

Regional Health Assessment & Regional Health Improvement Plan 2019

Region includes: Clatsop, Columbia, and Tillamook Counties



Columbia Pacific CCO™

Acknowledgments

In gratitude...

More than 1900 people contributed to the development of this Regional Health Assessment and Regional Health Improvement Plan. Numerous organizations and individuals volunteered their time and talents to collect and synthesize information. Others provided funding, time, and energy to develop frameworks for understanding and addressing the region's most pressing health issues.

Importantly, many community members shared their personal stories about health and wellness contributing to a rich dataset that informed every aspect of the Regional Health Improvement Plan.

CPCCO acknowledges each of these participants with sincere gratitude and in the spirit of our shared vision for a region where health and well-being abound, for everyone.

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Clatsop County Health Department
Clatsop Behavioral Health
Columbia Community Behavioral Health
Columbia County Health Department
Columbia Memorial Hospital
Providence Seaside Hospital
Tillamook County Health Department



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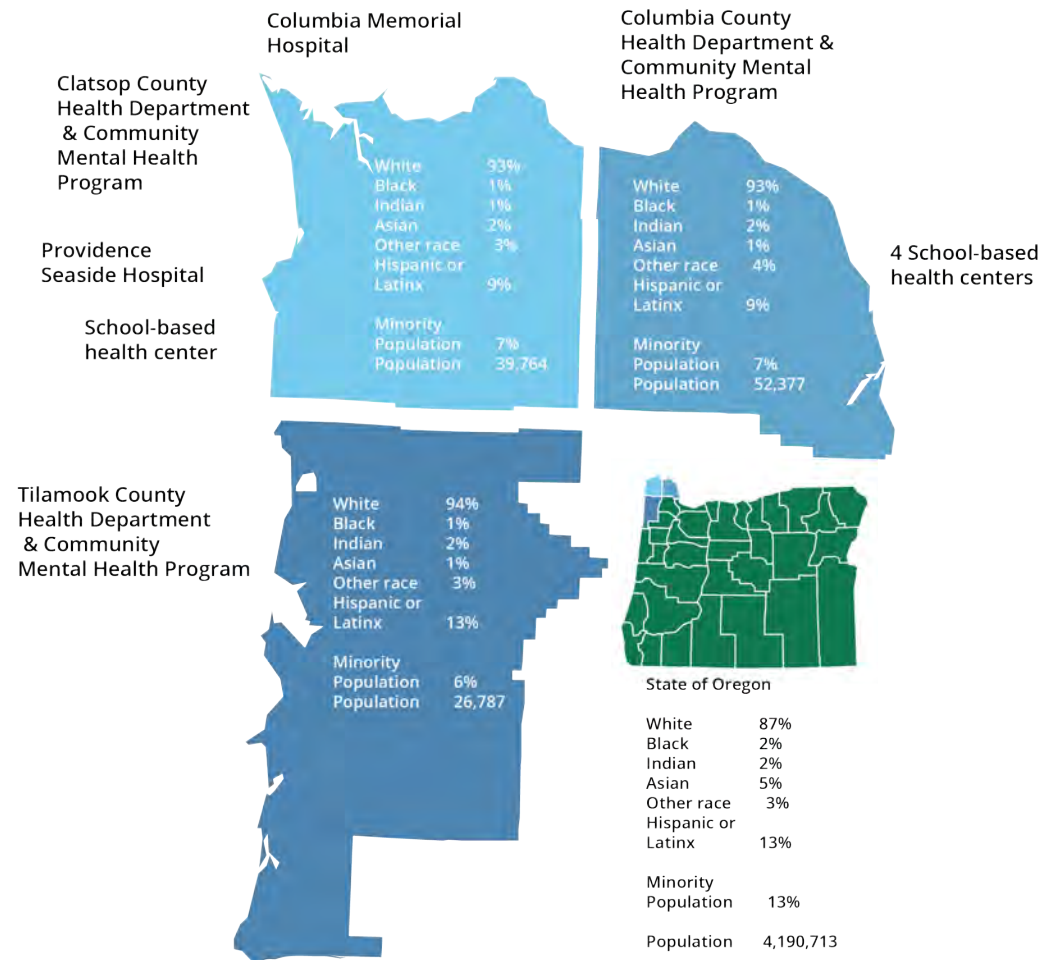
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Introduction

Regional Overview & Demographics

Figure 1: Regional overview and demographics



Source: U.S Census Bureau, 2018

Community health is the art and science of maintaining, protecting and improving the health of all members of the community through organized and sustained community efforts.

“Health is more than absence of disease; it is about economics, education, environment, empowerment, and community. The health and well-being of the people is critically dependent upon the health system that serves them. It must provide the best possible health with the least disparities and respond equally well to everyone.”
 –Jocelyn Elders, Fifteenth Surgeon General of the United States

This document outlines a five-year plan for improving health in this Clatsop, Columbia, and Tillamook Counties.

Led by Columbia Pacific Coordinated Care Organization (CPCCO), five health agencies in the region participated in the development of the following assessment and plan: Clatsop County Public Health, Columbia County Public Health, Columbia Memorial Hospital, Providence Health Systems, and Tillamook County Public Health.

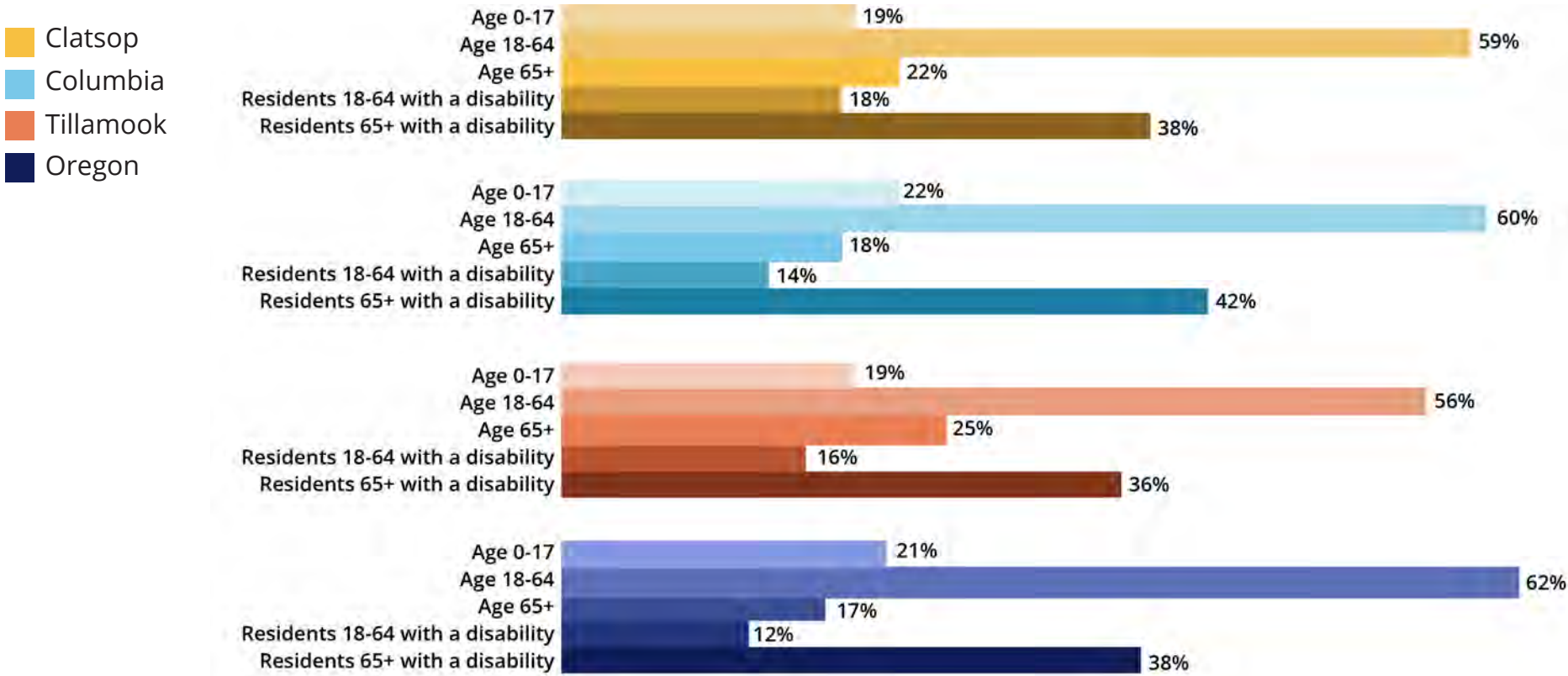
The process of visioning and planning for improved health starts with:

- Input from community members and specifically those who are or may be experiencing health inequities
- A thorough assessment of current conditions affecting health
- A clear understanding of population health status indicators

Regional Health Assessment Overview

This Regional Health Assessment is the culmination of an 18-month process of community engagement and discovery; it combines community voice with health status data to describe the health-related strengths in the region as well as its leading health challenges. The 2019 Regional Health Assessment illustrates the health status of each county within the region as compared to the rest of the state. This assessment was primarily developed to inform the health priorities and strategies in the Regional Health Improvement Plan (pages 38-57); however, community members and decision makers are encouraged to use this resource in other planning efforts.

Figure 2: Population by age and disability



Source: U.S. Census Bureau, 2018 and American Community Survey, 2012-2016

Methods and Limitations

Methods

This assessment comprises two main sections:

1. Micro-narrative research
2. Health status assessment

Micro-Narrative Research

To understand community strengths and needs, CPCCO worked with consultants at QED Insight to use a narrative research approach called SenseMaker. A core team of CPCCO staff, Community Advisory Council members, community partners, and volunteers (including CPCCO health plan members) prepared a survey addressing the unique needs of the region. Then the team collected and analyzed more than 1,200 micro-narratives from Clatsop, Columbia, and Tillamook County residents. Each narrative described a personal, unique experience related to health and well-being, including:

- Perceptions of ideal futures
- Qualities that are admired in existing supports, places, and services
- Improvements that could be made in the communities
- Areas of more learning/education that people would like to have
- Habits people would like to improve

In addition to sharing experiences (not opinions or beliefs), respondents were asked to self-code (“index”) and respond to questions about their experiences, keeping the context of their experiences in mind rather than responding to abstractions. The scales were based on polarities characterizing aspects of those

experiences, such as flexibility of care (“extremely flexible” vs. “extremely structured”) and stability of assistance (“stable as a rock” vs. “always changing”).

Metadata collected with the “indexing” was used to identify patterns of emergent meaning—allowing for mapping attitudes and pinpointing the experiences that evoked positive or negative feelings to assist with interpreting the patterns through exploration of respondents’ stories.

Visualization tools, linked to methods and models, permitted detection of statistically significant and complex patterns and anomalies, such as strong positive and negative associations with flexible and structured care, respectively. The output consisted of emergent themes that were statistically reliable and descriptions of how respondents thought about those themes. See Appendix A for the full CPCCO micro-narrative results.

Health Status Assessment

This report draws on several data sources to describe, using statistical measure, the health status of the communities within the region:

- American Community Survey
- BRFSS (Oregon county-level reports)
- County Health Rankings
- Oregon Death Certificate Data and Reports
- Oregon Healthy Teens Survey

For a comprehensive list of primary data sources, see Appendix B.

Social Determinants of Health

Social Determinants of Health

The conditions in which people are born, live, learn, work, and play affect a wide range of health and risk outcomes. Factors such as poverty, housing, access to food, education, and inequitable access based on structural racism or classism are powerful predictors of health. Understanding these factors, called social determinants of health, is critical to understanding a community's overall health.

Income and Housing

Figure 3 compares the 2017 median household incomes in the region to that of Oregon (\$56,119). The median household income in Columbia County was slightly higher at \$57,449. Both Clatsop and Tillamook Counties had lower median household incomes, at \$49,828 and \$45,061 respectively.

Figure 3: Median household income



Source: U.S. Census Bureau, 2013-2017

Figure 4 shows that the median gross rent in each of the counties in 2017 was at least \$99 lower than in Oregon overall (\$988). At \$889 per month, Clatsop County had the highest median gross rent in the region. Tillamook County, which also had the lowest median household income in the region (Figure 3), had the lowest median gross rent at \$831, \$157 less per month than in Oregon.

In Oregon, three people in every 1,000 experience homelessness (Figure 5). In Columbia County, the wealthiest of the three counties, the rate is also 3 people per 1,000. In Tillamook County, the least wealthy of the three counties, the homelessness rate is three times that of Oregon. However, the greatest housing disparity in the region exists in Clatsop County, where the median gross monthly rent is the highest in the region; the median household income is more than \$6,000 less than in Oregon and \$7,600 less than in Columbia County; and 17 out of every 1,000 people experience homeless, nearly six times Oregon's homelessness rate.

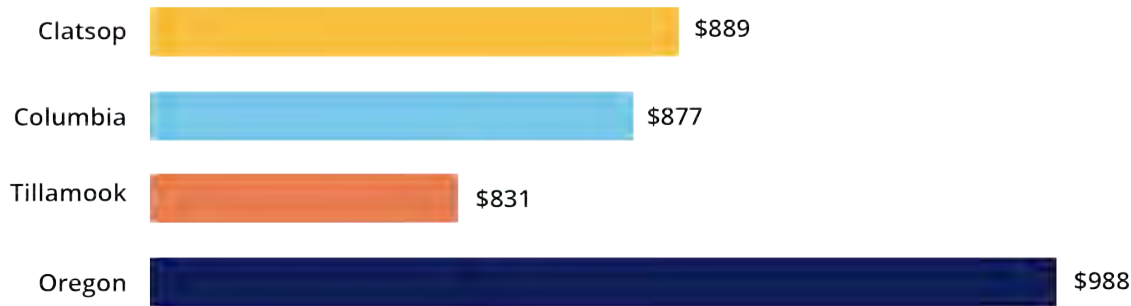
Owner-occupied housing unit rate

- Clatsop: 61%
- Columbia: 73%
- Tillamook: 69%
- Oregon: 62%

Source: U.S. Census Bureau, 2013-2017

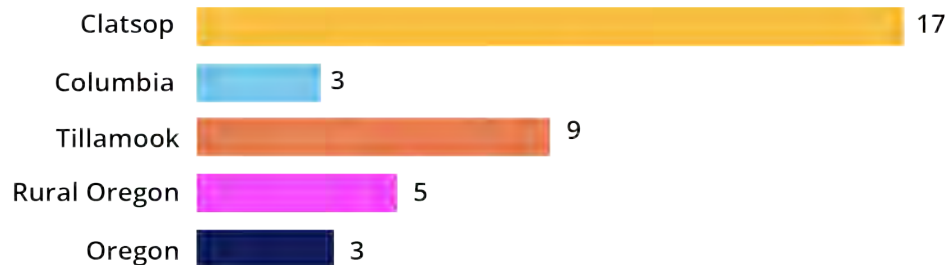
In Tillamook County, which has the second highest homelessness rate in the region, the median household income is more than \$12,000 less than in Columbia County while the median gross rent is only \$46 less per month. While a variety of factors influence homelessness, housing costs and income in the region are an important consideration.

Figure 4: Median gross rent



Source: U.S. Census Bureau, 2013-2017

Figure 5: Estimate of the homeless population rates per 1,000 total population



Source: Estimates of homeless population by county, Oregon, 2017

Poverty and Food Security

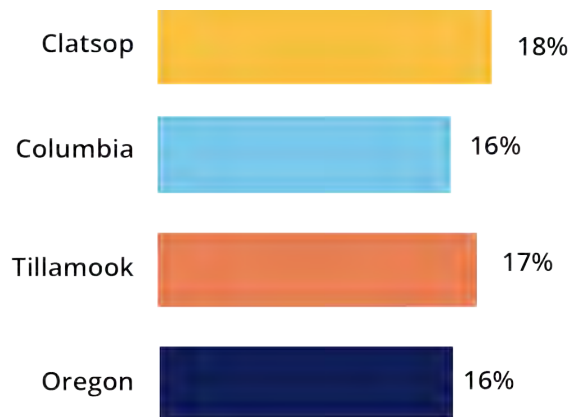
The United States Department of Agriculture (USDA) developed two categories for food insecurity: low food insecurity and very low food insecurity. Low food security individuals report reduced quality, variety, and/or desirability of diet but little or no reduced food intake. Very low food security individuals report multiple indicators of disrupted eating patterns and reduced food intake.¹

In Clatsop, Columbia, and Tillamook Counties, 13 percent of the total population reported food insecurity (low food security and very low food security)—the same as in Oregon overall (Figure 6). The proportion of food insecure children (under 18 years of age) in each of these counties is slightly higher than in Oregon overall (20%) and slightly lower than across Oregon’s rural counties (23%). In all of these places, the percentage of food insecure children is higher than the percentage of the total population living below the federal poverty level.

Supplemental Nutrition Assistance Program (SNAP)

The proportion of the population receiving SNAP benefits in all three counties is not far from the state average. In Clatsop (18%) and Tillamook (17%) Counties, it is only slightly higher than in Oregon overall (16%). However, this small difference is not inconsequential. This data represents the nearly one-fifth of residents in those counties who receive benefits in order to buy groceries but may not reflect the total number of residents who need assistance.

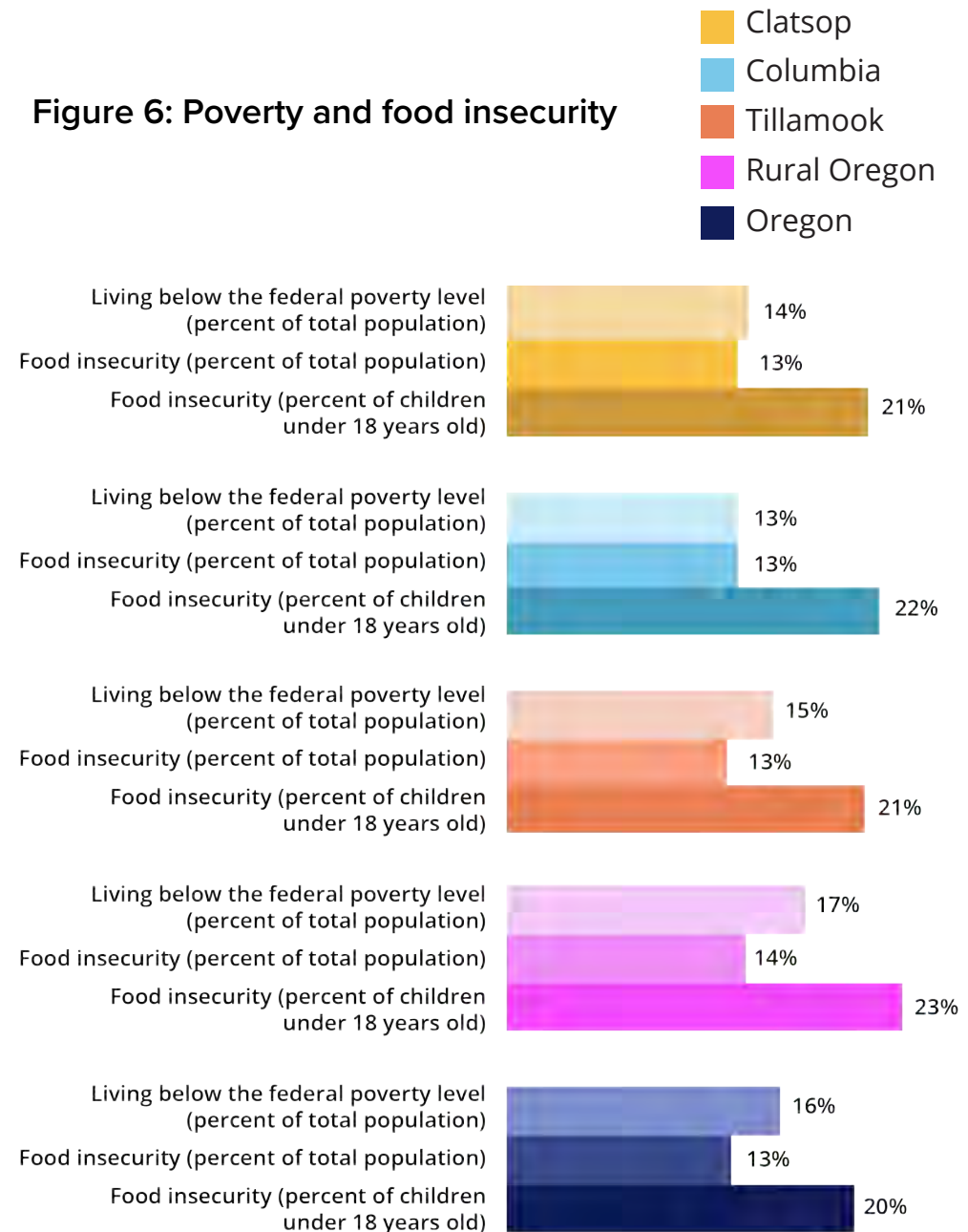
Figure 7: Percent of county population helped by SNAP



Source: Oregon Center for Public Policy, 2018

Table 1 shows the proportion of 11th graders in Clatsop, Columbia, and Tillamook Counties and in Oregon overall who ate less than they felt they should because there was not enough money for food. While there were fluctuations over the five-year period between 2013 and 2017, the proportion had decreased across the region and in Oregon by 2017.

Figure 6: Poverty and food insecurity



Source: OHA, Population living below federal poverty level by county, Oregon, 2012-2016 and Food insecurity by county, Oregon 2016

Table 1: 11th graders who ate less than they felt they should because there wasn't enough money to buy food

Jurisdiction	2013	2015	2017
Clatsop	18%	23%	17%
Columbia	24%	19%	18%
Tillamook	23%	19%	19%
Oregon	19%	19%	18%

Source: Oregon Healthy Teens Survey

High school graduation 2018

- Clatsop: 69%
- Columbia: 81%
- Tillamook: 81%
- Oregon: 77%

Source: County Health Rankings, 2019

Education

Educational attainment is a fundamental social determinant of health. Not only does education increase an individual's earning potential, it is associated with higher life expectancy and lower risk for most chronic diseases.²

High School Graduation

More than three-fourths of Oregonians graduate from high school. In Columbia and Tillamook Counties, 81 percent of high school students graduate. However, Clatsop County graduates only 69 percent of students, eight percent lower than in Oregon overall.

Educational Attainment

Figure 8 shows the attainment of post-secondary degrees among adults aged 25 years or older. This figure reflects individuals who have earned any formal degree following high school, including associate's and bachelor's degrees and beyond, but does not include educational certifications, certificates, and licenses attained. Clatsop County has a higher proportion of individuals aged 25 and older with post-secondary degrees (34%) than Columbia or Tillamook Counties (both 28%), though post-secondary degree attainment in all three counties is lower than the state average (40%).

Figure 8: Post-secondary degree among adults 25+



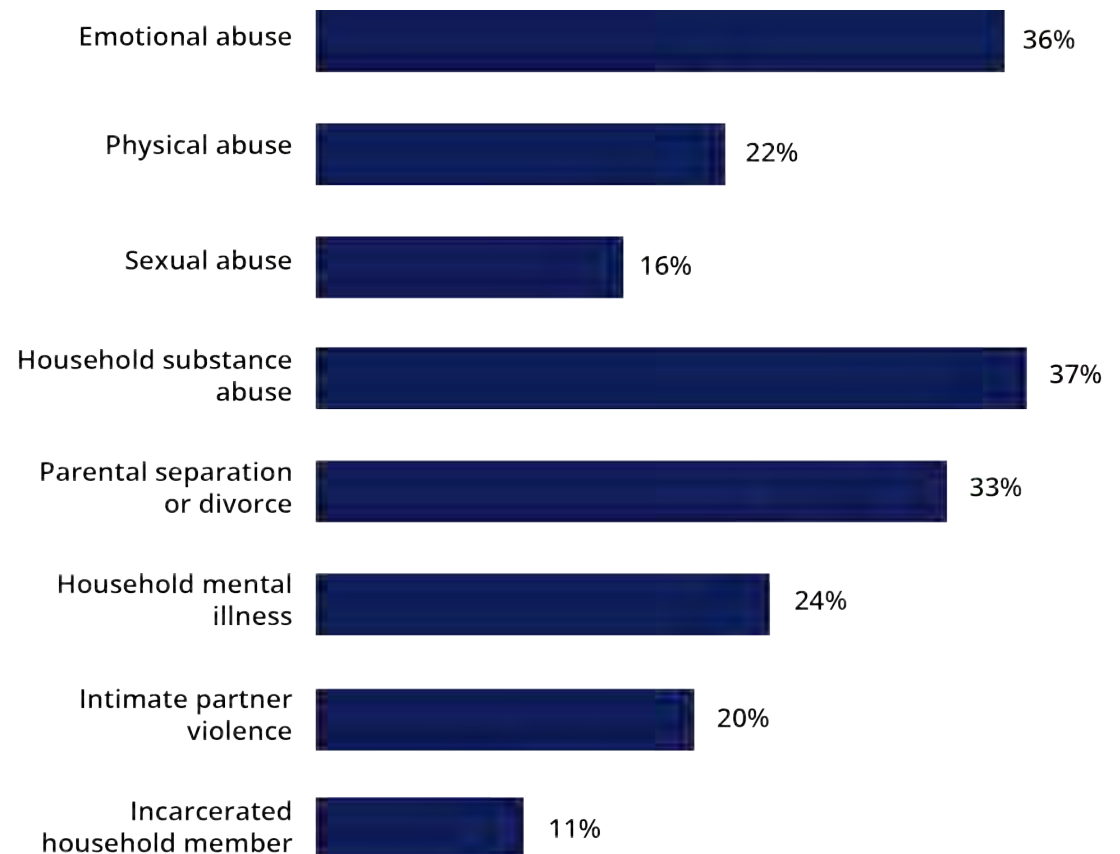
Source: OHA, Post-secondary degree among adults 25 years and older by county, Oregon, 2012-2015

Adverse Childhood Experiences (ACEs)

Research points to trauma informed care as a way to support resiliency and reduce the impact of Adverse Childhood Experiences (ACEs). ACEs have been linked to risky health behaviors, chronic health conditions, low life potential (e.g. dropping out of school, missing time at work)³, and early death. The risk for each of these outcomes increases as an individual's ACE exposure increases. Adults who were exposed to four or more categories of ACEs⁴ are seven times as likely to experience alcoholism; three (men) to five (women) times as likely to experience depression; 13 times as likely to attempt suicide; and 10 times as likely to use IV drugs. Supports and services that build resilience are important to the improvement of health and well-being.⁵

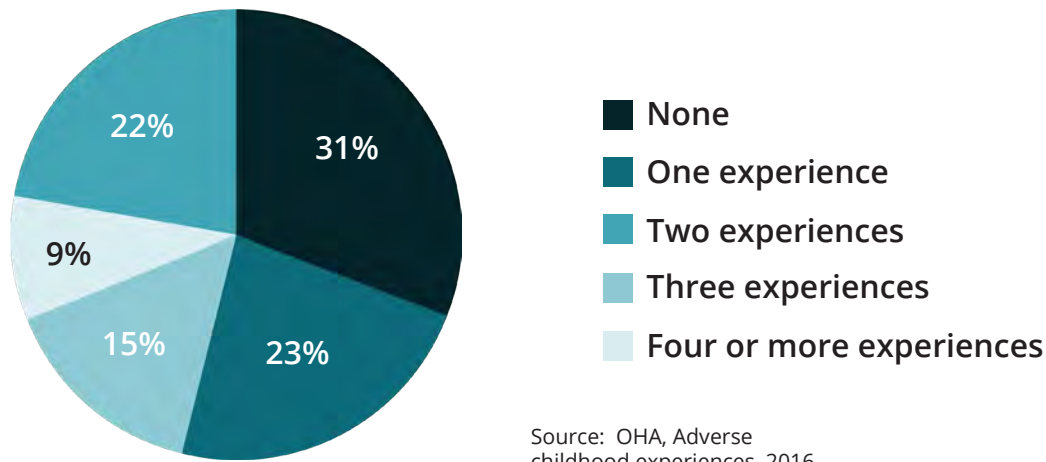
The most common types of ACEs reported by Oregon adults (aged 18 years or older) were emotional (36%) and physical (22%) abuse, household substance abuse (37%), and parental separation or divorce (33%) (Figure 9).

Figure 9: Types of ACEs among Oregon adults 18 years or older



Source: OHA, Adverse childhood experiences, 2016

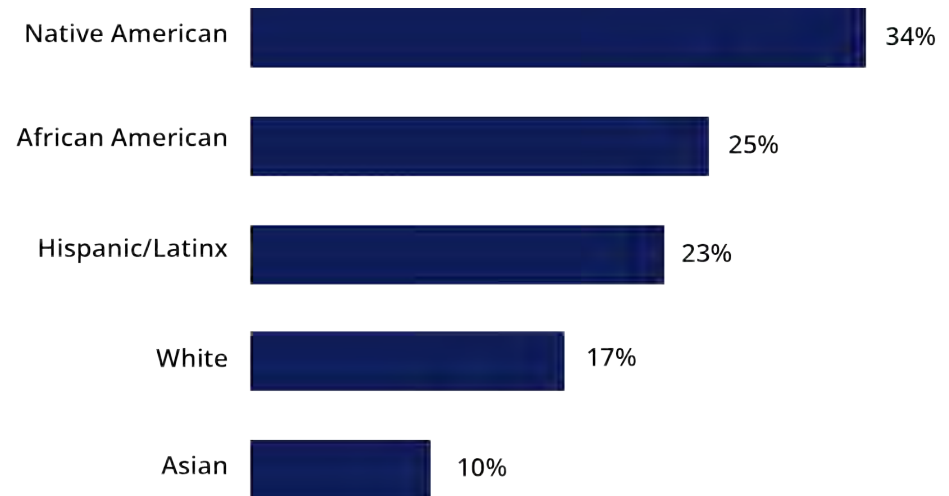
Figure 10: Number of ACEs among Oregon adults 18 years or older



Source: OHA, Adverse childhood experiences, 2016

Along with the specific types of ACEs, the number of ACEs an individual suffered matter. Nearly half (46%) of Oregon adults (aged 18 years or older) reported having suffered two or more ACEs (Figure 10). Oregonians of color were more likely to have experienced high numbers of ACEs (four or more), which is indicative of disparities. Of all the race/ethnic groups, Native Americans reported having the highest ACE scores (34%), and Asians had the lowest (10%) (Figure 11).

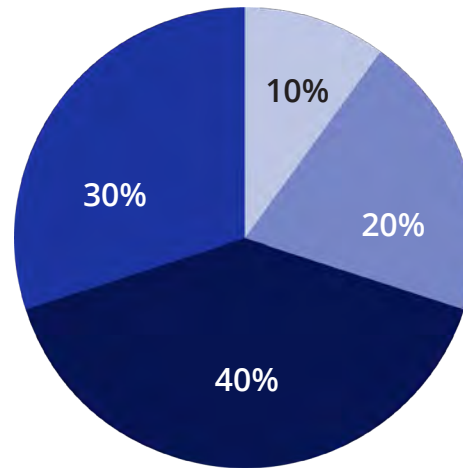
Figure 11: High ACE score (4+) among Oregon adults aged 18 or older by race/ethnicity



Source: OHA, Adverse childhood experiences, 2016

Figure 12: Impact of different factors on risk of premature death

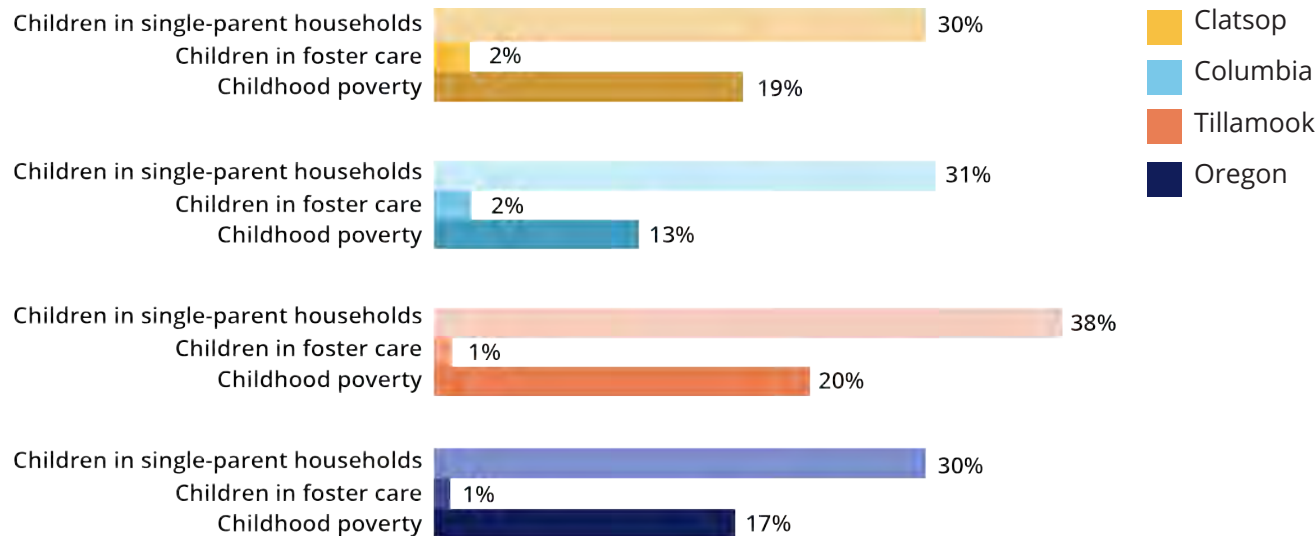
Figure 12⁶ shows factors that increase the risk of premature death. While 40 percent of the figure comprises individual behaviors, this factor is inextricably linked with social and environmental factors, all of which influence and are influenced by ACEs. Health care (i.e., access and quality) only influences premature death by 10 percent.



- Individual behavior
- Genetics
- Social and environmental factors
- Health care

Source: Schroeder, S. A. (2007). We Can Do Better: Improving the Health of the American People. New England Journal of Medicine

Figure 13: Children in single-parent households, foster care, and poverty



Source: County Health Rankings, 2019 and Children First for Oregon, 2018

According to the 2019 County Health Rankings and 2018 data from Children First for Oregon, children (aged 17 years or younger) who live in the counties served by CPCCO experience life in single-parent households, foster care, and poverty, for the most part, in similar proportion to those in the state overall. Among the counties served by CPCCO, Tillamook County had the greatest percentage of children living in single-parent households (38%) and childhood poverty (20%). Clatsop and Columbia Counties had slightly higher percentages of children in foster care (2%) (Figure13).

Micro-Narrative Data Results

Analysis

Initial Analysis

The consultants at QED Insight completed an initial analysis of the data using several statistically reliable methods in combination, including but not limited to: determining the statistically significant axes of differences among groups (i.e. determining statistically whether factors such as ethnicity, story tone, or insurance type led to significant differences); “heat mapping” triads to assess for the density of answers per area within the triangular answer area; a geometrical statistical analysis for the mean of the answers within the triads; statistical analysis of groups of consensus in triads and dyads alike, such as which corner of a triad or end of a dyad had the largest proportion of answers and unique characteristics within those proportions. One additional form of analysis was called “More Like This/Less Like That,” wherein the core team of CPCCO staff and volunteers coded the blank survey to find items that highlighted the potential for finding stories from which to amplify outcomes and those indicating barriers to overcome. The code was then used to filter for stories based on how many questions participants answered to be the most “amplifiable” examples or the most barriered. This information was first viewed by the core team and incorporated into the results portion of the workshop outlined below.

Workshop and Theming

Partners, members, and staff who had been involved in story collection or who were considered stakeholders attended a full day workshop to review the results. This workshop included the presentation of the consultant’s statistically significant findings; activities to give first impressions of the information

presented and think about what the data meant in part and as a whole; and “theming.” The theming was done using the following steps:

1. A packet of curated stories and vision statements was given to small groups of five to six. The curated packets contained groups of stories or vision statements with a similar demographic or descriptive tie, such as “vision statements for Clatsop County,” or “stories from the ‘More Like This’ grouping,” or “stories from Hispanic/Latinx members.” Each person took several minutes to look at the stories individually and write out the different basic ideas represented in the stories. A single idea was written per sticky note in a simple phrase or sentence such as “It is hard to buy healthy food on a budget” or “My relationship with my provider affects my health.”
2. The small groups were then directed to put all their sticky notes up in a bounded area that corresponded with their story packet. Once that task was complete, the small groups quickly grouped the sticky notes based on any number of potential unifying aspects, such as the presence of a similar social determinant, or a quality of care issue, or a trauma-informed care concept. They could move one another’s sticky notes, even after the notes were grouped. Then they gave their groups of sticky notes a theme title.
3. The small groups then shared their results with the larger group. The larger group shared some observations, and the small groups finished the day by doing a shared reflection of what stood out to them across the day, ultimately pointing to some areas for further consideration. CPCCO staff took photos of the results for posterity and further use.

Workshop Debrief and Additional Data Review

The core team met to debrief the process of the workshop and to review the themes and observations of the workshop attendees. Topics discussed included which themes occurred most often or had the most mentions within them, the group interpretations of the data, and next steps. After the formal debrief, two members of the core team were tasked with delving deeper into the story data itself to determine patterns in the data beyond what could be covered in the workshop. This task was done by establishing “swim lanes” of data where all questions would be displayed for specific sets of analyses, such as “all participant responses color-coded by health status” or “stories about transportation color-coded by experience tone,” to look both for patterns per question and patterns that emerged among all questions. The results of this in-depth analysis were summarized in a file to use while planning the community roadshow.

Examples from the Micro-Narrative Data Results and Analysis

Each of the individual lines depicted in Figures 14 and 16 represents one health care story, or micro-narrative, from one survey participant.

Figure 14 is one example of how individuals characterized the care they received as described in their micro-narrative. In this case, respondents indexed the stability of services. Their responses are color-coded by self-reported emotional tone of the experience.

Figure 14: Characterizations of and positive/negative associations with stability of care

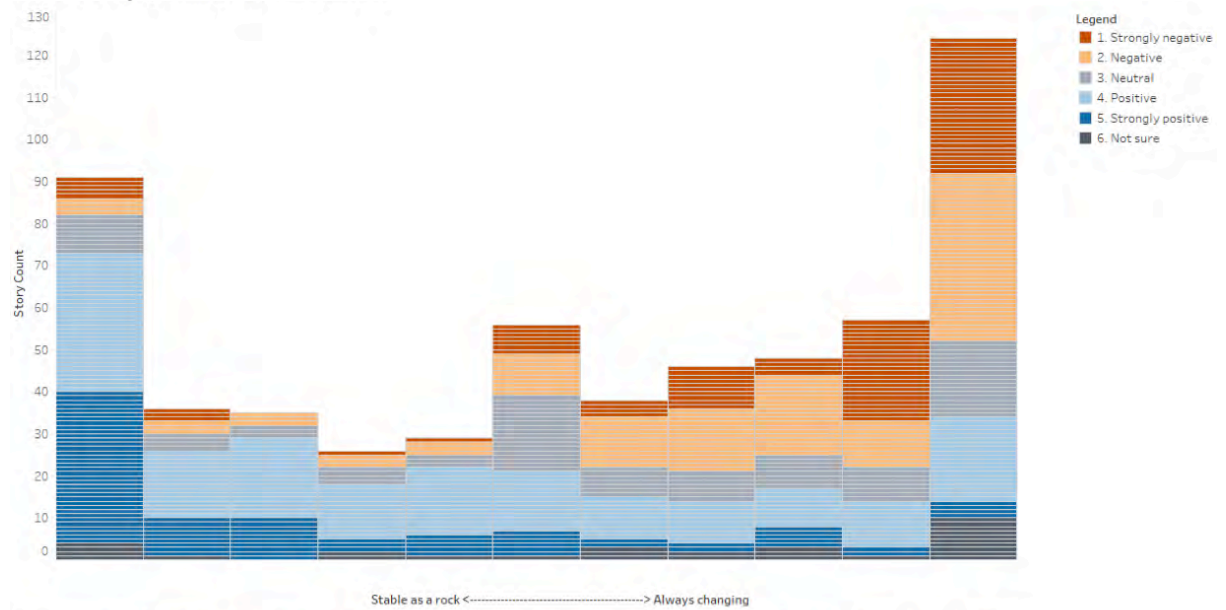
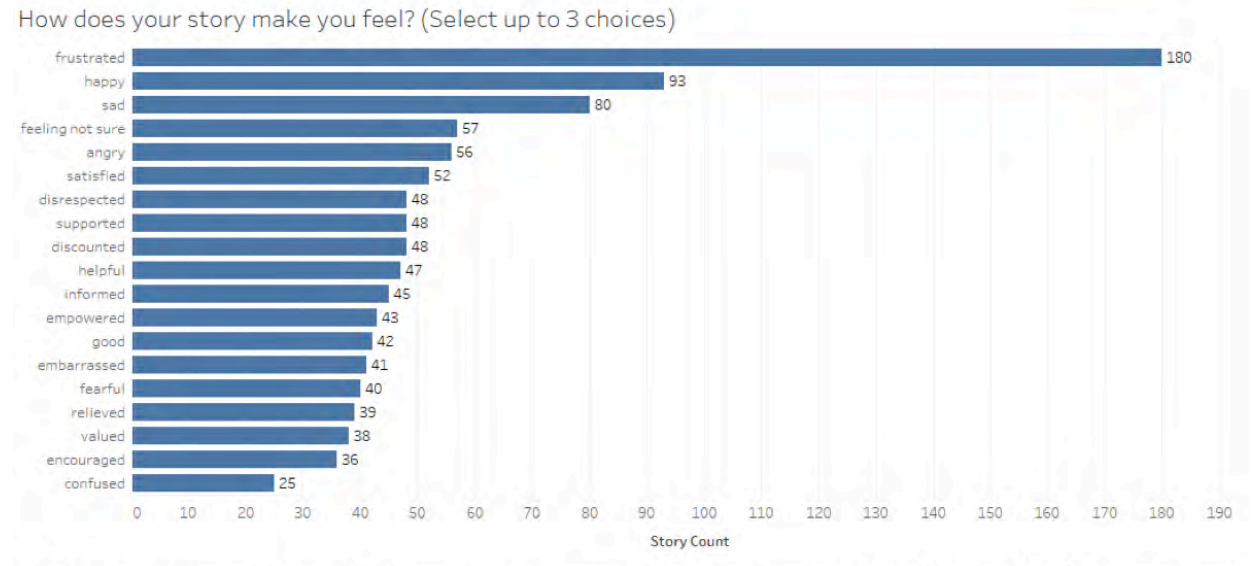


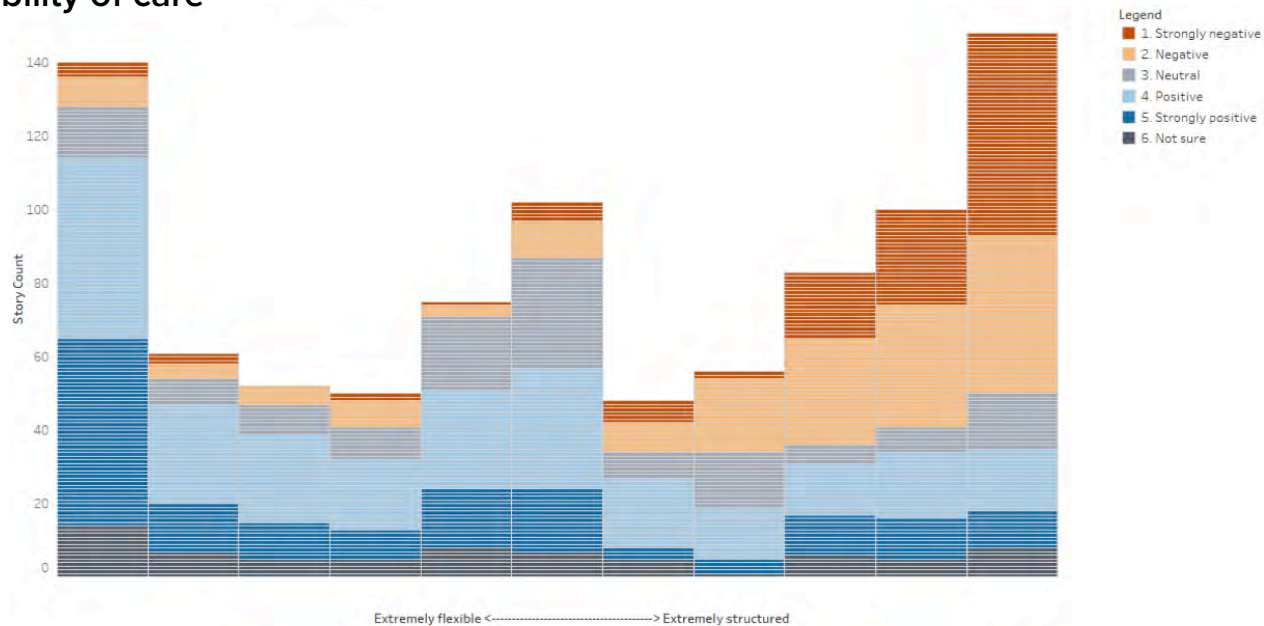
Figure 15: Specific feelings Oregon Health Plan clients associated with their individual health care stories



Oregon Health Plan clients contributed 508 of the stories collected. Figure 15 details the specific feelings (not emotional tone) respondents associated with their story about a health care experience.

In Figure 16, characterizations of flexibility of care (on the x axis) are compared with positive or negative association with the care (y axis). The example clearly demonstrates that extremely structured care was associated with negative emotions about the experience, and conversely, flexible care was associated with positive emotions about the experience.

Figure 16: Characterizations of and positive/negative associations with flexibility of care



The CPCCO team analyzed all the data, using multiple comparative frameworks and arrived at the following overarching themes:

- Respondents revealed a need for more and better programs to meet their needs. They also expressed that the need for community resources (such as supportive services for housing, transportation, and food) drastically outweighs the need for community education or safety
- The following barriers to accessing health care occurred most often (listed in no particular order):
 - o Geographic isolation
 - o Cost (recurred most often as an opportunity for improvement)
 - o Quality of care (recurred most often as an opportunity for improvement)
 - o Insurance
 - o Feelings of being overwhelmed
- Being heard and supported by people (involved in one’s health, health care, and access to health care) is critically

- important to building health and positive experiences
- Better health and positive experiences appear to correlate with flexibility and stability (in health care and access to health care)
- Location, cost, and feelings of being overwhelmed seem to be equally weighted barriers
- Respondents believe that everyone should be treated equally and with respect
- Access to housing, transportation, food, mental support, spiritual support, and emotional support are all top priorities
- An examination of the two ethnic minority groups (which might be referred to as “communities”) that are most represented in the data revealed both variety across answers as well as strength of answers. This finding indicates that these groups are not monoliths and have diverse needs and experiences within the health care system

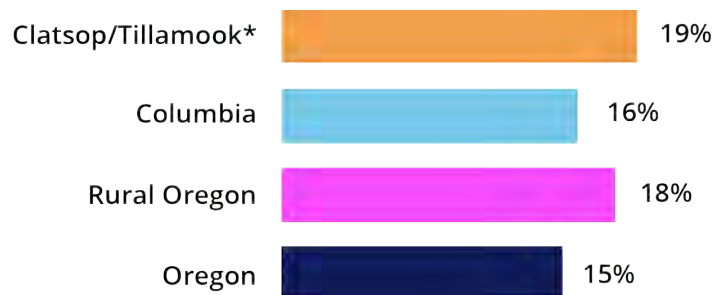
Access to Health Care

Health Insurance

The Oregon Health Plan (OHP) provides health care for low income Oregonians through Medicaid. Currently, 94 percent of Oregon adults have health insurance (Figure 18). OHP provides health insurance to one-quarter of adults in Oregon (Figure 19). Higher proportions of the population are uninsured in the CPCCO service region than in Oregon overall. Twenty-seven percent of the population in Clatsop and Tillamook Counties are on OHP. Columbia County has a lower percentage of adults on OHP than the state does.

Fifteen percent of Oregon's population is on Medicare and the CPCCO service region has a higher proportion of Medicare users than the state (Figure 17), though the difference in Columbia is slight. In Clatsop and Tillamook Counties, about one-fifth of the population is on Medicare.

Figure 17: Percent of adult population on Medicare



Source: OHA, Oregon Health Insurance Survey, 2017

*Clatsop and Tillamook Counties reported as a region

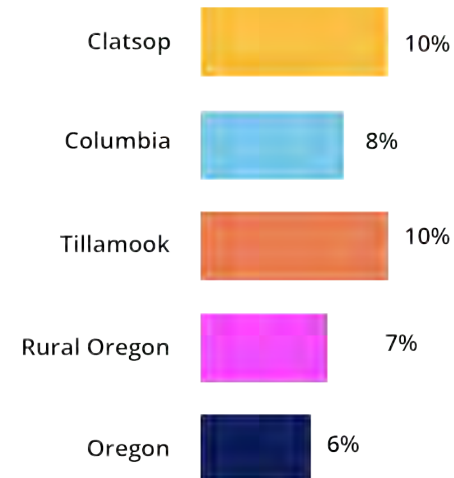
Figure 18: Percent of adult population on the Oregon Health Plan



Source: OHA, Oregon Health Insurance Survey, 2017

*Clatsop and Tillamook Counties reported as a region

Figure 19: Percent of population who are uninsured



Source: Oregon Health Insurance Survey, 2017

Causes of Death

The leading cause of death in Clatsop, Columbia, and Tillamook Counties is cancer. All three counties have a cancer death rate higher than that of the state of Oregon (195 deaths per 100,000). In Tillamook County, the cancer death rate (310 deaths per 100,000) is nearly 60 percent higher than Oregon’s rate. The proportion of deaths in each of these counties, however, is only slightly higher than in Oregon overall (22%). In Tillamook and Columbia Counties, 27% of deaths are attributable to cancer, while Clatsop County attributes 25% of deaths to cancer (Figure 20).

Cancer has many risk factors, including age, heredity, modifiable lifestyle behaviors, and environmental exposures. As shown in Table 2, the cancers that result in the highest percentage of deaths in the state are associated with some common modifiable behavioral risk factors. In Oregon, three of the most frequently fatal cancers are associated with tobacco use.

Heart disease is the second leading cause of death in all three counties. In Columbia and Clatsop Counties, nearly one-fourth of all deaths are attributed to heart disease, compared to nearly one-fifth of deaths in Tillamook County and Oregon overall (Figure 20). Heart disease shares many risk factors, including modifiable behavioral risk factors such as smoking and obesity, with the cancers shown in Table 2.

Chronic lower respiratory diseases are the third leading cause of death in all three counties.

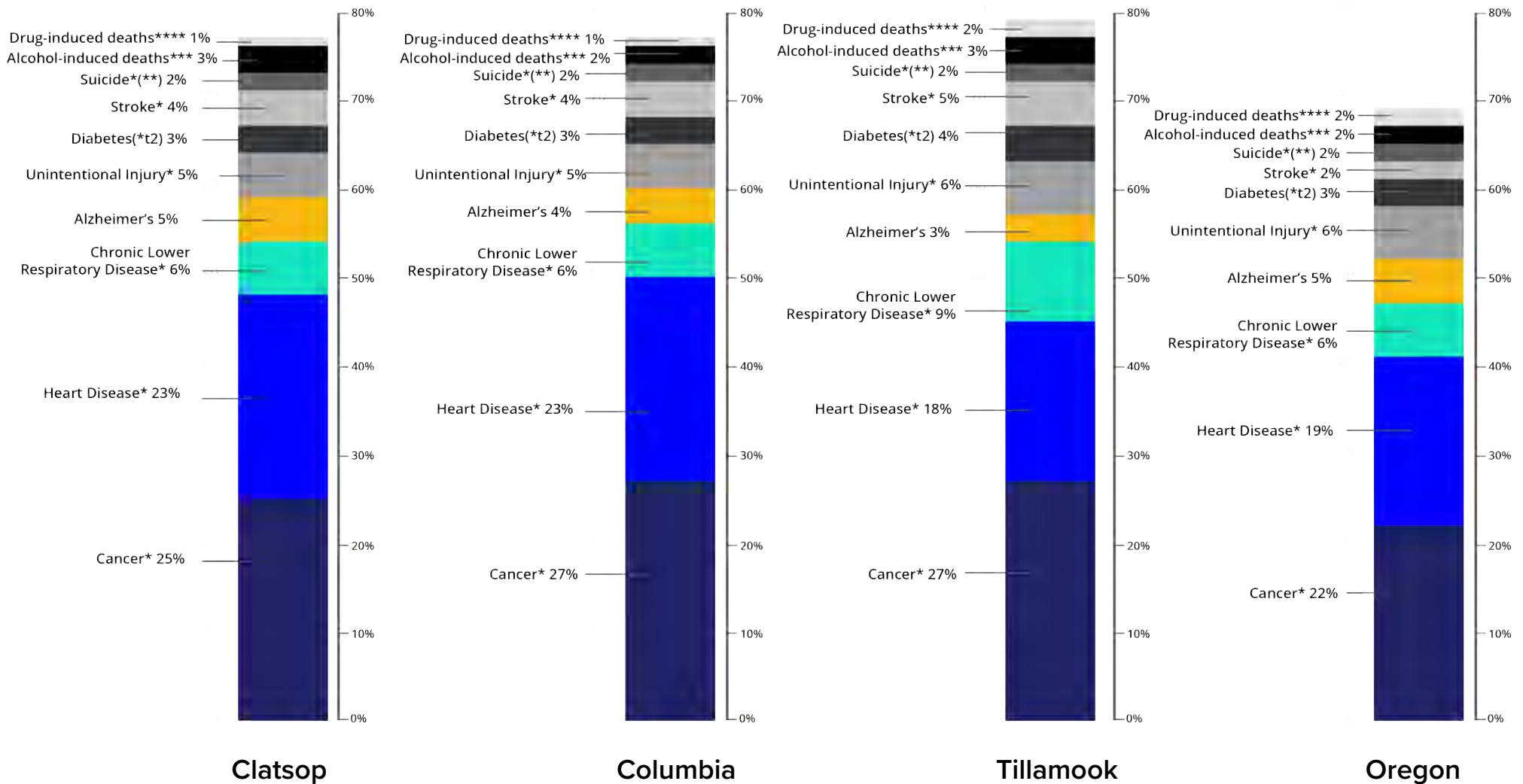
Overall, the majority of deaths in this region are due to causes that can be associated with lifestyle factors such as tobacco use, diet, and physical activity. However, while the harmful effects of these conditions may be prevented or mitigated through behavior modifications such as smoking cessation and increased exercise, behavioral risk factors can also be strongly influenced by social and environmental factors (stress, access to support systems, policy, etc.)

Table 2: Cancers contributing to the highest proportion of deaths in Oregon

Cancer Type	Percent of Cancer Deaths in Oregon	Modifiable Behavioral Risk Factors			
		Tobacco	Alcohol	Obesity	Physical Inactivity
Lung and bronchus	25%	x			
Colorectal	8%	x	x	x	
Pancreas	7%	x		x	
Breast	7%		x	x	x
Colon only	6%				x

Source: OHA, Cancer death rates and counts, 2012-2016, and OHA, Cancer and its significant modifiable risk factors, 2018

Figure 20: Causes of death (percent of all deaths)



*Preventable
 **Not a leading cause of death
 ***Includes liver disease and other alcohol induced. Alcohol overdose and poisoning are included in unintended injury
 **** Includes a variety of conditions affecting multiple organ systems, such as poisonings/overdoses and mental/behavioral disorders due to substance use/abuse. Other conditions, such as drug-induced hypoglycemia and drug-induced Parkinsonism are also included here. Note disorders included here are also included in other cause of death categories

Source: OHA, Oregon Vital Statistics Annual Report Volume 2, 2017

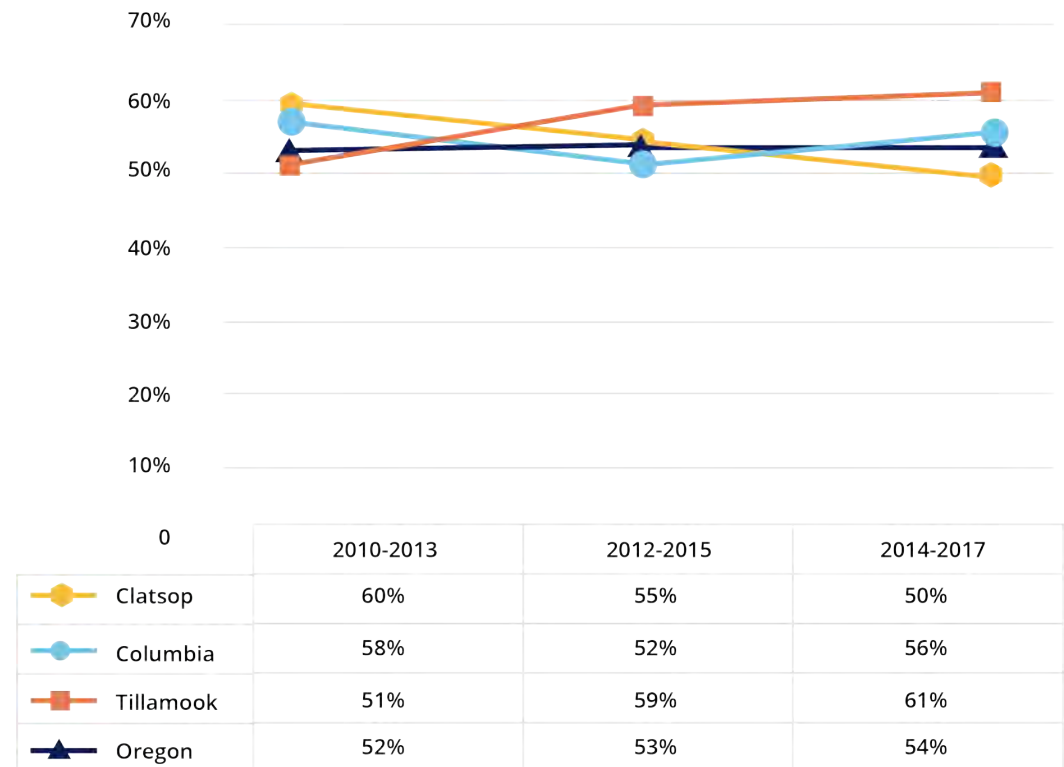
Chronic Diseases

According to the U.S. National Center for Health Statistics, a chronic disease must last three months or more. Chronic diseases generally cannot be prevented by vaccines or cured by medication, nor do they just disappear. Chronic conditions include arthritis, asthma, cancer, cardiovascular disease, chronic obstructive pulmonary disease (COPD), and diabetes. Figure 21 shows the percentage of adults in Clatsop, Columbia, and Tillamook Counties and Oregon with one or more chronic conditions across three points in time between 2010 and 2017.

In Oregon, the proportion of adults with one or more chronic diseases increased slightly between 2010 and 2017. Though Clatsop County had the most adults with chronic conditions in 2010-2013, by 2014-2017, it had the fewest. Clatsop County was the only county in the region to decrease its percentage across all three time periods shown, with a steady decline of five percent in each period.

Tillamook County experienced a 10 percent increase in its adult population with chronic conditions between 2010 and 2017. In 2010-2013, Tillamook County had the lowest proportion in the region, the only county of the three to have a lower percentage than Oregon. However, by 2014-2017, it had the highest proportion, seven percent higher than in Oregon overall.

Figure 21: Percent of adult population with one or more chronic condition(s)



Source: Oregon BRFSS

The proportion of adults with one or more chronic diseases in Columbia County fluctuated between 2010 and 2017. While it dropped from 58 percent to 52 percent between 2010-2013 and 2012-2015, by 2014-2017, it was back up to 56 percent.

Asthma

Figure 22 compares changes in the prevalence of adults with asthma in Clatsop, Columbia, and Tillamook Counties and in Oregon across three time periods from 2010 to 2017. In Oregon, the proportion of adults with asthma increased slightly from 10 percent to 11 percent.

The prevalence in both Clatsop and Columbia Counties declined across all three points in time, with Columbia County seeing the largest decrease (6%). The prevalence in Tillamook County stayed at seven percent from 2010-2013 to 2012-2015, but it jumped three percent by 2014-2017 to 10 percent. By 2014-2017, all three counties had a lower prevalence of adults with asthma than Oregon.

Heart Disease

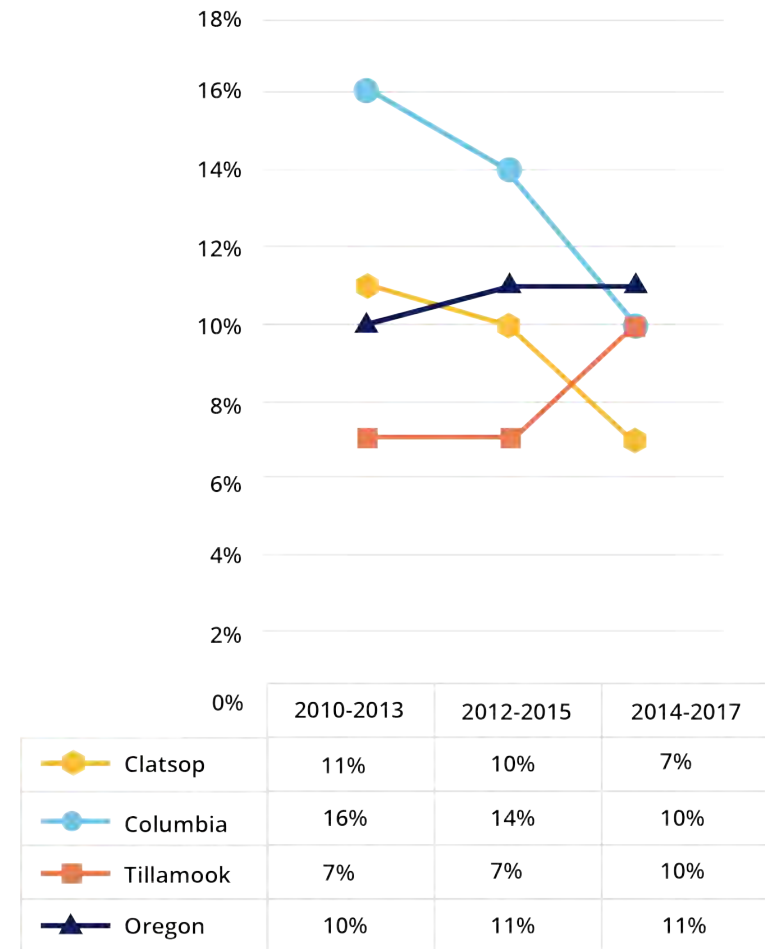
Cardiovascular disease generally refers to conditions in which narrowed or blocked blood vessels restrict blood flow to the heart, brain, or other areas of the body. The most common form in the U.S. is coronary artery disease, which limits blood flow to the heart and can cause heart attacks.⁷ Figure 23 illustrates the prevalence of cardiovascular disease in the three counties and in Oregon, based on individuals' responses to BRFSS questions about heart attack, coronary heart disease, and stroke.⁸ While the prevalence of cardiovascular disease in Clatsop and Columbia Counties is similar to that of Oregon (7%), the prevalence in Tillamook County is around 1.5 times higher (11%).

Figure 23: Percent of population with cardiovascular disease



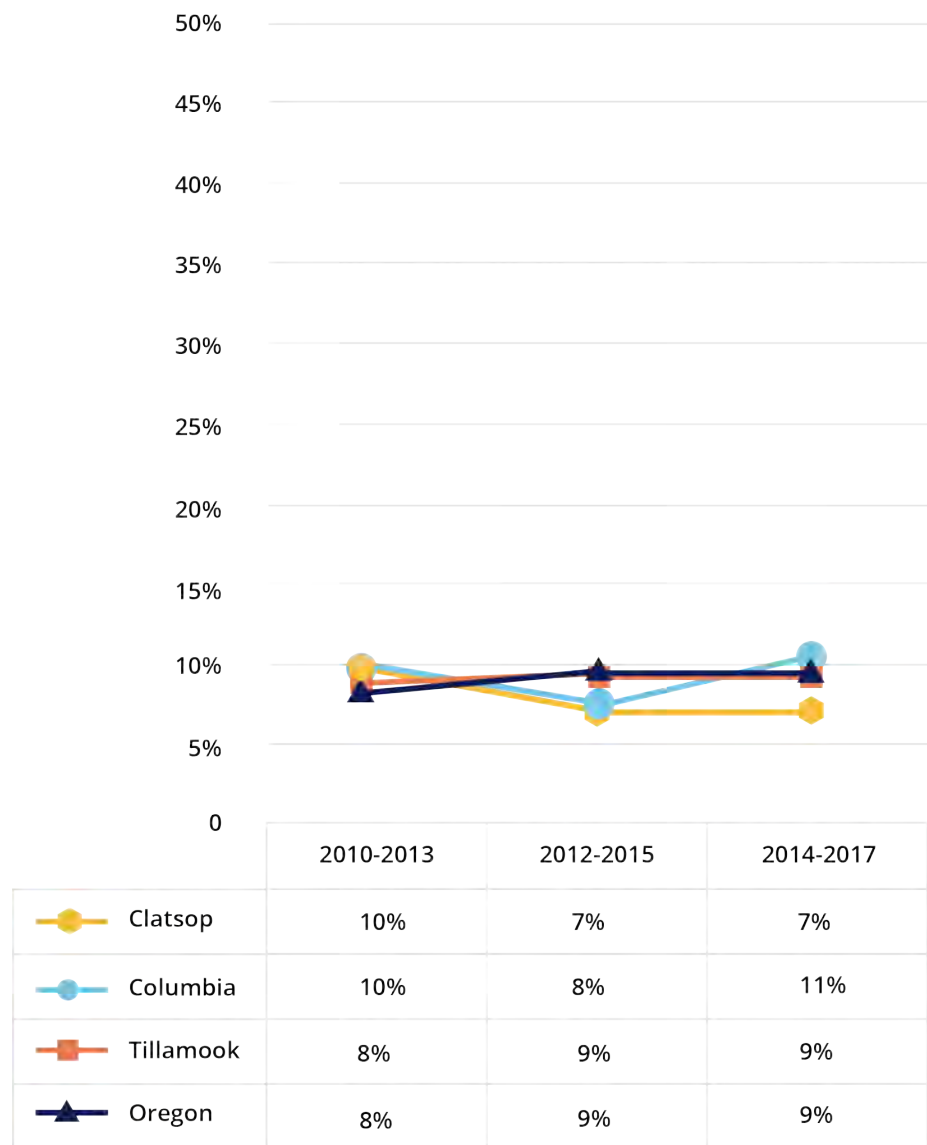
Source: Oregon BRFSS, 2014-2017

Figure 22: Percent of adult population with asthma



Source: Oregon BRFSS

Figure 24: Percent of adult population with diabetes



Includes respondents who answered “Yes” to the question: “Have you ever been told by a doctor, nurse or other health professional that you have diabetes?” Excludes females told only during pregnancy, pre-diabetes and borderline diabetes.

Source: Oregon BRFSS

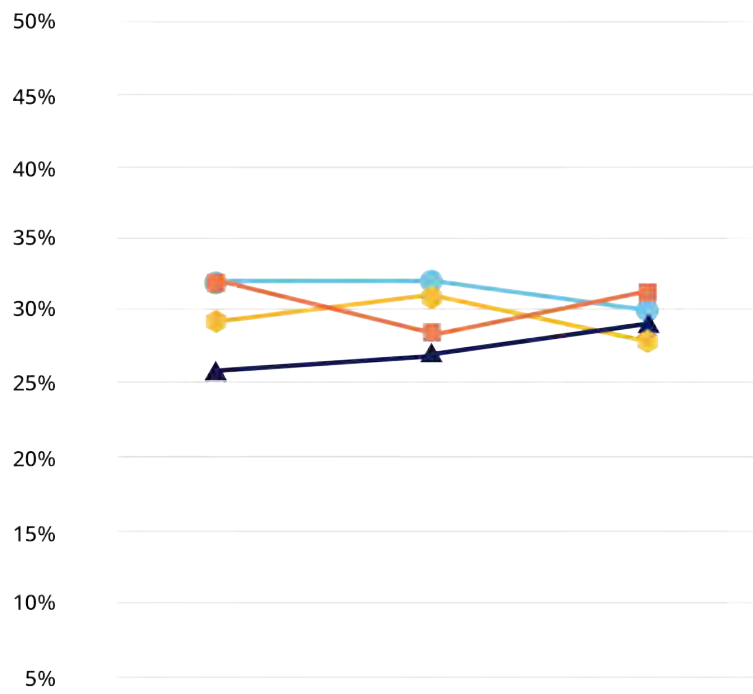
Diabetes

Diabetes is a disease in which too much blood glucose, or blood sugar, stays in the bloodstream because the body either does not produce insulin or does not use insulin well. Insulin is a hormone that helps glucose enter cells to give them energy. Diabetes increases risk for heart attack and can cause other serious health problems, such as kidney disease and vision loss. Figure 24 shows diabetes prevalence across all three counties and Oregon over three points in time between 2010 and 2017. Ninety percent of diabetes cases are Type 2 (once referred to as “adult onset” but increasingly occurring in children and teenagers). For the most part, diabetes prevalence has been fairly stable in these counties with approximately one in every ten adults having the disease. Also of note, the CDC estimates that one in three people nationally are prediabetic, thus a focus on prevention is crucial in keeping rates low.

Obesity

Obesity is a complex condition involving an excessive amount of body fat, which can increase risk of health problems, such as heart disease, diabetes, and high blood pressure. Figure 25 shows the prevalence of obesity among adults at three points in time between 2010 and 2017 in Clatsop, Columbia, and Tillamook Counties and Oregon. Though the prevalence of adult obesity increased in Oregon over time, by 2014-2017, it had decreased in the three counties. However, the prevalence is still high at roughly one-third of adults in all four jurisdictions, making obesity another important focus for chronic disease prevention efforts.

Figure 25: Percent of adult population with obesity



	2010-2013	2012-2015	2014-2017
Clatsop	29%	31%	28%
Columbia	32%	32%	30%
Tillamook	32%	28%	31%
Oregon	26%	27%	29%

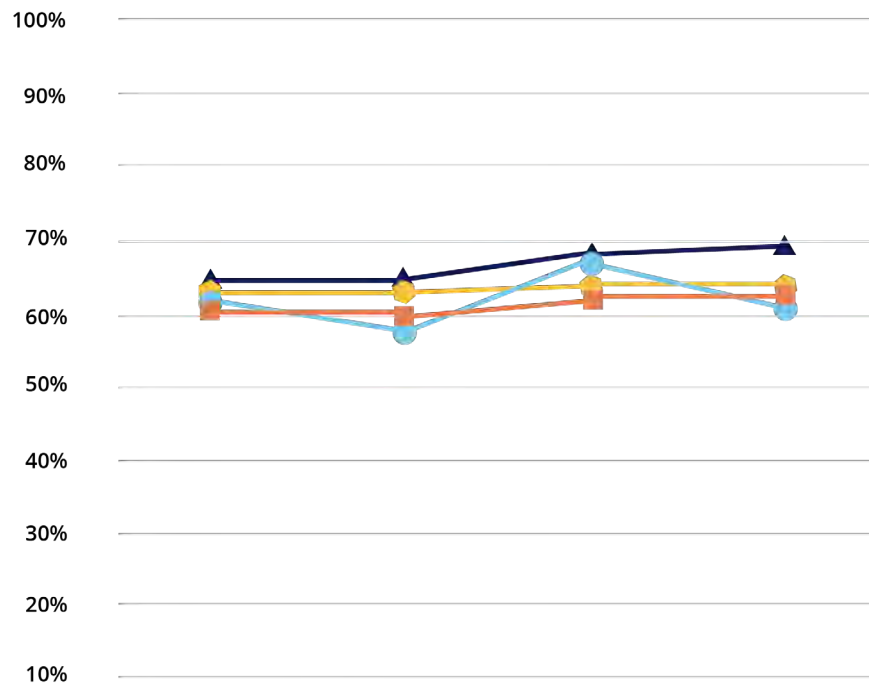
Source: Oregon BRFSS

Immunization

Vaccine-preventable diseases can cause long-term illness, hospitalization, and even death. Skipping vaccines can make children and adults vulnerable to illnesses such as influenza (flu), pneumococcal disease (such as bacterial meningitis), and shingles. Vaccines also protect against diseases such as human papillomavirus (HPV) and hepatitis B. Figure 26 shows the proportion of two-year-olds with up-to-date immunizations

in Clatsop, Columbia, and Tillamook Counties and in Oregon overall for years 2015 through 2018. Across all years depicted, all three counties have a lower proportion of two-year-olds with up-to-date immunizations than the state of Oregon. While childhood immunizations in the state have increased steadily, they have fluctuated in this region.

Figure 26: Two-year olds with up-to-date immunizations



	2015	2016	2017	2018
Clatsop	63%	62%	64%	64%
Columbia	62%	58%	65%	61%
Tillamook	62%	61%	64%	64%
Oregon	64%	66%	68%	69%

Source: OHA, Oregon Child Immunization Rates

Chronic Disease Risk Factors

Physical Activity

For healthy adults, the U.S. Department of Health and Human Services recommends at least 150 minutes of moderate aerobic activity, 75 minutes of vigorous aerobic activity, or a combination every week.⁹ Figure 27 shows around one-quarter of adults or fewer across the region engage in physical activity outside of work. In Oregon, there was little change from 2010 to 2017, with nearly one-fifth of the population inactive outside of work. Tillamook County saw the biggest change in inactive adults—an eight percent jump—in that time period. The number of inactive adults in Clatsop County also grew, but Columbia County had a slight overall decrease to match the state (18%).

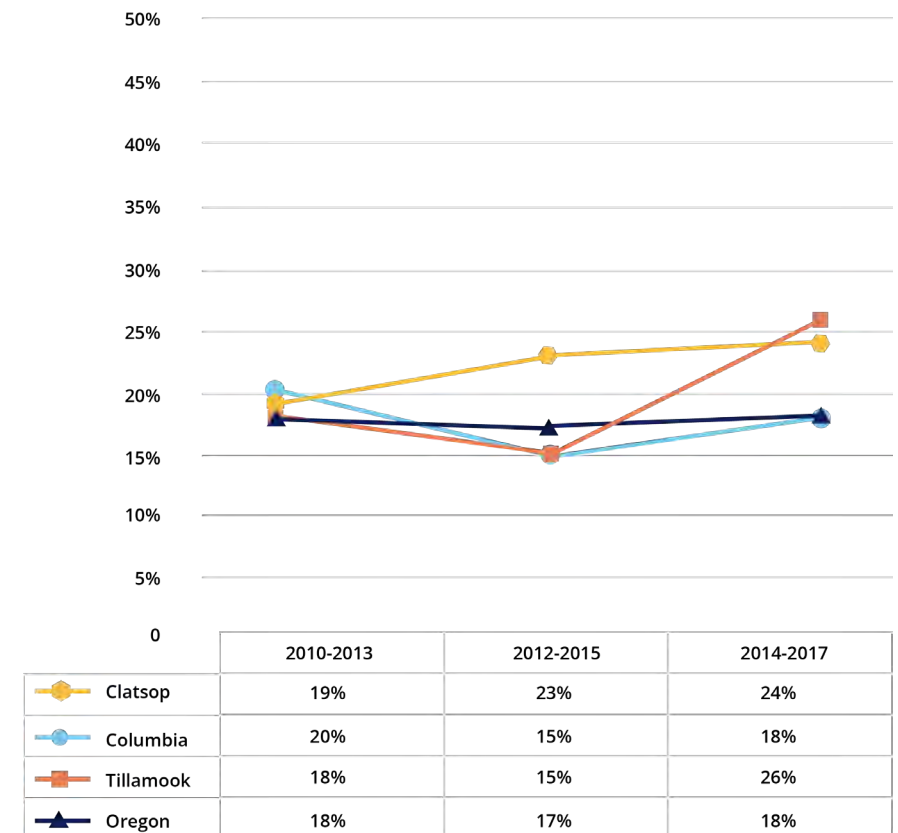
At least 60 minutes per day of aerobic, muscle strengthening, and bone strengthening physical activity. However, by 2014-2017, it had the highest proportion, seven percent higher than in Oregon overall. Figure 28 shows the percentage of 11th graders who met these physical activity recommendation, again in all three counties and in Oregon between 2010 and 2017. Oregon and Columbia County each had a three percent decline in physically active 11th graders.

In Clatsop County, the proportion of physically active 11th graders increased by three percent to meet the state average (23%). While eight percent of adults in Tillamook County became less active, as previously noted, eight percent of 11th graders in the county became more active.

Increases in the number of active youth is positive, but it's important to consider that the overall number is low—around three-quarters of 11th graders in most of the region are not

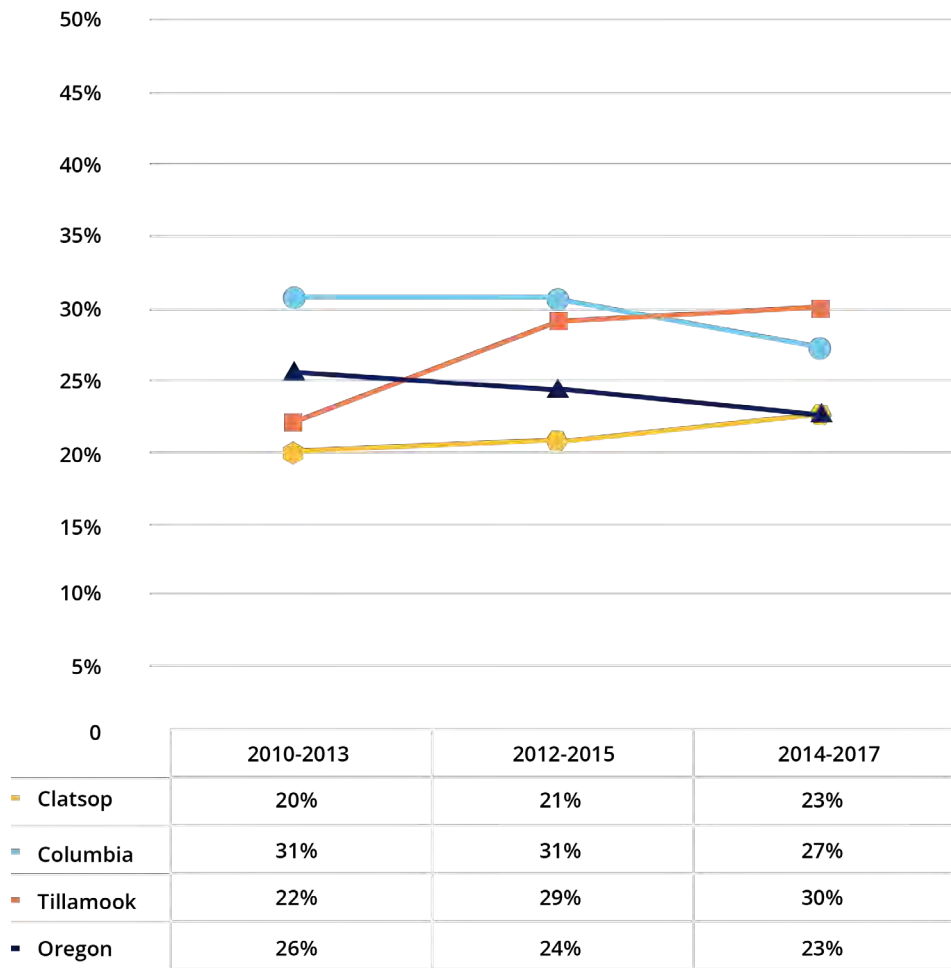
getting adequate amounts of physical activity. Physical activity is not only an important protective factor against chronic physical conditions such as obesity and cardiovascular disease, it can improve self-esteem and relieve symptoms of depression and anxiety in youth.

Figure 27: Percent of adult population without physical activity outside of work in the past month



Source: Oregon BRFSS

Figure 28: Percent of 11th graders who met daily physical activity recommendations



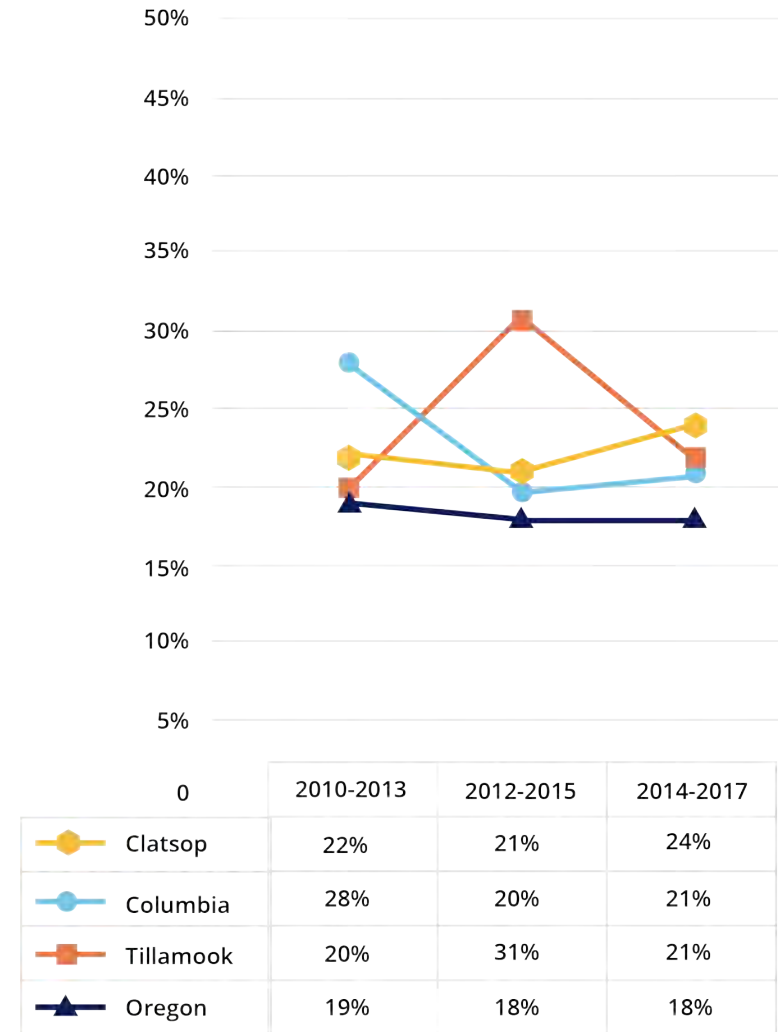
Source: Oregon Healthy Teen Survey

Tobacco Use

Tobacco use is associated with the top three causes of death in the region—cancer, heart disease, and chronic lower respiratory disease, all of which are preventable. Figure 29 presents the percent of adults in Clatsop, Columbia and Tillamook County, as well as the state of Oregon who are current cigarette smokers. All three counties in the region have

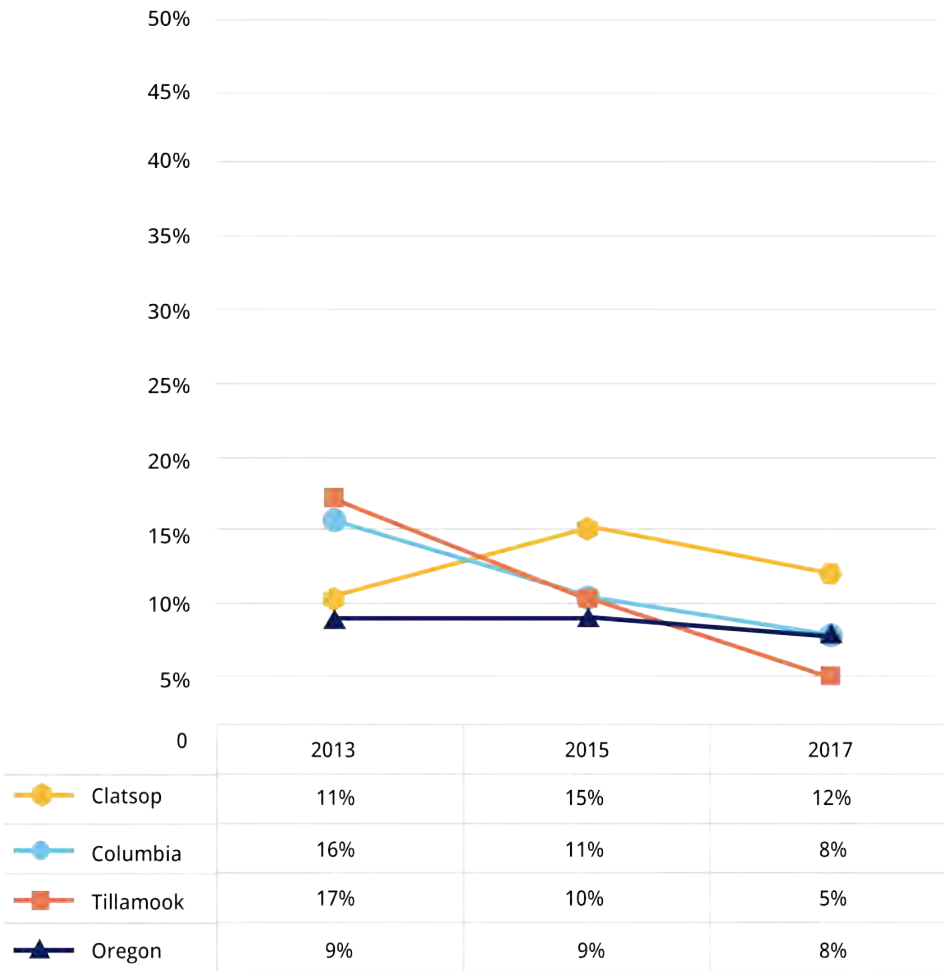
smoking rates that are above the state average (although the difference may not be statistically significant). The state of Oregon, for more than a decade, has reported less than 20 percent of the adult population as cigarette smokers.

Figure 29: Percent of adult population smoking cigarettes



Source: Oregon BRFSS

Figure 30: Percent of 11th graders smoking cigarettes (including menthol cigarettes) in the past 30 days



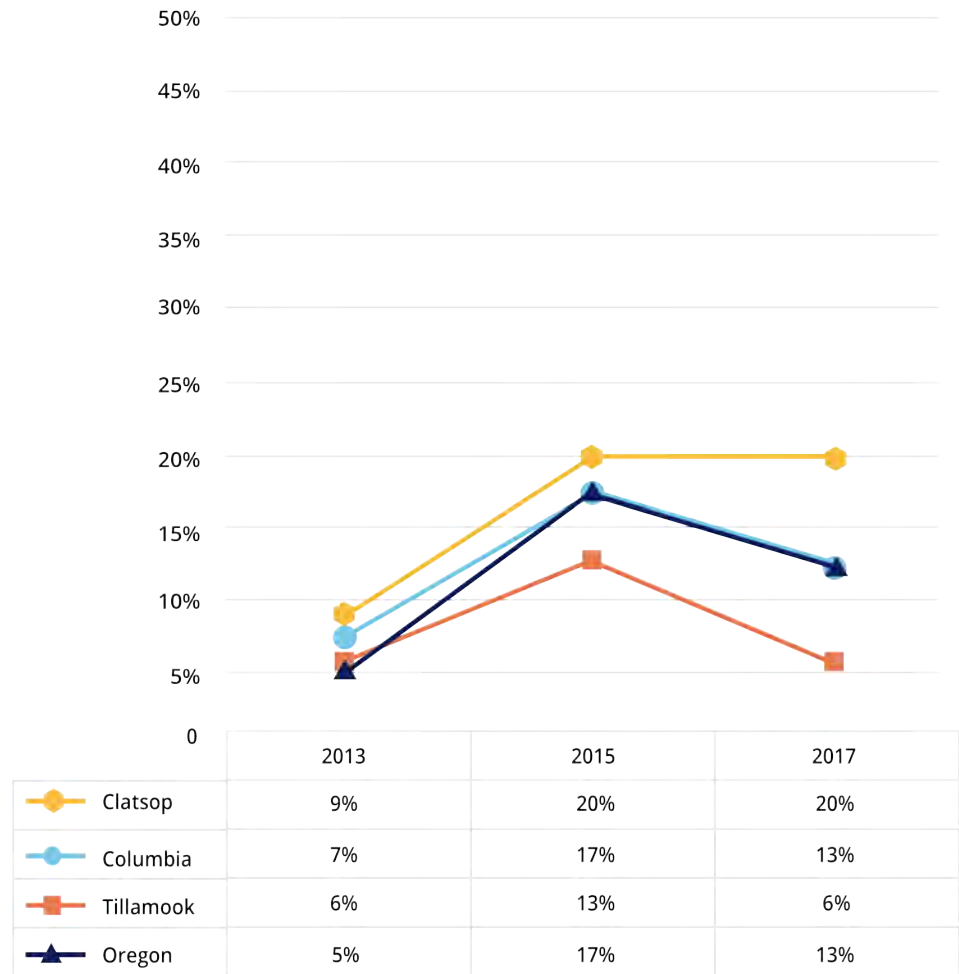
Source: Oregon Healthy Teen Survey

The vast majority of tobacco users start before they are 18 years old. Once they are addicted, quitting tobacco is a lifetime process that most tobacco users undertake and many struggle to achieve.¹⁰ Eleventh grade tobacco use is a key indicator for monitoring not only the present but also the future of tobacco use. All three counties reported a reduction of 11th graders smoking cigarettes from 2015 to 2017 (Figure 30). Figure 31 shows that following a rise in the use

of e-cigarettes and vaping product among 11th graders in all three counties and Oregon from 2013 to 2015, the proportion decreased in Columbia and Tillamook Counties and in Oregon by 2017.

Massive public health efforts have brought about a steady decline in youth smoking. However, tobacco industry innovation introduced electronic cigarettes and vaping within the past decade, and many

Figure 31: Percent of 11th graders using e-cigarette or other vaping product in the past 30 days



Source: Oregon Healthy Teen Survey

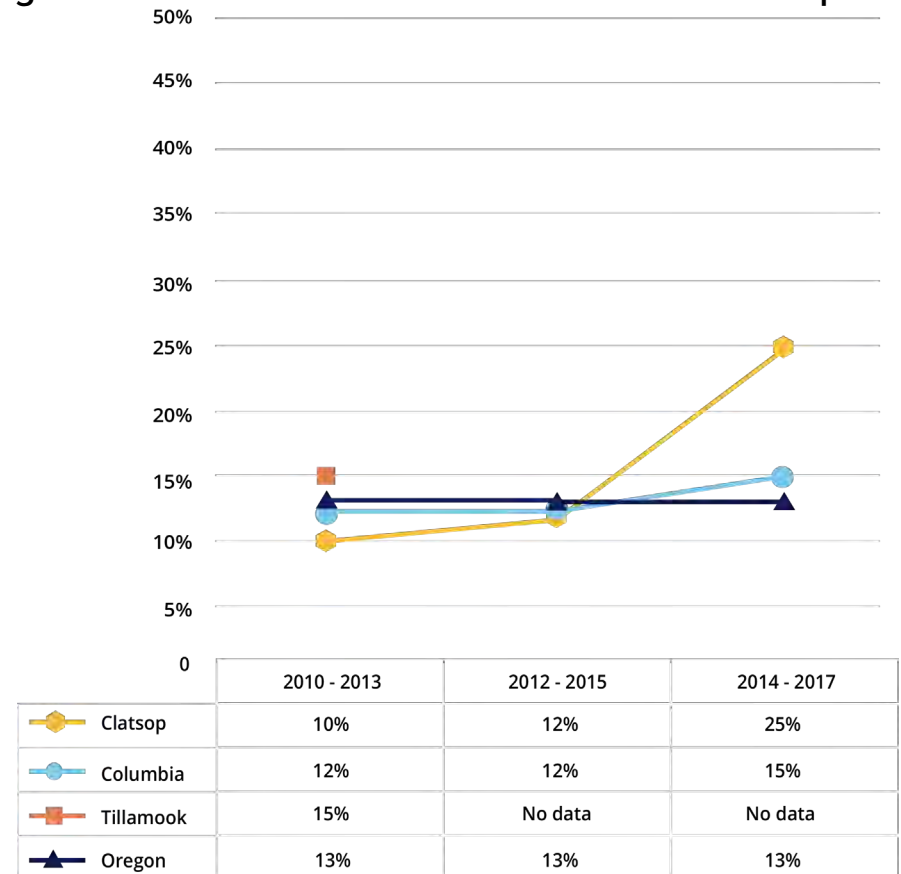
of the gains achieved are now threatened by the youth vaping epidemic.

From 2013 to 2015 the use of e-cigarettes or other vaping products doubled in every county and tripled in the state of Oregon. Columbia County and the state of Oregon managed to reduce the use of e-cigarettes from 17 percent (2015) to 13 percent (2017) among 11th graders. Clatsop County remained the same from 2015 to 2017 at 20 percent of 11th graders using e-cigarettes. However, Tillamook reduced 11th grade e-cigarette users by nearly 50 percent from 2015 (13%) to 2017 (6%).

Sugar-Sweetened Beverages Consumption

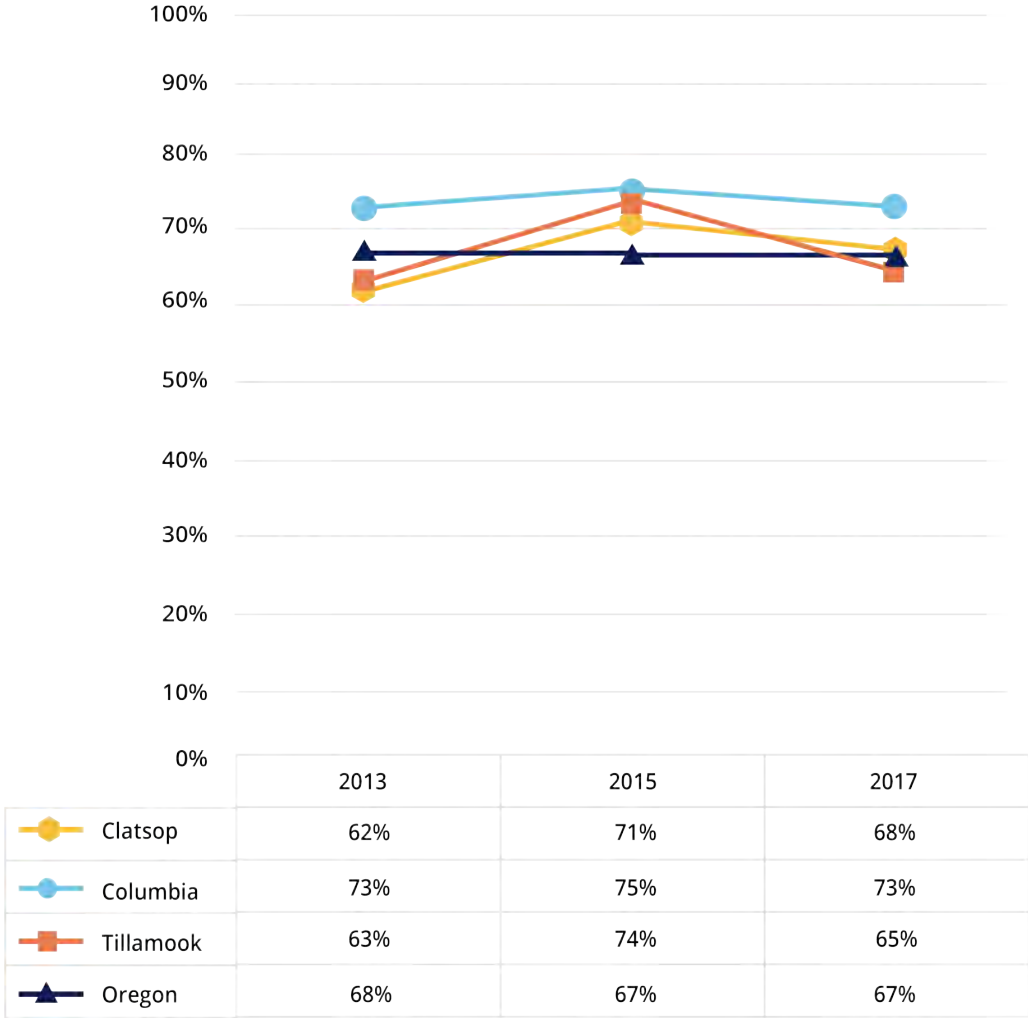
Sugar-sweetened beverages (SSBs) are drinks with added sugar, including sodas, fruit drinks, sports drinks, sweetened tea and coffee drinks, energy drinks, and sweetened water and electrolyte replacement drinks. According to the CDC, Americans consume most of their added sugar from SSBs. When consumed frequently, SSBs are associated with weight gain, heart disease, type 2 diabetes, tooth decay, and other health conditions.¹¹ Figure 32 shows the proportion of adults in the region and in Oregon who consumed seven or more sodas per week. Clatsop County had a large increase of 15 percent between 2010 and 2017 so that 25 percent of the adult population consumed seven or more sodas weekly, nearly twice the state average. Figure 33 shows that a large proportion of 11th graders in the region consumed sodas in the previous week though the numbers began trending downward between 2015 and 2017. In Clatsop (68%) and Tillamook (65%), the proportion was close to that of Oregon (67%) by 2017. Columbia County, however, saw very little change, with nearly three-quarters of 11th graders having consumed soda in the previous week across all three years shown.

Figure 32: Adults who consumed 7 or more sodas per week



Source: Oregon BRFSS

Figure 33: Percent 11th graders who drank soda or pop such as Coke, Pepsi, or Sprite (does not include diet soda or pop) in the last 7 days



Source: Oregon Healthy Teen Survey

Maternal Health and Pregnancy

Low Birth Weight

A baby's weight at birth is strongly associated with mortality risk during the first year and, to a lesser degree, with developmental problems in childhood and the risk of various diseases in adulthood. Figure 34 shows that the rate of low birthweight babies in Tillamook, Clatsop and Columbia Counties (2012-2016 combined) was lower than the rate for the state of Oregon.

Figure 34: Low birth weight, rate per 1,000 births

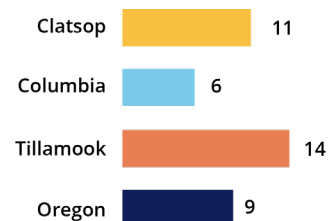


Source: OHA, Center for Health Statistics, Annual Report, Volume 1, 2017

Teen Births

In addition to being at higher risk for pregnancy-induced hypertension and postpartum depression than other mothers, teenage mothers are also at higher risk for suicidal ideation than their peers who aren't mothers. Children born to teenage mothers are at higher risk of not receiving proper nutrition, health care, and cognitive and social stimulation. They are also at higher risk of low birthweight babies, premature birth, low iron levels, high blood pressure, and mortality. In Oregon, there are nine teen births (ages 15-17) for every 1,000 children born. Tillamook County's rate is over 50% higher at 14 teen births for every 1,000. Clatsop County also has a higher teen pregnancy rate than the state. Columbia County, however, has a rate that is two-thirds that of the state rate (Figure 35).

Figure 35: Teen pregnancy, ages 15-17, rate per 1,000 births



Source: OHA, Center for Health Statistics, Annual Report, Volume 1, 2017

Inadequate Prenatal Care

Inadequate prenatal care occurs when care is not initiated until after the fourth month of pregnancy or when less than 50 percent of recommended visits are received. Figure 36 displays rates of adequate prenatal care received during the first trimester for every 1,000 births in each county, and in Oregon. Clatsop (77%) and Tillamook (65%) Counties had lower percentages of women receiving first trimester care than the state (80%).

Figure 36: Percent of pregnancies receiving prenatal care in the first trimester

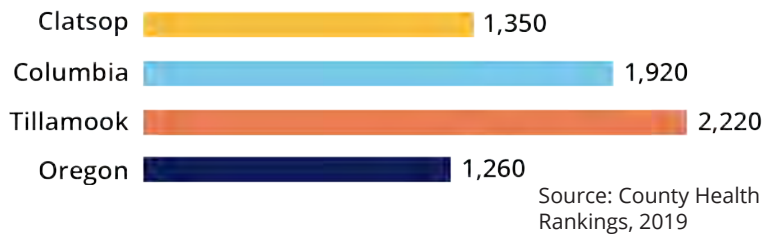


Source: OHA, Center for Health Statistics, Annual Report, Volume 1, 2017

Oral Health

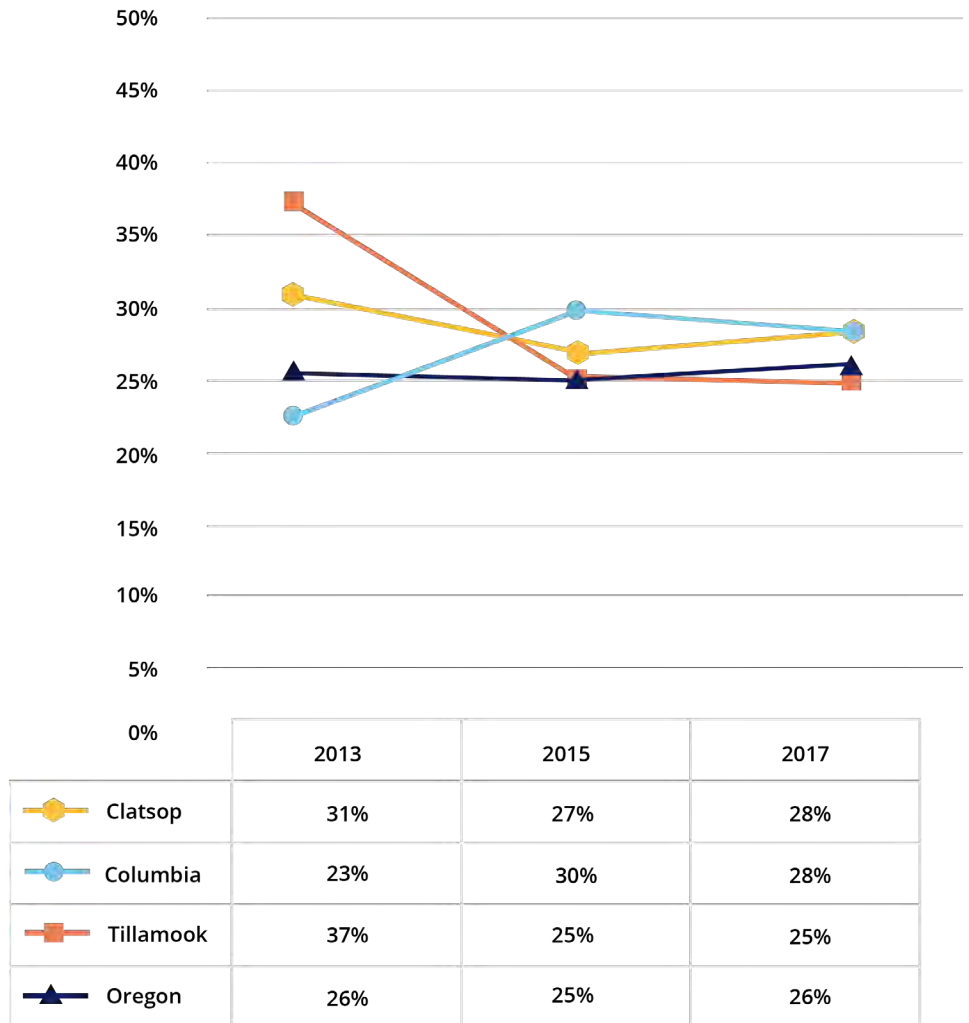
The percentage of 11th graders who had gone more than one year without seeing a dentist or dental hygienist leveled off between 2015 and 2017 to 28 percent for Clatsop and Columbia Counties and 25 percent for Tillamook County (Figure 38). Tillamook County had the biggest decline in its proportion of 11th graders not receiving oral care between 2013 and 2017, dropping 12 percent to become the lowest in the region. The proportion in Oregon remained steady at around 25 percent over the same time period.

Figure 37: Ratio of population to dentists



For every dentist, there are 1,260 citizens in the state of Oregon, a lower ratio than in Clatsop, Columbia, and Tillamook Counties. Tillamook has the most striking disparity at 2,220 individuals per one dentist; nearly 1,000 more individuals than the state of Oregon. Columbia County has nearly 700 citizens more for every dentist than Oregon at 1,920 individuals. Clatsop County's ratio is the closest to Oregon's at 1,350 people to every dentist in the county (Figure 37).

Figure 38: Percent of 11th graders who have gone more than one year without seeing a dentist or dental hygienist



Source: Oregon Healthy Teen Survey

Behavioral Health

Behavioral health is a broad term that refers to how behavior impacts the health and well-being of the body, mind, and spirit. This discipline is inclusive of mental health, substance use, and more, employing intervention, prevention, treatment, and recovery initiatives to improve quality of life.

Mental Health

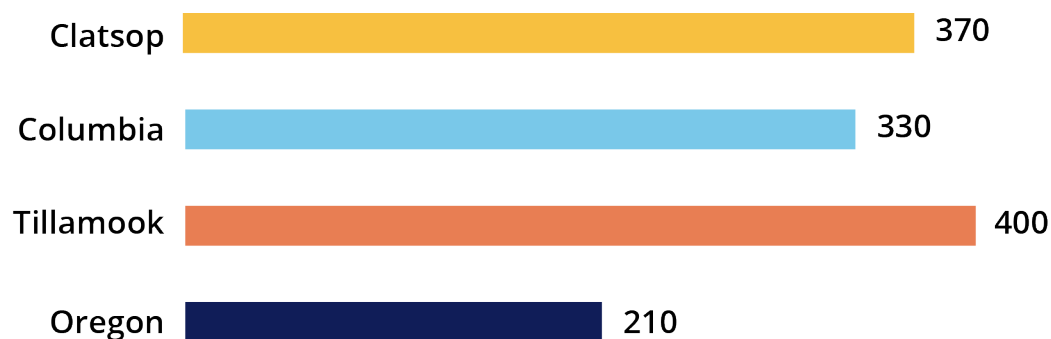
An important part of overall health, mental health refers to an individual's emotional, psychological, and social well-being. Mental health influences how a person thinks, feels, and acts.¹² Figure 39 provides a snapshot of mental health for adults in Clatsop, Columbia, and Tillamook Counties and in Oregon. Adults in the region reported in similar proportion to the state having had one or more days of poor mental health in the previous 30 days.

Figure 39: Adults reporting 1 or more days of poor mental health in the past 30 days



Source: OHA, Adults reporting 1 or more days of poor mental health in the past 30 days by county, Oregon, 2012-2015

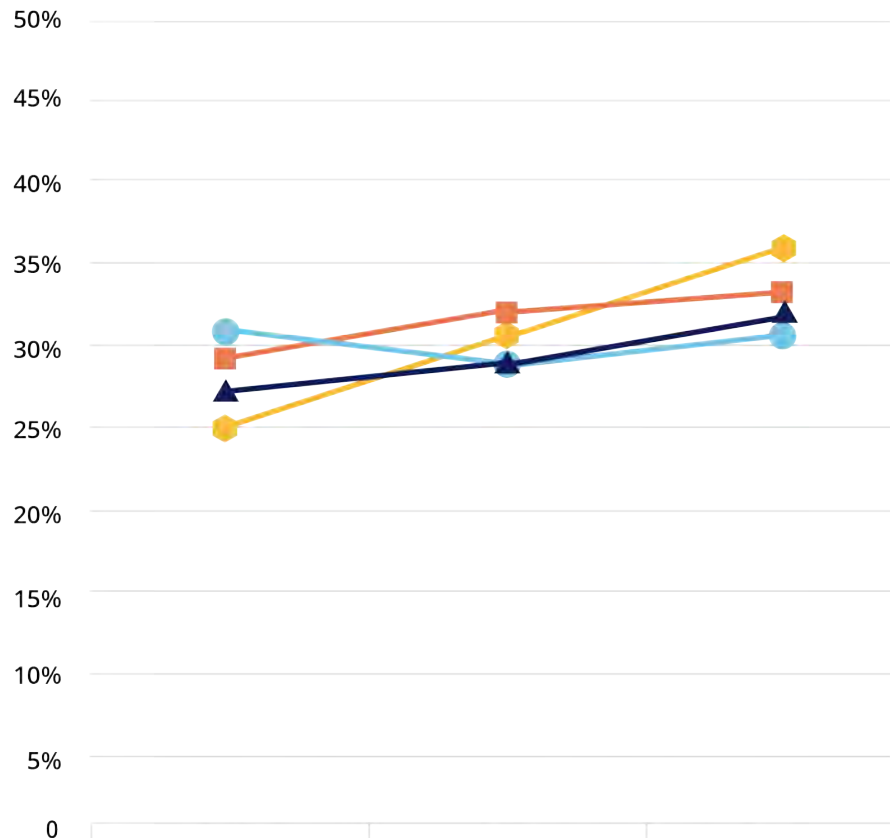
Figure 40: Ratio of population to mental health providers



Source: County Health Rankings, 2019

The availability of mental health providers to the total adult population in Oregon, however, is much better than in the region. All three counties are designated as Mental Health Care Health Professional Shortage Areas for their total populations. At 400 to one, Tillamook County has the largest ratio of adult residents to mental health care providers—nearly double the state ratio (Figure 40).

Figure 41: Percent of 11th graders who felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities



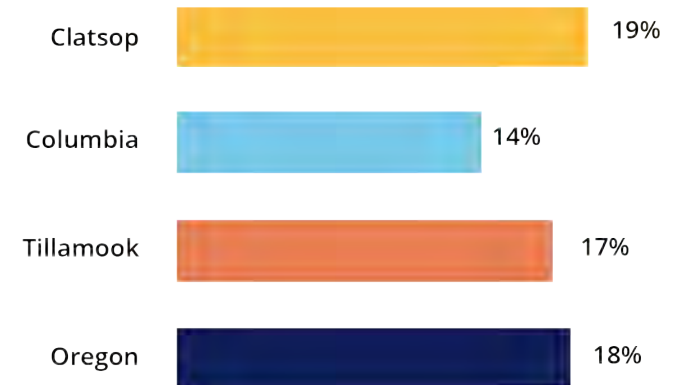
Source: Oregon Healthy Teen Survey

Figure 41 shows an overall increase in the percentage of 11th graders reporting poor mental health between 2013 and 2017 in all but Columbia County, which saw little change. Clatsop County, which had the lowest proportion in 2013, had an 11 percent increase, the largest in the region by far. Overall, more than one-third of 11th graders in the region, as well as in Oregon, reported poor mental health in 2017.

Alcohol Consumption

Binge drinking is the consumption of an excessive amount of alcohol in a short period of time (five drinks for men and four drinks for women over a four-hour period.) In Clatsop and Tillamook Counties and in Oregon, nearly one-fifth of adults reported binge drinking (Figure 42). Clatsop had the highest proportion in the region at 19 percent, and Columbia County had the lowest at 14 percent.

Figure 42: Percent of adults who reported binge drinking

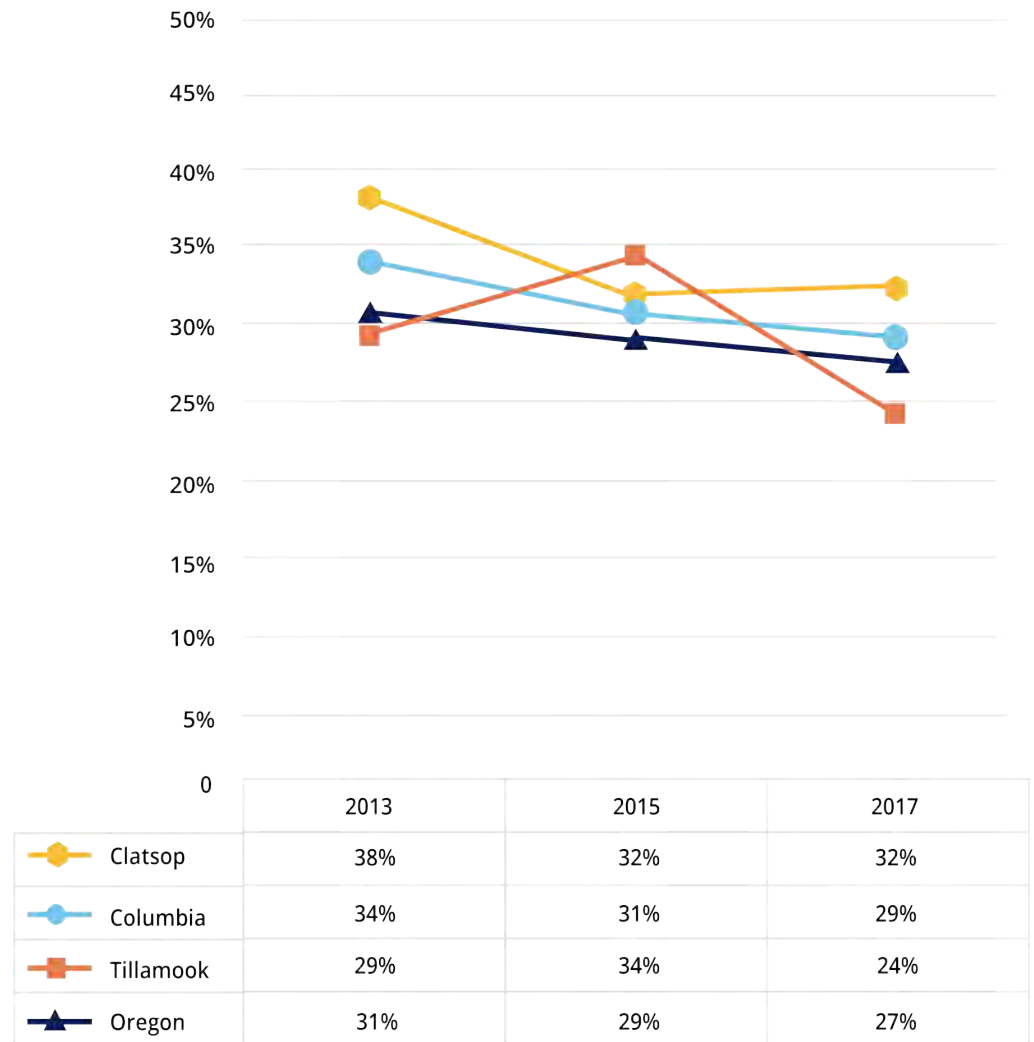


Source: Oregon BRFSS, 2014-2017

Figures 43 and 44 show drinking behaviors among youth in the region compared to the state overall. Between 2015 and 2017, youth drinking decreased across the region and the state. While the decline in the percentage of youth who reported drinking at least one alcoholic drink was, for the most part, small everywhere else, Tillamook County saw a 10 percent drop in that time period. Approximately one-third of youth reported drinking alcohol in Clatsop and Columbia Counties and in Oregon, but only one-fourth reported doing so in Tillamook County.

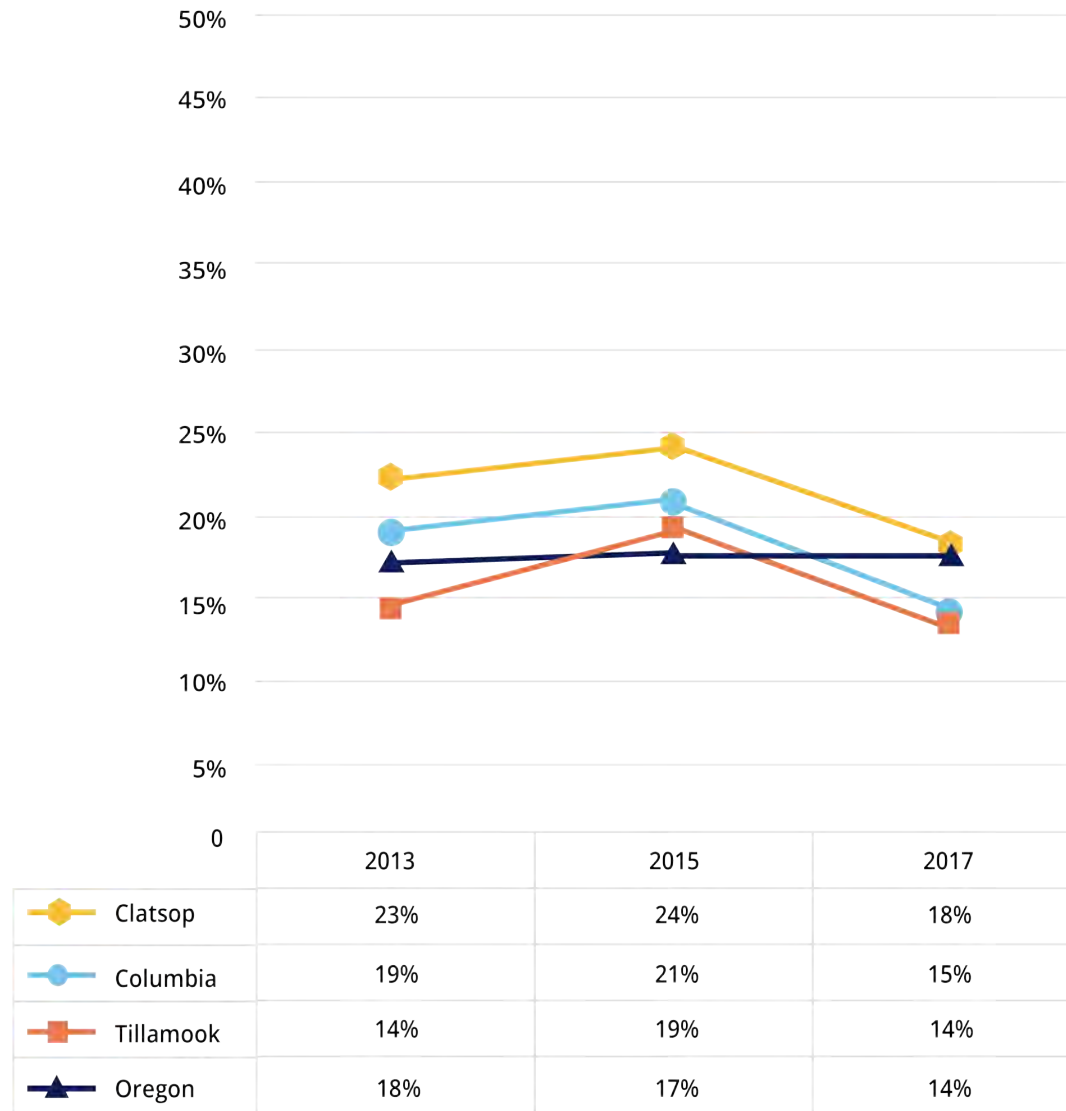
Reports of binge drinking (five or more drinks over a couple of hours) among youth were less common. Oregon overall saw a small change of three percent between 2015 and 2017, but across the region, youth binge drinking declined by five to six percent. In Tillamook (14%) and Columbia (15%) Counties, youth binge drinking was similar to that in the state overall (14%). In Columbia, it was higher (18%).

Figure 43: Percent of youth who reported drinking one or more drinks of alcohol in the past 30 days



Source: Oregon Healthy Teen Survey

Figure 44: Percent of youth who reported binge drinking one or more days in the past 30 days



Source: Oregon Healthy Teen Survey

Regional Health Improvement Plan Overview

Columbia Pacific Coordinated Care Organization (CPCCO), their advisors, and community partners engaged in a community conversation through 2018 and 2019 about the factors that create health and well-being for all individuals who live in the three counties in the CPCCO service area. This included not only individuals' lived experiences of health and well-being, but it took into consideration public health departments, hospitals, clinics, community safety net providers, behavioral health organizations, the education system, and the need to support the on-going efforts to improve the supports and access to care throughout the system outside of the healthcare setting.

The resulting five-year regional health improvement plan advances public health modernization by finding the intersection between the specific ways that public health supports health care improvement and addressing the values and needs expressed by the community at large. The value based health innovation and improvement efforts that will be undertaken 2020-2024 will take into consideration the opinions of those who gave their time and efforts during our planning process in 2018 and 2019 as well as population health indicators.

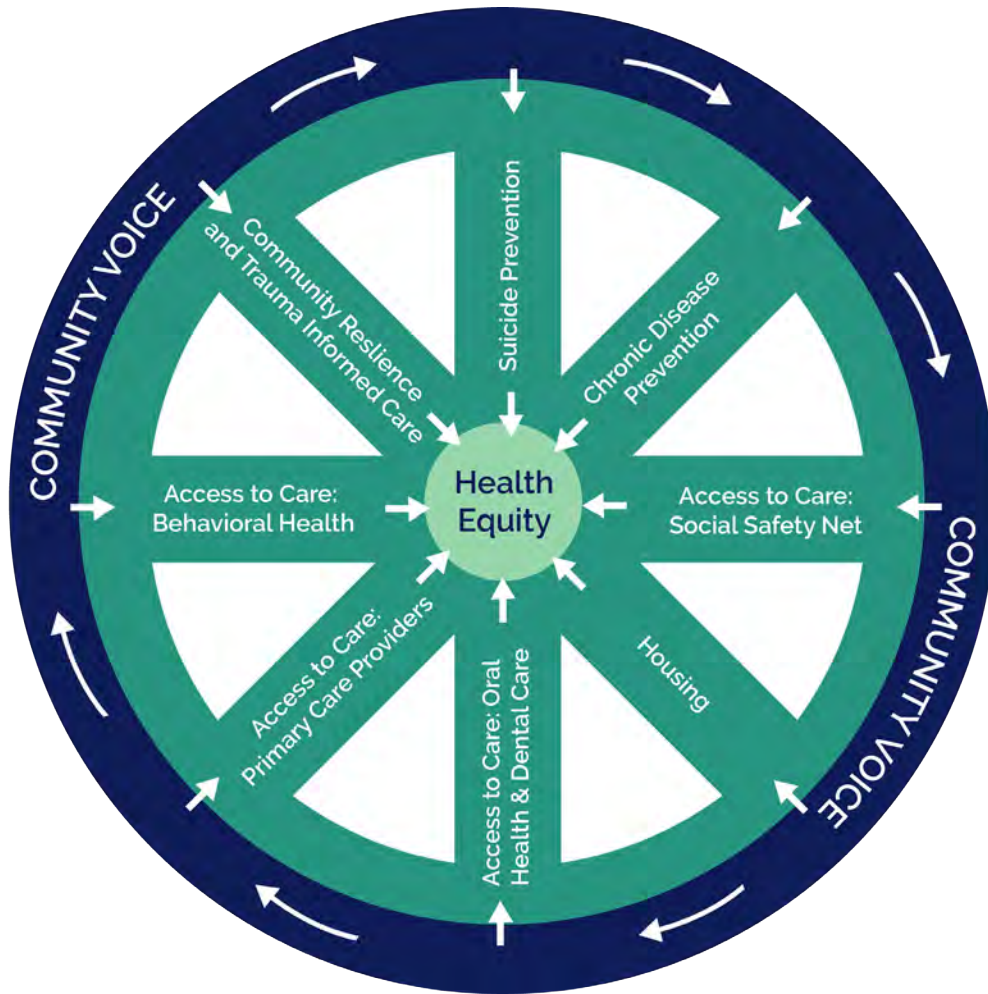
The regional health improvement plan makes the commitment to increase the intersection between healthcare, social services and the social determinants of health. Our goal is to support the efforts community wide that maximize the creation of, and investment in, health and well-being through community-based supports and services, along with the efforts to improve population health through epidemiology.

There are so many positives to build on and talk about. So many individuals and organizations that care about and support each other. This five-year effort will not be accomplished in silos of care and support. People and organizations have already come together to commit to work across sectors to accomplish the improvement of health and well-being in their communities. While challenging, reaching goals will be made easier by all of those already engaged and ready to take the next steps in creating system change and improving access to supports and care across all sectors.

There are also some important things to improve that there is agreement on where measurable change can take place. CPCCO, our advisors, and community partners have chosen eight areas to prioritize with goals and strategies to undertake over the next five years to collaboratively improve health in the region.

The priority areas for improving health, well-being and resiliency for individuals and communities are: Community Resilience/Trauma Informed Care, Primary Care, Behavioral Health, Oral Health and Dental Care, Social Safety Net, Chronic Disease Prevention, Suicide Prevention, and Housing. The promotion of health and wellness are foundational to all goals and strategies for each priority area.

Figure 45: Achieving health equity through strategic priorities



The graphic in Figure 46 was developed as a way to visualize the complex relationship between the strategic priorities presented in this report, the community voice, and the path to health equity.

How to Use the Regional Health Improvement Plan

This regional health improvement plan is divided into eight priority areas for improving health in the region:

- Community Resilience and Trauma Informed Care
- Access to Care: Primary Care
- Access to Care: Behavioral Health
- Access to Care: Oral Health and Dental Care
- Access to Care: Social Safety Net
- Chronic Disease Prevention
- Suicide Prevention
- Housing

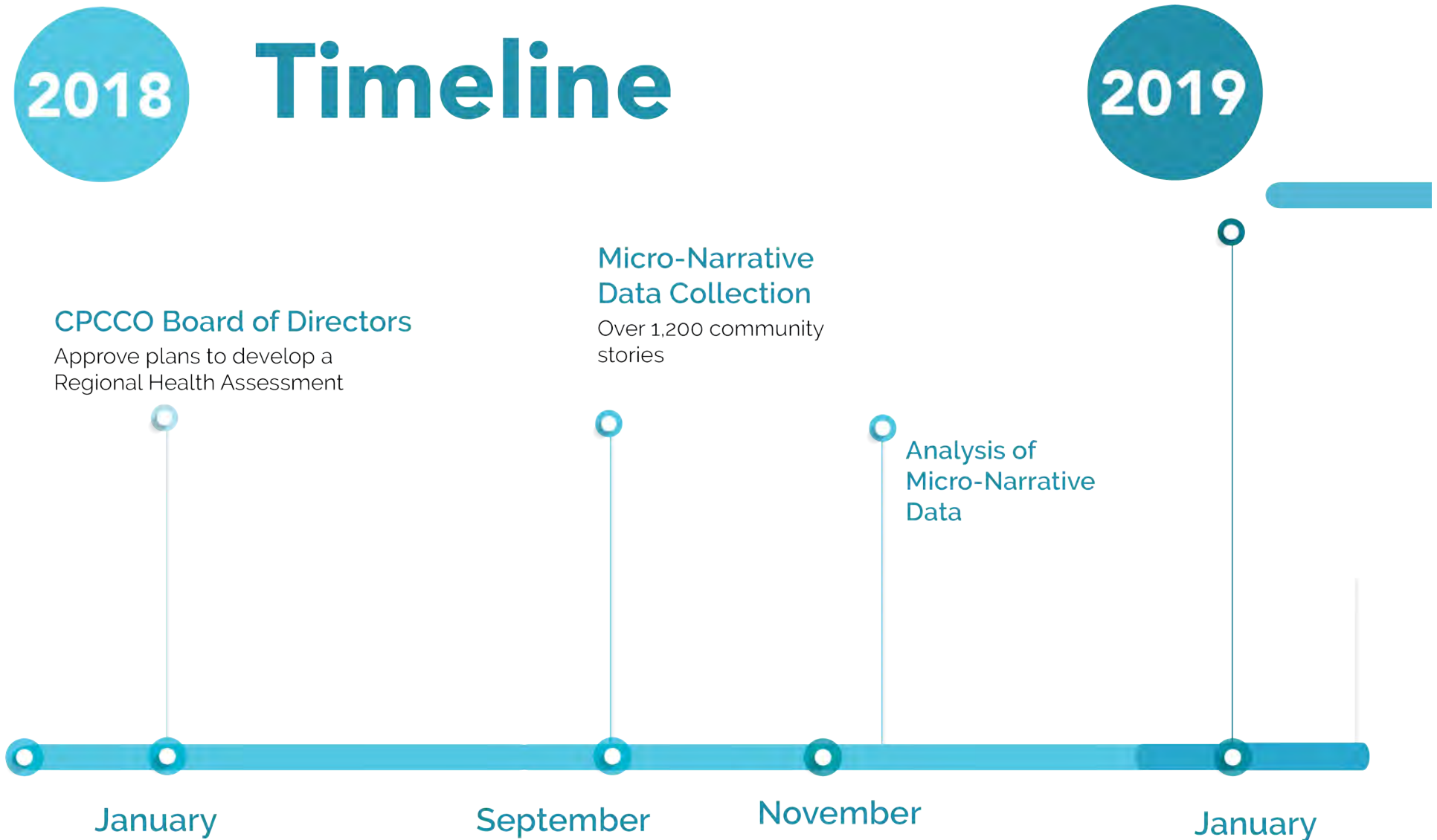
The objectives and strategies outlined for each priority area are divided into categories based on the following areas of action in which CPCCO and its regional partners will concentrate work to achieve the goals of each priority. In the plan, each color-coded category appears alongside the objectives and strategies to which it relates.

Access to Care: Impacts the number, availability, and quality of health care options and resources

Data Collection and Utilization: Impacts the ability to collect and analyze information about the community as a whole in order to better understand and provide for the community's needs

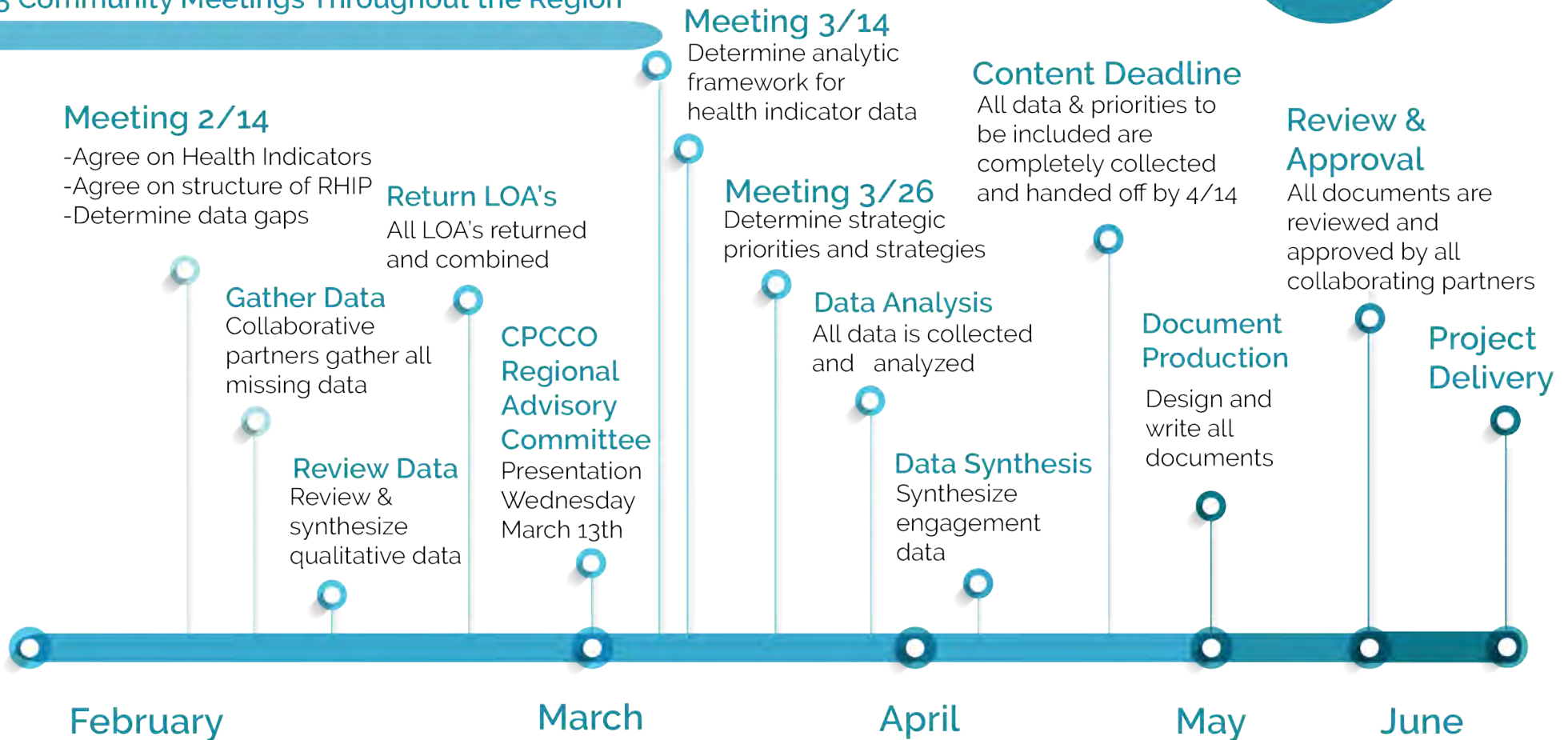
Prevention and Policy: Impacts risk factors that influence health by implementing plans for community investment and advocacy

Figure 46: Project timeline





15 Community Meetings Throughout the Region



Community Resilience and Trauma Informed Care



Rationale

Research points to trauma informed care as a way to increase resiliency and reduce the impact of Adverse Childhood Experiences (ACE's). ACEs have been linked to risky health behaviors, chronic health conditions, not meeting developmental benchmarks, and early death. The risk for each of these outcomes increases as an individual's ACE exposure increases. Adults who were exposed to four or more categories of ACEs are seven times as likely to experience alcoholism; three (men) to five (women) times as likely to experience depression; 13 times as likely to attempt suicide; and 10 times as likely to use IV drugs. Supports and services that build resilience are important to the improvement of health and well-being.



Goals

1. Understand baseline/readiness of organizations for trauma informed care in multiple sectors;
2. Improve capacity and reach of trauma informed supports and service in programs, organizations, and across sectors;
3. Implement best practices that create resilience in children and families using the trauma informed lens.

Data Collection and Utilization



Objective: By 2024, increase the number of programs, organizations, and sectors aware of the trauma informed perspective and its relation to engaging individuals in the services that support improvement of health and well-being.

Strategies:

1. Support the increased use of the TRACE (trauma, resilience, and adverse childhood experience) questionnaire to health care and community-based organizations' intake forms and collate and analyze data to use for quality improvement initiatives.
2. Collaborate to access resources and share investment opportunities that support the implementation of trauma informed care across programs, organizations, and sectors in the region.

Health Equity Impact: Increasing organizational and programmatic understanding of the conditions that create resiliency allows for development of equity informed approaches and culturally responsive services.

Output/Outcome Metrics: Increased number of organizations committed to trauma awareness for their service recipients and within their workforce.

Access to Care



Objective: By 2024, increase the number of community-based organizations providing trauma informed services, with an emphasis on organizations serving the greatest numbers of individuals and families experiencing health disparities.

Strategies:

1. Increase coordination and engagement among the health care, education, child welfare, community, and criminal justice sectors to integrate trauma informed care across systems and organizations;
2. Increase the utilization of and support for traditional health workers across all sectors;
3. Support the increase of supportive adult advisors, diverse peer leaders, and strategic messaging campaigns to support the increase of social networks.

Health Equity Impact: Adverse Childhood Experiences are a root cause of ill health that may further exacerbate health disparities. Trauma informed services are demonstrated to promote resiliency in individuals and communities. Social support networks and buffers enhance resilience.

Output/Outcome Metrics: Reduced entry into foster care; increased access via behavioral health and primary care providers to coordinated services that address the social determinants of health.

Access to Care: Primary Care

Rationale

Access to coordinated primary care is the cornerstone of a modern health care system, increasing the chances that individuals receive preventive care and appropriate screenings that reduce the likelihood of poor health outcomes. Clatsop and Columbia Counties are designated as Primary Health Care Provider Shortage Areas for everyone living in the geographic area, and Tillamook County is designated as a Health Professional Shortage Area for low income/homeless/migrant farm worker populations. In addition to provider shortages, barriers such as transportation and geographic isolation may be present. Community-level research points to transportation to health care services as a key issue for residents in the entire region.

Goal

Eliminate barriers to primary care, including, geographic and transportation inconveniences, lack of knowledge, unavailability of Internet, and lack of insurance coverage.

Access to Care



Objective: Increase referrals to primary care providers from community-based organizations and emergency, urgent, and virtual care providers.

Strategies:

1. Increase the number of referrals and stronger partnerships between primary care and community-based organizations that support the growth of transitional and supported housing for those with special needs who are working on recovery from addiction, substance abuse, and mental illness
2. Increase awareness of and access to quality interpretation and translation services across sectors
3. Increase the number of organizations in the region that offer help desks and community-based referral supports that:
 - a. Support discharge from acute and sub-acute health care settings to community-based care settings

Access to Care



- b. Increase access to traditional health workers and health care navigators that can support access to primary care
- c. Collaborate across sectors to increase the participation in a volunteer driver network.

Health Equity Impact: Improving the quantity of organizations that coordinate services and community-based supports increases the opportunity for individuals (including those who do not have English as their first language) to equitably access primary care services.

Output/Outcome Metrics:

1. Increased number of referrals to primary care from community-based organizations
 2. Decrease in emergency room visits for ambulatory sensitive conditions.
-

Objective: Collectively address the primary care and health professional provider shortage.

Strategies:

1. Identify incentives to recruit and retain highly qualified health care providers at every level and profession with a focus on integration;
2. Increase the number of traditional health workers working in the health care setting in the region
3. Increase participation in clinician and staff wellness programs regionally
4. Increase the utilization of telehealth in the region
5. Collaborate to increase the workforce opportunities in the region for medical assistants, scribes, and health care extenders.

Health Equity Impact: Low income, homeless, and migrant populations most impacted by provider shortage will have increased access to screening and preventive care.

Output/Outcome Metrics: Increased number of primary care and health professionals including those who are certified as traditional health workers.

Access to Care: Behavioral Health

Rationale

Oregon is widely recognized as having among the poorest access to behavioral health services in the country. In a recent national survey, Oregon's access to substance use disorder treatment ranked last. Supports and services have long been underfunded. Individuals who need treatment for substance misuse or mental health concerns often have challenges managing their overall health. Clatsop, Columbia, and Tillamook Counties are designated as Mental Health Care Shortage Areas for the entire population.

Goal

All people in Clatsop, Columbia, and Tillamook Counties have the services and supports they need to achieve optimal behavioral health and emotional well-being.

Data Collection and Utilization



Objective: By 2024, expand and improve access to the full range of behavioral health services.

Strategies:

1. Develop alternative payment models that support enhancement of behavioral health services, including developing components of the array of services that do not currently exist.
2. Recruit behavioral health care providers to work in the region;
3. Integrate behavioral health and primary care services to provide coordinated care and a whole-person approach;

Health Equity Impact: Increased behavioral health care utilization by groups with less access to care, including low income individuals, specific racial/ethnic groups, individuals with low English fluency, etc., will lower their risk for poor behavioral health outcomes.

Output/Outcome Metrics: Increased number of behavioral health care providers and service components, and collaboration across sectors to address behavioral health needs.



Objective: Increase behavioral health-related prevention activities and awareness and understanding of behavioral health supports and services that are peer driven.

Strategies:

1. Support the increase of services that are peer driven and are distributed throughout the continuum of care;
2. Integrate behavioral health and primary care services to provide coordinated care and a whole-person approach;
3. Add to the components of the existing system to expand the continuum of care.
4. Increase the systemic clinical interventions and screenings at all levels of the community

Health Equity Impact: Destigmatization of behavioral health increases access to health care and treatment-seeking self-efficacy for vulnerable populations.

Output/Outcome Metrics: Implemented prevention and outreach activities across sectors that are peer driven

Objective: Increase access to harm reduction and addiction treatment resources in the region.

Strategies:

1. Support the increase of services that are peer driven and are distributed throughout the continuum of care
2. Increase the number of needle exchange programs in the region
3. Support the increase of modalities and interventions that help individuals to access services for behavioral health, including medication-assisted treatment (MAT)
4. Increase the systemic clinical interventions and screenings at all levels of the community

Health Equity Impact: Better access to behavioral health treatment resources will improve behavioral health risk and outcomes for vulnerable populations most impacted by the social determinants of health.

Output/Outcome Metrics: Implemented programs and services supporting harm reduction and increasing awareness of services for behavioral health

Access to Care: Oral Health and Dental Care

Rationale

Oral health is critical to overall health. Gum disease and other oral health conditions are associated with heart disease, diabetes, low birthweight and certain types of cancers. Poor oral health also contributes to missed school and work days, and can have a negative impact on overall well-being. Clatsop and Tillamook Counties are designated as Dental Health Care Shortage Areas for low income populations.

Goal

Improve capacity and utilization of affordable, preventive, and integrated oral health services for children, youth, and underserved populations.

Access to Care



Objective: Increase the number of oral health care professionals who treat children, youth, and underserved populations.

Strategies:

1. Work with local programs and schools to promote oral health careers
2. Support tele-dentistry programs
3. Collaborate with dental care organizations to improve efforts to recruit and retain dental health care providers for low income and underinsured in each county

Health Equity Impact: Oral health care is integral to individuals' general health. Increasing the availability of oral health professionals will improve access to and utilization of dental services and overall quality of life.

Output/Outcome Metrics: By 2024, increase access and utilization by Medicaid members ages 0-20 years by five percentage points each.

Access to Care



Objective: Expand access to full service and mobile dental care services for underinsured and low-income individuals.

Strategies:

1. Improve access through shared investment in supports and services that provide community-based dental services.
2. Work to expand evidenced-based, best practice oral health programs in schools and community programs
3. Develop ongoing partnerships in medical-dental alignment, dental home development, and other mechanisms to better integrate care across multiple disciplines by leveraging and developing cross-disciplinary systems;
4. Increase care coordination efforts supporting access to the continuum of dental health care across sectors.

Health Equity Impact: Oral health care is integral to individuals' general health. Improving access to dental services for low income and underinsured individuals will increase utilization and overall quality of life.

Output/Outcome Metrics:

1. By 2024, increase individuals accessing oral health services in a primary care or community-based setting by five percentage points each.
2. By 2024, increase individuals receiving dental care coordination from other sectors by five percentage points each.

Access to Care: Social Safety Net

Rationale

Health-related community-based services can improve care and overall community health and well-being. Unmet social needs, including housing, access to healthy food, employment, education, social isolation, and social connection, must be considered as critical components in preventing and treating disease.

Goal

Ensure individuals and community stakeholders can easily and accurately identify, access, and locate health and community services and healthy foods.

Access to Care



Objective: Collaborate to support the establishment of a comprehensive, cohesive system for coordinating and partnering between hospitals, community action programs, and primary care settings.

Strategies:

1. Increase community awareness of resources and supports through screening for social determinants of health in clinical settings and the coordination of referrals across sectors
2. Deploy community resource navigators to key locations through the region
3. Collaborate to increase the options for transportation, including the development of a volunteer driver network

Health Equity Impact: Social support increases resiliency and improves access to basic needs, such as quality food and housing.

Output/Outcome Metrics: Increased number of organizations that coordinate services and have community resource navigators on staff.



Objective: Increase availability of nutritious food options for individuals with limited access to fresh food.

Strategies:

1. Establish broad cross-sector support for and investment in food banks, food recovery, and programs that support the reduction of chronic health conditions
2. Develop specific linkages through care coordination and shared mechanisms between primary care, food pantries, and other nutrition resources that support an increase in access to health care as individuals access supports through community resource navigators
3. Establish “Rx for Health” projects in the region to support the reduction and prevention of diabetes

Health Equity Impact: Improved food security will lead to reductions in malnutrition and related chronic diseases and improved school performance and attendance.

Output/outcome metrics: Established network of organizations that have community resource navigators to decrease service confusion and reduce system duplication

Chronic Disease Prevention

Rationale

Chronic diseases are the leading causes of death in the region. Many chronic diseases are preventable through lifestyle factors such as nutrition and physical activity. Using evidenced-based approaches to prevent initiation of tobacco use, misuse of alcohol, and the onset of obesity will reduce chronic diseases and the associated costs related to health and well-being.

Goal

Decrease chronic disease prevalence through focus on reducing chronic disease risk factors.

Access to Care



Objective: Increase care coordination across sectors to mitigate the burden on chronically ill individuals to navigate complex systems.

Strategy: Establish broad cross-sector support for and investment in food banks, food recovery, and programs that support the reduction of chronic health conditions;

Health Equity Impact: Improved health care access and case management will reduce chronic disease-related mortality rates for vulnerable populations at highest risk.

Output/Outcome Metrics: Increased number of supports and services that are community-based and being provided by community health workers and peer wellness specialists.



Objective: Prevent tobacco use and drug and alcohol misuse.

Strategies:

1. Support an increase in the number of community environments that support tobacco-free, with an emphasis on policy changes to retail environments and evidence-based practices to address electronic cigarettes and vaping
2. Support an increase in the number of health promotion programs for youth that are collectively funded and are evidence based to prevent tobacco use and drug and alcohol misuse

Health Equity Impact: Preventing initial use and making the healthy choice the easy choice reduces the impact of chronic health conditions on youth as they age into adulthood. Enforcement of the Tobacco 21 age limit and promotion of healthy environments reduces the likelihood that youth will start smoking, decreasing risk for tobacco related chronic disease.

Output/Outcome Metrics:

1. Expanded collaboration across sectors and increased number of individuals working with community health workers and peer wellness specialists
 2. Increased number of health promotion programs that are collectively funded
 3. Increased implementation of community and school nutrition programs
-

Objective 2: Reduce obesity rates.

Strategies:

1. Community and school-based nutrition education, exercise, and access to affordable, healthy food options, such as Rx for health, to community-based activities, food bank fresh, or fresh food pharmacy.
2. Expand farm-to-school nutrition and educational programs.

Health Equity Impact: Obesity rates are strongly influenced by social determinants of health. Improved access to healthy foods and environments safe for activity decrease obesity and obesity-related chronic conditions.

Output/Outcome Metrics: Increased implementation of community and school nutrition programs

Suicide Prevention

Rationale

Suicide rates in Clatsop, Columbia, and Tillamook Counties are higher than the state average. Oregon overall has a higher rate of suicide than the national average.

Goal

Reduce to zero the number of suicides in Clatsop, Columbia, and Tillamook Counties.

Prevention and Policy



Objective: Increase community awareness campaigns and education for the public about suicide as a public health problem that is preventable.

Strategies:

1. Identify, develop, and implement suicide prevention programs in every county, with specific outreach on suicide prevention and awareness for youth
2. Facilitate community collaborations across sectors to increase the number of community-based education and trainings that are evidence based and address suicide prevention, intervention, and post-vention

Health Equity Impact: Increased knowledge and destigmatization of suicide and associated behavioral health conditions which disproportionately impact specific groups, including veterans, lowers suicide rates.

Output/Outcome Metrics: By 2024, reduced number of individuals dying by suicide to zero

Housing

Rationale

Nineteen percent of Clatsop, 14 percent of Columbia, and 18 percent of Tillamook County households have severe housing problems (high housing costs, lack of kitchen facilities, lack of plumbing, or overcrowding). Research has shown that housing can impact health through four pathways: stability, affordability, quality and safety, and neighborhood environment.

Goal

Partner across sectors to reduce the impact that housing insecurity has on health and well-being for all individuals in Clatsop, Columbia, and Tillamook Counties.

Data Collection and Utilization



Objective: By 2021, monitor, local housing conditions affecting health by creating a regional dashboard that centralizes county housing needs assessments, workforce and low-income housing stock, active and developing housing projects, and tenancy supports occurring in the region.

Strategies:

1. Partner to support community action programs, Northwest Oregon Housing Authority, and community-based organizations that provide shelter/transitional housing supports in the region to create a regional dashboard that centralizes county housing needs assessments, low income and workforce housing stock, active and developing housing projects, and tenancy supports occurring in the region
2. Explore ways to develop a framework to collect data on housing instability and homelessness with a focus on developing a housing data framework that leverages existing sources and includes a plan for future data collection and utilization opportunities

Data Collection and Utilization

Health Equity Impact: Reliable, valid, and consistent data collection mechanisms improve the ability to systematically track, analyze, report, and intervene on gaps in housing quality and access that adversely and inequitably impact community health.

Output/Outcome Metrics: Updated local, timely, actionable data on housing conditions

Access to Care



Objective: By 2024, decrease the number of individuals and families whose access to health is compromised by housing challenges.

Strategies:

1. Partner with existing local housing task forces/committees to develop pathways for increased access to shelter housing, transitional support to acquire permanent housing, and options for permanent housing
2. Encourage local adoption of evidence-based recovery housing, supported housing, supported employment, and supported education programs
3. Increase access to transportation systems such as dial-a ride and volunteer ridesharing

Health Equity Impact: Housing insecure individuals are more likely to delay care-seeking due to cost. Housing support reduces the burden of housing-related stress and costs as a barrier to care for low income individuals and increases the opportunity for those individuals to develop a stable, sustainable relationship with primary care providers.

Output/Outcome Metrics: Increased collaboration and referral between housing support programs and health care settings.

Objective: Support and collaborate on increasing the number of initiatives and programs that provide stability, affordability, quality, and safety for low income individuals who have housing needs.

Strategies:

1. Increase the number of tenancy sustaining services
2. Create transitional support services between higher and lower levels of care
3. Increase programs that support the remediation of unsafe or inadequate housing conditions

Access to Care



Health Equity Impact: Stable, safe housing is not equitably distributed. Health disparities intensify in an environment where housing insecurity exists. Addressing structural issues leading to poor housing conditions has the potential to improve the equitable access to health and wellness, as individuals and families can spend less of their overall income on housing and be relieved of stress related to addressing basic human needs, thus being able to focus some energy on health and wellness.

Output/Outcome Metrics: Increased number and coordination of housing support services

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Appendices

Appendix A: CPCCO Micro-narrative Results

Appendix B: Regional Health Assessment Data Sources



Community Health Assessment Columbia Pacific CCO

By Laurie Webster, December 18, 2018

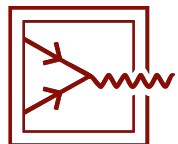
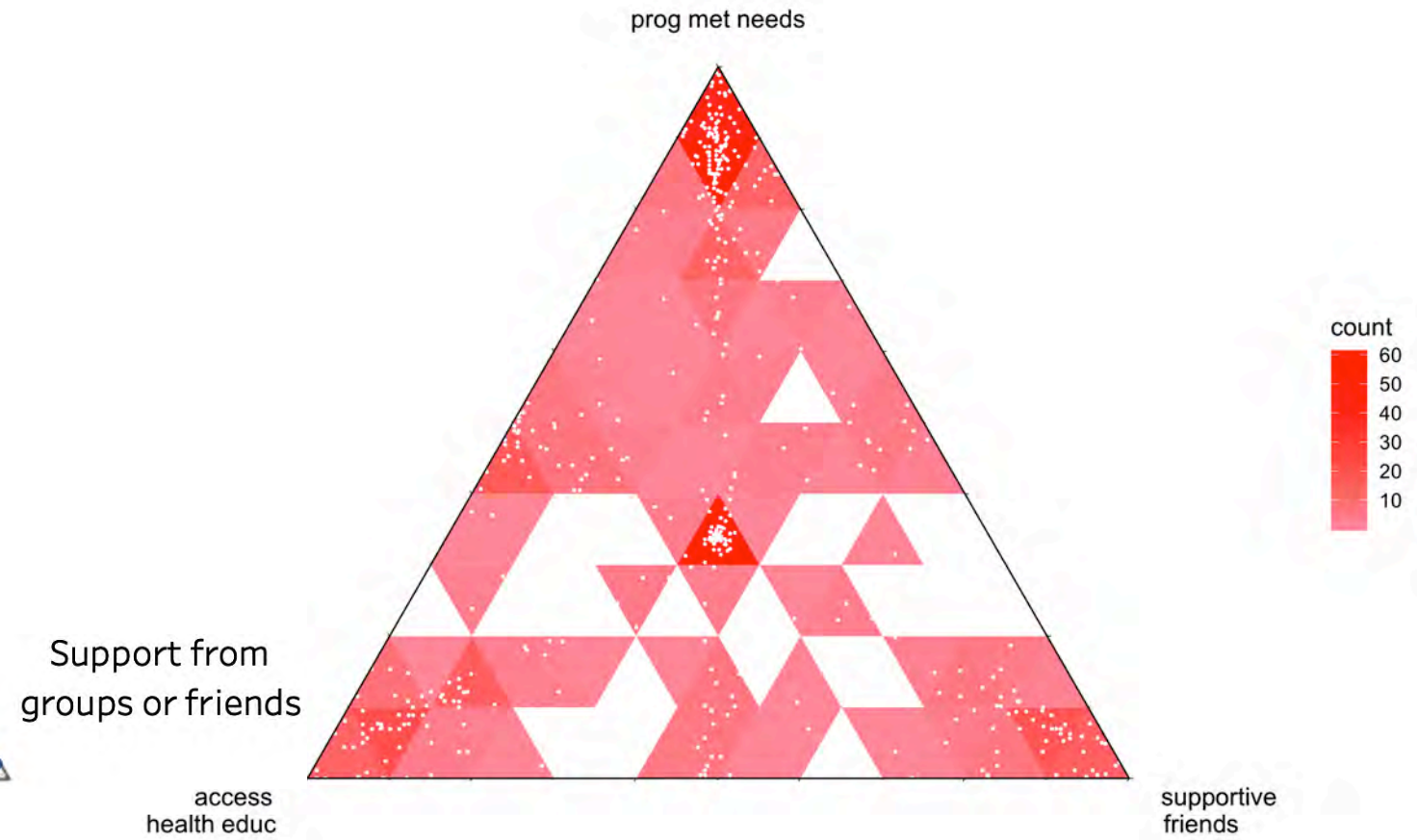
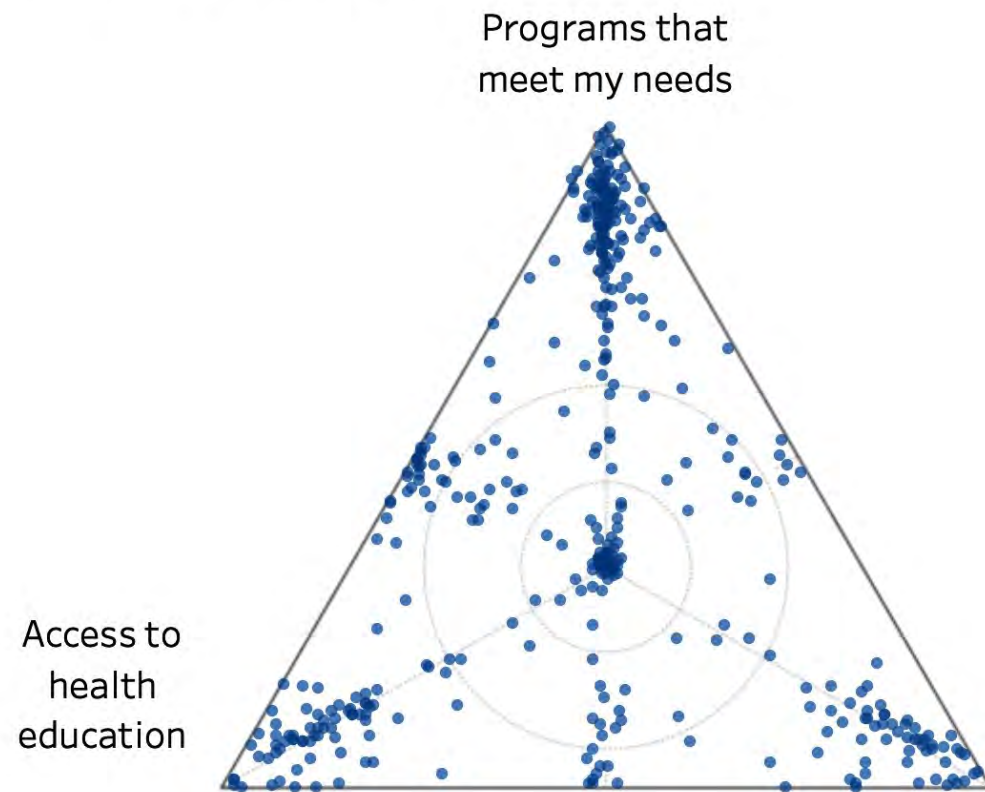
How Images Were Created

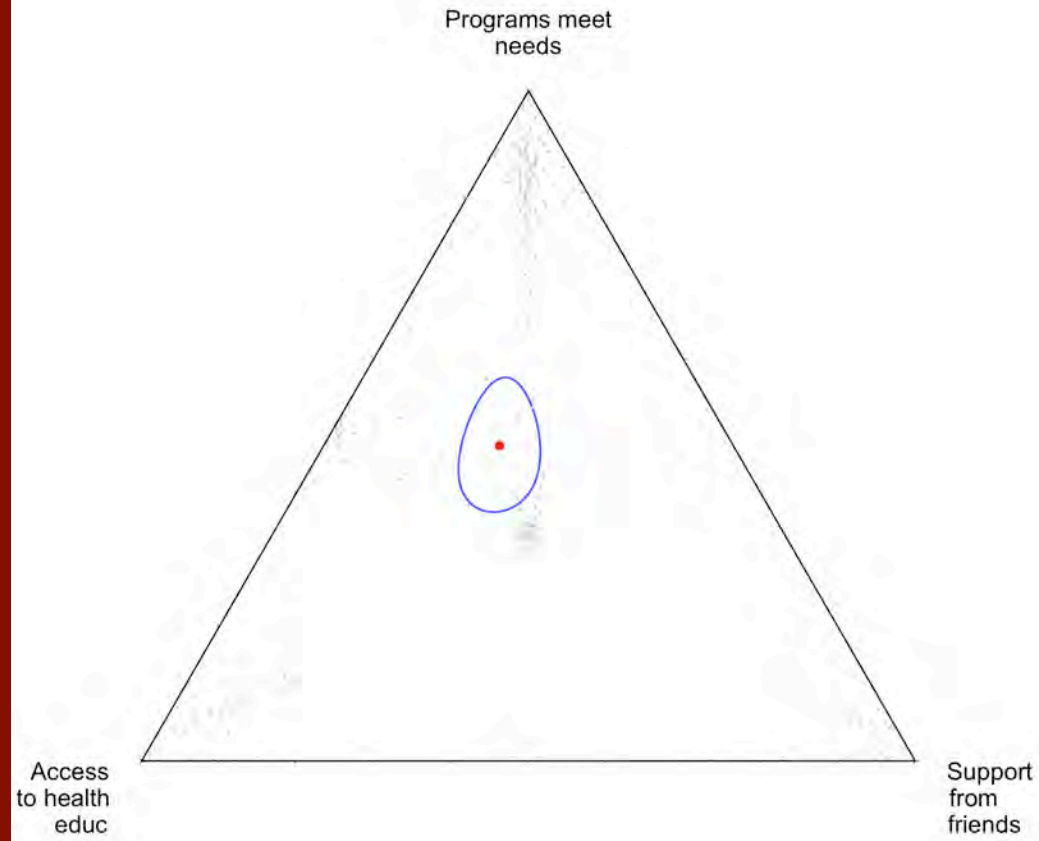
- The triad on the left with story dots was exported from the Tableau workbook as were the all of the dyad images.
- The triad heat map was generated with R code. (<http://www.ggtern.com/2018/01/20/version-2-2-2-released/> - gives the background on the code.)
- The triads with geometric means and confidence ellipses was generate with R code. (<http://qedinsight.com/2017/07/08/confidence-regions/> gives the background on this statistics and its use.)
- The differences shown with the dyads were determined by using Kruskal-Wallis H test followed by Fisher's Least Squared Differences as the post-hoc test.



90% response

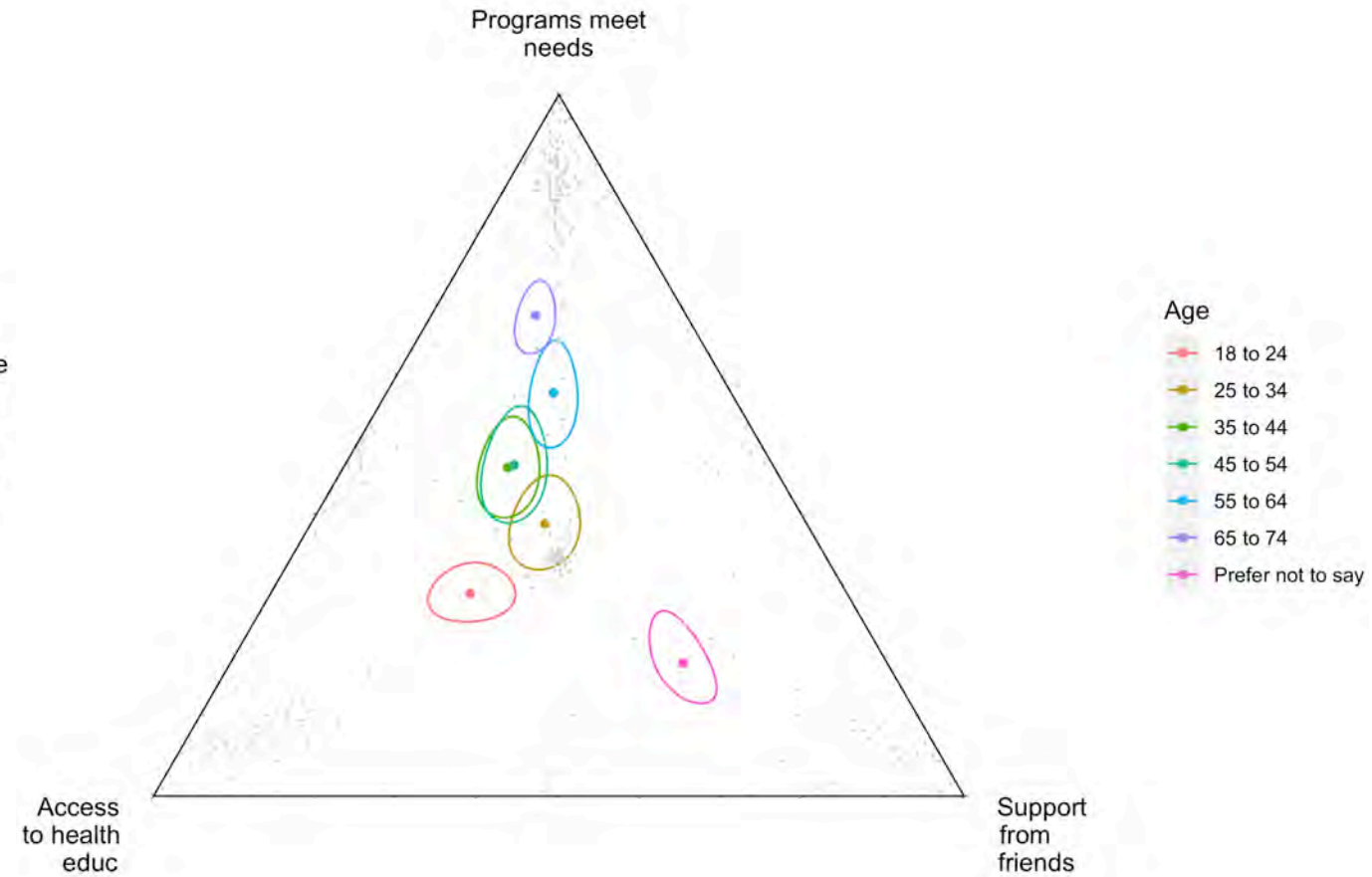
T1. Thinking about your story, what was important?





Overall Tone

- Negative
- Neutral
- Not sure
- Positive

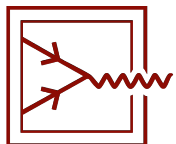
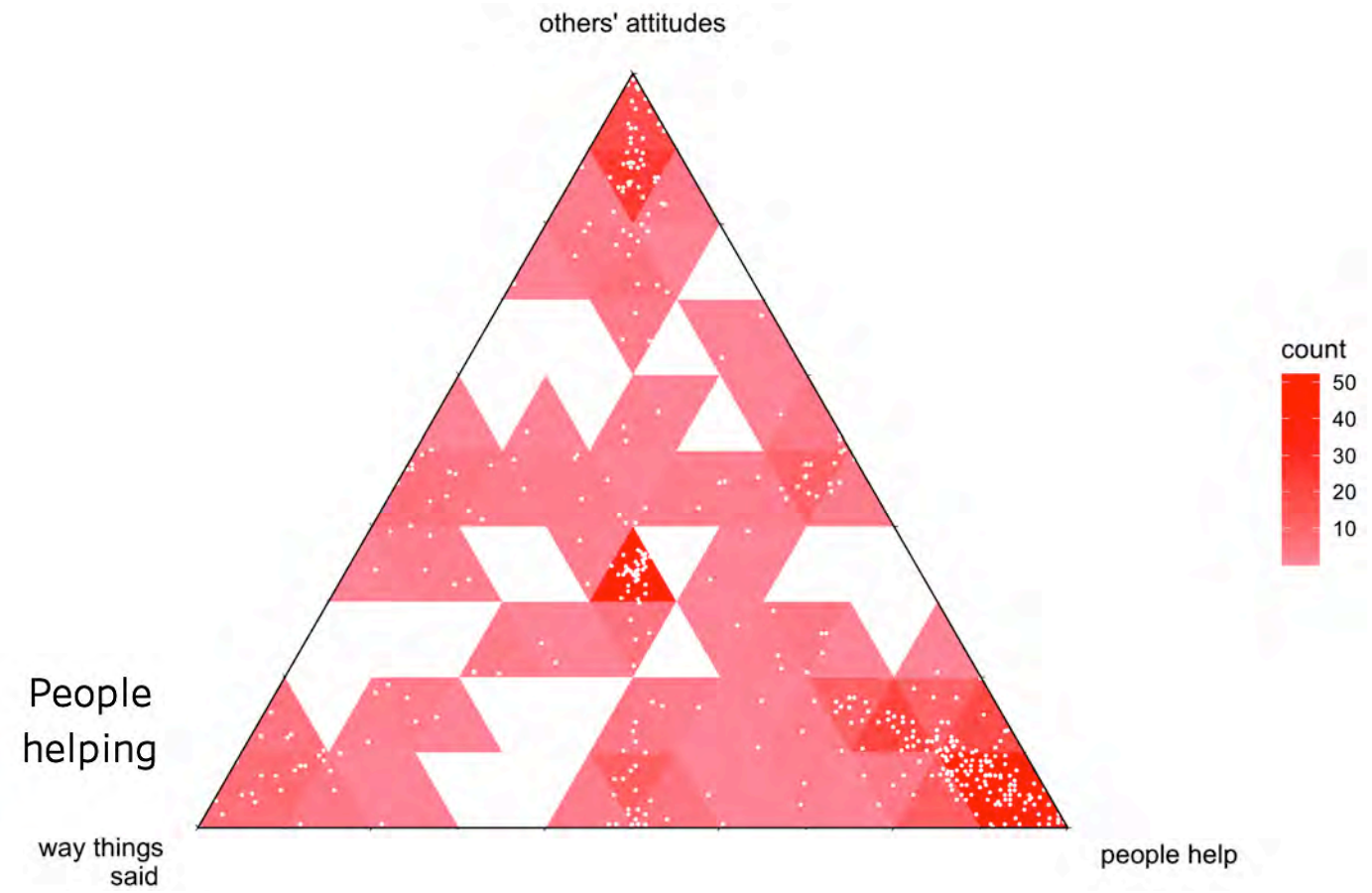
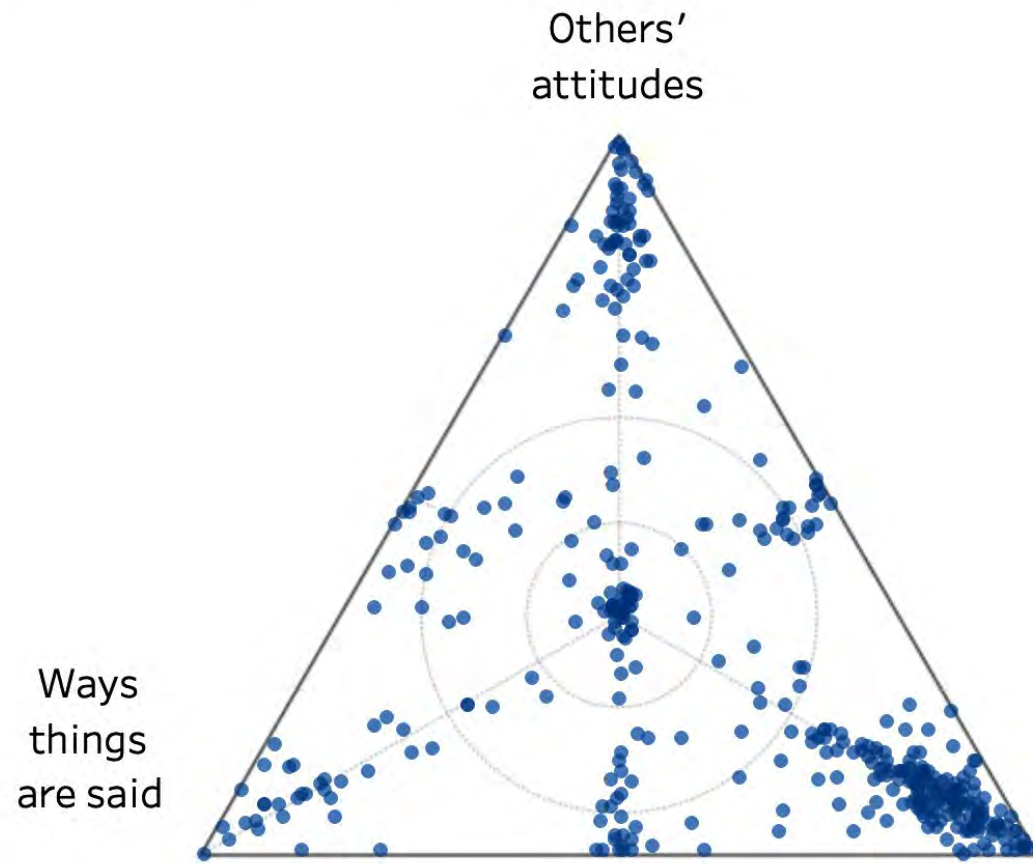


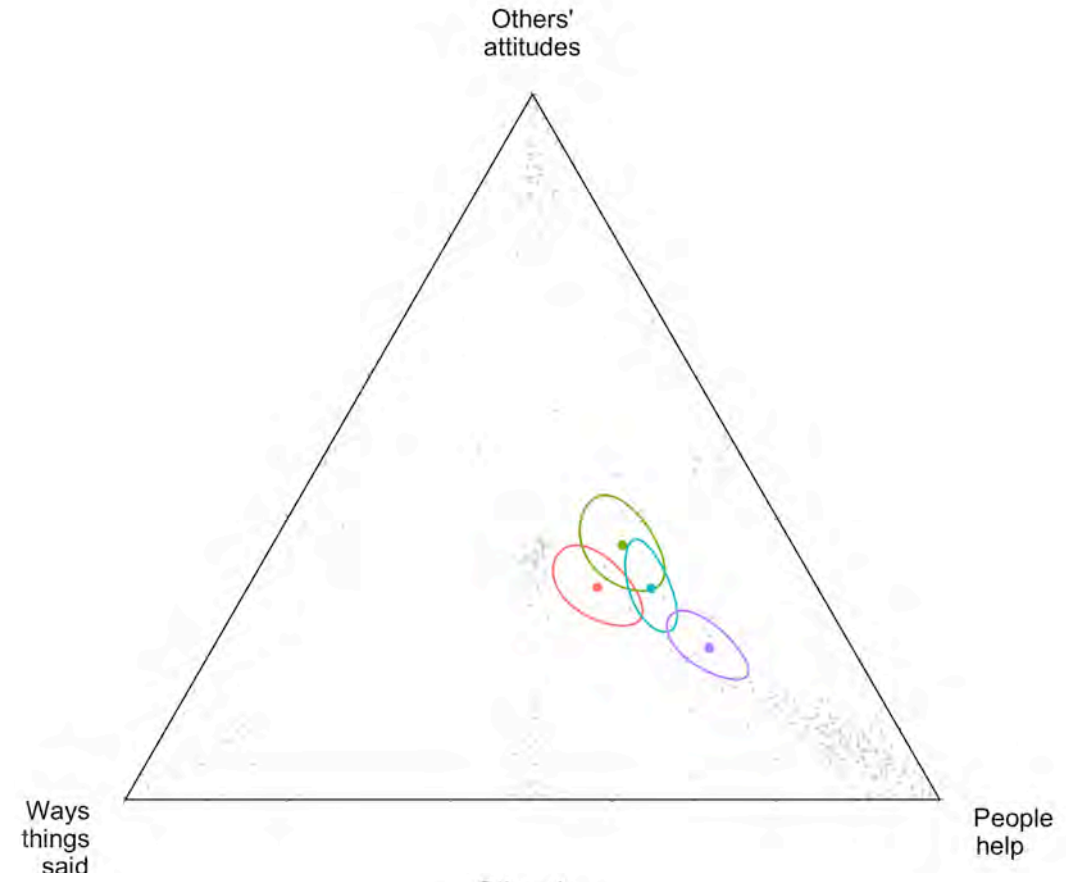
Age

- 18 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 to 74
- Prefer not to say

84% response

T2. In your story, what affects health?





- Overall Tone**
- Negative
 - Neutral
 - Not sure
 - Positive



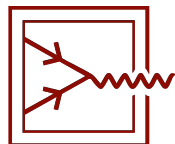
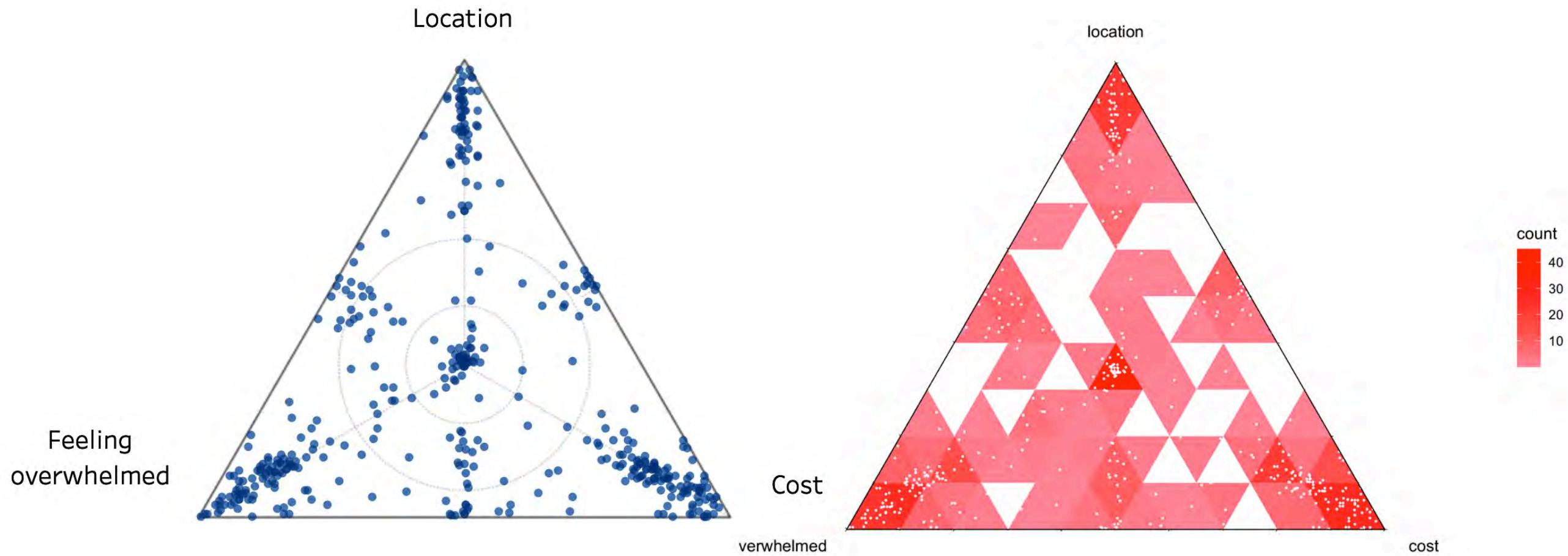
- Health**
- Excellent
 - Fair
 - Good
 - Poor
 - Prefer not to say
 - Very good

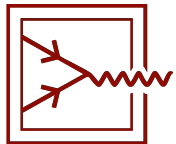
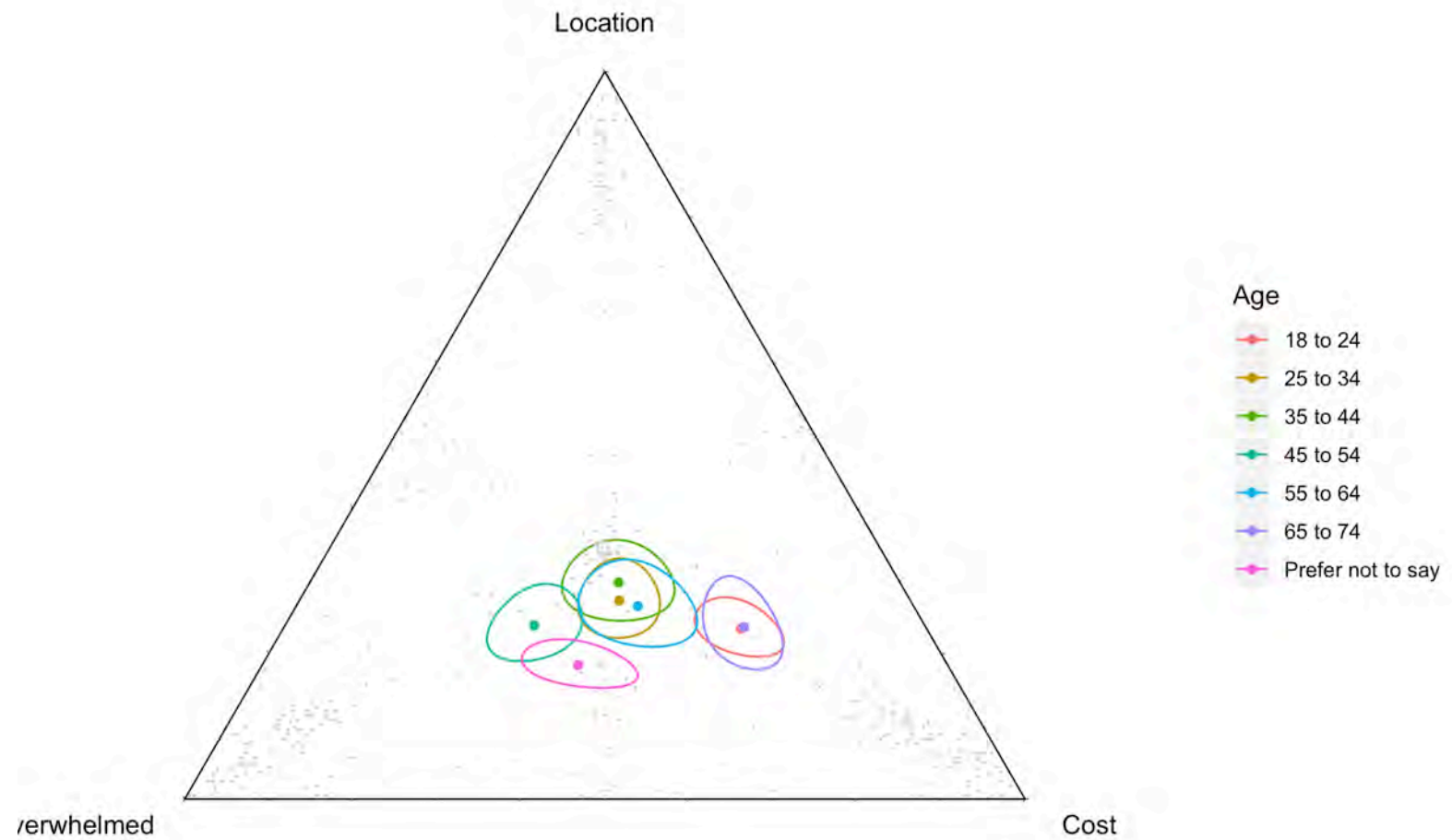
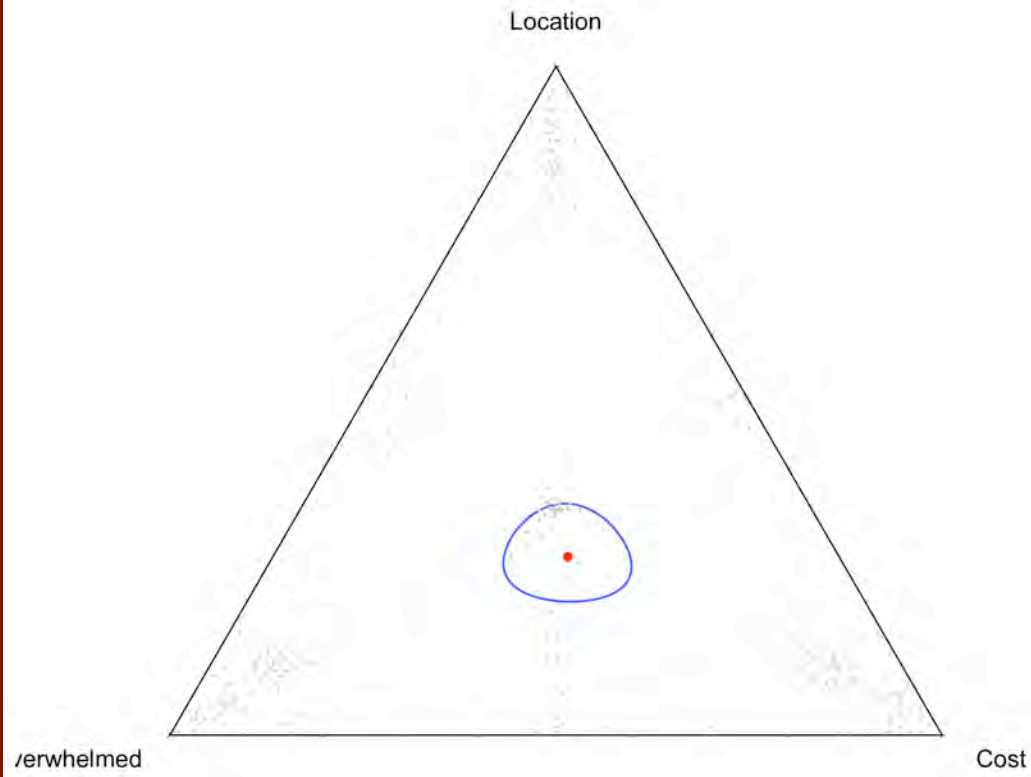


- County**
- Clatsop
 - Columbia
 - Other location
 - Tillamook

85% response

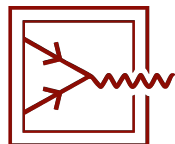
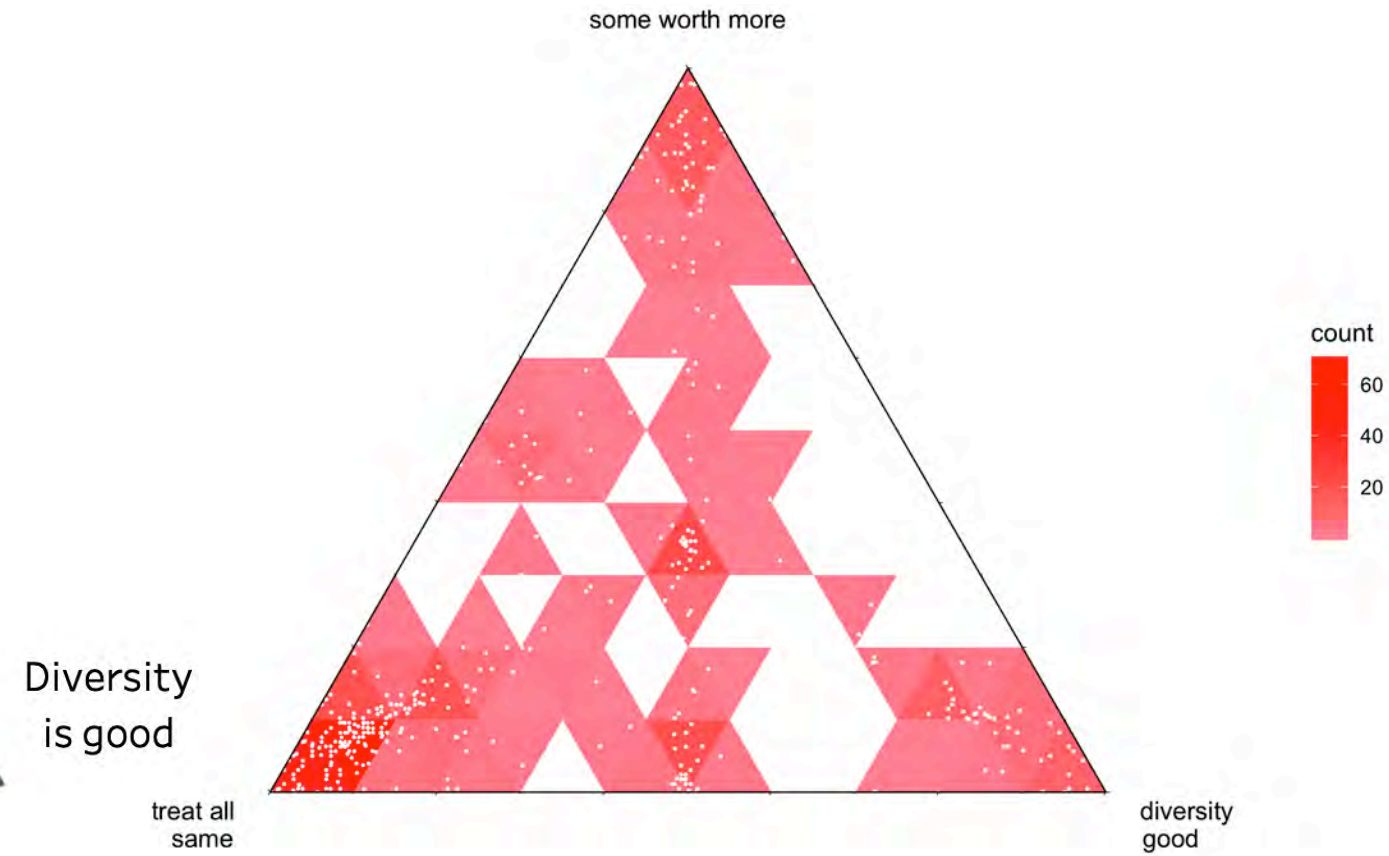
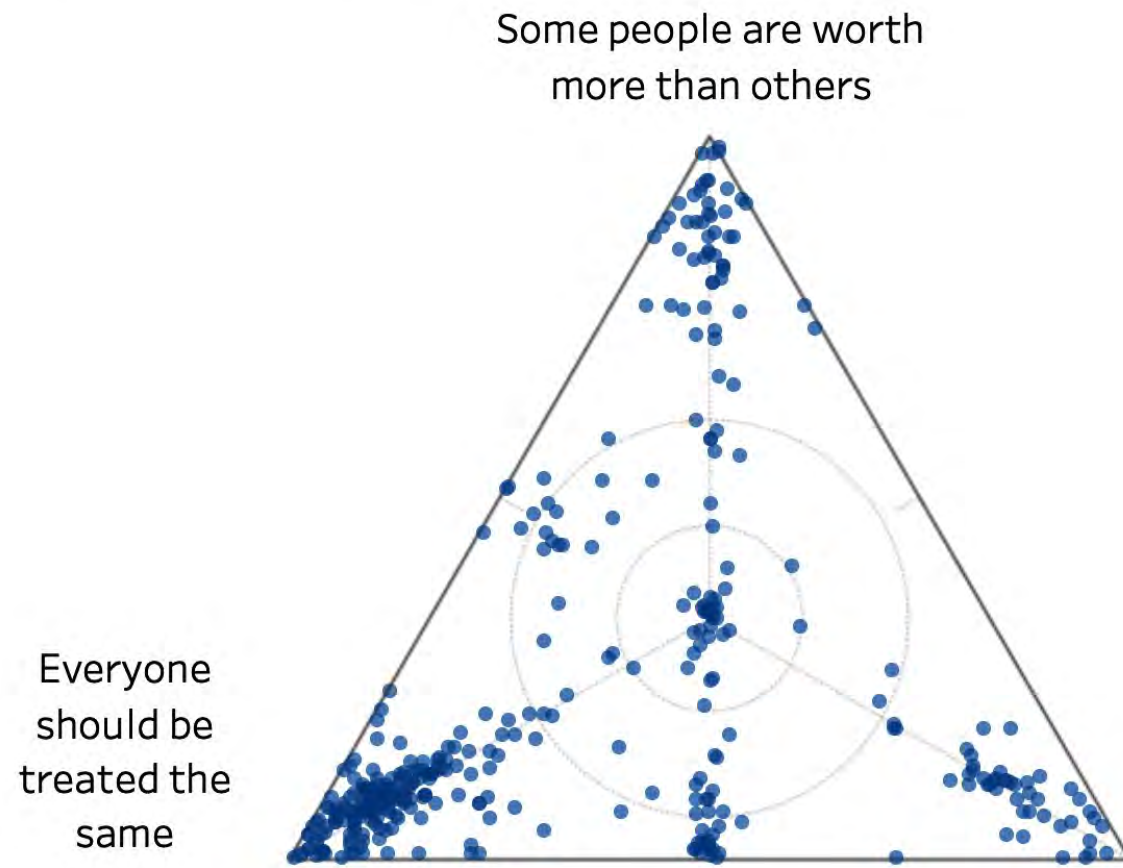
T3. In the experience shared, barriers overcome or present were...

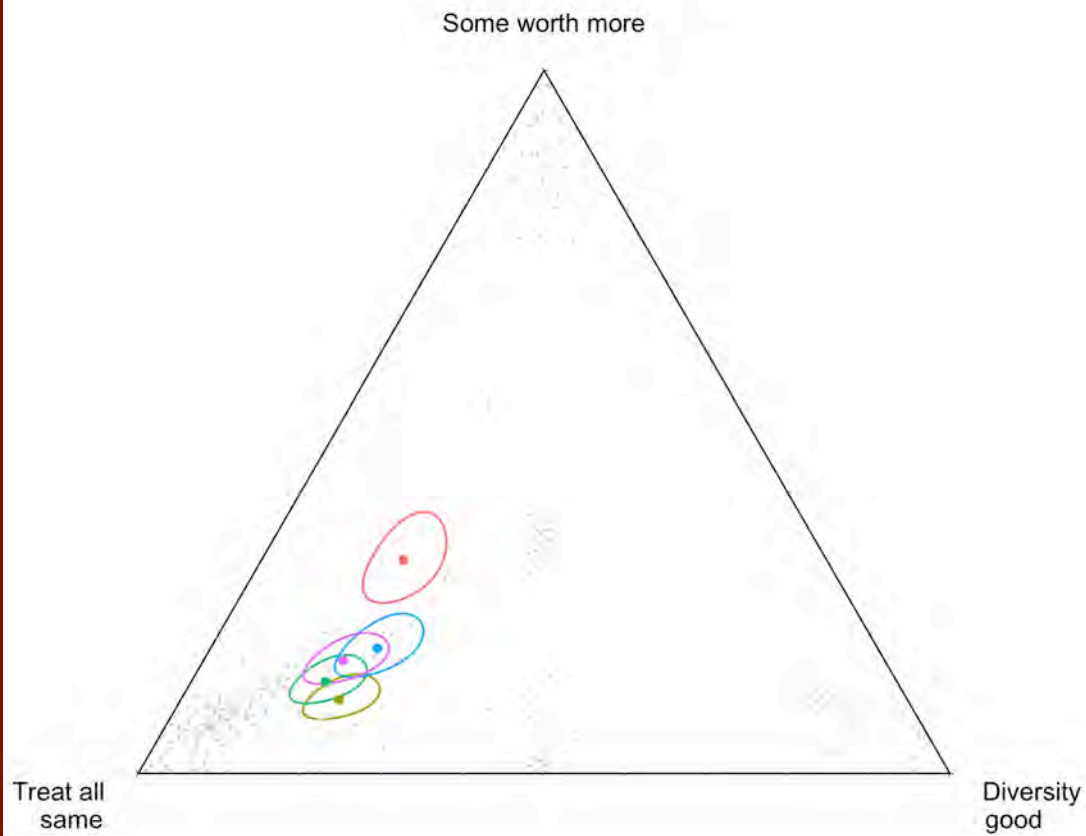
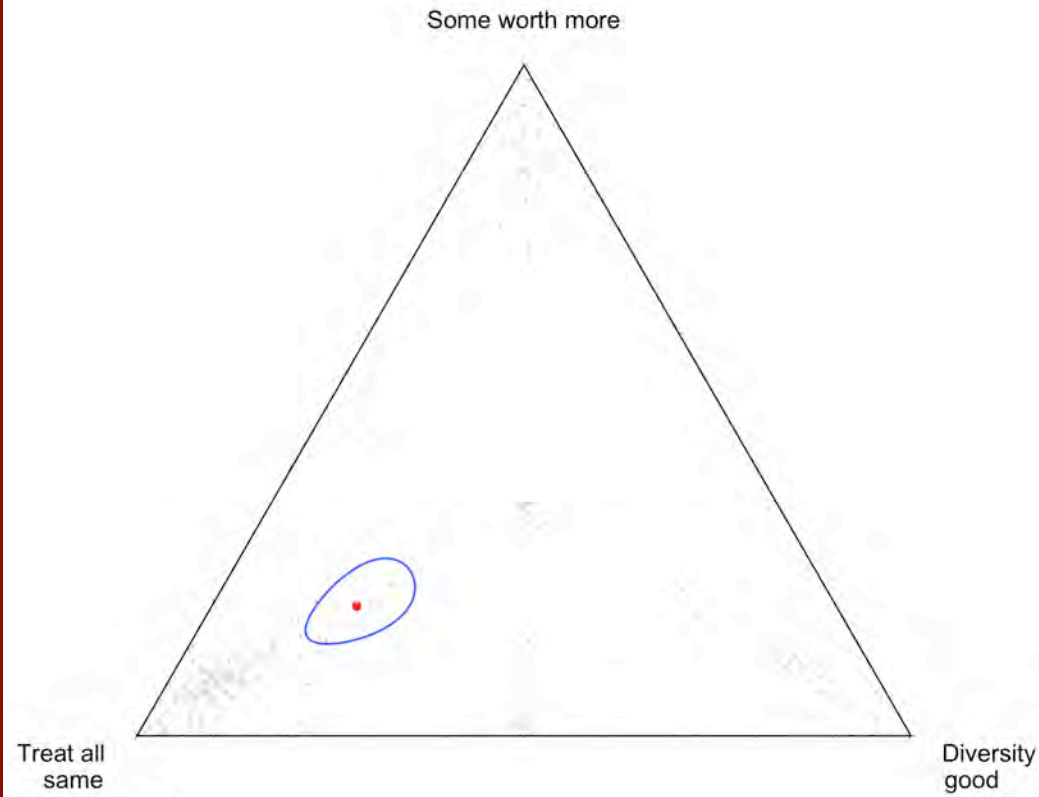




76% response

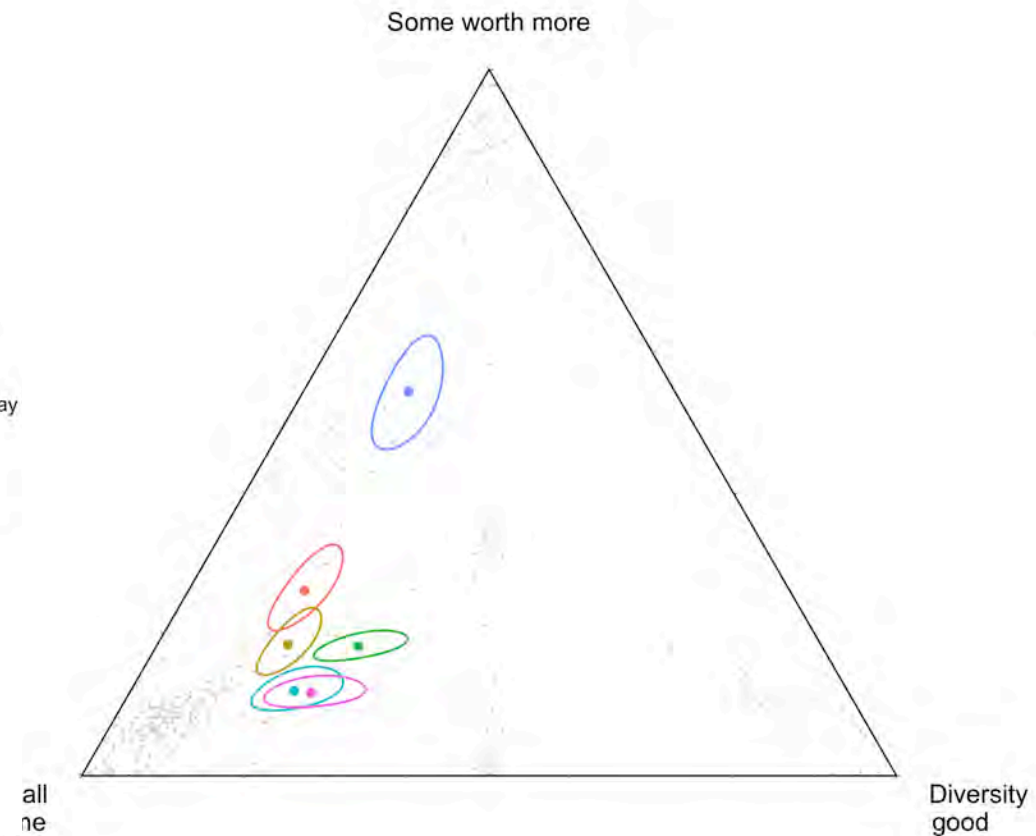
T4. The attitudes of people in the story seem to say...





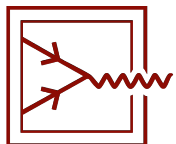
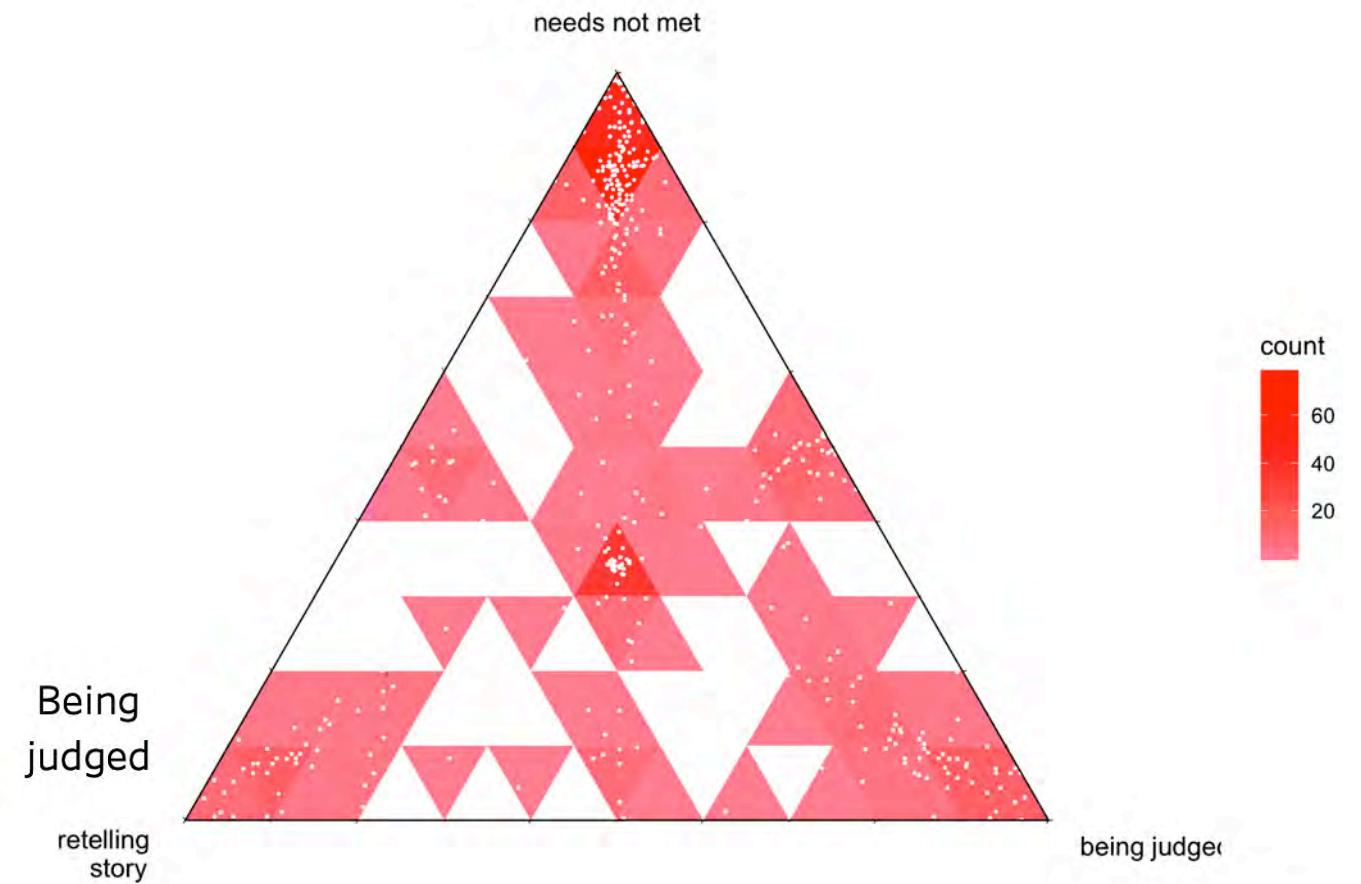
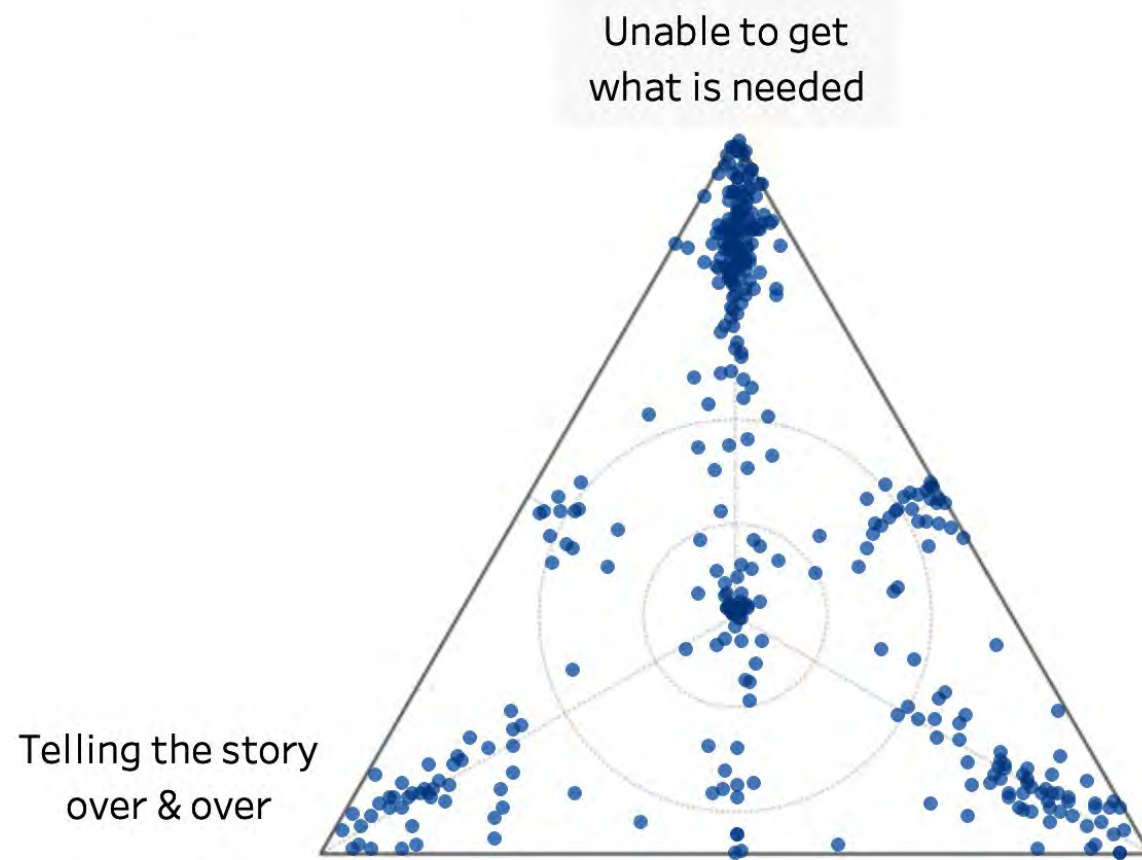
- How often
- All the time
 - Prefer not to say
 - Rare
 - Regularly
 - Time to time

- EmotionTone
- Negative
 - Neutral
 - Not sure
 - Positive
 - Strongly negative
 - Strongly positive

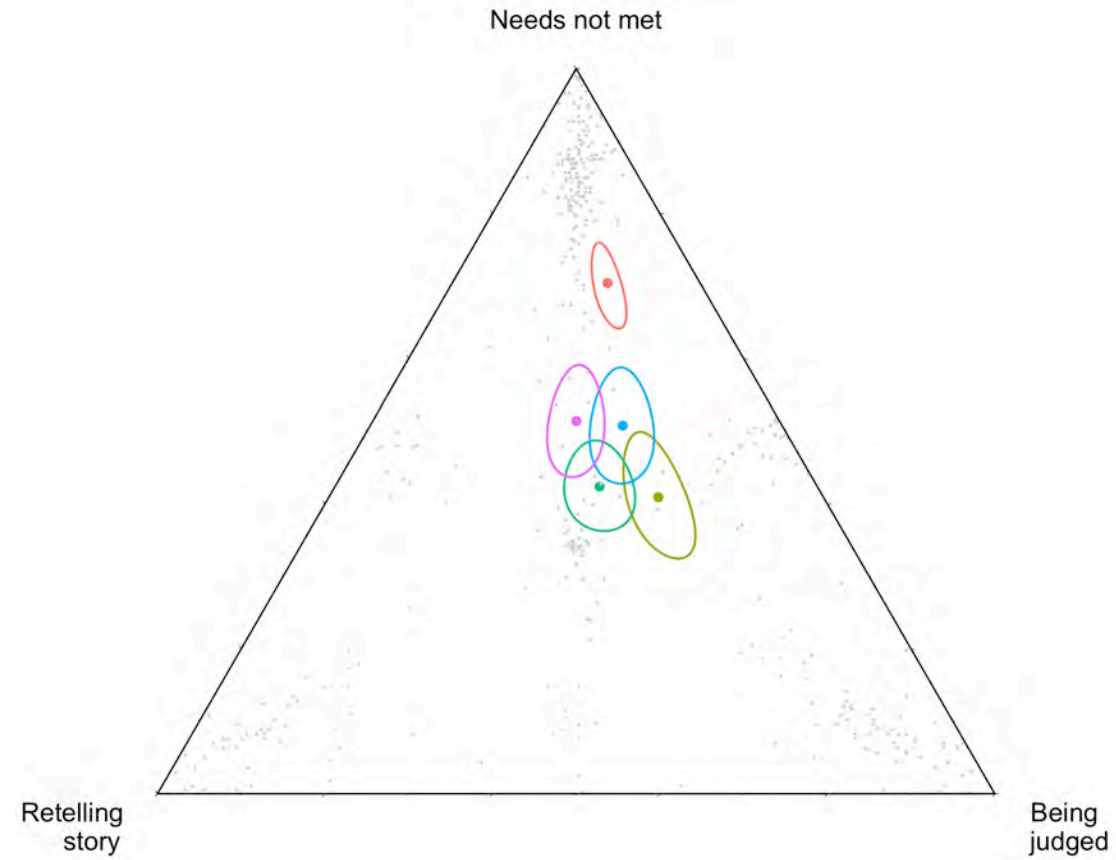
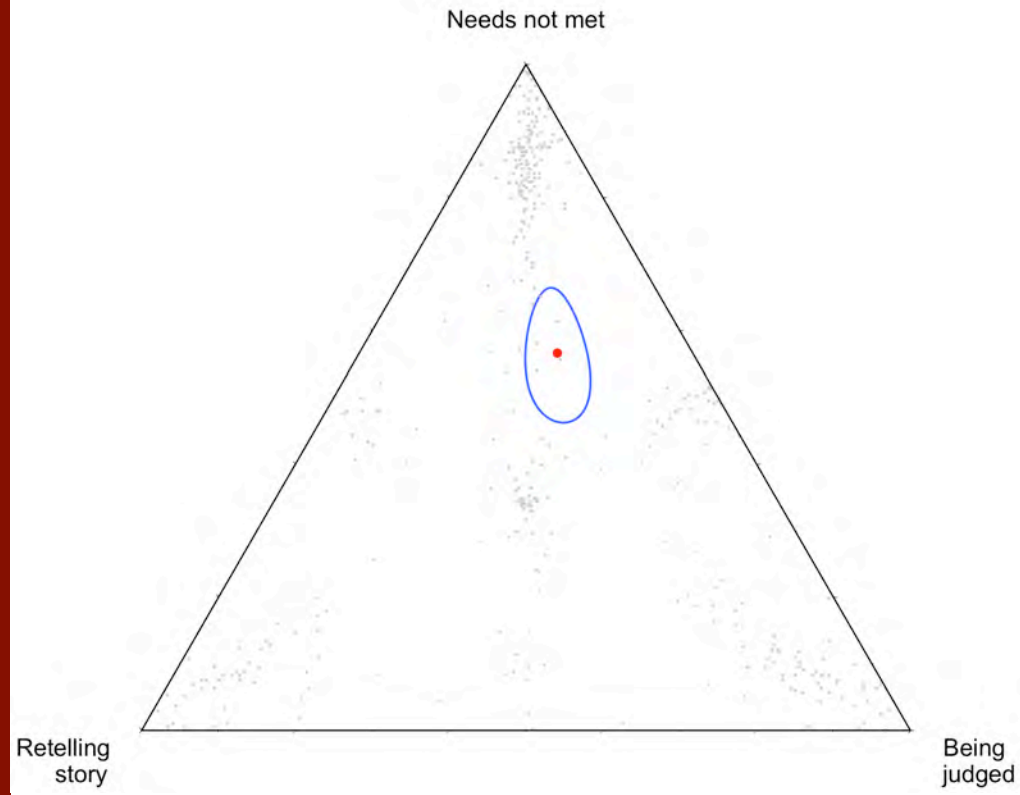


78% response

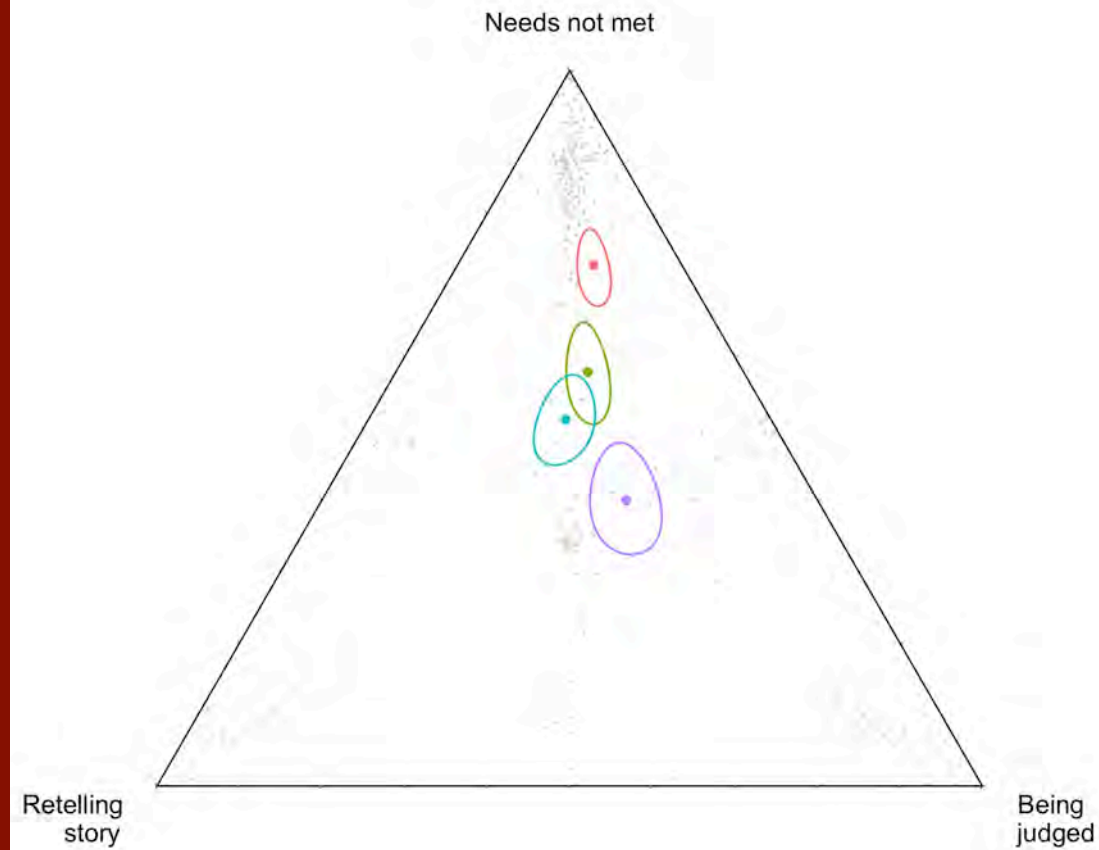
T5. Thinking about the story, what was frustrating?



Geometric means with confidence ellipses



- How often
- All the time
 - Prefer not to say
 - Rare
 - Regularly
 - Time to time



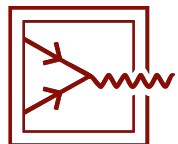
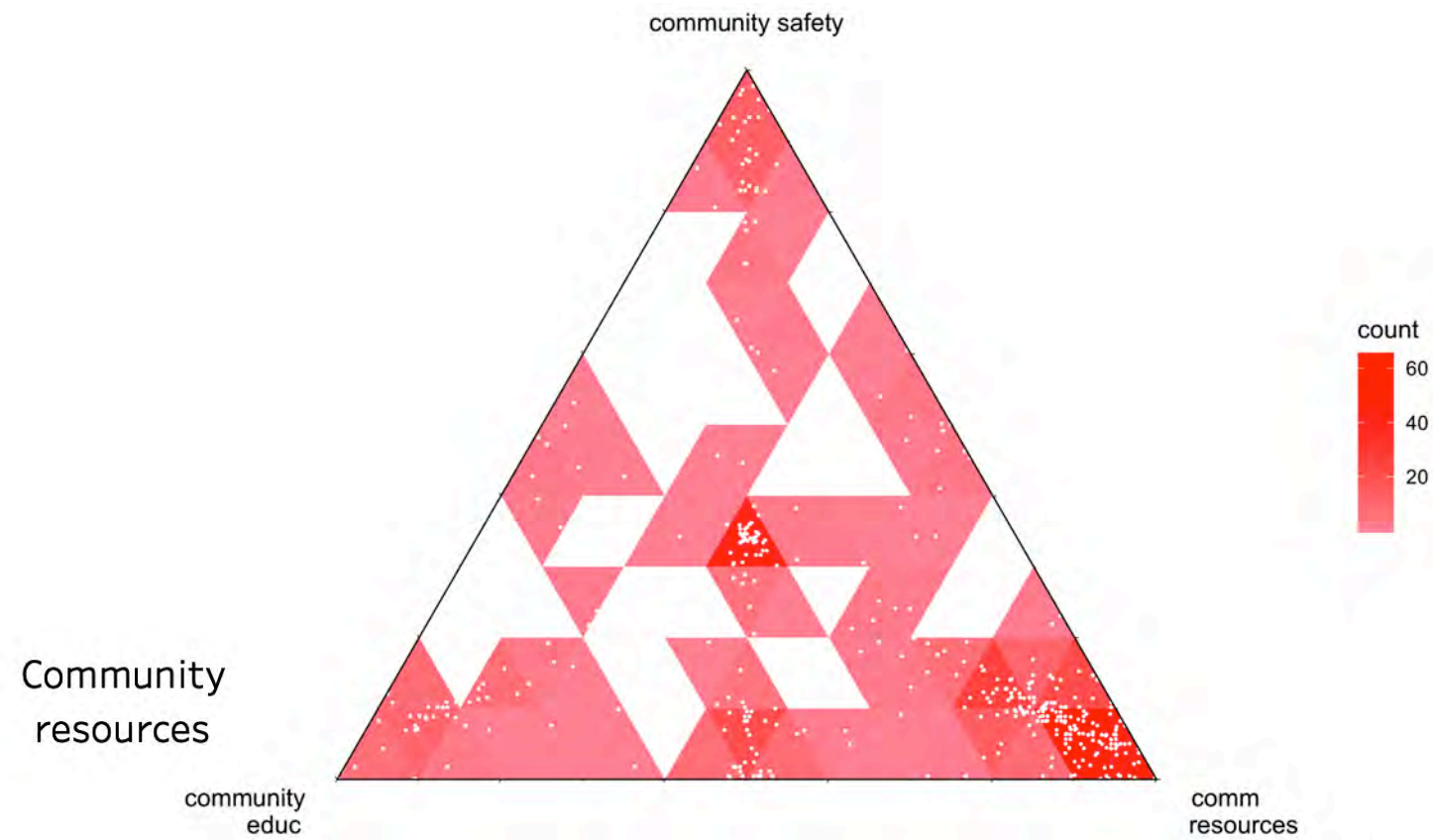
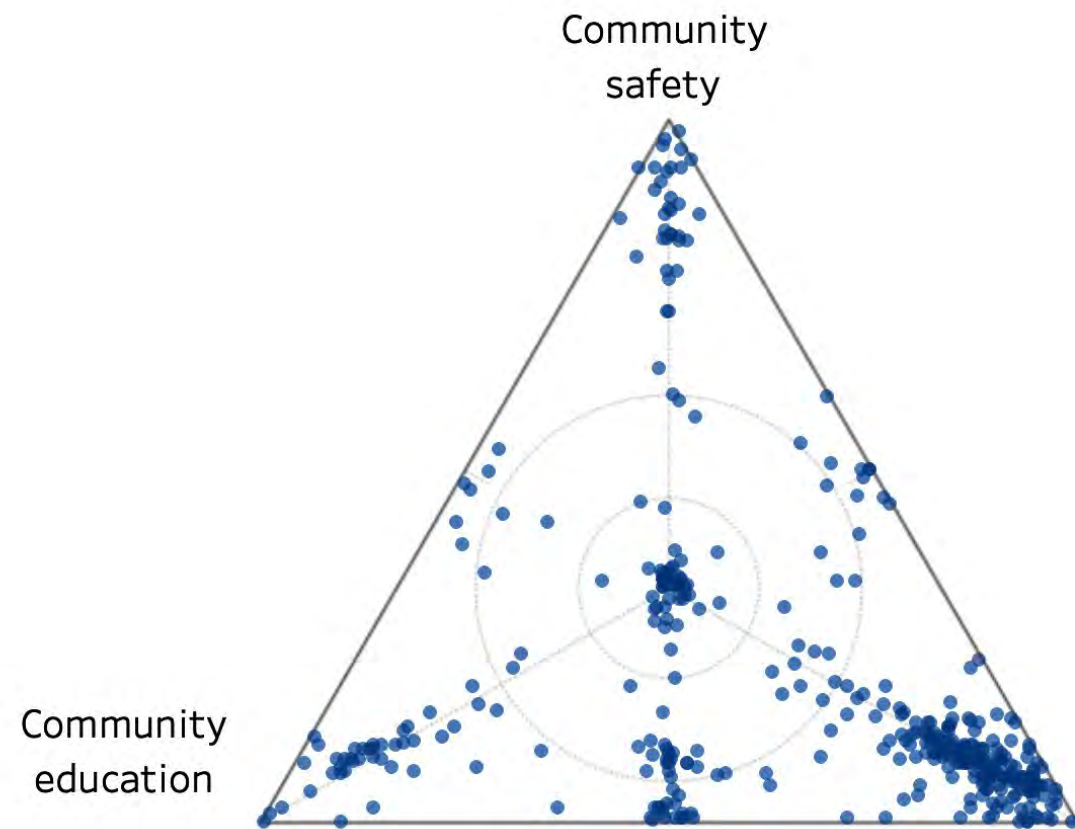
- Overall Tone
- Negative
 - Neutral
 - Not sure
 - Positive

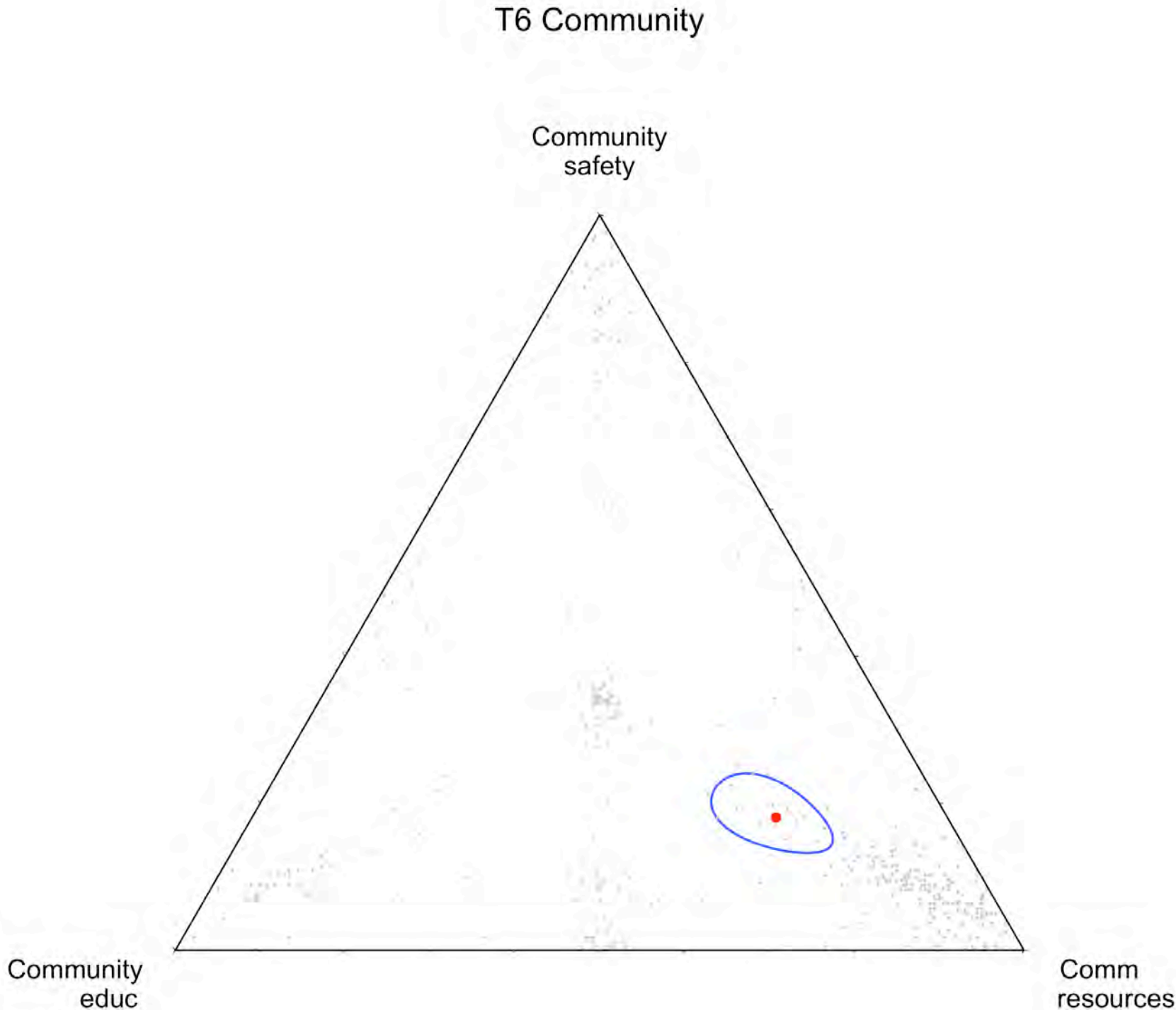


- Health
- Excellent
 - Fair
 - Good
 - Poor
 - Prefer not to say
 - Very good

81% response

T6. In the story shared, the following was part of the experience:



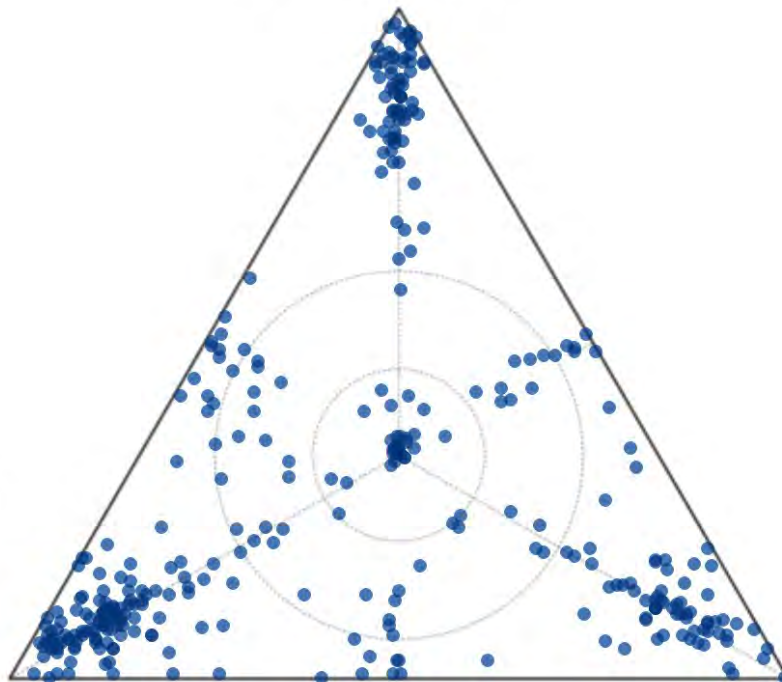


71% response

T7. In the story, the following was experienced:

Limited or inadequate health insurance

Getting where you need to go is hard

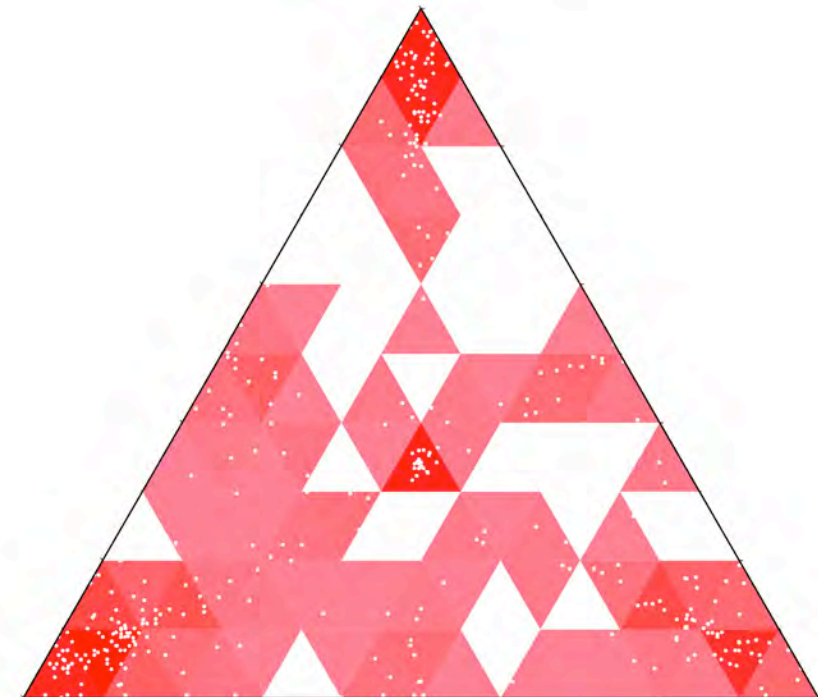


Rules were barriers to help

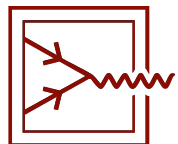
transport is hard

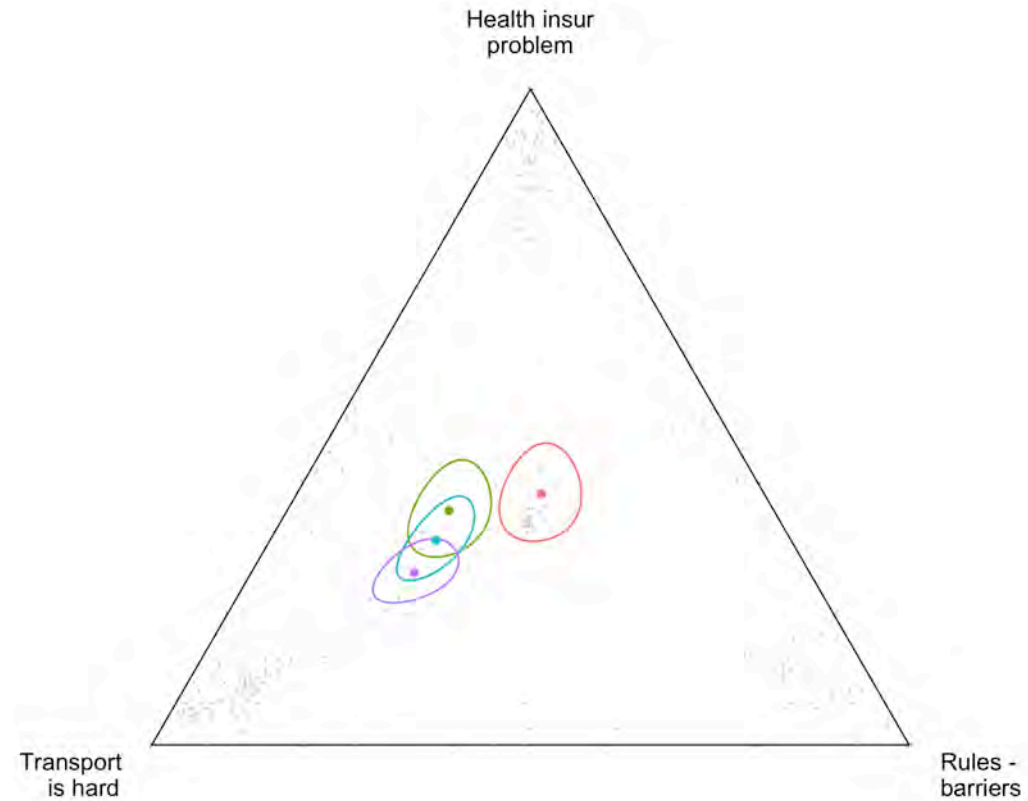
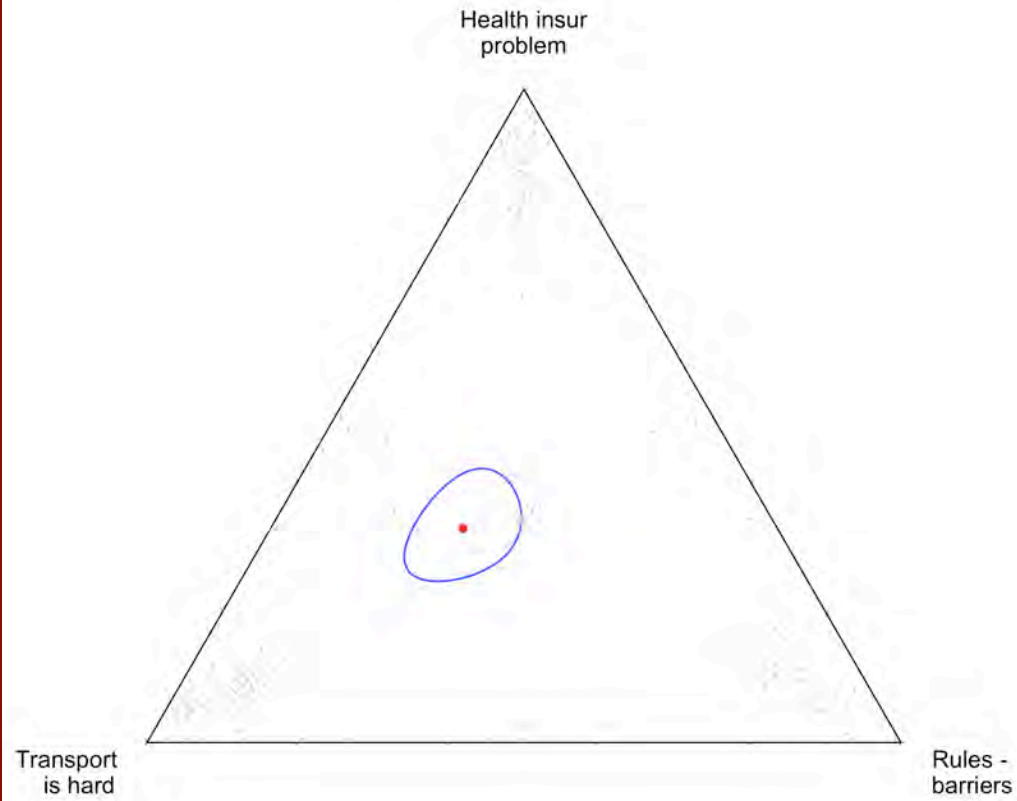
T7 Limits

health insur problem



rules - barriers

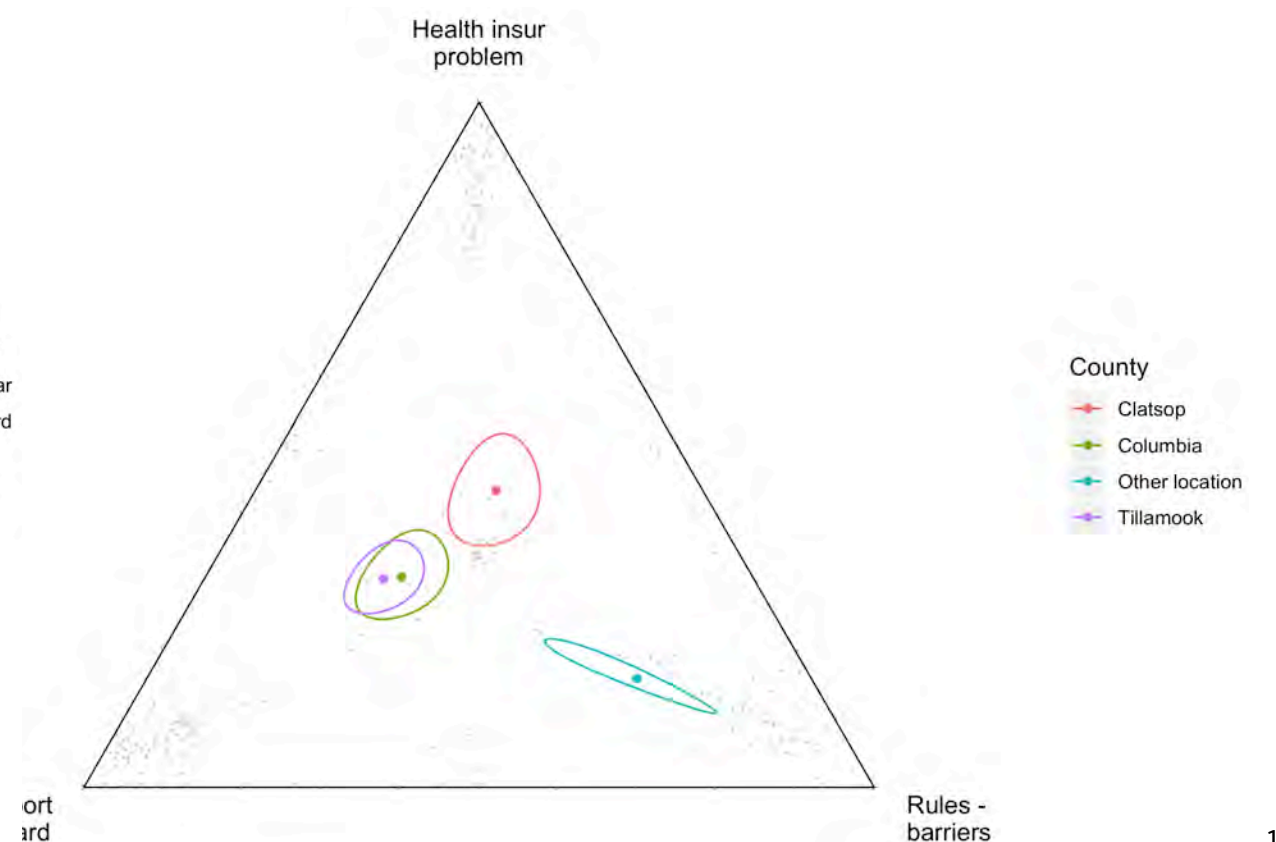




- Overall Tone
- Negative
 - Neutral
 - Not sure
 - Positive



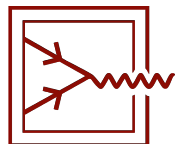
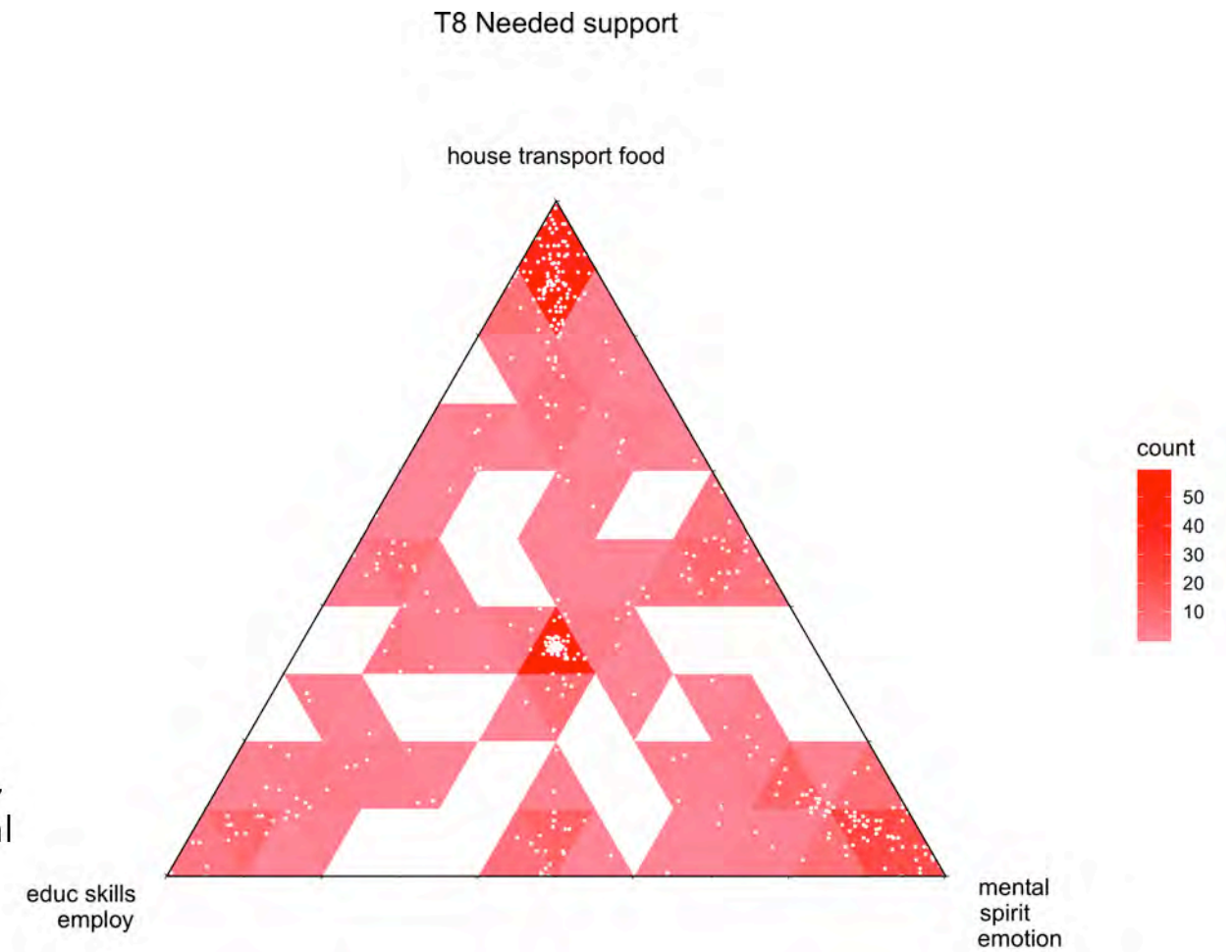
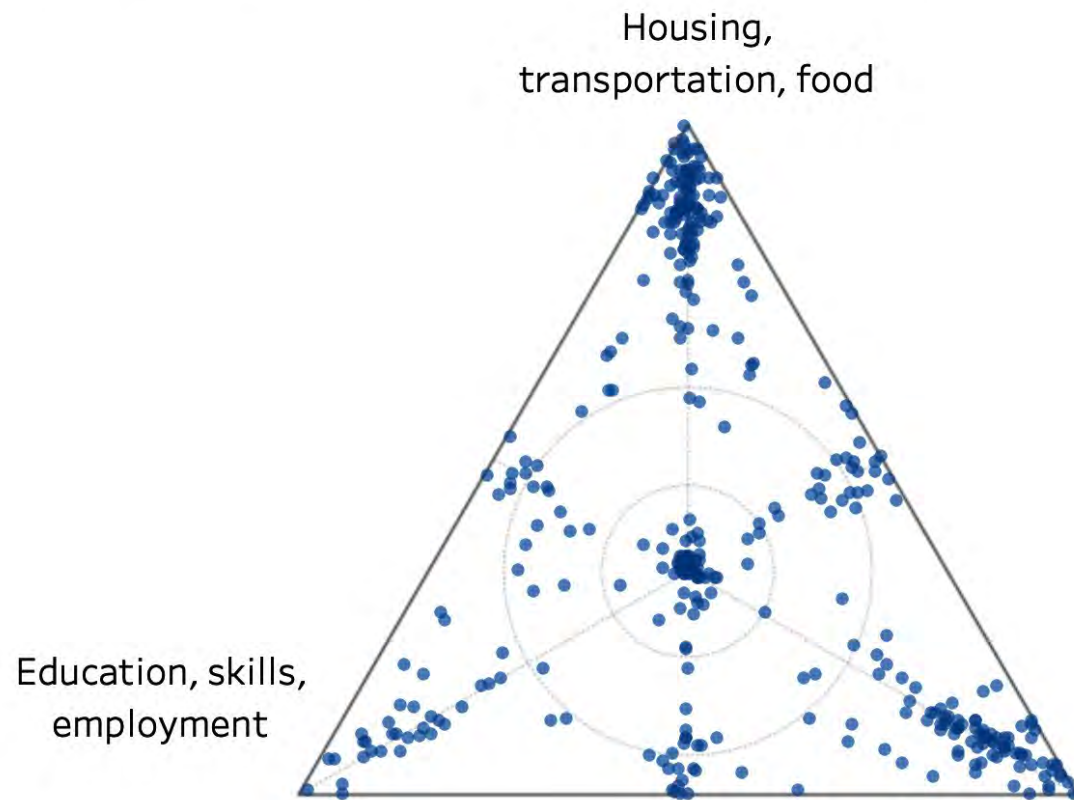
- How important
- Definitely hear
 - Must be heard
 - Not much
 - Not sure
 - Something



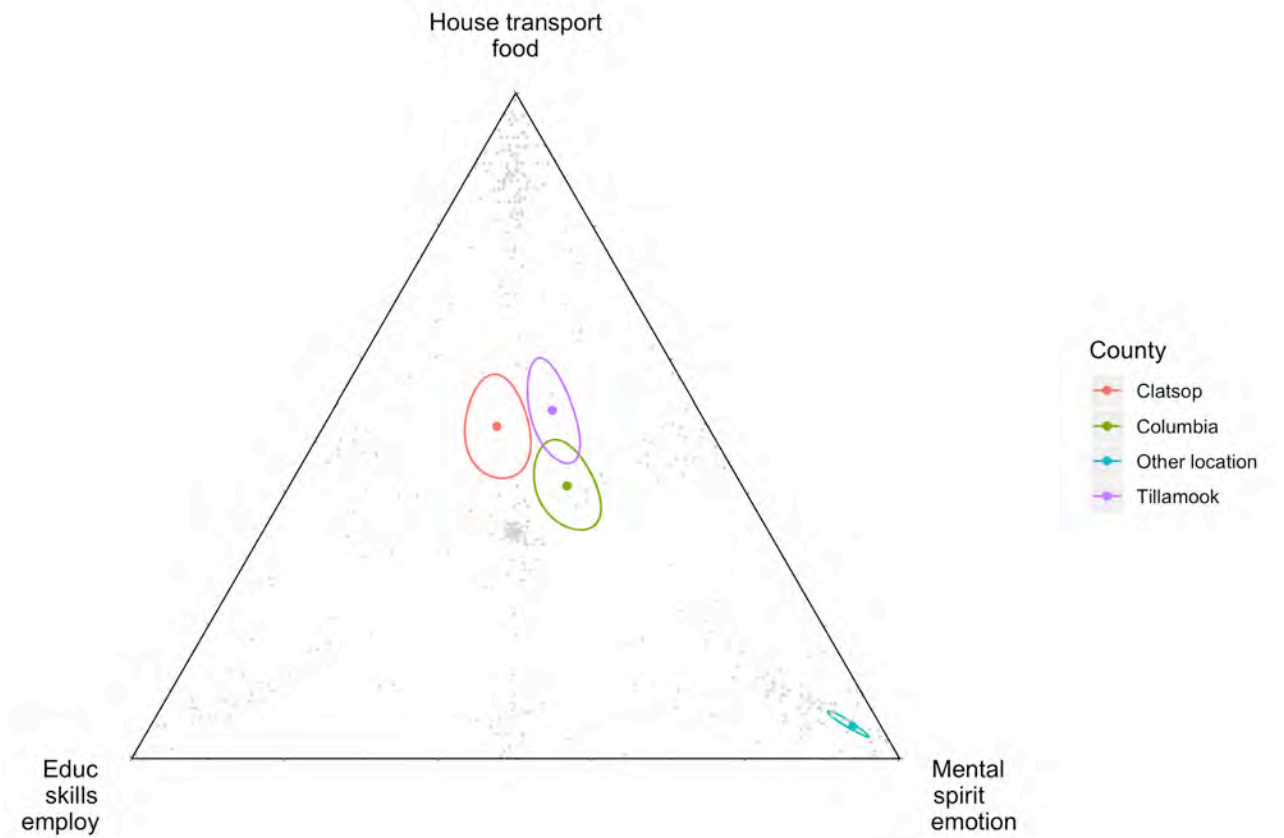
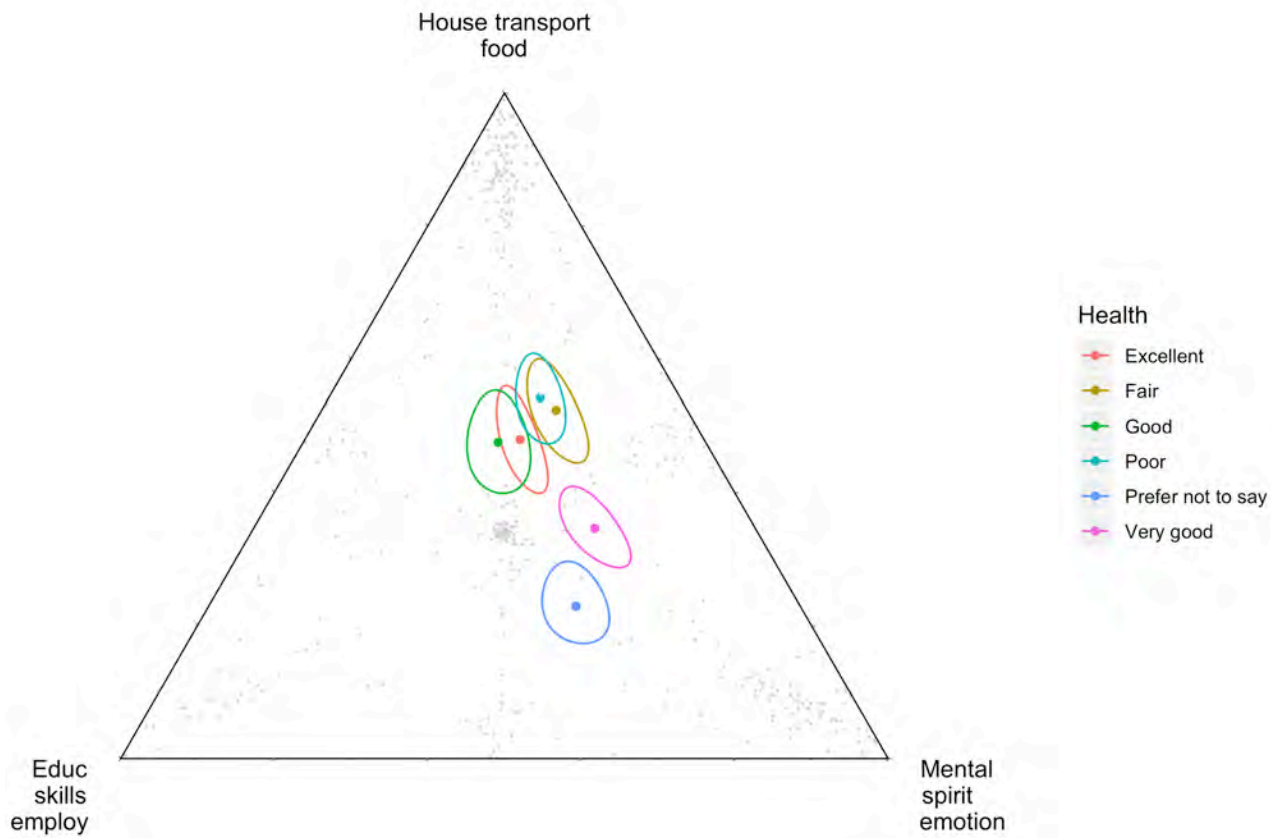
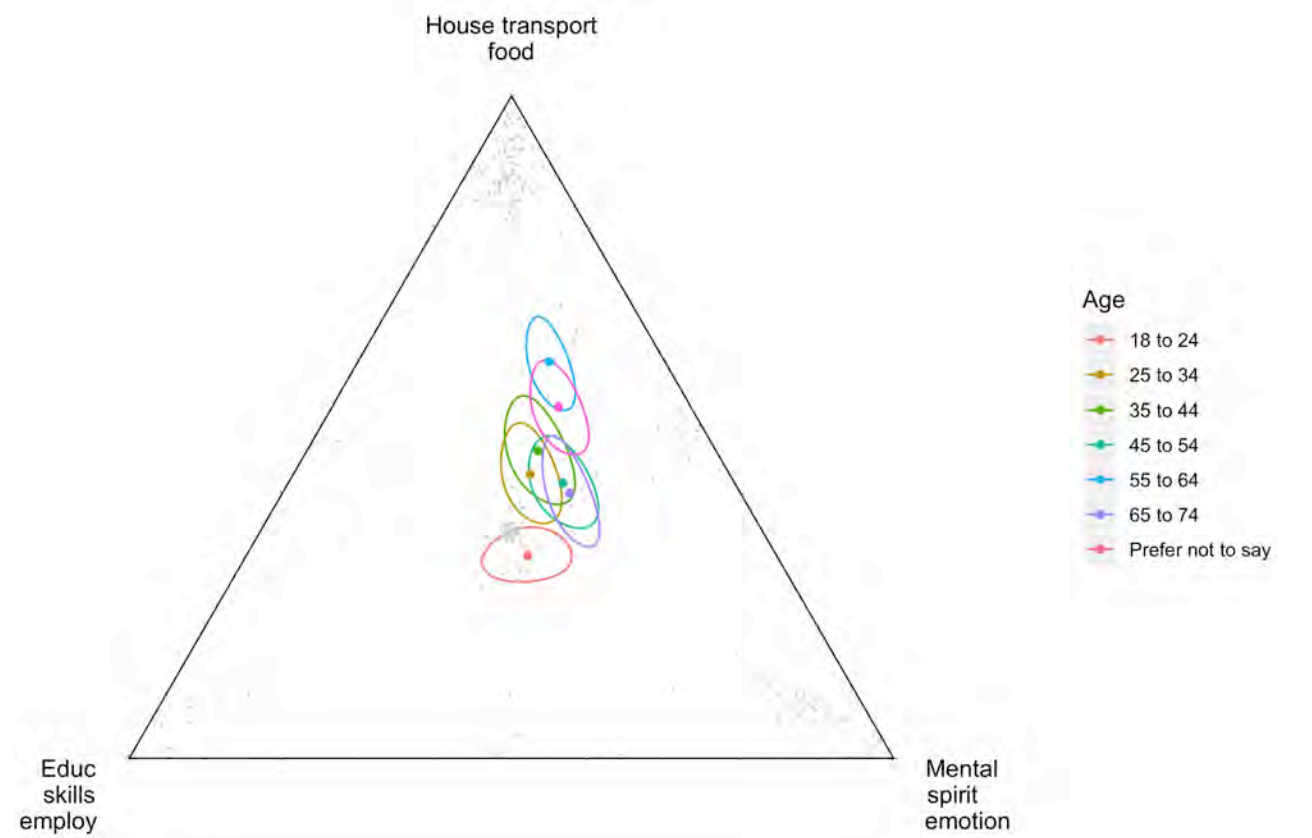
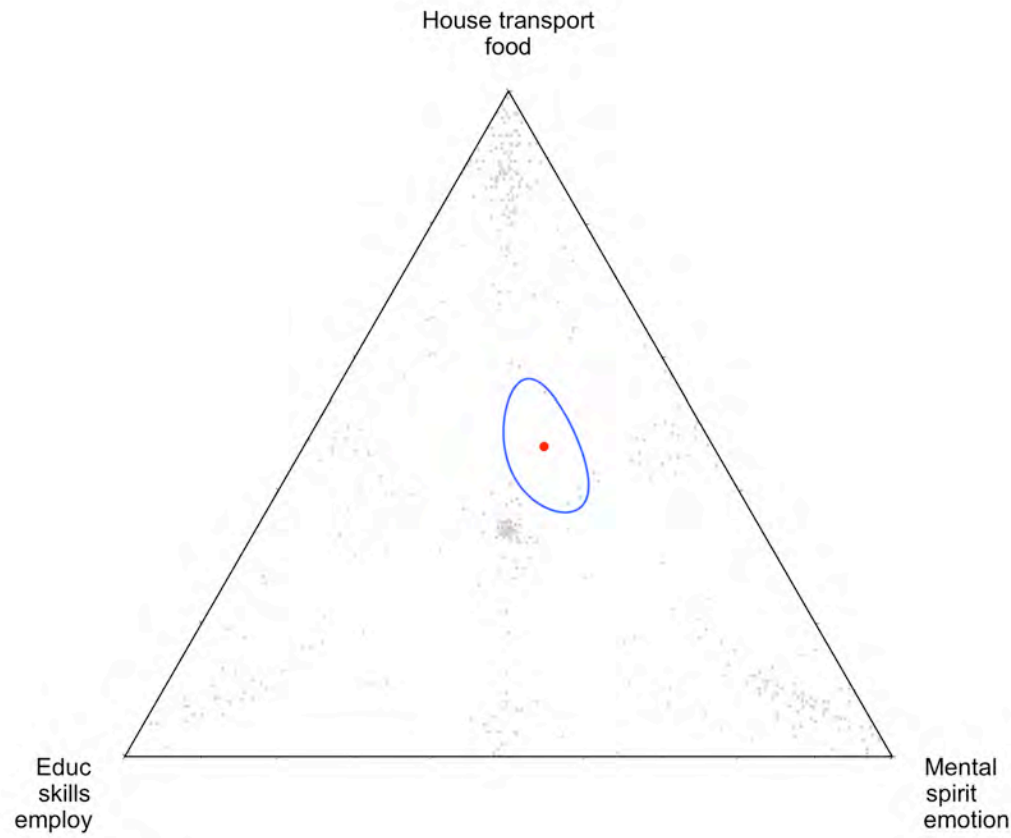
- County
- Clatsop
 - Columbia
 - Other location
 - Tillamook

81% response

T8. In your story, some of the supports or services most needed are...

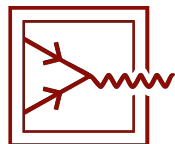
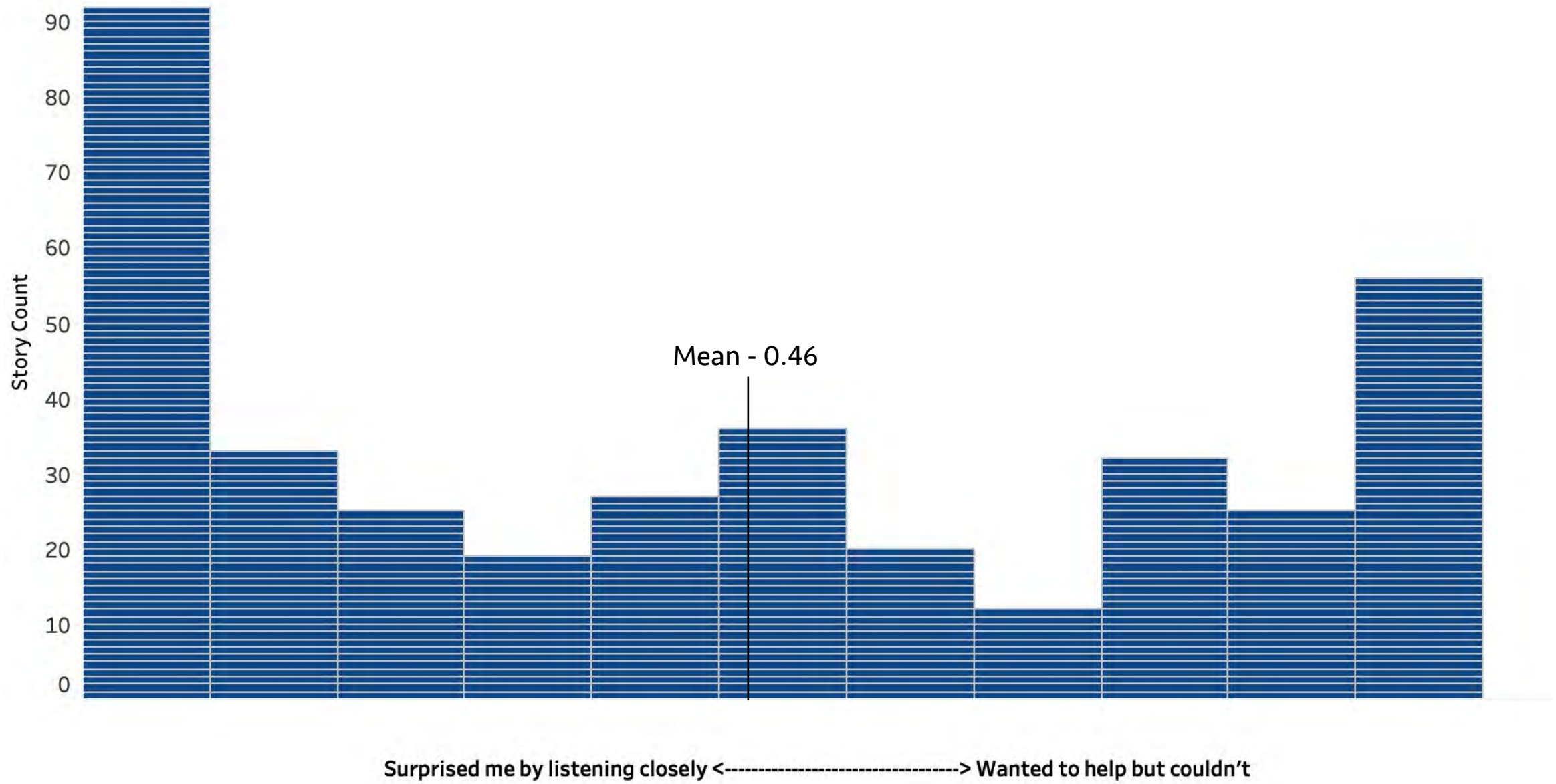


Geometric means with confidence ellipses



74% response

D1. In the story, when talking with people who could help, they...

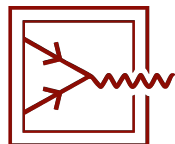


D1. In the story, when talking with people who could help, they...

M2Emotion..



Surprised me by listening closely <-----> Wanted to help but couldn't



D1. In the story, when talking with people who could help, they...

Dem3Health

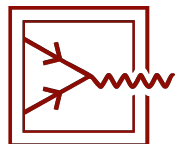
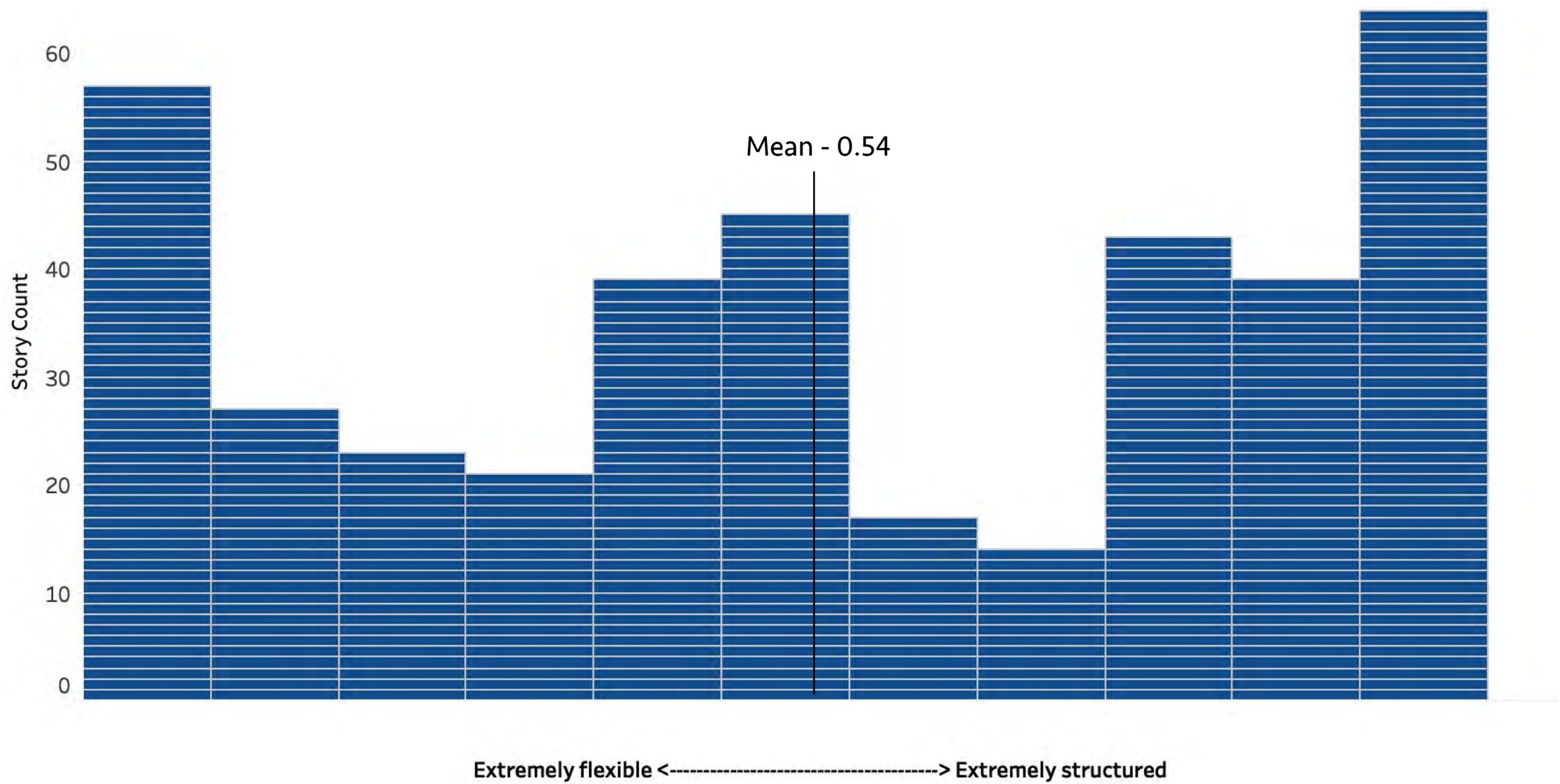


Surprised me by listening closely <-----> Wanted to help but couldn't

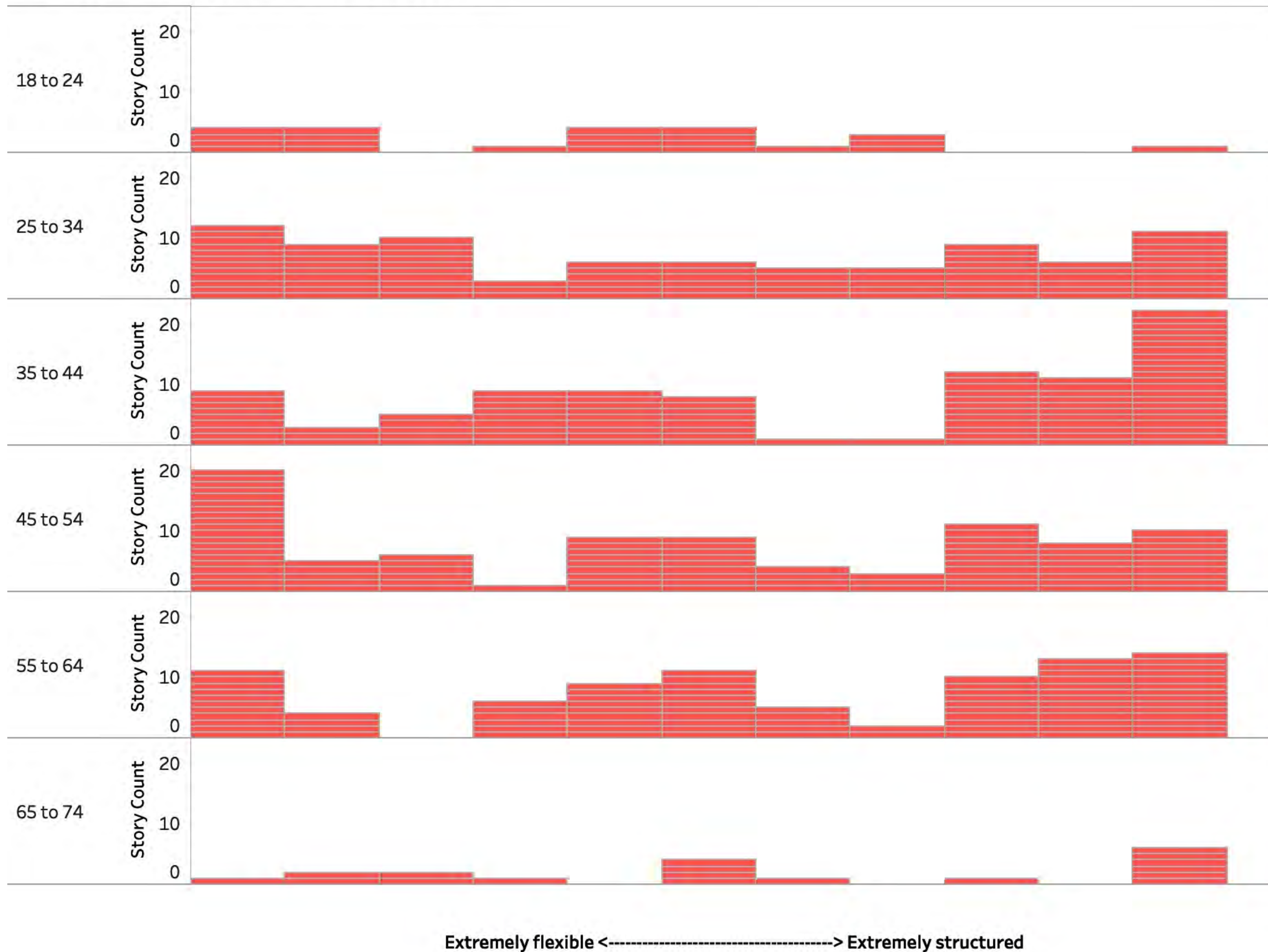


77% response

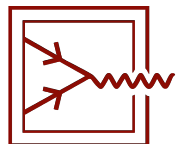
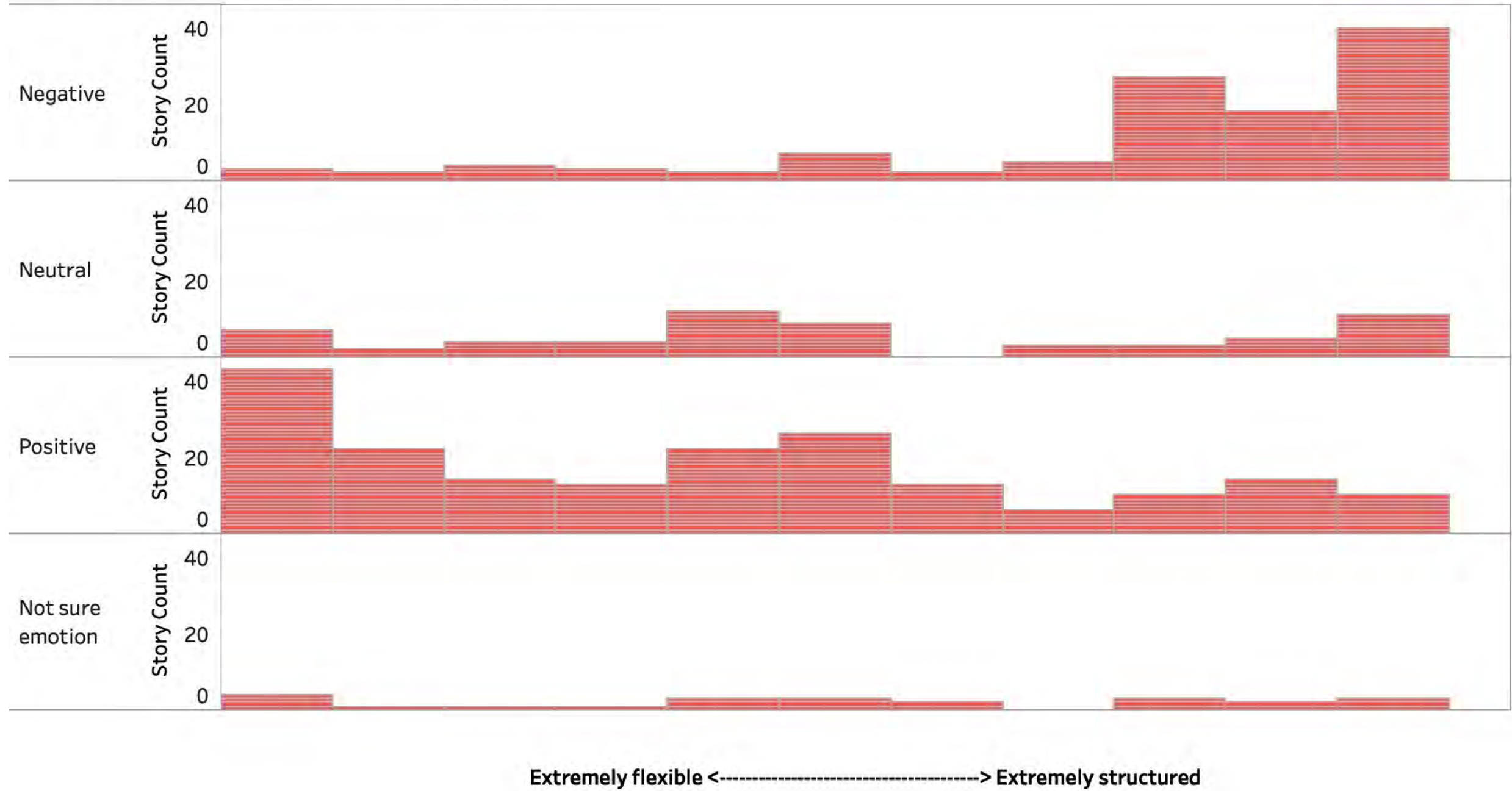
D2. In the story, the services were...



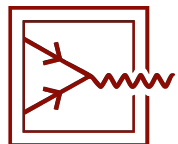
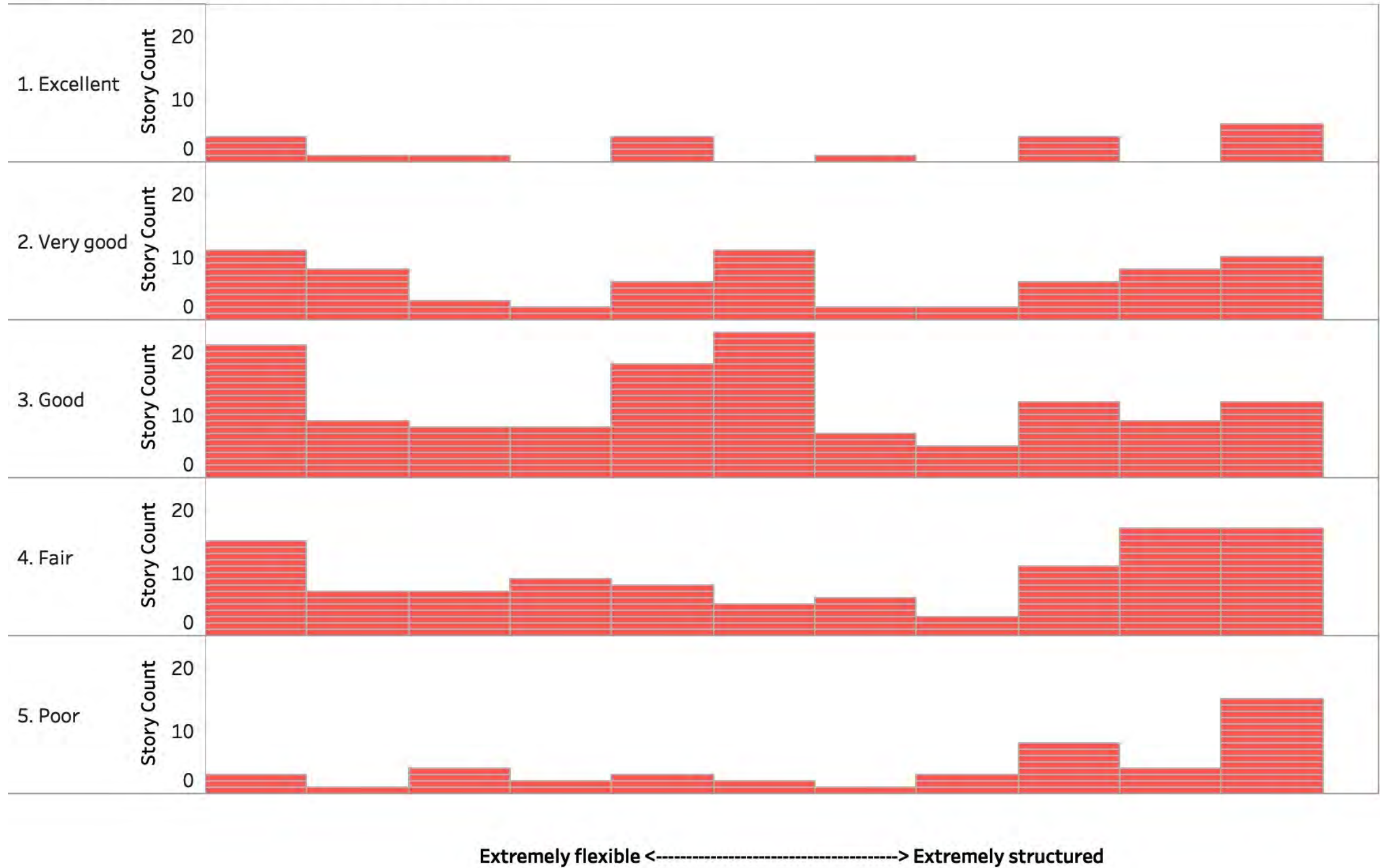
D2: In the story, the services were...



D2. In the story, the services were...

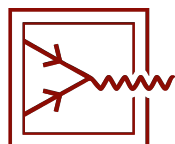
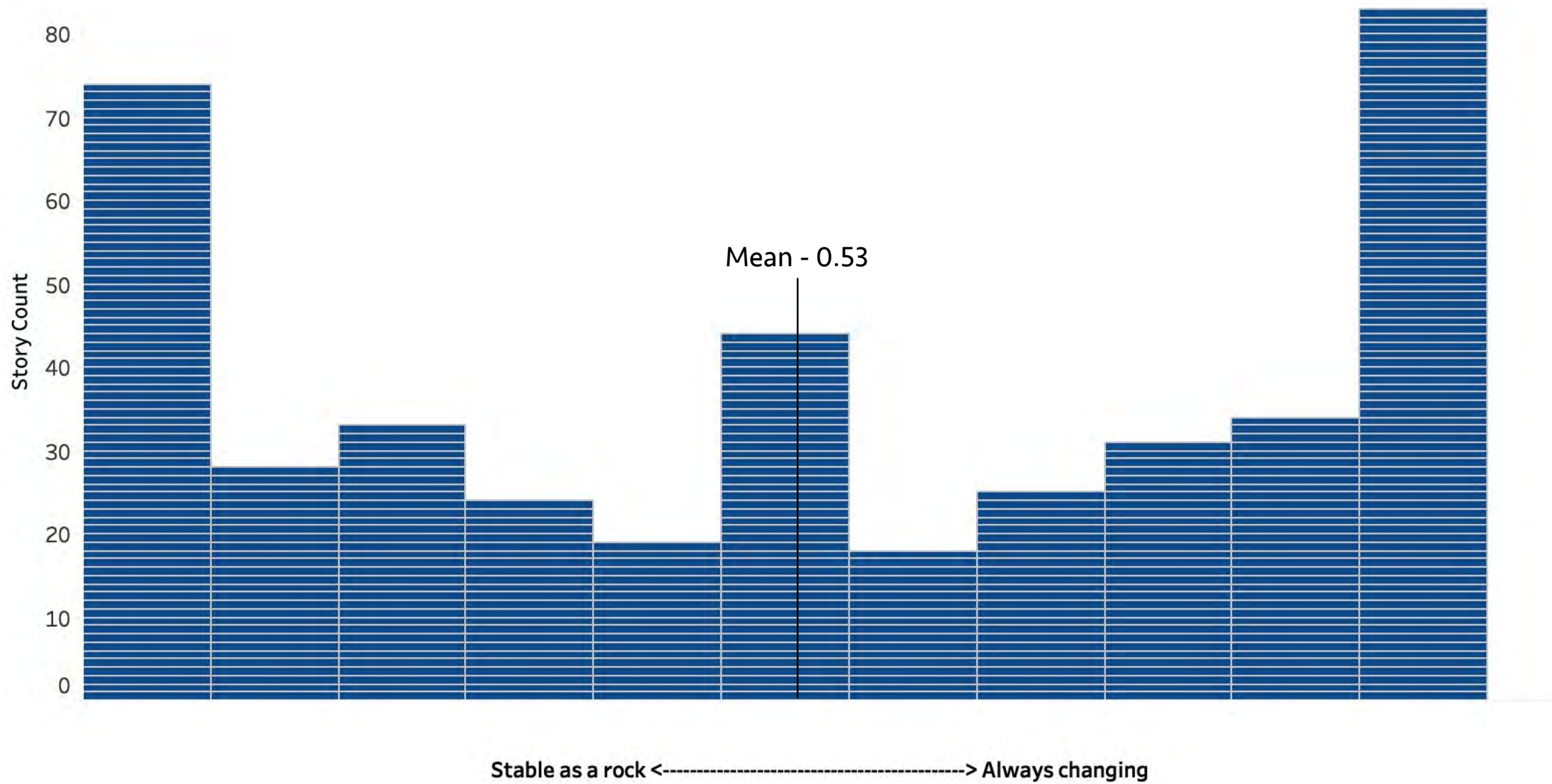


D2. In the story, the services were...

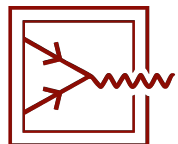
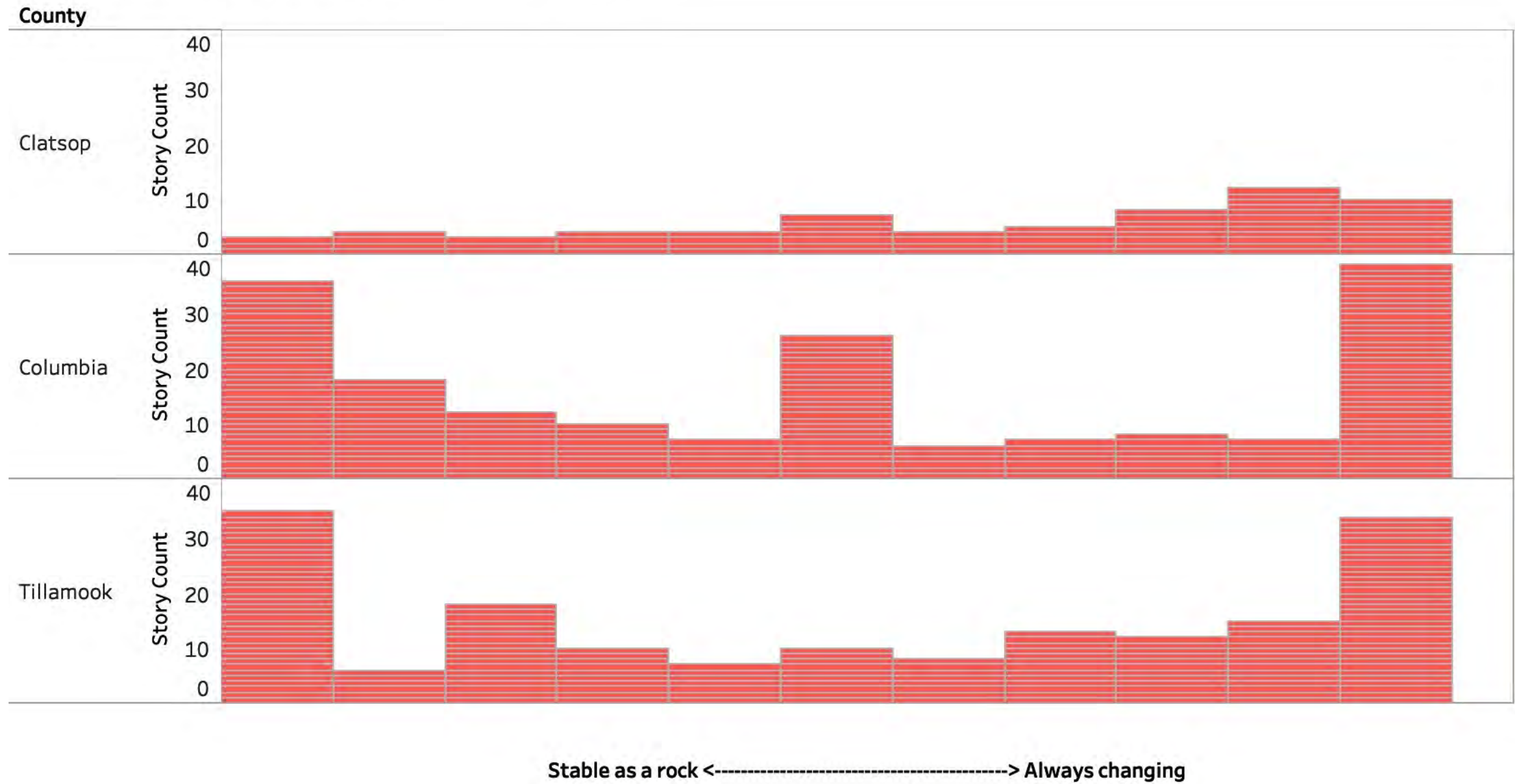


81% response

D3. In the story shared, assistance was...

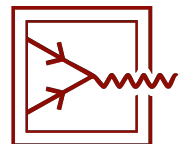
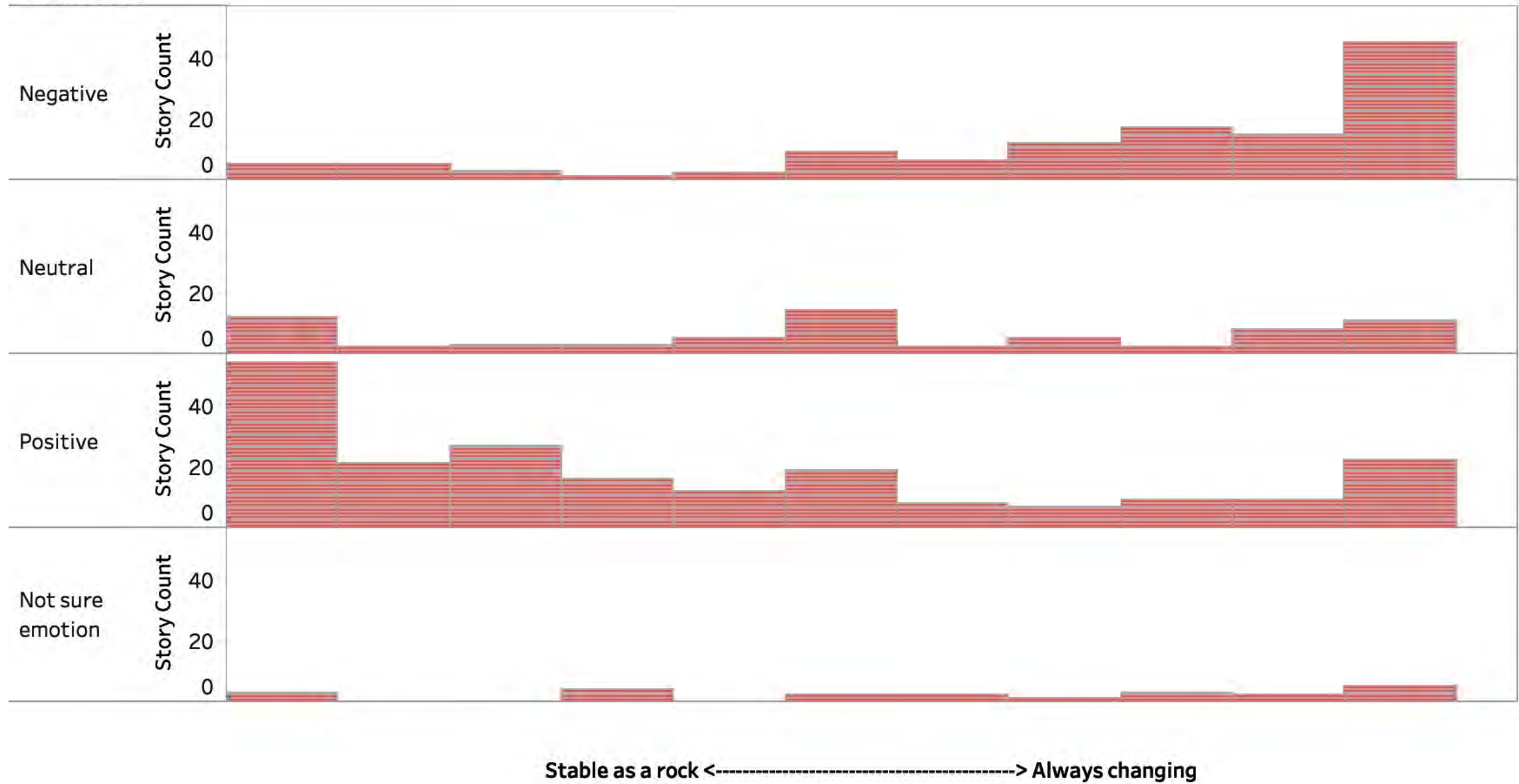


D3. In the story shared, assistance was...

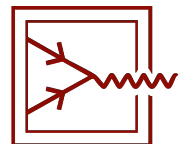
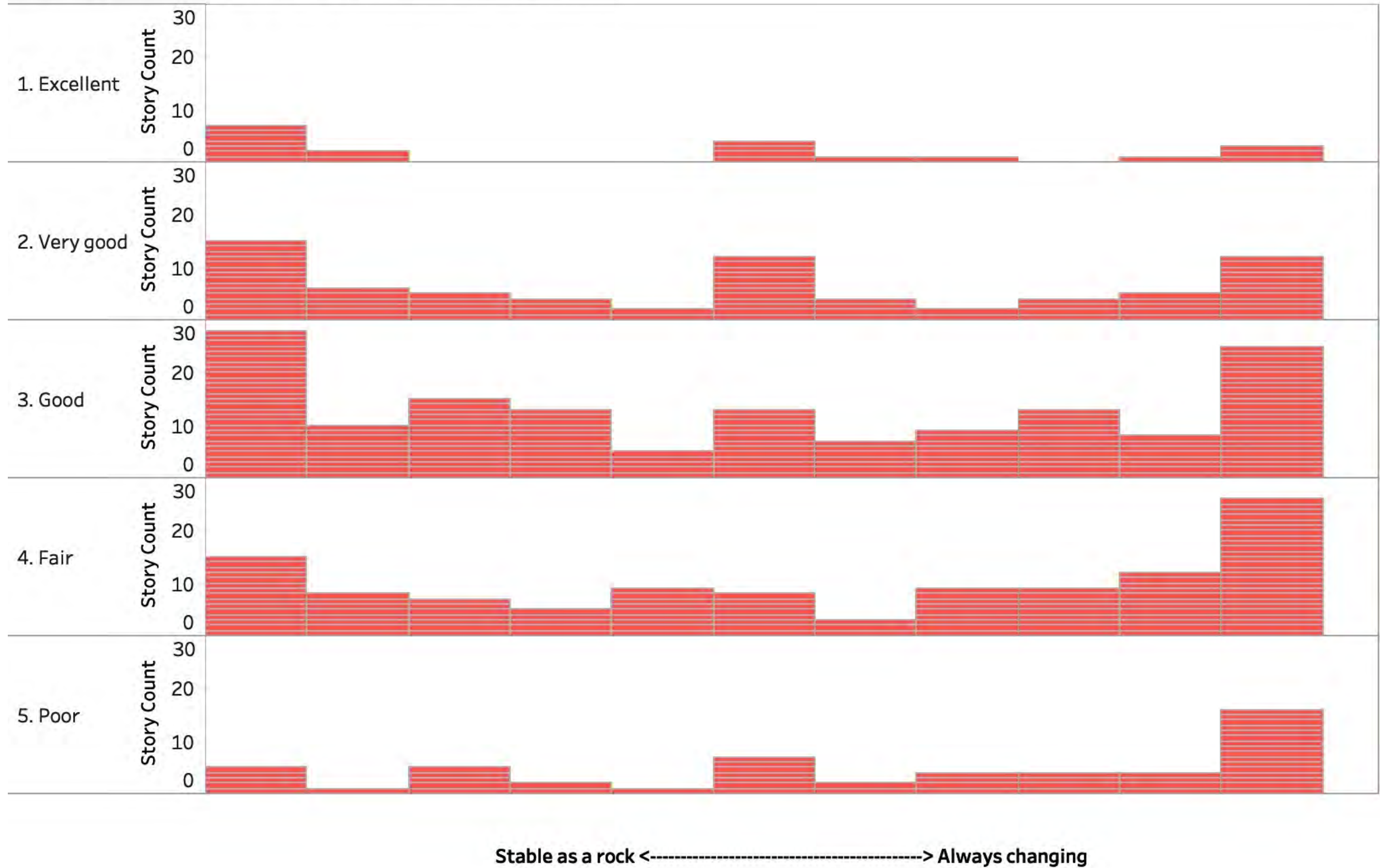


D3. In the story shared, assistance was...

M2Emotion..

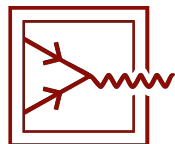
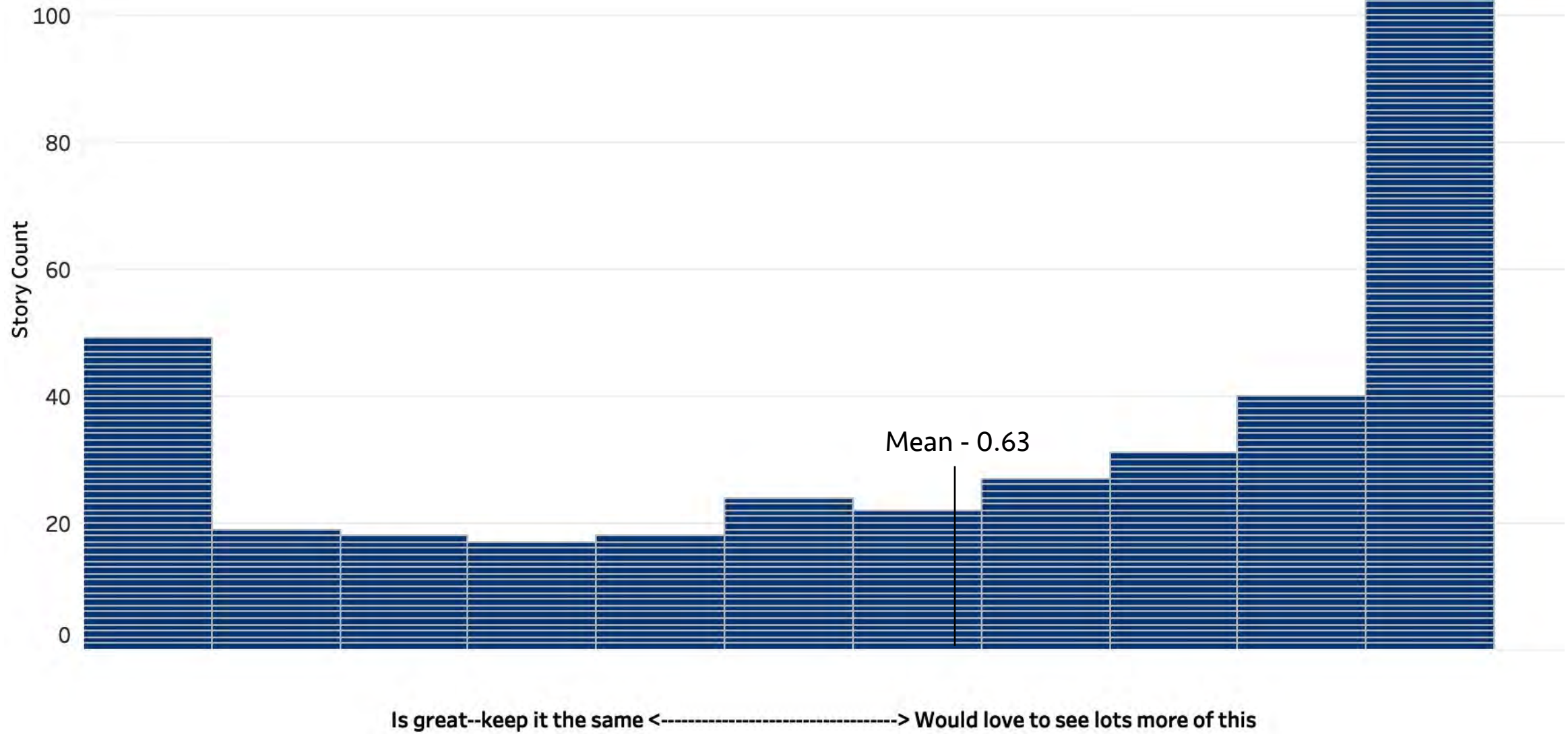


D3. In the story shared, assistance was...

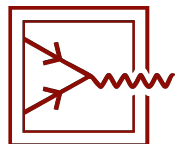
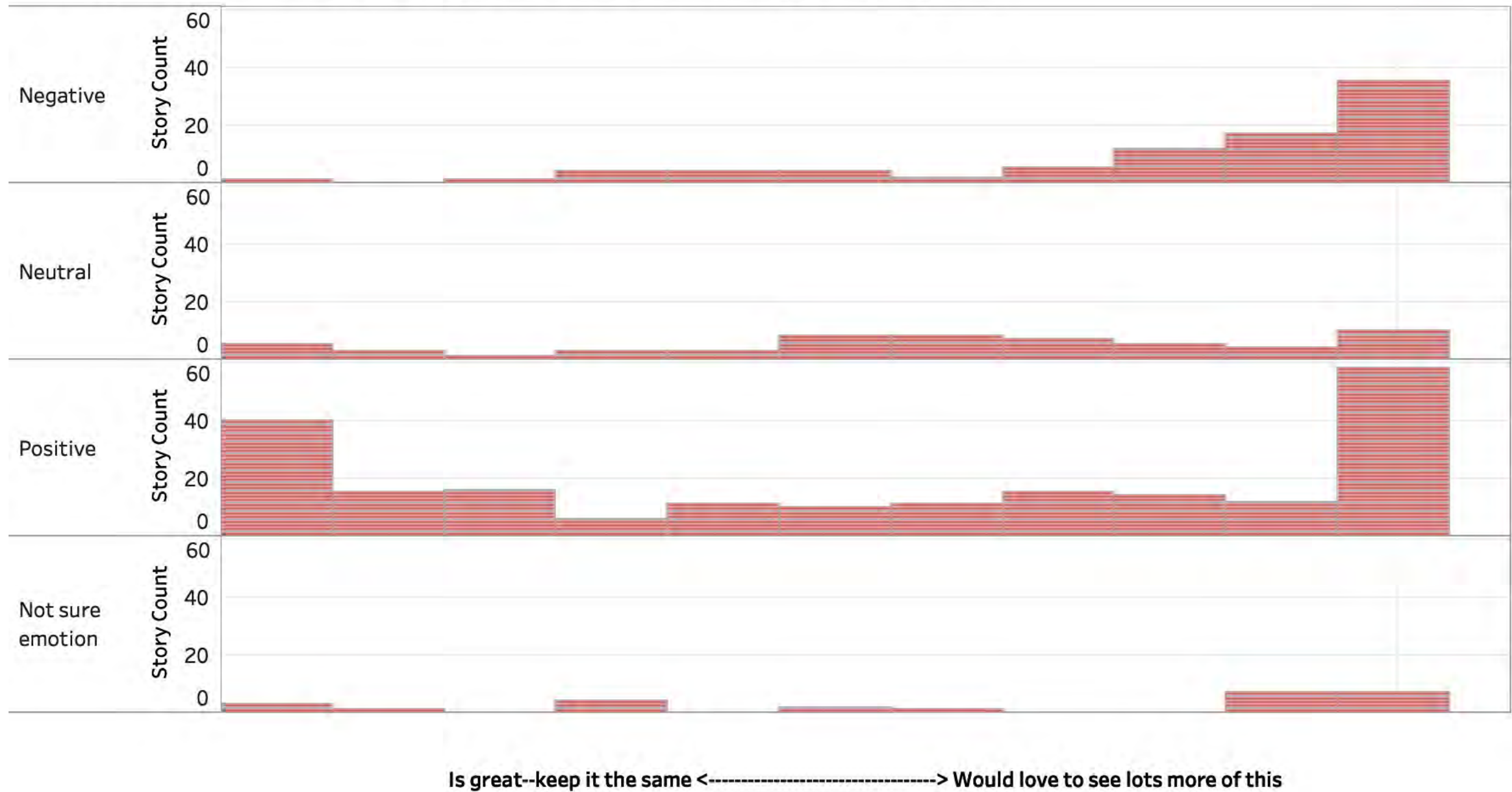


74% response

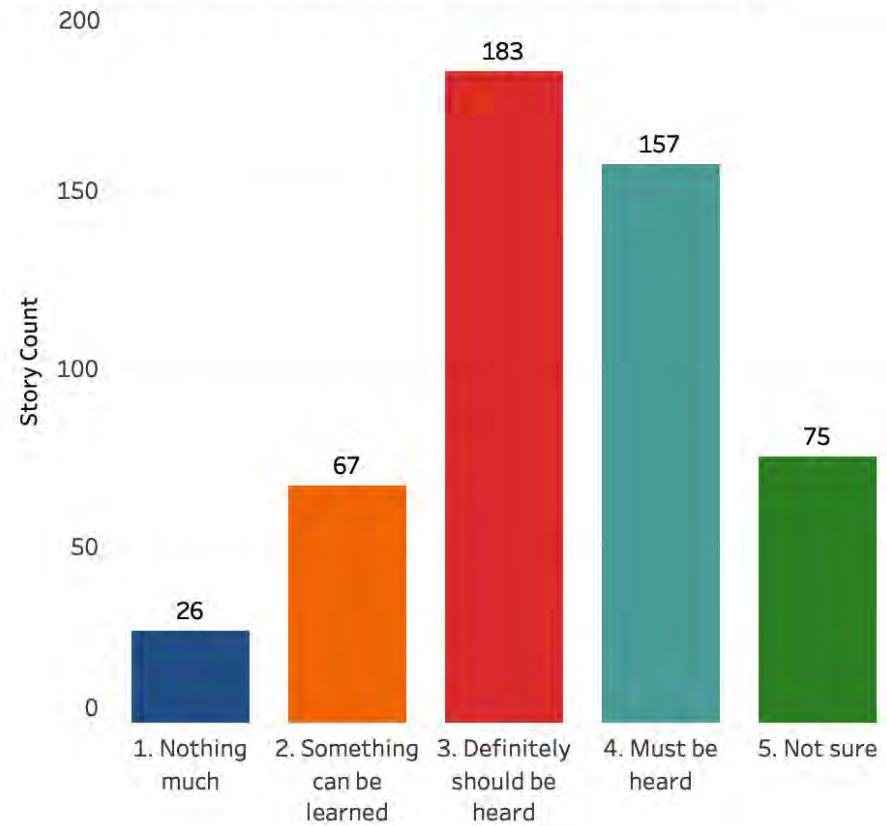
D4. In the experience shared, the service, activity, or program...



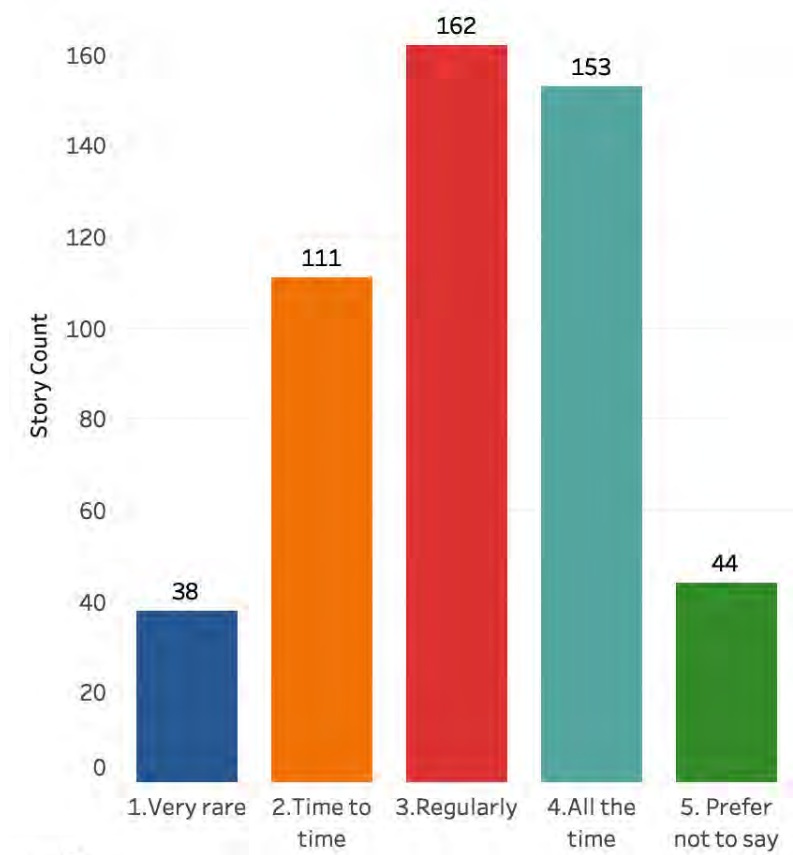
D4. In the experience shared, the service, activity, or program...



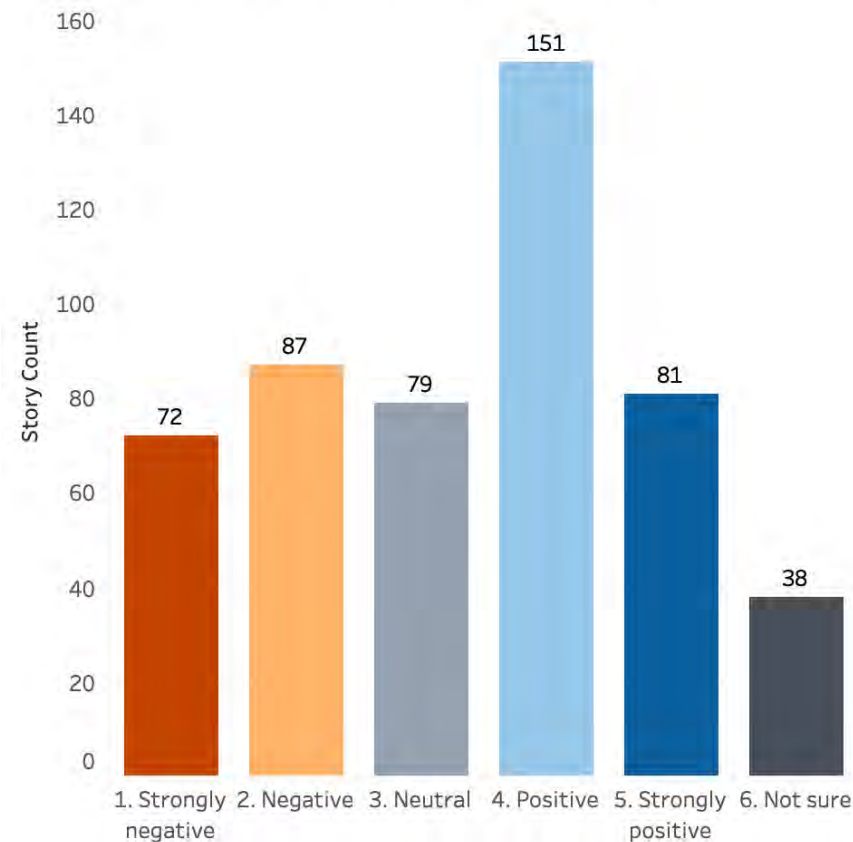
Appendix A: CPCCO Micro-narrative Results
 How important is it for people who make rules to hear & learn from this anonymous story?



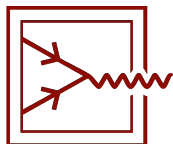
How often does the situation in your story occur?



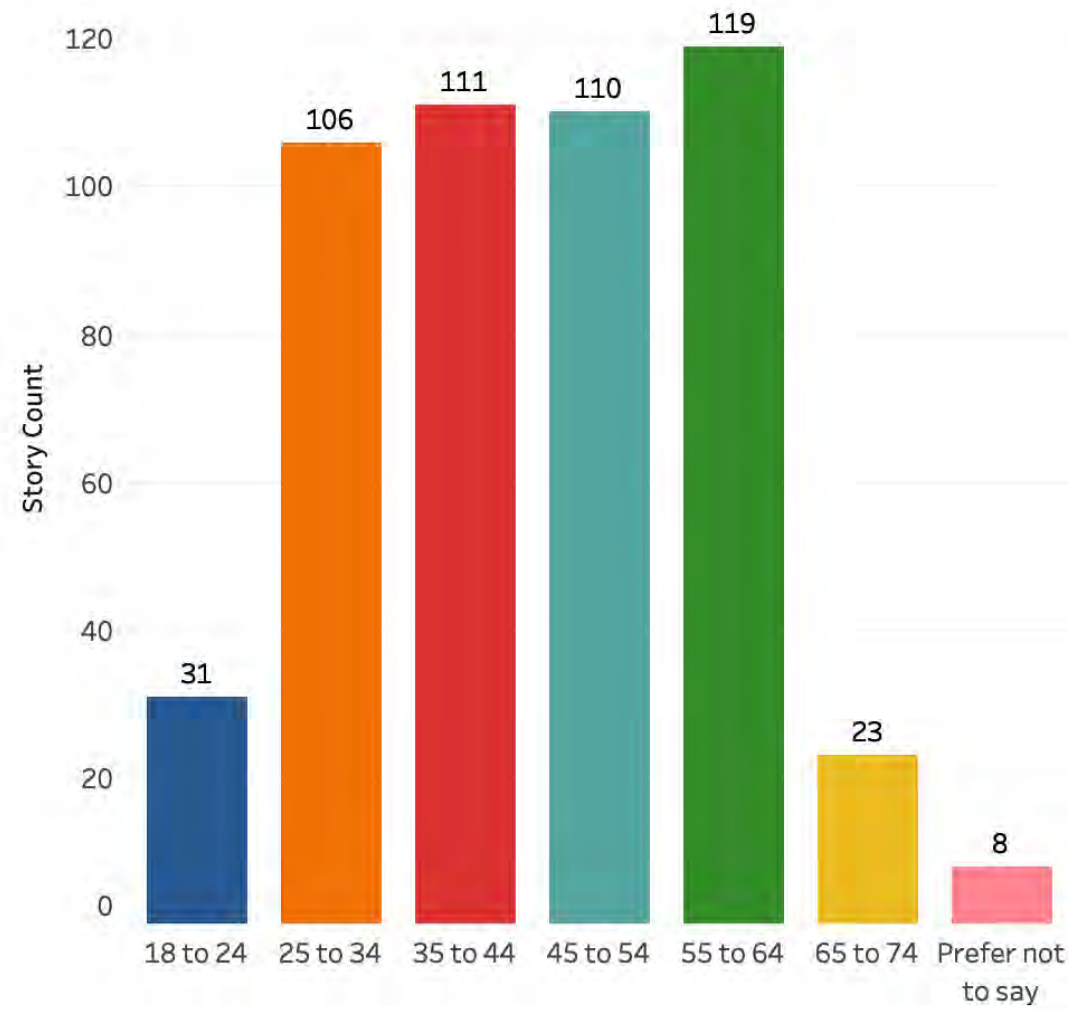
What type of experience was this for you?



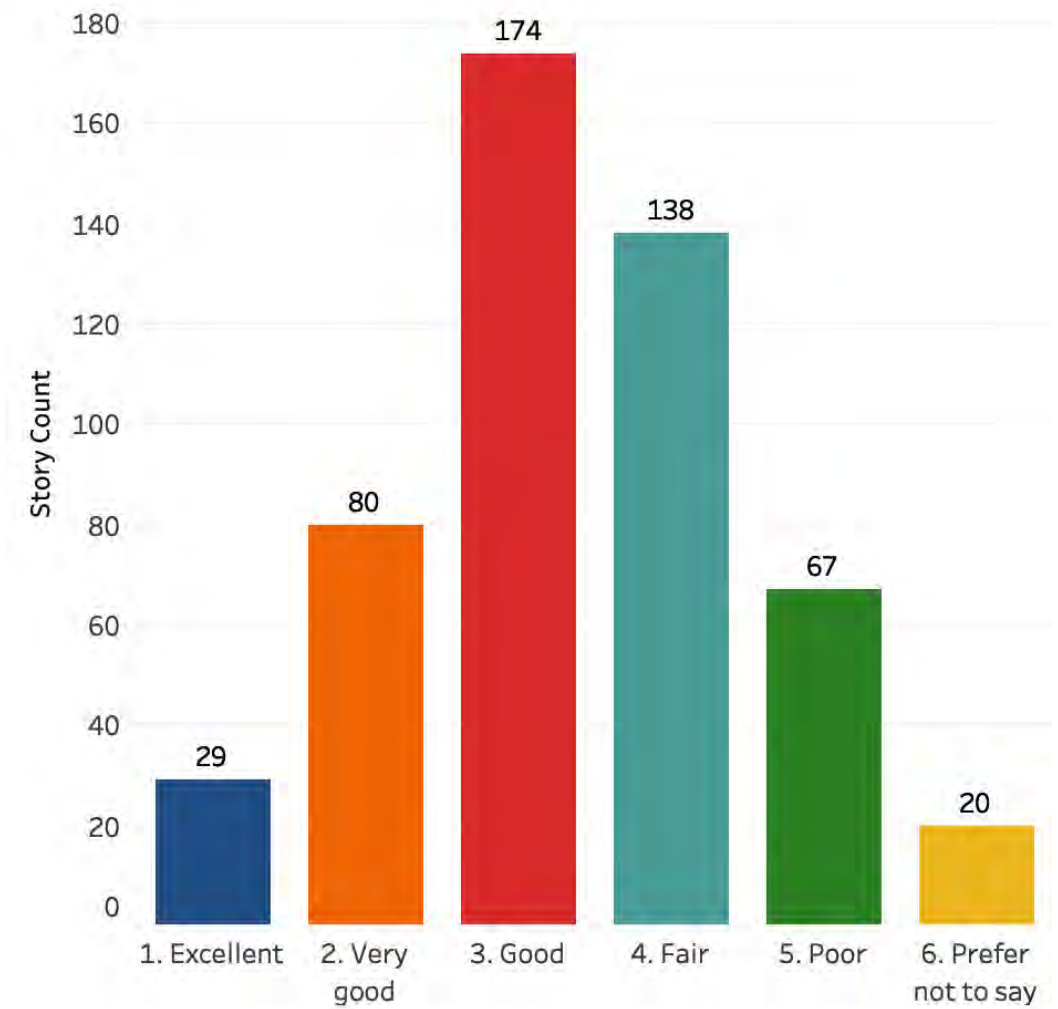
OHP - 508 stories



How old are you?

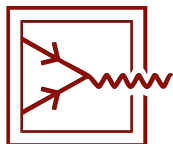
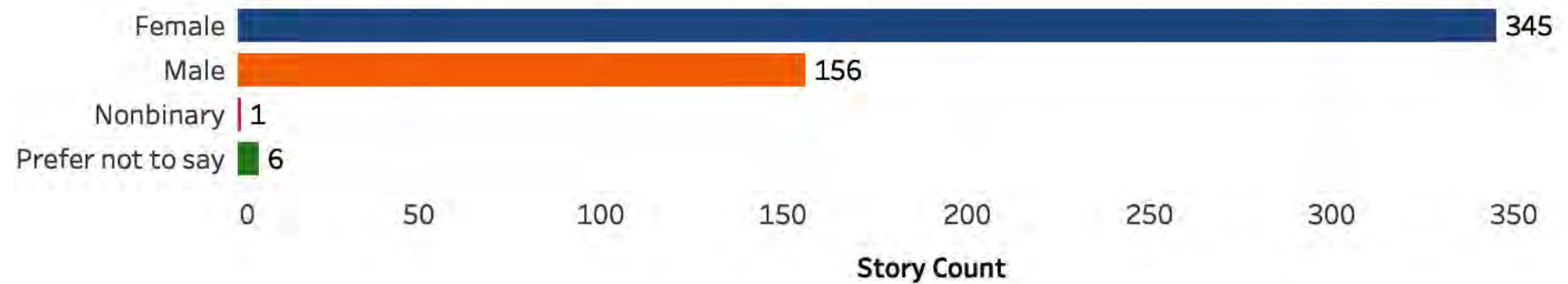


How would you rate your own health?



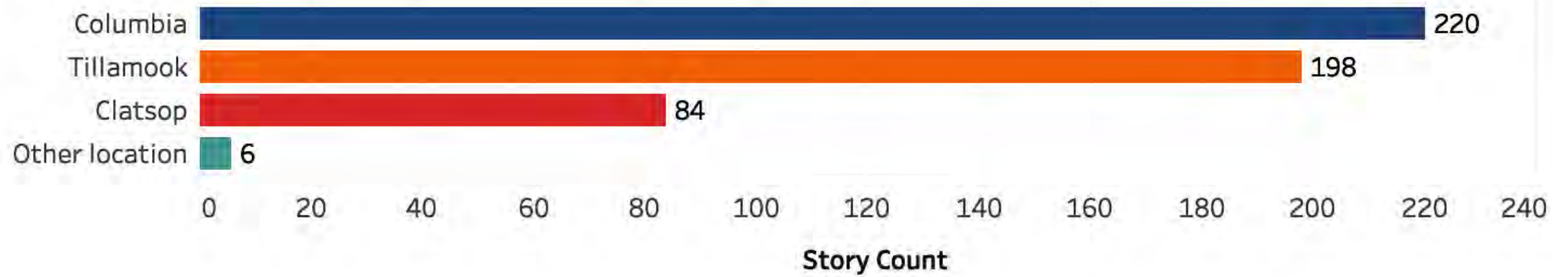
OHP - 508 stories

What is your gender?

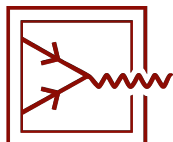
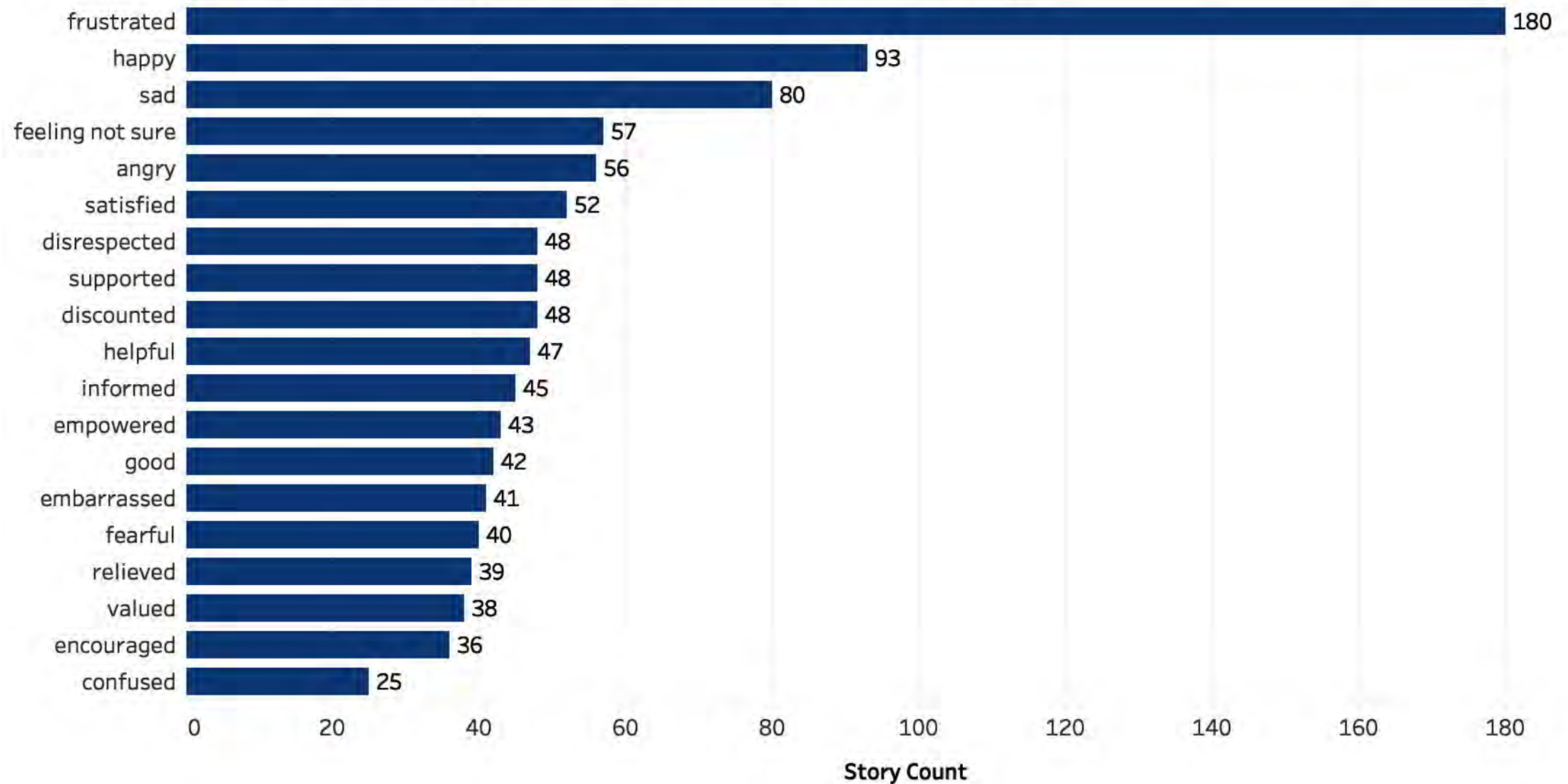


OHP - 508 stories

County

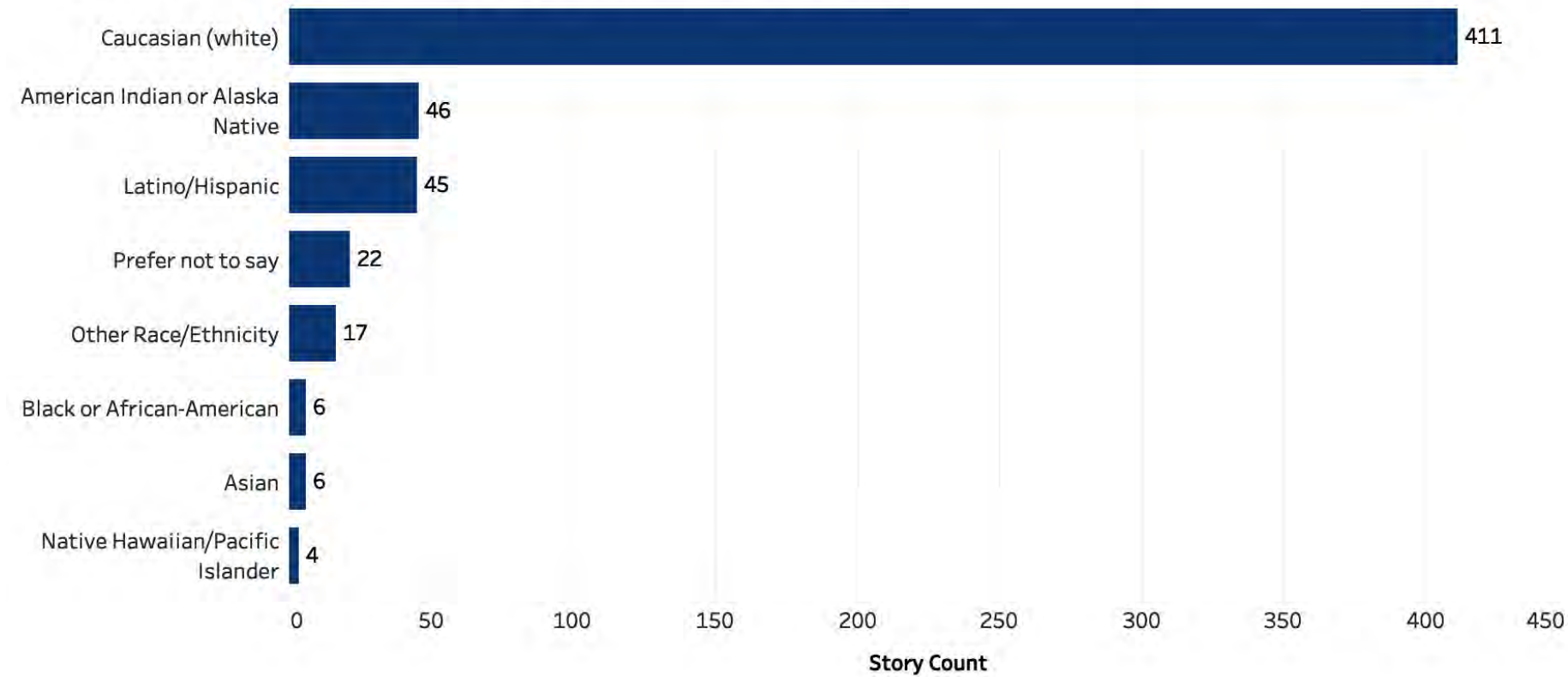


How does your story make you feel? (Select up to 3 choices)

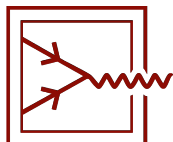
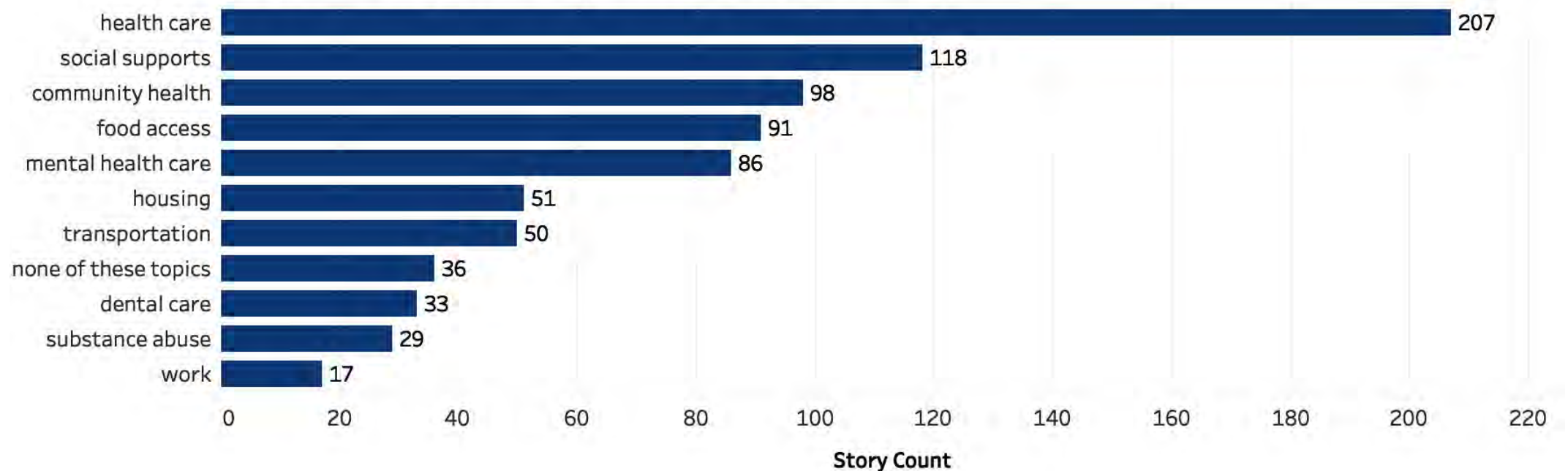


OHP - 508 stories

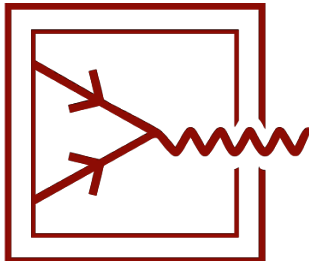
What is your race or ethnicity? (Select up to 4 choices)



What topics did your story cover? (Select up to 2 choices)

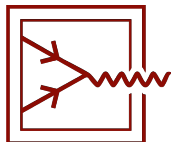


Statistics for entire 1252 stories



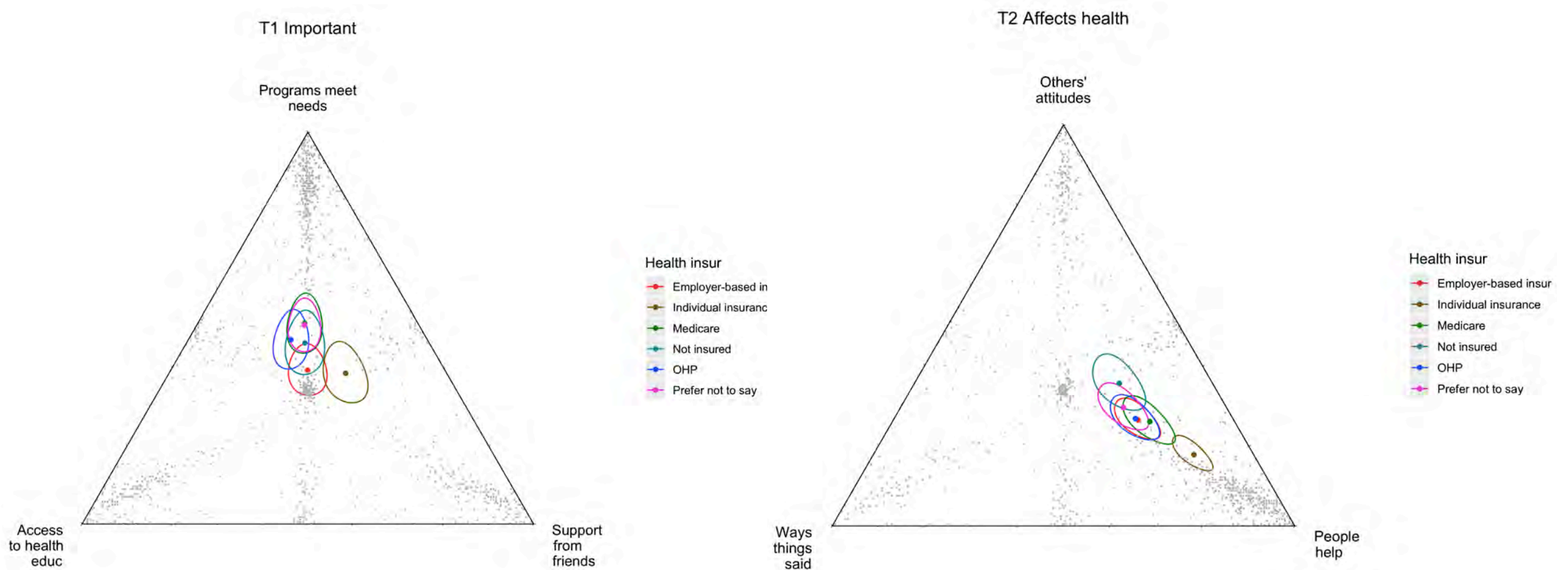
Statistical differences based on type of insurance

- There were no statistical differences for any of the dyads.¹
- You will see a few differences in T1, T2, T3, & T8. In general, these are slight shifts closer to one of the dimension.
- There were a couple of differences (T5, T6) related to the Prefer not to say response. Since we don't know the composition of this group, there's no action that can be taken.
- You can conclude for the most part that there were no glaring differences to questions based on insurance.



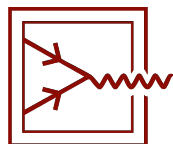
1. For dyads, we ran Kruskal-Wallis H test followed by Fisher's Least Squared Difference as the Post Hoc.

Differences between Insurance Types

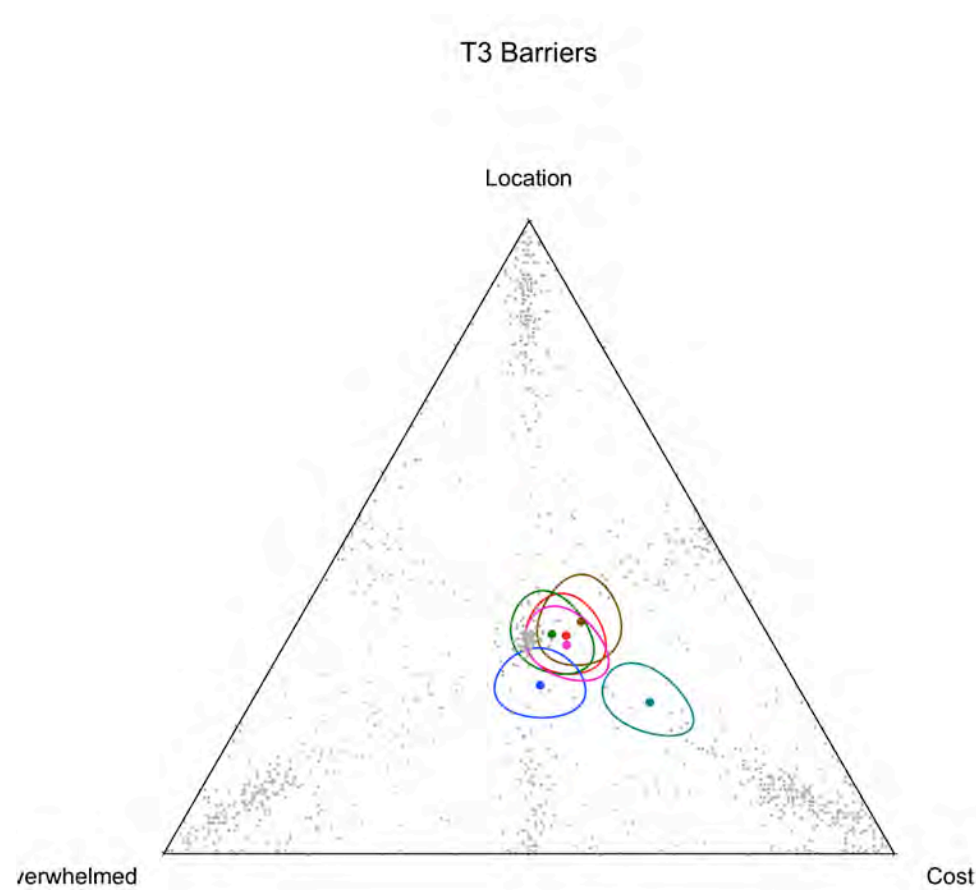


OHP & Medicare differs from Individual insurance

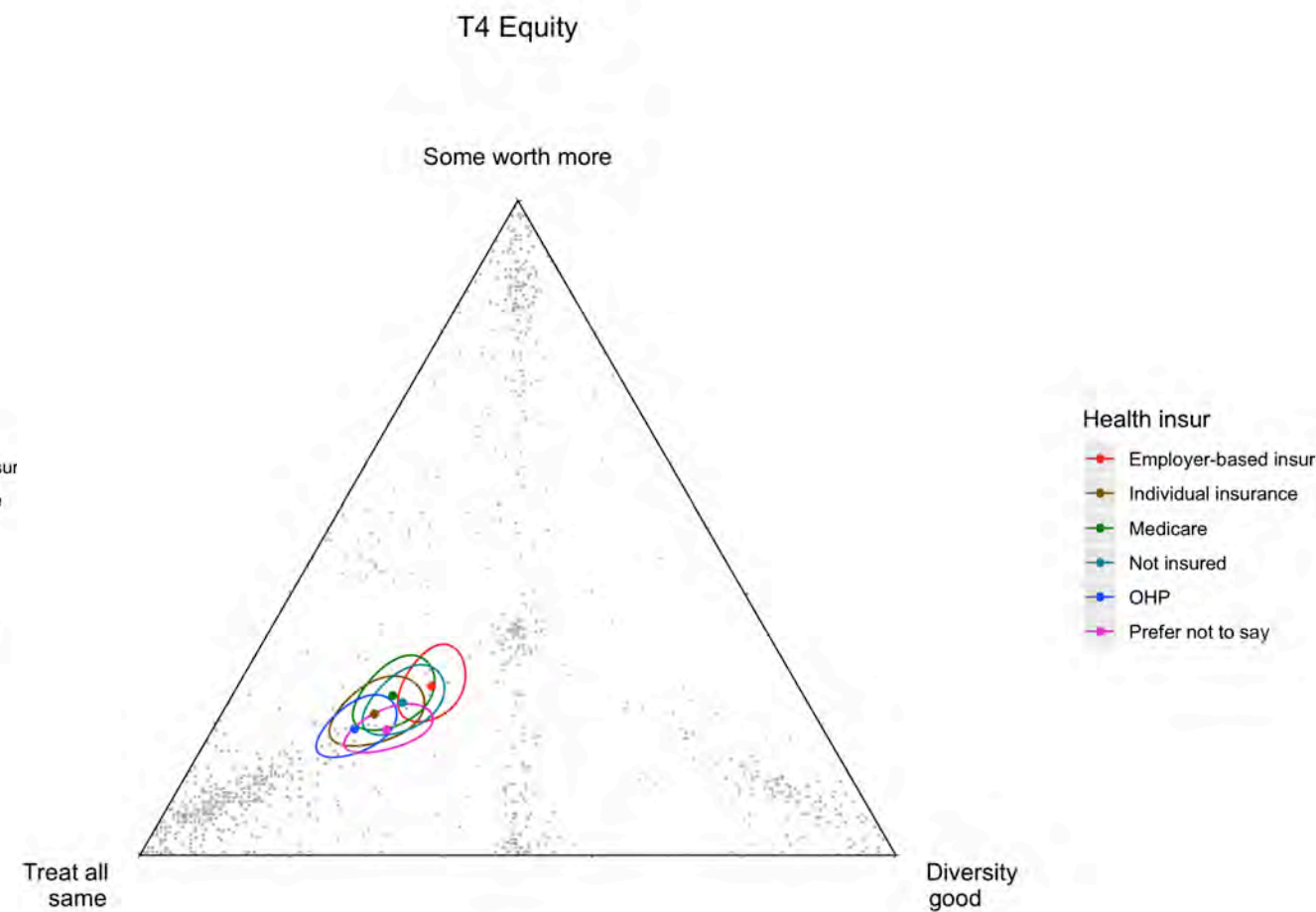
Individual insurance differs from all but Medicare



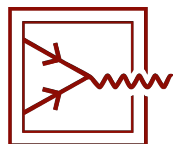
Differences between Insurance Types



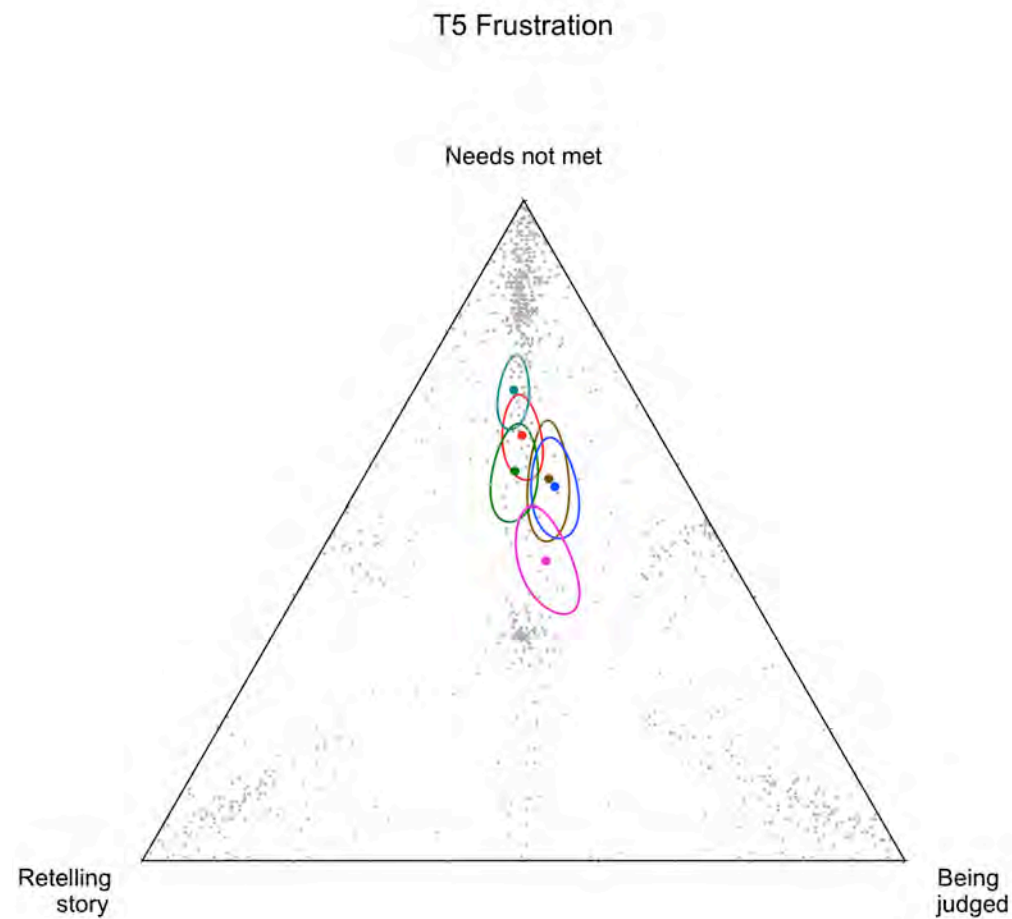
Medicare differs from all other types



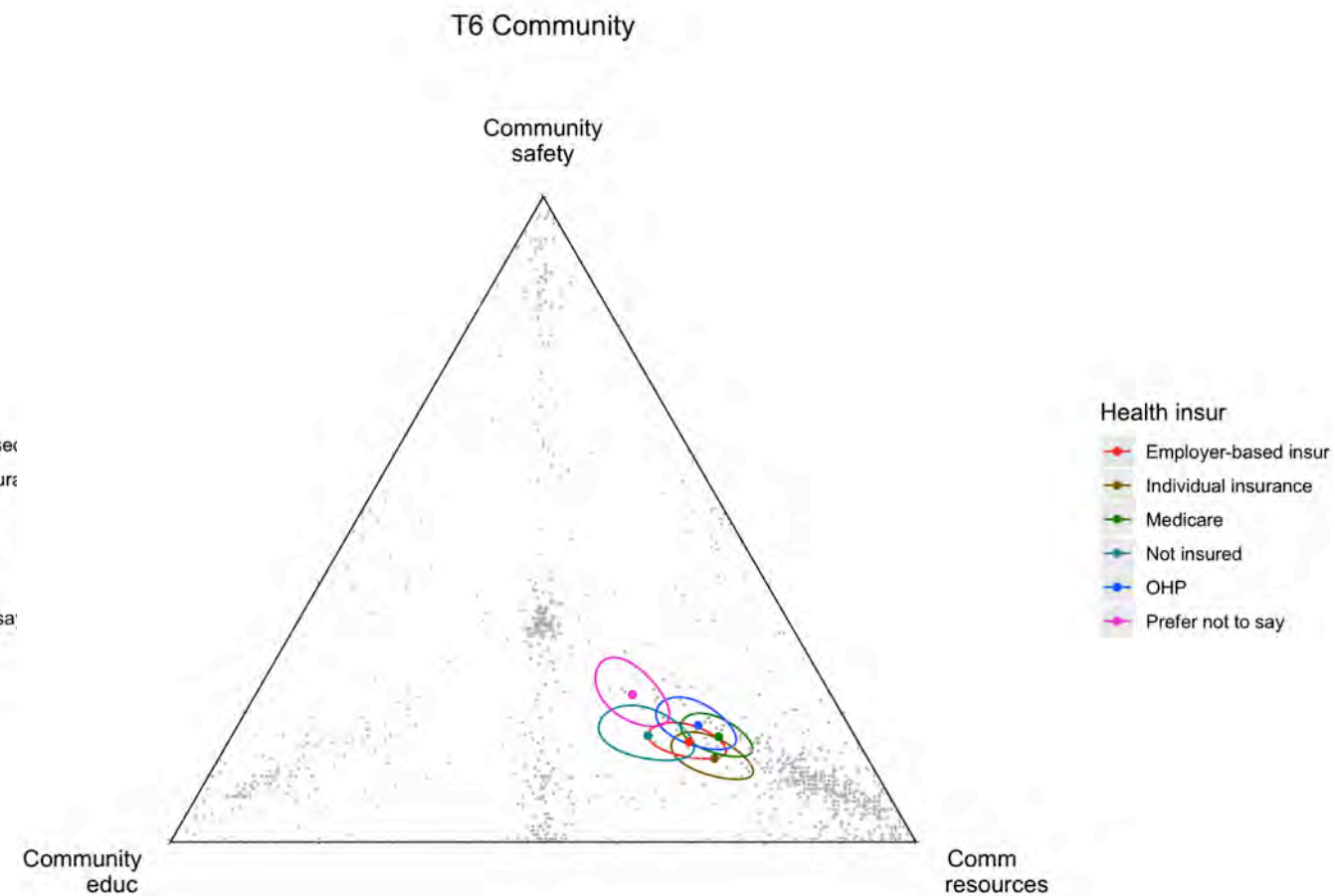
No differences



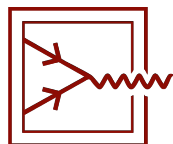
Differences between Insurance Types



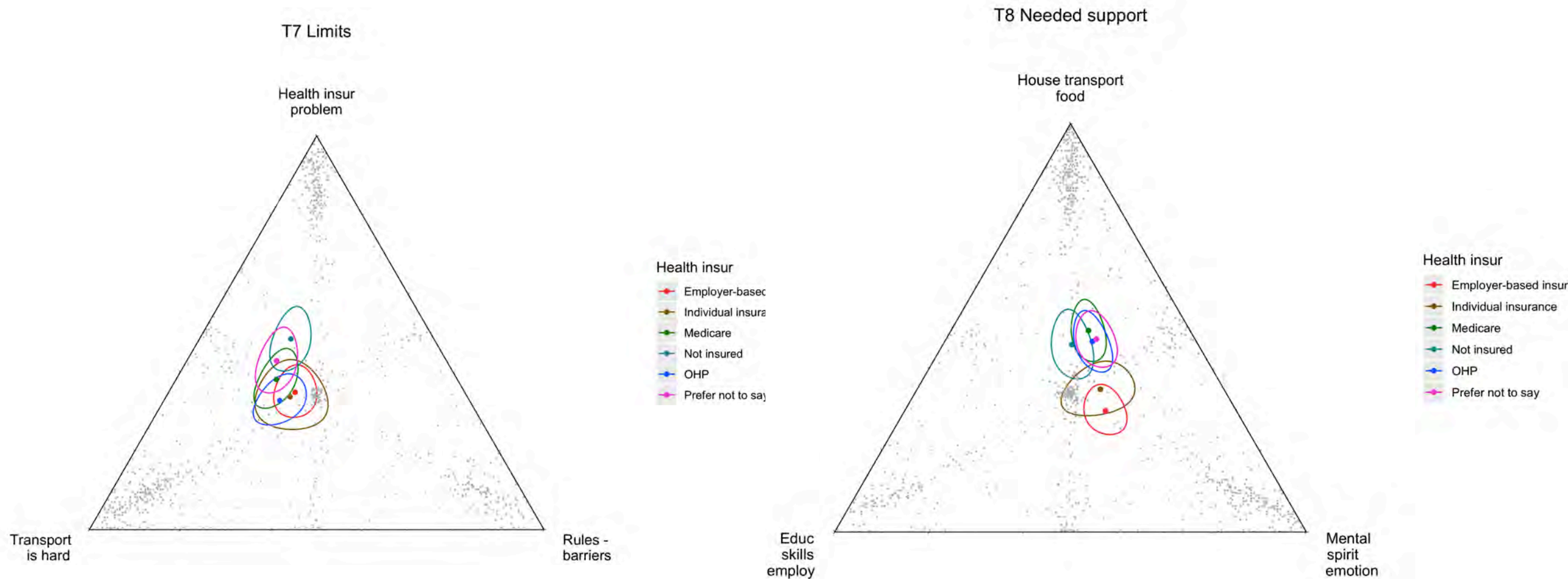
Not insured & employee-base is different from Prefer not to say. No real insight from this.



Individual and Medicare different from Prefer not to say. No real insight here.

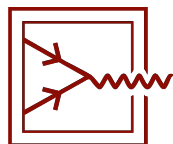


Differences between Insurance Types



No differences

Employee-based is different from all but Individual insurance.



Appendix B: Regional Health Assessment Data Sources

REGIONAL HEALTH ASSESSMENT DATA SOURCES

This report draws on several data sources to describe, using statistical measure, the health status of the communities within the region. This document identifies the data sources used in the regional health assessment.

American Community Survey, 2012-2016 (retrieved from <https://www.census.gov/programs-surveys/acs/>):

The American Community Survey (ACS) helps local officials, community leaders, and businesses understand the changes taking place in their communities. It is the premier source for detailed population and housing information about our nation. The U.S. Census Bureau must balance the information needs of a growing, changing nation with respect for the privacy and time of the American public. Adding a question or making a change to the American Community Survey involves extensive testing, review, and evaluation over a 5-year period. This ensures the change is necessary and will produce quality, useful information for the nation.

Limitations: People without legal immigration status are likely under-represented.

Children First for Oregon, 2018 (retrieved from <https://www.cffo.org/wp-content/uploads/2018/12/CFFO-County-Data-2018.pdf>):

2018 County Data: Child Well-Being in Oregon compiles data on child well-being across a broad range of indicators, painting a picture of children's health, education, and economic security throughout the state. Each indicator reveals how Oregon communities are supporting child well-being and identifies opportunities for improvement. Indicator rankings reveal the distinct strengths and challenges facing Oregon's diverse counties in building a strong foundation for children and their continued development

Limitations: Trends based on less than 5 events may be insignificant.

County Health Rankings, 2019 (retrieved from www.countyhealthrankings.org):

The County Health Rankings & Roadmaps (CHR&R) brings actionable data, evidence, guidance, and stories to communities to make it easier for people to be healthy in their neighborhoods, schools, and workplaces. Ranking the health of nearly every county in the nation (based on the model below), CHR&R illustrates what we know when it comes to what is keeping people healthy or making them sick and shows what we can do to create healthier places to live, learn, work, and play. Rankings help counties understand what influences how healthy residents are and how long they will live. The Rankings are unique in their ability to measure the current overall health of each county in all 50 states. They also look at a variety of measures that affect the future health of communities, such as high school graduation rates, access to healthy foods, rates of smoking, obesity, and teen births.

Appendix B: Regional Health Assessment Data Sources

Limitations: The county-level estimates based on BRFSS data are calculated for the County Health Rankings by staff at the Centers for Disease Control and Prevention. One limitation of the BRFSS is that all measures are based on self-reported information, which cannot be validated with medical records. Another limitation is that these model-based estimates were created by borrowing information from the entire BRFSS, which may or may not accurately reflect those counties' local intervention experiences. Additionally, the confidence intervals constructed from these methods appear much smaller than confidence intervals reported for direct survey methods in previous years.

OHA, Adverse Childhood Experiences, 2016 (retrieved from <https://www.oregon.gov/OHA/PH/ABOUT/Documents/indicators/aces.pdf>): Every five years the Oregon Health Authority, Public Health Division describes the health of our state through the State Health Assessment (SHA). The SHA provides a data-driven resource that describes Oregon's health related strengths as well as its leading health challenges.

Limitations: A lack of sufficiently granular data was also a challenge. Although OHA-PHD monitors a wealth of population data, many of the indicators do not allow for analysis by subgroup such as race, ethnicity or county. For some indicators, the data collection process does not encompass these and other subgroups. For example, it is difficult to capture health information about migrant workers or incarcerated populations. For other indicators, the number of people affected by a specific condition or behavior is not large enough to allow for meaningful analysis. In 2015, the Oregon Legislature enacted a statute related to the collection of data on race, ethnicity, language, and disability status. As this statute continues to be put into practice across the Oregon Health Authority and Department of Human Services, OHA-PHD expects the availability of granular data to improve.

OHA, Adults reporting 1 or more days of poor mental health in the past 30 days by County, Oregon, 2012-2015 (retrieved from <https://www.oregon.gov/OHA/PH/ABOUT/Documents/indicators/mentalhealth-county.pdf>): The Public Health Division collects and analyzes data on health behaviors, diseases and injuries, disseminates findings, and designs and promotes evidence-based programs and policies to improve the health and safety of all Oregonians.

Limitations: Data was collected via a telephone survey conducted annually among non-institutionalized adults age 18+. Therefore, caution should be used in interpreting changes over time. Data include responses of "1 or more" to the question: "For how many days during the past 30 days was your mental health not good?"

OHA, Cancer and its Modifiable Risk Factors, 2018 (retrieved from <https://www.oregon.gov/oha/PH/DISEASES/CONDITIONS/CHRONICDISEASE/DATAREPORTS/Documents/datatables/Risk%20factors%20related%20cancer%20web%20tables.pdf>): The Oregon State Cancer Registry (OSCaR) is a population-based reporting

Appendix B: Regional Health Assessment Data Sources

system that collects and analyzes information about cancer cases occurring in Oregon. Reportable cases include all cancers except specific forms of common, curable skin cancer and in situ cervical cancers.

Limitations: It requires approximately two years to compile cancer data for a given year of diagnosis, which results in a two-year delay in data reporting. OSCaR does not conduct follow-up of reported patients, which results in incomplete information for some cases. Only includes data on those seeking care; lacks data on cancer prevalence.

OHA, Cancer death rates and counts, 2012-2016 (retrieved from https://www.oregon.gov/oha/PH/DISEASES/CONDITIONS/CHRONIC/DISEASE/DATAREPORTS/Documents/datatables/ORAnnualCancer_deaths.pdf): The Oregon Public Health Division reports chronic disease information to help guide Oregon's efforts to control or prevent chronic diseases and reduce disparities among populations most affected by these diseases.

OHA, Center for Health Statistics, Annual Report, Volume 1, 2017 (retrieved from <https://geo.maps.arcgis.com/apps/MapSeries/index.html?appid=776bbb30bba548809e7c40e301237624>): The Oregon Geospatial Enterprise Office provides coordination of geospatial activities for the State of Oregon. This site is meant to be a resource guide for both state employees and the general public. State agencies can acquire software through our statewide ELA, sign up for ArcGIS Online, or consume our geospatial data and imagery services. Our ArcGIS Server services are public and available to anybody. Developers are encouraged to use these services to support their applications and workflows.

Limitations: All rates are per 1,000 births. Rates exclude missing and unknown values in the calculation. Rates based on less than five events are unreliable. Percentages for first trimester initiation of prenatal care exclude missing and unknown values in the calculation. Percentages based on less than five events are unreliable. Because some neighboring states (e.g. California) do not exchange abortion reports with Oregon, those that obtain an out-of-state abortion are not always included in this count. Percentages for cigarette smoking during pregnancy exclude missing and unknown values in the calculation. Percentages based on less than five events are unreliable.

OHA, Estimates of Homelessness Population by County, Oregon, 2017 (retrieved from <https://www.oregon.gov/OHA/PH/ABOUT/Documents/indicators/homeless-county.pdf>)
The Point-in-Time Count attempts to count sheltered and unsheltered homeless people to provide a snapshot of homelessness. The count occurs every two years during the last ten days of January. Along with the total number of sheltered and unsheltered

Appendix B: Regional Health Assessment Data Sources

homeless people, information is gathered on a wide range of characteristics of the homeless population such as age, gender, race, ethnicity, veteran status, and disability status. Estimates are available at the county and state level.

Limitations: Survey data provides contextual information around health care in the state. It is not as reliable for program enrollment counts as administrative data. It is not an annual source of data, but it is conducted every two years. Another limitation is bias in the survey from the look-back period and response bias due to respondents answering for other members of their household.

OHA, Food Insecurity by County, Oregon, 2016 (retrieved from <https://www.oregon.gov/oha/PH/ABOUT/Documents/indicators/foodinsecurity-county.pdf>): Every five years the Oregon Health Authority, Public Health Division describes the health of our state through the State Health Assessment (SHA). The SHA provides a data-driven resource that describes Oregon's health related strengths as well as its leading health challenges.

Limitations: A lack of sufficiently granular data was also a challenge. Although OHA-PHD monitors a wealth of population data, many of the indicators do not allow for analysis by subgroup such as race, ethnicity or county. For some indicators, the data collection process does not encompass these and other subgroups. For example, it is difficult to capture health information about migrant workers or incarcerated populations. For other indicators, the number of people affected by a specific condition or behavior is not large enough to allow for meaningful analysis. In 2015, the Oregon Legislature enacted a statute related to the collection of data on race, ethnicity, language, and disability status. As this statute continues to be put into practice across the Oregon Health Authority and Department of Human Services, OHA-PHD expects the availability of granular data to improve.

OHA, Oregon Healthy Teen Survey, 2013, 2015, 2017 (retrieved from <https://www.oregon.gov/oha/PH/BIRTHDEATHCERTIFICATES/SURVEYS/OREGONHEALTHYTEENS/Pages/index.aspx>): is a comprehensive, school-based, anonymous and voluntary survey of 8th and 11th-graders that is a key part of a statewide effort to help local schools and communities ensure that all Oregon youth are healthy and successful learners who contribute positively to their communities.

Limitations: The survey samples 8th and 11th graders in public schools. Sampling frame excludes virtual/online schools, charter schools outside of a public school district, those without a brick-and-mortar presence, alternative/non-traditional schools with non-standard hours (evenings, weekends), rehabilitation services, etc. Some districts (Beaverton, Salem-Keizer, and those in Josephine County) historically do not participate in the OHT Survey. Responses are missing from adolescents who are not in school.

Appendix B: Regional Health Assessment Data Sources

OHA, Population Living Below Federal Poverty Level by County, Oregon, 2012-2016 (retrieved from <https://www.oregon.gov/OHA/PH/ABOUT/Documents/indicators/povertylevel-county.pdf>): The Public Health Division collects and analyzes data on health behaviors, diseases and injuries, disseminates findings, and designs and promotes evidence-based programs and policies to improve the health and safety of all Oregonians.

Limitations: People without legal immigration status are likely under-represented.

OHA, Post-secondary Degree Among Adults 25 Years and Older by County, Oregon, 2012-2016 (retrieved from <https://www.oregon.gov/OHA/PH/ABOUT/Documents/indicators/educationalattainment-county.pdf>): The Public Health Division collects and analyzes data on health behaviors, diseases and injuries, disseminates findings, and designs and promotes evidence-based programs and policies to improve the health and safety of all Oregonians.

Limitations: People without legal immigration status are likely under-represented.

OHA, Oregon Vital Statistics Annual Report Volume 2, 2017 (retrieved from <https://www.oregon.gov/oha/PH/BIRTHDEATHCERTIFICATES/VITALSTATISTICS/ANNUALREPORTS/VOLUME2/Documents/2017/2017%20VITAL%20STATS%20VOL%202%20FINAL.pdf>): Oregon State law requires a report of death to be completed for all deaths. These records are the primary data source for the health information presented here. The Center for Health Statistics registers only those vital events occurring in Oregon. However, information on Oregon resident deaths occurring out-of-state is also collected through an interstate exchange agreement. Data may be tabulated by residence (where the person lived) or by occurrence (where the event occurred).

Oregon law requires birth certificates for all live births. The Center for Health Statistics registers only those vital events occurring in Oregon. However, information on births that occur out of state to Oregon residents is also reported through an interstate exchange agreement. Data may be tabulated by residence (where the person lived) or by occurrence (where the event occurred). When age-adjusted rates are calculated, the 2000 U.S. population is used as the standard. The SHA also uses information collected from death certificates. These data are used to examine trends in mortality and causes of death. Variables in the death certificate database include cause of death; decedent's identifying information; date and place of death; occupation of the decedent; whether the death was related to tobacco use; education of decedent; marital status of decedent; and county, place, and date of injury (if applicable).

Appendix B: Regional Health Assessment Data Sources

Limitations: Limited to information on U.S. standard Certificate of Birth and that is Oregon-specific required by law.

Oregon Behavioral Risk Factor Surveillance System (BRFSS) (retrieved from

<https://www.oregon.gov/oha/PH/BIRTHDEATHCERTIFICATES/SURVEYS/ADULTBEHAVIORRISK/Pages/index.aspx>): The BRFSS is an annual random-digit dialed telephone survey that is conducted year-round among Oregon adults aged 18 years or older. The BRFSS includes questions on diagnosis of chronic diseases, health behavior risk factors such as diet, weight control, tobacco and alcohol use, physical activity, preventive health screenings, and use of health care services. The data are weighted to represent all adults aged 18 years and older. A core set of questions is asked annually, and other topics are surveyed on a rotating basis. Starting in 2010, Oregonians who use cell phones were added to the survey, causing the method for adjusting (weighting) the data to the demographics of the state to change. This new method is called “raking.” Because of these changes, data prior to 2010 are not directly comparable to the data from 2010 forward. The national BRFSS implemented these changes in 2011. [Learn more about BRFSS. A note about county level data:](#) Oregon combines four years of annual BRFSS data to produce more reliable county-level estimates for chronic diseases and related risk factors.

Limitations: BRFSS is limited to non-institutionalized adult Oregon residents with a land line and/or cell phone service. Declining response rates for both landline and cell phones are an ongoing concern. BRFSS is not as representative of adults who are homeless, who do not speak English or Spanish, who are institutionalized or incarcerated, or who have limited access to phone service.

Oregon Center for Public Policy, 2018 (retrieved from <https://www.ocpp.org/media/uploads/documents/2018/20180620-Clatsop.pdf> <https://www.ocpp.org/media/uploads/documents/2018/20180620-Columbia.pdf>

<https://www.ocpp.org/media/uploads/documents/2018/20180620-Tillamook.pdf>): The Oregon Center for Public Policy researches and analyzes tax, budget, and economic issues. Our goal is to improve decision making and generate more opportunities for all Oregonians.

Oregon Child Immunization Rates, 2015-2018 (retrieved from

<https://www.oregon.gov/oha/PH/PREVENTIONWELLNESS/VACCINESIMMUNIZATION/Pages/researchchild.aspx>) Oregon immunization rates measure vaccination rates among two-year-old’s and adolescents (13- to 17-year-olds) living in a certain geographical area: state, county, or zip code. They tell us how well immunized different areas of the state are based on where people live, not where they seek health care. These are different from what you might know as AFIX (Assessment, Feedback Incentive, Exchange) rates, which measure immunization rates only among individuals who are active patients at a certain clinic.

Appendix B: Regional Health Assessment Data Sources

Individuals are included in the rates if they have a post-birth immunization record in ALERT Immunization Information System (IIS) and are Oregon residents based on their most current address.

Limitations: ALERT is based on mandatory reporting from pharmacists and for state-supplied vaccines; otherwise, reporting is voluntary. Data completeness is high but may vary by subpopulation, age, or region. High data capture for 0 – 18 and increasing capture among adult population. SES, race, and ethnicity are not commonly reported by immunization providers.

Oregon Health Insurance Survey, 2017 (retrieved from <https://www.oregon.gov/oha/HPA/ANALYTICS/InsuranceData/2017-OHIS-Health-Insurance-Coverage-Region.pdf>): The Oregon Health Insurance Survey is an important source of information about health care coverage in the state. The survey provides detailed information about the effects of health-system reform on health care coverage, access to care, and use of coverage.

Limitations: Survey data provides contextual information around health care in the state. It is not as reliable for program enrollment counts as administrative data. It is not an annual source of data, but it is conducted every two years. Another limitation is bias in the survey from the look-back period and response bias due to respondents answering for other members of their household.

U.S Census Bureau (retrieved from <https://www.census.gov/quickfacts/OR>): QuickFacts provides fast, easy access to the most requested social, economic, and housing characteristics of a given state, county, city, or town. QuickFacts provides statistics for all states and counties, and for cities and towns with a population of 5,000 or more. QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits.

Limitations: Some estimates come from sample data, and thus have sampling errors that may render some apparent differences between geographies statistically indistinguishable