health problems, which was also discussed in previous sections of this report.

Forces of Change

The final domain of the Community Context Assessment is Forces of Change. These questions focus on social, economic, political, technological, environmental, and scientific forces that could have an impact on the health of the community.

The main Force of Change discussed in the interviews was generational poverty stemming from the decline of resource-based industries decades ago, which continue to have an impact on employment and economic stability. This has created significant disparities in access to resources, particularly affecting the minority populations of the county, including Native American, Hmong, and Hispanic communities. The current community's resilience is evident in ongoing efforts by local organizations and initiatives working towards addressing these disparities and improving them for future generations.

Climate change and the COVID-19 pandemic have further reshaped conditions. While Del Norte has been fortunate to avoid severe climate impacts, such as wildfires and changing weather patterns, COVID-19 significantly disrupted local employment and services, underscoring vulnerabilities in the public health infrastructure. The response has required innovative adaptations, including expanded telehealth services and community collaboration to mitigate health impacts.

Efforts by health departments have been crucial yet constrained by resource shortages and increasing mandates, reflecting broader struggles to meet evolving public health needs. Collaborative approaches involving various stakeholders, including local government and educational institutions, have been pivotal in navigating these challenges, though systemic gaps persist, particularly in addressing substance use and supporting at-risk youth.



Community Voices

“We don’t have the capacity to deal with what we have to deal with, let alone by state mandates. The only way to do it here is to join forces and not be siloed. Whether you’re the school district, whether you’re the city, whether you’re the county, we have to combine our resources and collectively try to address it.”

Overall, the community's journey underscores the importance of proactive, collaborative strategies to address ongoing and emerging health challenges, emphasizing the need for upstream interventions to break the cycle of poverty and improve outcomes for future generations in Del Norte County.

While there are already numerous programs and initiatives working to address the challenges discussed in this section around the three domains, there is always room for improvement. More recommendations for improving community health will be outlined in the next phase of the work, the Del Norte County Community Health Improvement Plan.

Focus Group Results

In efforts to gather additional primary data from the general community, the County of Del Norte DHHS Public Health Branch staff conducted three focus groups. One with community members who identify as Native American, one with people who are experiencing homelessness, and one with people who are on a journey of recovery from substance use disorders. The focus groups consisted of fourteen questions divided into four sections: 1) Prevention and Health Promotion, 2) Access, 3) Behavioral Health, and 4) Closing. While much of the focus group discussions focused on ideas for improving community health which will be included in the CHIP, there was some conversation around the current health status and challenges in the county.

In the discussions about prevention and health promotion in Del Norte County, participants emphasized the holistic nature of health, encompassing both physical and mental well-being. They expressed that health is vital for survival and requires ongoing maintenance, particularly for the older population. Various community practices for staying healthy were highlighted, such as exercising, eating nutritious foods, and engaging in outdoor activities. However, concerns were raised about the limited healthcare resources available, especially for the homeless population, who face barriers such as inadequate access to medical services, lack of hygiene facilities, and insufficient funding for support programs.

The second set of questions were around health access and participants shared several barriers and challenges related to access. Many individuals only seek medical help for severe issues like extreme pain or infections, often trying home remedies first. Reluctance to seek care is fueled by experiences of prejudice based on living

DEL NORTE COUNTY

**EXPERIENCING HOMELESSNESS?
YOUR VOICE MATTERS**

**COMMUNITY HEALTH ASSESSMENT
2024 FOCUS GROUP DISCUSSION**

If you have faced homelessness, sharing your story can contribute to addressing community health concerns. Join a focus group to offer insights, discuss challenges, and suggest ways for improvement.

**Date: 5/28/24
Time: 3:00 - 5:00pm
Location: 1125 Burtshell St
Crescent City**

To RSVP or for more information, contact Shane at 707.464.0861 EXT 2825 or shane.gausepoh@dncoc.org
Space is limited.

A meal will be provided.

Participants will receive a \$30 cash prize for their time.

facebook.com/dncpublichealth

COUNTY OF DEL NORTE
California Center for Rural Policy

status or appearance. Consistent access to medical and dental care is problematic due to long wait times, difficulties in getting referrals, and understaffed programs. Insurance complications further delay access, with some individuals facing waits of up to seven months for appointments. Transportation to appointments is challenging, although various services exist, they often require advance notice and awareness to utilize. Telemedicine is underutilized due to lack of phone access, and insurance coverage inconsistencies complicate the process. Despite these barriers, those actively engaged with county or insurance provider care coordination may have better experiences, though participants still suggested the overall quality of care is affected by systemic issues and provider biases.

The third set of questions focused on behavioral and mental health, which, according to all focus group participants, is a significant concern in the community due to the lack of and/or inadequate services. Some participants suggested that the high prevalence of poor mental health issues is substantially contributing to the growing homeless population, which, for many individuals, results in unsafe conditions. The youth in the community seem to be especially impacted by mental and behavioral health challenges and without access to routine and/or crisis services participants are even more at risk than some adults. The prevalence of substance use disorders was also discussed in the focus groups as something that contributes to mental health challenges. While some services do already exist, capacity is limited, and services are not promoted enough in the community.

The final closing section first asked participants to share what factors in the community affects their well-being, and then asked follow-up questions for how to improve the health and well-being of the community. Several factors impact the well-being of the community, including the inability of current services to meet demand, lack of transportation for medical and mental health appointments, and economic challenges like high food and housing costs. Employment opportunities are limited, and the lack of affordable housing exacerbates these issues. Environmental concerns, such as high crime rates and lack of electricity, further affect community safety. Legal and civil rights issues are also prominent, with biased systems and ongoing changes to government support programs. The specific ideas for how to improve well-being will be discussed in the CHIP, but the general idea is that community members are looking for more safe spaces and support to access services.

Section 7. Conclusion

Del Norte County faces a myriad of public health challenges that significantly impact residents, particularly among vulnerable populations. Health outcomes in the county are notably poorer compared to state averages, with higher rates of premature death, chronic diseases, and mental health issues disproportionately affecting individuals of low socioeconomic status. These disparities are further compounded by socioeconomic and environmental factors, such as limited access to healthcare, high rates of substance use, and inadequate nutrition, which create additional barriers to achieving optimal health. This analysis explored the multifaceted health risks in Del Norte County, examining the underlying factors contributing to these disparities and highlighting the urgent need for targeted public health interventions.

Health Outcomes

Del Norte County faces notable challenges in health outcomes, particularly among people of color and the Native American population. Premature death rates in the county are substantially higher than the state average, reflecting underlying health disparities that disproportionately affect these communities. The mortality rates associated with tobacco use, substance abuse, and mental health conditions also exceed state averages, signaling a critical need for targeted interventions to address these pressing health issues. Furthermore, SAE models suggest the county's overall health status is poorer across a range of outcomes relative to the state, including respiratory health, heart disease, obesity, mental health, and oral health. These health disparities highlight the need for comprehensive public health strategies that address the unique challenges faced by the county's diverse populations.

The prevalence of Hepatitis C in Del Norte County is the highest in the state, and rates have been increasing in recent years. This rise is particularly concerning for individuals who inject narcotics using unsanitary needles, as they are at increased risk of contracting the virus. Disability rates in Del Norte County are also substantially higher than state averages, particularly among adults aged 18 to 34. Adequate oral health seems to be a significant challenge for many Del Norte residents. While overall health in the county may be a challenge for some residents, primary data from the Del Norte Community Survey (DNCS) provide no compelling evidence to suggest any specific group within the population experiences poorer overall health than others.

Proximate Risk Factors

Del Norte County is facing significant challenges related to tobacco use, substance use, and mental health, affecting both adults and children. Data from multiple sources indicate 11th graders and students in non-traditional schools, such as continuation schools, are at particularly high risk for substance use and suicidal ideation. The county also has an exceptionally high rate of fentanyl-related deaths, with Native American, Black, and male individuals between the ages

of 30 and 34 being the most at risk, according to statewide data from the California Department of Public Health (2024). Mental health struggles are also prevalent among Del Norte County adults, with approximately 27% of adults potentially experiencing frequent mental health issues, and up to one-third having experienced suicidal ideation at some point in their lives. Although there is no clear evidence subpopulations experience these mental health problems more than others—based on DNCS data, male adults may be more prone to suicidal thoughts compared to female adults.

Substance use is another area of concern in Del Norte County, with DNCS data suggesting nearly one-in-three adults may use some form of drug, most commonly cannabis. The frequency of drug use appears to be polarized, with some individuals using substances only occasionally, while others may use them daily or nearly every day. Alcohol consumption patterns also vary, with most DNCS participants (63%) reporting abstinence, while a smaller percentage (28%) consume one-to-seven drinks weekly, and an even smaller group (9%) consuming eight or more drinks weekly. Male adults in the county may have a higher rate of alcohol consumption compared to female participants, though this is not definitively clear. Nicotine use is also prevalent, with nearly one-in-three adults (29%) using some form of nicotine, either through tobacco products or vaping. Although this number may be inflated compared to previous data, it highlights the ongoing challenge of addressing substance use in the county.

Economic, Social, Institutional, and Environmental Factors

Economic, social, institutional, and environmental factors play a significant role in shaping the health outcomes of Del Norte County residents. Females face more acute challenges in accessing housing and mental health services compared to males, with statistically significant differences in these areas. Individuals aged 18 to 34 also encounter disproportionately high barriers in securing housing and medical care, further exacerbating the health disparities within the county. These challenges are compounded by dietary habits, as only 30% of respondents reported consuming three or more servings of fruits and vegetables daily, well below the recommended five or more servings. This dietary nutritional shortfall may contribute to the county's broader health challenges, including obesity and other diet-related conditions.

Homelessness is another pressing issue in Del Norte County, with the most vulnerable age group being those aged 35 to 54. This group experiences significantly higher rates of both current and historical homelessness compared to individuals aged 55 and above. Race also plays a critical role in the experience of homelessness, with non-white DNCS participants experiencing homelessness more frequently than white populations—a statistically significant difference. Additionally, DNCS data revealed 50% of participants have experienced domestic violence, and a significant portion (69%) have encountered Adverse Childhood Experiences (ACEs). Males are disproportionately represented among those who reported having been arrested compared to

females, highlighting the complex interplay of socioeconomic and institutional factors that contribute to health disparities in the county.

The health disparities in Del Norte County underscore the complex and interconnected challenges faced by its residents. From higher rates of premature death and chronic diseases to significant barriers in accessing healthcare and housing, the county's most vulnerable populations are disproportionately affected. The prevalence of substance use, mental health issues, and poor nutrition further exacerbates these challenges, highlighting the need for comprehensive strategies that address both the immediate health risks and the underlying socioeconomic and environmental factors. By understanding these issues in their full context, public health and community efforts can be more effectively tailored to improve the overall health and well-being of Del Norte County's diverse communities.

Leveraging Community Strengths and Resources

Del Norte County is not without its challenges and disparities around public health. Notwithstanding, there are many strengths held within the county and its residents that contribute to the community's overall well-being. Both DNCS participants and members of the Del Norte Community Health Assessment Steering Committee highlighted the county's natural beauty and access to outdoor spaces as key factors that foster public health. Additionally, the community's resilience and adaptability in the face of adversity, along with strong social connections that help prevent isolation and improve mental health, were noted as significant assets by interviewees.

Del Norte County also benefits from strong collaborations and partnerships among community agencies, as well as a diverse array of services and programs currently available to residents. Interviewees emphasized the importance of strategies to address health inequities, such as focusing on Diversity, Equity, and Inclusion (DEI) in policymaking, promoting education and workforce development, improving healthcare access, strengthening social connections and support networks, and enhancing food security.

By leveraging these strengths and continuing to foster collaboration and innovation, Del Norte County is well-positioned to enhance the well-being of all its residents and create a healthier, more inclusive community for generations to come.

Appendices

Appendix A: Del Norte CHA Community Survey

Demographic Information

1. What is your age?
 - Under 18
 - 18-24
 - 25-34
 - 35-44
 - 45-54
 - 55-64
 - 65+

2. ZIP code: _____

3. How do you identify your gender?
 - Male
 - Female
 - Non-binary
 - Other (Please specify in the textbox below): _____

4. Which of the following best describes your race or ethnicity? (Please select all that apply.)
 - American Indian or Alaska Native
 - Asian
 - Black or African American
 - Hispanic or Latino
 - Native Hawaiian or Other Pacific Islander
 - White
 - Other (Please specify in the textbox below): _____
 -

Community Health

5. In general, I think Del Norte County is a _____ community to live in. (Please select one answer from the list of options below)

<input type="checkbox"/> Very unhealthy	<input type="checkbox"/> Very healthy
<input type="checkbox"/> Unhealthy	<input type="checkbox"/> I don't know
<input type="checkbox"/> Healthy	

6. What are the **best parts** about living in Del Norte County? [Please select up to 5 choices from the list of options below]

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <input type="checkbox"/> Access to health care <input type="checkbox"/> Acceptance of diversity <input type="checkbox"/> Affordable housing <input type="checkbox"/> Arts and cultural events <input type="checkbox"/> Clean environment <input type="checkbox"/> Community involvement <input type="checkbox"/> Good childcare/after school programs <input type="checkbox"/> Good jobs and healthy economy <input type="checkbox"/> Elder care <input type="checkbox"/> Good place to raise children | <ul style="list-style-type: none"> <input type="checkbox"/> Good schools <input type="checkbox"/> Low crime/safe neighborhoods <input type="checkbox"/> Low death/disease rates <input type="checkbox"/> Parks and recreation <input type="checkbox"/> Religious or spiritual values <input type="checkbox"/> Substance abuse treatment <input type="checkbox"/> Support for families <input type="checkbox"/> Other (Please describe in the textbox below): _____ |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

7. What do you think are the **most important health challenges** in Del Norte County? [Please select up to 5 choices from the list of options below]

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <input type="checkbox"/> Alcohol or drug abuse <input type="checkbox"/> Bad environmental quality (e.g. pollution, smoke) <input type="checkbox"/> Child abuse/neglect <input type="checkbox"/> Chronic diseases (e.g. cancer, diabetes, etc.) <input type="checkbox"/> Dental health or oral hygiene <input type="checkbox"/> Domestic violence <input type="checkbox"/> Emotional/mental health <input type="checkbox"/> Hepatitis C (Hep C) <input type="checkbox"/> HIV/AIDS <input type="checkbox"/> Gun violence <input type="checkbox"/> Hunger or not enough food <input type="checkbox"/> Infant mortality <input type="checkbox"/> Inactivity/lack of exercise | <ul style="list-style-type: none"> <input type="checkbox"/> Lack of affordable housing <input type="checkbox"/> Limited access to healthy food <input type="checkbox"/> Obesity <input type="checkbox"/> Rape or sexual assault <input type="checkbox"/> Reckless driving/motor vehicle injuries <input type="checkbox"/> Sexually transmitted diseases (STDs; other than HIV/AIDS, Hep C) <input type="checkbox"/> Teenage pregnancy <input type="checkbox"/> Tobacco, e-cigarettes, vape pens, etc. <input type="checkbox"/> Other (Please describe in the textbox below): _____ |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Health Status

8. How would you rate your overall health status?
 - Poor
 - Fair
 - Good
 - Excellent

9. Have you ever been diagnosed with any of the following diseases or illnesses? (Please select all that apply.)
 - Cardiovascular disease
 - Diabetes
 - Cancer
 - Respiratory diseases
 - Other (Please describe in the textbox below): _____
 - None of the above

10. How would you rate your overall **oral health**?
 - Poor
 - Fair
 - Good
 - Excellent

11. Over the past month, how often have you felt mentally unwell (e.g., stressed, anxious, depressed)?
 - None of the time
 - Rarely
 - Some of the time
 - Often
 - Almost all the time

12. Have you ever seriously considered attempting suicide? Please select the response that best reflects your experience.
 - Never
 - Yes, once
 - Yes, more than once

IF YOU SELECTED ‘YES’ TO Q12:

Would you be willing to share more about the circumstances or factors that led you to consider suicide? Please select all that apply, and feel free to share as much or as little as you feel comfortable with.

- Mental health conditions (e.g., depression, anxiety)
- Personal loss (e.g., death of a loved one, end of a relationship)
- Financial or employment-related issues
- Health-related issues (personal or family)
- Feelings of isolation or loneliness
- Experiencing bullying or harassment
- Substance use or addiction
- Other reason (Please specify in the textbox below): _____
- None of the above
- Prefer not to say

Health Behaviors

13. In a typical week, how many alcoholic drinks do you consume? Please consider all types of alcoholic beverages, such as beer, wine, and spirits. If you do not consume alcohol, please select 'None'.

- None
- 1-2 drinks
- 3-4 drinks
- 5-7 drinks
- 8-10 drinks
- 11-14 drinks
- 15-20 drinks
- More than 20 drinks

IF YOU SELECTED 8 OR MORE DRINKS IN Q13:

What are the main reasons for your current level of alcohol consumption? Please select all that apply.

- Social occasions or celebrations
- To relax or unwind after work/stress
- Habit or routine
- To cope with emotional or psychological distress
- I enjoy the taste of alcoholic beverages
- Other (Please specify in the textbox below): _____

14. In the past year, have you used any of the following substances? Please select all that apply. If you do not use any recreational or non-prescribed drugs, please select 'None'.

- Cannabis (marijuana, hashish)
- Cocaine (including crack)
- MDMA (Ecstasy, Molly)
- Amphetamines (speed, meth)
- Opioids (Fentanyl, heroin, non-prescribed painkillers)
- Hallucinogens (LSD, psilocybin mushrooms)
- Inhalants (nitrous oxide, glue, aerosols)
- Prescription drugs (non-prescribed use)
- Other (please specify): _____
- None. I do not use recreational or non-prescribed drugs.

IF YOU SELECTED ANY OF THE DRUGS IN Q14:

How often have you used recreational or non-prescribed drugs in the past year?

- Only once
- Occasionally (less than once a month)
- Monthly
- Weekly
- Daily or almost daily

What are the main reasons for your use of recreational or non-prescribed drugs?

Please select all that apply.

- To relax or relieve tension
- For enjoyment or recreational purposes
- To cope with emotional or psychological distress
- Due to peer pressure or social situations
- To enhance creativity or productivity
- Other reasons (Please specify in the textbox below): _____

15. Do you currently use any nicotine product(s) (examples: cigarettes, vaping devices, e-cigarettes, chew, snuff, hookah, shisha, cigarillos, or cigars)

- Yes
- No

IF YOU SELECTED ‘YES’ TO Q15:

We appreciate your openness about your nicotine product use. Understanding the reasons why individuals use nicotine can help us provide better support and resources. Could you share why you use nicotine products? Please select all that apply and feel free to add additional reasons.

- Stress relief or relaxation
- Habit or routine
- Social reasons (e.g., smoking with friends, at parties)
- Enjoyment of the taste or sensation
- Weight management or appetite control
- Helps with concentration or focus
- A form of self-medication for emotional or psychological reasons
- Influence from family or friends who smoke
- Other (Please specify in the textbox below): _____

16. How many servings (cups) of fruits and vegetables do you consume on an average day?

- Less than 1 serving
- 1-2 servings
- 3-4 servings
- 5 or more servings

17. On average, how many days per week do you engage in at least 30 minutes of physical activity?

- 1-2 days
- 3-4 days
- 5 or more days
- None

Social Determinants of Health

18. Which of the following best describes your current employment status?

- Employed full-time
- Employed part-time
- Unemployed and currently looking for work
- Could not find a job and stopped looking for work
- Unable to work
- Not interested in a job (e.g. retired, student, caregiver)

19. In the past 12 months, have you or your family had to go without any of the following basic needs because you could not afford them? (Please select all that apply).

- Food
- Housing (e.g., unable to pay rent or mortgage)
- Medical care (e.g., medications, doctor visits)
- Heating or cooling
- Other. Please specify _____
- None of the above

20. What is the highest level of education you have completed?

- Less than high school
- High school graduate or equivalent
- Some college, no degree
- Associate degree
- Bachelor's degree
- Graduate or professional degree

21. How often do you have access to healthy, nutritious food?

- Never
- Rarely
- Sometimes
- Most of the time
- Always

22. Have you ever experienced homelessness, including situations where you did not have a permanent place to live, stayed in shelters, temporary housing, or places not meant for regular nighttime residence?

- Yes, I am currently experiencing homelessness.
- Yes, I have experienced homelessness in the past, but I am not currently homeless.
- No, I have never experienced homelessness.

IF YOU RESPONDED 'YES' TO Q22:

If you're comfortable sharing, could you please describe your experiences with homelessness? Feel free to include any causes or circumstances that led to these situations, challenges you faced, types of support or resources that were helpful, or any other details you believe are important.

23. In the past month, how often have you felt socially isolated or lonely?

- None of the time
- Rarely
- Some of the time
- Often
- Almost all the time

24. Before the age of 18, did you experience any of the following? (Please select all that apply)

- Physical Abuse
- Emotional Abuse
- Sexual Abuse
- Physical Neglect
- Emotional Neglect
- Parental Separation or Divorce
- Substance Abuse in the Household
- Mental Illness in the Household
- Incarceration of a Household Member
- Witnessing Domestic Violence
- None of the above

25. Have you ever experienced domestic violence in any form?

- Yes
- No

26. Have you ever been arrested or incarcerated?

- Yes
- No

27. Which of the following would have the greatest **beneficial impact** on your health?

(Please select the option that best applies to you from the list of options below)

- Improved access to medical care
- Mental health support services
- Nutritional education and healthy food access
- Physical activity and fitness resources
- Affordable safe housing
- Employment opportunities and job security
- Environmental improvements
- Educational opportunities
- Social support networks and connections
- Improved public transportation options
- Financial assistance programs
- Other (please specify in the textbox below) _____

Free Response Question

28. What resources does Del Norte County have that could be better used to improve the health and wellbeing of the community?

Appendix B: Detailed Data Limitations and Methodology

Several data limitations are evident within this report. First, some data points have suppressed data. To protect anonymity/confidentiality, data sources (e.g. CHRR) will omit county-level data when sample sizes are inadequate (e.g. $n < 12$). In the data visualizations throughout this report, missing data will either be suppressed from the visualization with notation, or the missing variable (e.g. county name) will be included in the visualization but without a corresponding value. Frustratingly, this often eliminates the ability to provide estimates for minority populations for counties with low populations.

Wherever feasible, data points include confidence intervals provided by the data source. Unless otherwise stated, all confidence intervals use a 95% level of confidence. In some cases, when necessary, variables are available and confidence intervals are not provided by the data source, confidence intervals are calculated with 95% confidence. Because Del Norte has a small population, the resulting small sample sizes often produce point estimates with wide confidence intervals.⁴⁰ This is a particular challenge quantifying a condition or event among a small subset of a population. This further narrowing of an already small population increases the statistical uncertainty of the estimate, widening confidence intervals.

Small Area Estimate (SAE) data, such as those from the Centers for Disease Control (CDC) and the Robert Wood Johnson Foundation's PLACES project, utilize regression techniques to predict health outcomes and behaviors at the county level. Specifically, the PLACES data incorporates information from the CDC's Behavioral Risk Factor Surveillance System (BRFSS), which is available regionally, along with population estimates from the Census Bureau's American Community Survey (ACS) and Decennial Census to make predictions at the county level. Although these estimates are predictive, they align with BRFSS survey estimates at the county level indicating methodological validity. However, the CDC advises caution in using these estimates to assess the impact of local interventions, as such effects would not necessarily be reflected in the data used to construct the predicted values. This caution also extends to AskCHIS Neighborhood Edition data and other sources classified as SAE.

The California Health Interview Survey (CHIS) is a rich dataset both in breadth and depth, providing direct survey evidence that in many cases are not available or comparable to other datasets. However, a limitation of these data is the aggregation of small population counties into larger statistical units. Because of this limitation, it is not possible to represent Del Norte County in these data as this county has been aggregated with seven other counties outside the Redwood Coast region.

⁴⁰ As an example, a point estimate for the poverty rate would be the estimated poverty rate (e.g. 20%), and the confidence interval would be a range of values that indicate the reliability of that point estimate. A wide confidence interval indicates that the point estimate is less reliable, whereas the narrow confidence interval indicates that the point estimate is likely close to reality.

Data from the Del Norte Community Survey (DNCS) may have been collected from a statistically biased and unrepresentative sample of Del Norte County residents. Notable discrepancies in age, race, and ethnicity representation were observed in DNCS data when compared to Census data for Del Norte County. For example, ACS data indicates 54% of residents identify as male, while only 24% of our survey respondents identify as male. This underrepresentation/overrepresentation of gender suggests our survey sample does not accurately reflect the county's population demographics. The DNCS was administered via social media using an anonymous Qualtrics link and QR code. Paper copies were also completed by residents who attended community-wide events sponsored by the county. We believe this distribution method introduced sample bias, which likely explains the representation issues observed in our survey data.

Administering the DNCS online, for example, inherently excludes individuals without internet access or those who do not engage with the county's digital platforms, leading to an underrepresentation of certain demographic groups, such as older adults or individuals from lower socioeconomic backgrounds. Additionally, the self-selection bias introduced by this method means those who chose to respond might have different characteristics or interests compared to the total population. DNCS estimates and corresponding confidence intervals should be taken with caution, meaning these results and their implications within this report, may not be generalizable to all Del Norte County residents. No statistical techniques were implemented to mitigate any effects from sample bias (e.g., weighting adjustments, bootstrap resampling).

Because of these disparate statistical challenges including limited population sizes, imperfect statistical representation of the geographic area, and small area estimation (SAE) techniques, wherever possible multiple data sources will be used to bolster the weight of evidence, enabling the identification of trends that emerge from the collective signals conveyed by the data. Where necessary, a more detailed discussion of data limitations particular to certain data sources is discussed further in their corresponding sections.

Terminology and Technical Methodology

The word “significant” is used deliberately and precisely throughout this report to mean that the difference between a variable and the state average is statistically significant at the level of confidence associated with the confidence interval provided by the data source. A difference between two variables is determined to be statistically significant when their confidence intervals do not intersect. Wide and overlapping confidence intervals should be interpreted as an absence of compelling evidence of difference rather than evidence of similarity between variables. Because of the data limitations above, the data sources used throughout this report may fail to indicate significant differences, when in fact true and meaningful differences exist.

To facilitate interpretation and comparison of findings, we include the observational period during which the data were gathered in the title of each data visualization. Data publication dates are included in the References section.⁴¹

All data analysis and visualization in this report was conducted using the R programming language. In this environment, we primarily made use of the Tidyverse suite of R packages. U.S. Census data were drawn from the Census Bureau’s application programming interface (API) via the TidyCensus R package. Unless otherwise stated, all maps in this report were made using data drawn from the Census Bureau via the TidyCensus library for R.

International Classification of Diseases (ICD-10) Codes for CDPH Data

Figure B.1

International Classification of Diseases (ICD-10) Codes

All Cancer Deaths	C00–C97
Colorectal Cancer	C18–C21, C260
Lung Cancer	C34
Female Breast Cancer	C50
Prostate Cancer	C61
Diabetes	E10–E14
Alzheimer’s Disease	G30
Coronary Heart Disease	I20–I25
Cerebrovascular Disease (Stroke)	I60–I69
Influenza and Pneumonia	J09–J18

⁴¹ When multiple data sources or variables are included, we include the total observational window. For example, if one variable has an observational window of 2015 to 2018 and another has an observational window of 2016 to 2019, 2015 to 2019 will be given in the title.

Chronic Lower Respiratory Disease	J40–J47
Chronic Liver Disease and Cirrhosis	K70, K73–K74
Accidents (Unintentional Injuries)	V01–X59, Y85–Y86
Motor Vehicle Traffic Crashes	V02–V04(1, 9), V092, V12–V14(3–9), V19(4–6), V20–V28(3–9), V29–V79(4–9), V80(3–5), V811, V821, V83–V86(0–3), V87(0–8), V892
Suicide	U03, X60–X84, Y870
Homicide	U01–U02, X85–Y09, Y871
Firearm-related Deaths	U014, W32–W34, X72–X74, X93–X95, Y22–Y24, Y350
Drug Overdose Deaths	X40–X44, X60–X64, X85, Y10–Y14

Note. Codes sourced from CDPH County Health Status Profiles 2023 (California Department of Health, 2022).

Table B.2

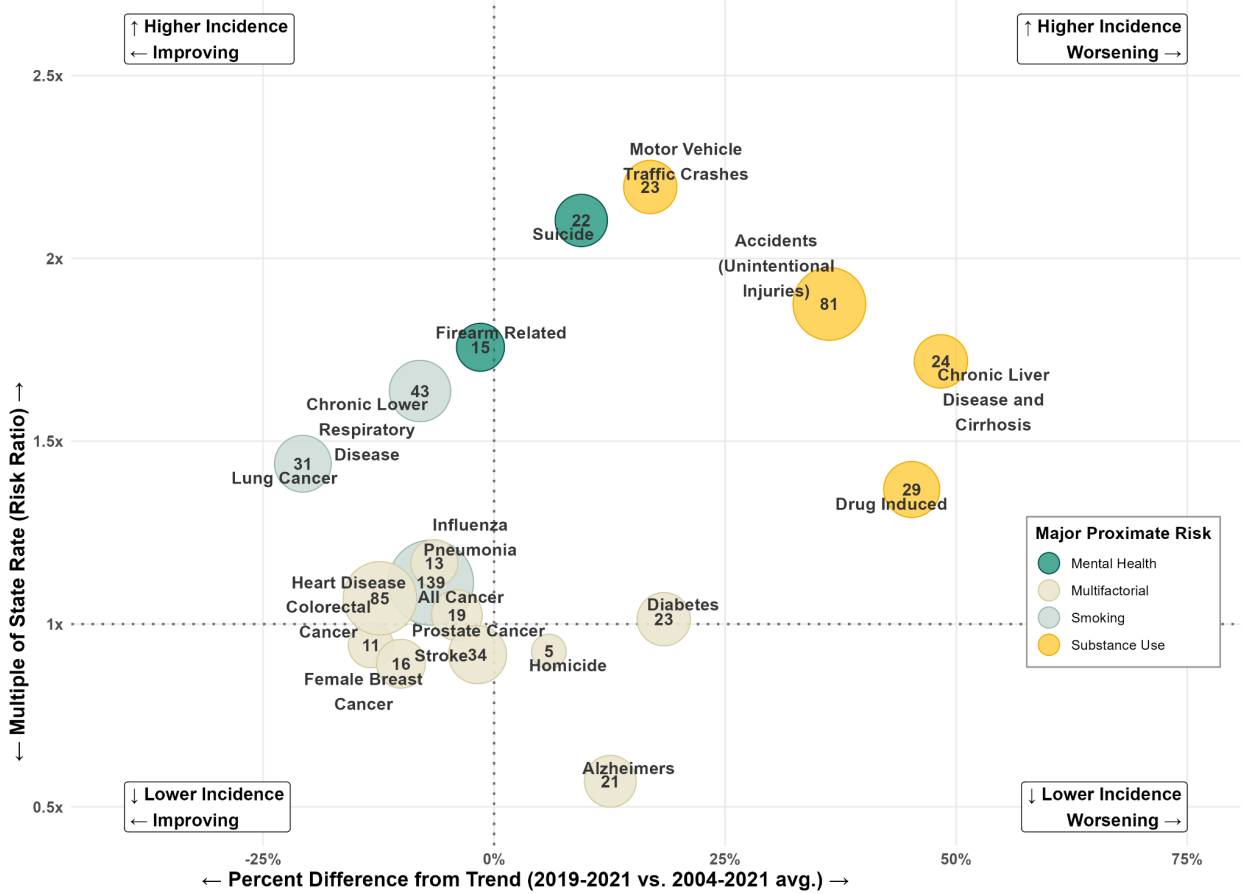
DNCS Participants by ZIP Del Norte County ZIP Code

ZIP Code	<i>n</i>	Percentage
95531	332	79.0
95532*	3	0.7
95538	12	2.9
95543	18	4.3
95548	37	8.8
95567	18	4.3
Total	420 (N)	100.0

*ZIP code corresponds to Crescent City, California, and includes Pelican Bay State Prison. While we cannot determine whether these participants live near the prison or made an error in reporting, we are confident they are not inmates of the facility, as inmates are prohibited from participating in external surveys. Therefore, their responses are assumed to reflect the perspectives of individuals residing or working in the surrounding community (i.e., Crescent City).

Appendix C: Supplemental Health Outcome Data

Figure C.1
Age-Adjusted Mortality Rates per 100,000, Rural California



Note. Data sourced from the California Department of Public Health and the California Conference of Local Health’s *County Health Status Profiles* report data. None of these causes include deaths where COVID-19 is the underlying cause of death. Regional average rates were aggregated by taking a population-weighted average.

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