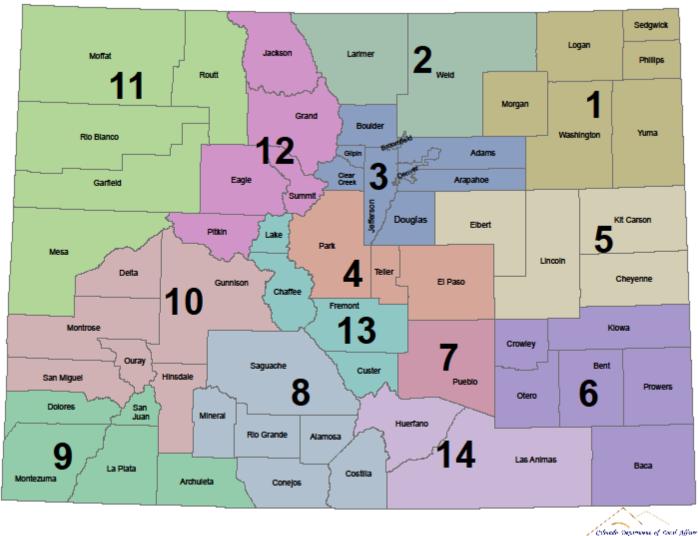
Colorado Estimates OF People With TBI by Planning Region

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Craig Hospital November 4, 2016



COLORADO PLANNING AND MANAGEMENT REGIONS

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Background

Current research built on the Colorado Study of TBI Prevalence and Associated Outcomes which was:

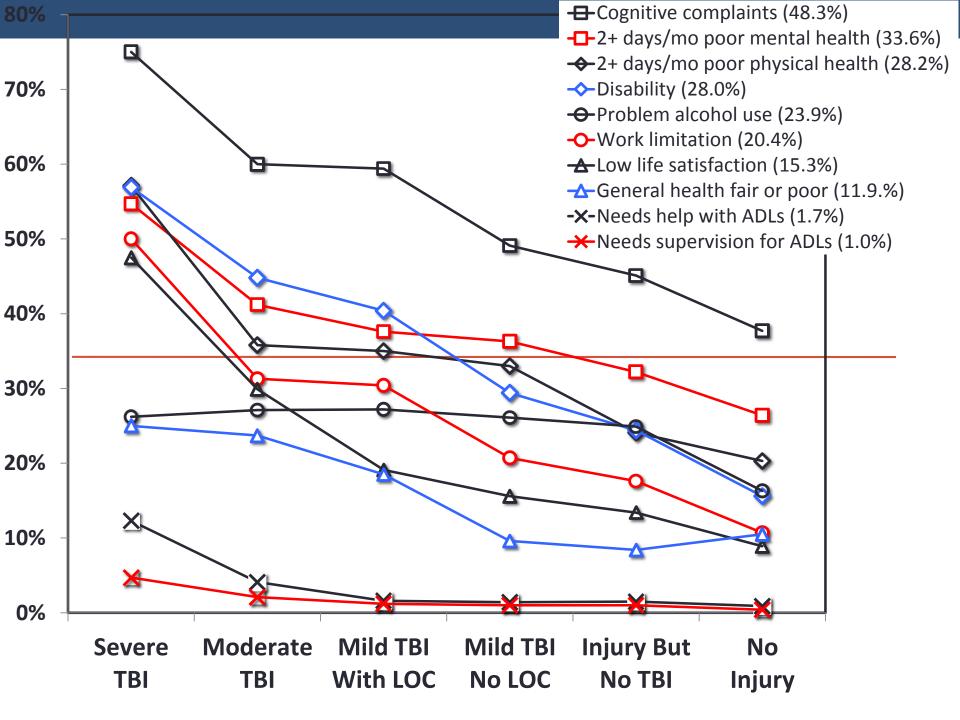
- CDC funded
- Statewide population-based survey of a random member of random-digit-dialed households.
- 2,701 adults age 18 and over interviewed using a modified CATI version of the OSU-TBI-ID
- To gather the lifetime history of TBI
- And standardized current assessments of 11 postconcussive symptoms and 10 negative outcomes

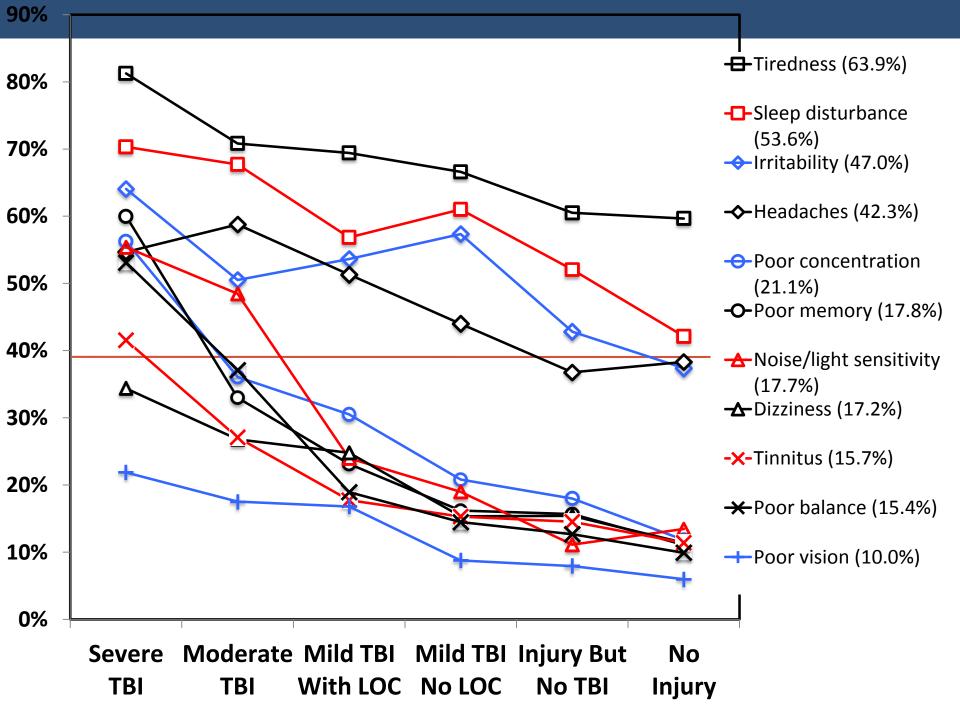
Raking and Weighting

- Raked the characteristics of the 2,701 people interviewed to the characteristics of the Colorado population age 18 and over
- Based on 2010 Census characteristics (including age; gender; race/ethnicity; marital, education, and employment status; and household income)
- Starting with a base weight of 1.0
- And iterating until all characteristics matched

Colorado Study Publications

- Whiteneck GG, Cuthbert JP, Corrigan JD, Bogner JA. Prevalence of Self-Reported Lifetime History of Traumatic Brain Injury and Associated Disability: A Statewide Population-Based Survey. J Head Trauma Rehabil. 2016 Jan-Feb;31(1):E55-62.
- Whiteneck GG, Cuthbert JP, Corrigan JD, Bogner JA. Risk of Negative Outcomes After Traumatic Brain Injury: A Statewide Population-Based Survey. J Head Trauma Rehabil. 2016 Jan-Feb;31(1):E43-54.
- Cuthbert JP, Whiteneck GG, Corrigan JD, Bogner J. The Reliability of a Computer-Assisted Telephone Interview Version of the Ohio State University Traumatic Brain Injury Identification Method. J Head Trauma Rehabil. 2016 Jan-Feb;31(1):E36-42.





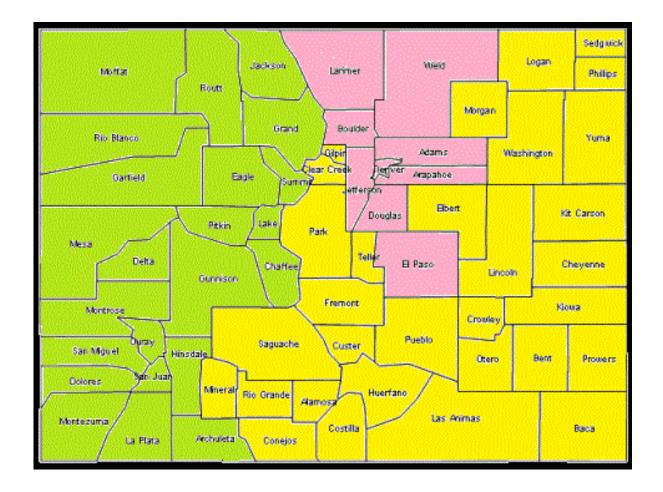
Current Research Objectives

- To estimate the number of adults with a lifetime history of TBI
- And estimates of the numbers of people with TBI and 10 current negative outcomes as well as 11 post-concussive symptoms
- In each of 14 planning regions of Colorado
- To facilitate service delivery planning.

Current Research Methodology

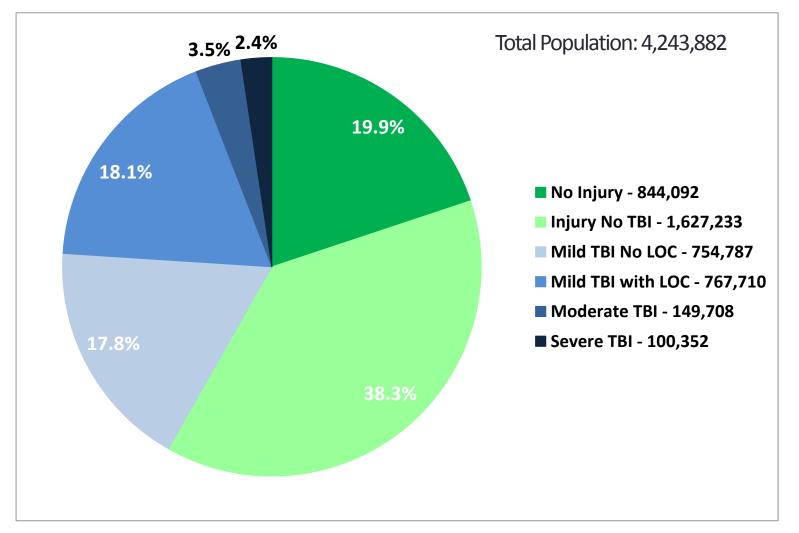
- Secondary data analysis of the original study data
- Compare the population characteristics and rates of TBI in 3 large geographic areas of Colorado
 - The urban front-range counties
 - The western slope counties
 - The remaining non-urban, non-western slope counties in the east and south
- Use the respondents in these 3 large geographic areas to estimate TBI and outcomes in the 14 planning regions

Three Large Geographic Areas of Colorado

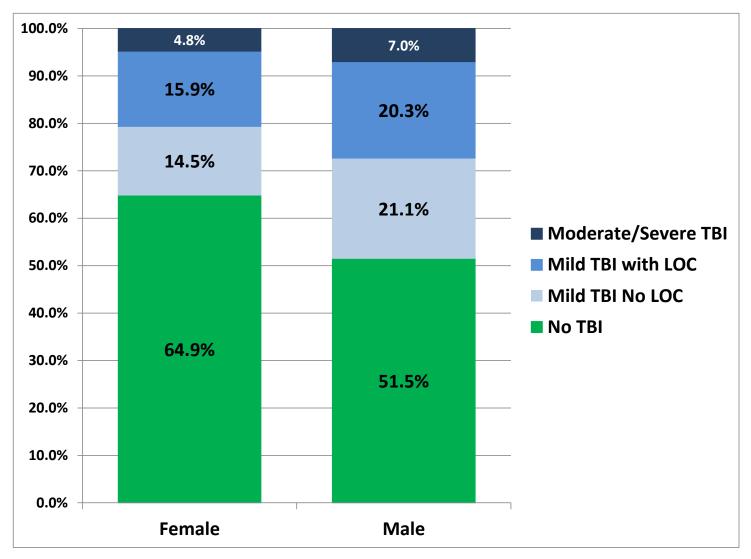


Statewide Data

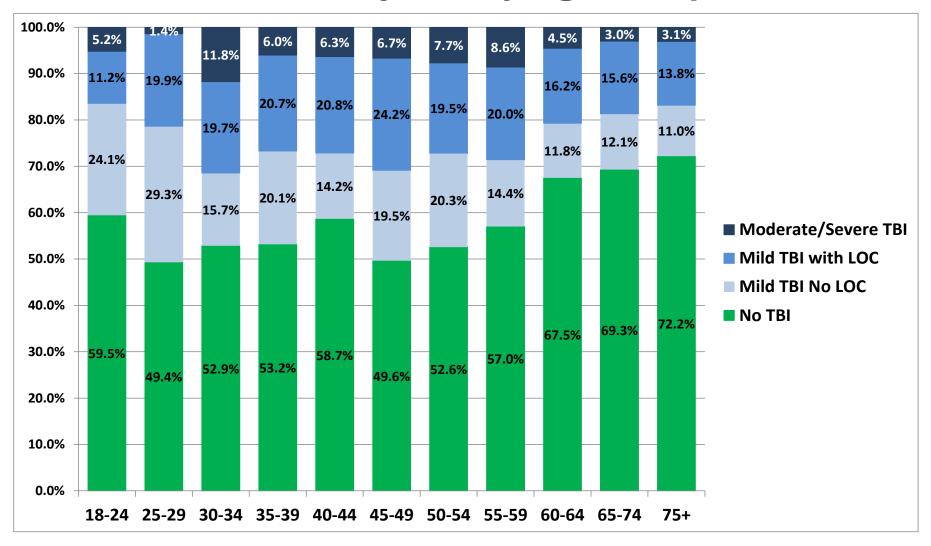
Prevalence of TBI in Colorado



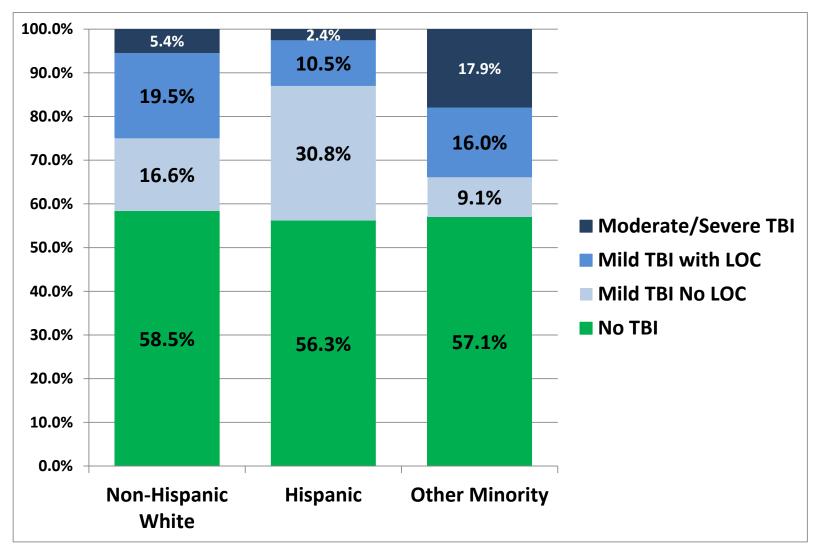
Statewide Injuries by Sex



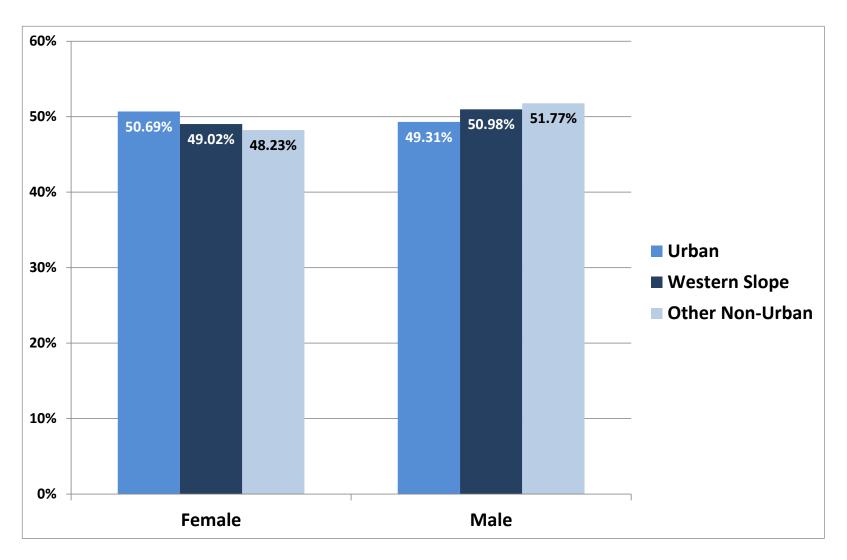
Statewide Injuries by Age Groups



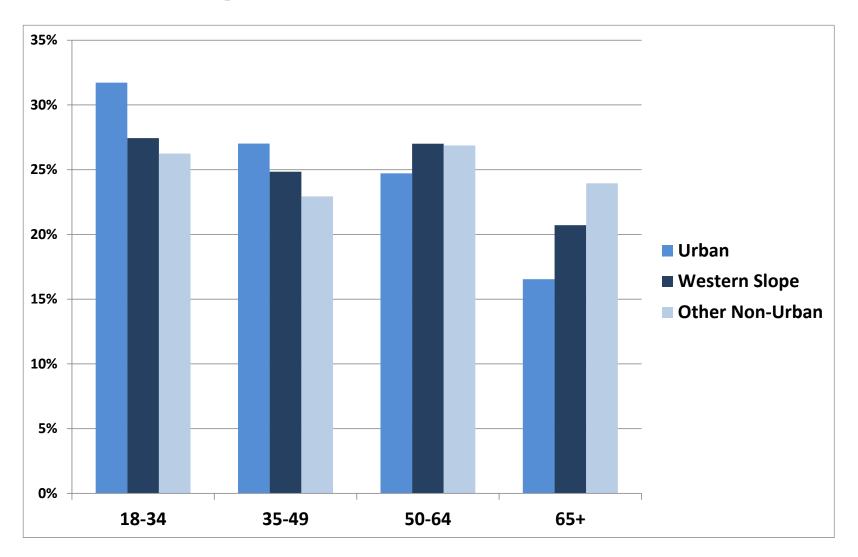
Statewide Injuries by Race



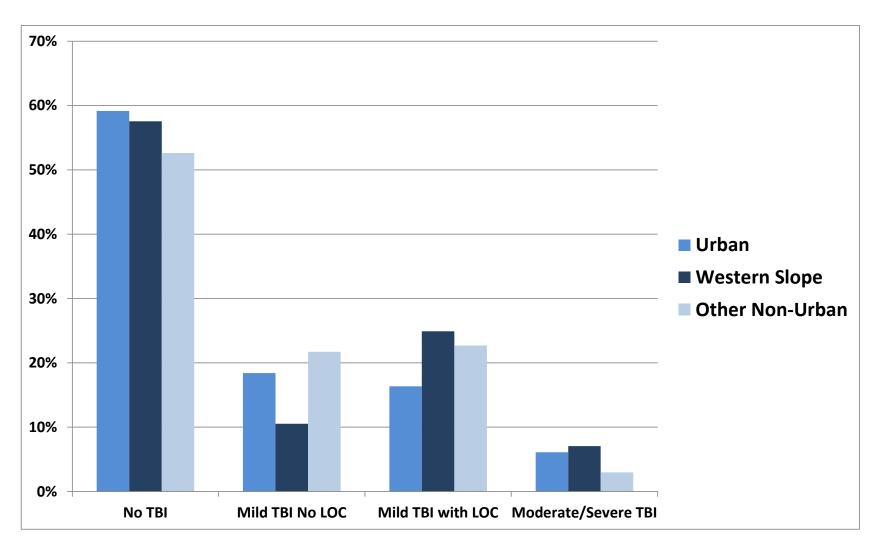
Gender Differences in Colorado



Age Differences in Colorado



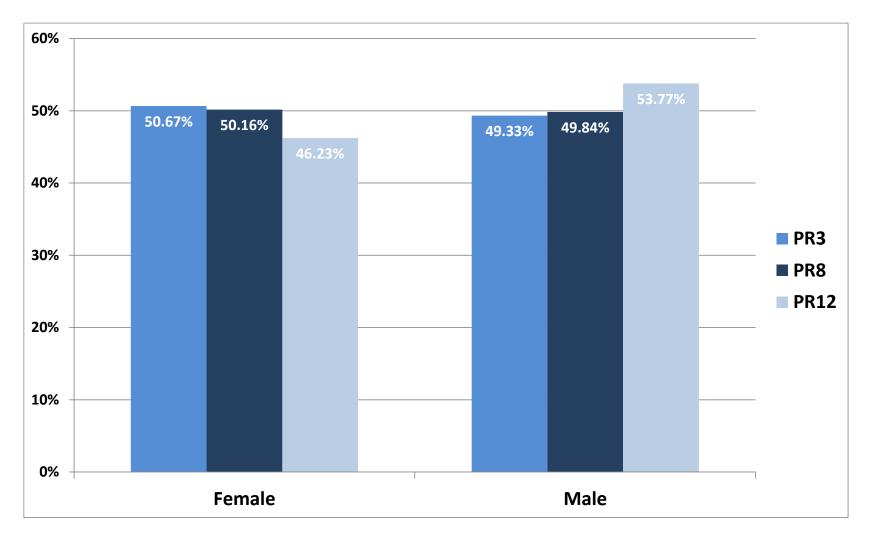
TBI Prevalence Differences in Colorado



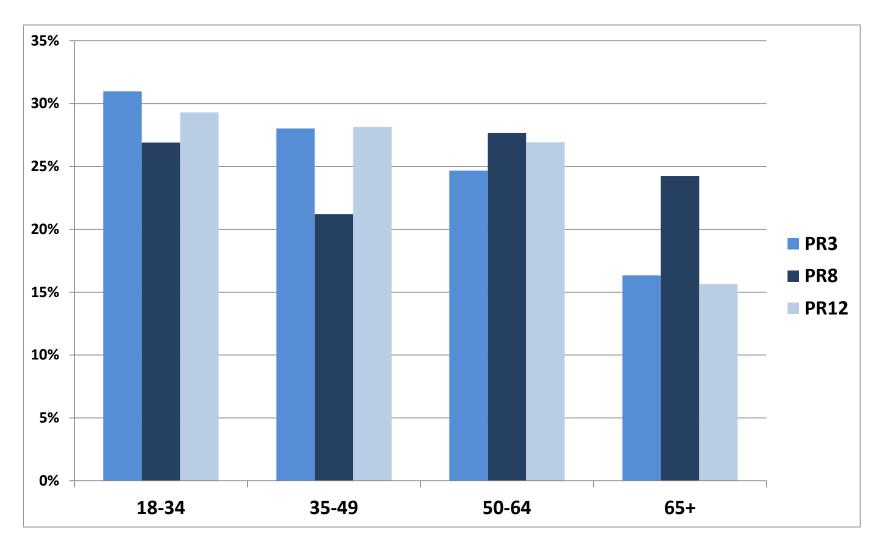
Current Research Raking and Weighting

- Raked the characteristics of people interviewed in the 3 large areas to the characteristics of the population age 18 and over in each of the 14 planning districts
- Based on 2016 population age and gender distributions of each planning district provided by the Colorado Office of Demography
- With the base weight as the original study weight
- And iterating until the characteristics matched

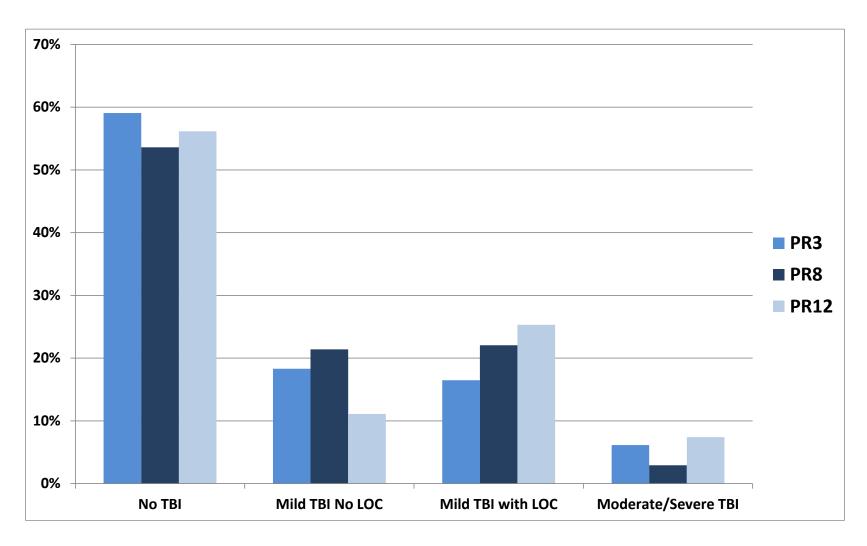
Gender Differences in Planning Regions



Age Differences in Planning Regions



TBI Prevalence Differences in Planning Regions



Closing Cautions

- These are only estimates
- Based on the self-reports
- Of 2,701 adult Coloradans
- With no estimates about TBI in children
- And no ability to infer causation, just association
- But hopefully helpful to TBI advocates and TBI service providers

Thank You

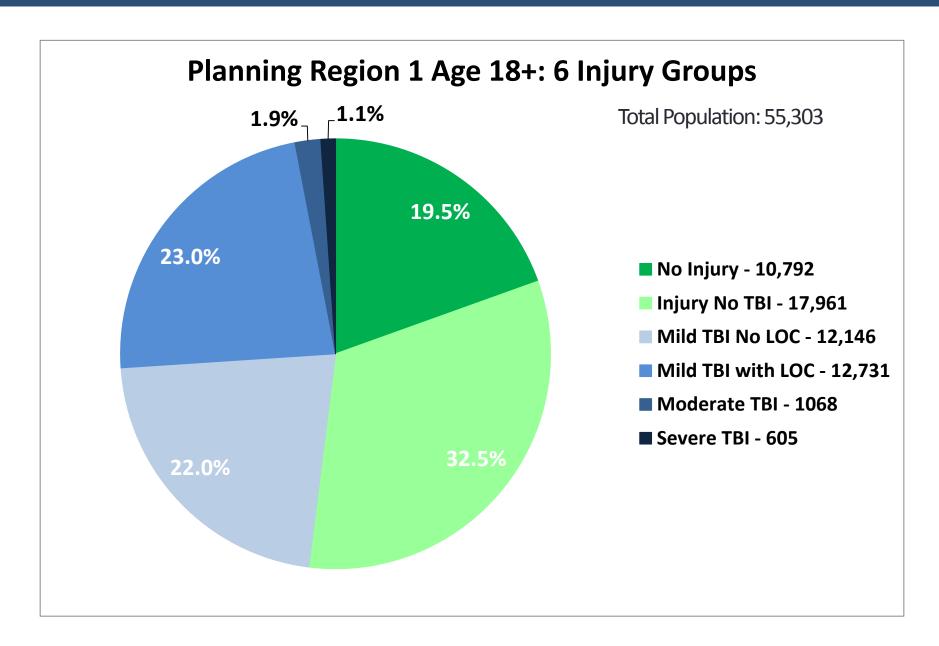
gale@craighospital.org peagye@craighospital.org

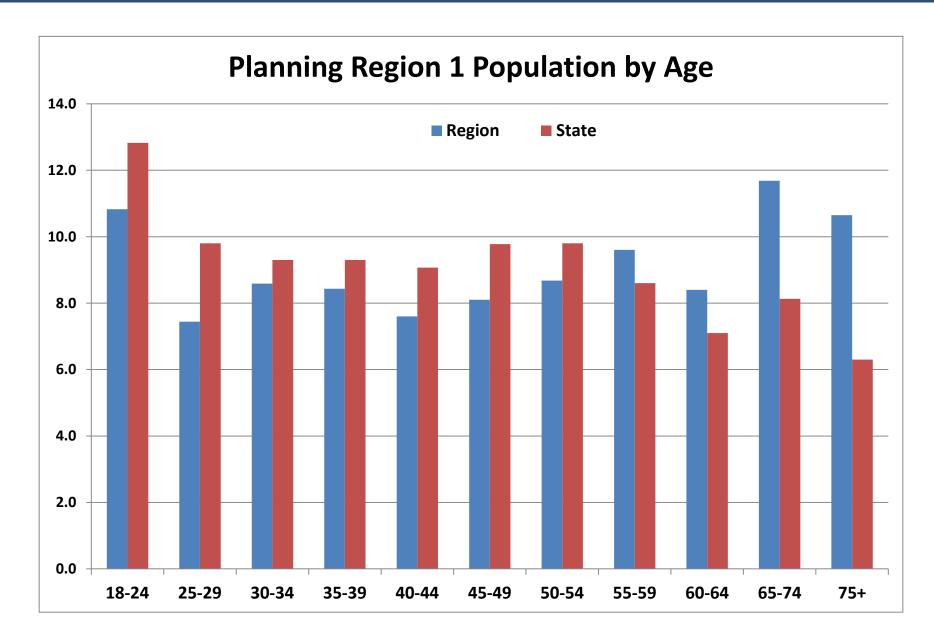


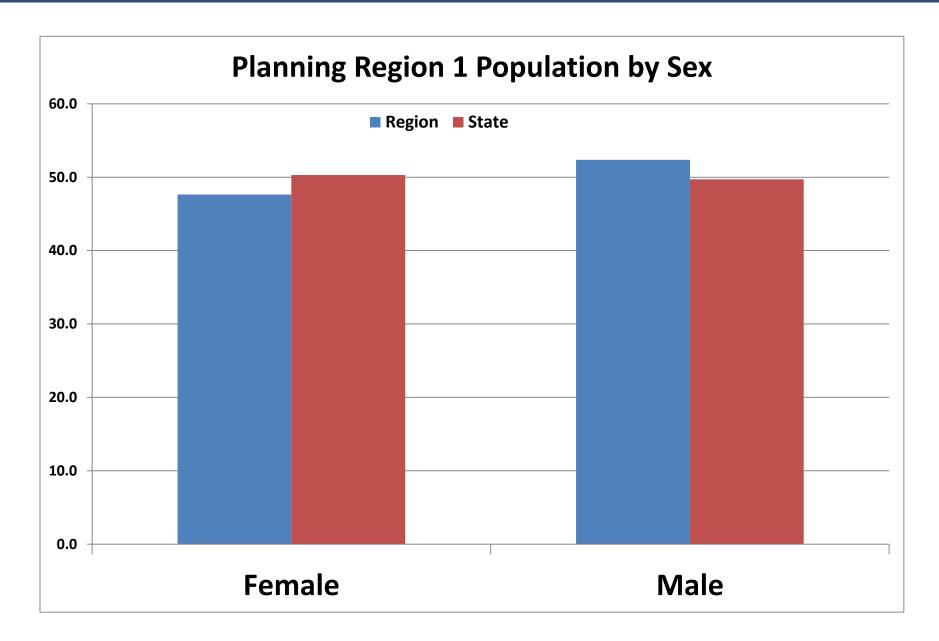
UNYIELDING DETERMINATION. EMPOWERING LIVES.

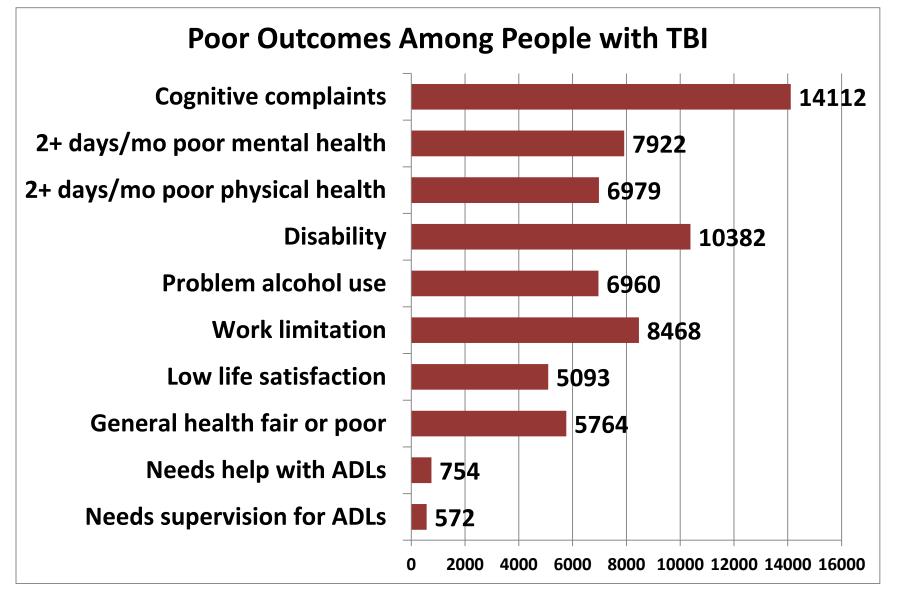
3425 S. Clarkson Street, Englewood, CO 80113

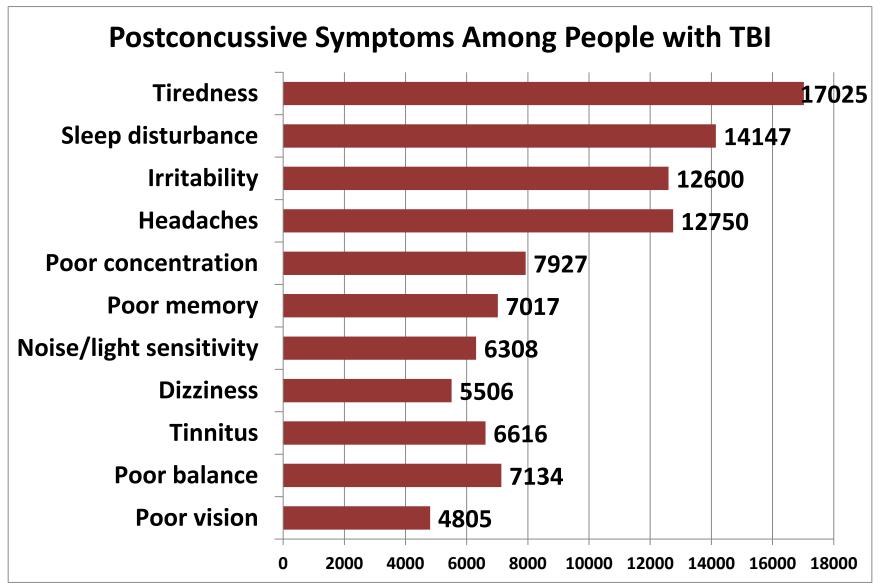
craighospital.org



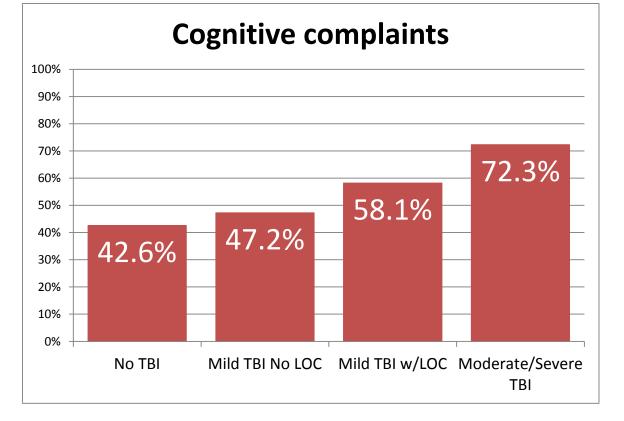




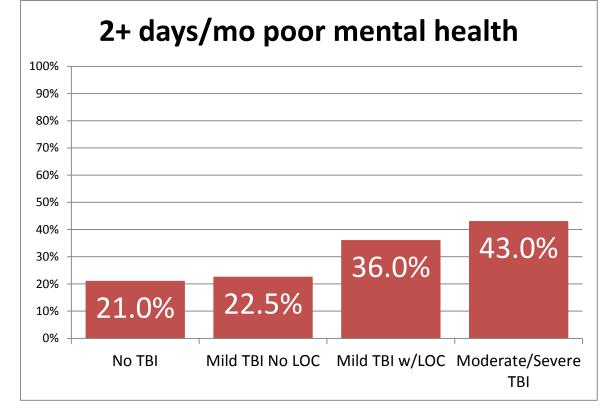




 Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile



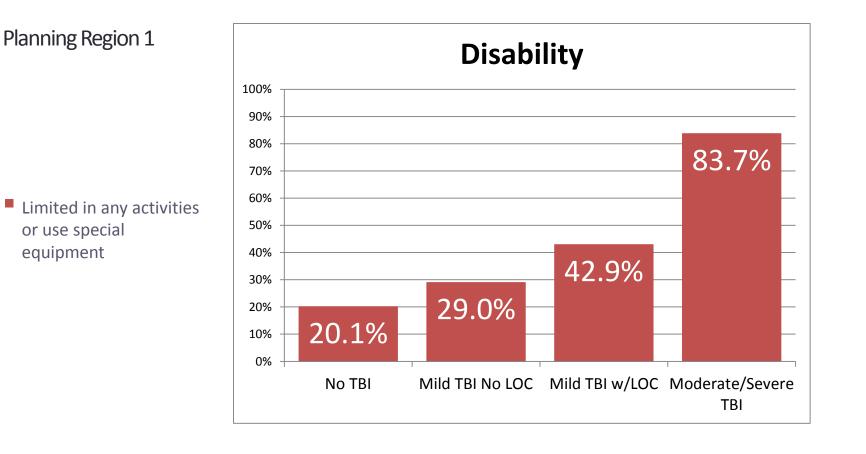
Two or more days of poor mental health reported

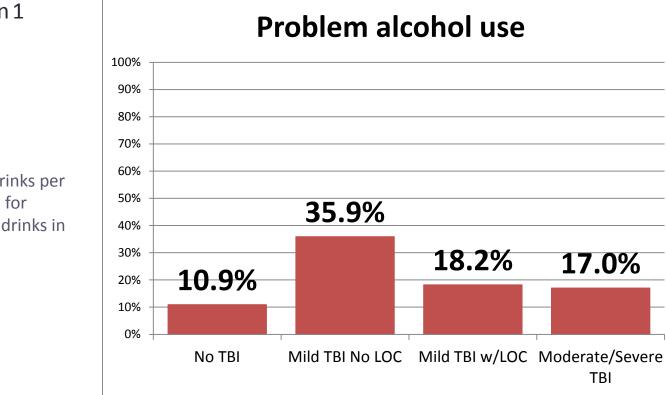


33

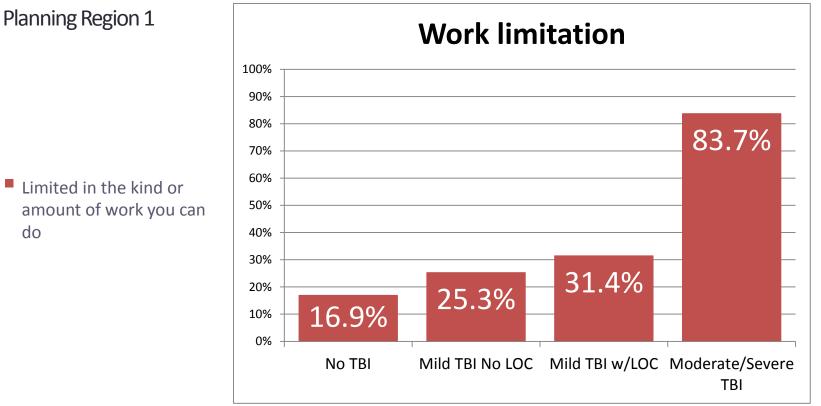
Two or more days of poor physical health reported

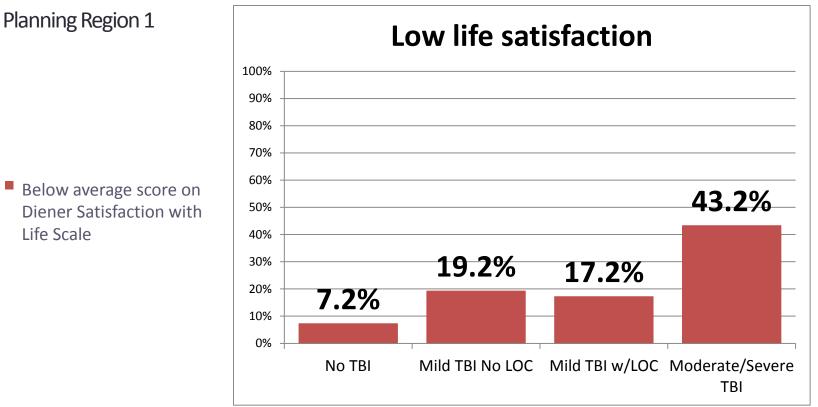
2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 43.0% 30% 29.8% 20% 22.0% 20.8% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI



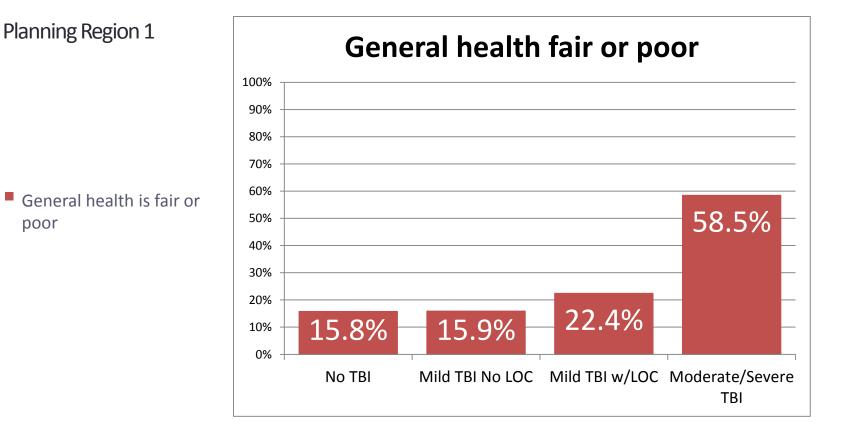


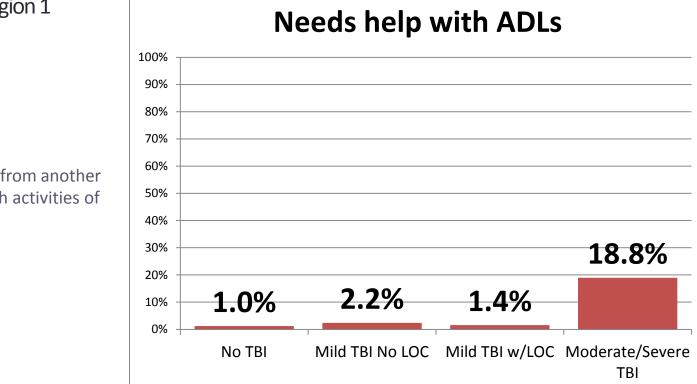
 More than 2 drinks per day for men (1 for women) or 5+ drinks in one sitting





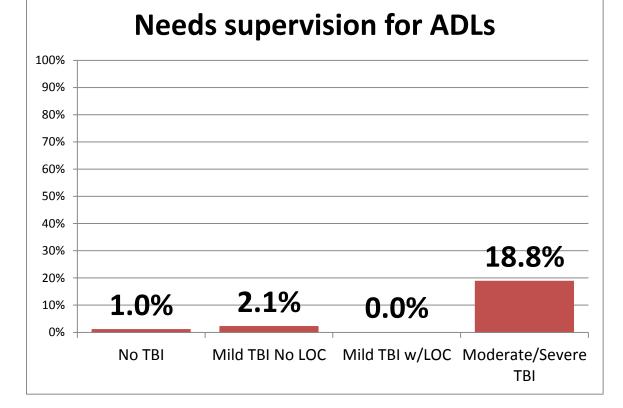
Diener Satisfaction with Life Scale

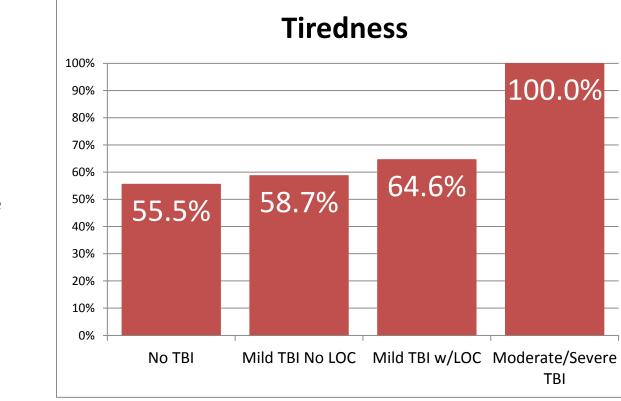




Need help from another person with activities of daily living

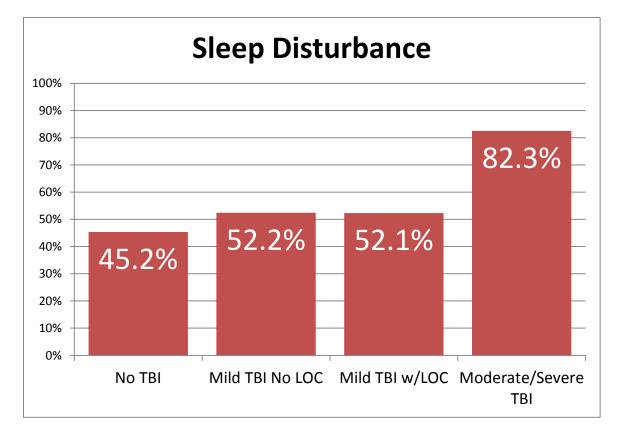
Need to be reminded or supervised when doing activities of daily living

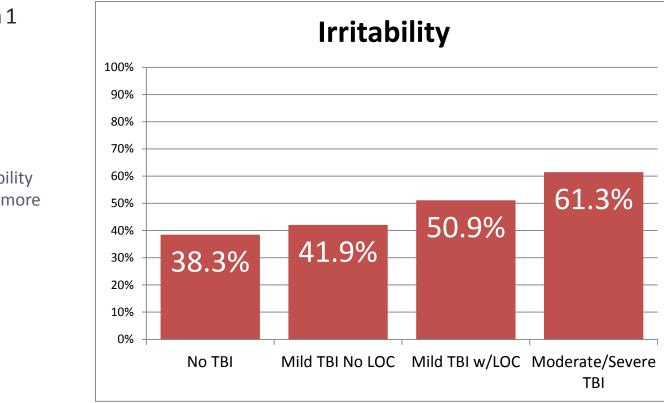




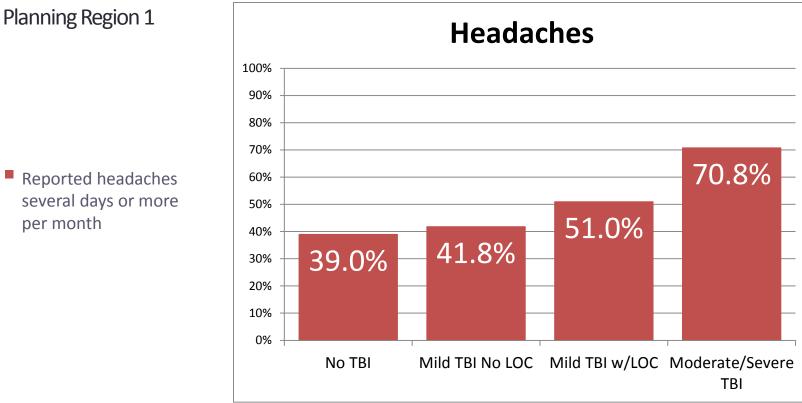
Reported tiredness several days or more per month

Reported sleep disturbance several days or more per month



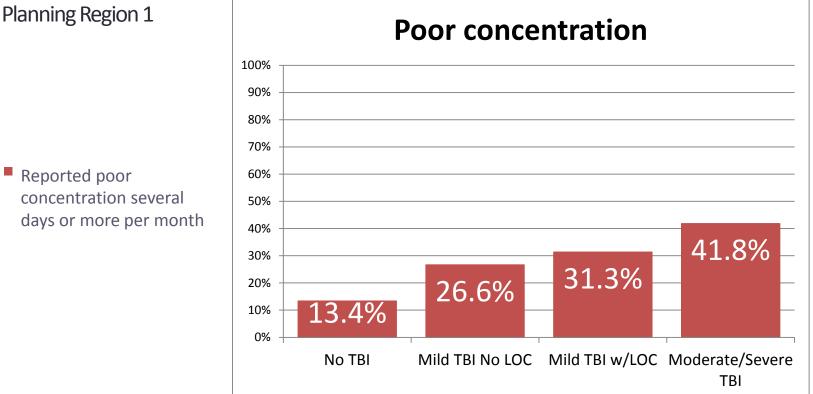


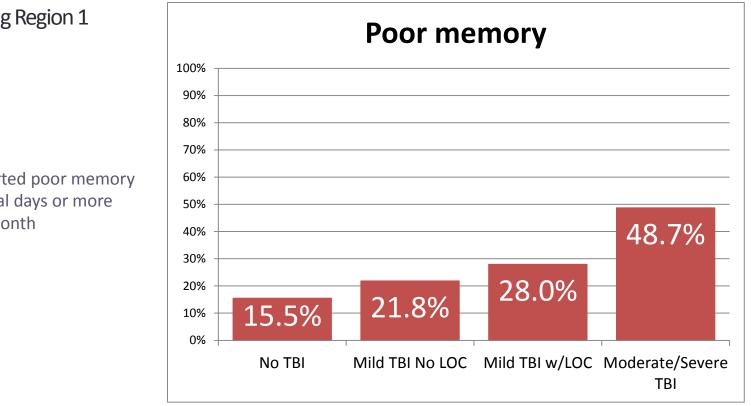
Reported irritability several days or more per month



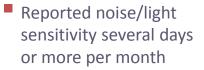
Reported headaches several days or more

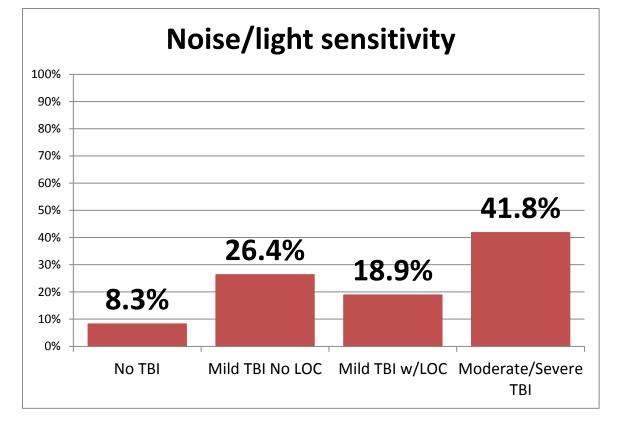
per month

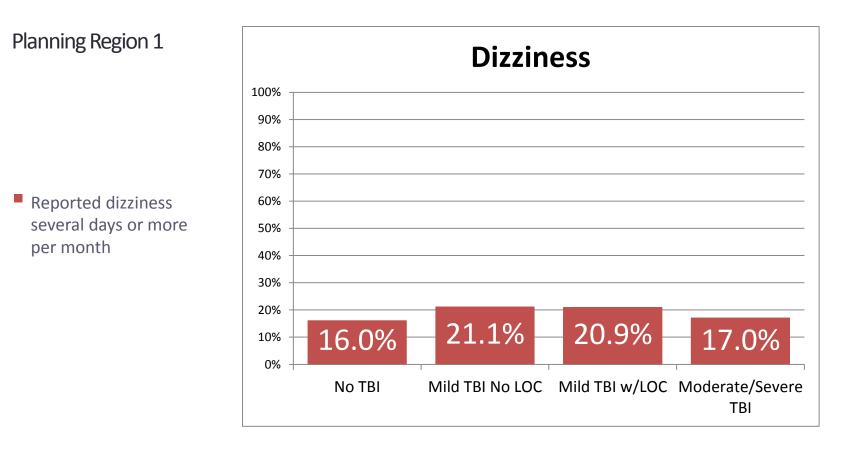


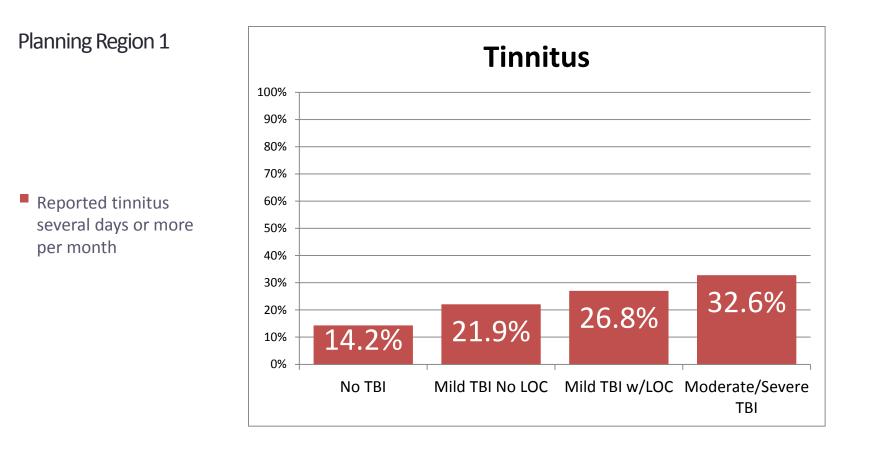


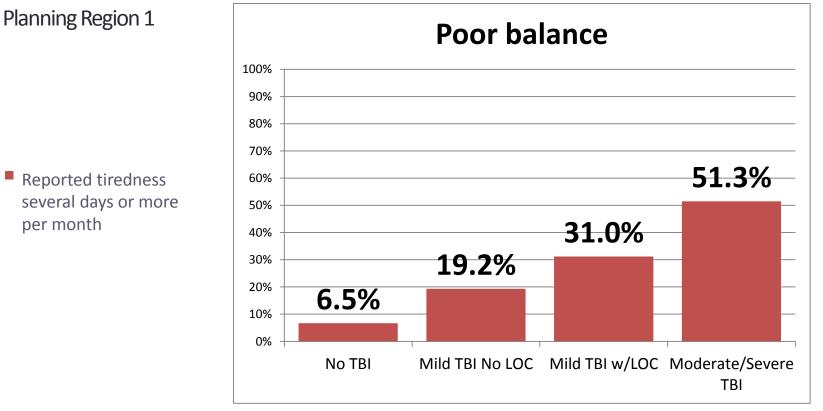
Reported poor memory several days or more per month



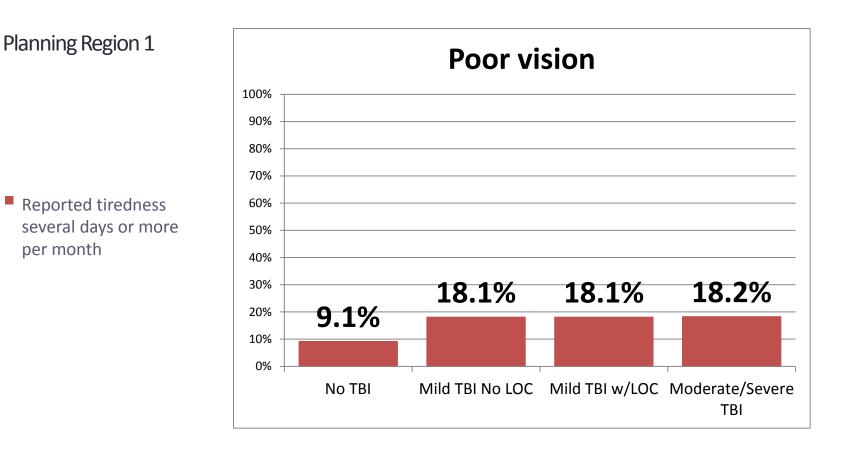


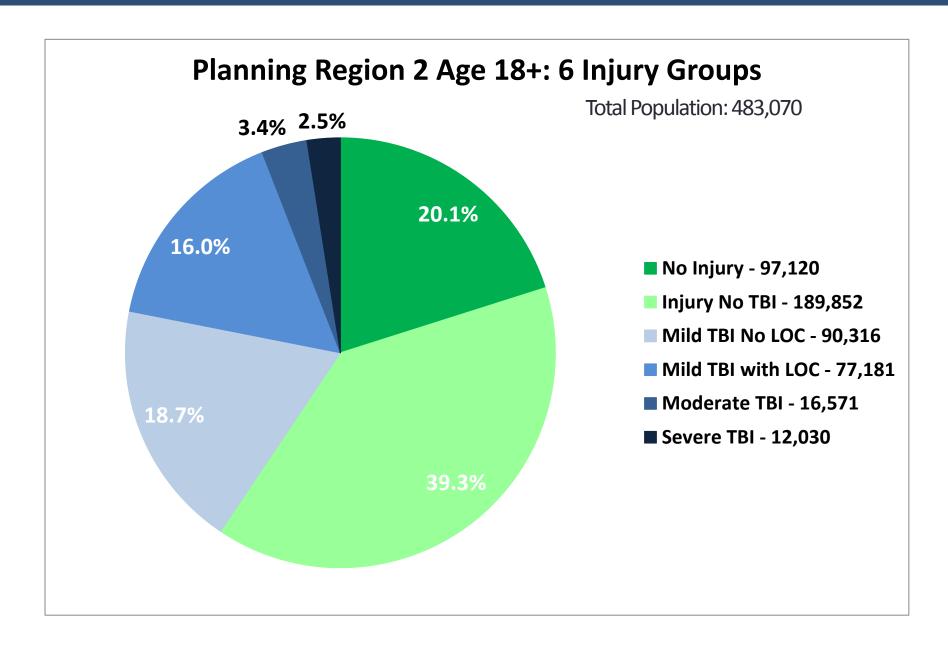


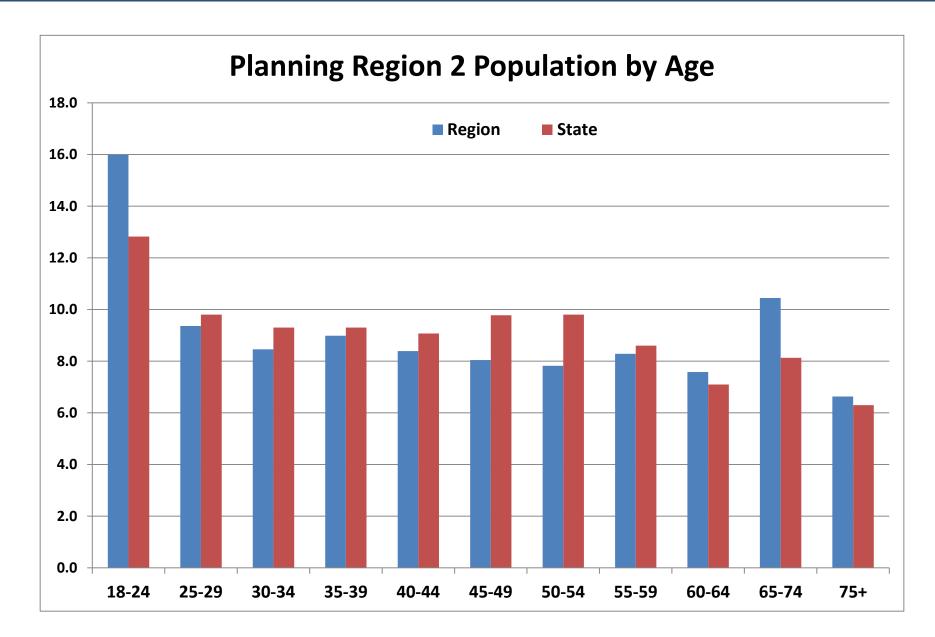


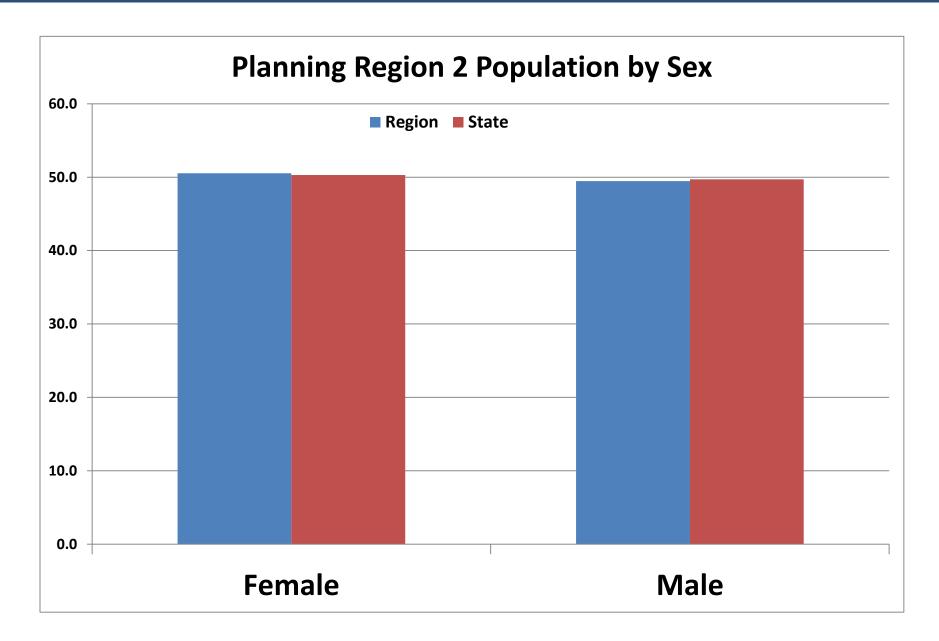


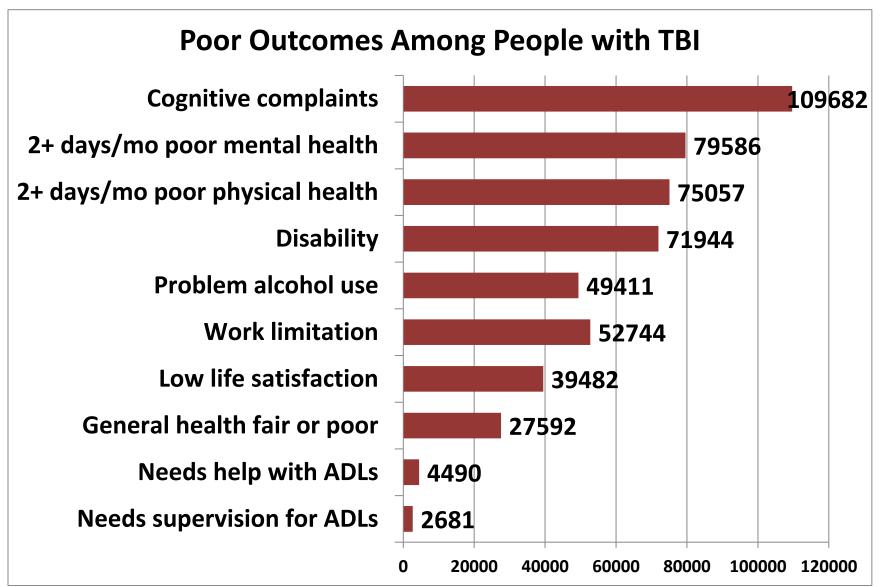
Reported tiredness several days or more per month

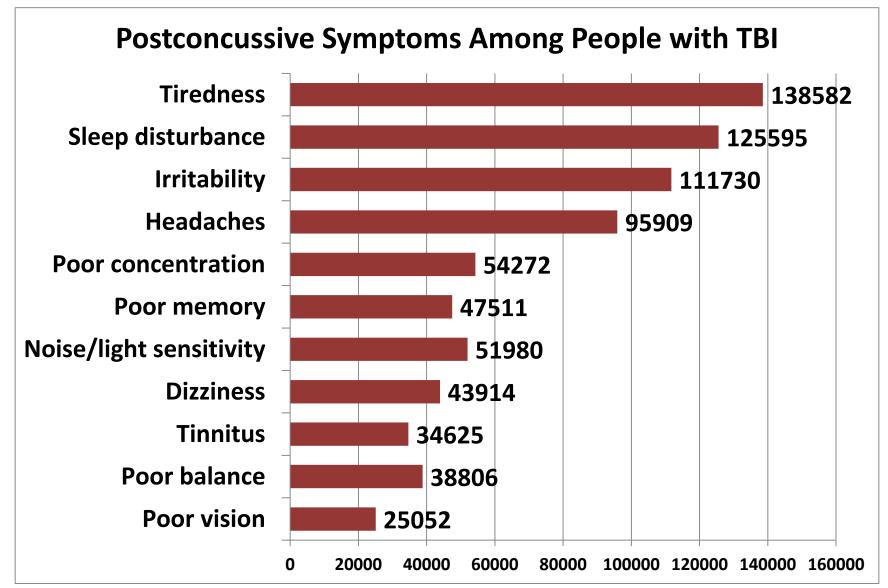




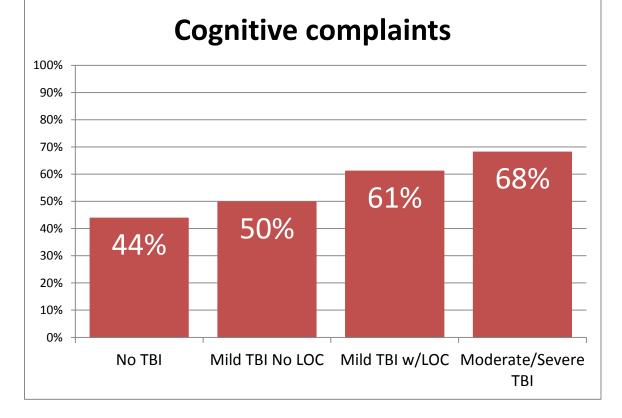








Alertness Behavior Subscale of the Sickness Impact Profile – endorsement of any of 16 items like "I have difficulty reasoning and solving problems."



Two or more days of poor mental health reported

100% 90% 80% 70% 60% 50% 47% 40% 42% 38% 30%

Mild TBI No LOC

Mild TBI w/LOC Moderate/Severe

TBI

29%

No TBI

20% 10%

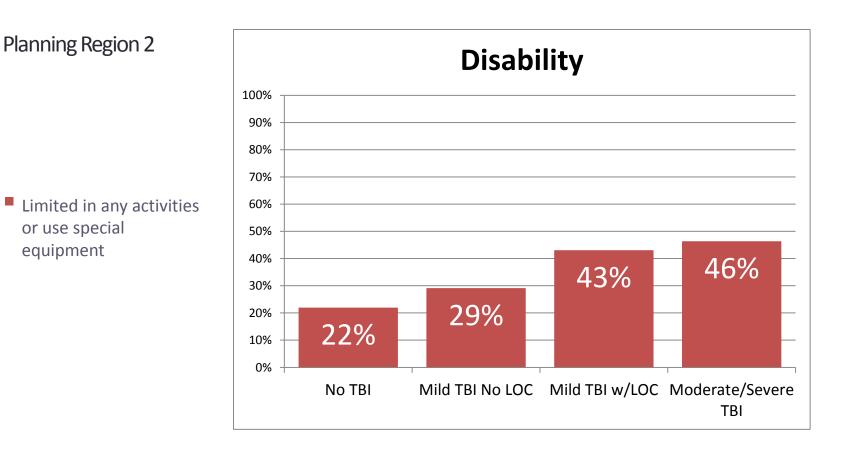
0%

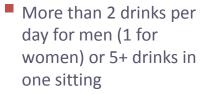
2+ days/mo poor mental health

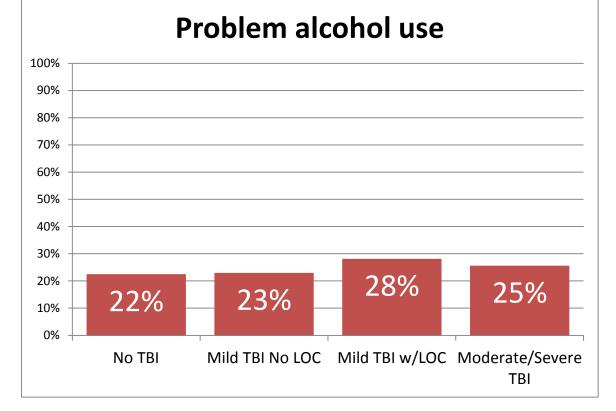
Two or more days of poor physical health reported

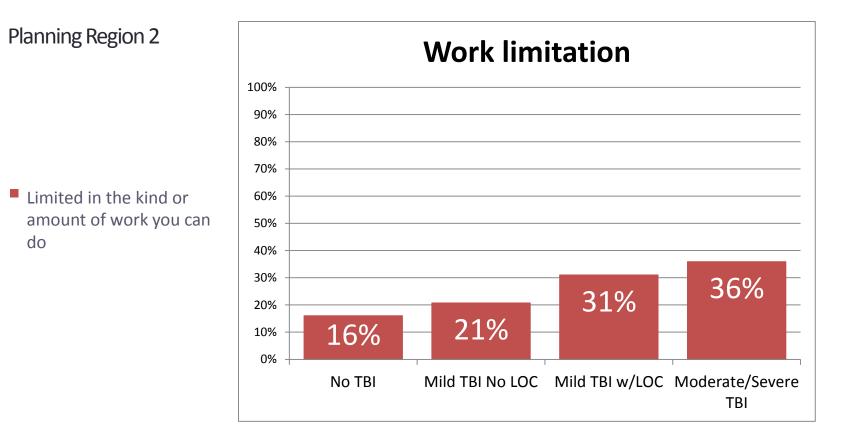
2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 40% 39% 38% 30% 20% 23% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC

TBI

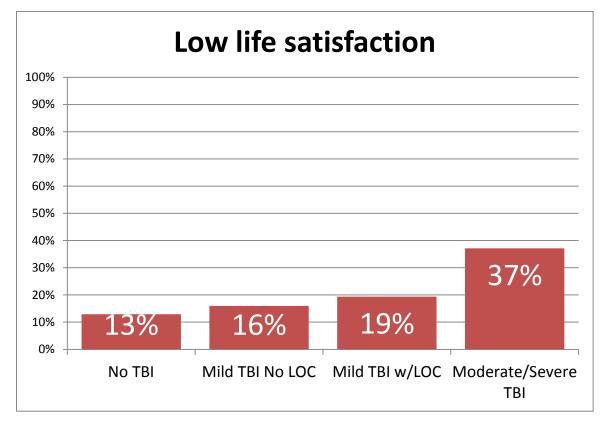


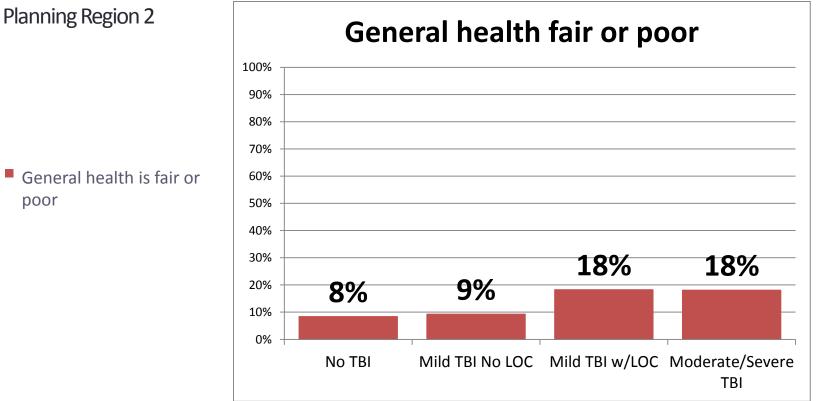


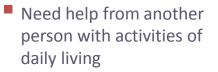








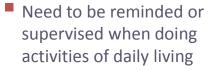




Needs help with ADLs 100% 90% 80% 70% 60% 50% 40% 30% 20% 6% 1% 2% 2% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

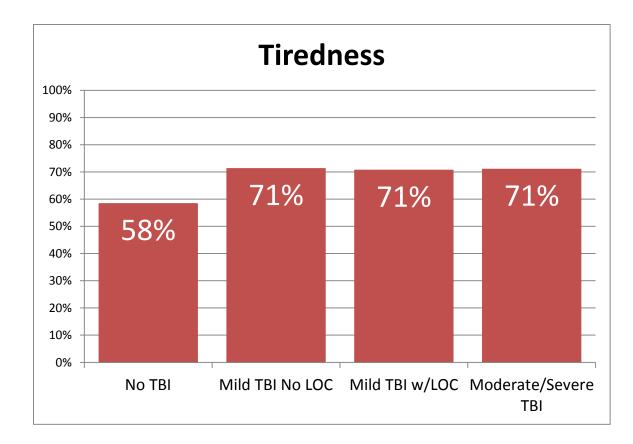
68

Planning Region 2



Needs supervision for ADLs 100% 90% 80% 70% 60% 50% 40% 30% 20% 3% 1% 1% 1% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

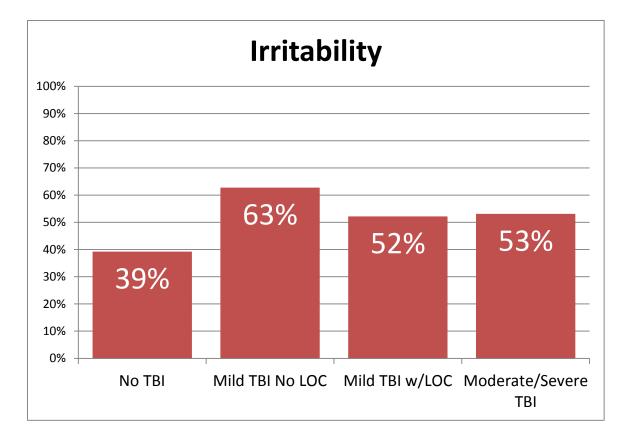
Reported tiredness several days or more per month

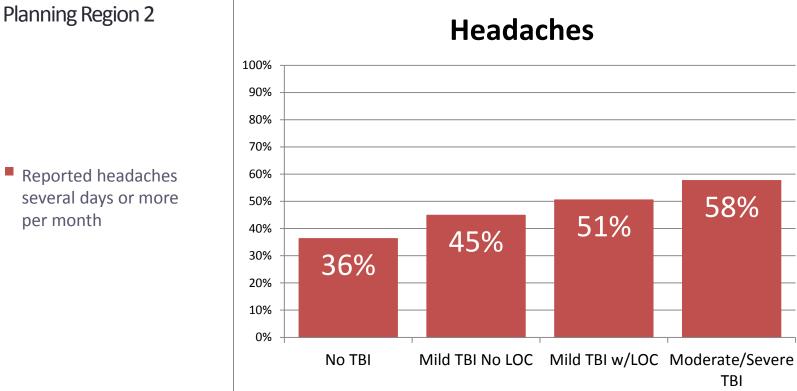


Reported sleep disturbance several days or more per month

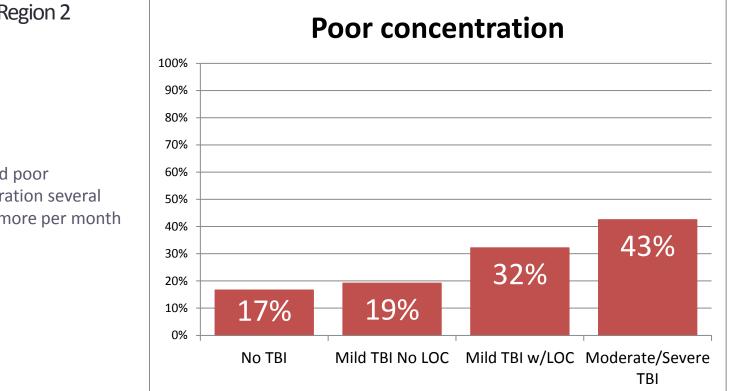
Sleep Disturbance 100% 90% 80% 70% 71% 60% 66% 60% 50% 50% 40% 30% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Reported irritability several days or more per month



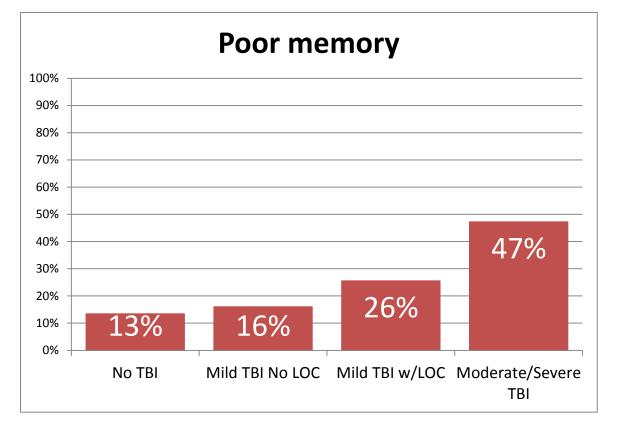


Reported headaches several days or more per month



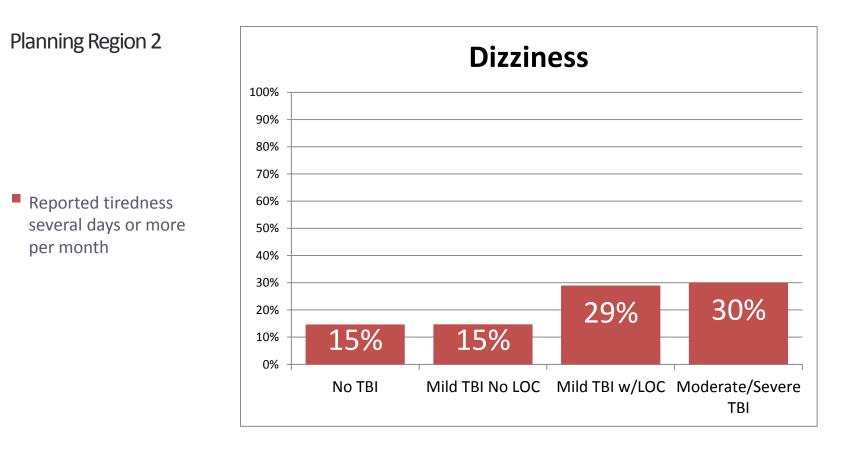
Reported poor concentration several days or more per month

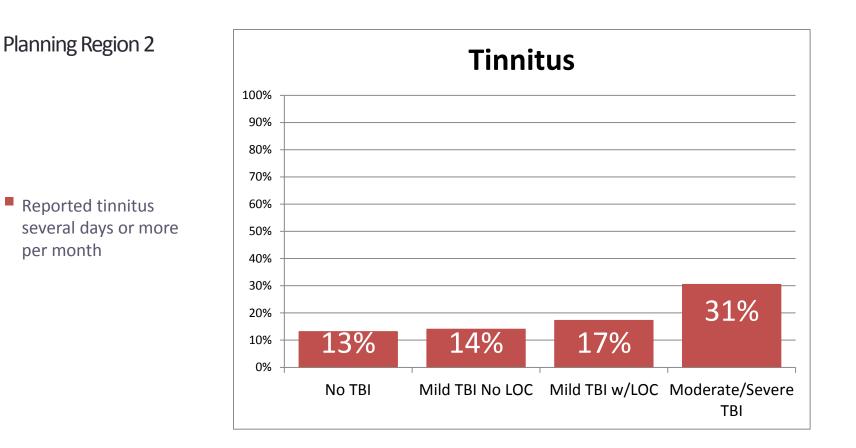


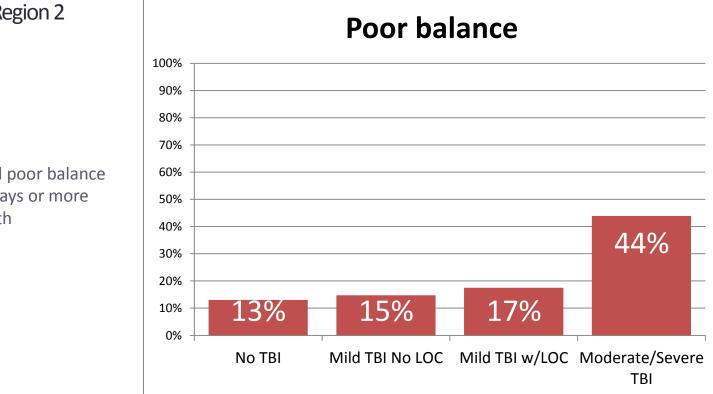


Reported noise/light sensitivity several days or more per month

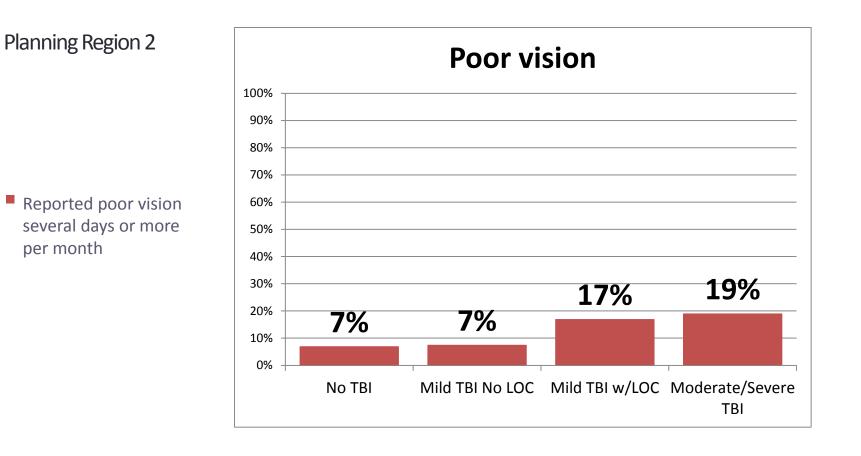
Noise/light sensitivity 100% 90% 80% 70% 56% 60% 50% 40% 24% 19% 30% 11% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

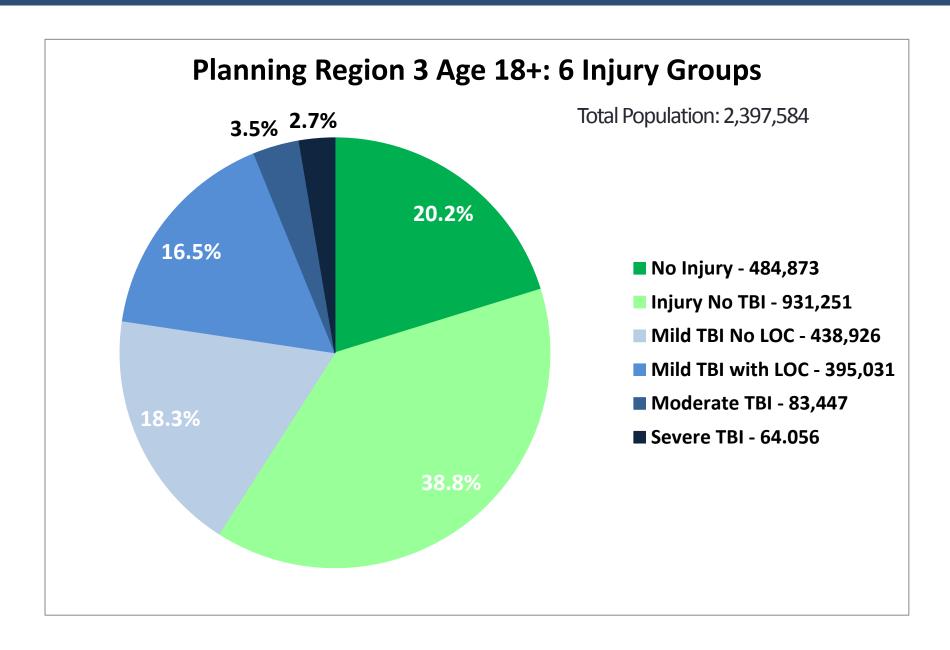


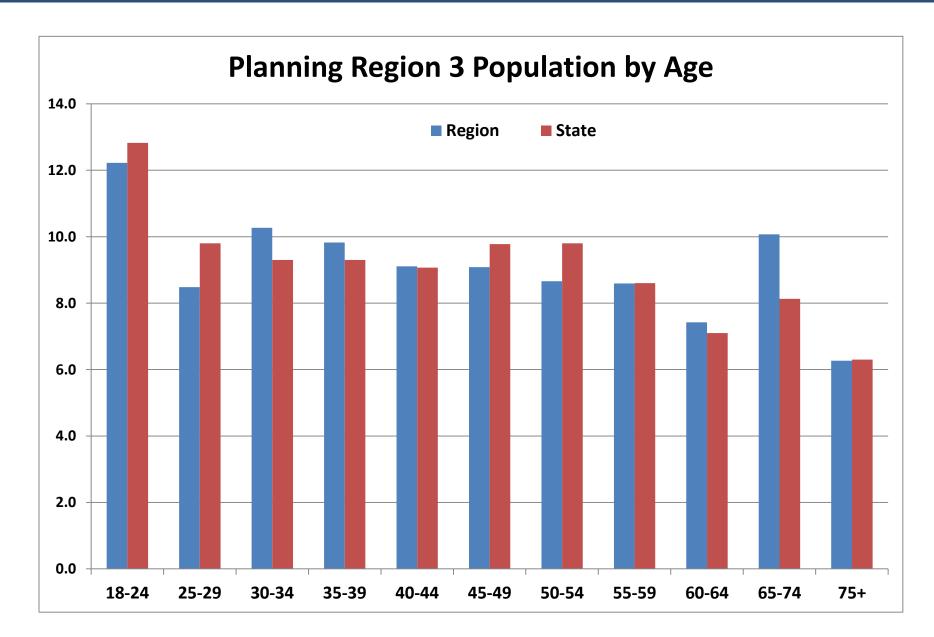


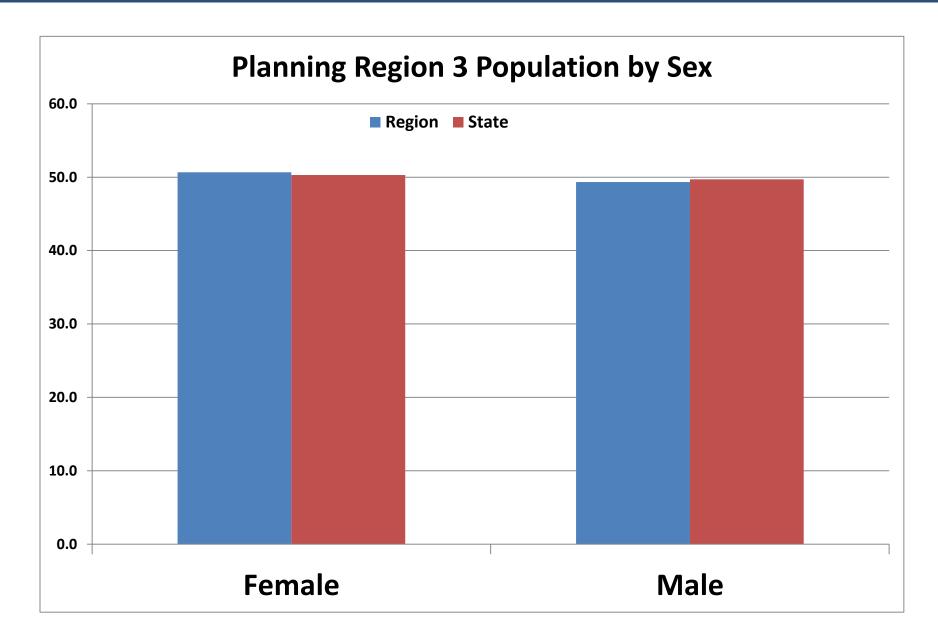


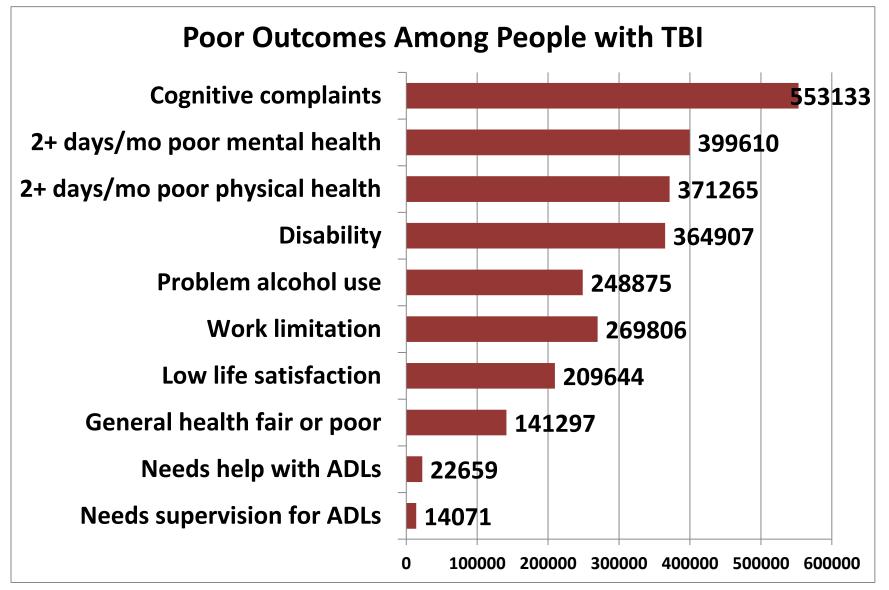
Reported poor balance several days or more per month

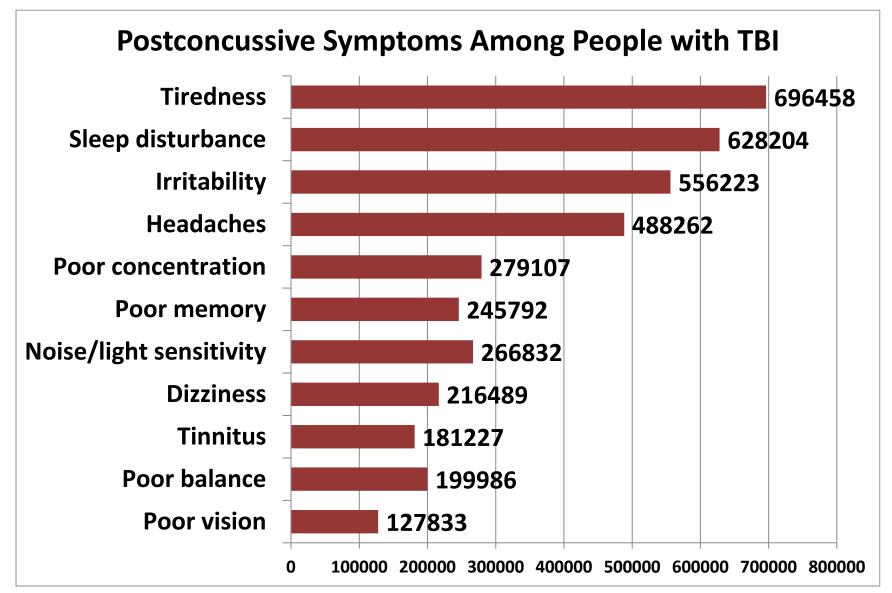




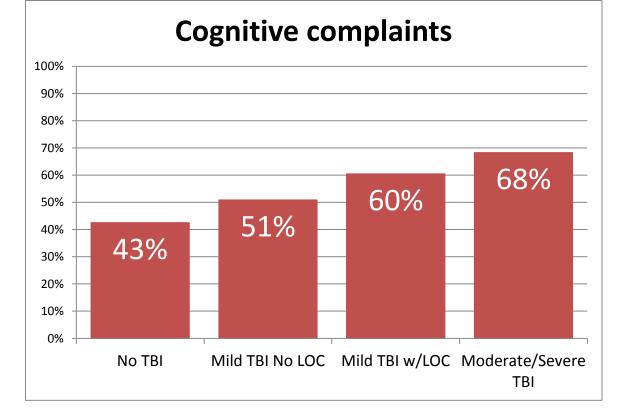








 Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile

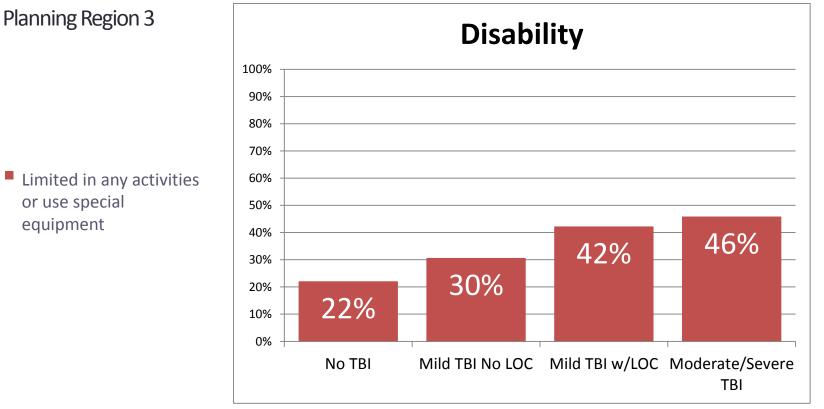


Two or more days of poor mental health reported

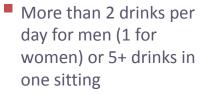
2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 48% 40% 40% 40% 30% 29% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Two or more days of poor physical health reported

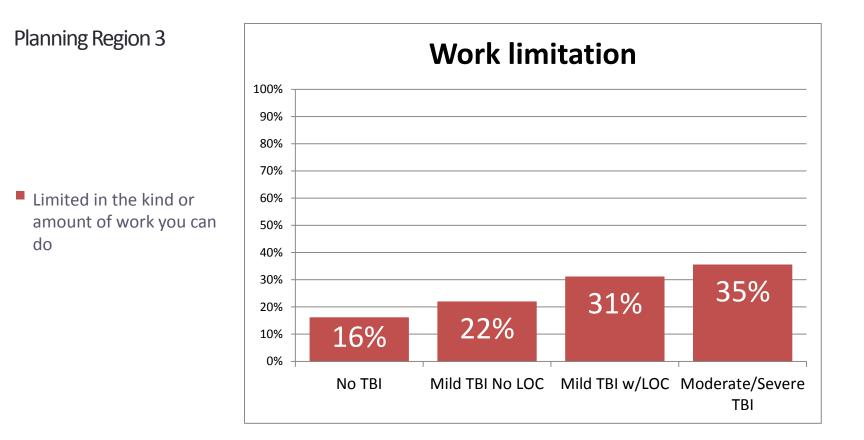
2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 43% 38% 30% 36% 20% 23% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI



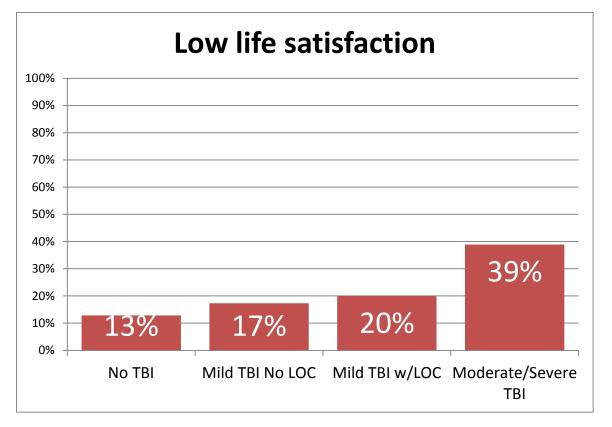
Limited in any activities or use special

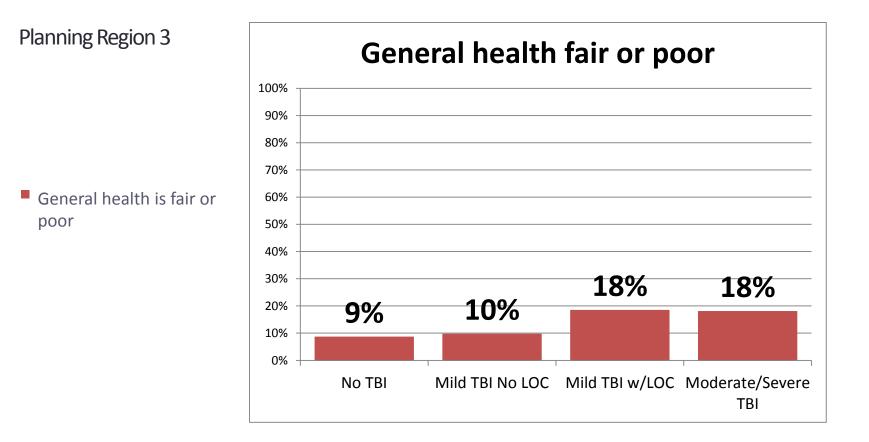


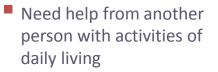
Problem alcohol use 100% 90% 80% 70% 60% 50% 40% 30% 27% 20% 26% 23% 22% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI







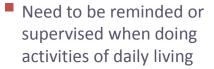




Needs help with ADLs 100% 90% 80% 70% 60% 50% 40% 30% 20% 5% 2% 2% 1% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

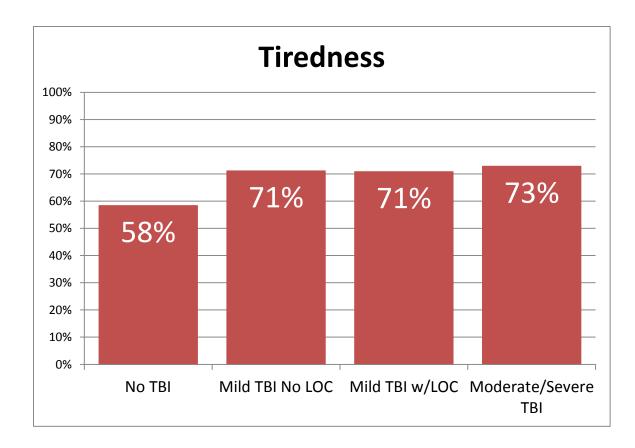
95

Planning Region 3



Needs supervision for ADLs 100% 90% 80% 70% 60% 50% 40% 30% 20% 3% 2% 1% 1% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

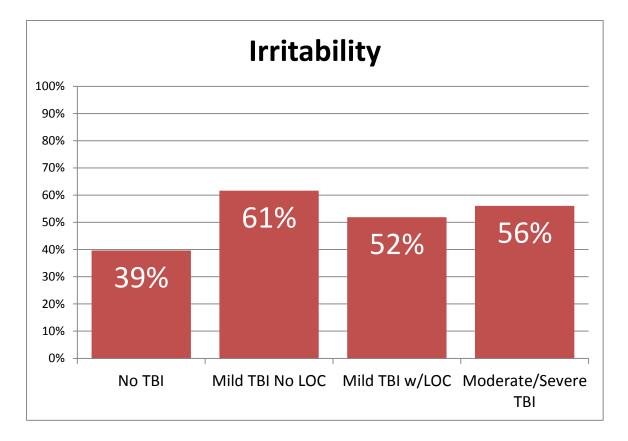
Reported tiredness several days or more per month

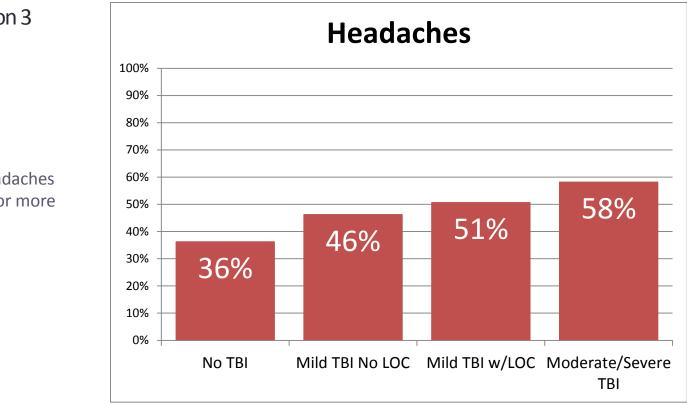


Reported sleep disturbance several days or more per month

Sleep Disturbance 100% 90% 80% 70% 70% 60% 65% 60% 50% 50% 40% 30% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Reported irritability several days or more per month





Reported headaches several days or more per month

Poor concentration 100% 90% 80% 70% 60% 50% 40% 44% 30% 32% 20% 21% 17% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

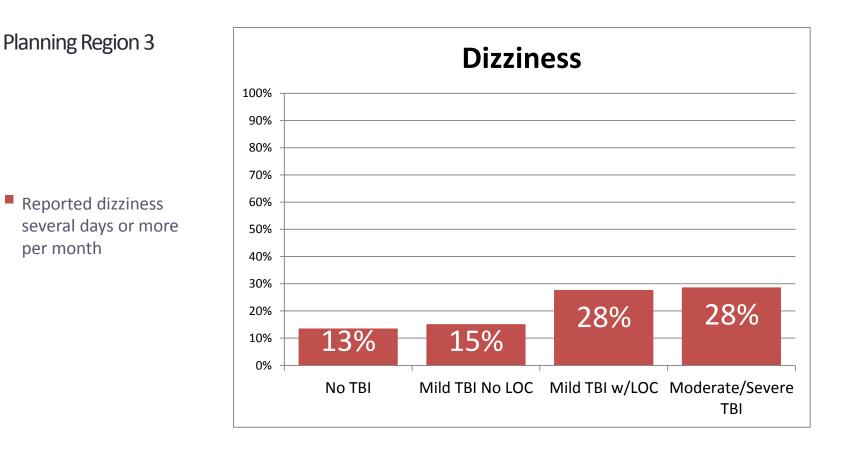
Planning Region 3

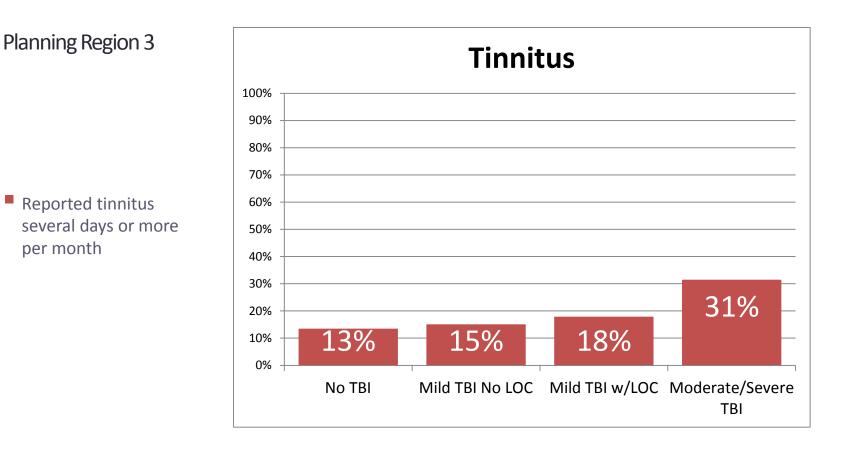
Reported poor concentration several days or more per month

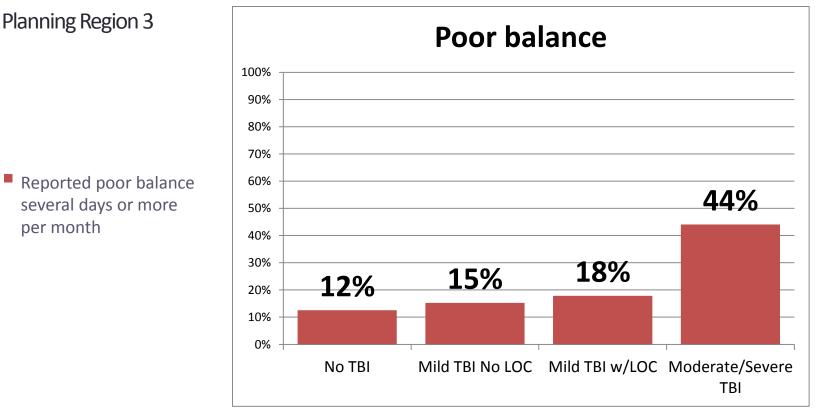
Poor memory 100% 90% 80% 70% Reported poor memory 60% several days or more 50% per month 48% 40% 30% 20% 26% 17% 14% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

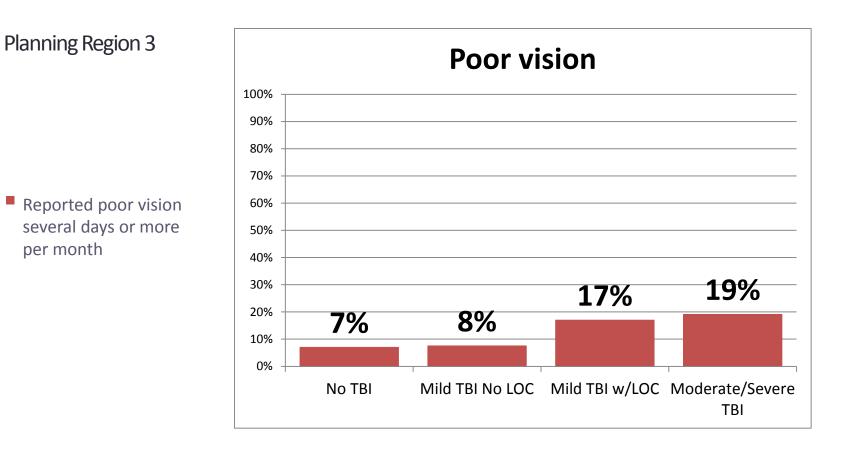
Reported noise/light sensitivity several days or more per month

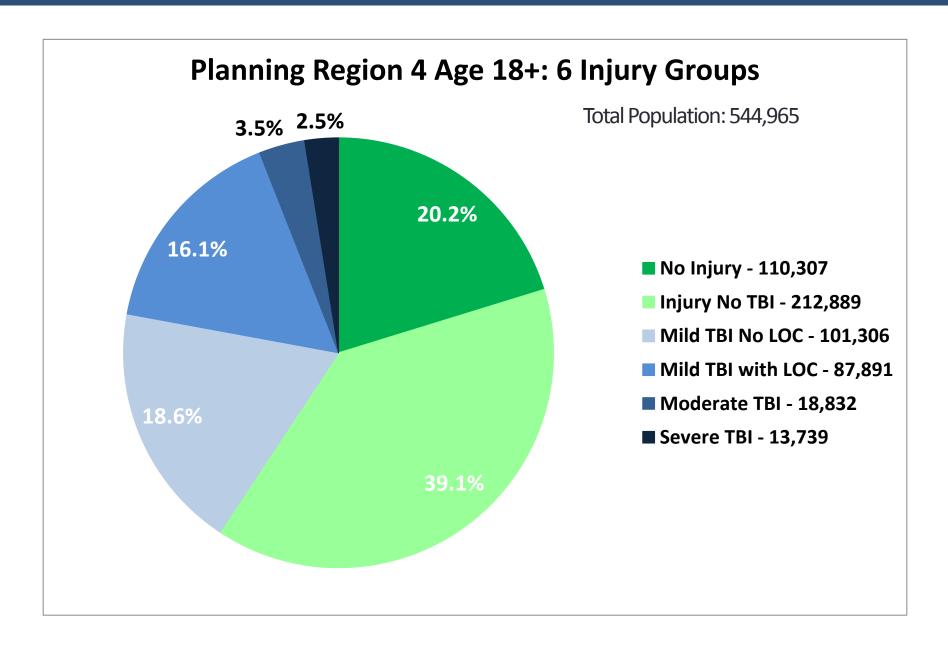
Noise/light sensitivity 100% 90% 80% 70% 56% 60% 50% 40% 25% 20% 30% 12% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

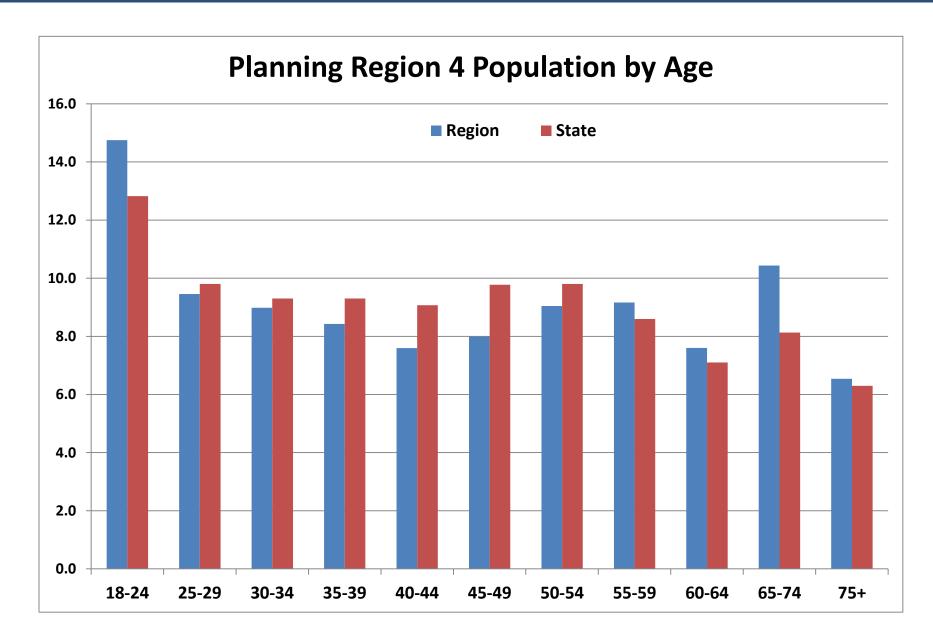


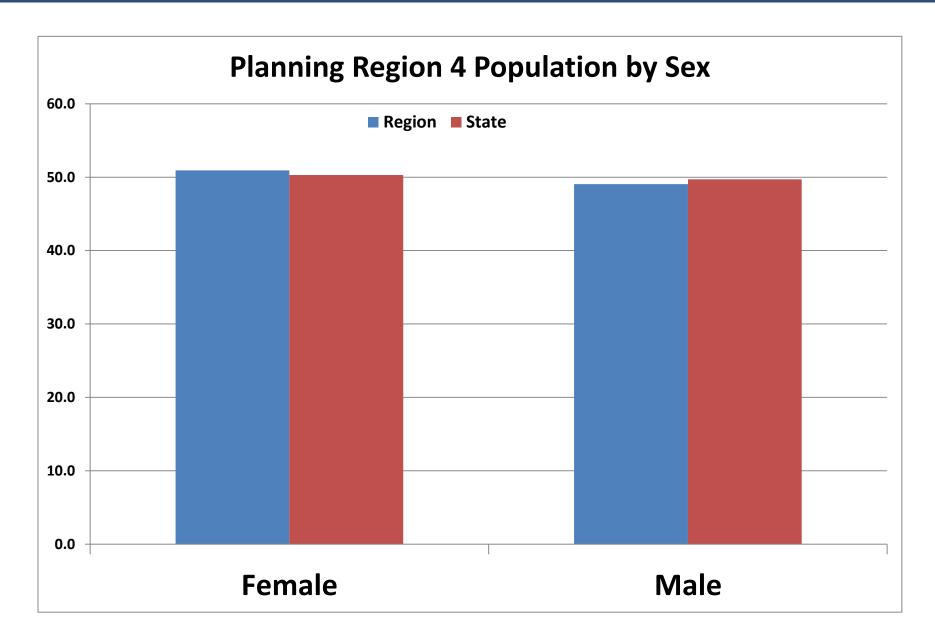


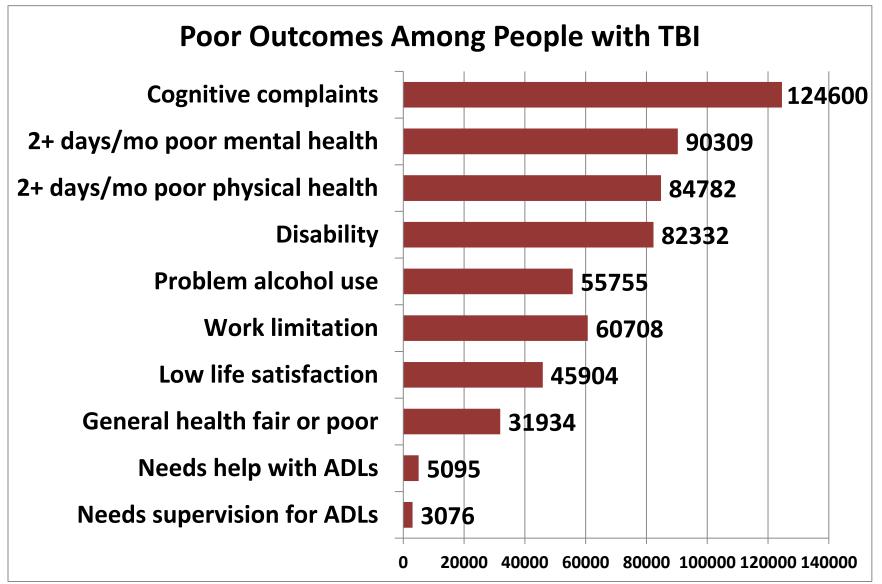


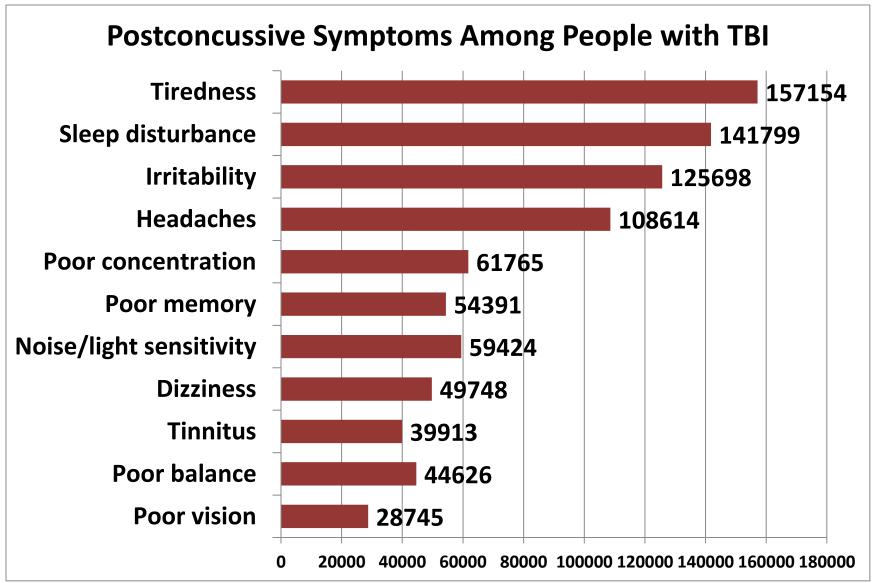




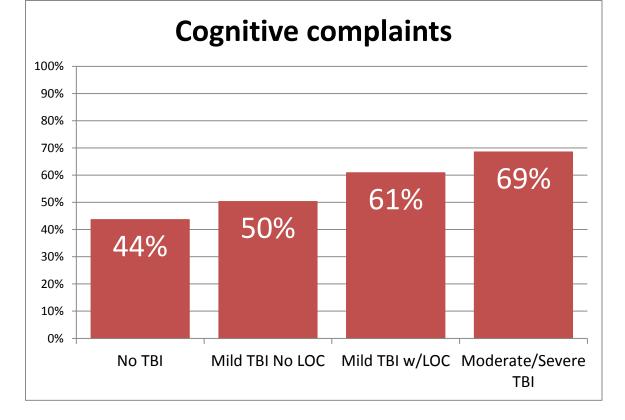








 Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile



Two or more days of poor mental health reported

2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 48% 40% 41% 39% 30% 29% 20% 10% 0%

Mild TBI w/LOC Moderate/Severe

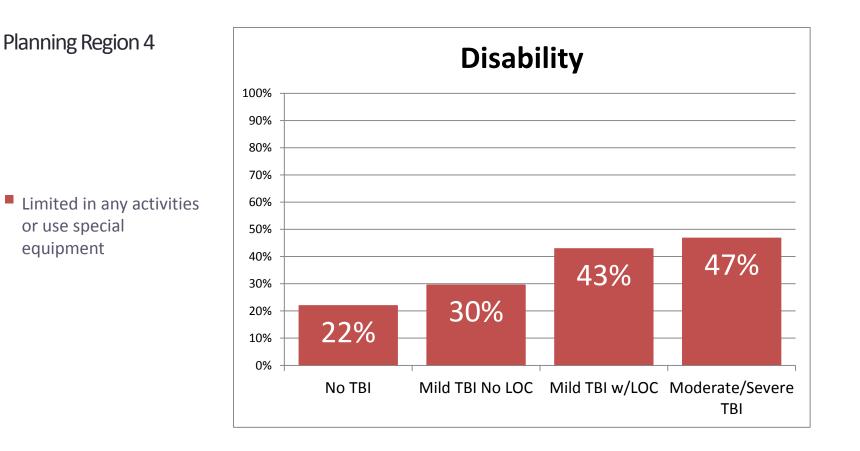
TBI

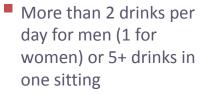
Mild TBI No LOC

No TBI

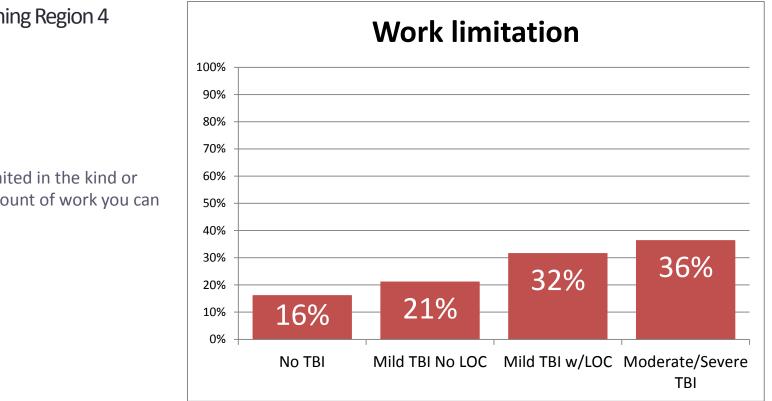
Two or more days of poor physical health reported

2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 41% 38% 38% 30% 20% 23% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI





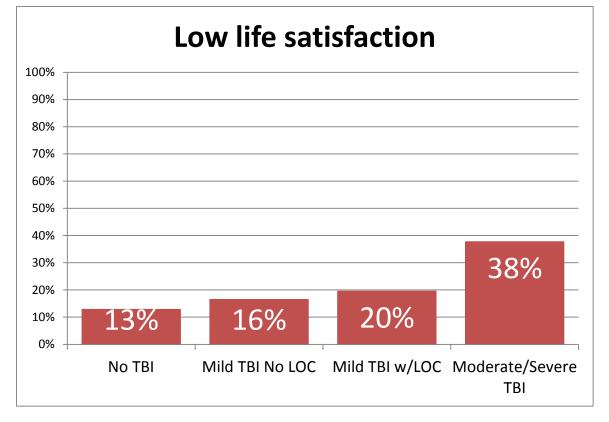
Problem alcohol use 100% 90% 80% 70% 60% 50% 40% 30% 28% 20% 26% 23% 22% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

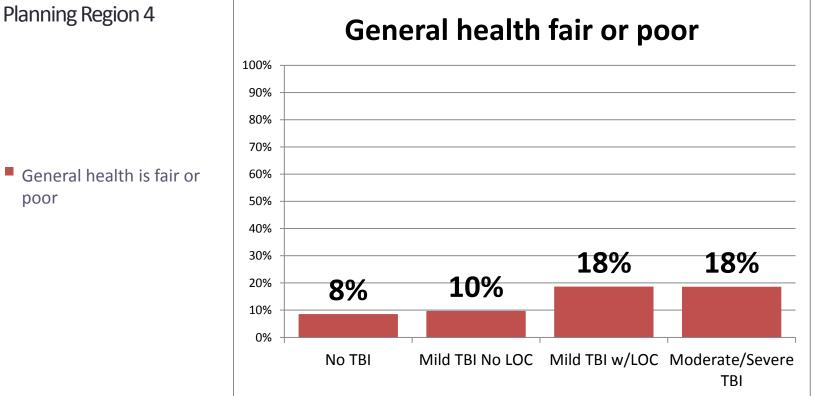


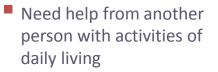
Limited in the kind or amount of work you can do











Needs help with ADLs 100% 90% 80% 70% 60% 50% 40% 30% 20% 6% 2% 2% 1% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Need to be reminded or supervised when doing activities of daily living

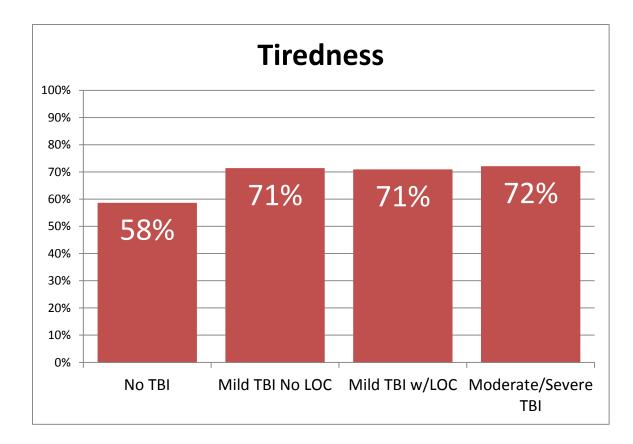
Needs supervision for ADLs 100% 90% 80% 70% 60% 50% 40% 30% 20% 3% 1% 1% 1% 10% 0%

No TBI

Mild TBI No LOC Mild TBI w/LOC Moderate/Severe

TBI

Reported tiredness several days or more per month



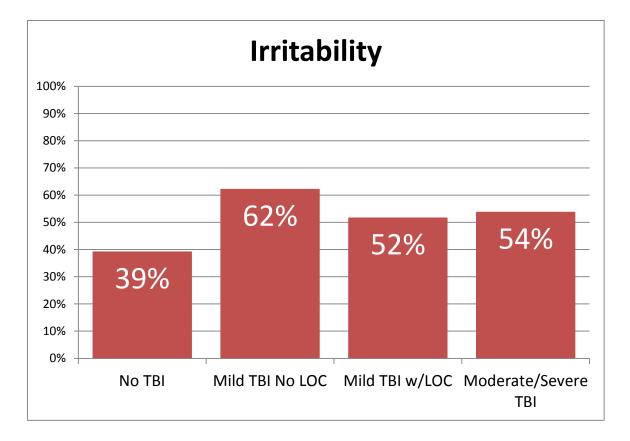
TBI

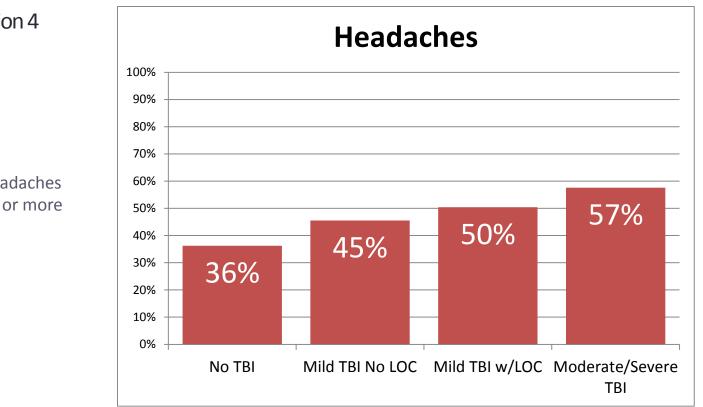
Planning Region 4

Reported sleep disturbance several days or more per month

Sleep Disturbance 100% 90% 80% 70% 70% 60% 66% 60% 50% 50% 40% 30% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI

Reported irritability several days or more per month



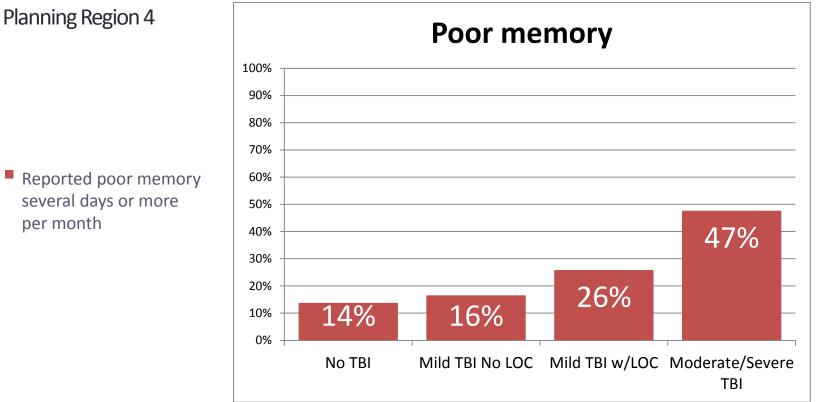


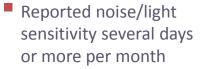
Reported headaches several days or more per month

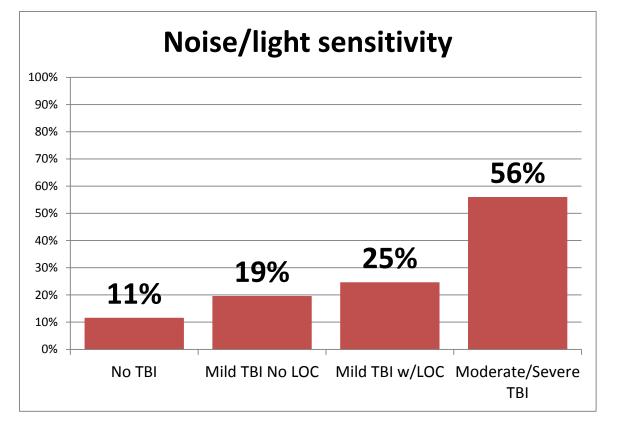
Poor concentration 100% 90% 80% 70% 60% 50% 40% 43% 30% 32% 20% 20% 17% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

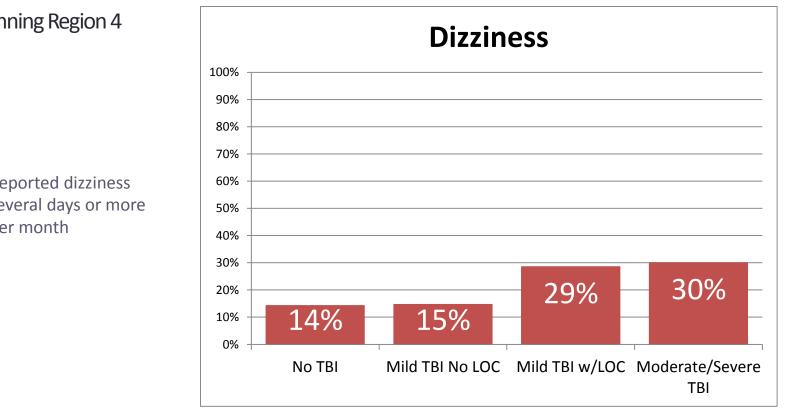
Planning Region 4

Reported poor concentration several days or more per month

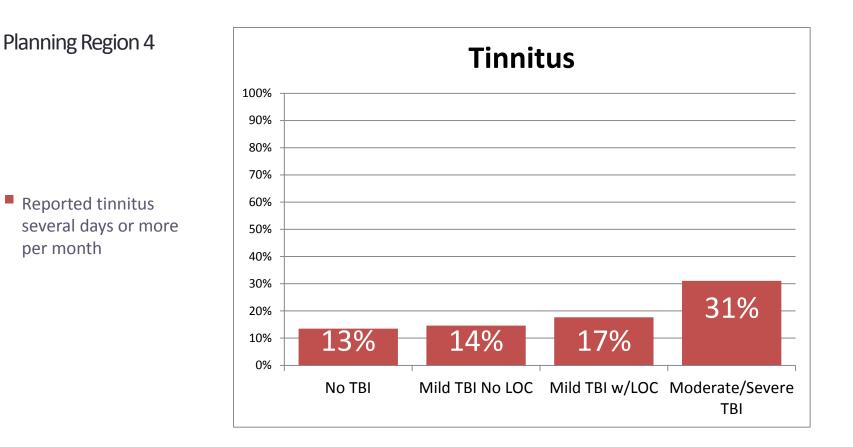


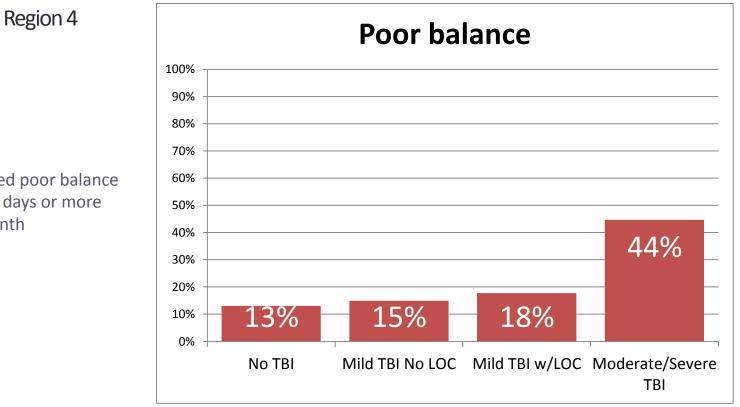




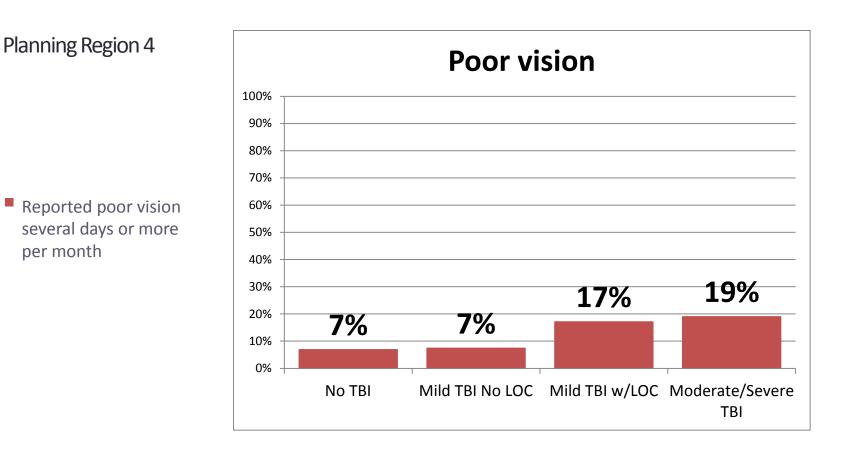


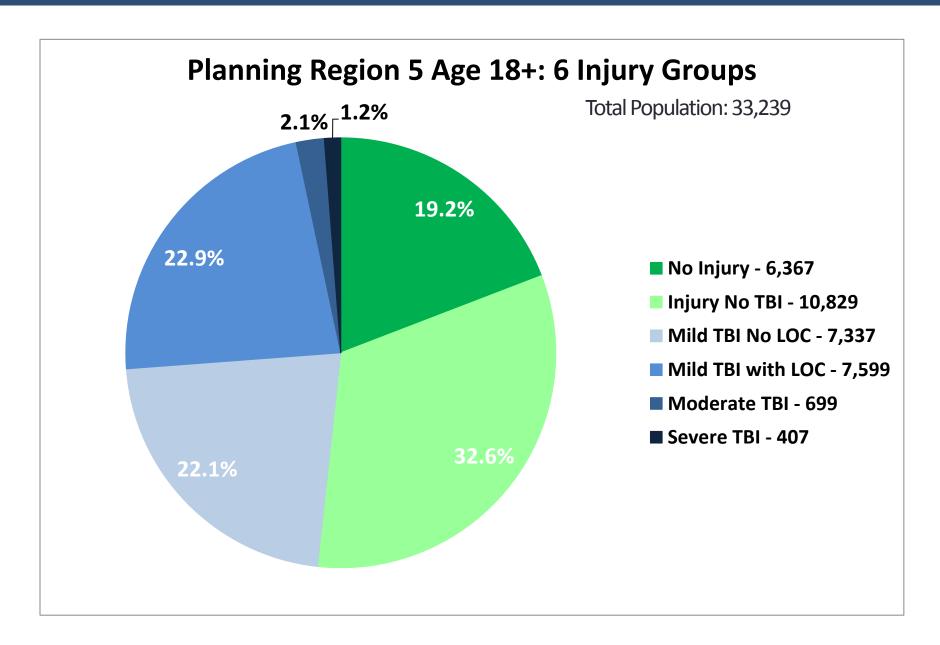
Reported dizziness several days or more per month

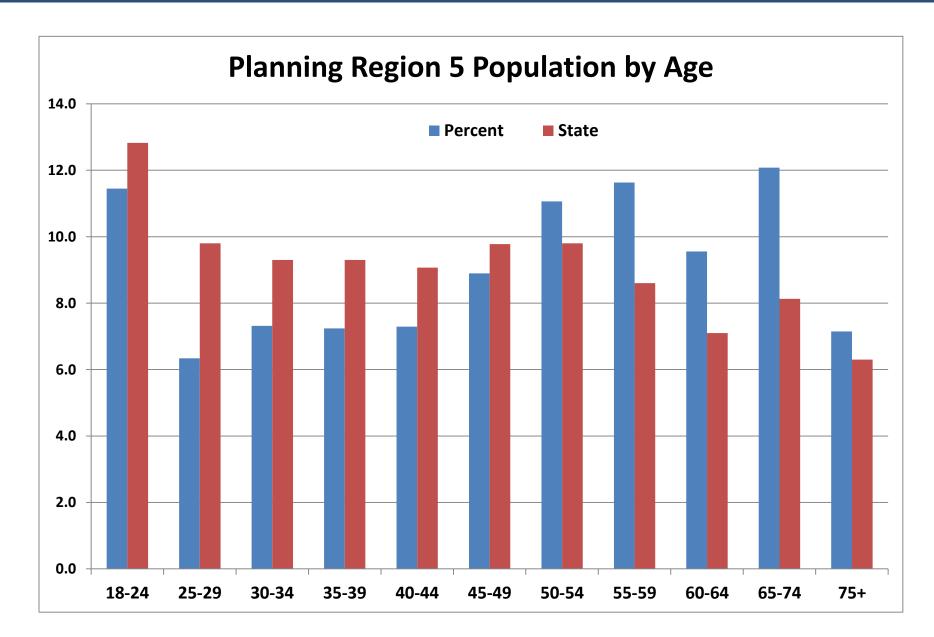


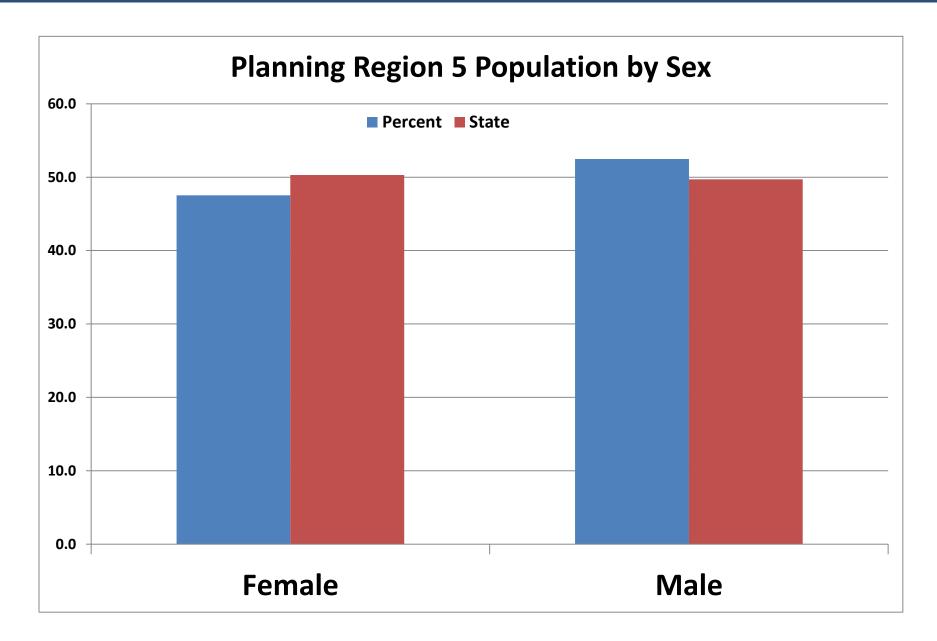


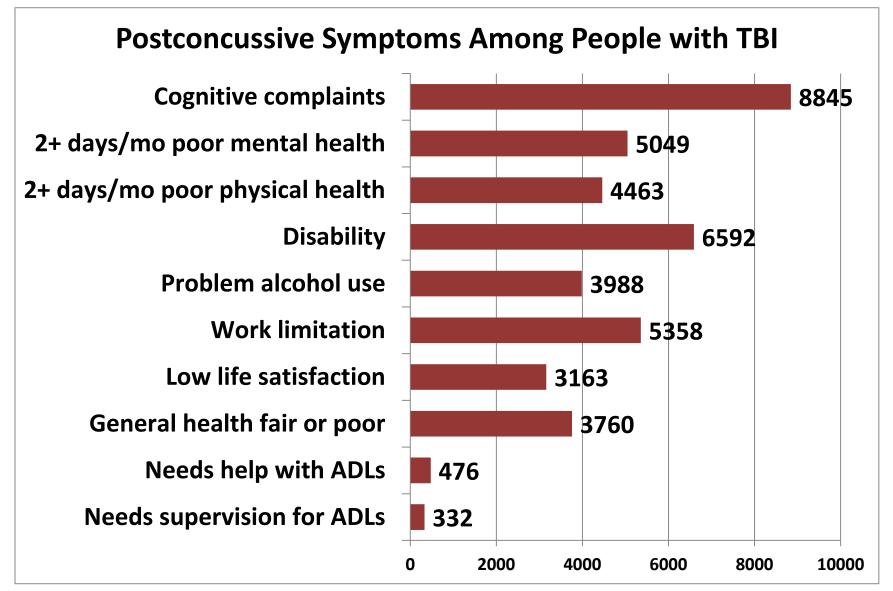
Reported poor balance several days or more per month

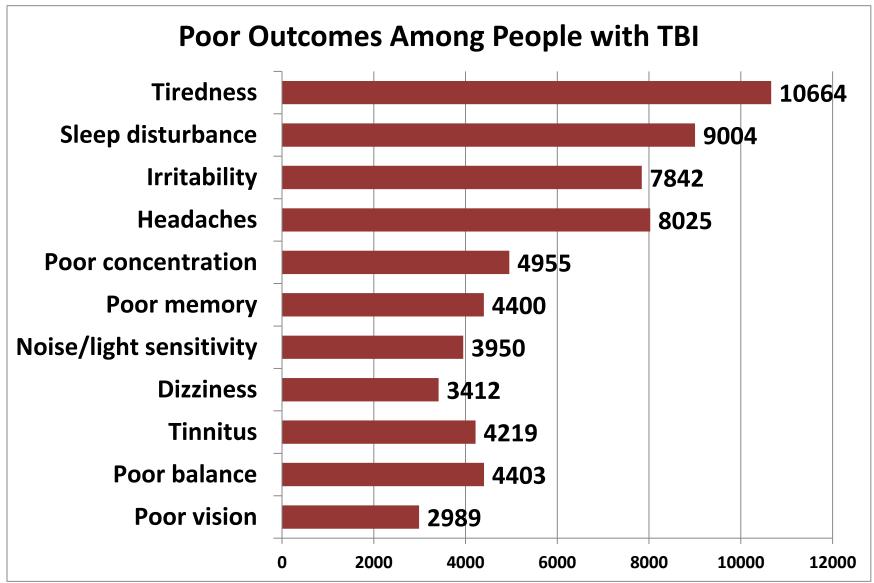




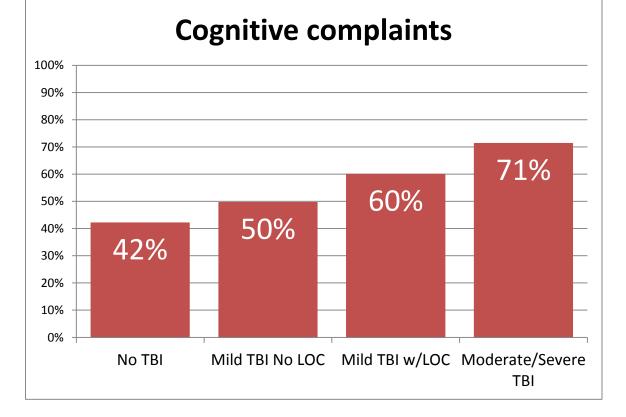








 Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile



TBI

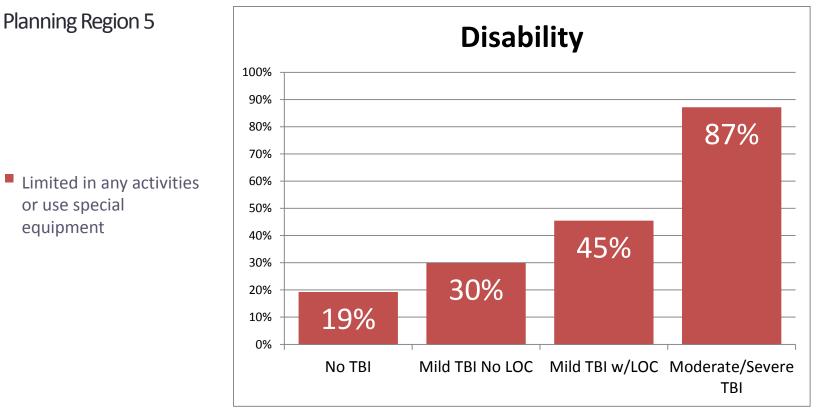
Planning Region 5

Two or more days of poor mental health reported

2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 40% 41% 38% 30% 20% 24% 22% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI

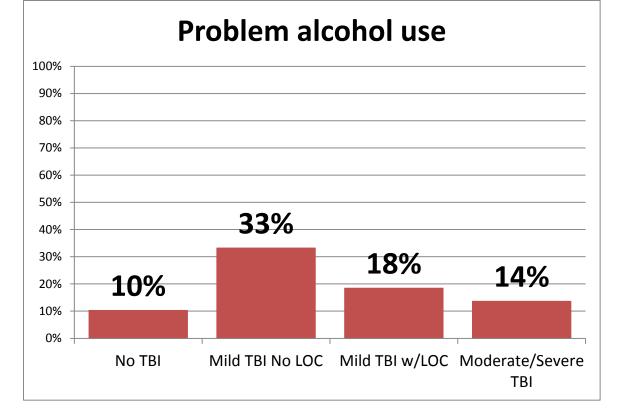
Two or more days of poor physical health reported

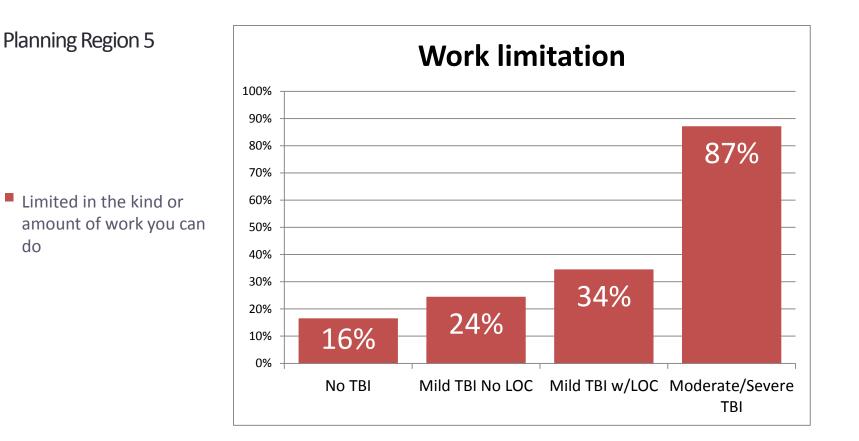
2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 41% 30% 32% 20% 24% 21% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI



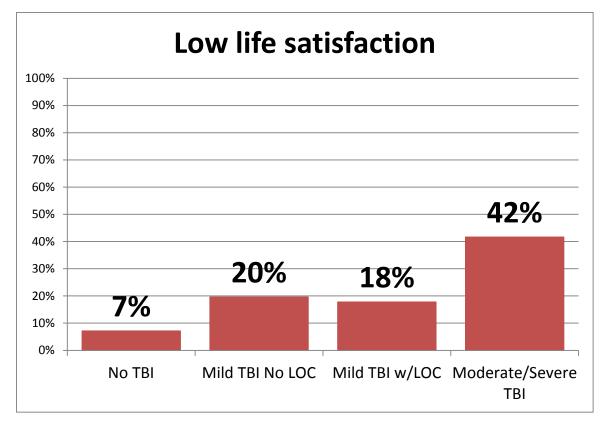
Limited in any activities or use special

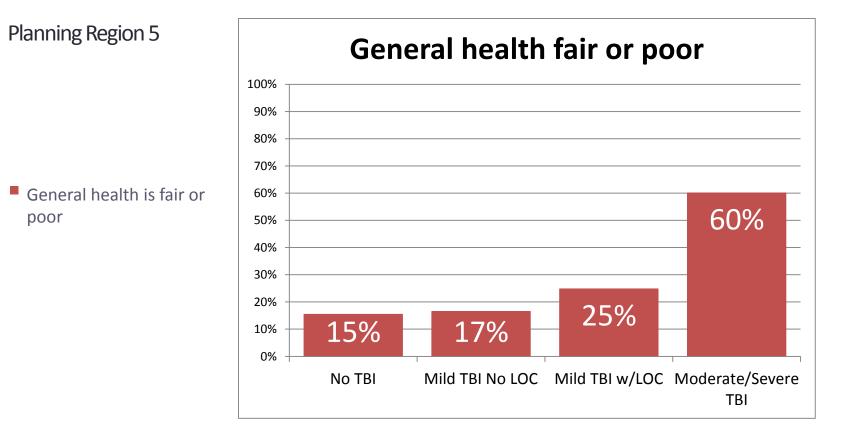
More than 2 drinks per day for men (1 for women) or 5+ drinks in one sitting

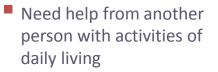








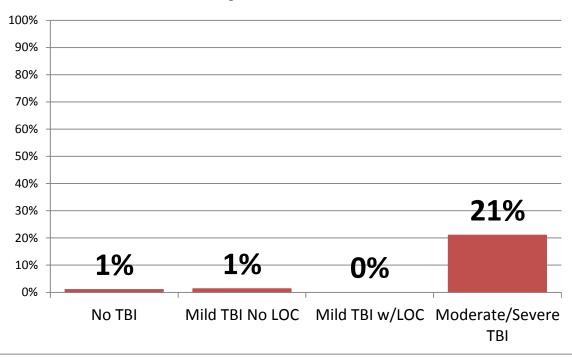




Needs help with ADLs 100% 90% 80% 70% 60% 50% 40% 21% 30% 20% 1% 2% 1% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Need to be reminded or supervised when doing activities of daily living

Needs supervision for ADLs

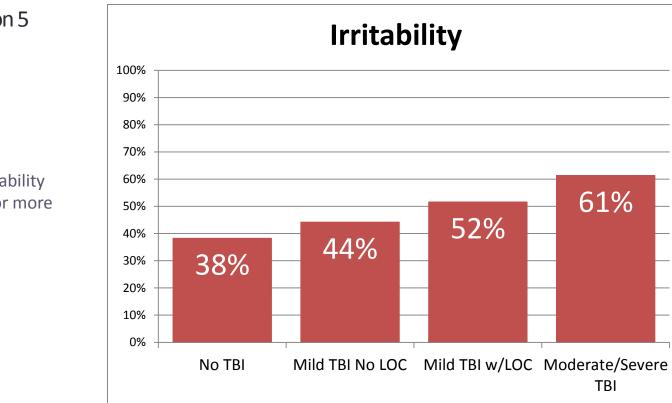


Reported tiredness several days or more per month

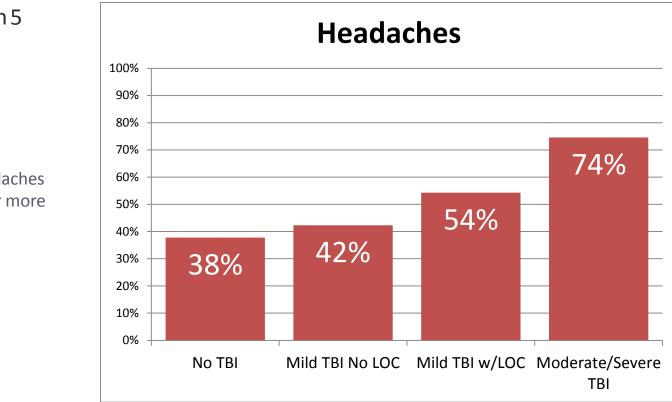
Tiredness 100% 100% 90% 80% 70% 60% 66% 61% 50% 54% 40% 30% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Reported sleep disturbance several days or more per month

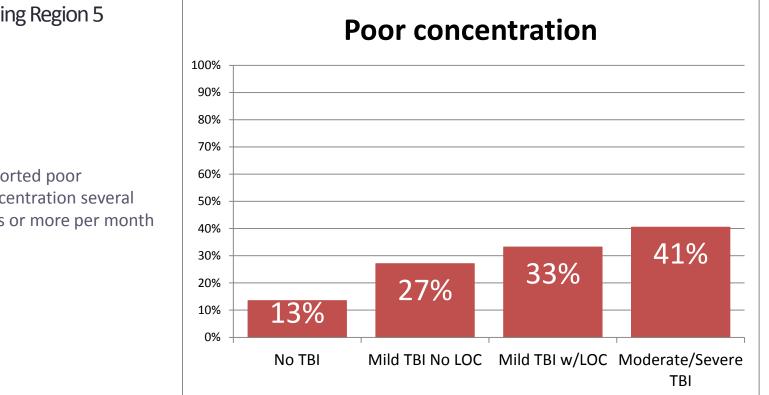
Sleep Disturbance 100% 90% 80% 85% 70% 60% 50% 56% 55% 40% 44% 30% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI



Reported irritability several days or more per month



Reported headaches several days or more per month

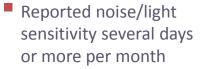


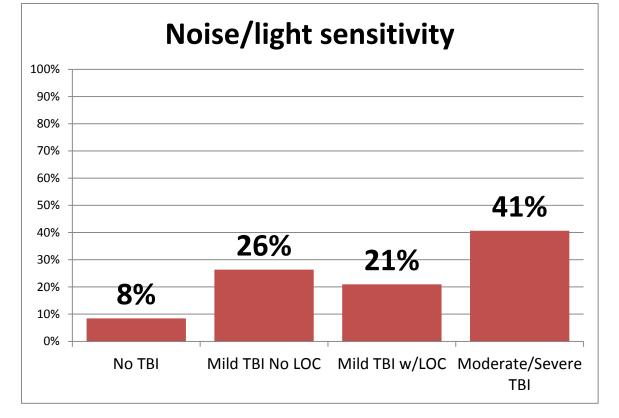
Reported poor concentration several days or more per month

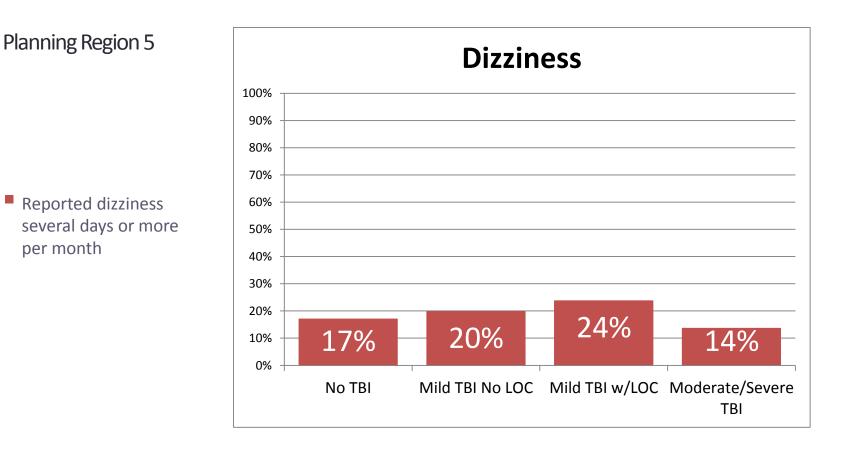
Poor memory 100% 90% 80% 70% 60% 50% 47% 40% 30% 30% 20% 22% 16% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

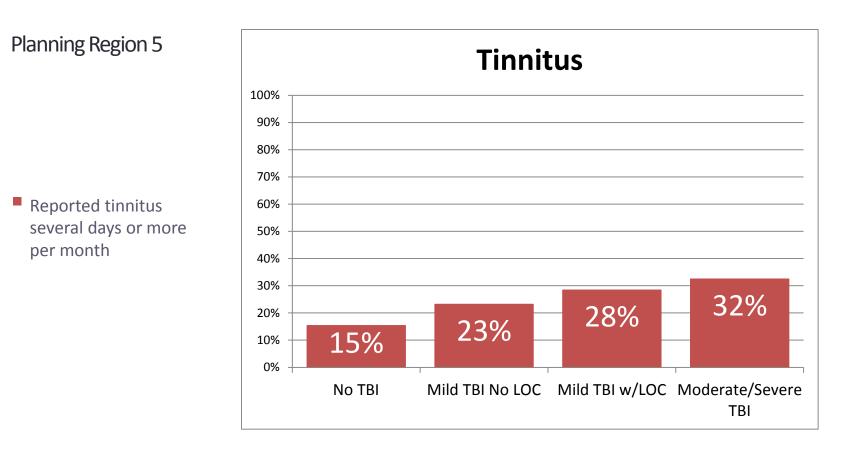
Planning Region 5

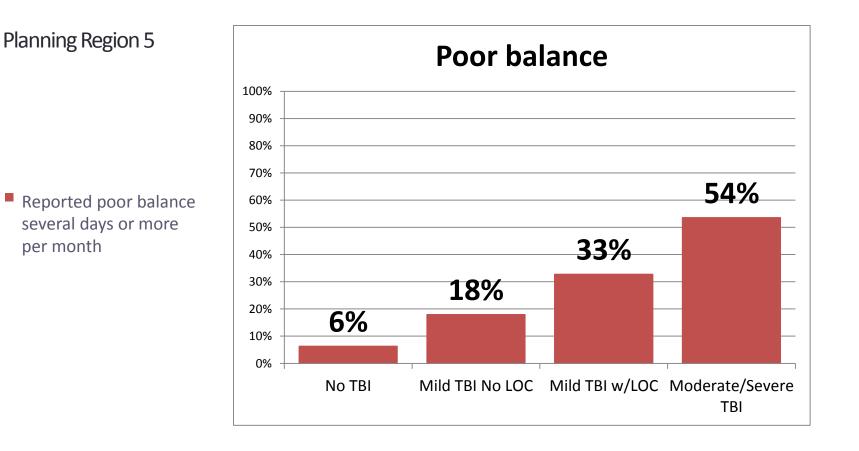
Reported poor memory several days or more per month

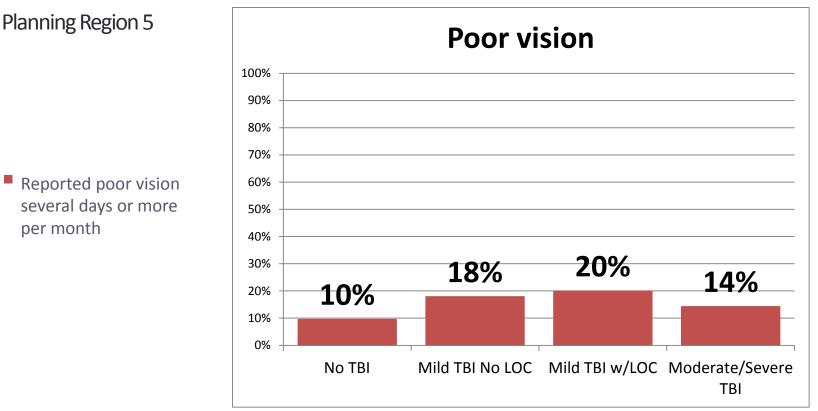


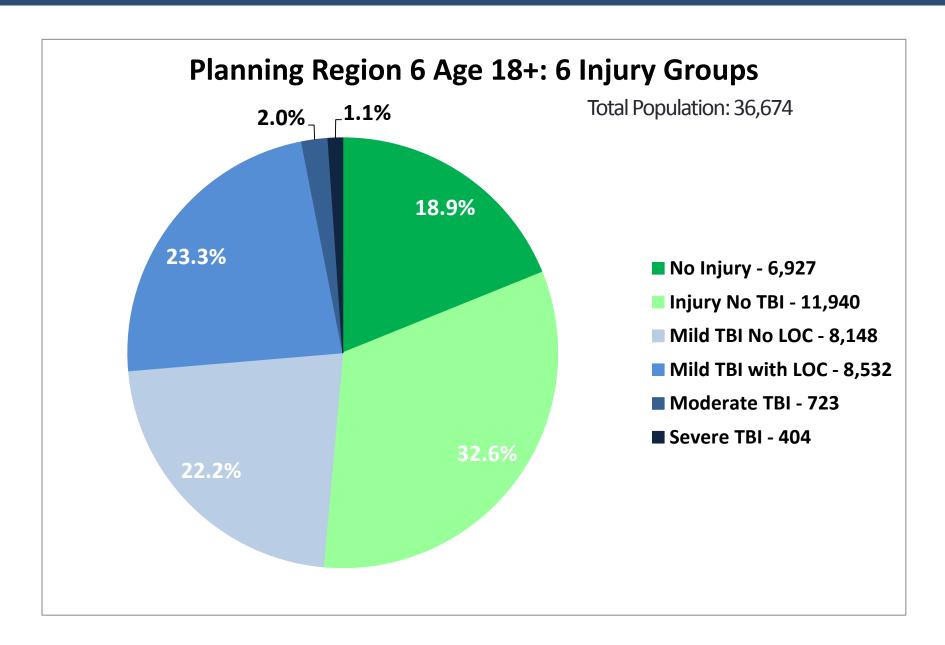


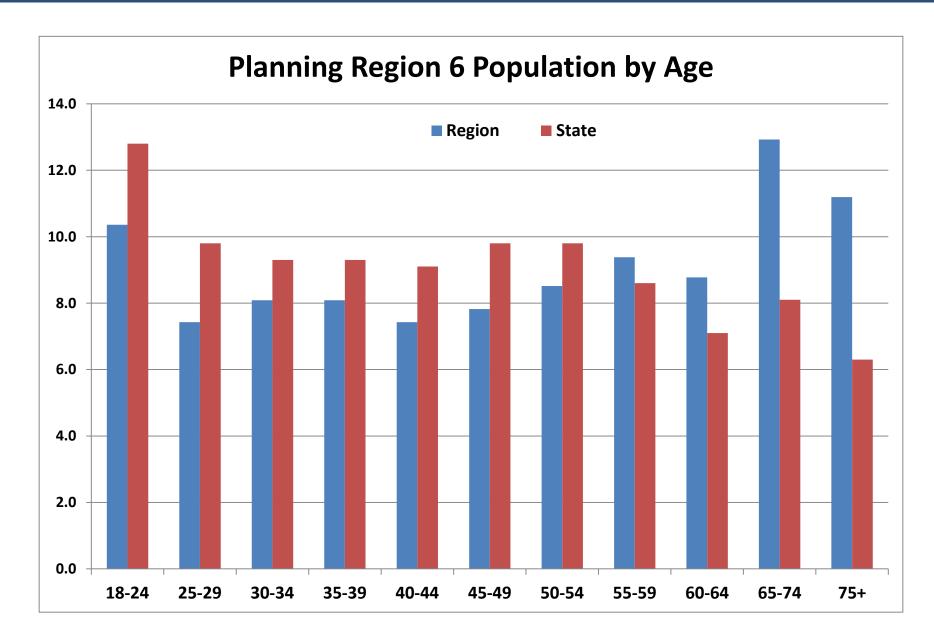


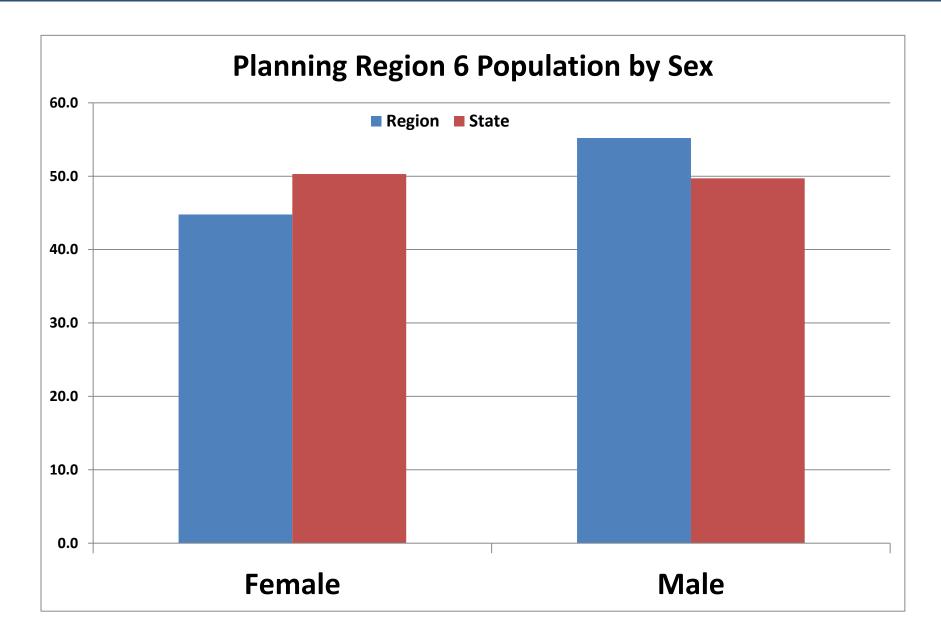


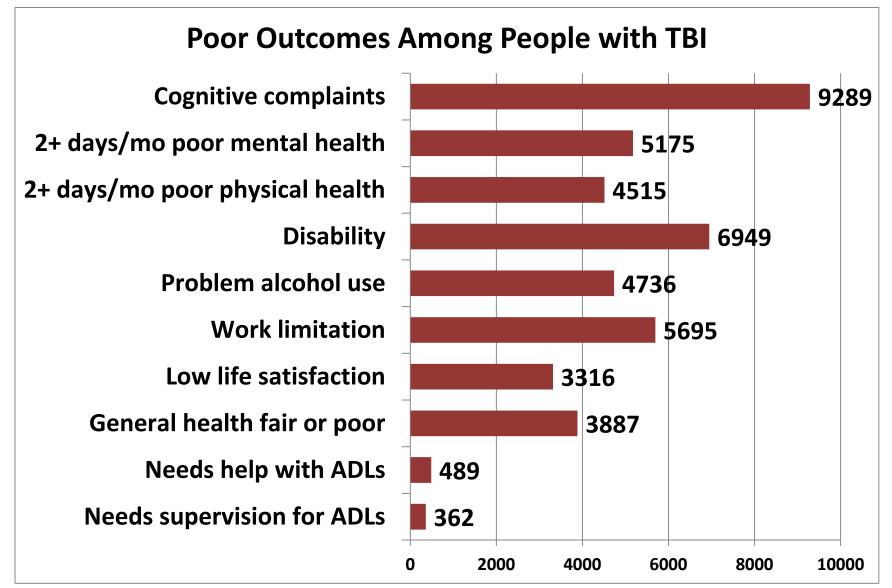


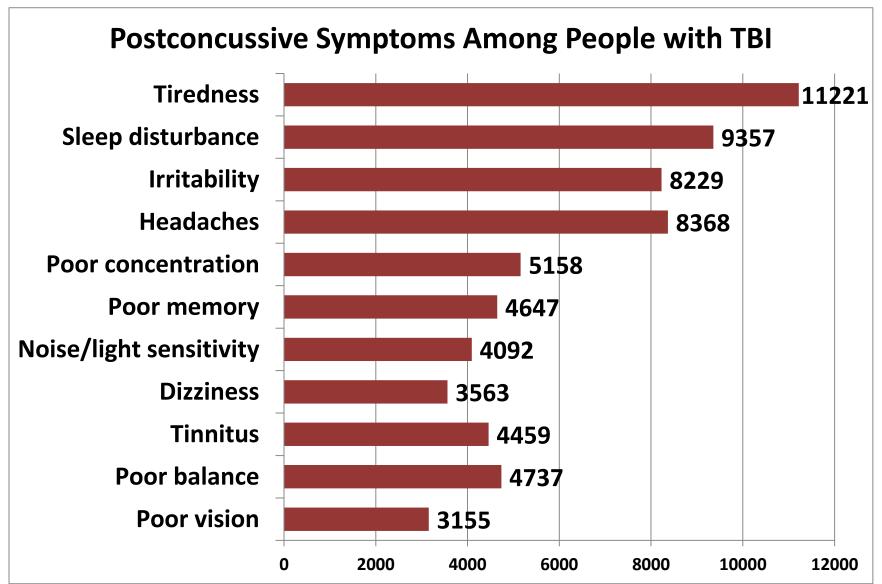




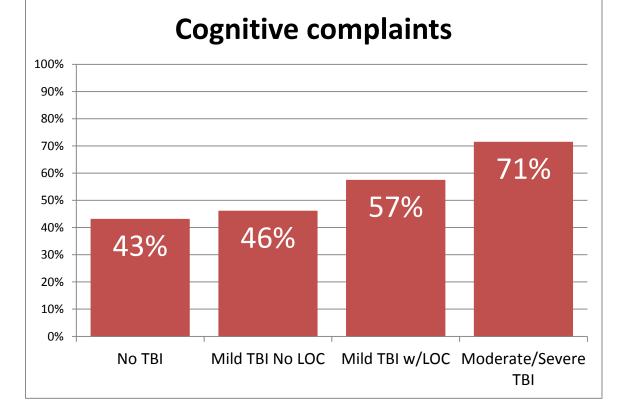








Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile



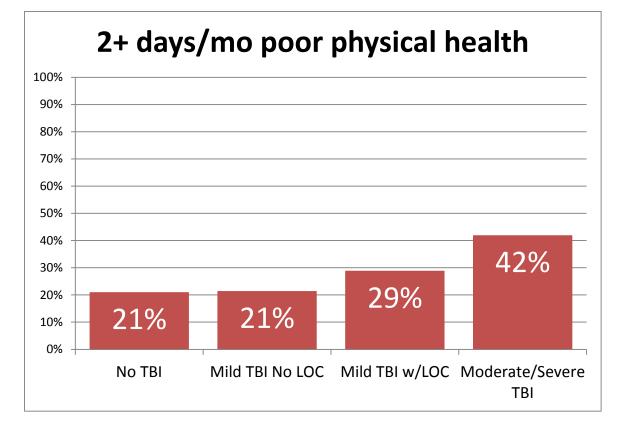
TBI

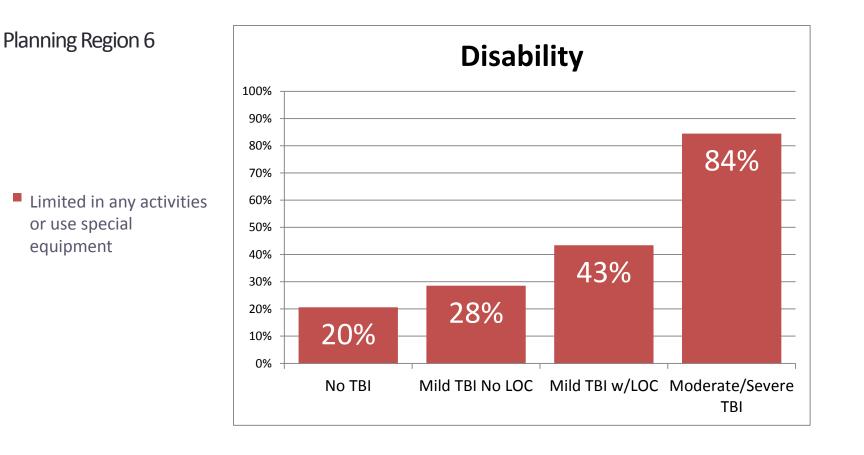
Planning Region 6

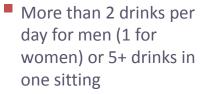
Two or more days of poor mental health reported

2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 40% 42% 30% 35% 20% 22% 21% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC

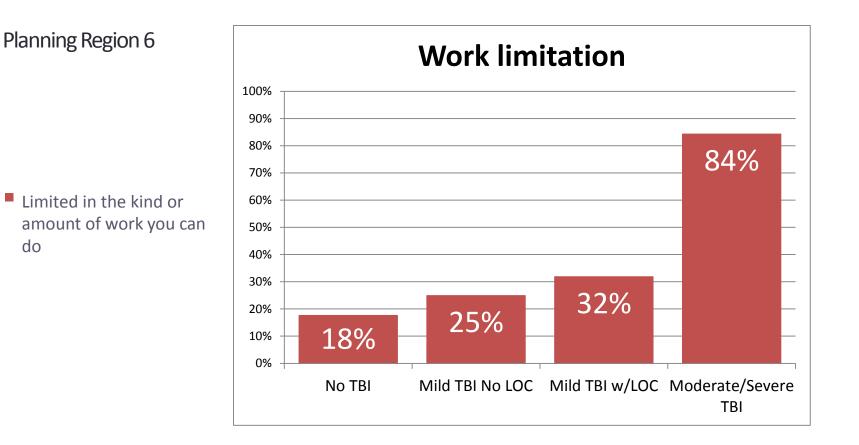
Two or more days of poor physical health reported



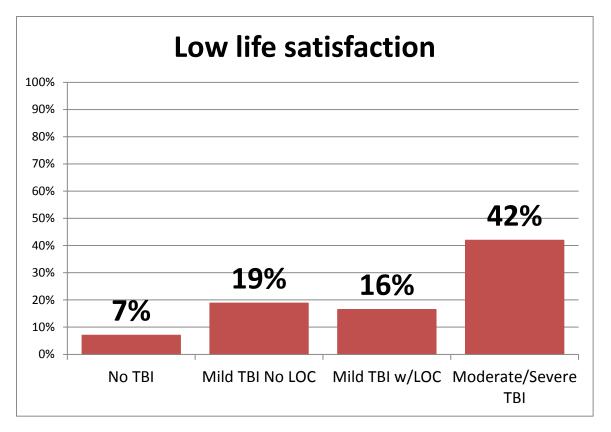


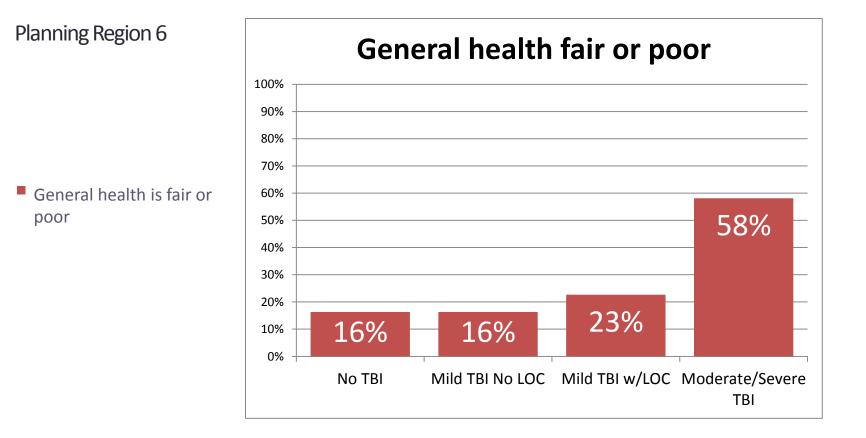


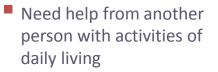
Problem alcohol use 100% 90% 80% 70% 60% 50% 37% 40% 30% 18% 17% 11% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

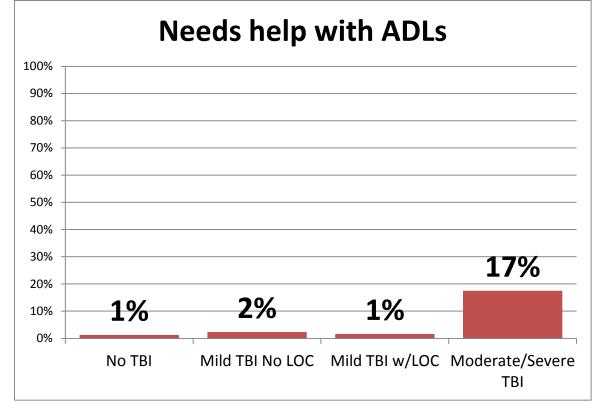






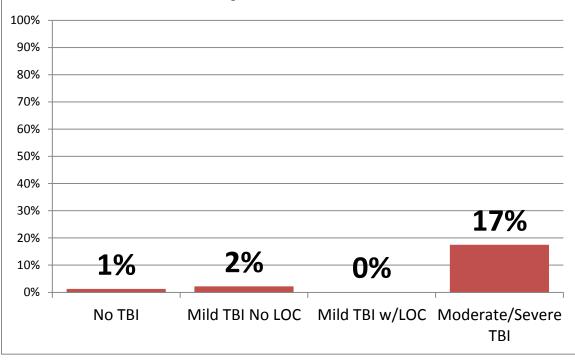




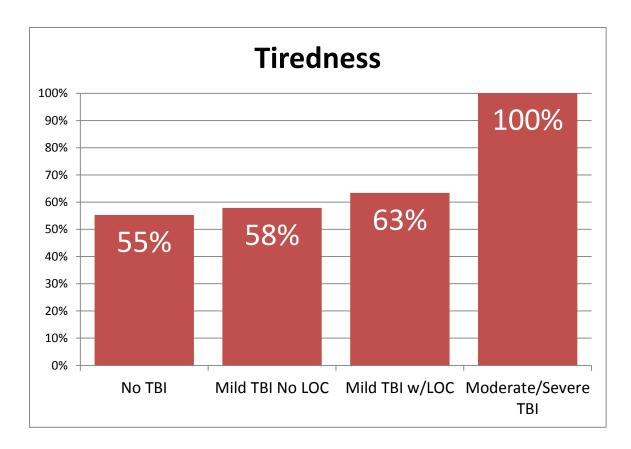


Need to be reminded or supervised when doing activities of daily living

Needs supervision for ADLs

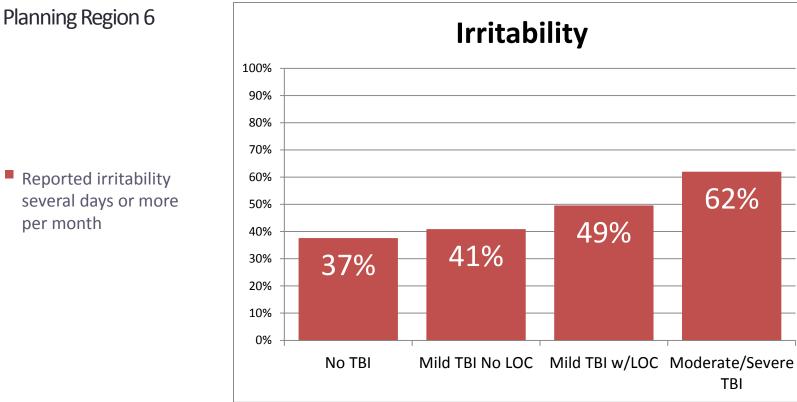


Reported tiredness several days or more per month

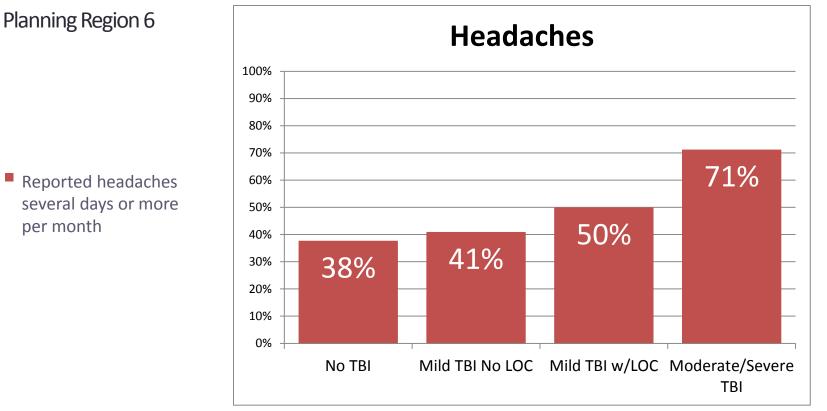


Reported sleep disturbance several days or more per month

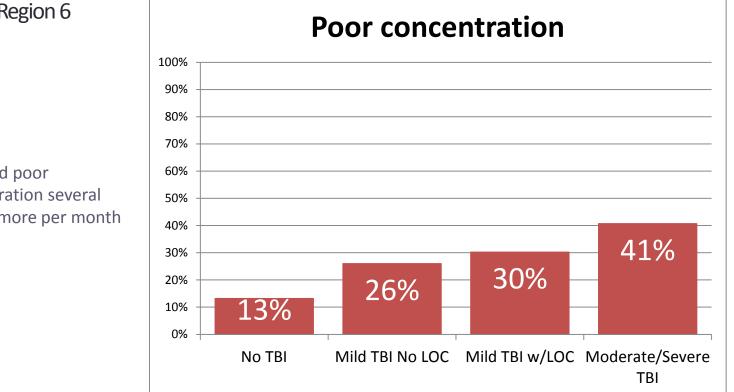
Sleep Disturbance 100% 90% 80% 83% 70% 60% 50% 52% 51% 40% 45% 30% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI



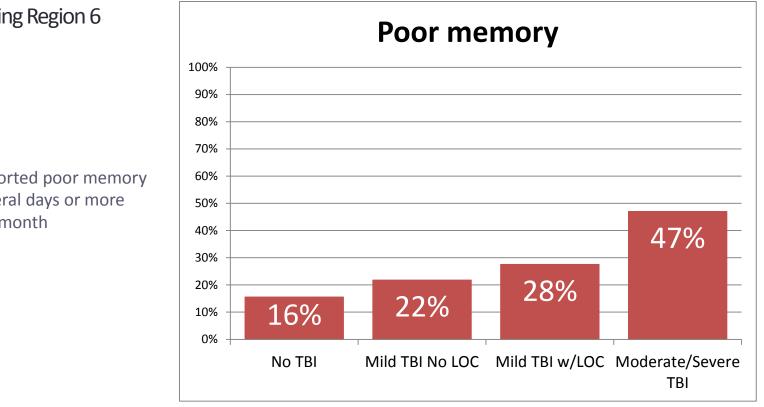
Reported irritability several days or more per month



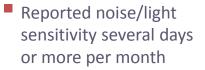
Reported headaches several days or more

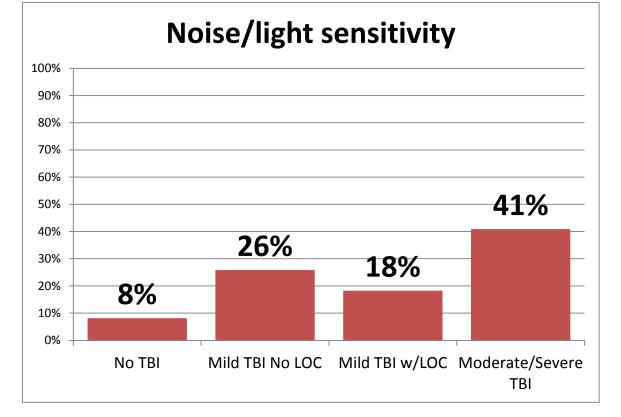


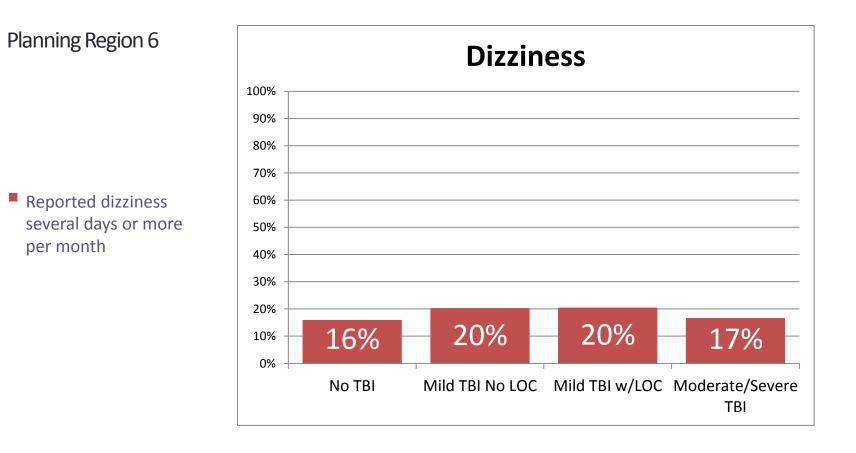
Reported poor concentration several days or more per month

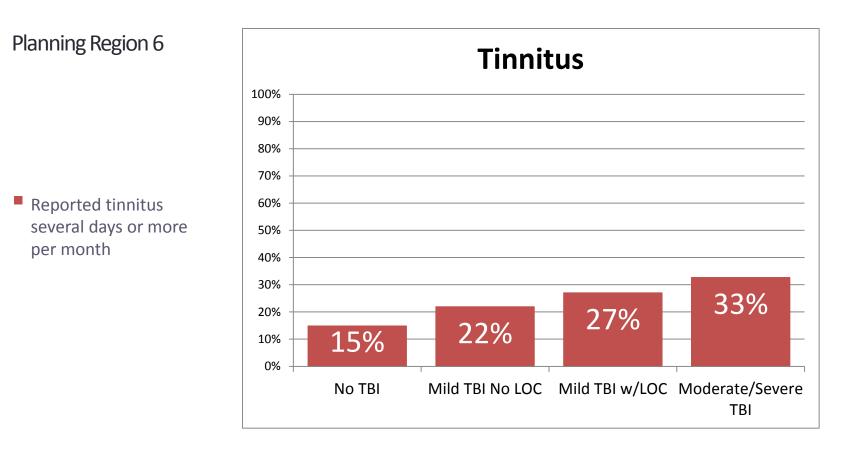


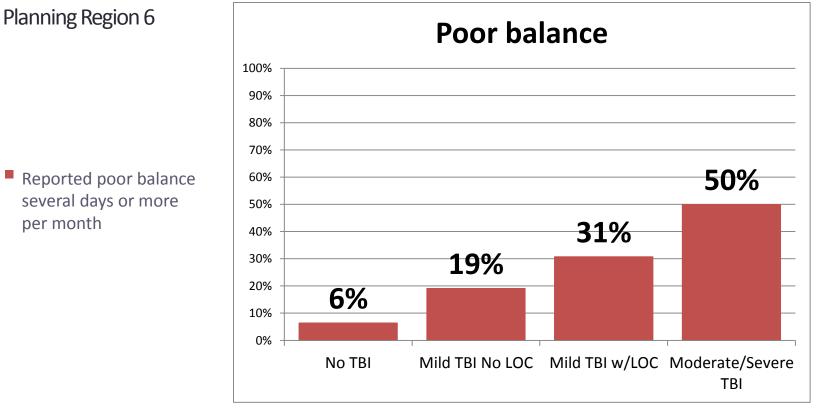
Reported poor memory several days or more per month

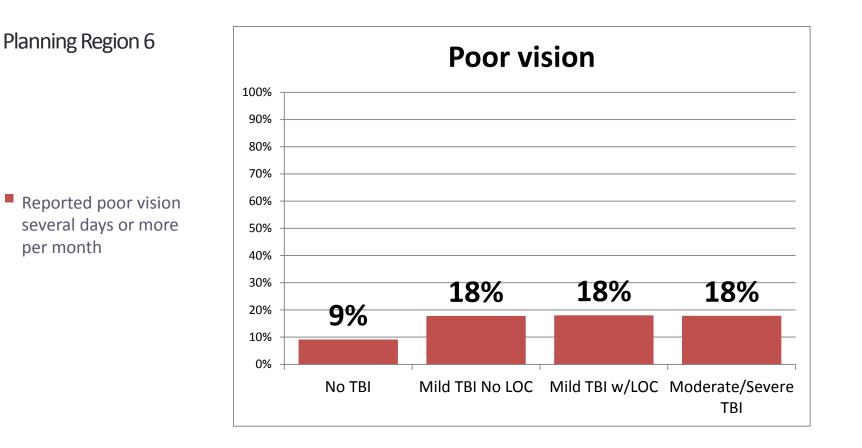


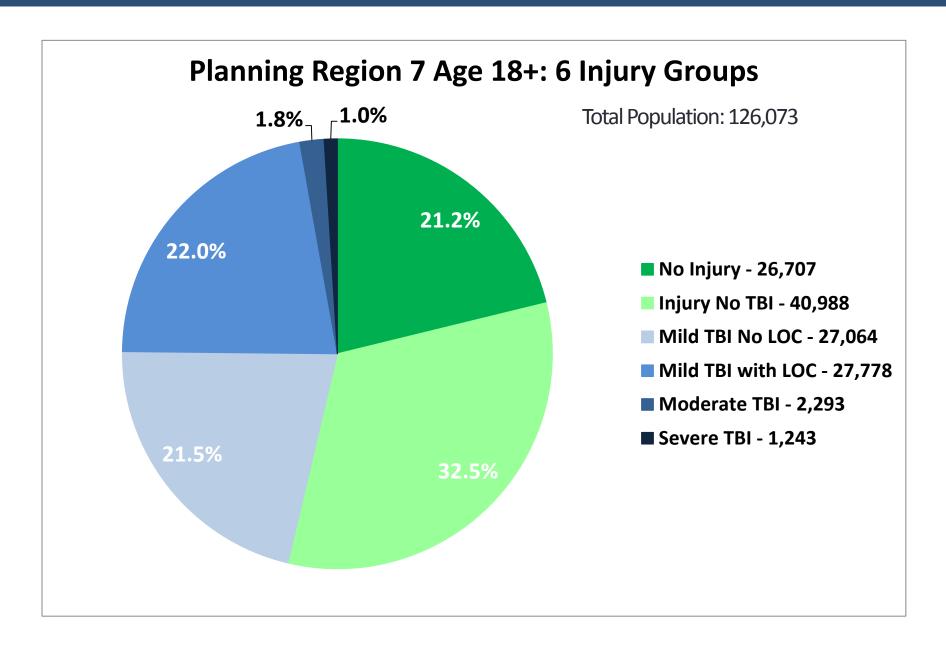


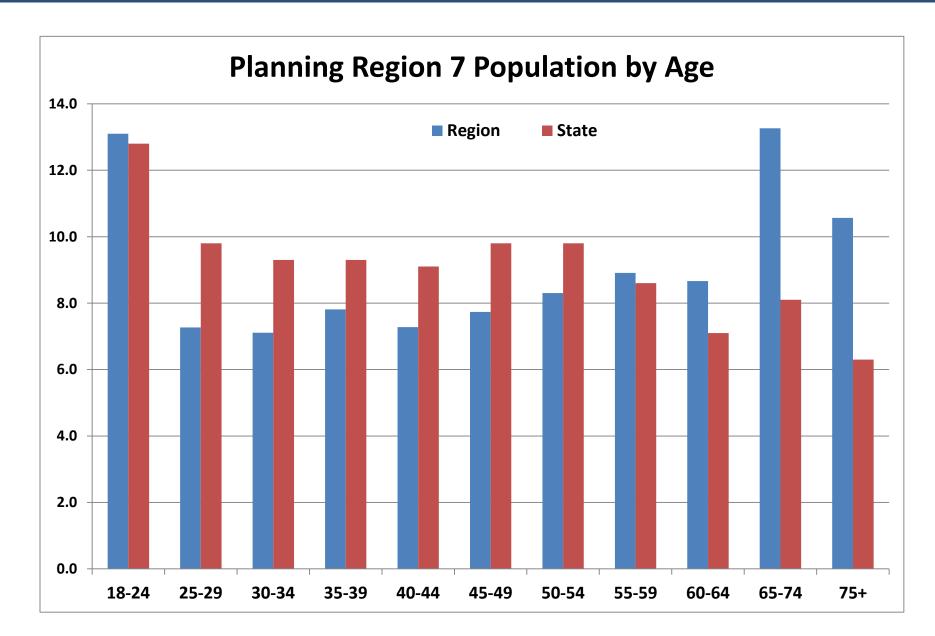


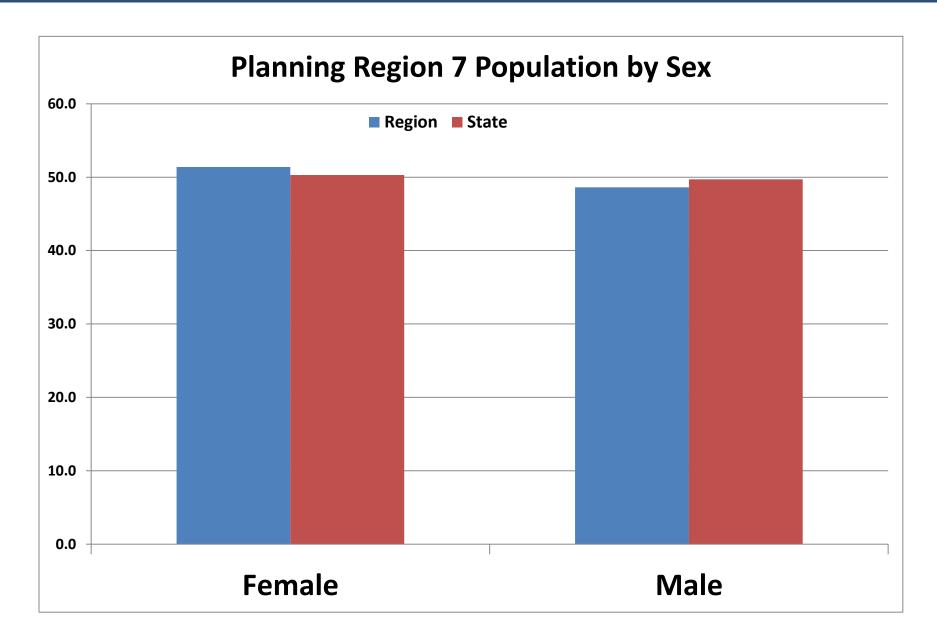


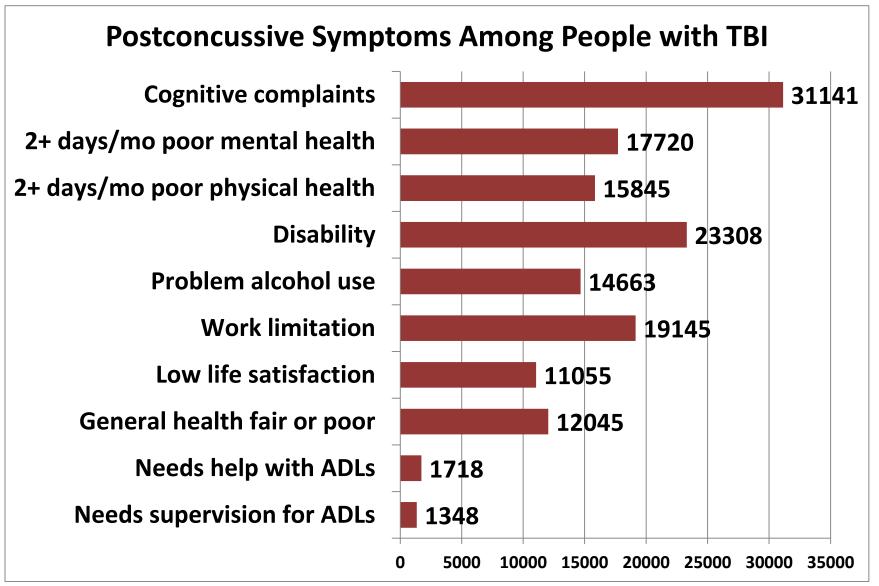


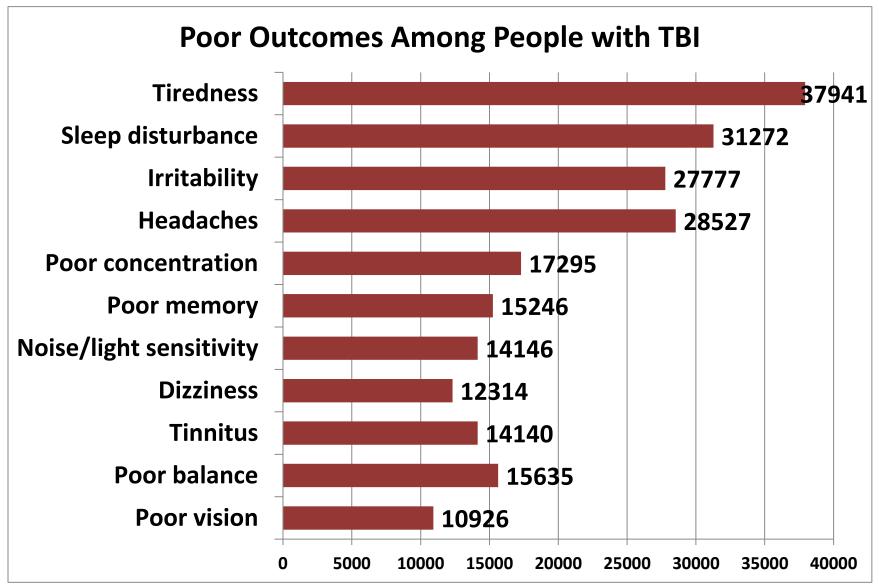




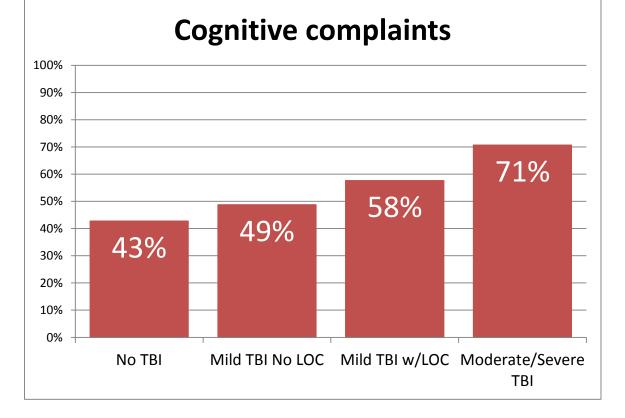








 Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile



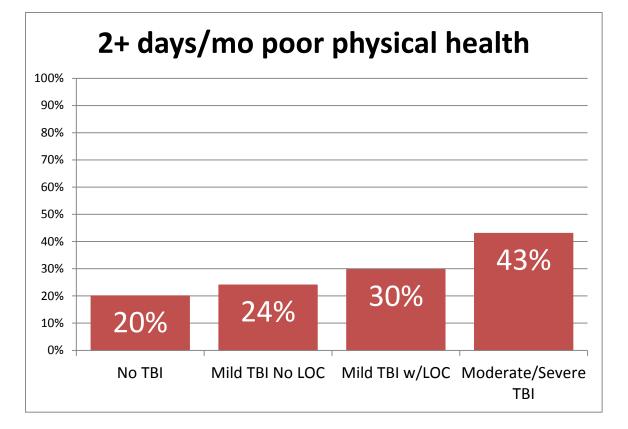
TBI

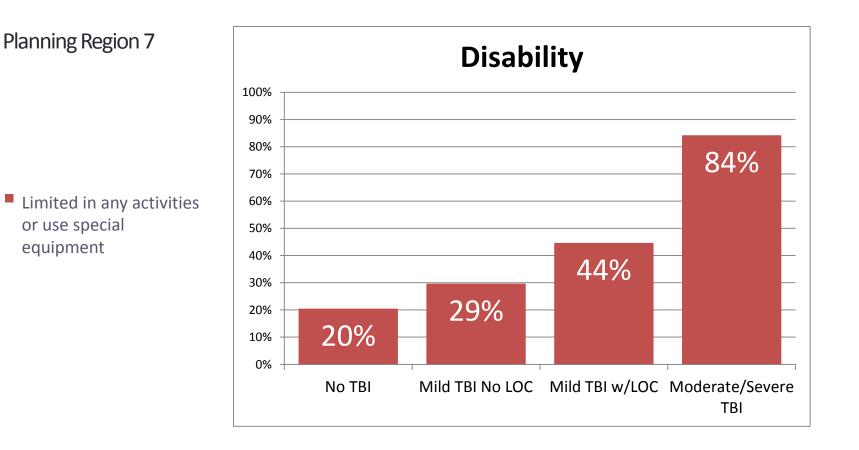
Planning Region 7

Two or more days of poor mental health reported

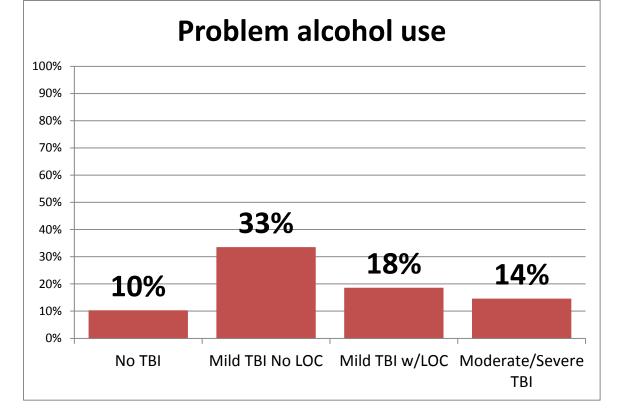
2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 40% 43% 30% 37% 20% 23% 20% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC

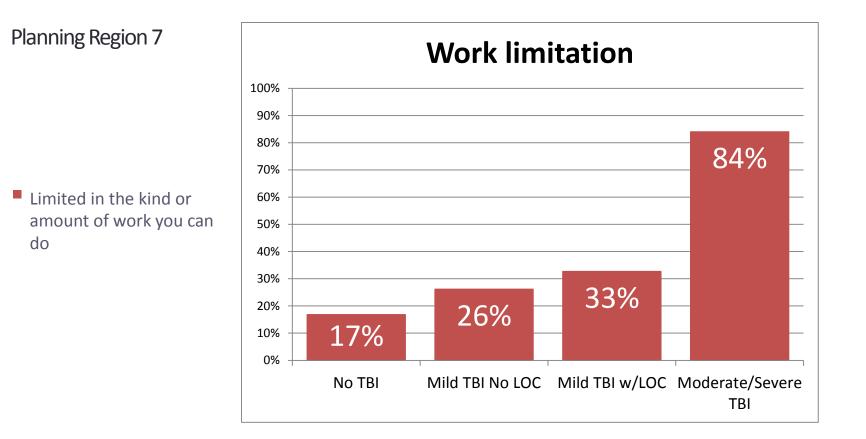
Two or more days of poor physical health reported



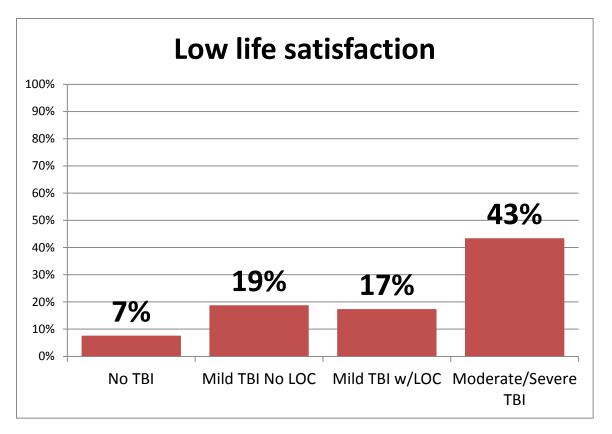


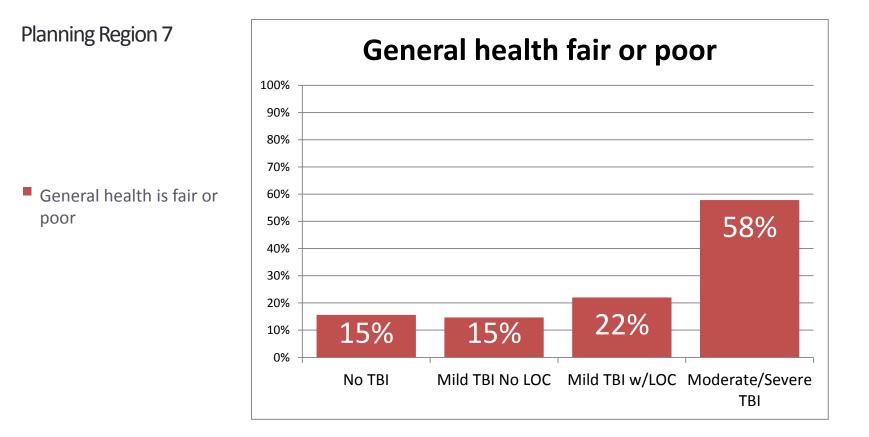
More than 2 drinks per day for men (1 for women) or 5+ drinks in one sitting



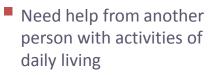


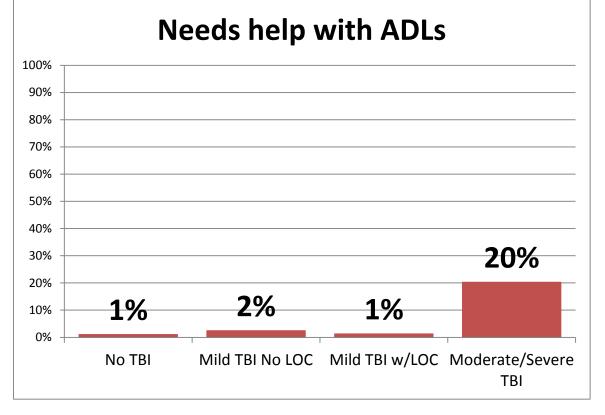








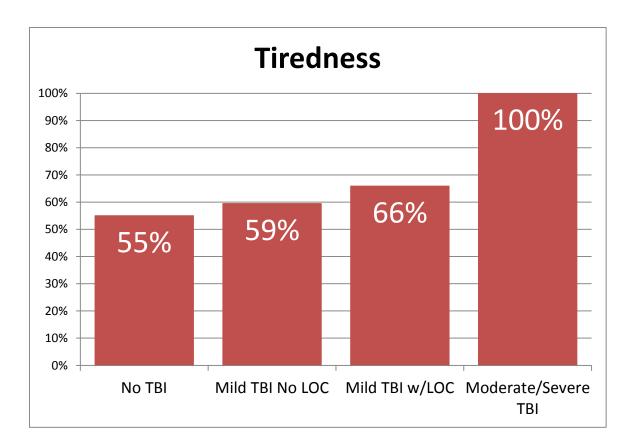




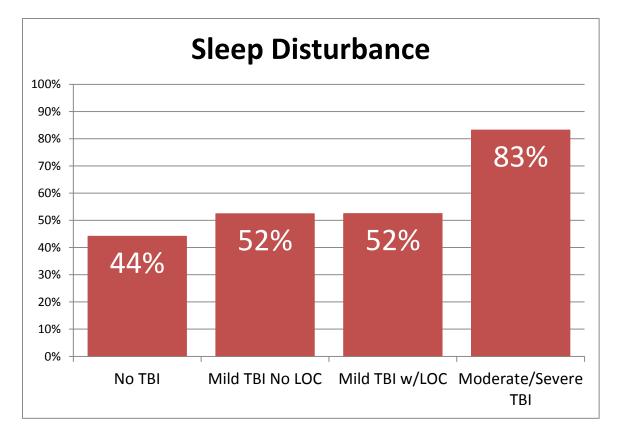
Need to be reminded or supervised when doing activities of daily living

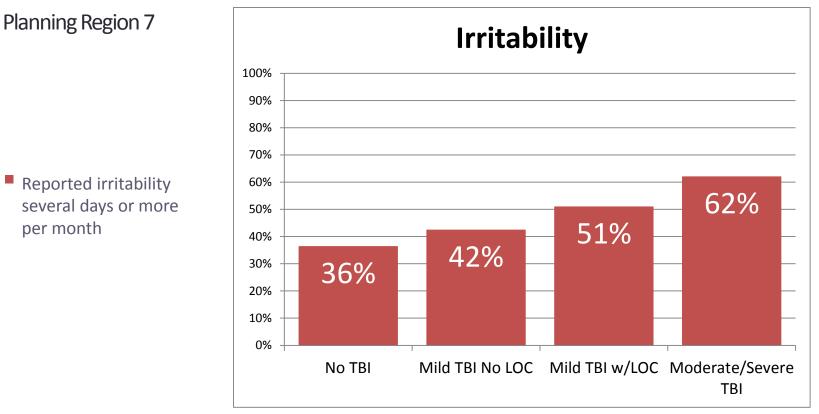
Needs supervision for ADLs 100% 90% 80% 70% 60% 50% 40% 20% 30% 20% 2% 1% 0% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

Reported tiredness several days or more per month



Reported sleep disturbances several days or more per month

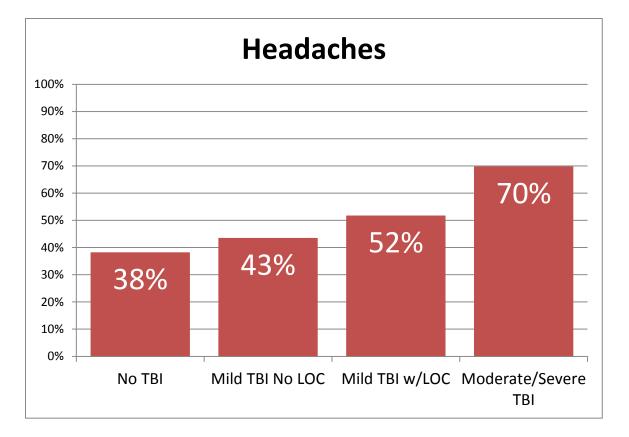




Reported irritability several days or more per month



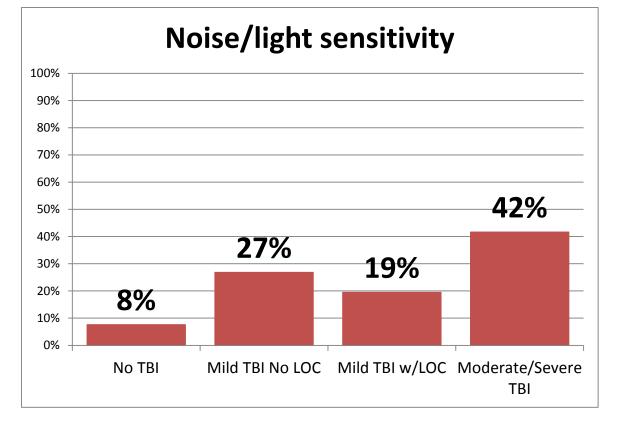
Reported headaches several days or more per month

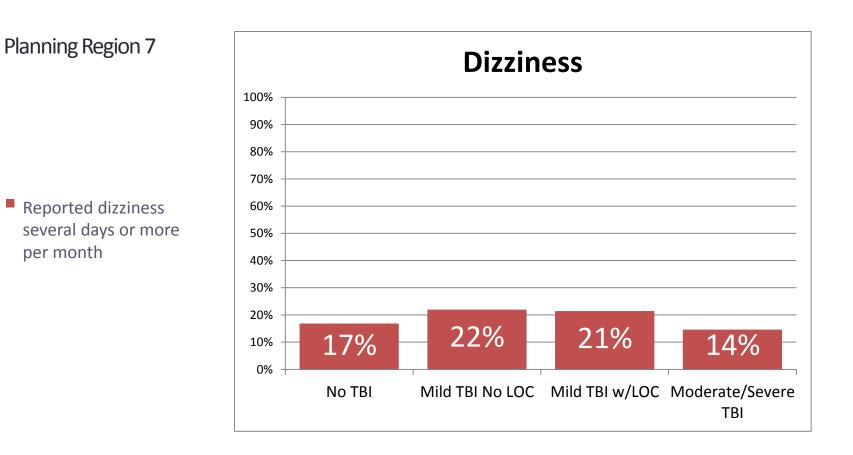


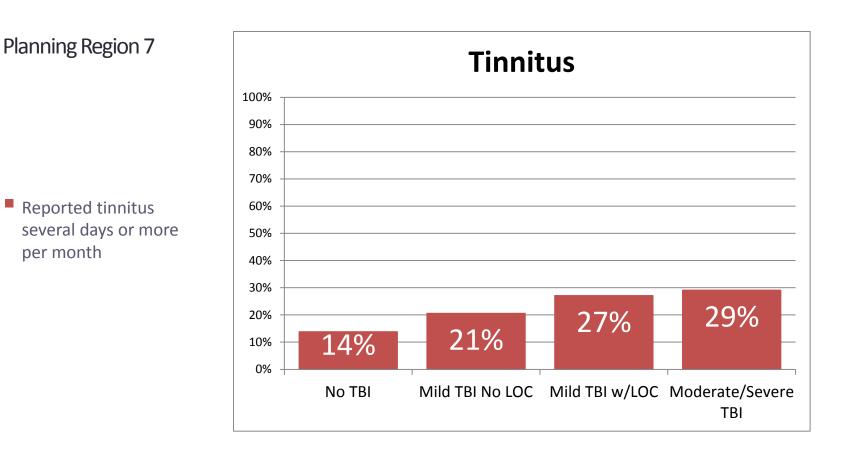
Planning Region 7 **Poor concentration** 100% 90% 80% 70% Reported poor 60% concentration several 50% days or more per month 40% 42% 30% 32% 20% 26% 13% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

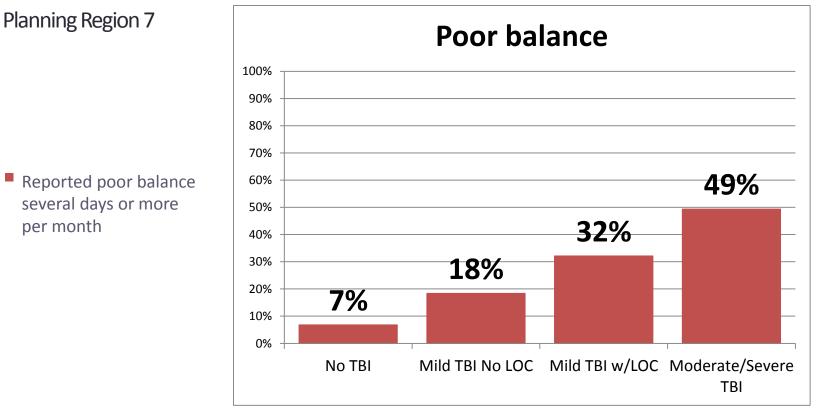
Planning Region 7 **Poor memory** 100% 90% 80% 70% Reported poor memory 60% several days or more 50% per month 49% 40% 30% 29% 20% 21% 15% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Reported noise/light sensitivity several days or more per month

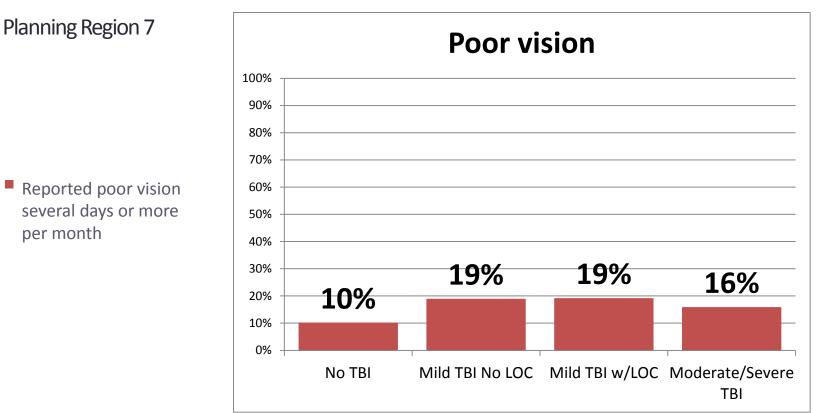




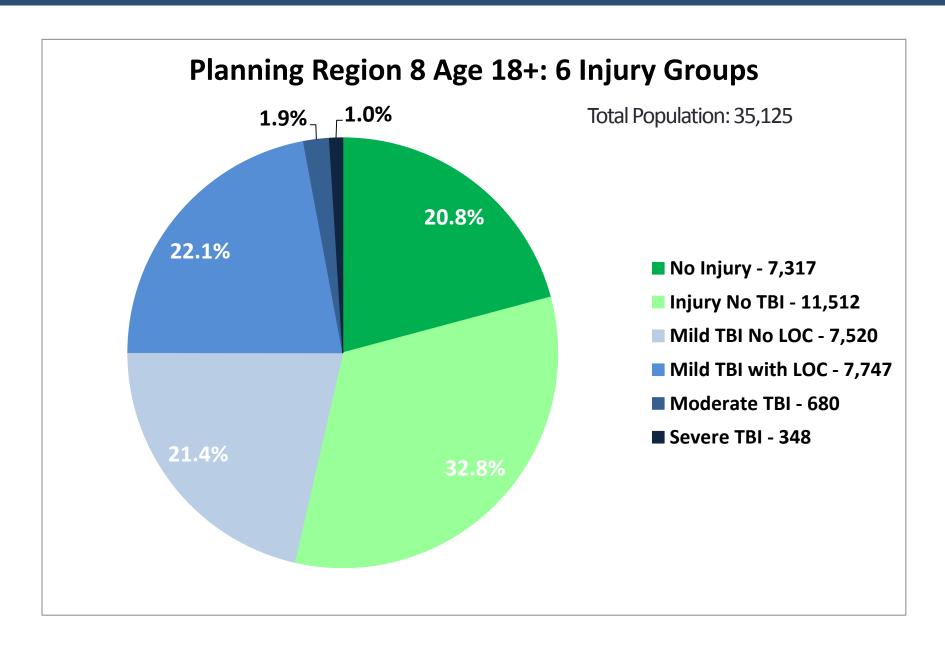


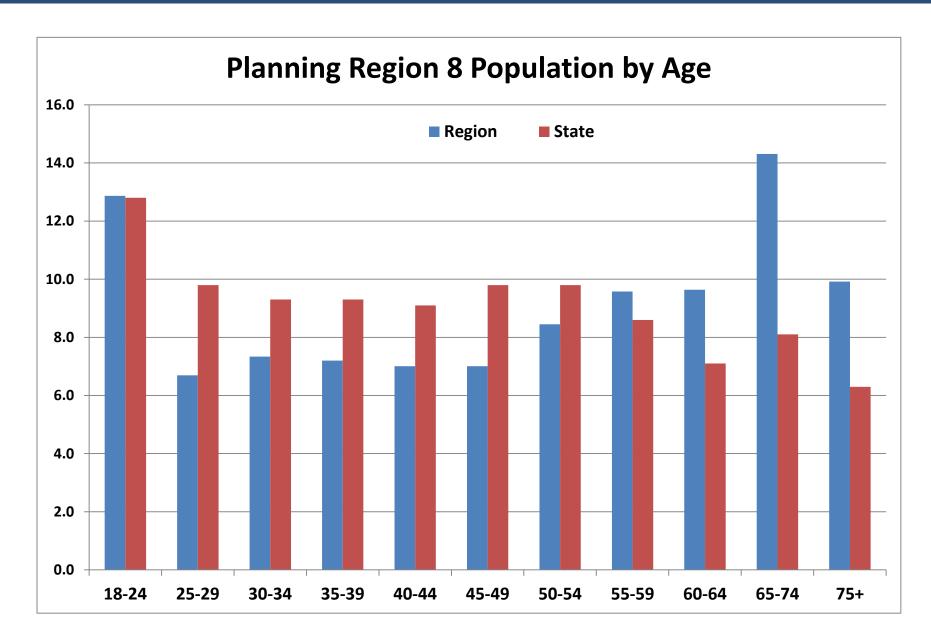


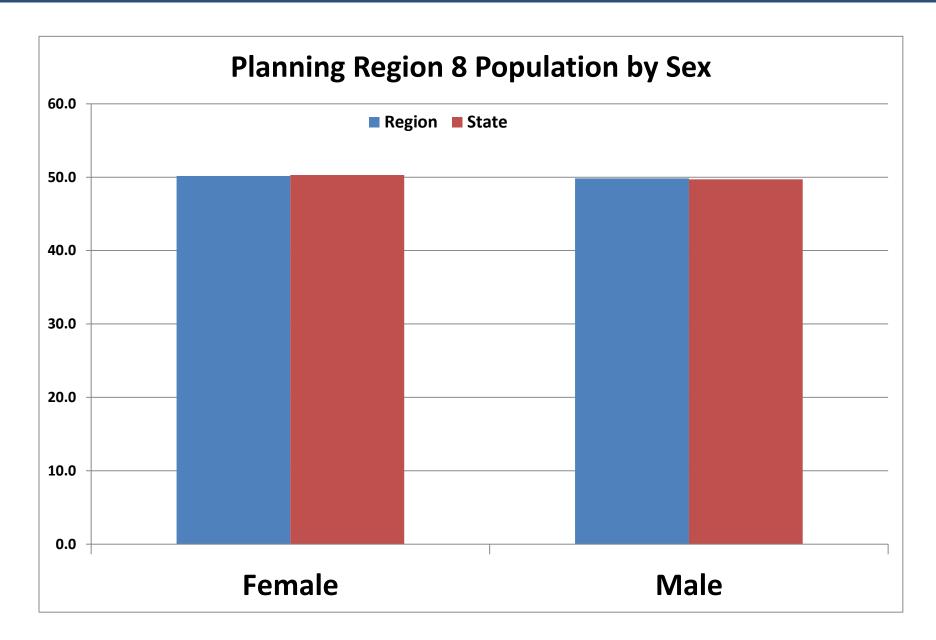
Reported poor balance several days or more per month

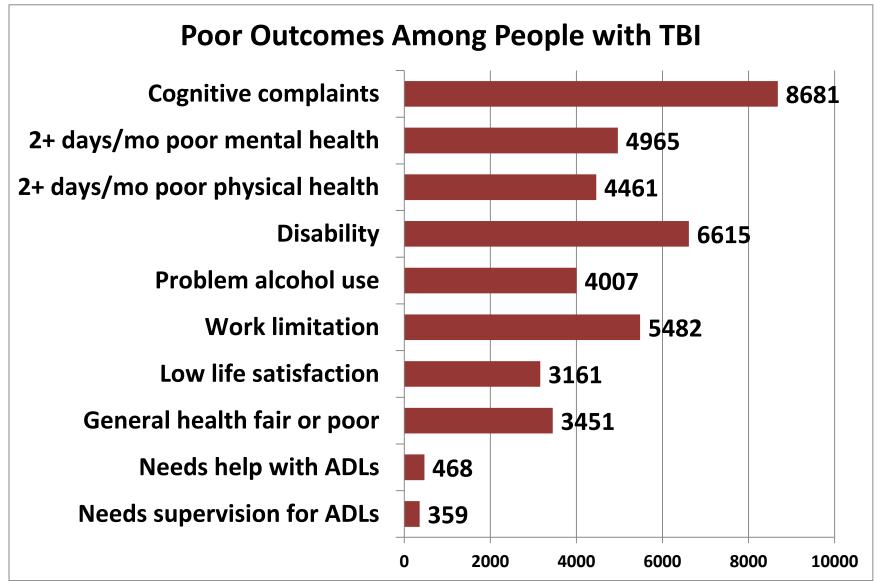


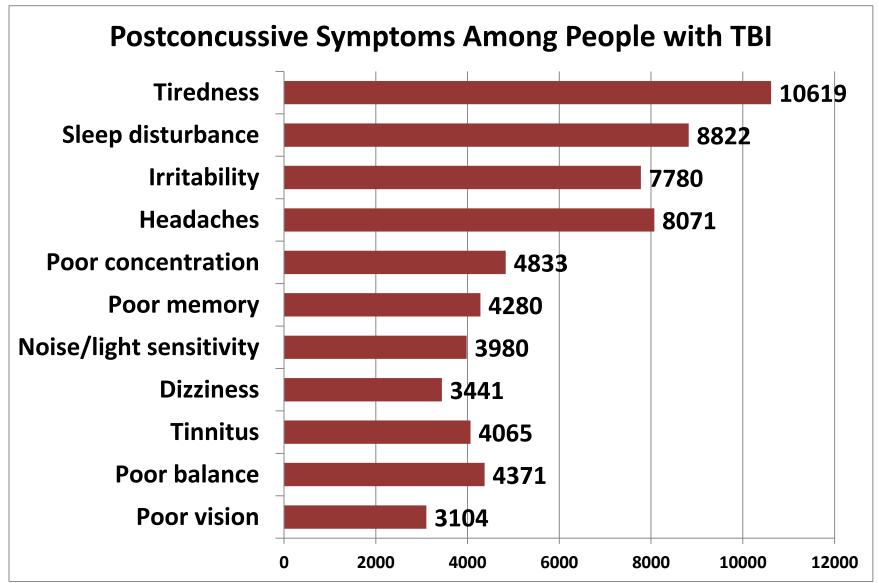
several days or more per month



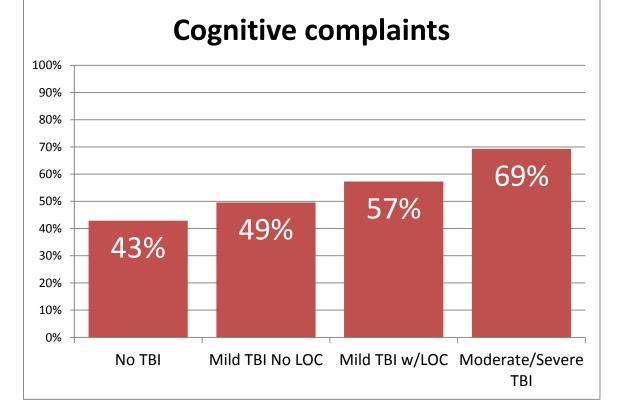








 Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile



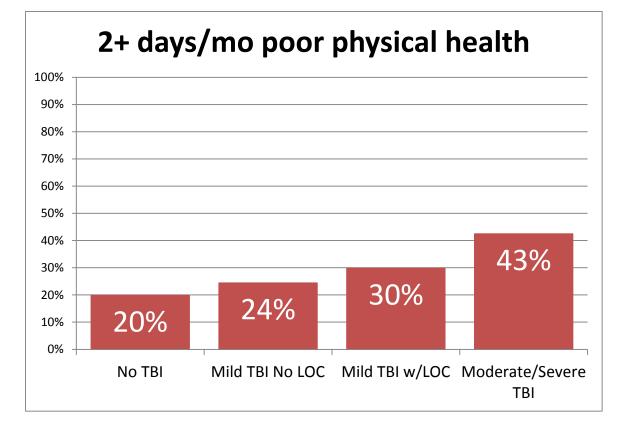
TBI

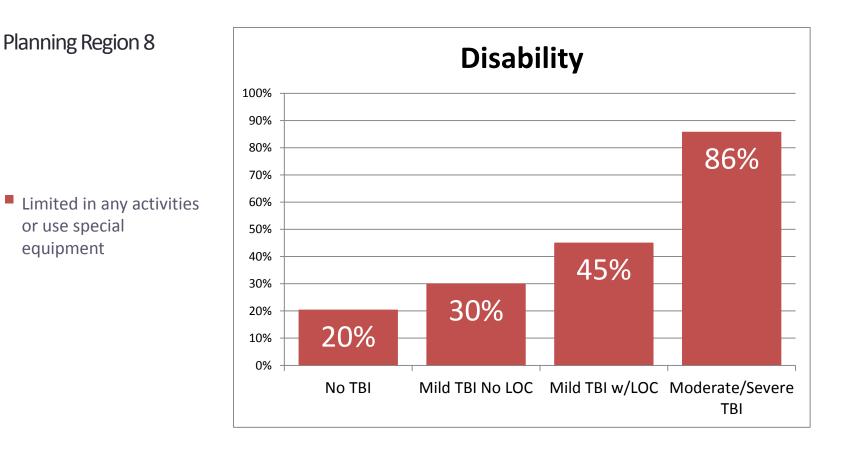
Planning Region 8

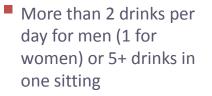
Two or more days of poor mental health reported

2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 40% 43% 30% 36% 20% 24% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI

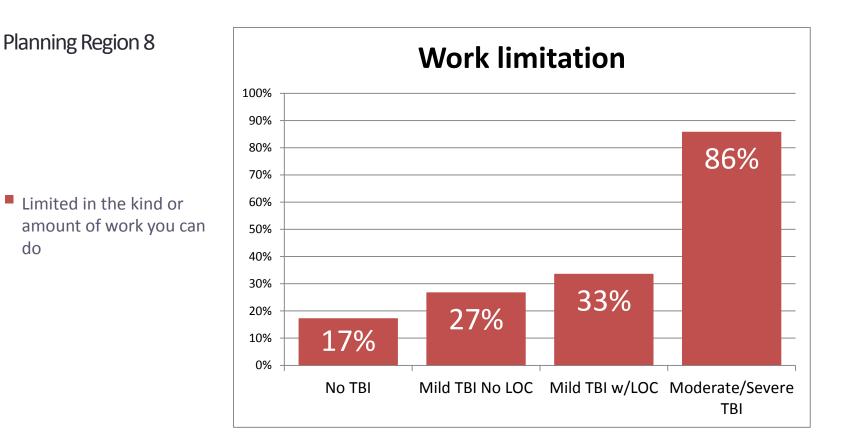
Two or more days of poor physical health reported



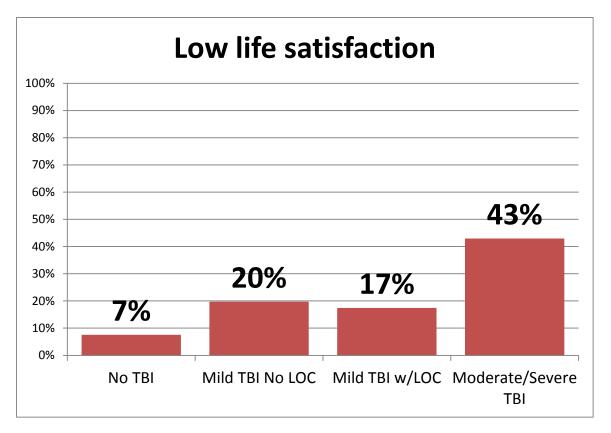


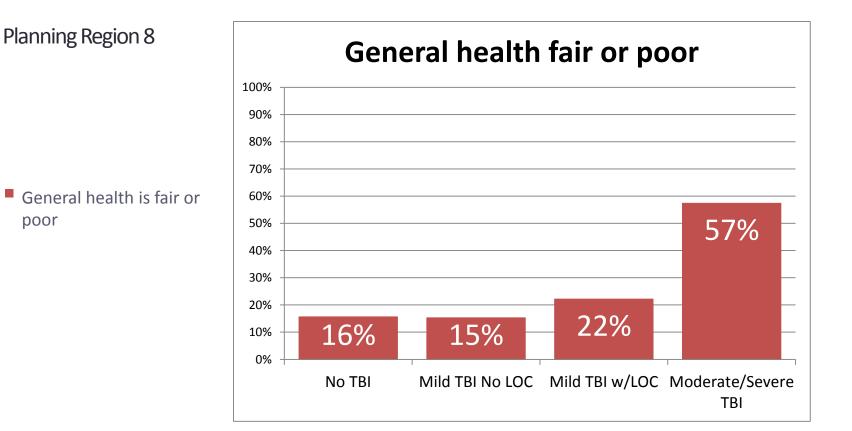


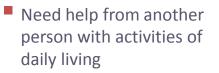
Problem alcohol use 100% 90% 80% 70% 60% 50% 33% 40% 30% 18% 15% 10% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

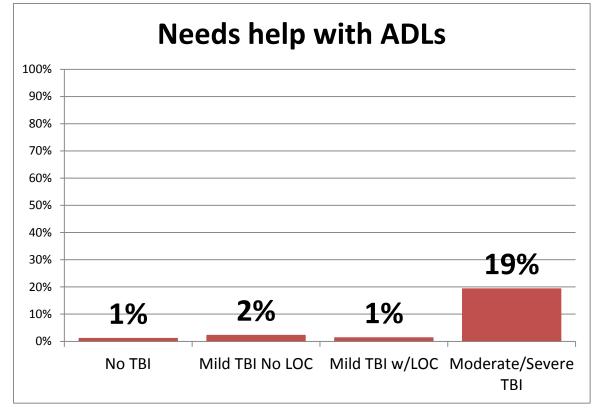










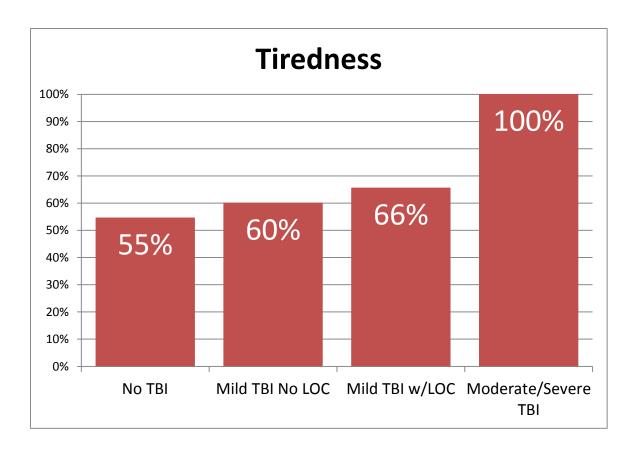


Need to be reminded or supervised when doing activities of daily living

100% 90% 80% 70% 60% 50% 40% **19%** 30% 20% 2% 1% 0% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

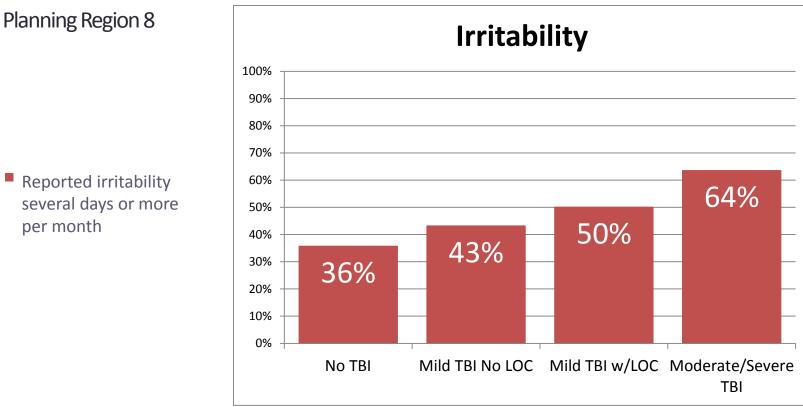


Reported tiredness several days or more per month

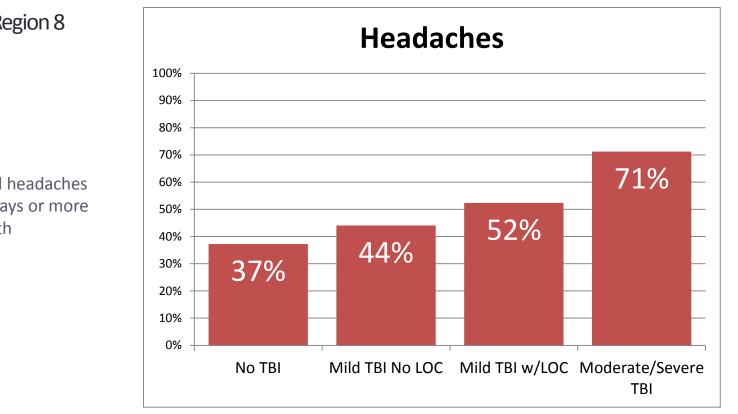


Reported sleep disturbance several days or more per month

Sleep Disturbance 100% 90% 80% 85% 70% 60% 50% 53% 52% 40% 44% 30% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

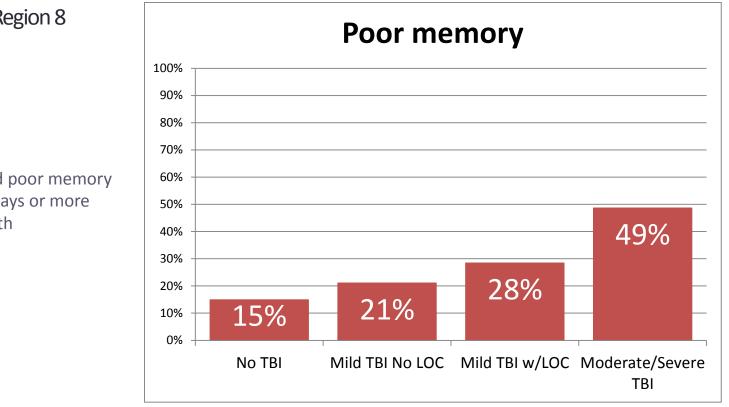


Reported irritability several days or more per month

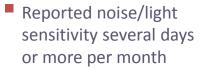


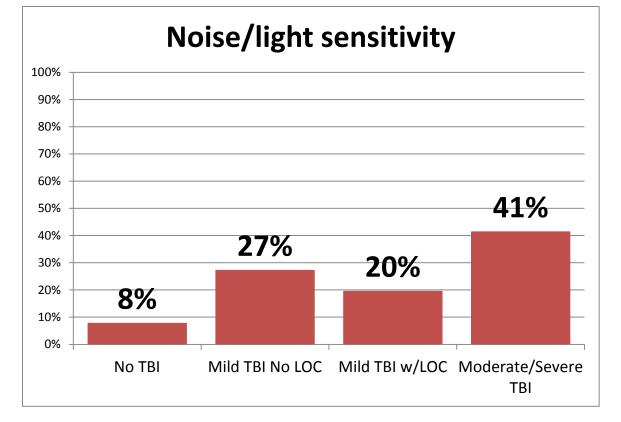
Reported headaches several days or more per month

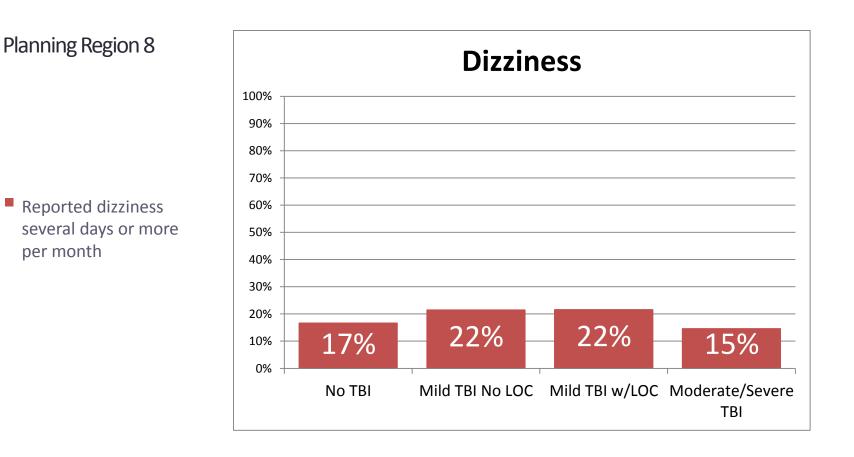
Planning Region 8 **Poor concentration** 100% 90% 80% 70% Reported poor 60% 41% concentration several 50% days or more per month **31%** 40% 26% 30% 12% 20% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

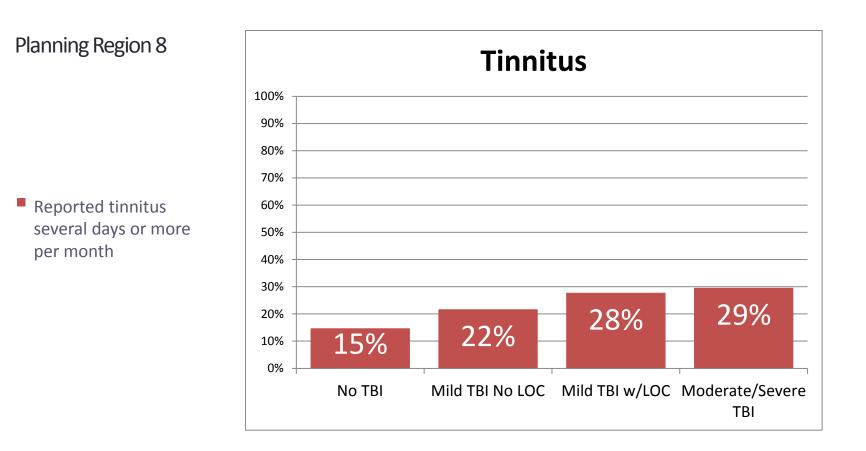


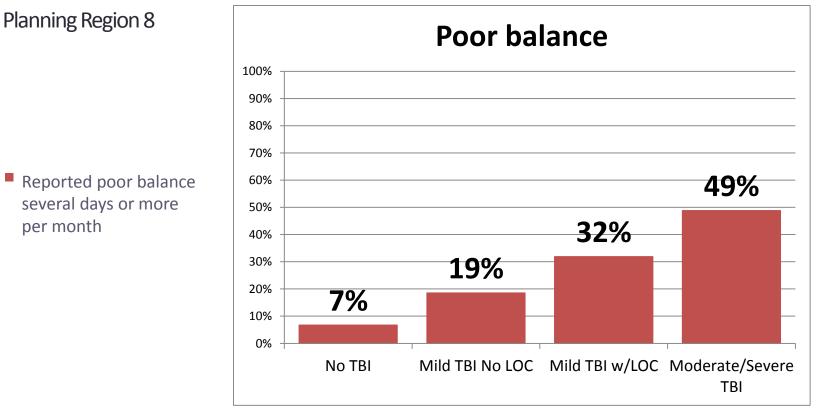
Reported poor memory several days or more per month

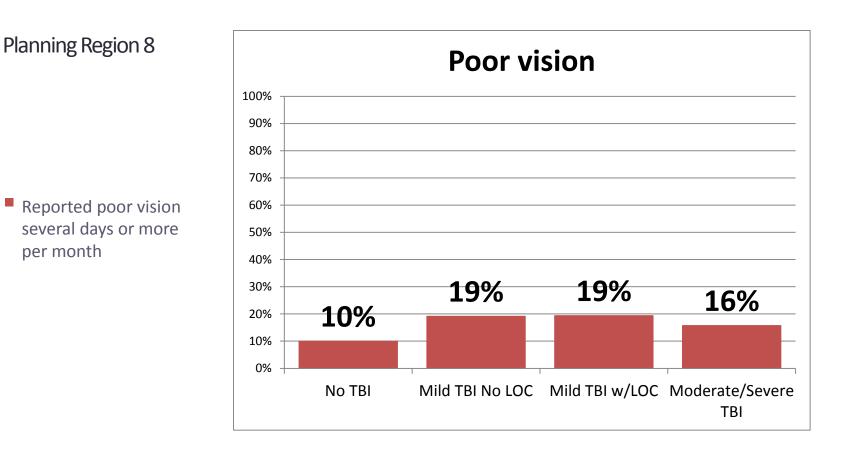


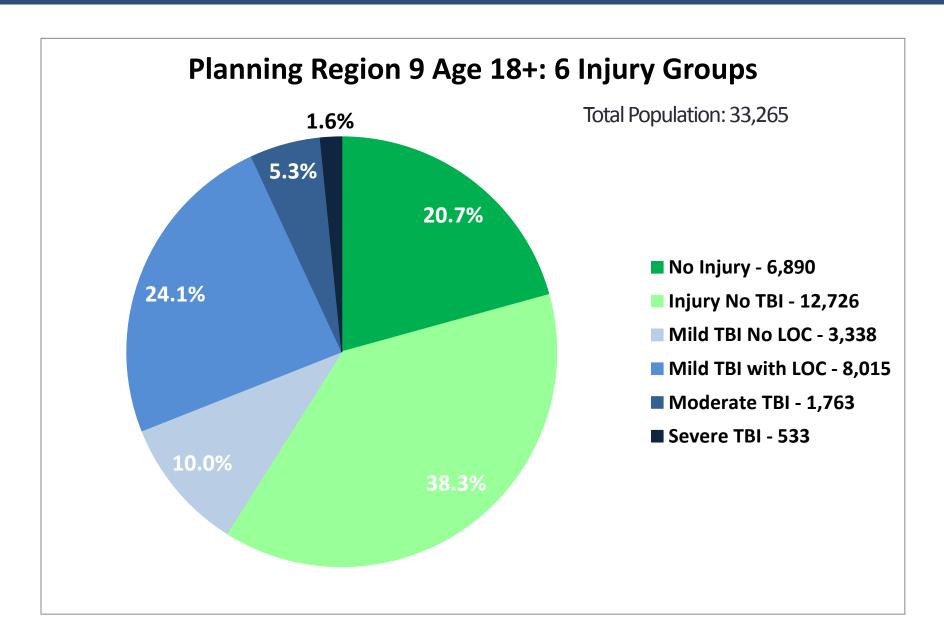


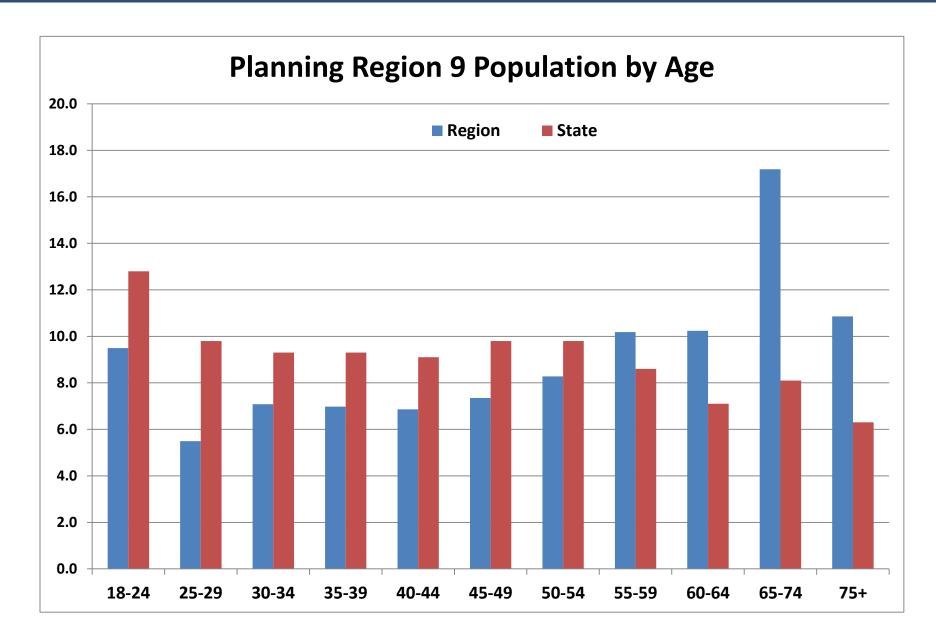


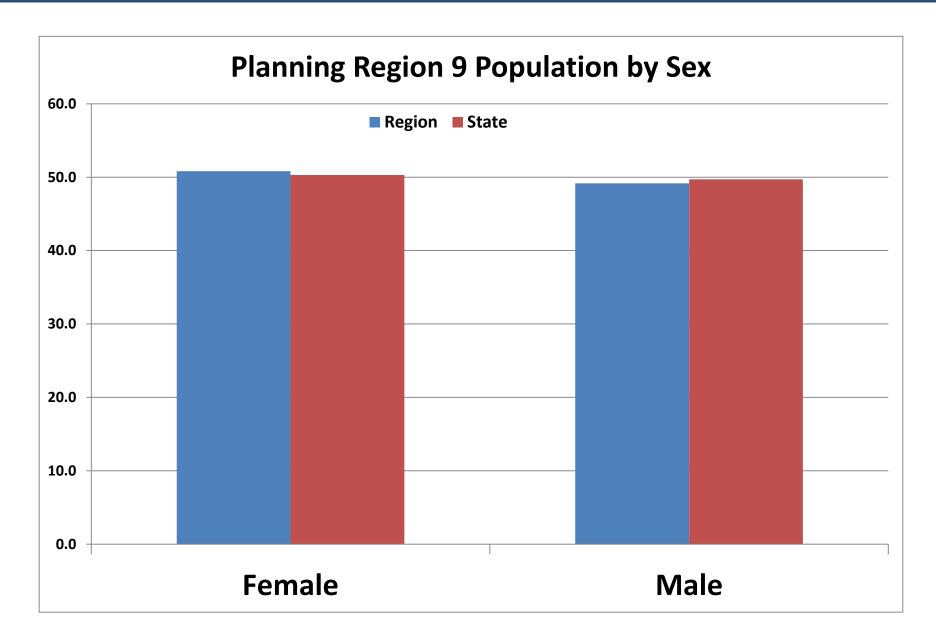


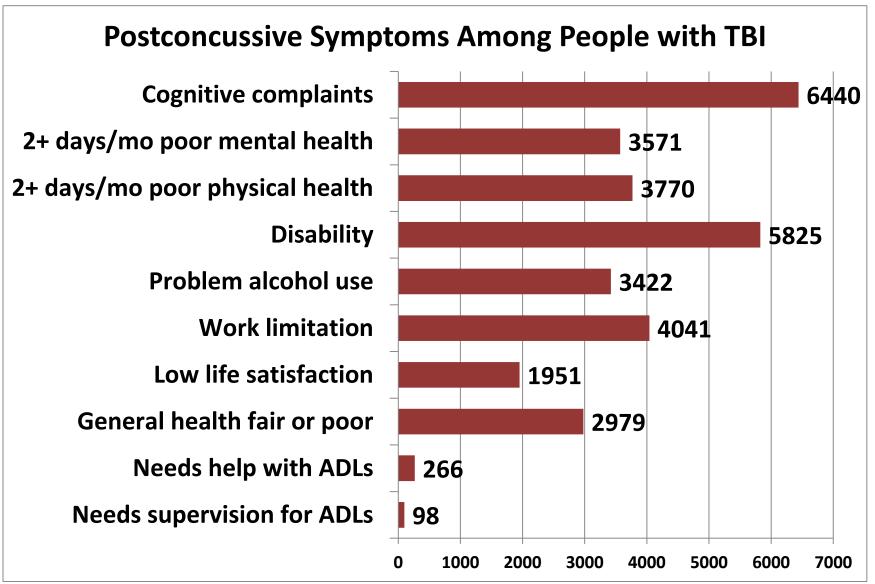


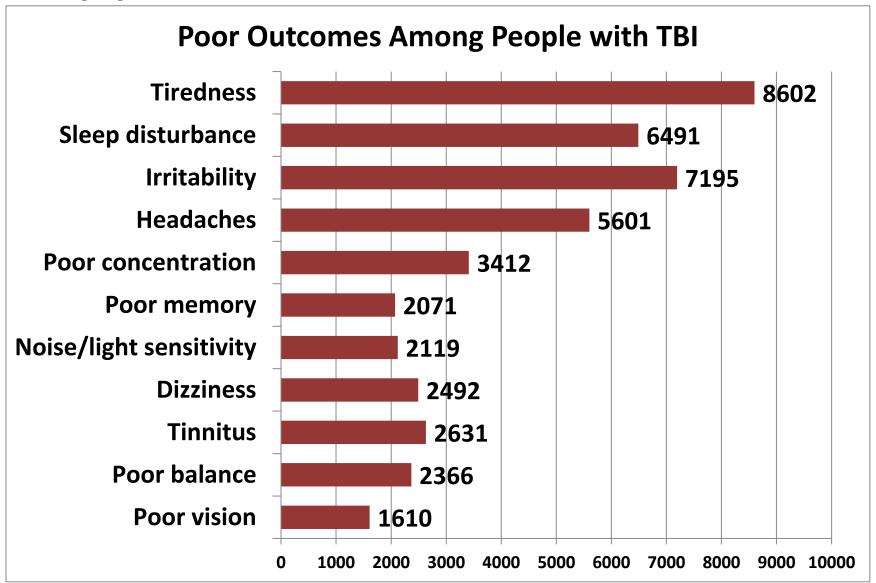




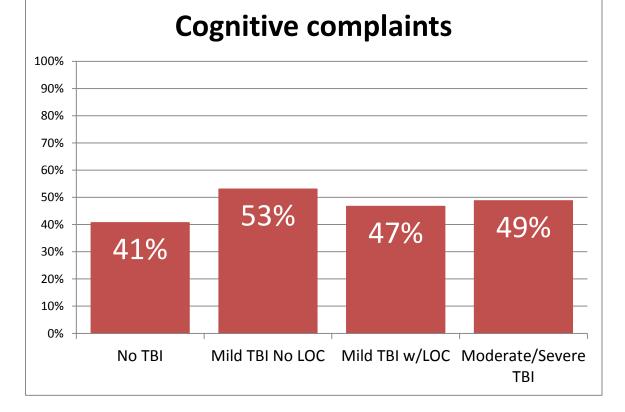








Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile

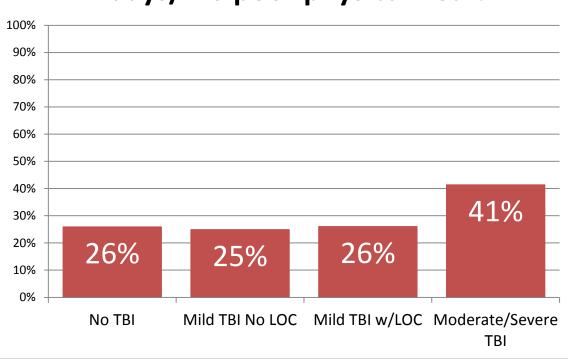


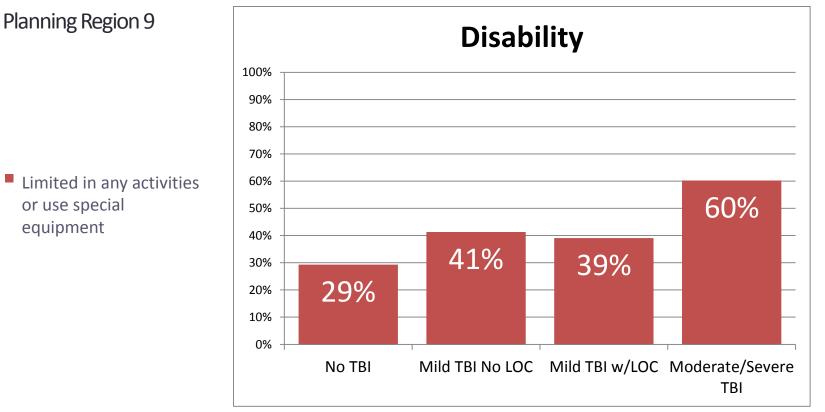
Two or more days of poor mental health reported

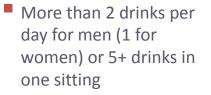
2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 40% 30% 36% 31% 31% 20% 22% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

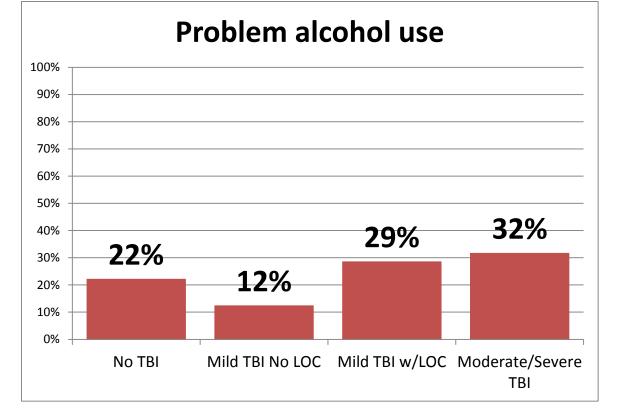
Two or more days of poor physical health reported

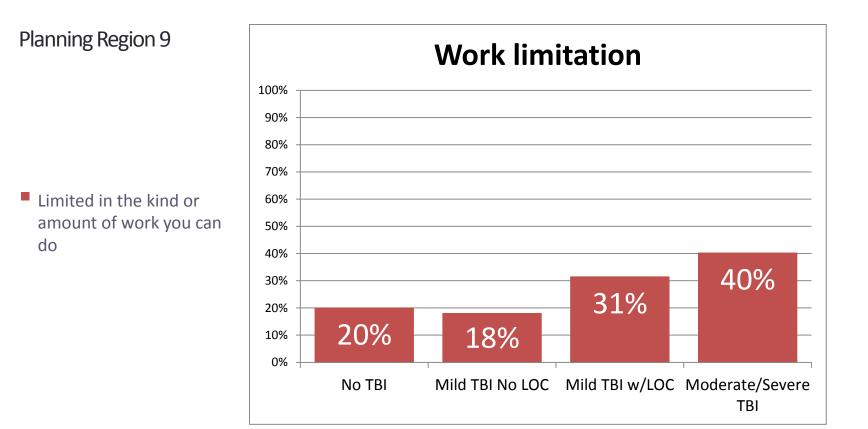
2+ days/mo poor physical health

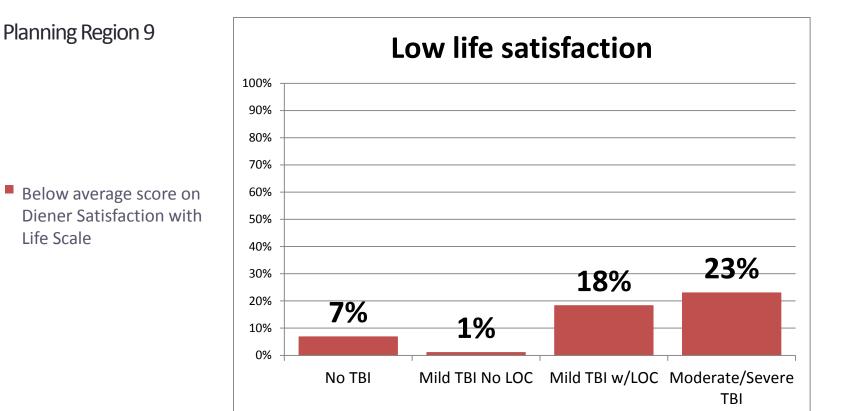


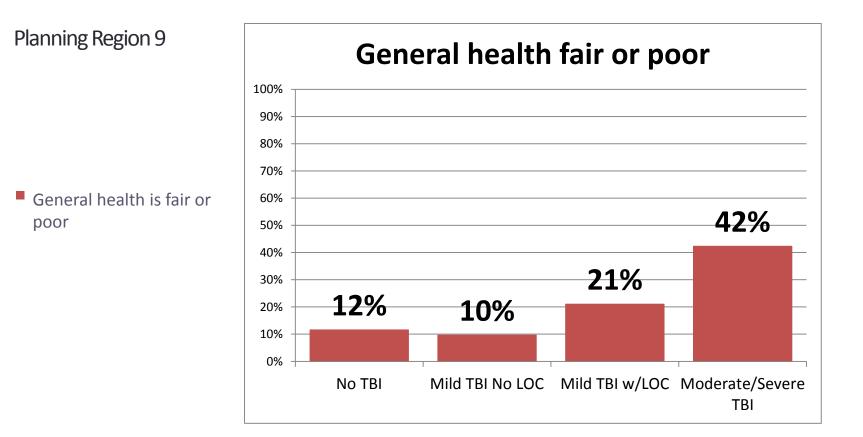


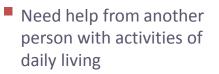








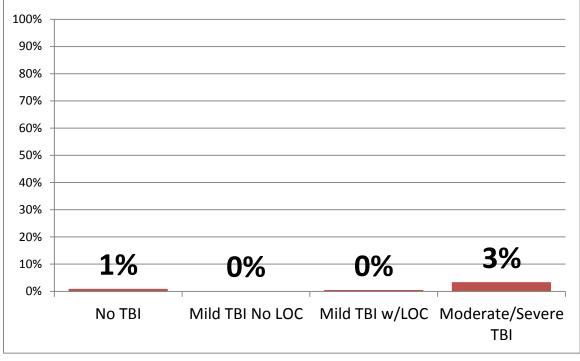




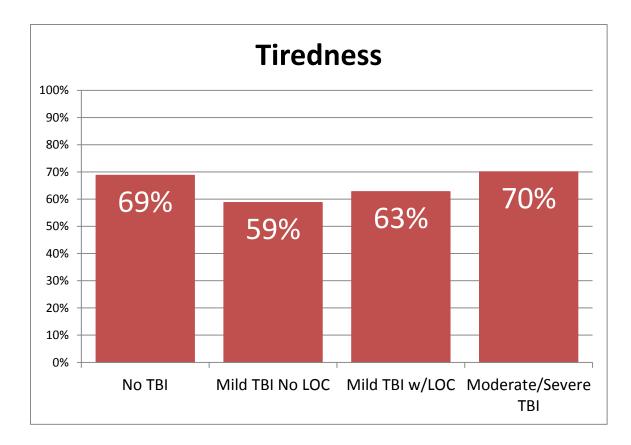
Needs help with ADLs 100% 90% 80% 70% 60% 50% 40% 30% 11% 20% 1% 0% 0% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Need to be reminded or supervised when doing activities of daily living

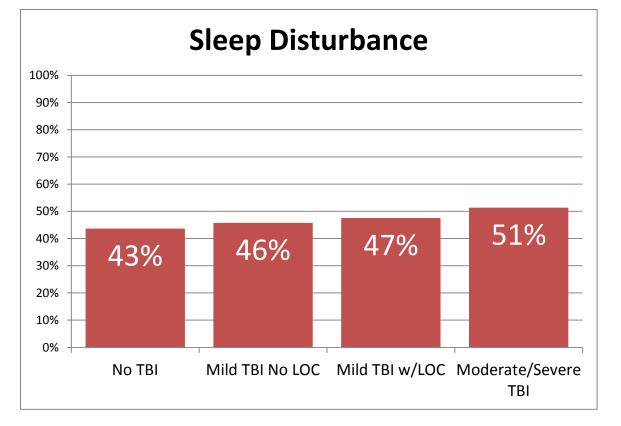
Needs supervision for ADLs

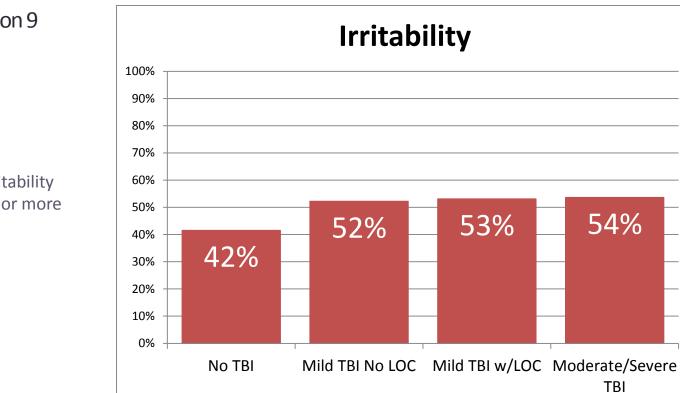


Reported tiredness several days or more per month

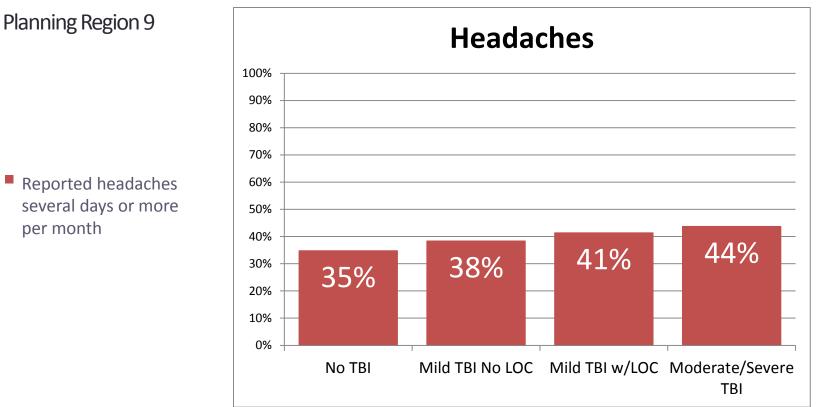


Reported sleep disturbance several days or more per month



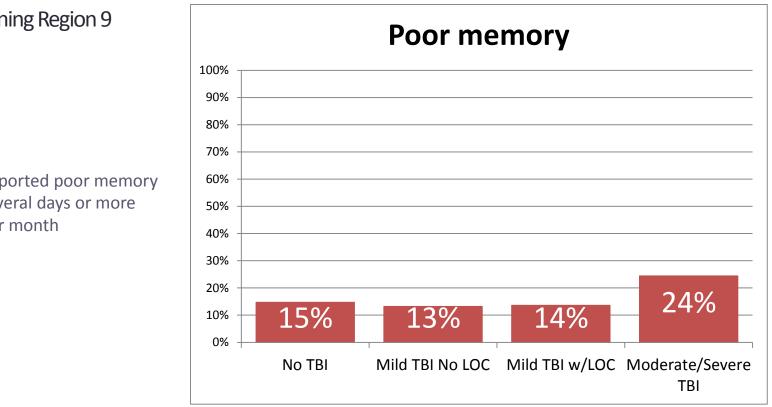


Reported irritability several days or more per month

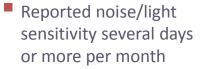


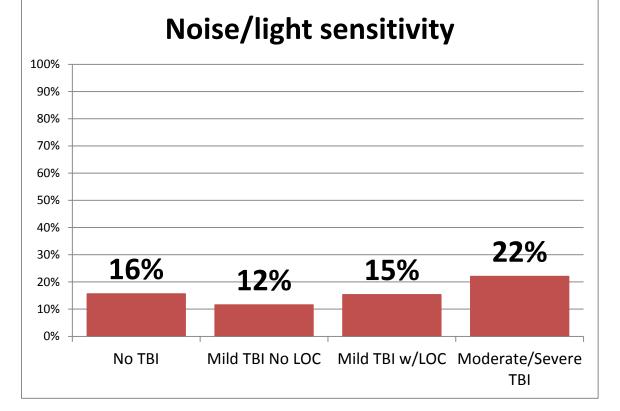
Reported headaches several days or more per month

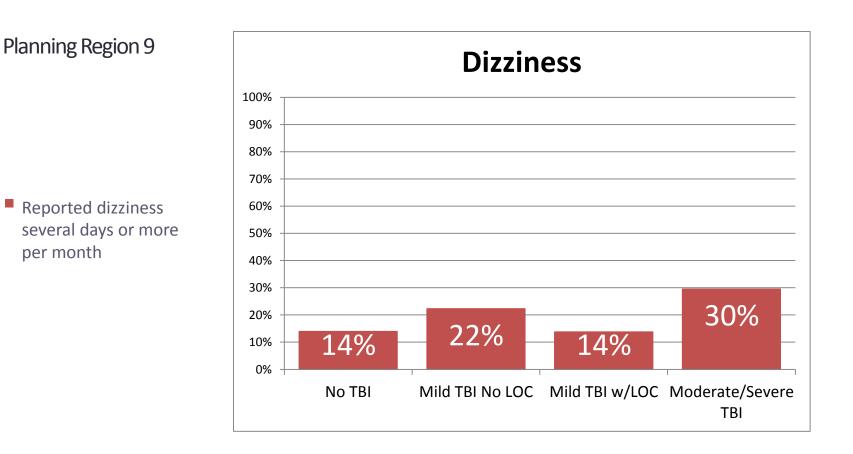
Planning Region 9 **Poor concentration** 100% 90% 80% 70% Reported poor 60% concentration several 50% 37% days or more per month 40% 25% 30% 18% 20% 8% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

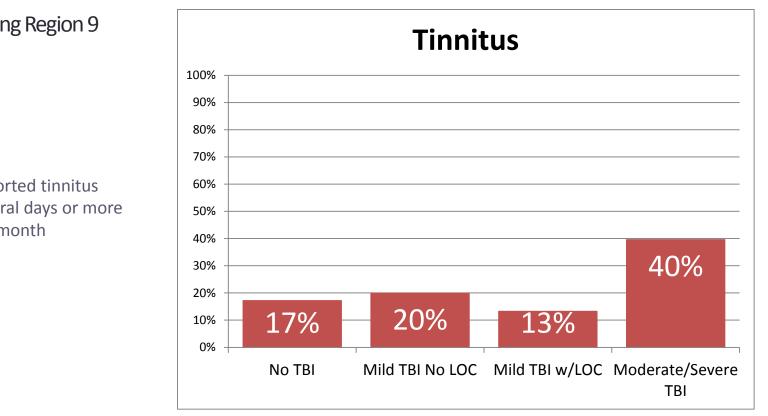


Reported poor memory several days or more per month

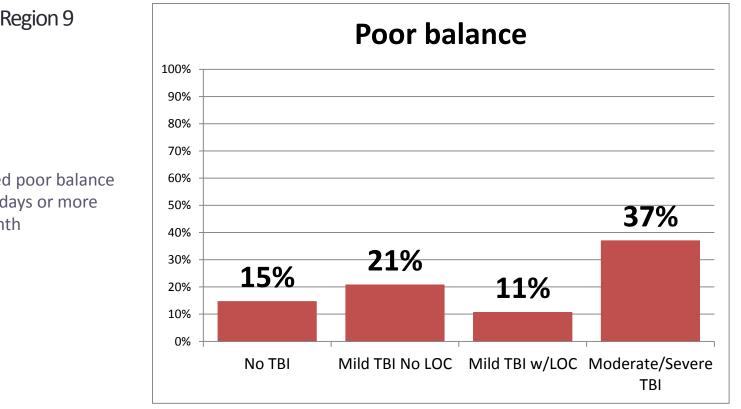




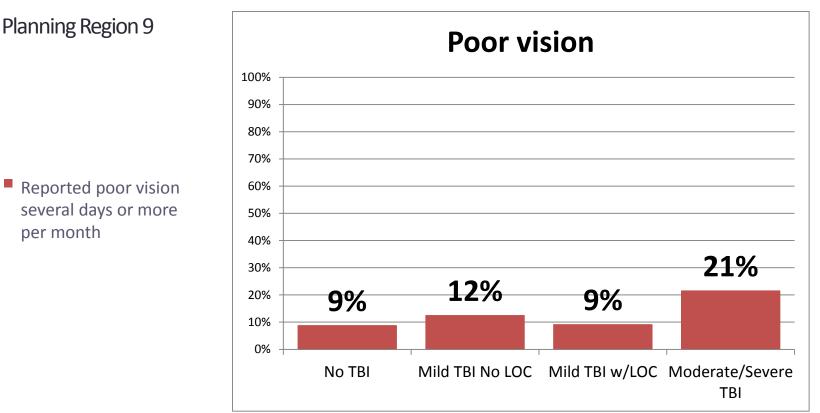


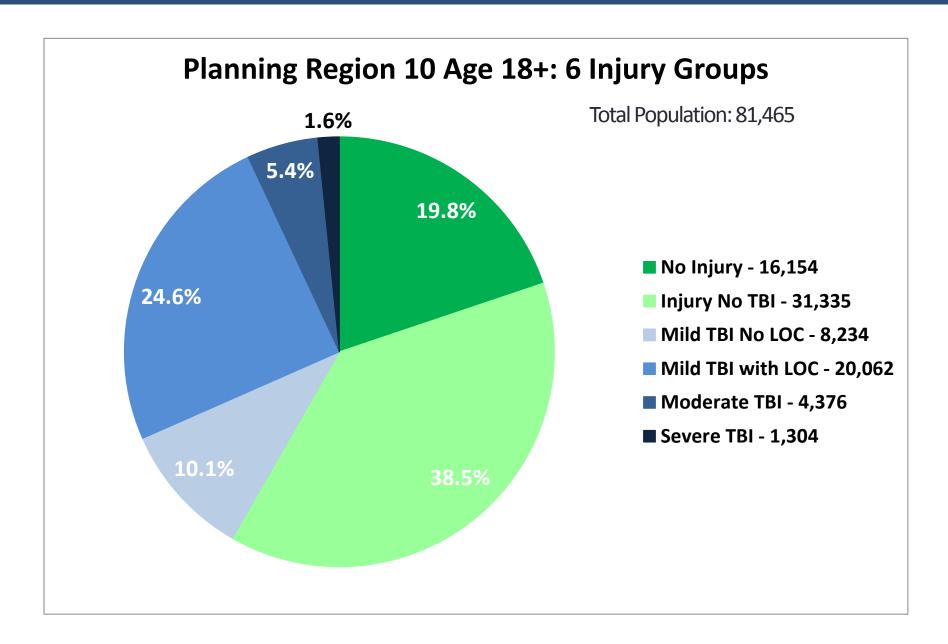


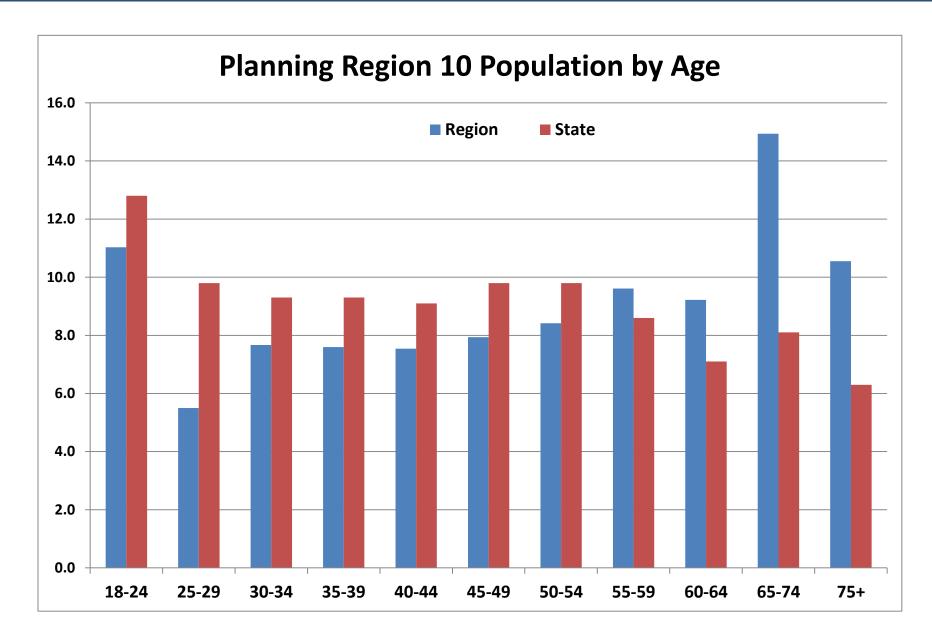
Reported tinnitus several days or more per month

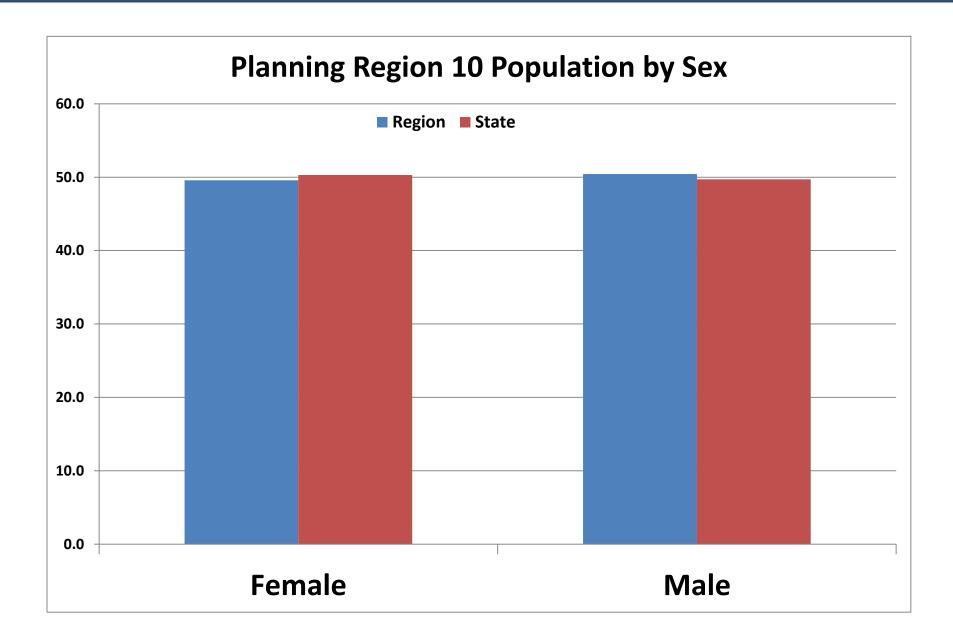


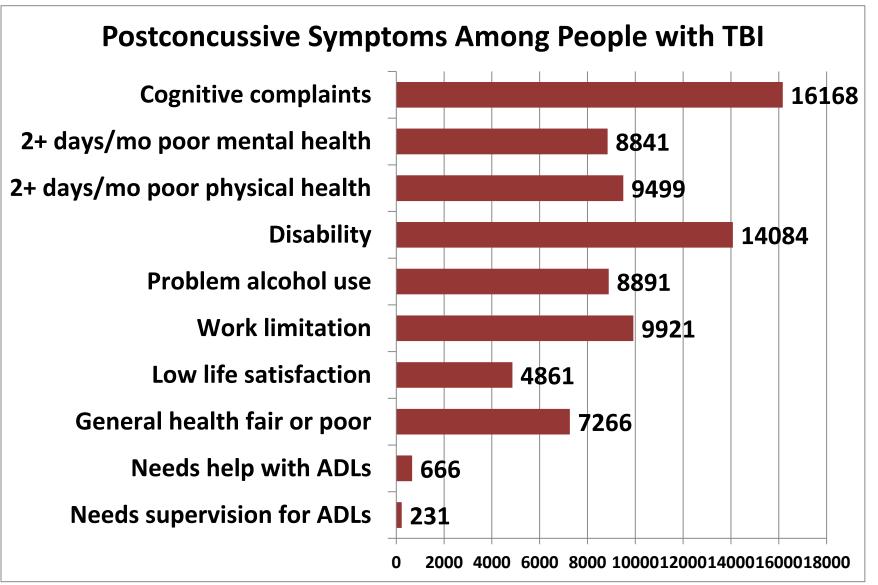
Reported poor balance several days or more per month

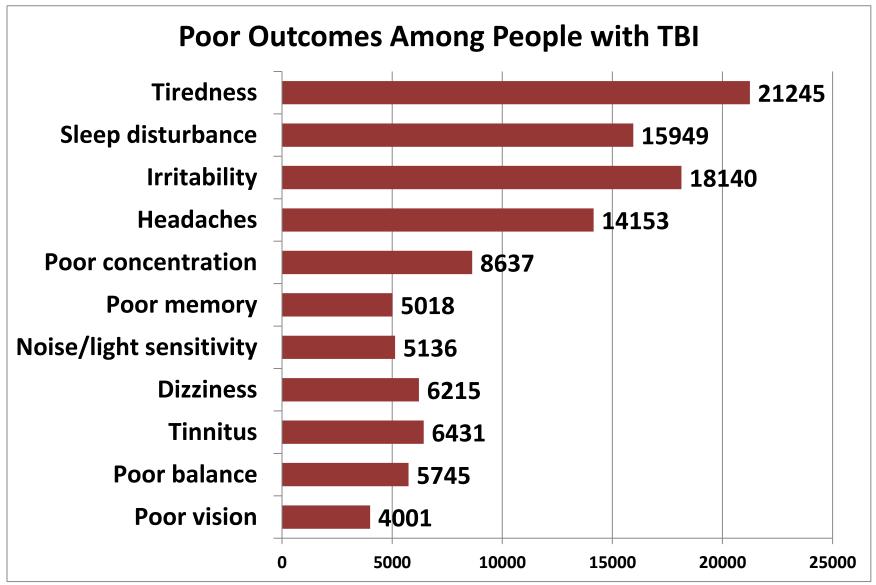




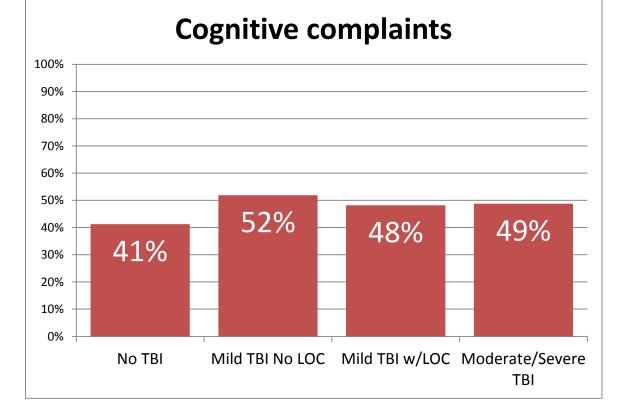








Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile

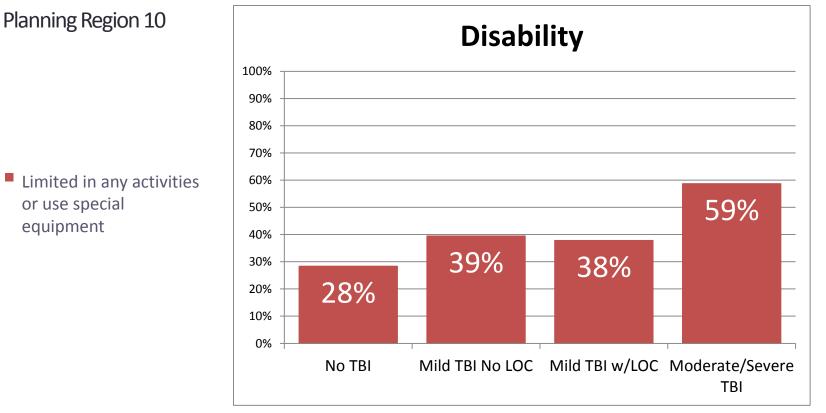


Two or more days of poor mental health reported

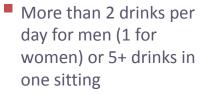
2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 40% 30% 36% 33% 31% 20% 22% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

Two or more days of poor physical health reported

2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 43% 30% 20% 26% 26% 24% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

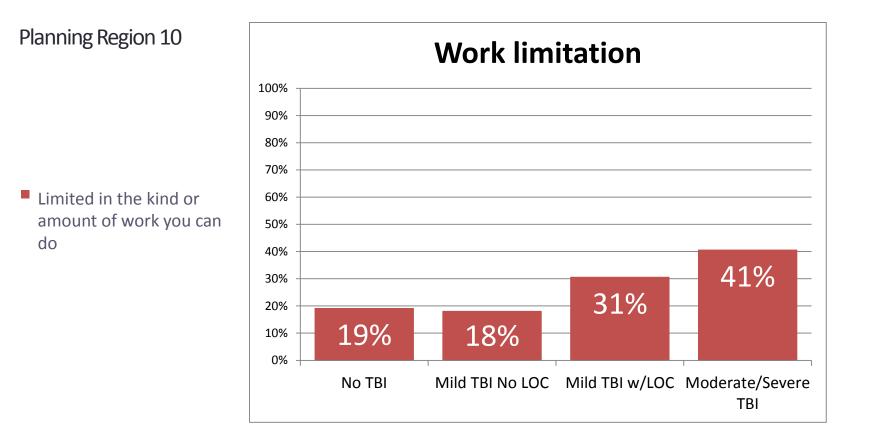


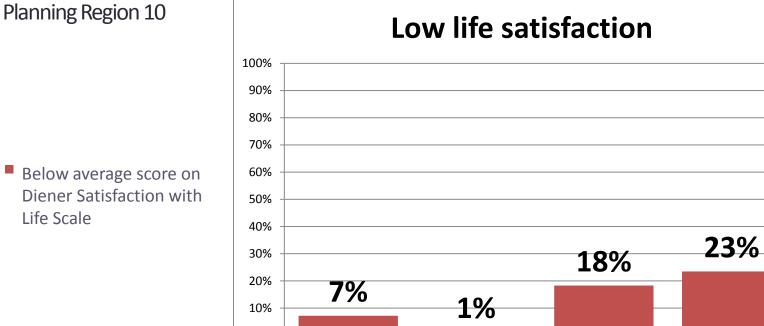
Limited in any activities or use special equipment



100% 90% 80% 70% 60% 50% 40% 30% 33% 30% 20% 23% 13% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

Problem alcohol use





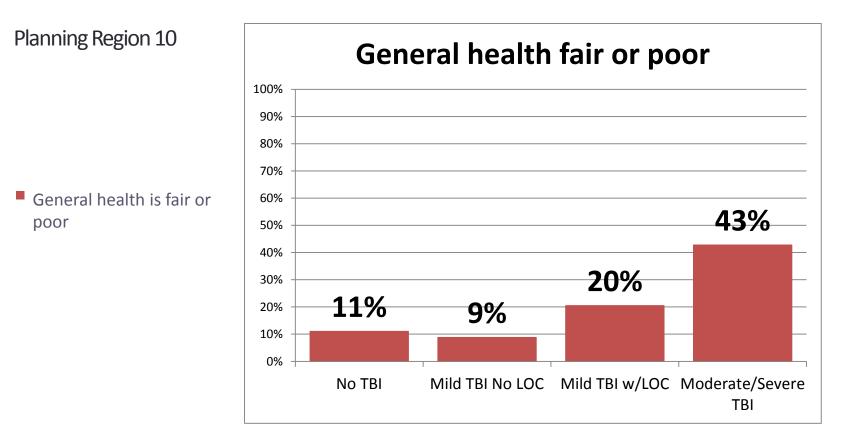
No TBI

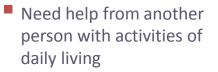
Mild TBI No LOC Mild TBI w/LOC Moderate/Severe

TBI

0%

Diener Satisfaction with Life Scale

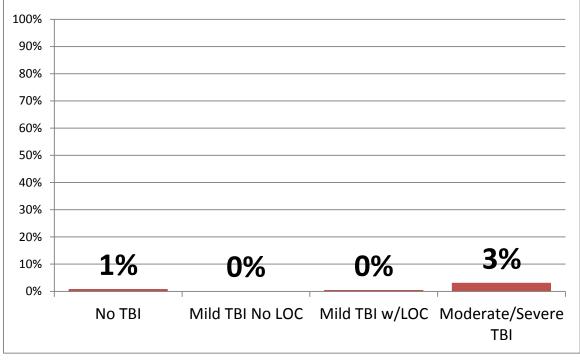




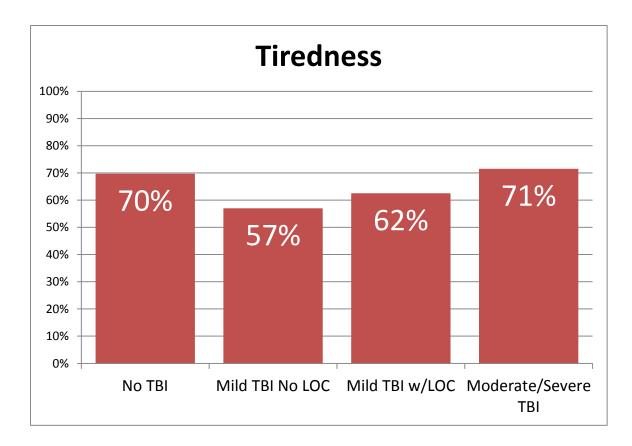
Needs help with ADLs 100% 90% 80% 70% 60% 50% 40% 30% 11% 20% 1% 0% 0% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Need to be reminded or supervised when doing activities of daily living

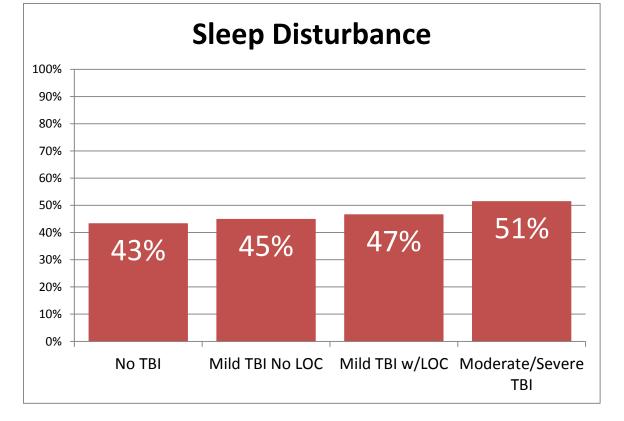
Needs supervision for ADLs

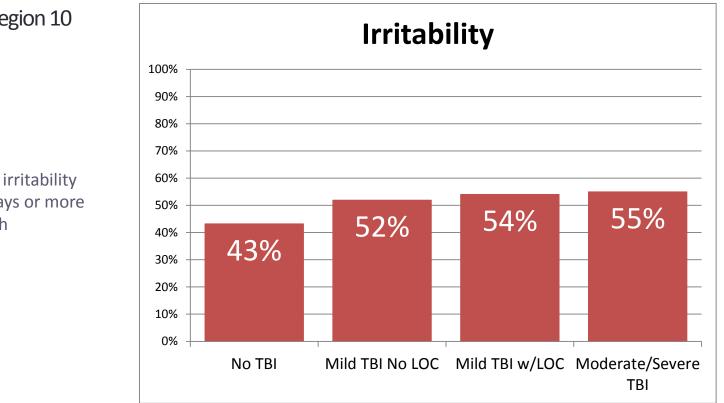


Reported tiredness several days or more per month

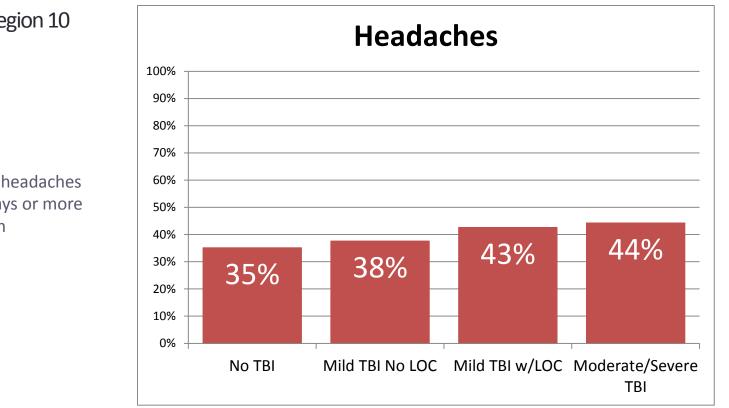


Reported sleep disturbance several days or more per month

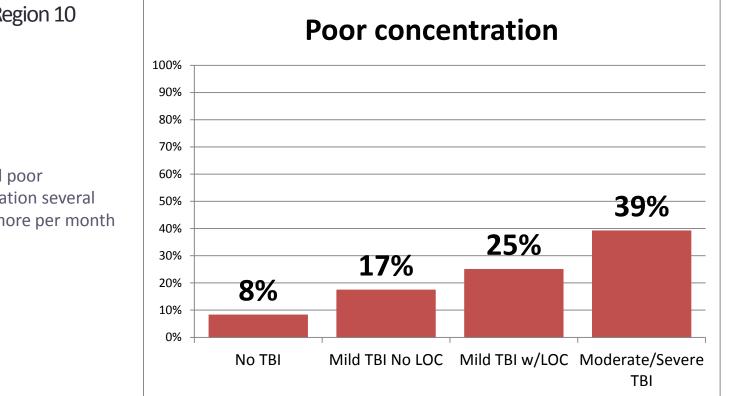




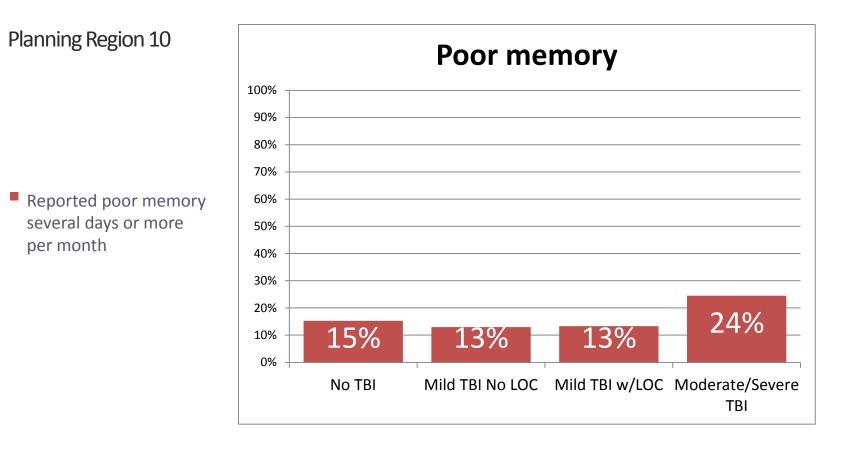
Reported irritability several days or more per month

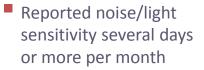


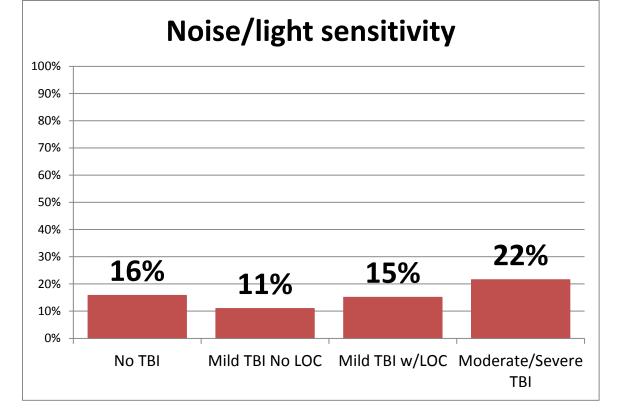
Reported headaches several days or more per month

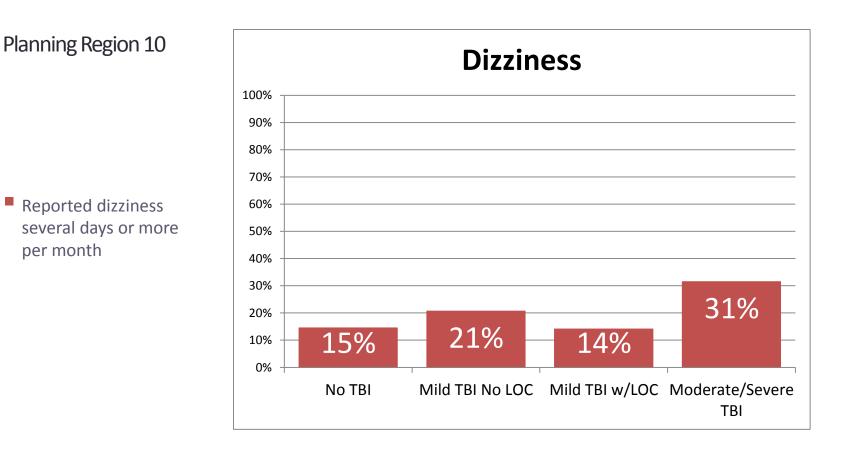


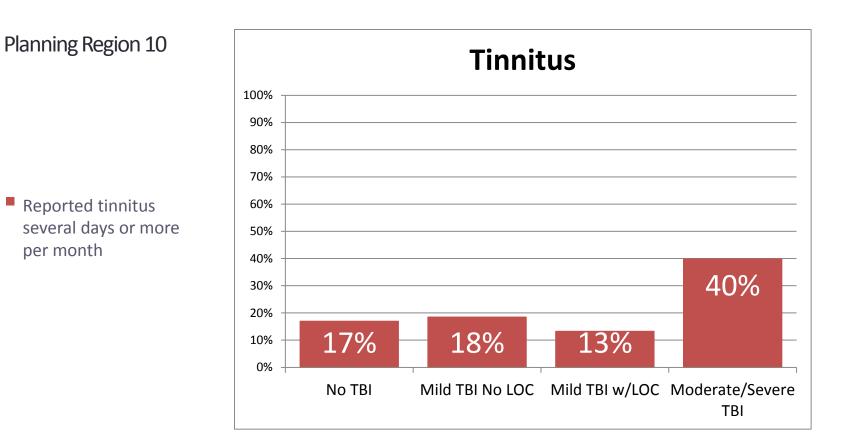
Reported poor concentration several days or more per month

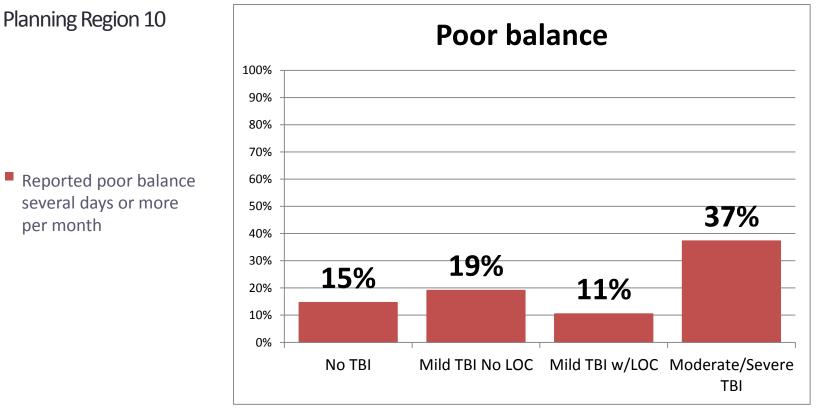




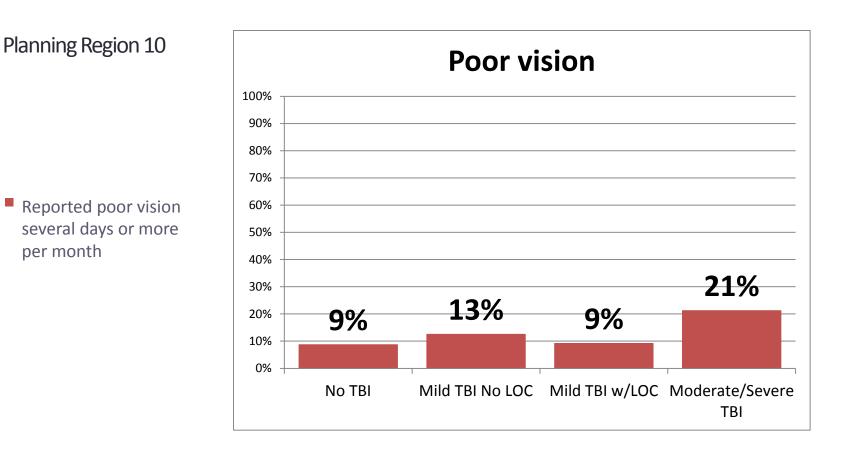


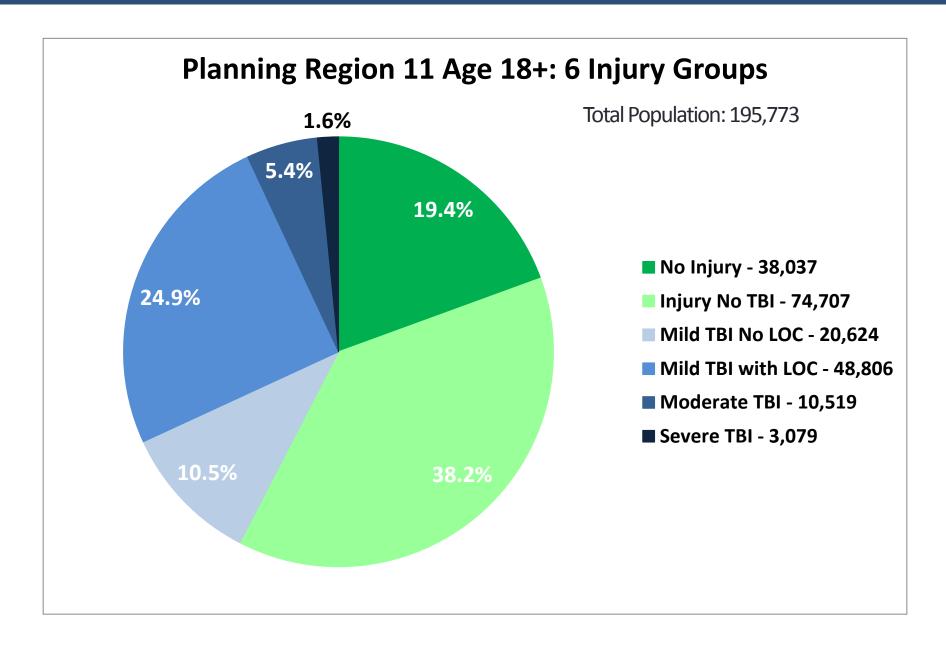


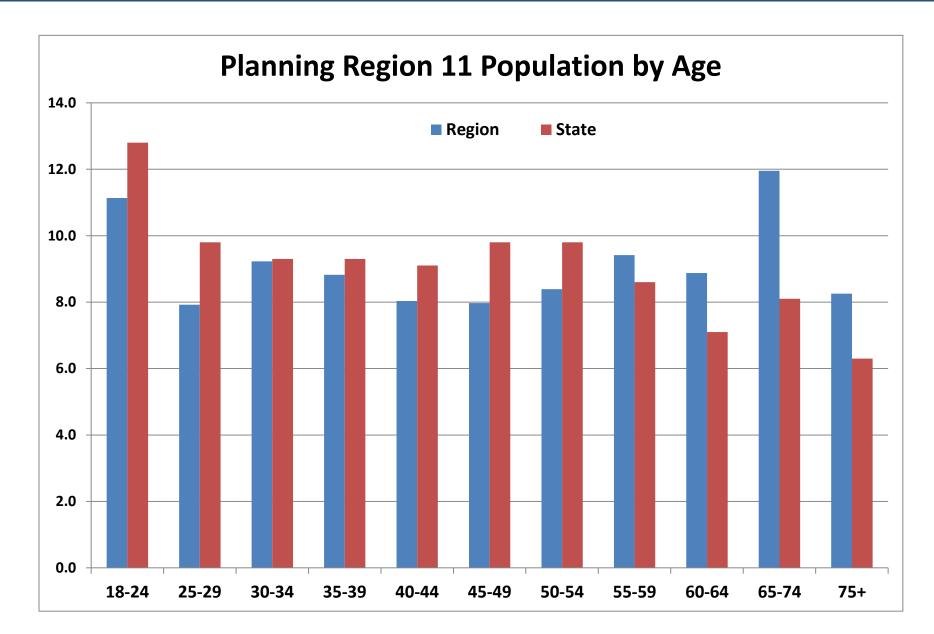


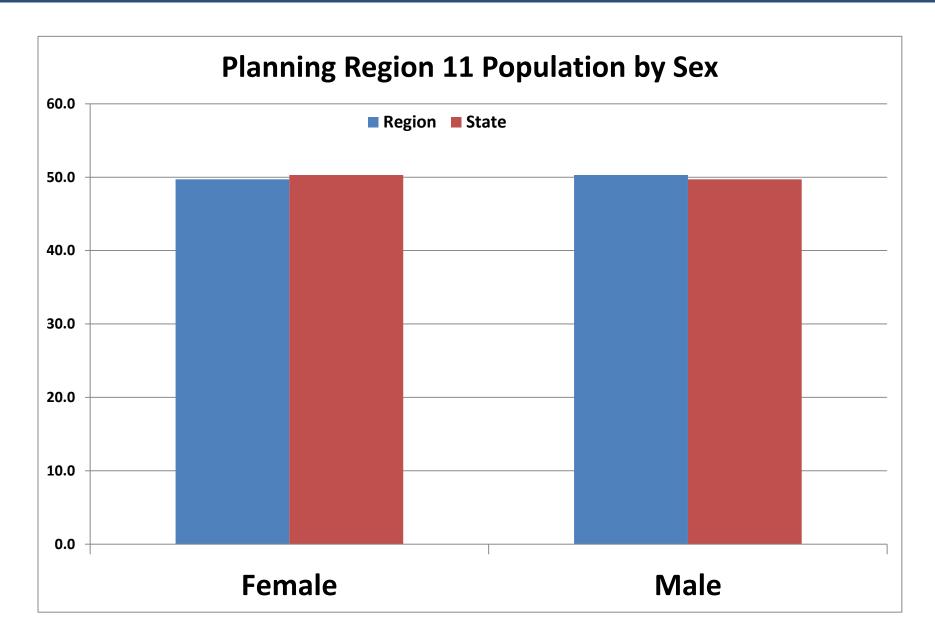


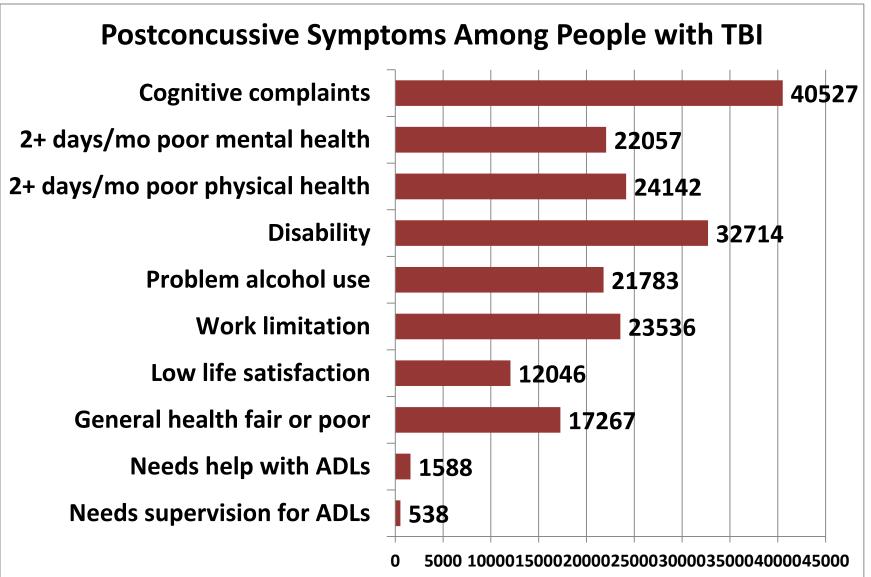
Reported poor balance

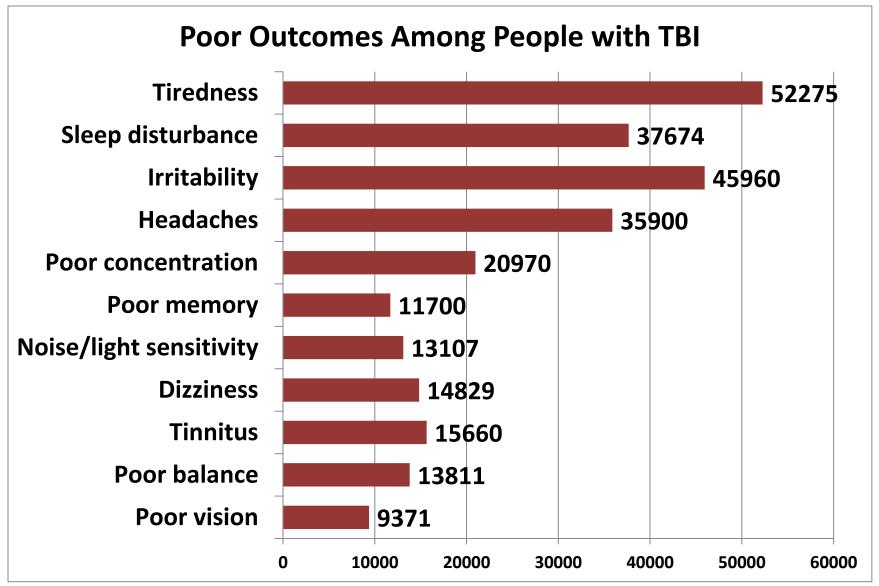




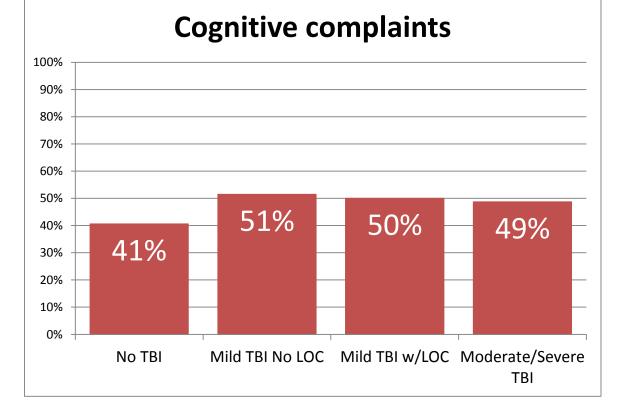








 Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile

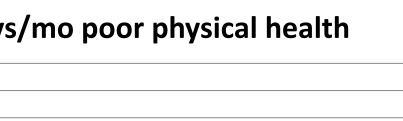


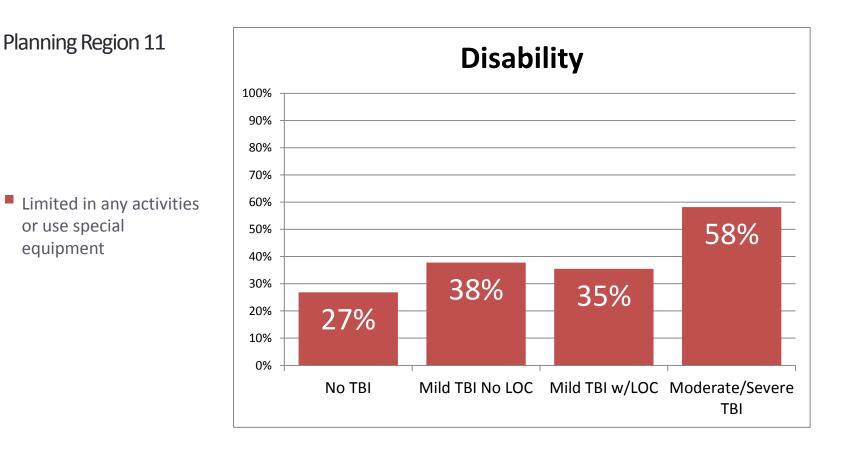
Two or more days of poor mental health reported

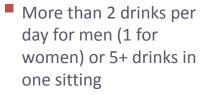
2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 40% 38% 30% 35% 31% 20% 23% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

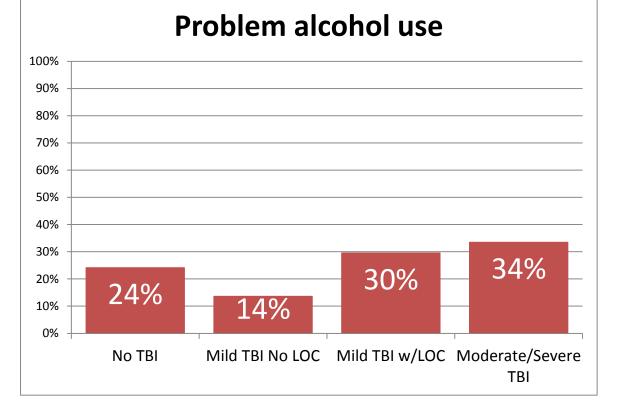
Two or more days of poor physical health reported

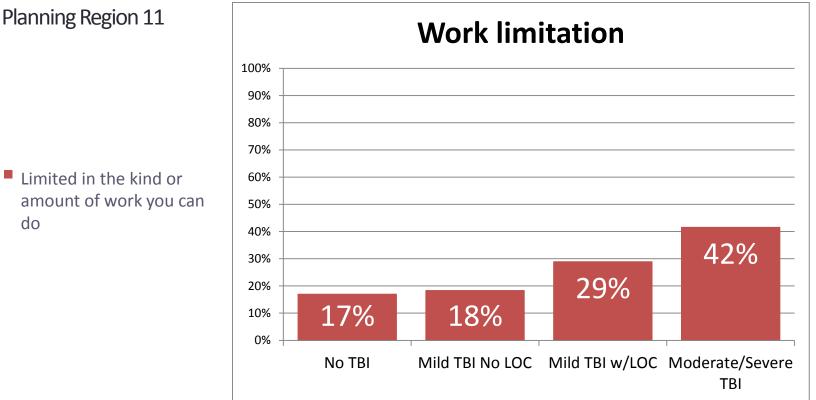
2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 44% 30% 20% 28% 24% 24% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

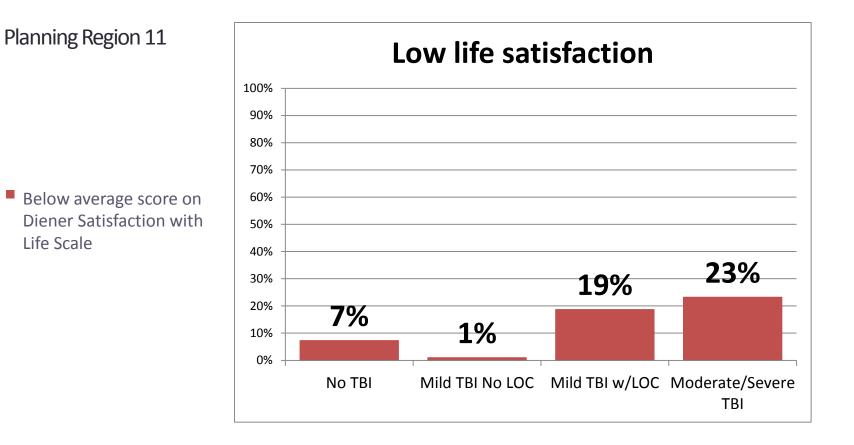


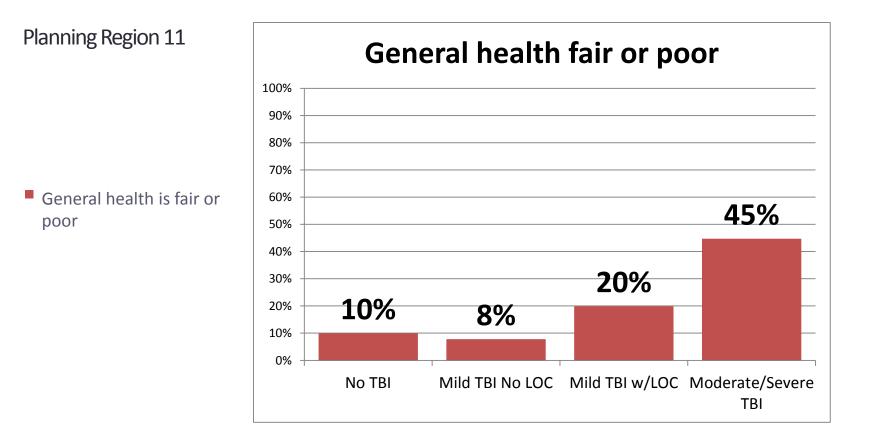


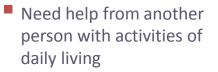




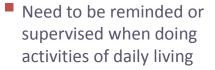






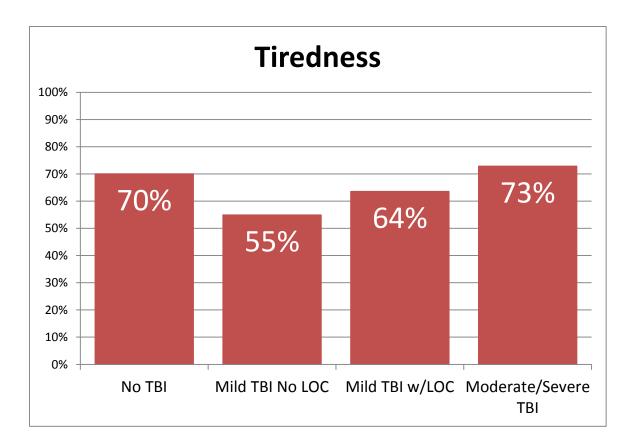


Needs help with ADLs 100% 90% 80% 70% 60% 50% 40% 30% 11% 20% 1% 0% 0% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

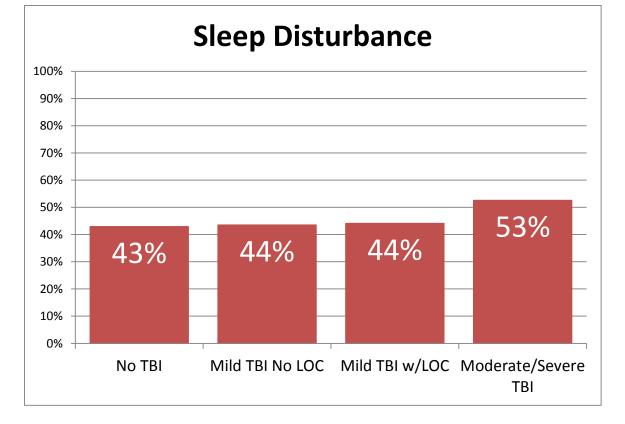


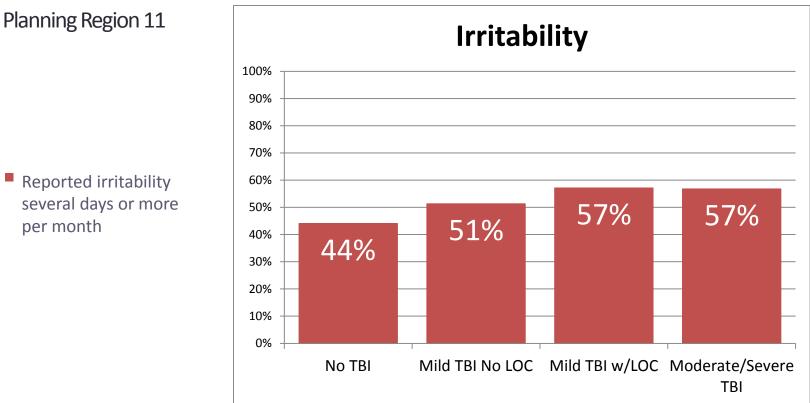
Needs supervision for ADLs 100% 90% 80% 70% 60% 50% 40% 30% 20% 3% 1% 0% 0% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Reported tiredness several days or more per month

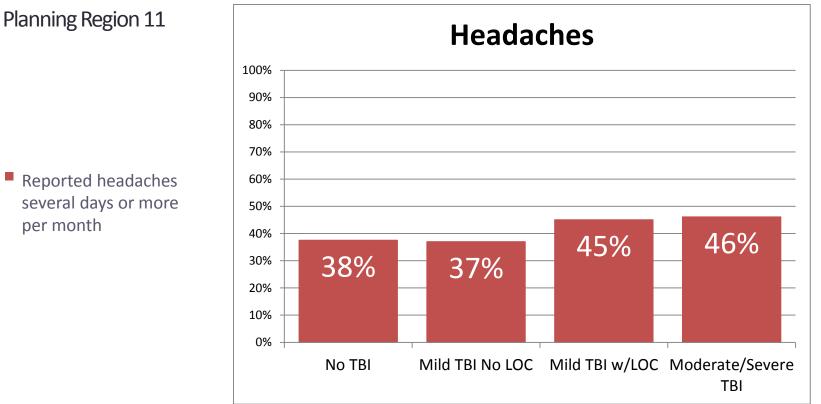


Reported sleep disturbance several days or more per month



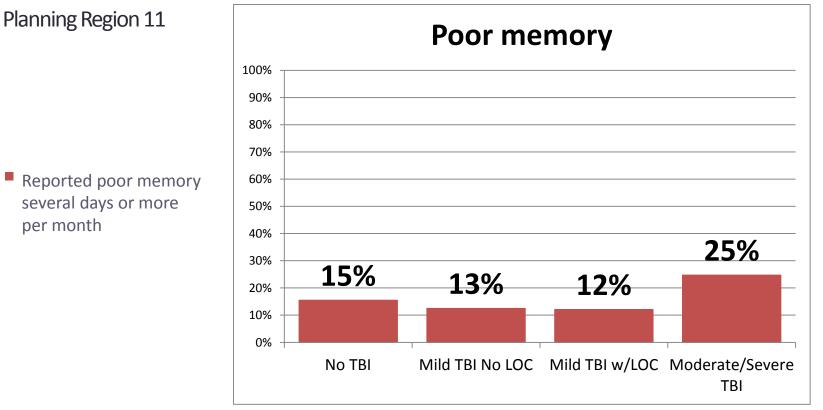


Reported irritability several days or more per month

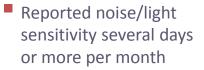


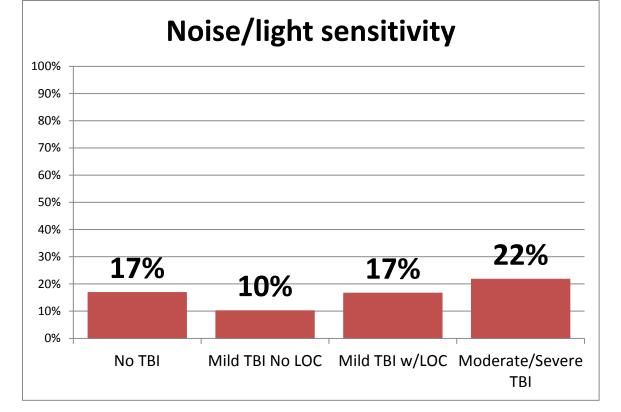
- Reported headaches several days or more per month

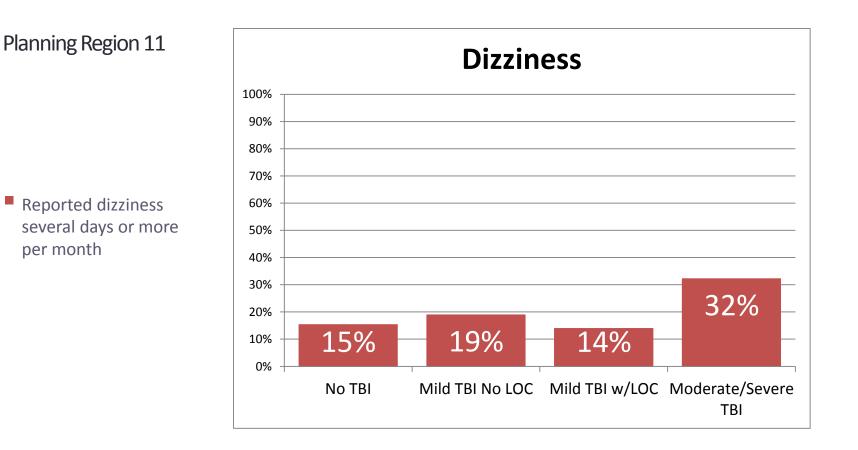
Planning Region 11 **Poor concentration** 100% 90% 80% 70% Reported poor 60% concentration several 40% 50% days or more per month 40% 25% 30% 17% 20% 8% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

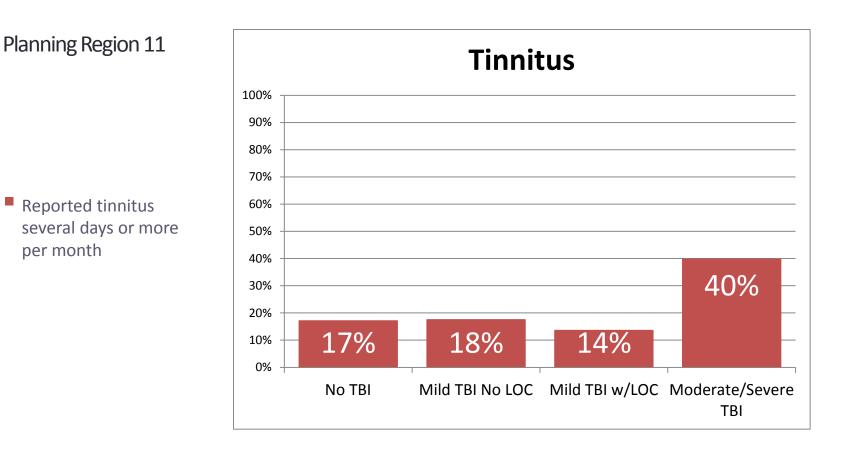


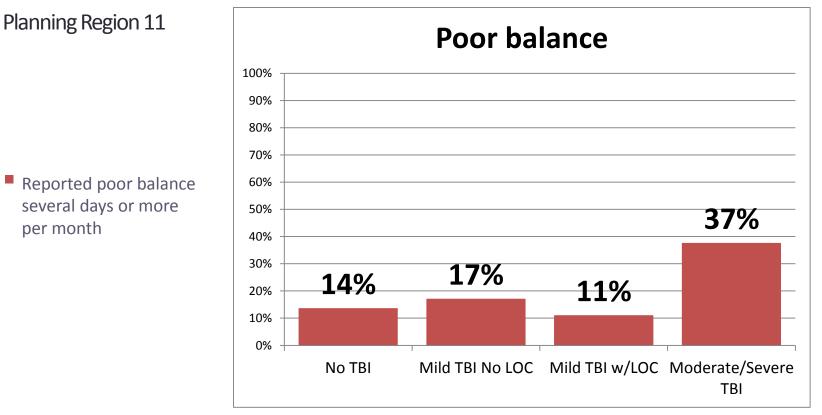
Reported poor memory several days or more per month

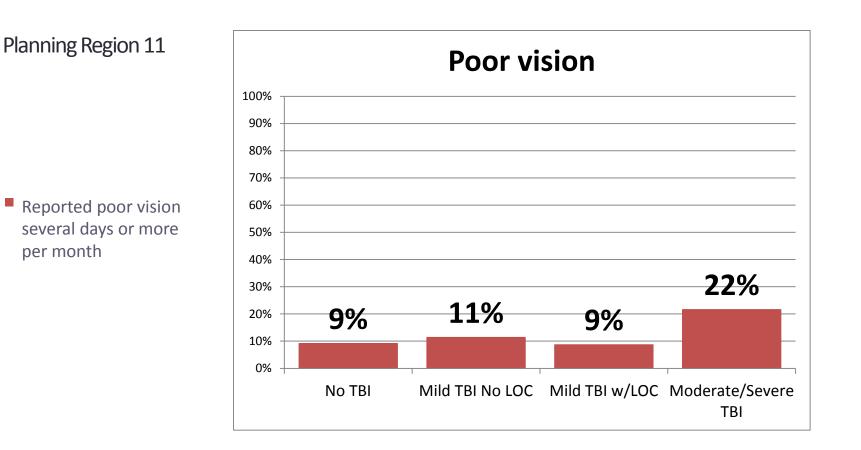


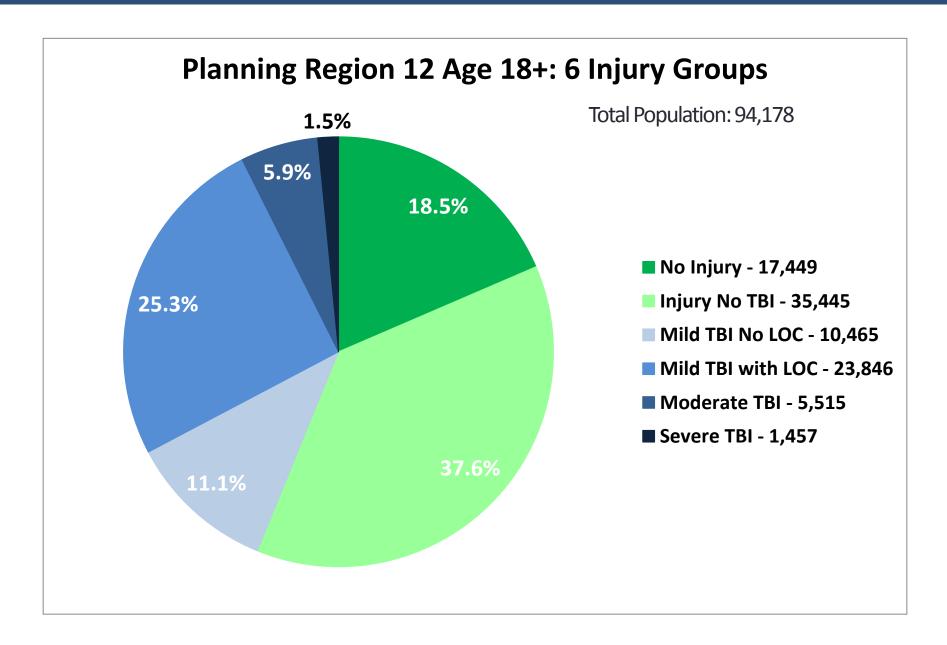


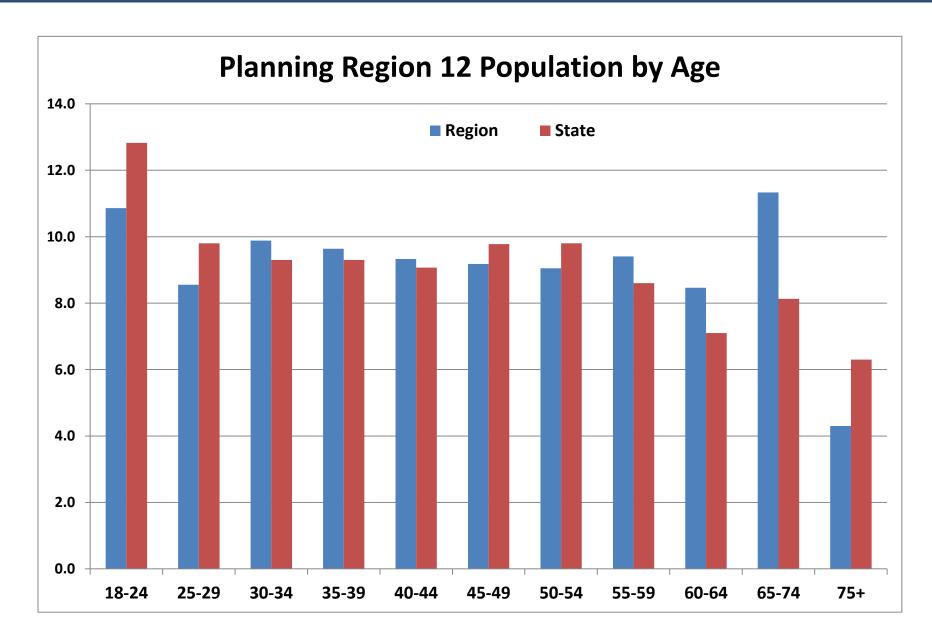


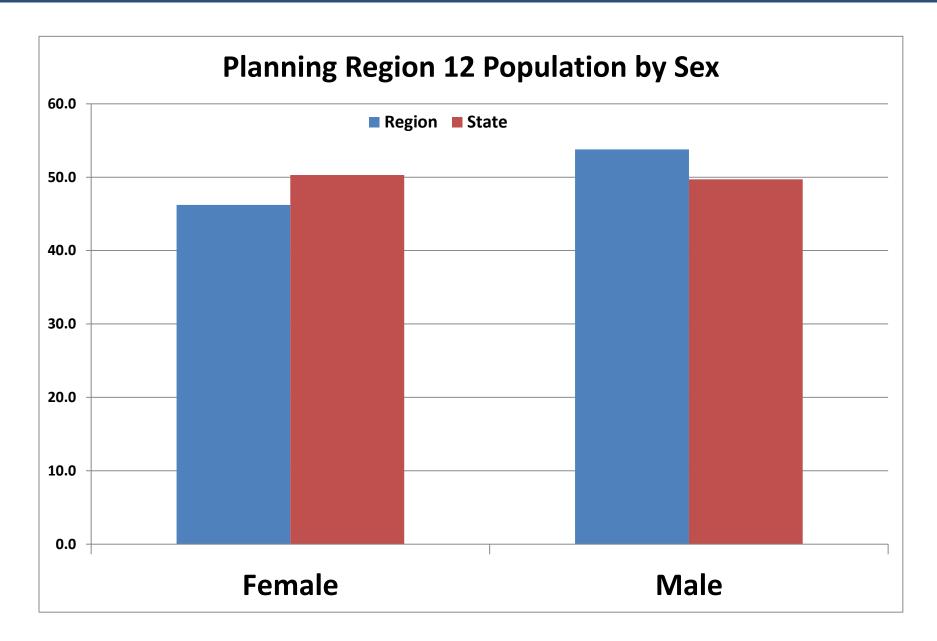


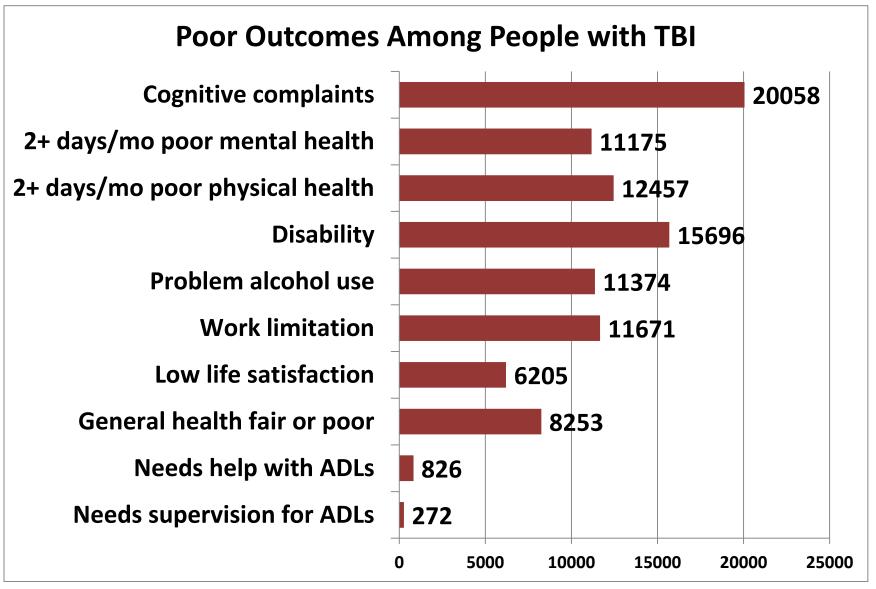


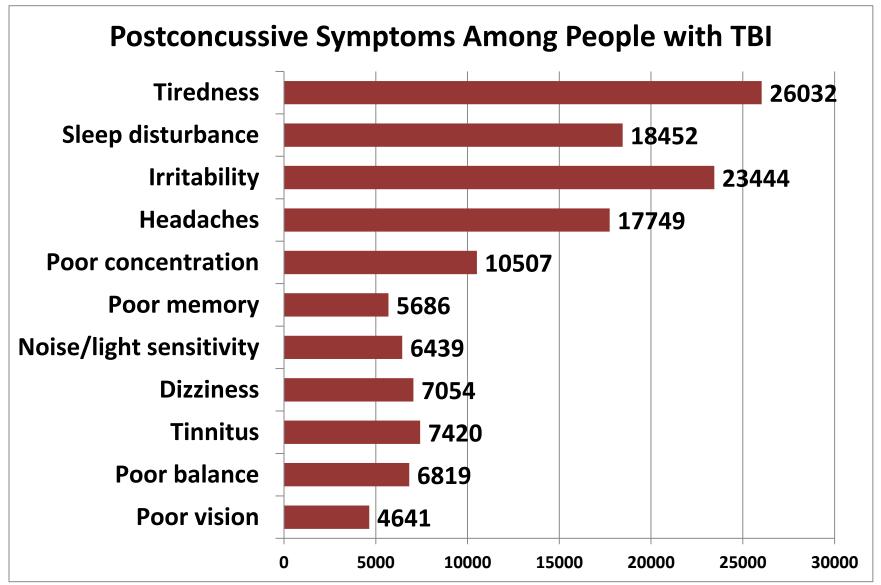




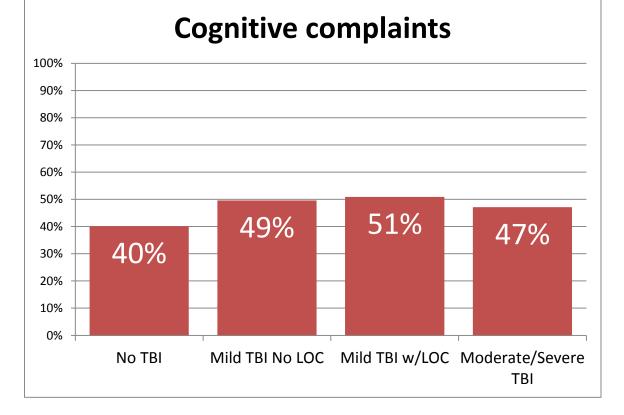








 Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile



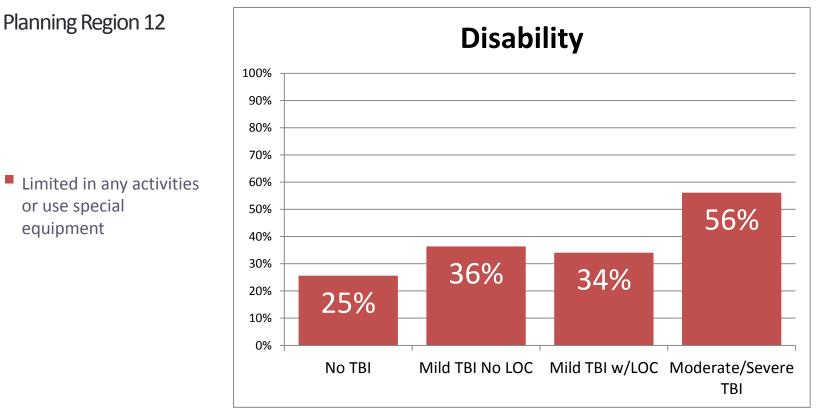
Two or more days of poor mental health reported

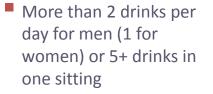
100% 90% 80% 70% 60% 50% 40% 38% 30% 37% 31% 20% 23% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

2+ days/mo poor mental health

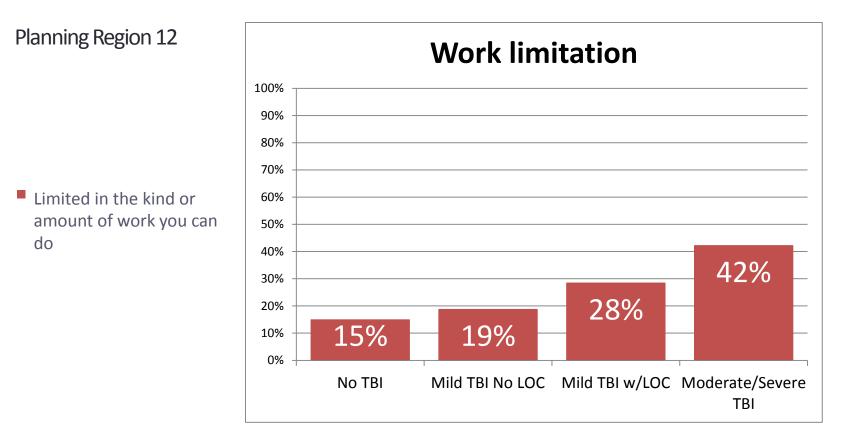
Two or more days of poor physical health reported

2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 46% 30% 29% 20% 23% 23% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

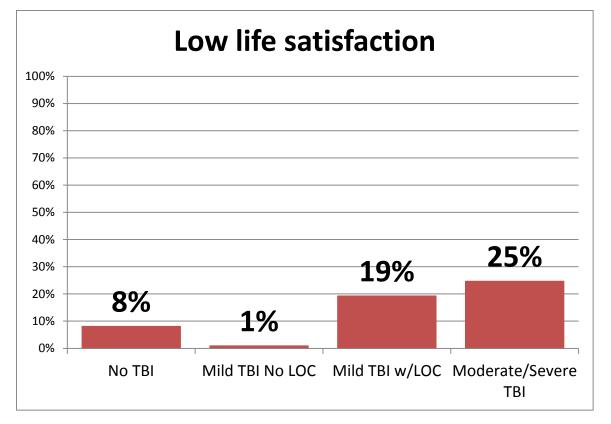


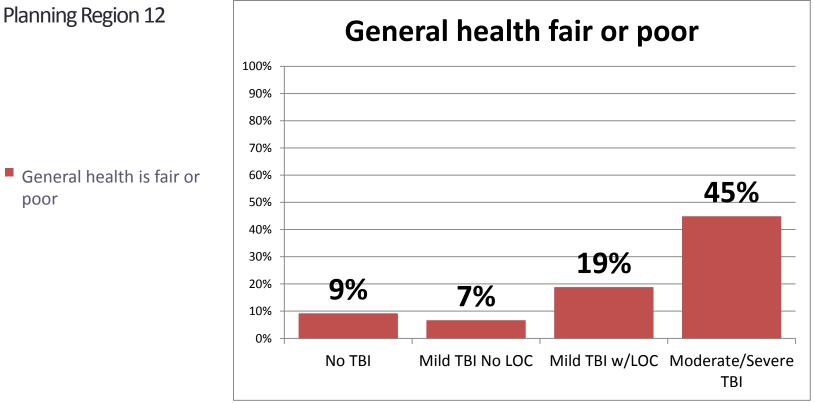


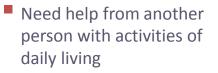
Problem alcohol use 100% 90% 80% 70% 60% 50% 40% 30% 37% 31% 20% 25% 14% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI







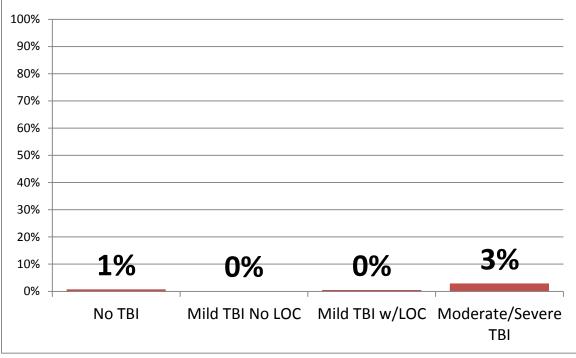




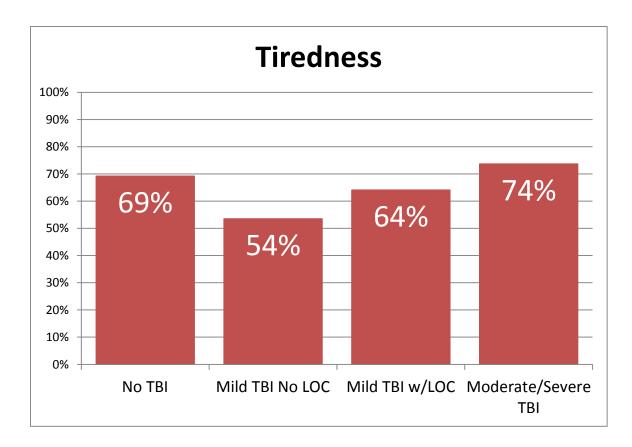
Needs help with ADLs 100% 90% 80% 70% 60% 50% 40% 30% 11% 20% 1% 0% 0% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Need to be reminded or supervised when doing activities of daily living

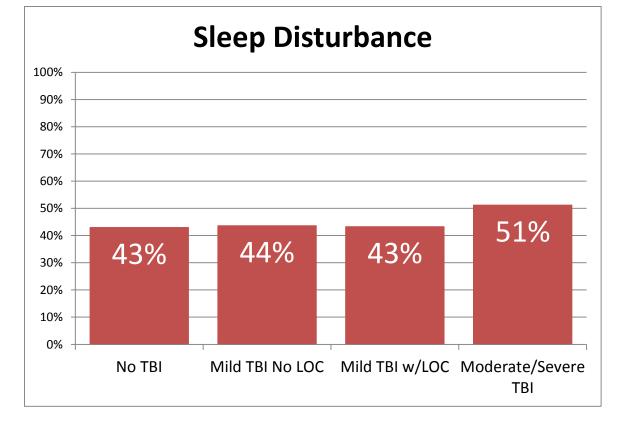
Needs supervision for ADLs



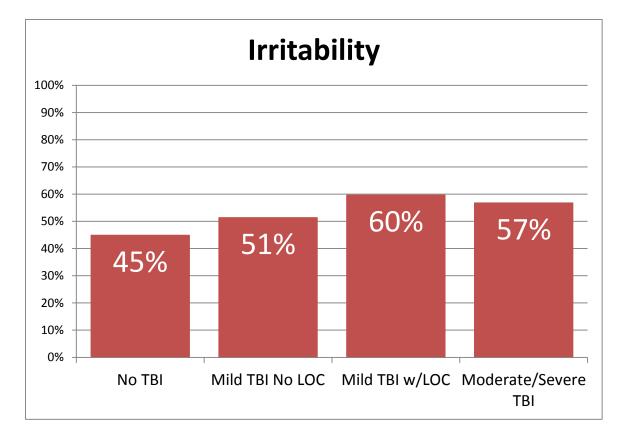
Reported tiredness several days or more per month

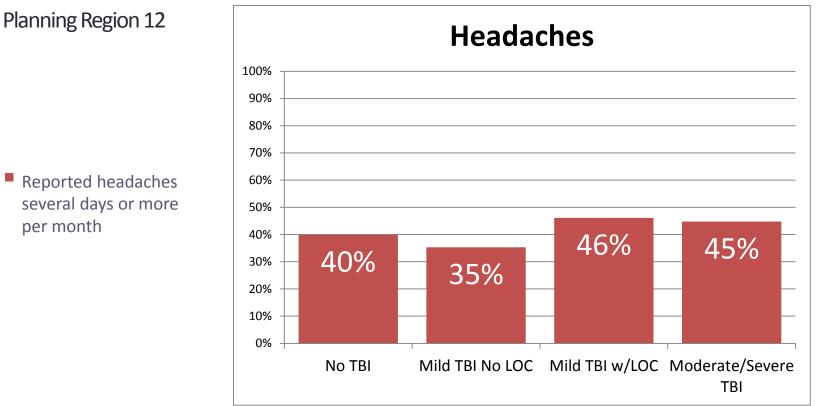


Reported sleep disturbance several days or more per month

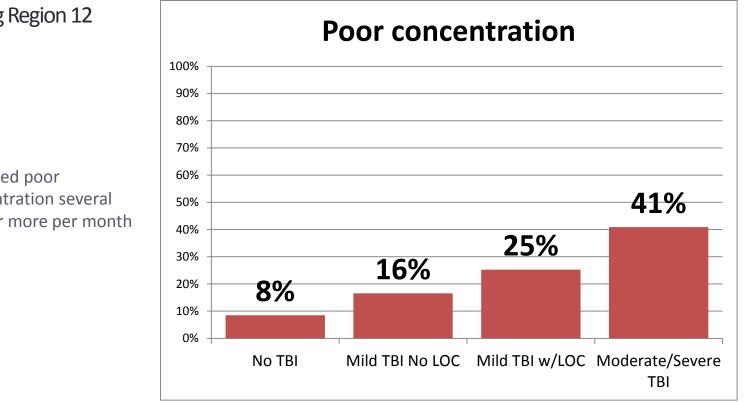


Reported irritability several days or more per month

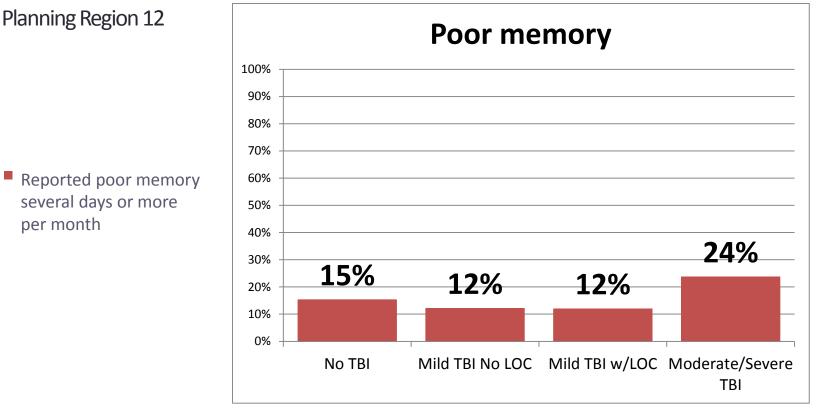


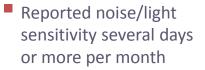


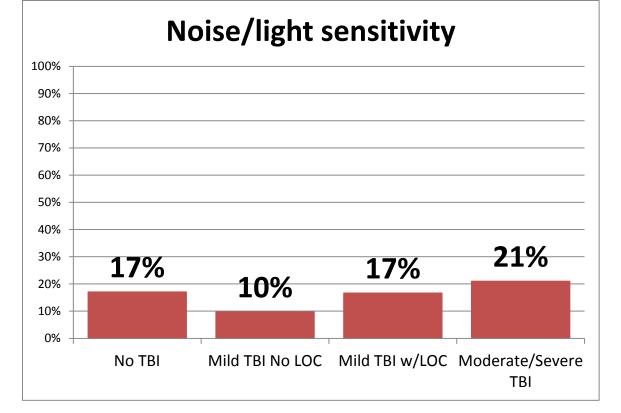
Reported headaches several days or more per month

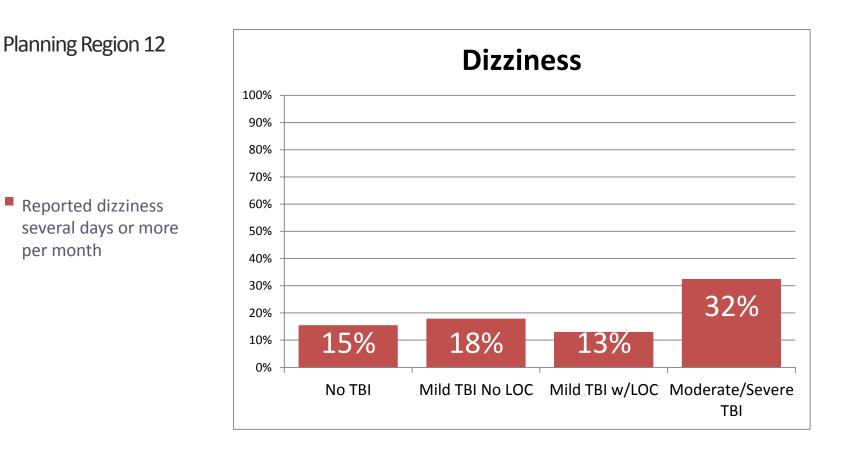


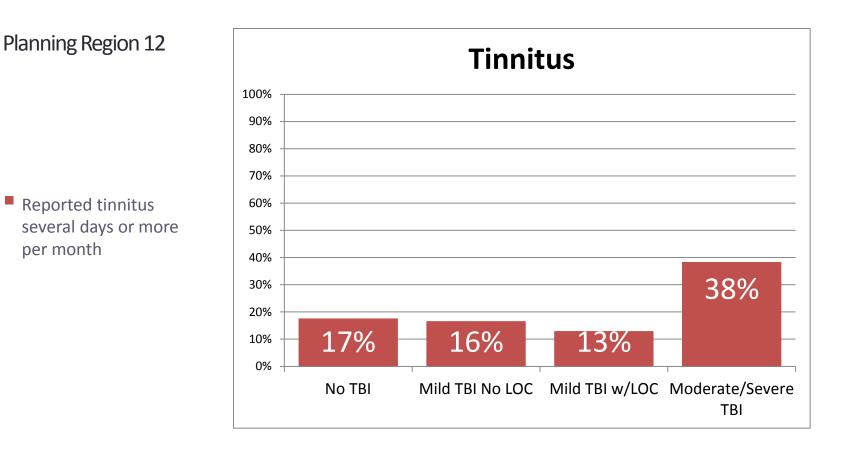
Reported poor concentration several days or more per month

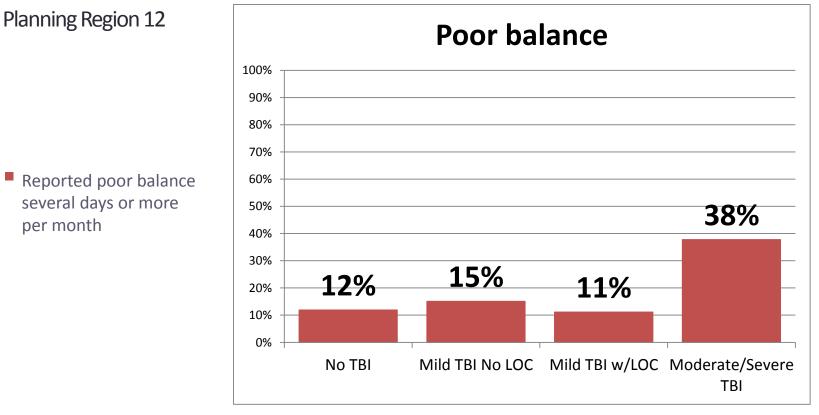




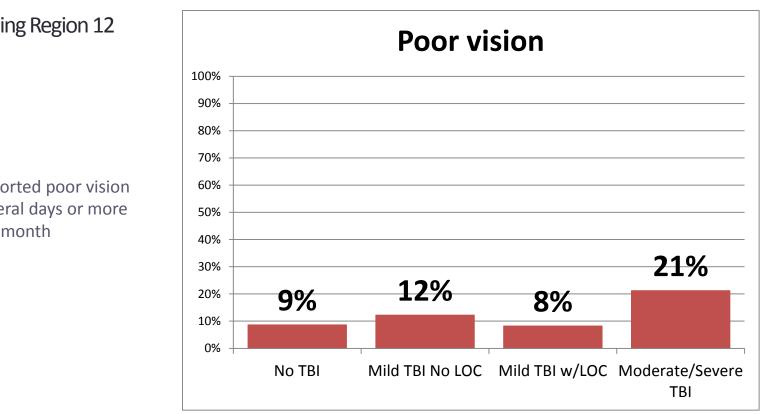




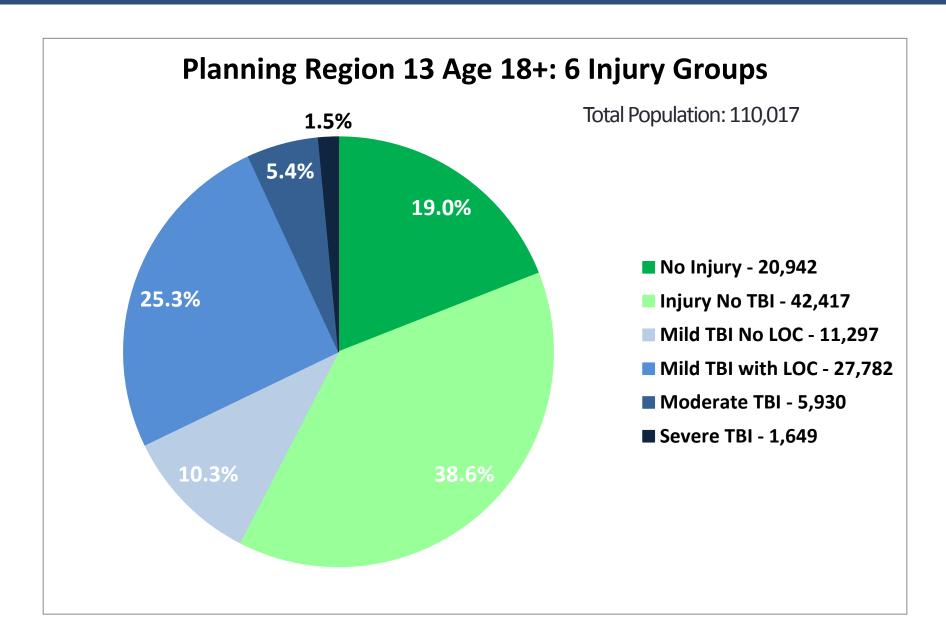


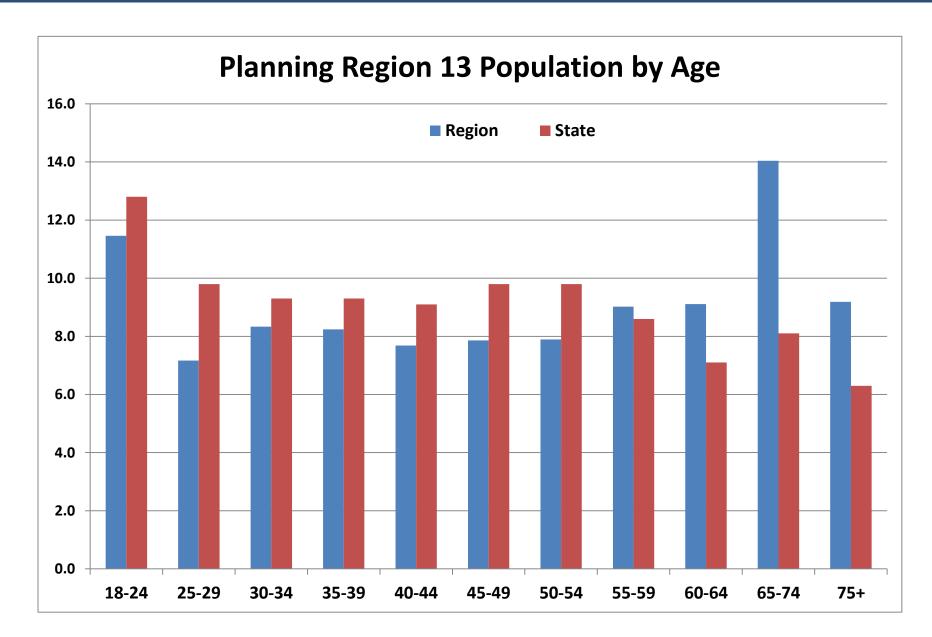


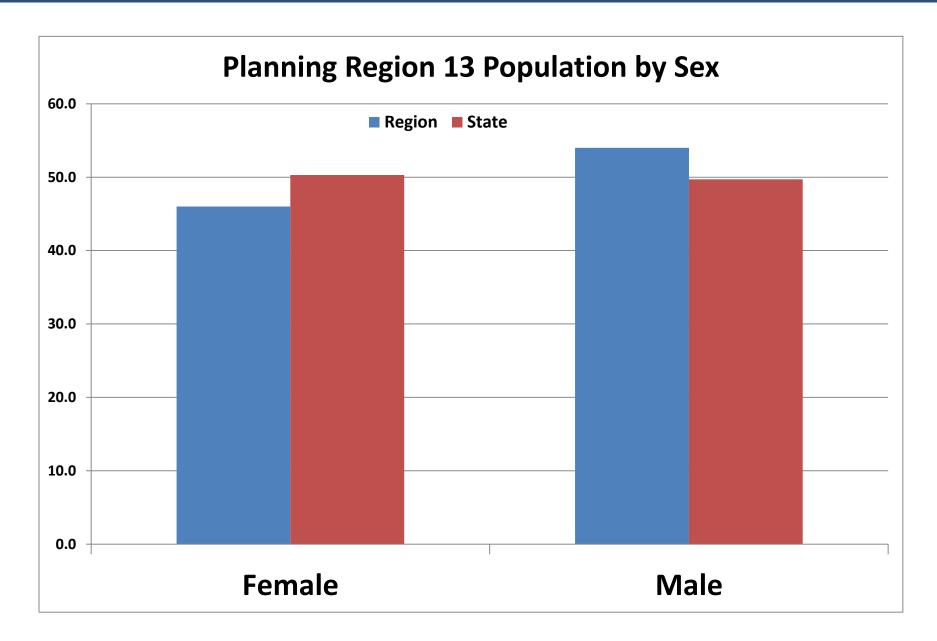
- Reported poor balance
 - several days or more per month

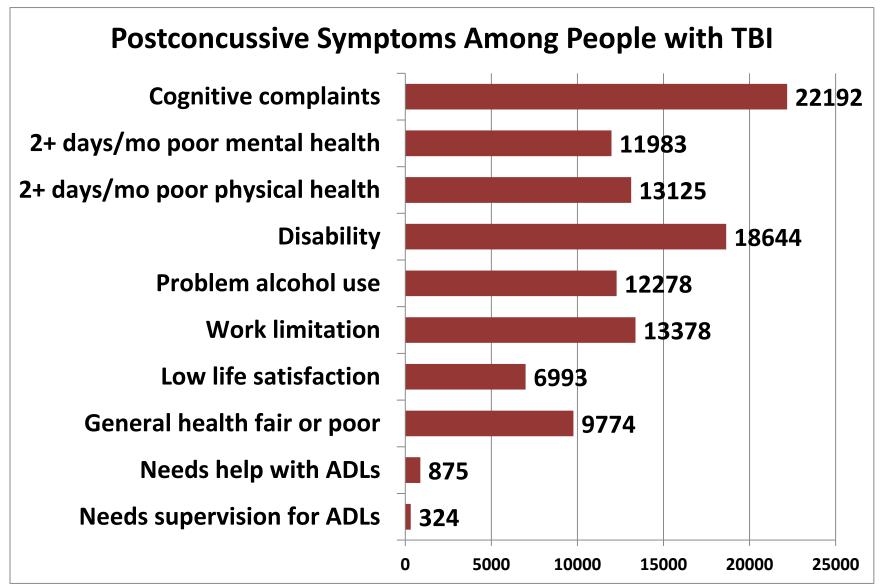


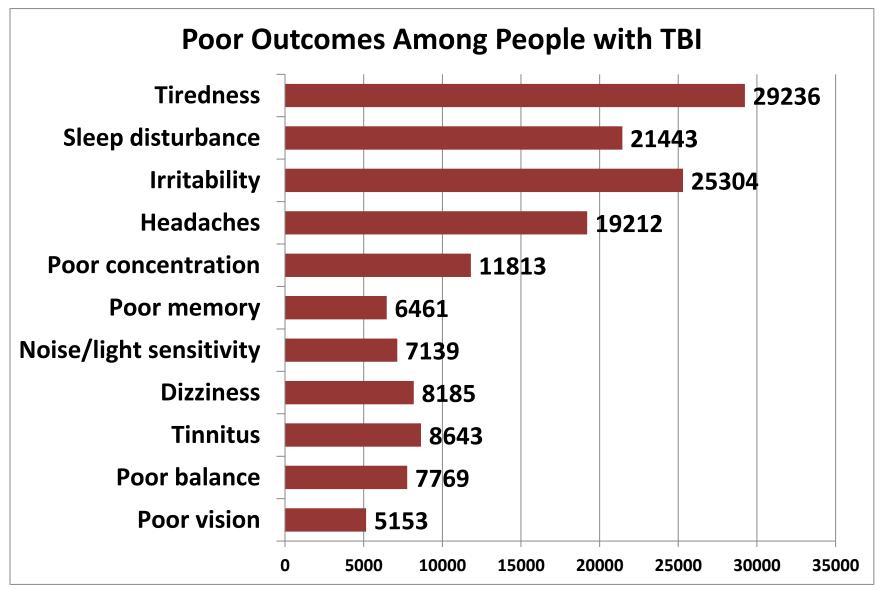
Reported poor vision several days or more per month



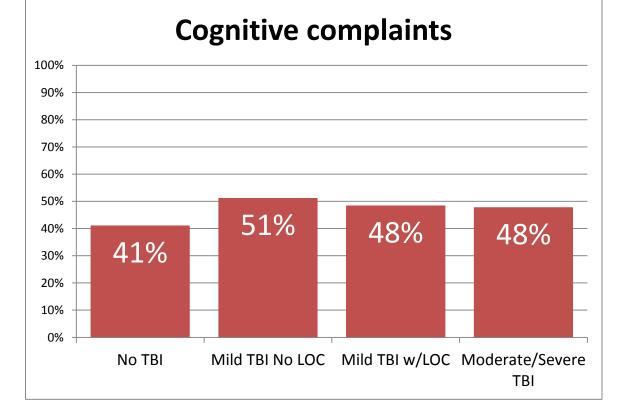








Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile



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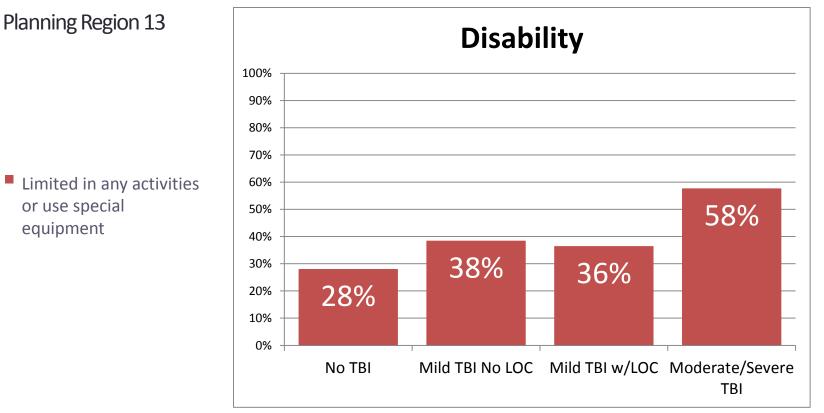
Planning Region 13

Two or more days of poor mental health reported

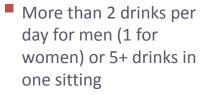
2+ days/mo poor mental health 100% 90% 80% 70% 60% 50% 40% 30% 36% 34% 31% 20% 22% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Two or more days of poor physical health reported

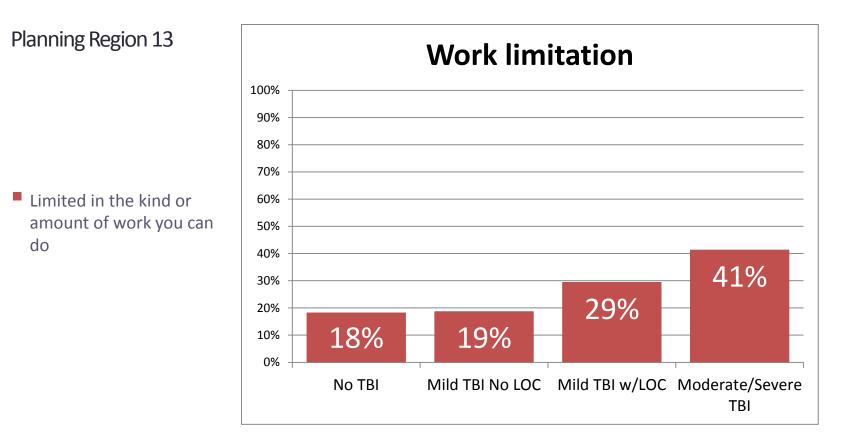
2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 44% 30% 20% 27% 25% 23% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI

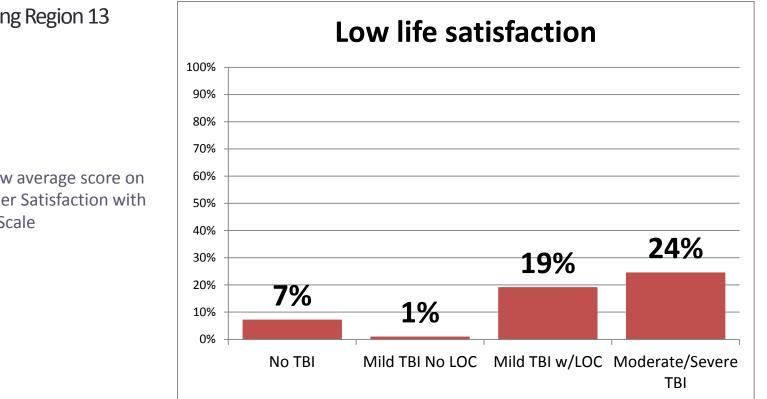


Limited in any activities or use special equipment

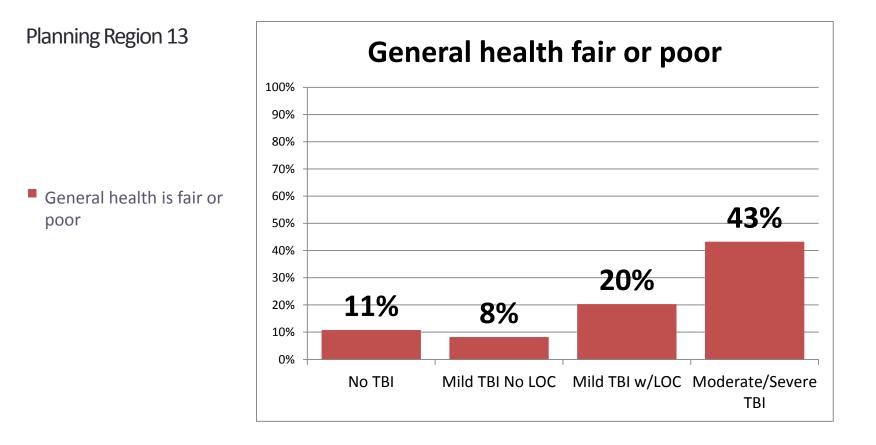


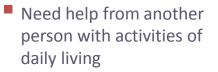
Problem alcohol use 100% 90% 80% 70% 60% 50% 40% 30% 35% 29% 20% 24% 13% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI





Below average score on **Diener Satisfaction with** Life Scale

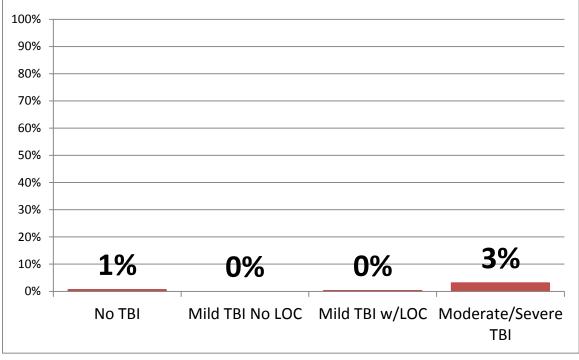




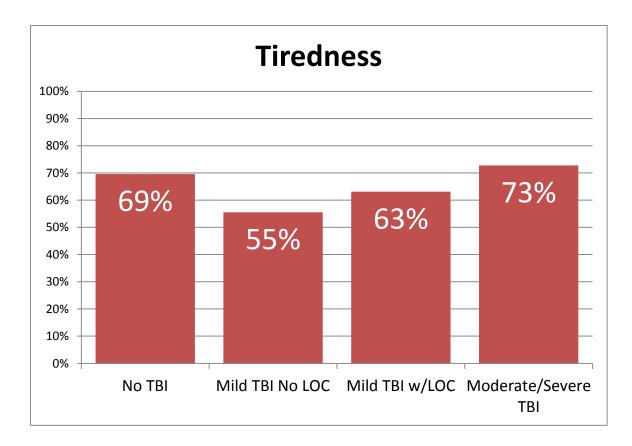
Needs help with ADLs 100% 90% 80% 70% 60% 50% 40% 30% 10% 20% 1% 0% 0% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

Need to be reminded or supervised when doing activities of daily living

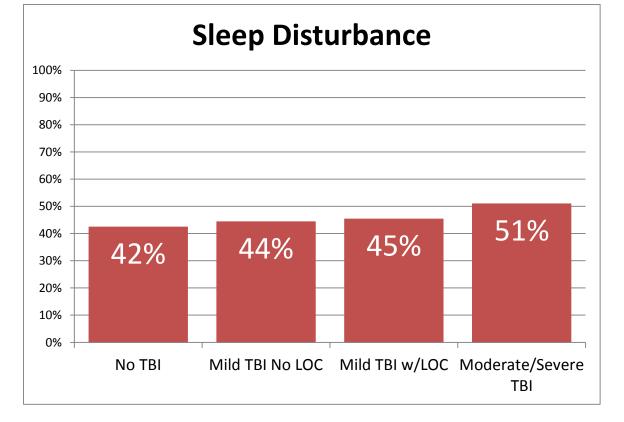
Needs supervision for ADLs

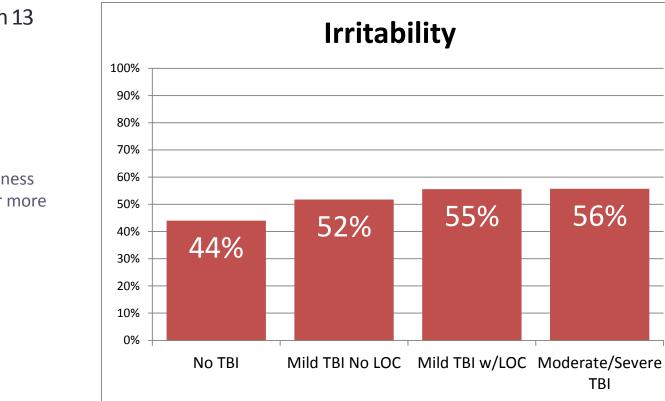


Reported tiredness several days or more per month

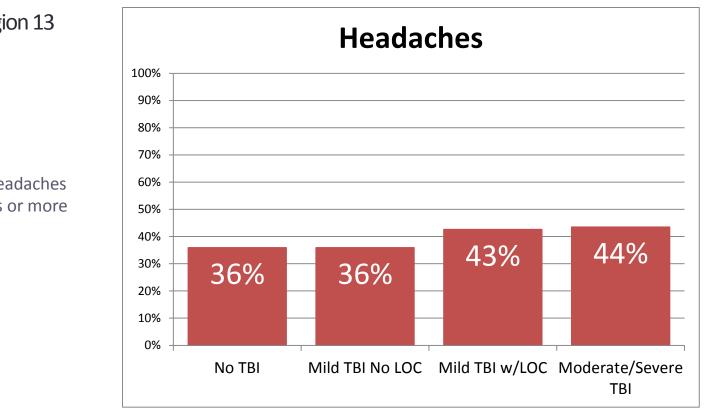


Reported sleep disturbance several days or more per month





Reported tiredness several days or more per month

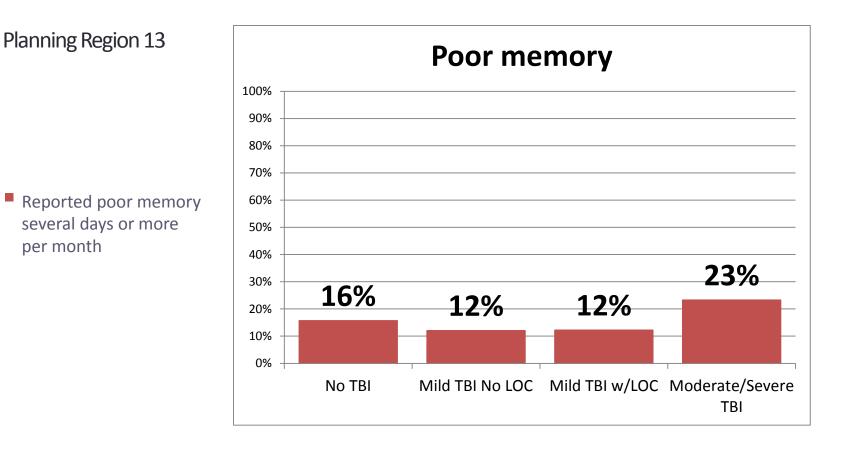


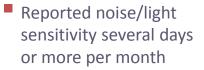
Reported headaches several days or more per month

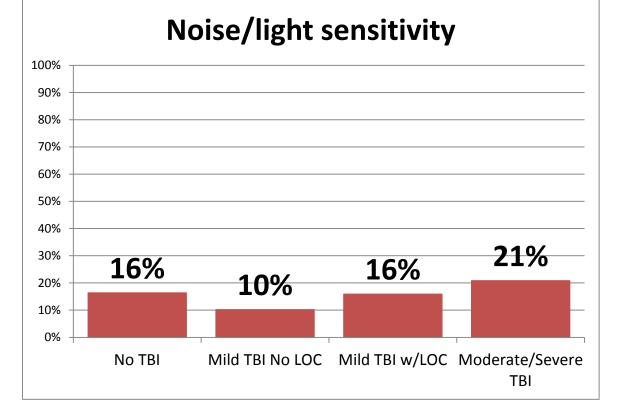
Poor concentration 100% 90% 80% 70% 60% **39%** 50% 40% 25% 30% 16% 20% 8% 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

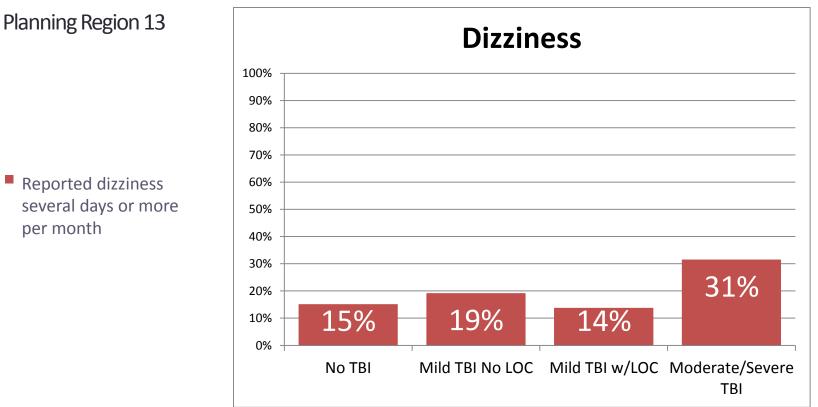
Planning Region 13

Reported poor concentration several days or more per month

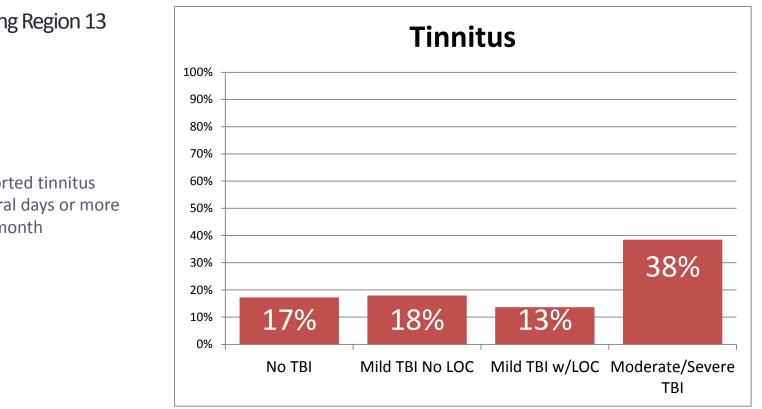




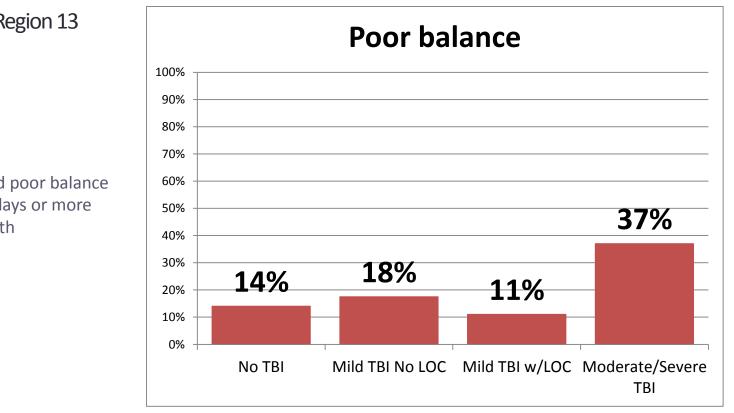




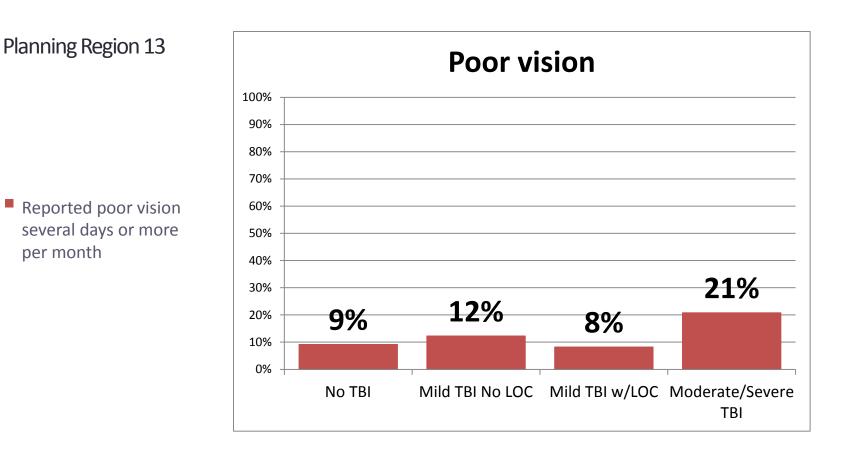
Reported dizziness several days or more per month

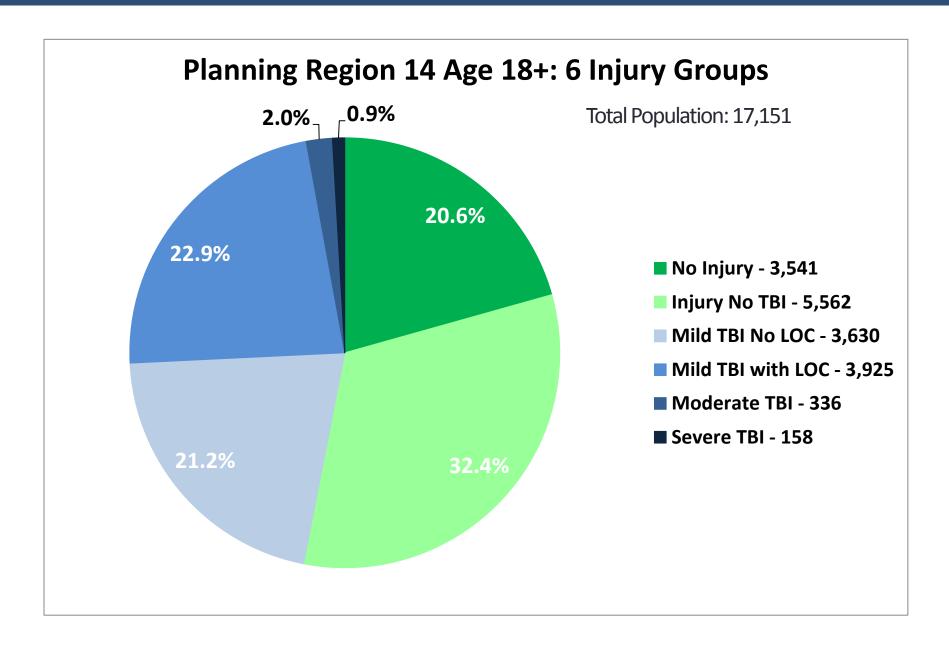


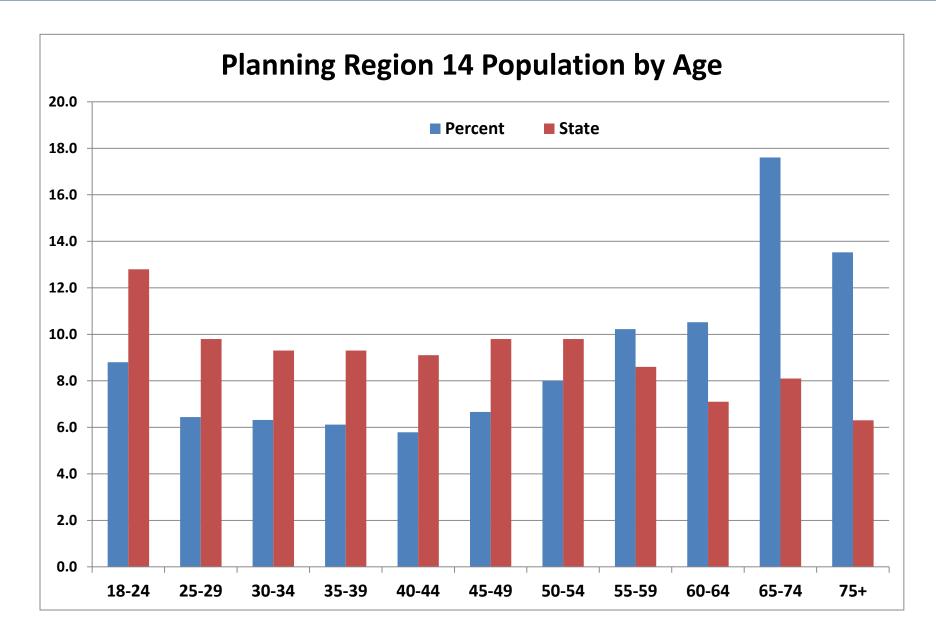
Reported tinnitus several days or more per month

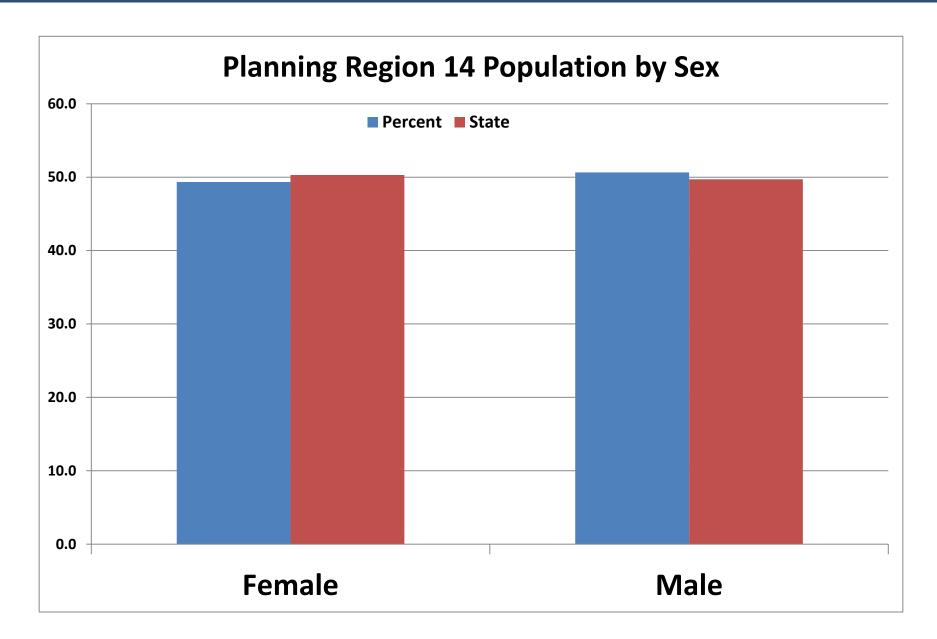


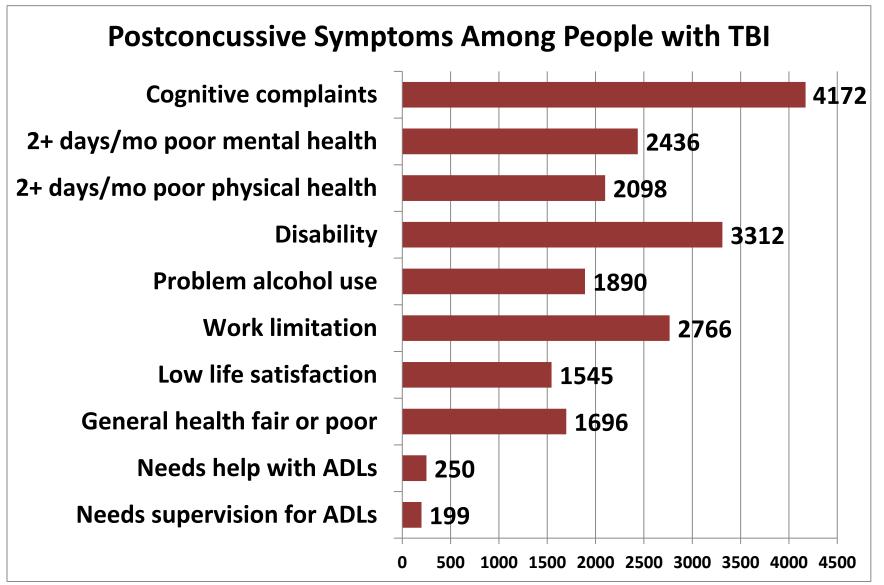
Reported poor balance several days or more per month

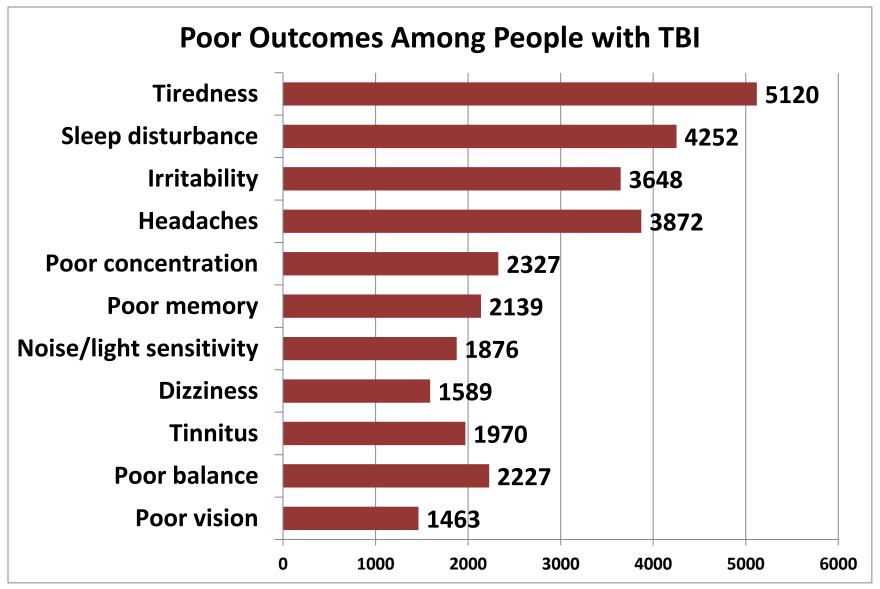




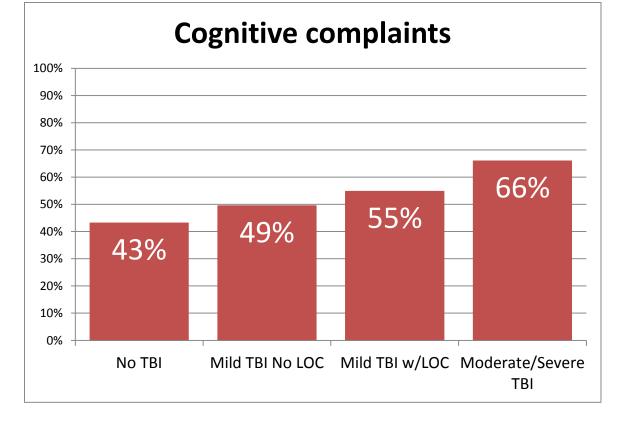






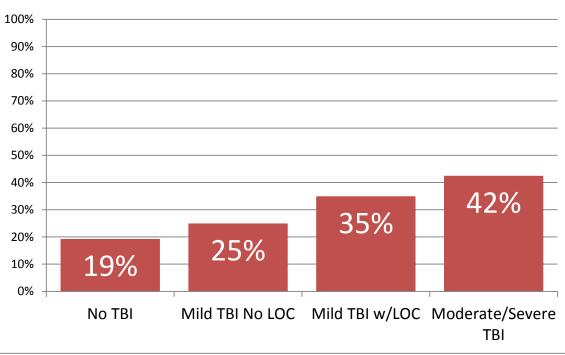


Endorsement of any cognitive complaints on the Alertness Behavior Subscale of the Sickness Impact Profile



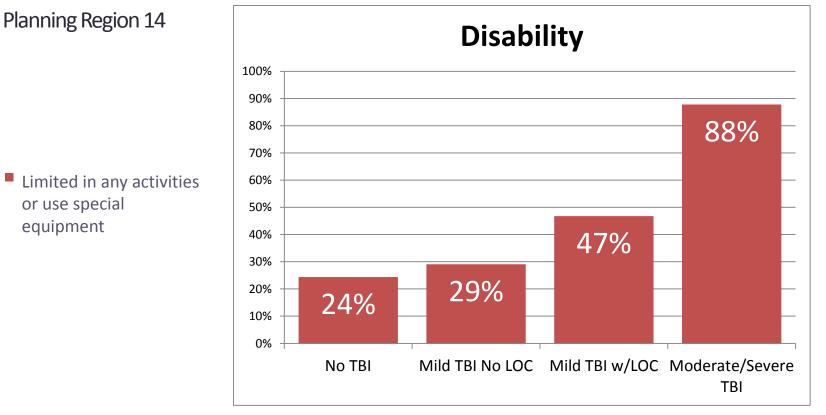
Two or more days of poor mental health reported

2+ days/mo poor mental health

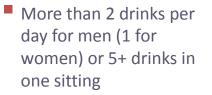


Two or more days of poor physical health reported

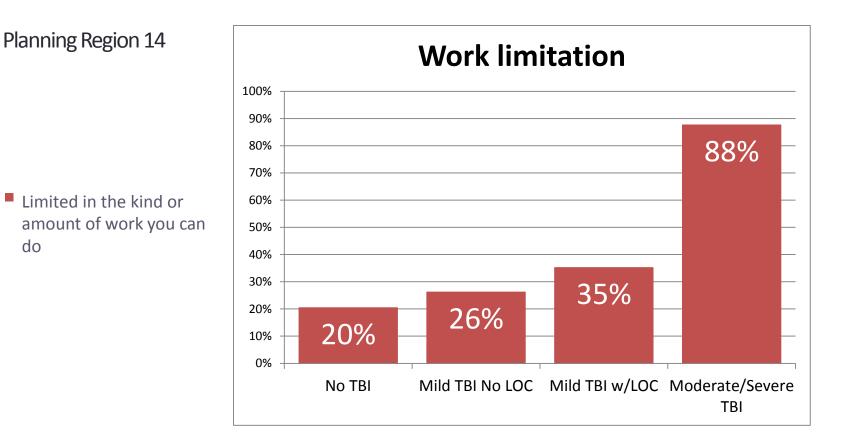
2+ days/mo poor physical health 100% 90% 80% 70% 60% 50% 40% 42% 30% 27% 20% 24% 21% 10% 0% Mild TBI w/LOC Moderate/Severe No TBI Mild TBI No LOC TBI



Limited in any activities or use special equipment

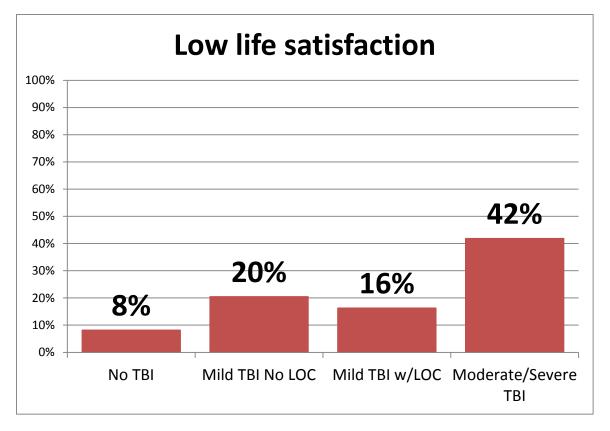


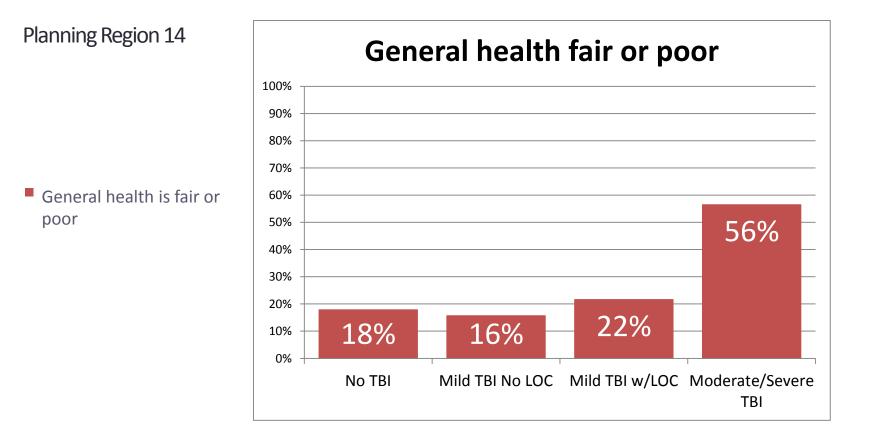
Problem alcohol use 100% 90% 80% 70% 60% 50% 32% 40% 30% 17% 13% 20% **9%** 10% 0% Mild TBI No LOC Mild TBI w/LOC Moderate/Severe No TBI TBI

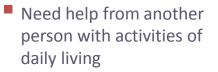


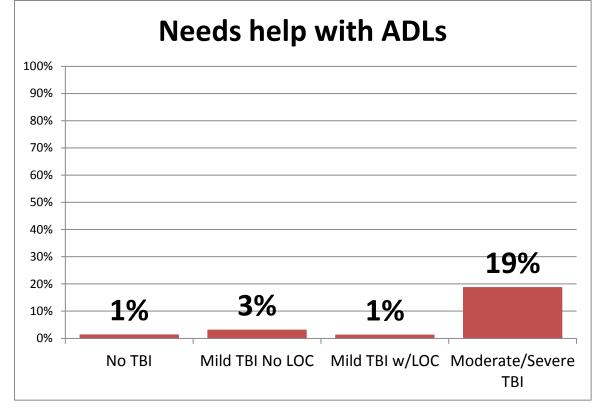






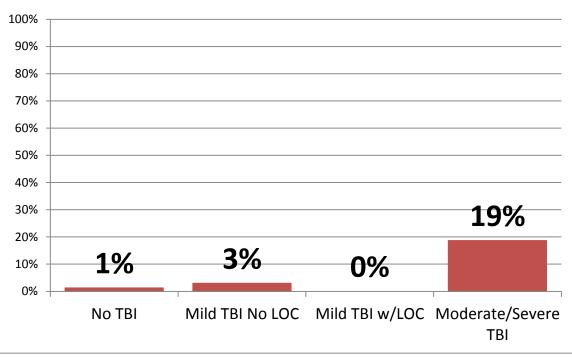




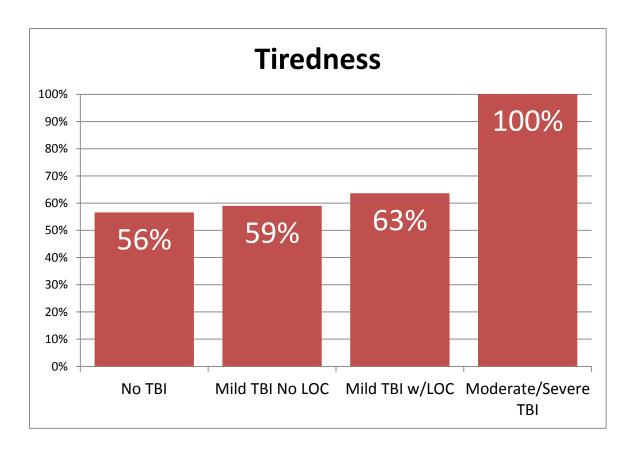


Need to be reminded or supervised when doing activities of daily living

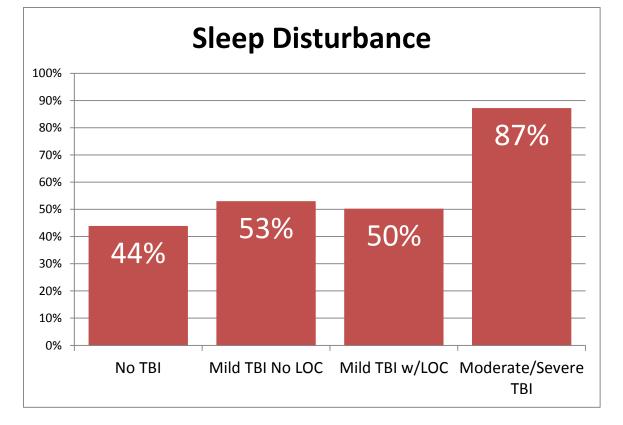
Needs supervision for ADLs

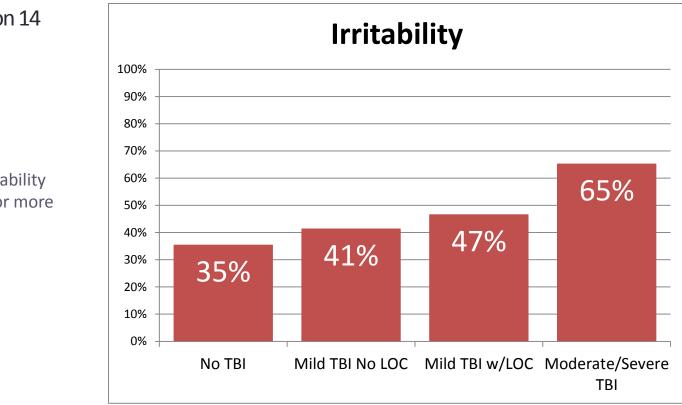


Reported tiredness several days or more per month

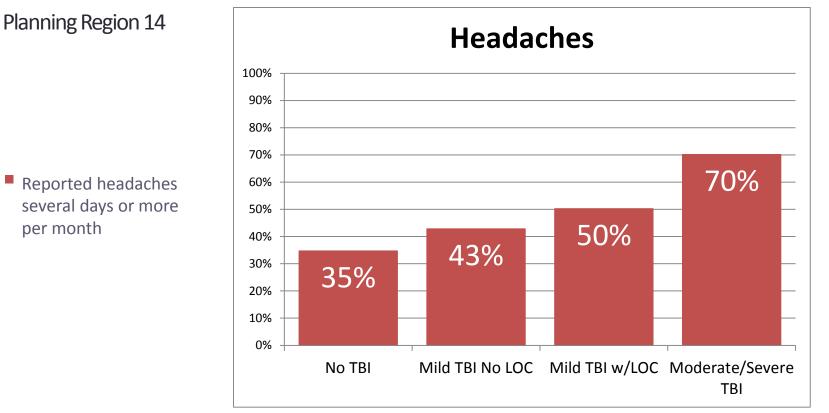


Reported sleep disturbance several days or more per month

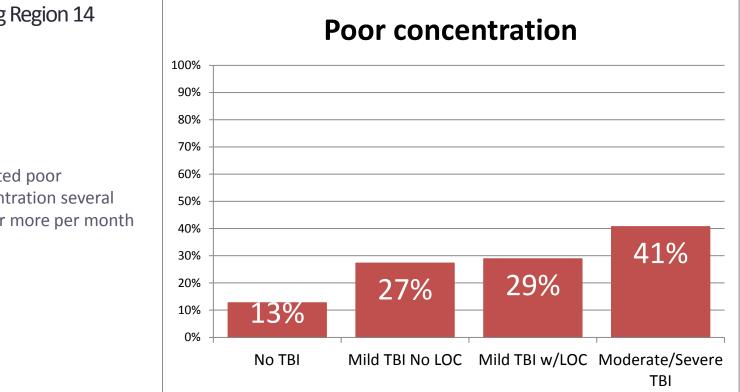




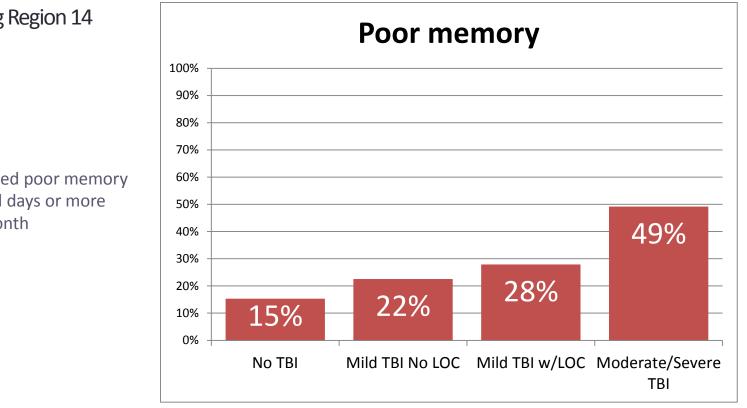
Reported irritability several days or more per month



Reported headaches



Reported poor concentration several days or more per month



Reported poor memory several days or more per month

