

Child and Adolescent Health

Special Report to the Legislative Committee on Health Care

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purpose

This report provides a high-level overview of certain health-related outcomes that may indicate the present status of child health in Nevada. It is the hope of the Division of Public and Behavioral Health that the statistics and information contained in the report supplements the other materials provided and presentations given to the members of the Legislative Committee on Health Care on March 5, 2013. The focus of this short report is children¹ and adolescents² who are residents of Nevada with outcomes that occurred in Nevada between 2009 and 2012.

introduction

The determinants of child and adolescent health are numerous and multi-factoral. This report does not aspire to address all facets of the topic, a subject that merits a lifetime of study and contemplation in its own right; however, it does offer a high-level glimpse at a few, select measures drawn from available mortality and hospitalization data that may convey a sense of the hazards and risks that children and adolescents face alike and that adversely impact their health and well-being. It is the hope of the Division of Public and Behavioral Health that this report stimulates a productive conversation about the ways that Nevada might address these challenges so as to ameliorate the situation of children and adolescents in the state.

technical notes

terms

As used in this report, the following terms have the definitions stated:

1. children: > 1 year (excluding neonates and infants) and < 13 years
2. adolescents: ≥ 13 years and < 18 years

methods

The manner of death-specific totals do not sum to the total number of deaths due to unknown or unrecorded manner of death for a number of records.

The intermediate crude rates used to produce the age-adjusted rates were calculated using the 2000-2013 Age, Sex, Race, and Hispanic Origin Estimates and Projections provided by the Nevada State Demographer² from unpublished 2012 vintage estimates and projections data files.

Age-adjusted rates were calculated using the single ages 0-100+, 2000 US Standard Population published by the Surveillance, Epidemiology, and End Results Program³ and is available at:

seer.cancer.gov/stdpopulations/stdpop.singleages.html

Age-adjusted rates having a relative standard error greater than 30% were suppressed because of statistical unreliability.

data sources

The mortality statistics contained in this report were drawn from death data last downloaded on January 16, 2014 from the Electronic Deaths Registry System (EDRS), a component of the Web-Enabled Vital Records Registry System (WEVRRS).

The latest available Hospital In-patient Billing (HIB) and Hospital Emergency Department Billing (HEDB) data used in this report was provided by the Center for Health Information Analysis on November 22, 2013 and is available at:

www.chiaunlv.com/HealthFacilityData/AcquiringData_Services.php

mortality

The death of a child or adolescent is not only a traumatic loss for his or her loved ones and family but also for the friends and community that he or she left behind. Although mortality is not the only indicator of the health status of a community, patterns of fatalities may indicate hazardous physical and social environments. In this way, mortality serves as an established proxy measure for the dangers, risks, and psychosocial vulnerabilities of a community. Toward this end, the next few pages examine deaths among children and adolescents generally followed by deaths due to natural causes, accidental causes, suicide, and homicide.

all-cause

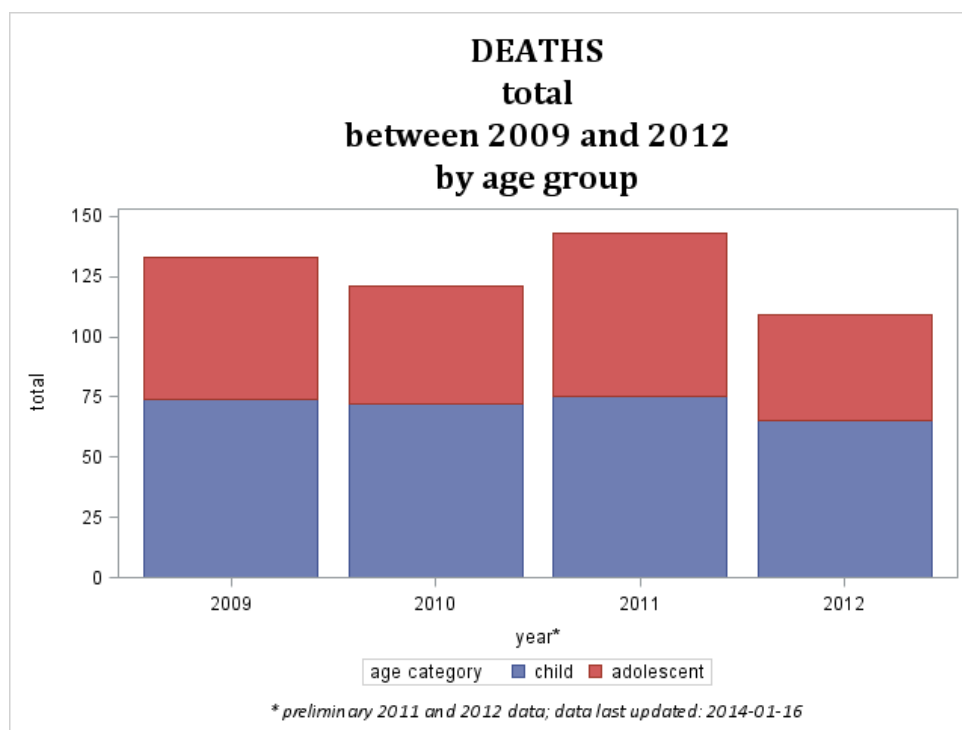
During the 4-year period between 2009 and 2012, a total of 506 children and adolescents died due to various causes. Each year, the proportion of deaths among children was greater than among adolescents.

For children and adolescents combined, accidental causes of death, ranging from motor vehicle accidents to drowning and poisoning, were predominant. In subsequent categories, assault, malignant neoplasm, and intentional self-harm were distant but similarly ranked causes of death.

Among children, accidental causes of death, ranging from motor vehicle accidents to drowning and poisoning, were most common followed distantly by malignant neoplasm and assault equivalently as ranked categories.

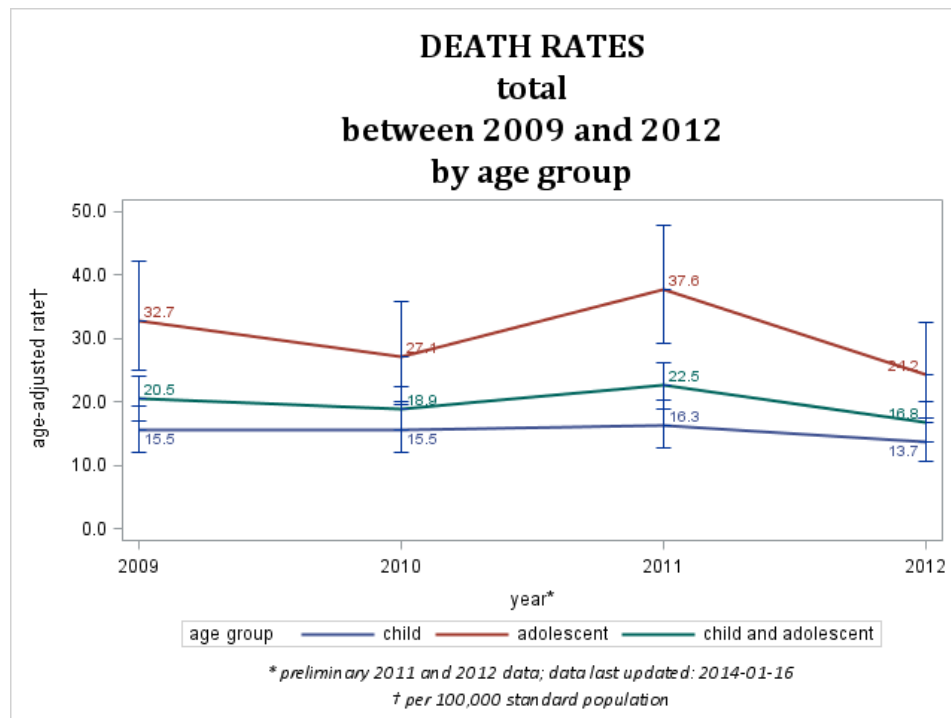
Among adolescents, motor vehicle accident was the most common cause of death category followed distantly by self-harm then assault.

Figure 1



When considering the age-adjusted death rates for children, adolescents, and children and adolescents combined, there were no statistically significant differences between years for any of the rates, meaning that despite regular year-to-year fluctuations, the death rates for these age groups held steady. Nevertheless, a statistically significant difference was observed between the death rates for children and adolescents for every year of the trend, suggesting that adolescents were at greater risk of mortality than children during the time period.

Figure 2

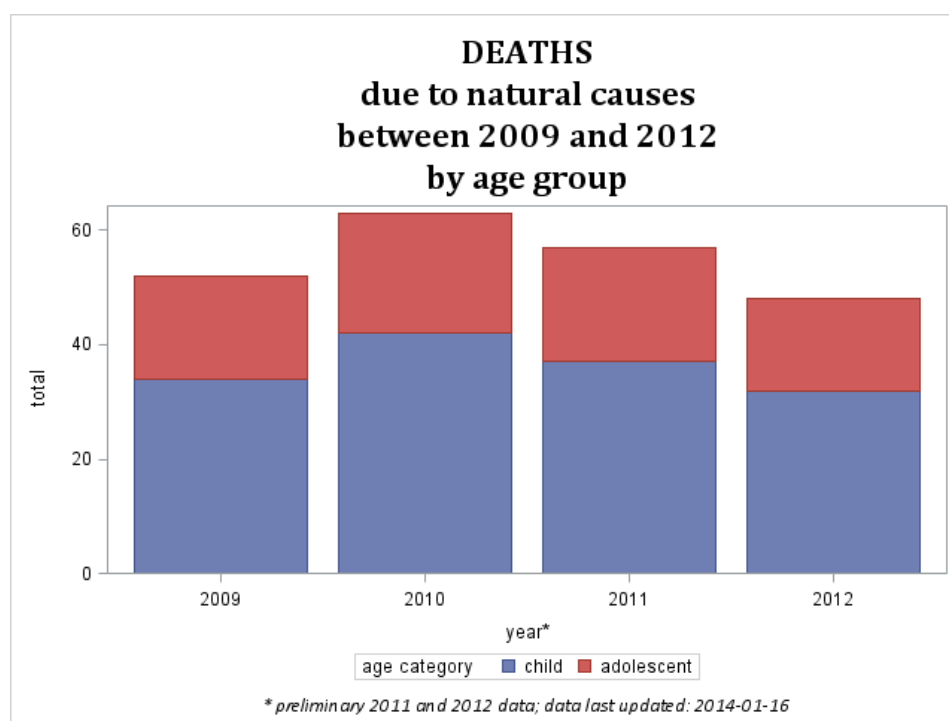


natural causes

Deaths due to natural causes or natural causes with injury represented the most common manner of death for children and adolescents combined for all but one year between 2009 and 2012, accounting for 220 total deaths. For children, deaths due to natural causes represented the largest proportion of fatalities for all years; while for adolescents, the total number of deaths due to accidental cause surpassed death due to natural causes for a couple years and was equal for a third, though these differences in absolute deaths were not statistically significant upon consideration of the age-adjusted death rates.

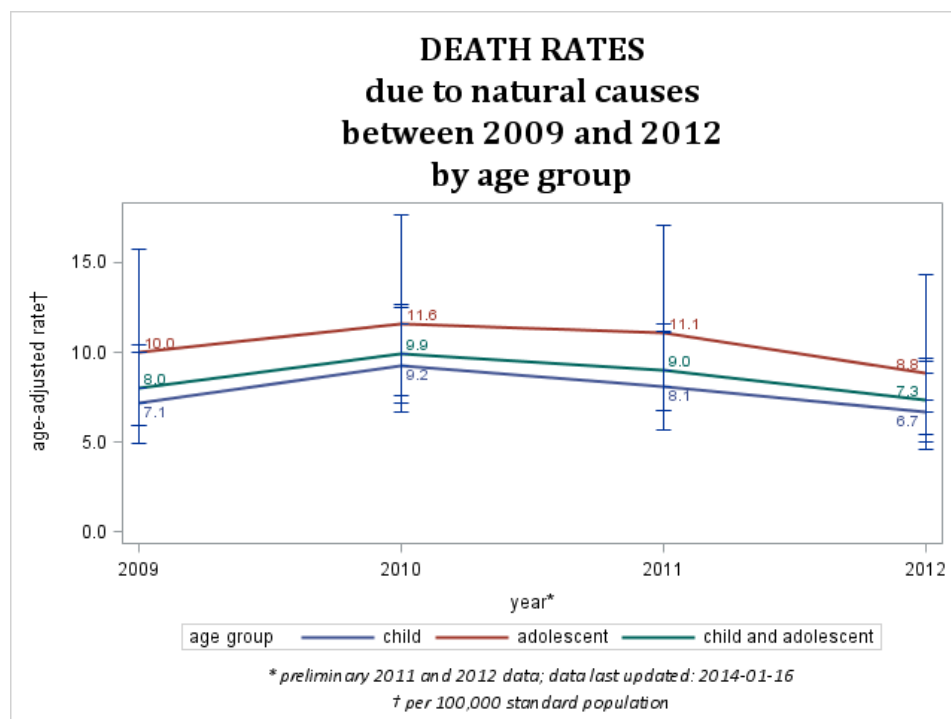
For children and adolescents combined, malignant neoplasm was the major cause of death followed by various diseases of the heart and chronic lower respiratory disease. The same pattern was observed among children and adolescents separately. Major individual causes of death included congenital malformation, deformation, and chromosomal abnormality followed by malignant neoplasms of meninges, brain, and other parts of the central nervous system.

Figure 3



When considering the age-adjusted death rates due to natural causes for children, adolescents, and children and adolescents combined, there were no statistically significant differences between years or between age groups for any of the rates, even though the rates for adolescents were higher for all years.

Figure 4



accidental causes

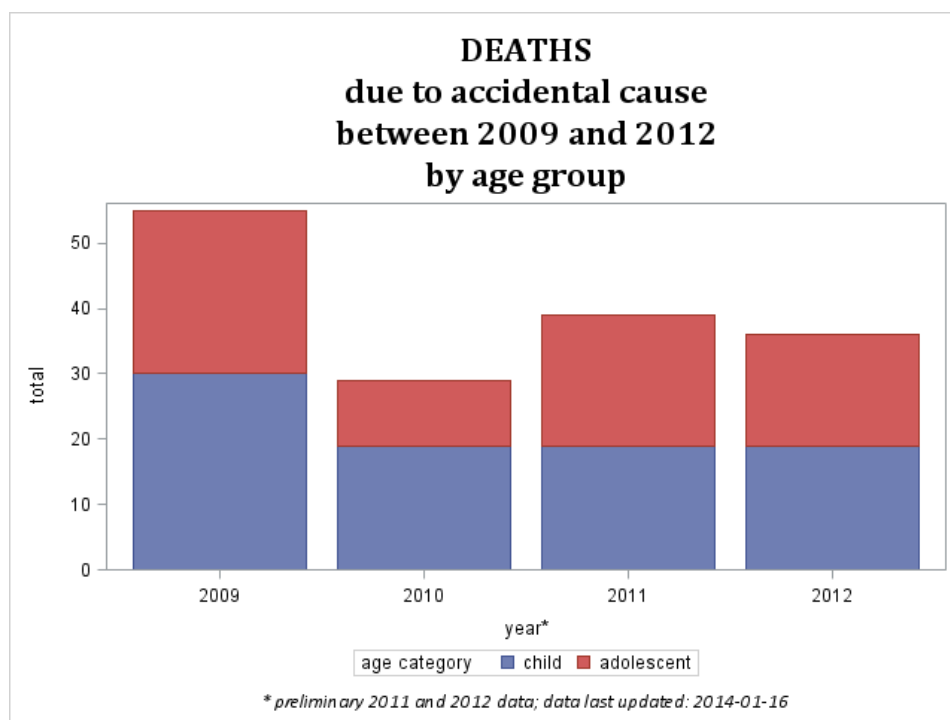
Deaths due to accidental cause represented the second most common manner of death for children and the first most common for adolescents for some years between 2009 and 2012, accounting for 159 total deaths. Total deaths for each age group were roughly similar for each year, though there were more deaths among children each year, with the exception of 2010, when there were significantly fewer adolescent deaths due to accidental causes relative to such deaths among children.

For children and adolescents combined, accidental causes of death, ranging from motor vehicle accidents to drowning and poisoning, were predominant. In subsequent categories, assault, malignant neoplasm, and intentional self-harm were distant but similarly ranked causes of death.

Among children, accidental causes of death, ranging from motor vehicle accidents to drowning and poisoning, were most common followed distantly by malignant neoplasm and assault equivalently as ranked categories. Major individual causes of death were predominantly attributable to drowning followed by motor vehicle accident.

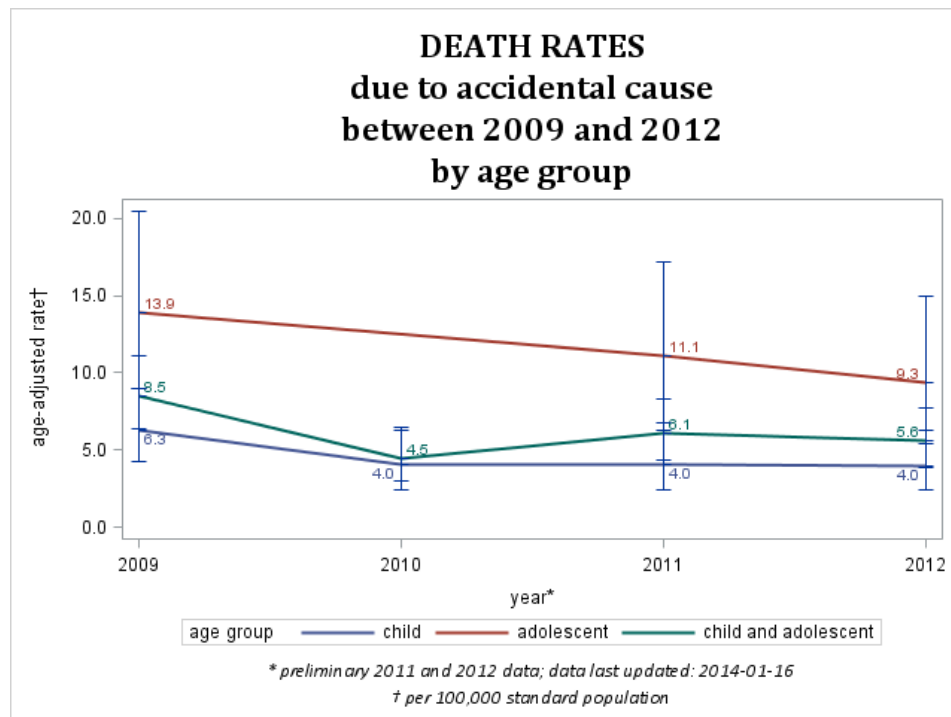
Among adolescents, motor vehicle accident was the most common cause of death category followed distantly by self-harm then assault. Major individual causes of death were predominantly attributable to motor vehicle accident followed by poisoning.

Figure 5



When considering the age-adjusted death rates due to accidental causes for children, adolescents, and children and adolescents combined, there were no statistically significant differences between years or between age groups for any of the rates, even though the rates for adolescents were higher for all years. For adolescents in 2010, the rate was statistically unreliable and so was suppressed.

Figure 6

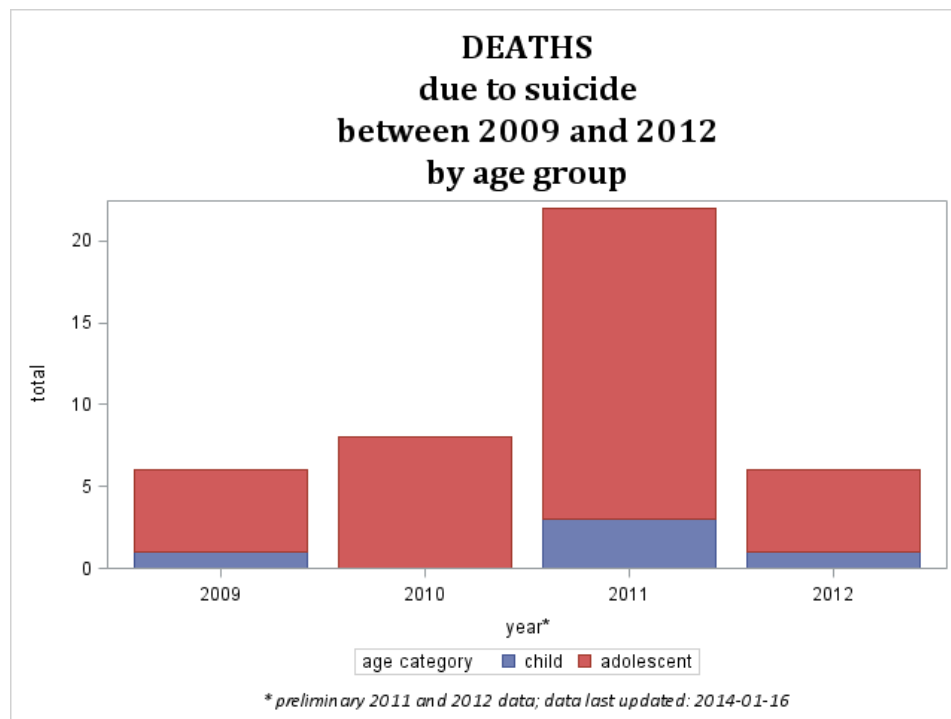


suicides

Deaths due to suicide were rarely observed among children between 2009 and 2012 and at a lesser frequency than adolescents. There were a total of 42 suicides during the time period, and 2011 saw the largest number of suicides among adolescents, though because of low average annual counts, this may be attributable to statistical variability.

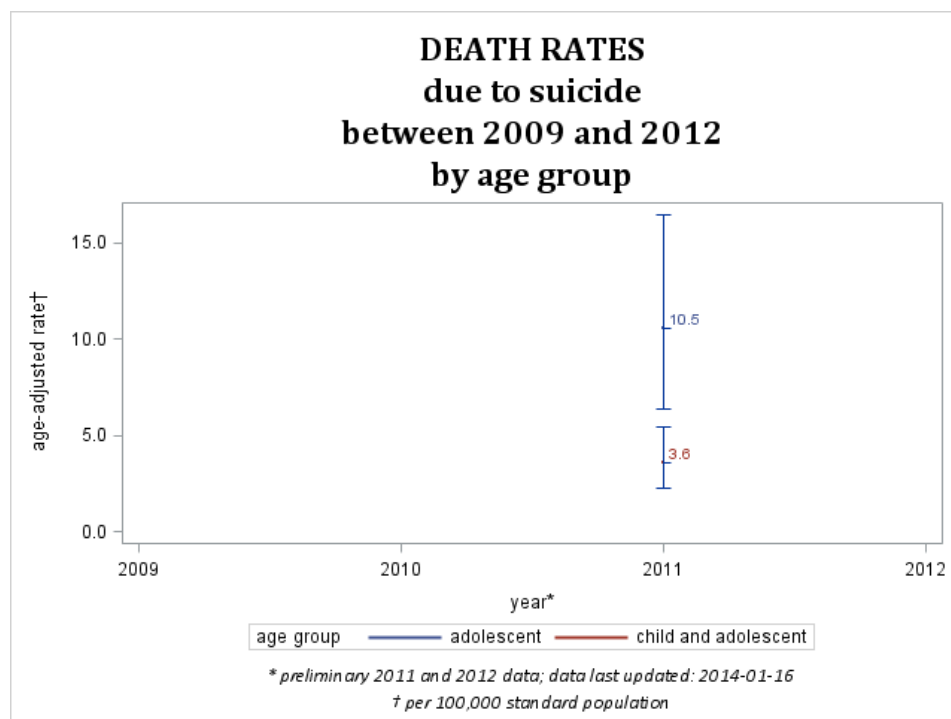
For children and adolescents combined and children and adolescents separately, intentional self-harm by discharge of a firearm amounted to nearly two-thirds of all intentional self-harm suicides.

Figure 7



When considering the age-adjusted death rates due to accidental causes for children, adolescents, and children and adolescents combined, no trend could be established because the rates for all years, with the exception of 2011, were statistically unreliable as and so were suppressed.

Figure 8

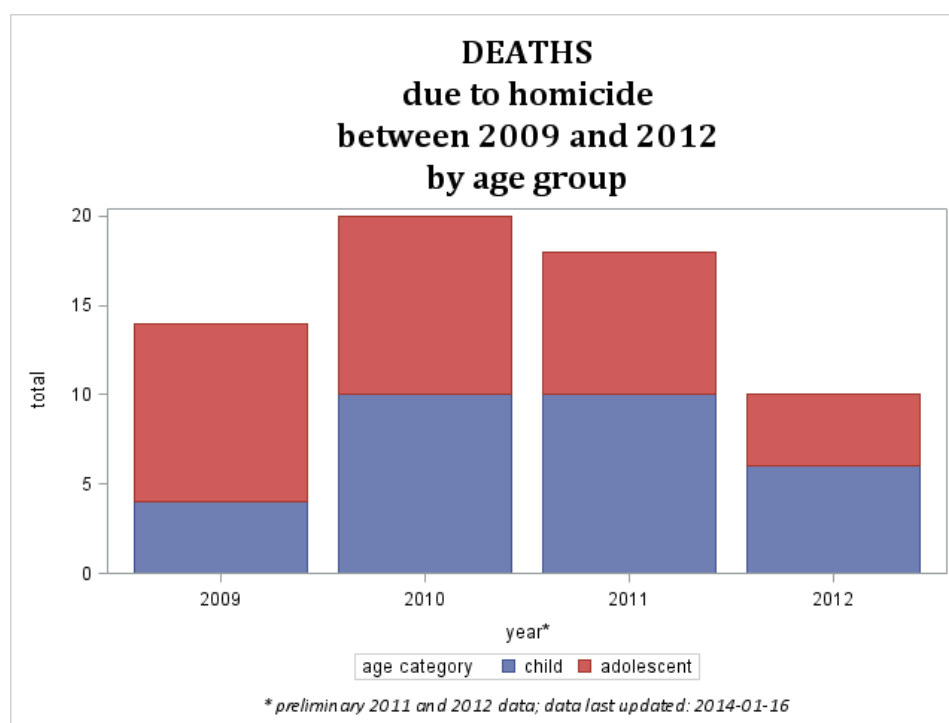


homicides

Deaths due to homicide were more common than suicide for both children and adolescents between 2009 and 2012 with the exception of 2011, when the total number of suicides among adolescents was larger. Despite these differences in absolute deaths, no further comparisons were possible due to the statistical unreliability of most rates and because the rates that were reliable for 2011 for adolescents exhibited no statistically significant difference between suicide and homicide. There were a total of 62 homicides during the time period.

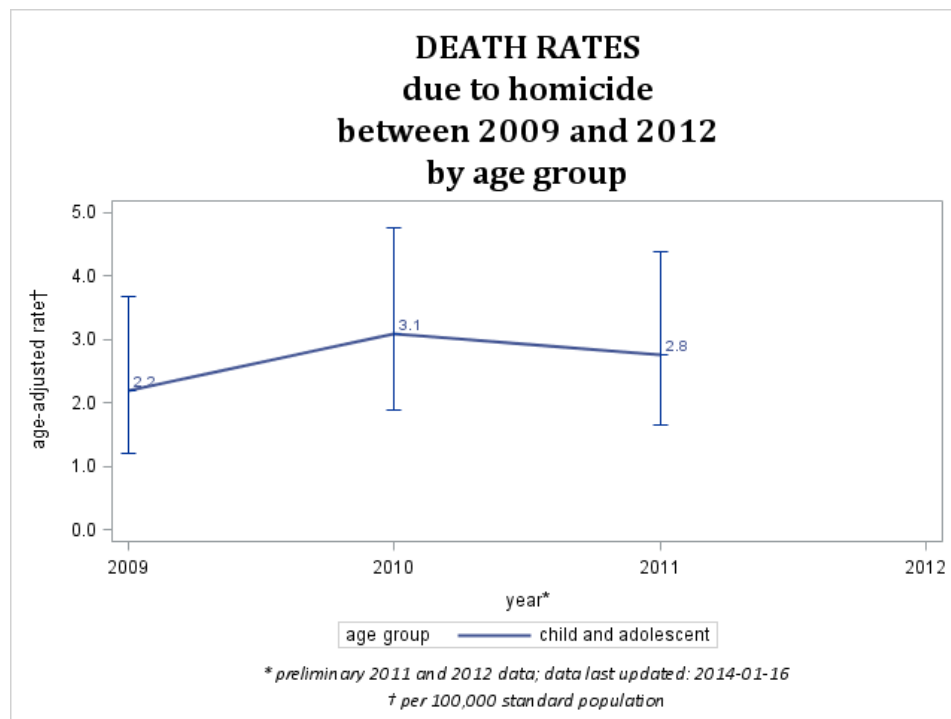
For children and adolescents combined, the dominant causes of death were due to assault with other or unspecified means and assault by discharge of a firearm; however, among children, assault with other or unspecified means and assault by discharge of a firearm accounted for nearly all homicides while among adolescents, assault by discharge of a firearm was the majority followed by other or unspecified assault.

Figure 9



When considering the age-adjusted death rates due to homicide for children, adolescents, and children and adolescents combined, most rates were statistically unreliable and so were suppressed; therefore, other than for children and adolescents combined for 3 of the 4 years, no further trends could be established, and the differences in the rates for children and adolescents were not statistically significant between years.

Figure 10



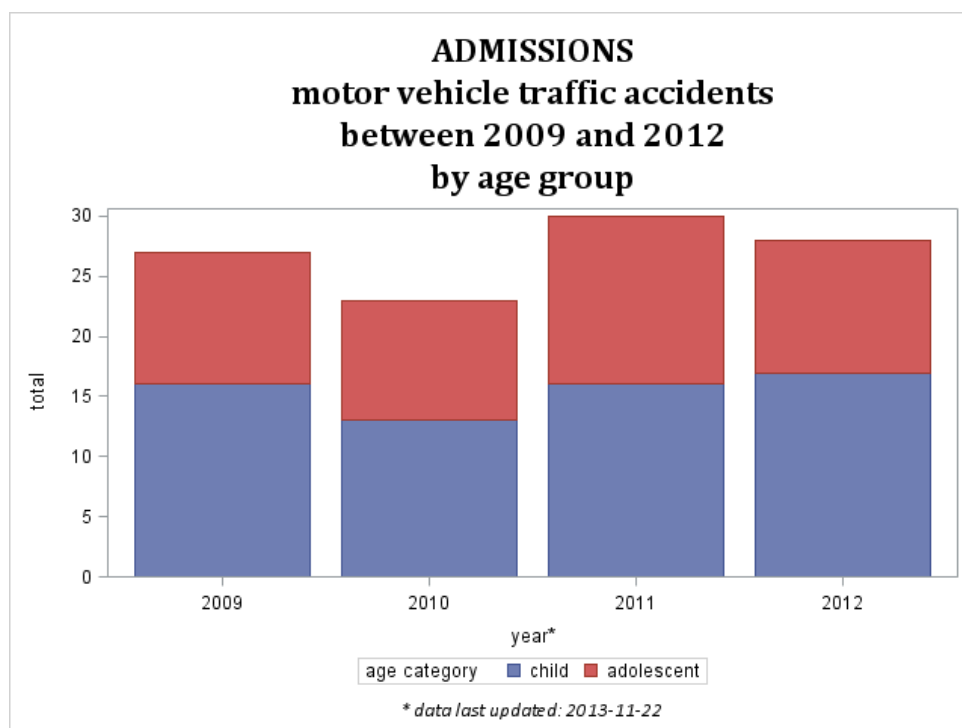
hospitalization and emergency department visitation

In addition to mortality, hospitalization and emergency department visitation represent the impact and burden that non-fatal health outcomes have on a community. Even though there is a plethora of disease, disorder, and illness categories available for analysis, a select few categories were chosen for inclusion in this report because they matched some of the top manners of death from the previous section, represented burdensome illness in terms of patient volume or rate, or are of particular interest and concern in recent times. The following 6 categories are included hereafter: motor vehicle traffic accidents; injury and poisoning; drugs, medicinal and biological substances causing adverse effects in therapeutic use; suicide and self-inflicted injury; homicide and injury purposely inflicted by other persons; and mental disorders.

motor vehicle traffic accidents

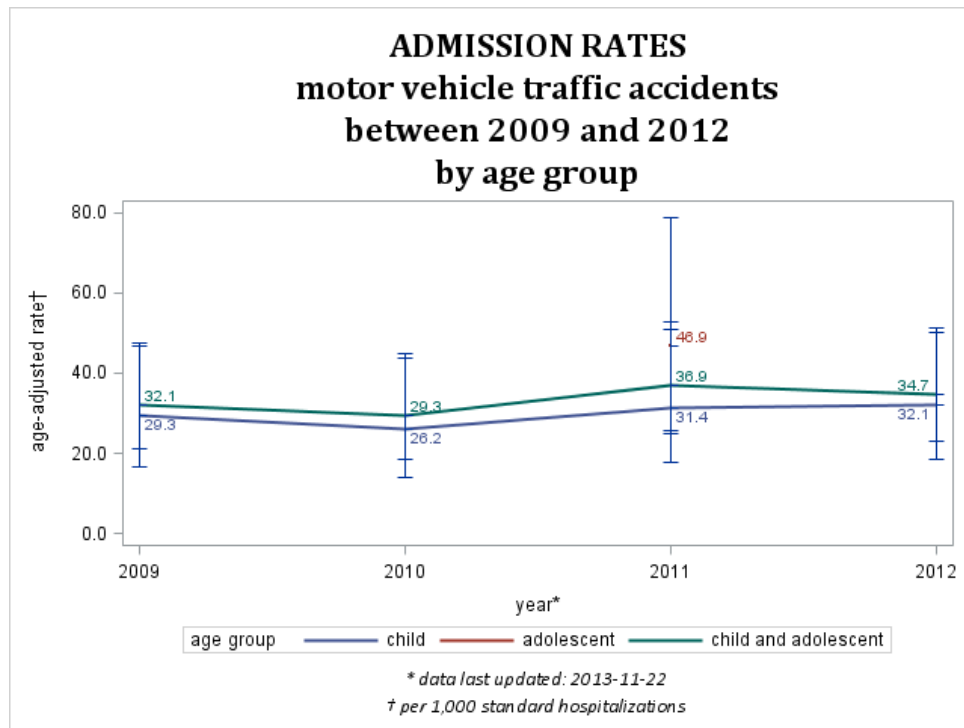
During the 4-year period between 2009 and 2012, a total of 108 hospitalizations due to a motor vehicle traffic accidents involved children and adolescents. Each year, the proportion of hospitalizations among children was slightly greater than among adolescents.

Figure 11



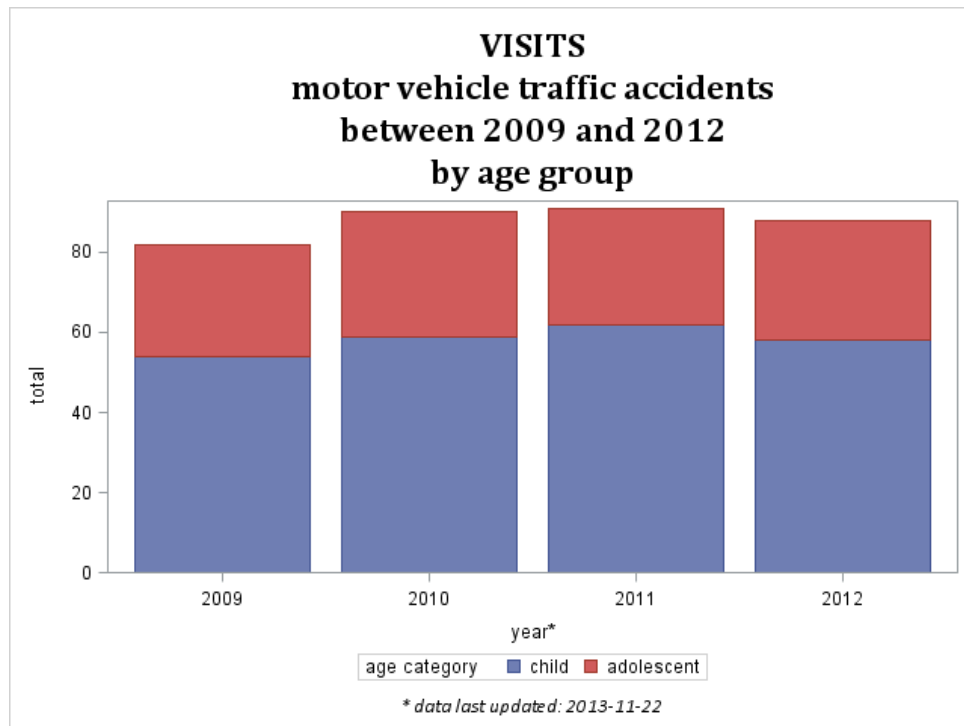
When considering the age-adjusted hospitalization rates due to motor vehicle traffic accidents for children, adolescents, and children and adolescents combined, there were no statistically significant differences between years or between age groups for 2011. With the exception of 2011, the adolescent rates were statistically unreliable and so were suppressed.

Figure 12



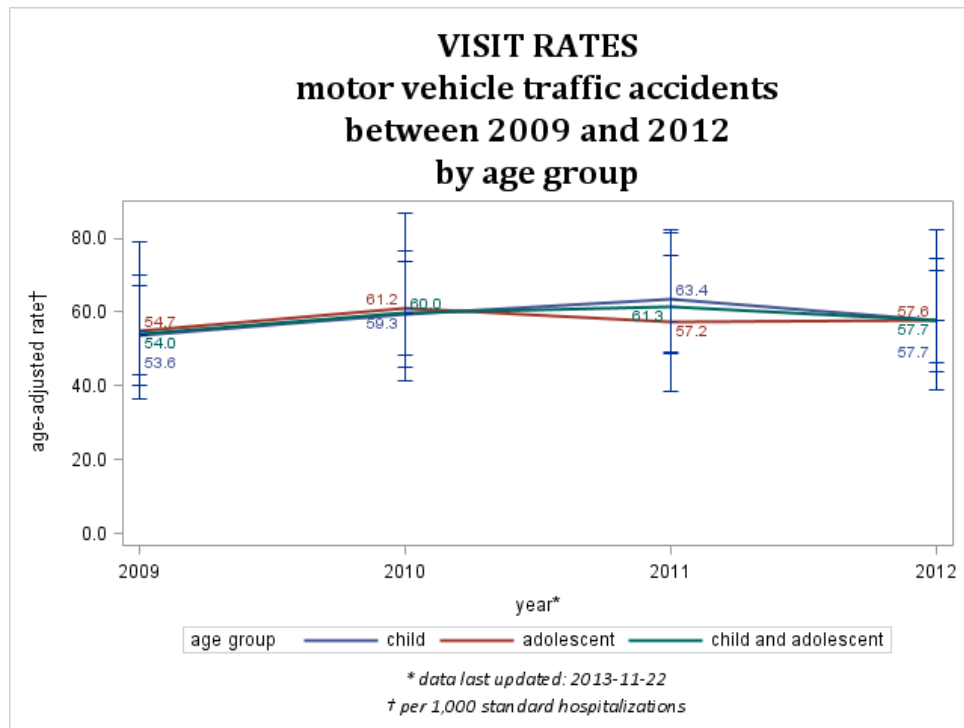
A total of 351 emergency department visits due to a motor vehicle traffic accidents involved children and adolescents during the time period, with children again representing the larger share.

Figure 13



When considering the age-adjusted emergency department visitation rates due to motor vehicle traffic accidents for children, adolescents, and children and adolescents combined, there were no statistically significant differences between years or between age groups. All rates exhibited a stable pattern suggesting that the trend for this category is fairly normal.

Figure 14



injury and poisoning

Figure 15

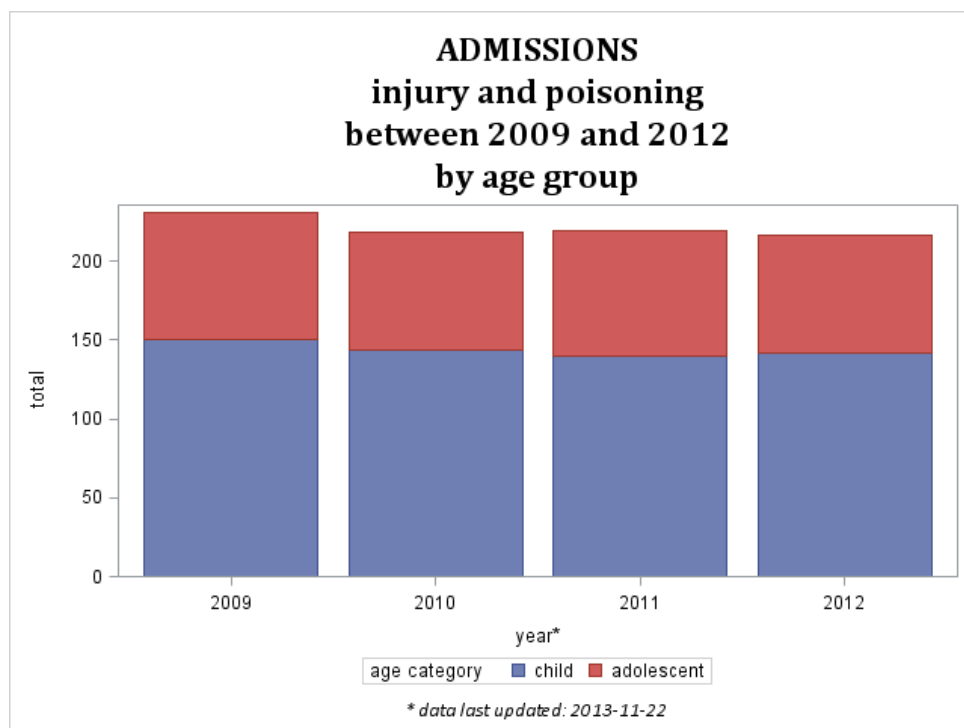


Figure 16

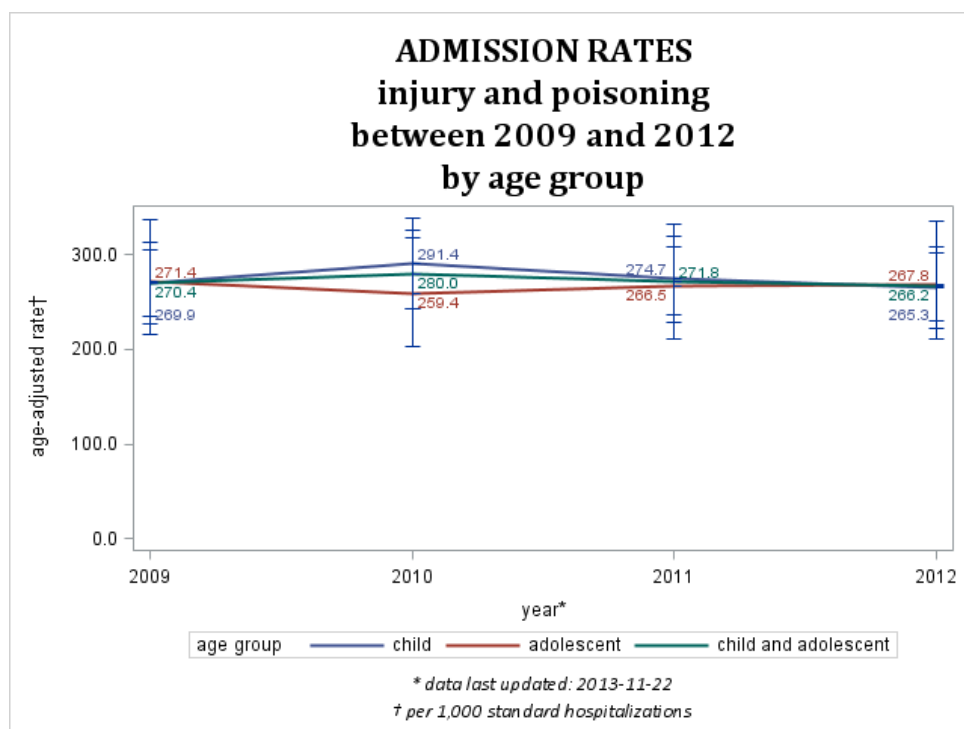


Figure 17

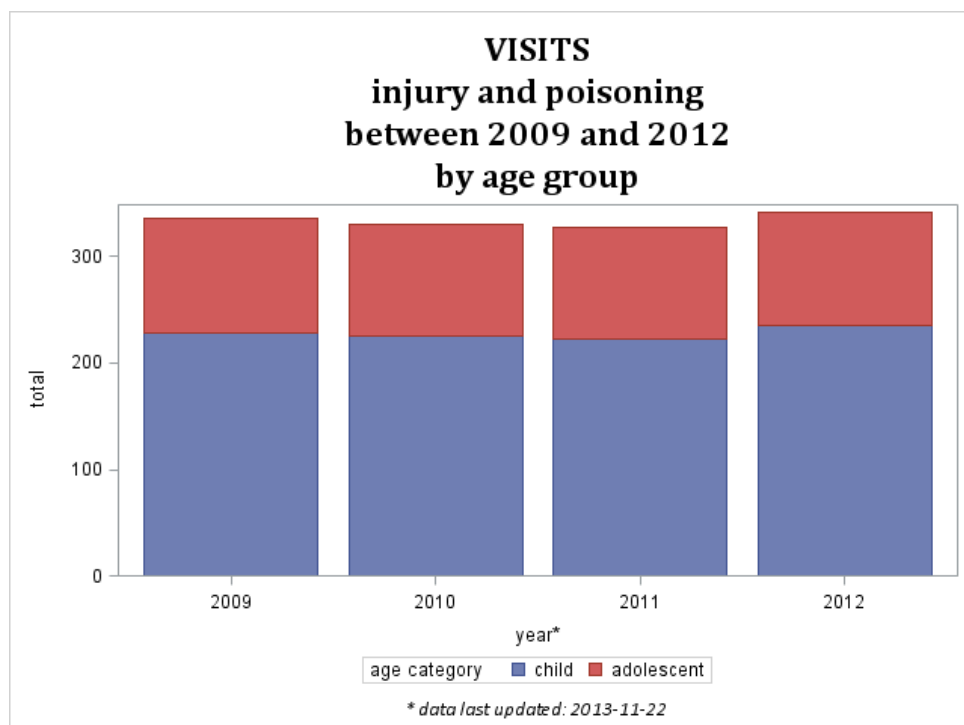
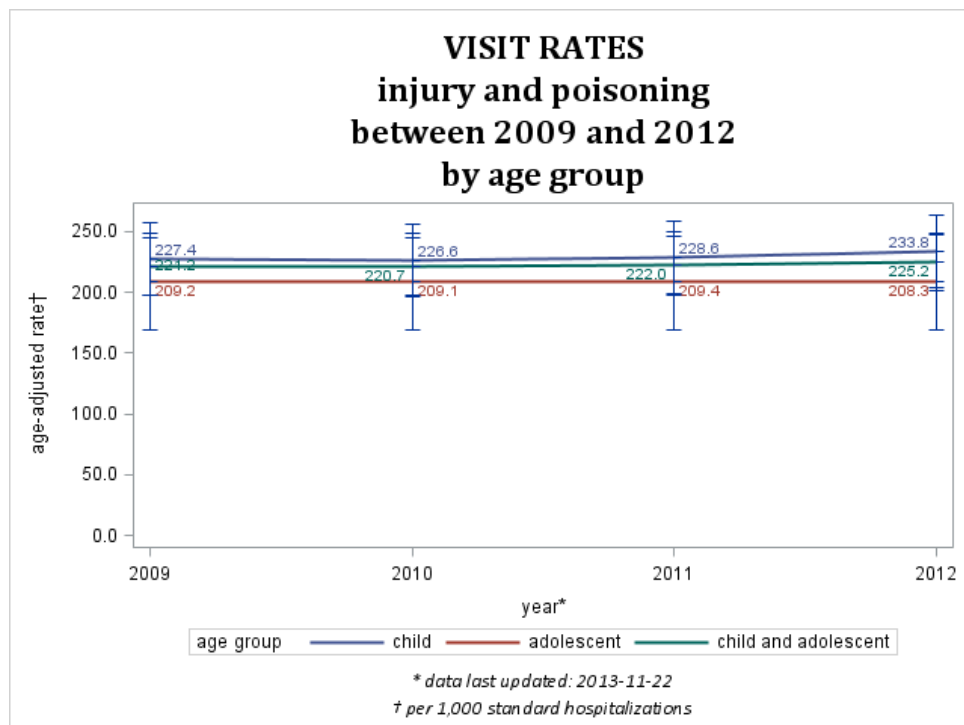


Figure 18



drugs, medicinal and biological substances causing adverse effects in therapeutic use

Figure 19

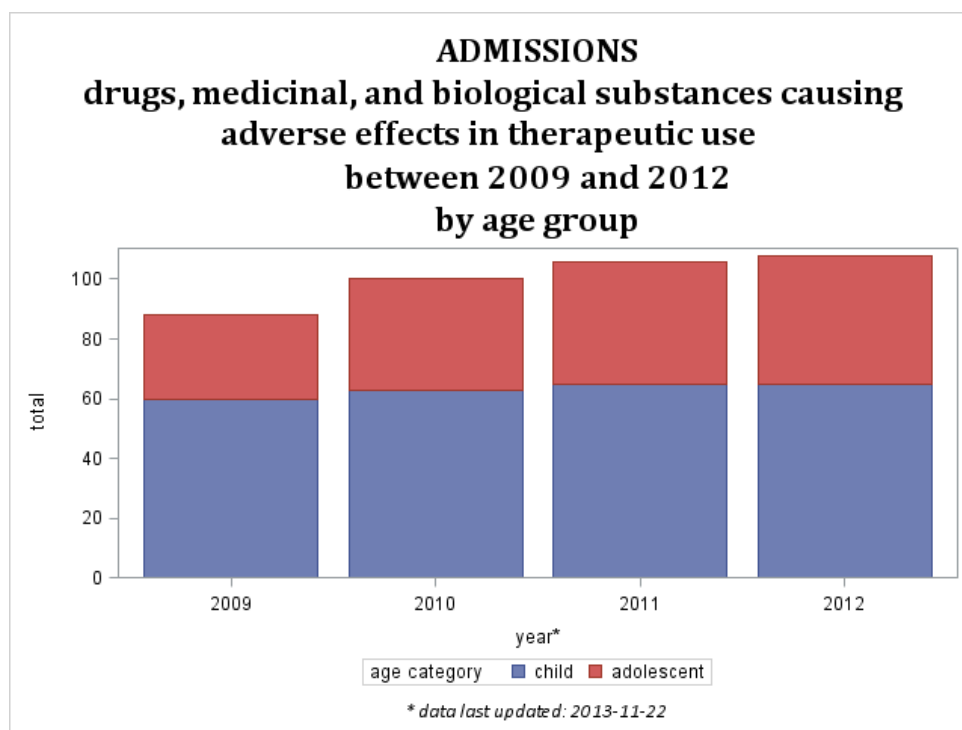


Figure 20

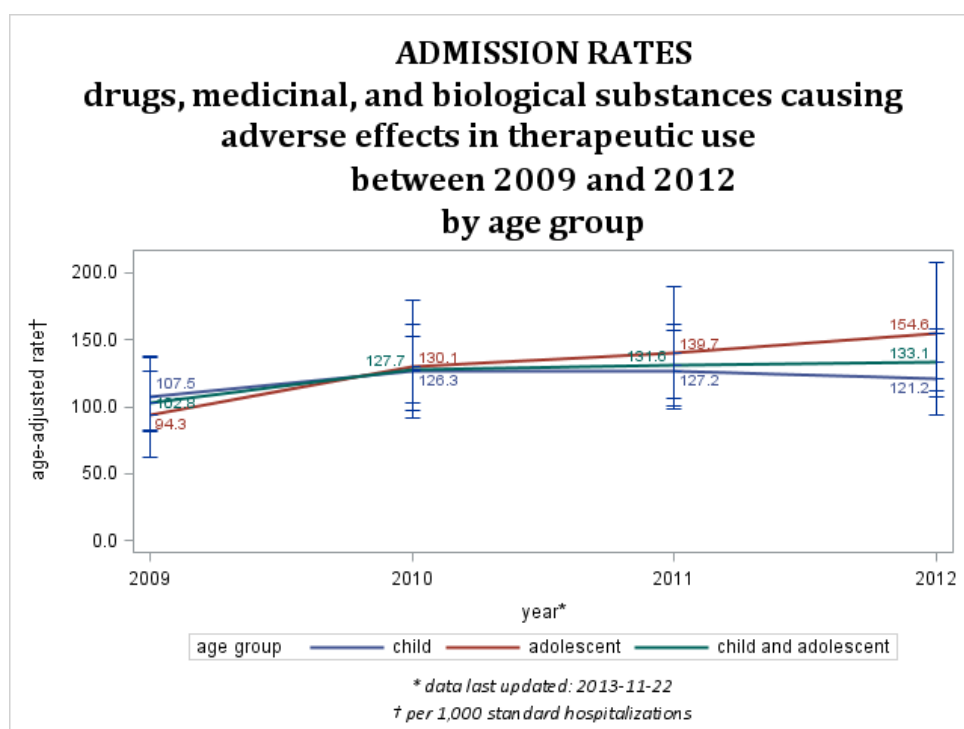


Figure 21

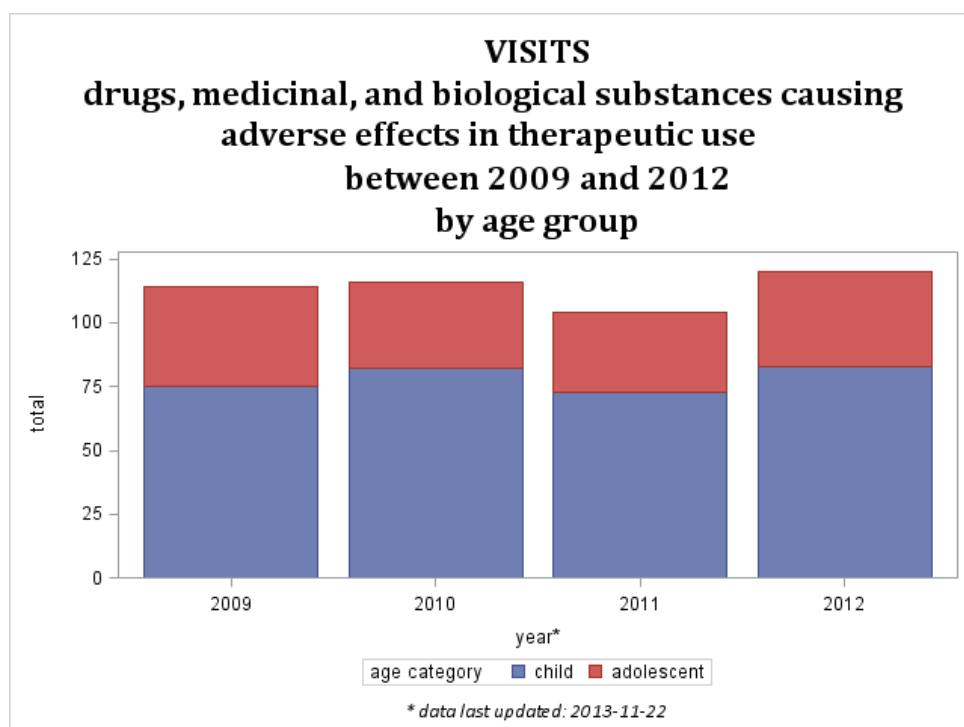
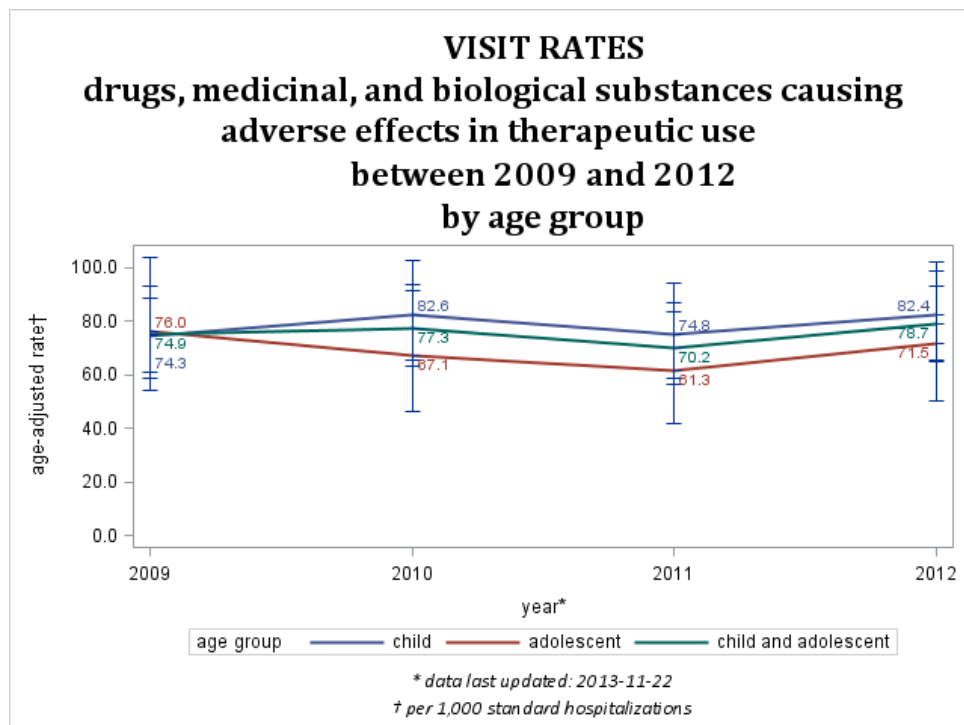


Figure 22



suicide and self-inflicted injury

Figure 23

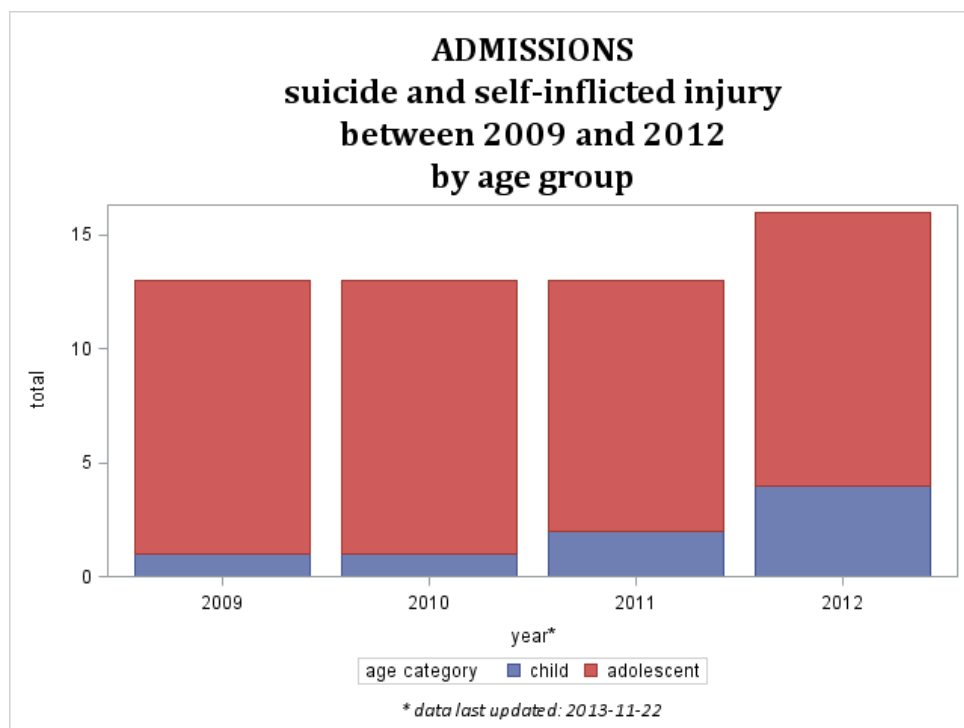


Figure 24

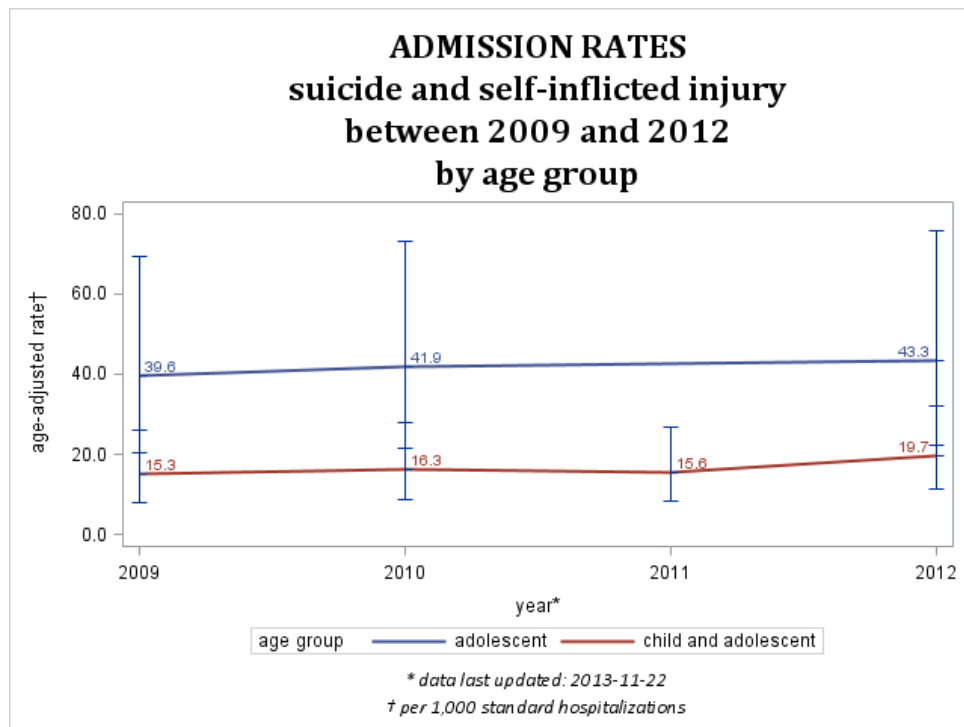


Figure 25

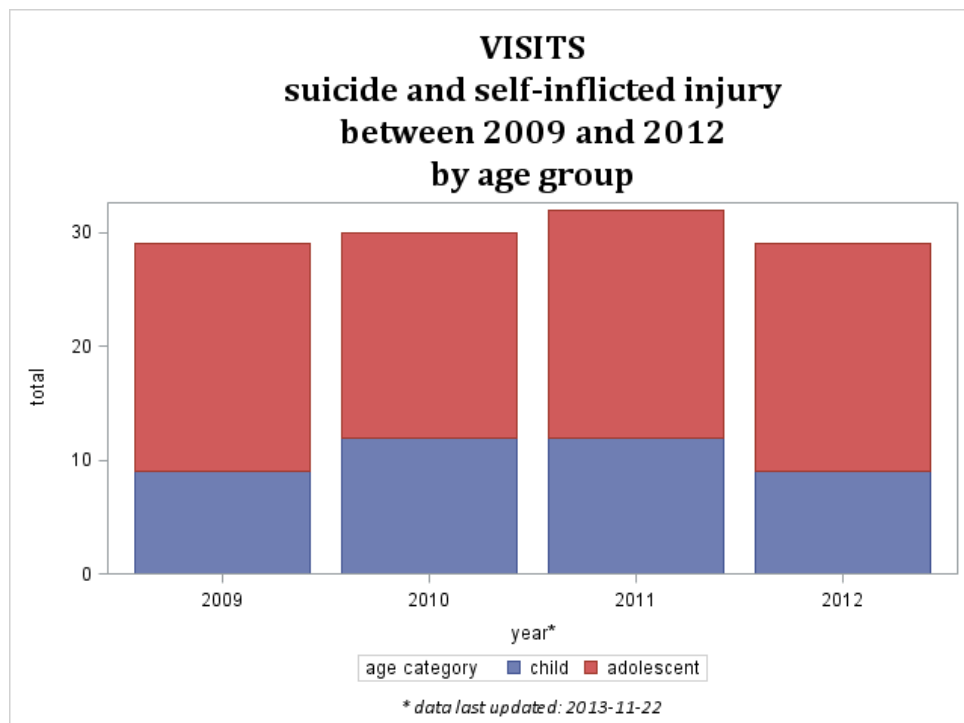
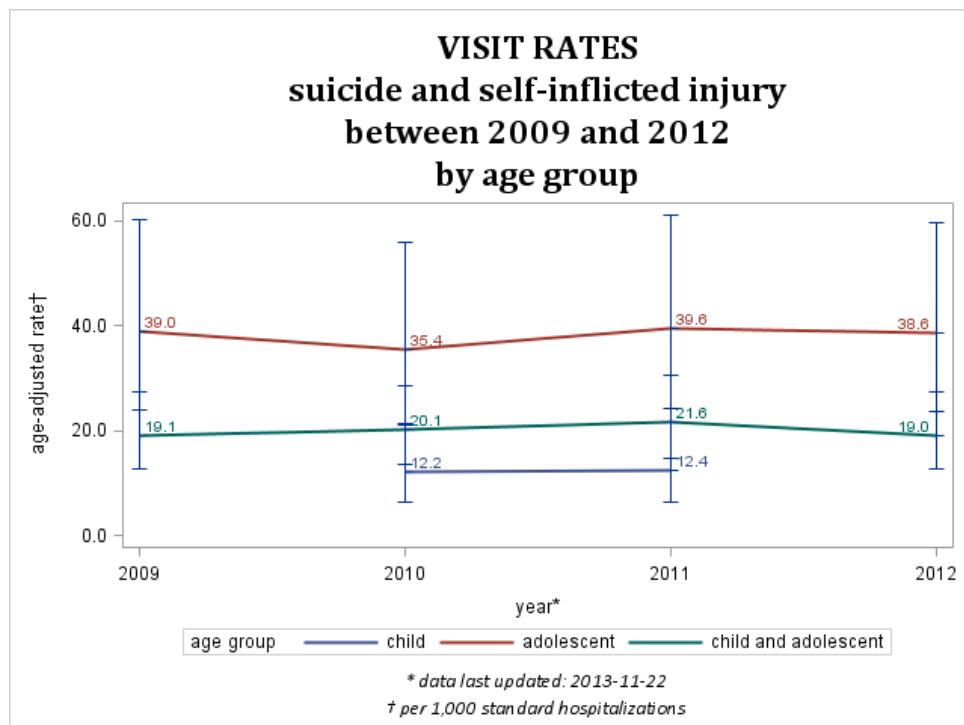


Figure 26



homicide and injury purposely inflicted by other persons

Figure 27

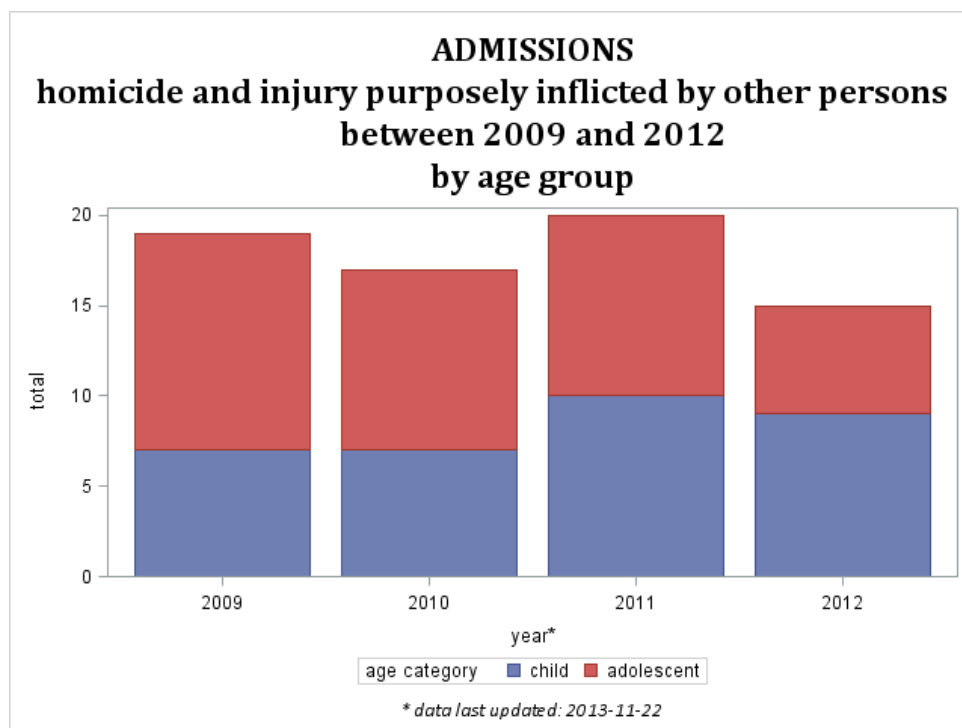


Figure 28

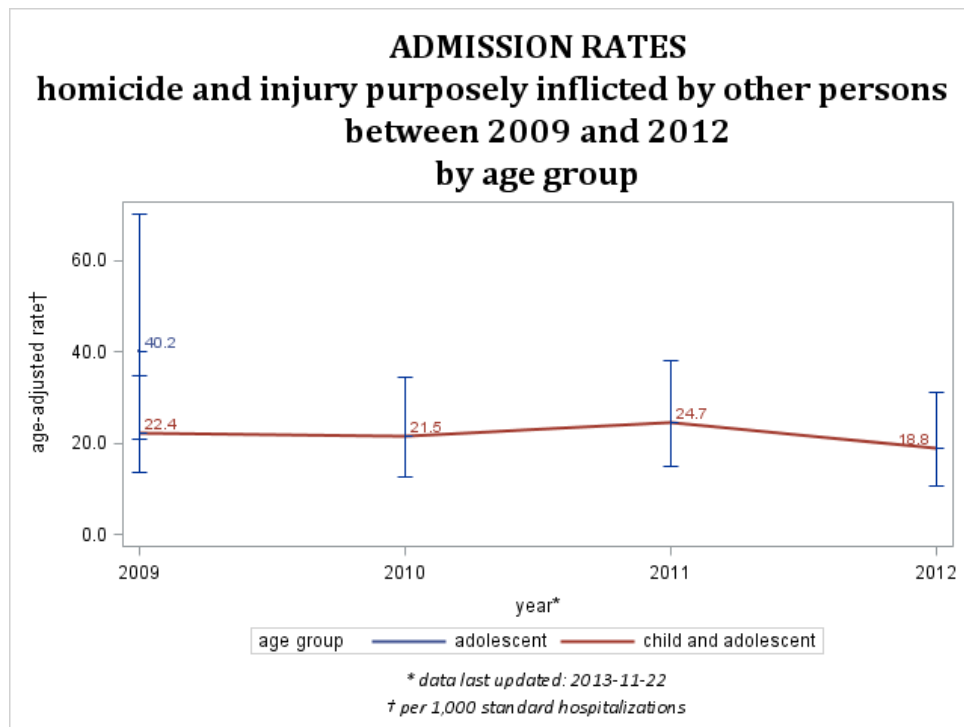


Figure 29

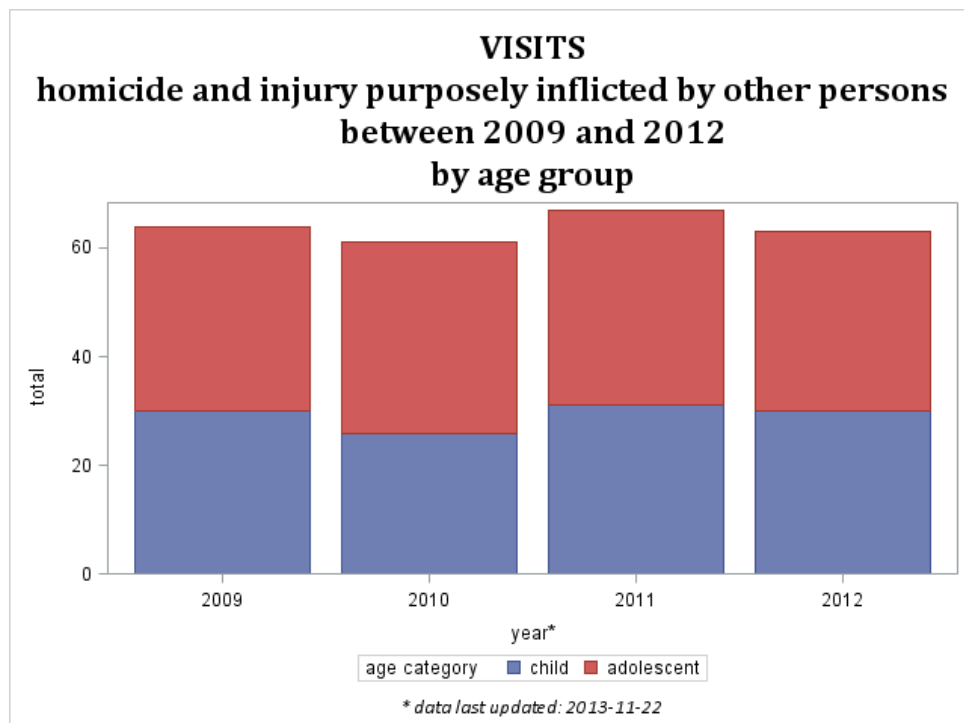
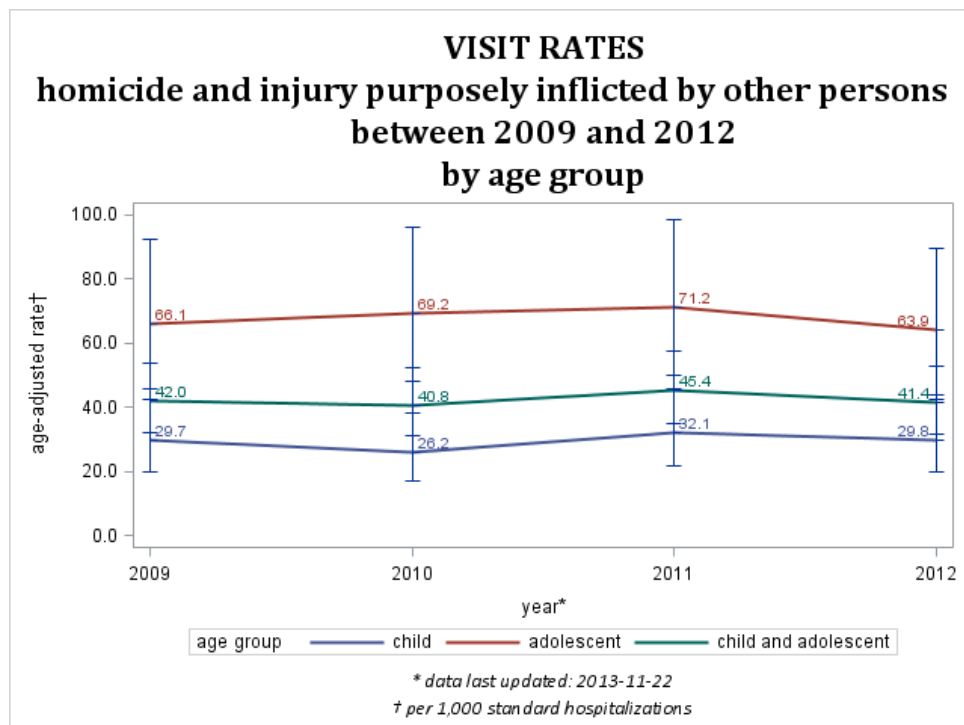


Figure 30



mental disorders

Figure 31

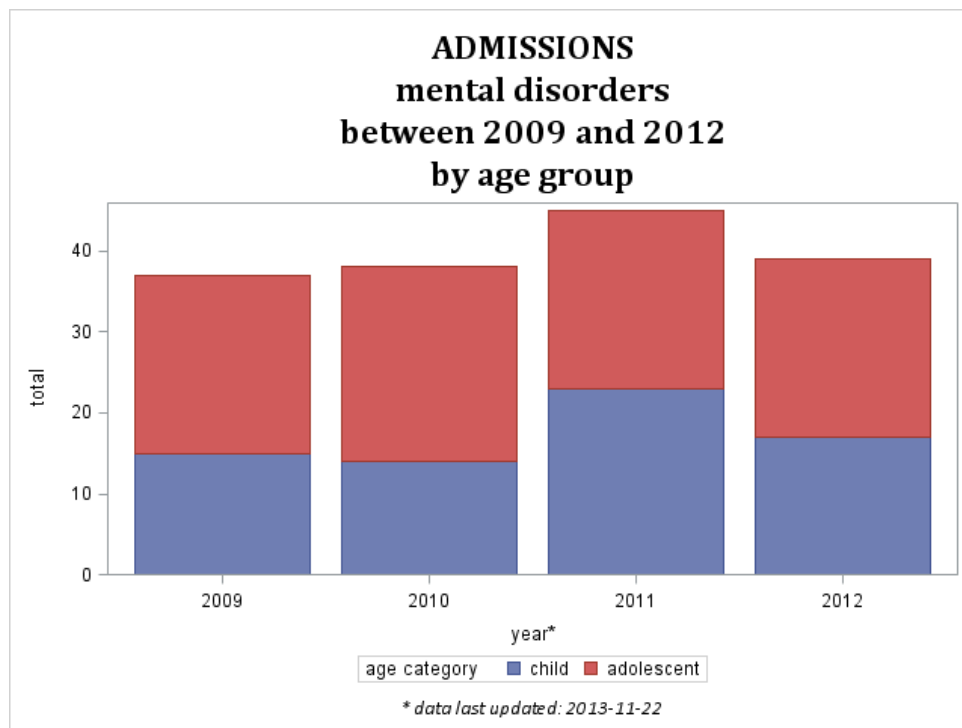


Figure 32

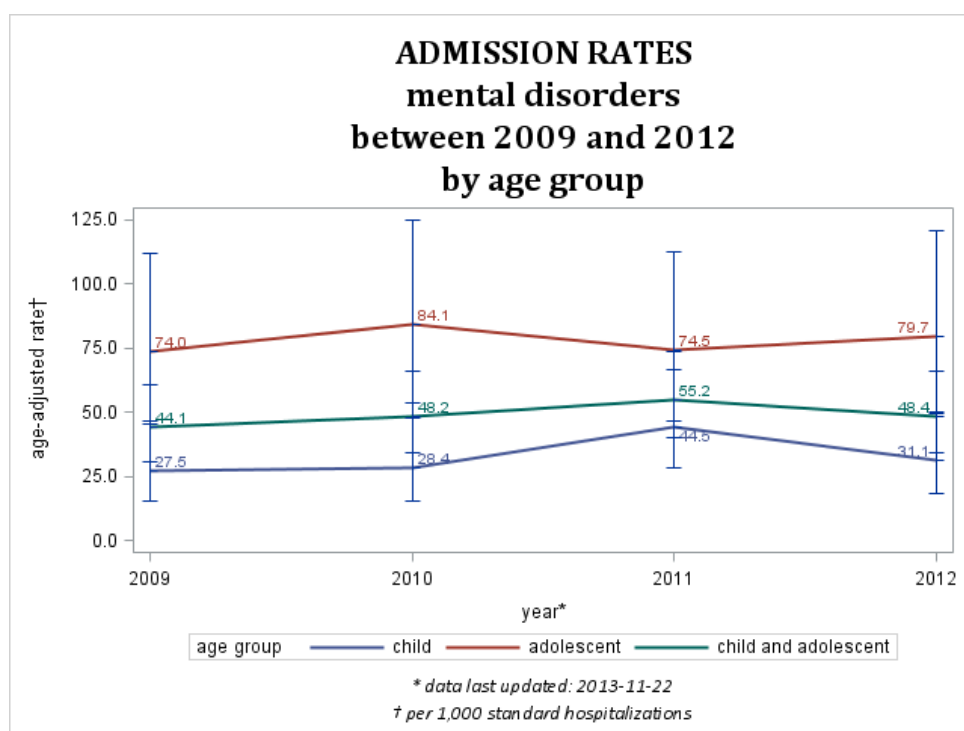


Figure 33

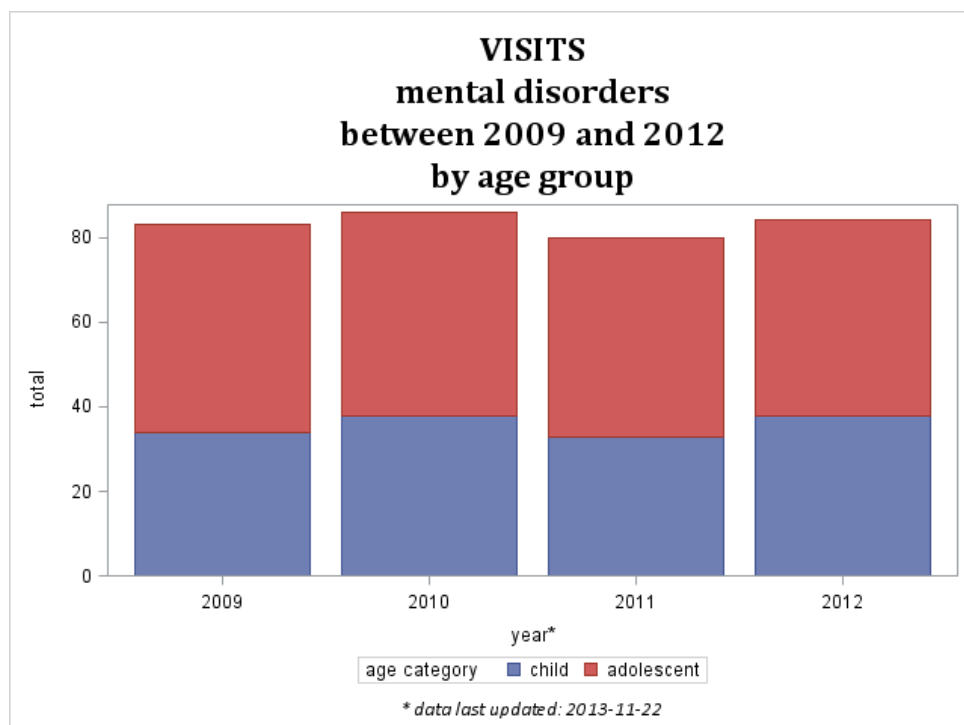
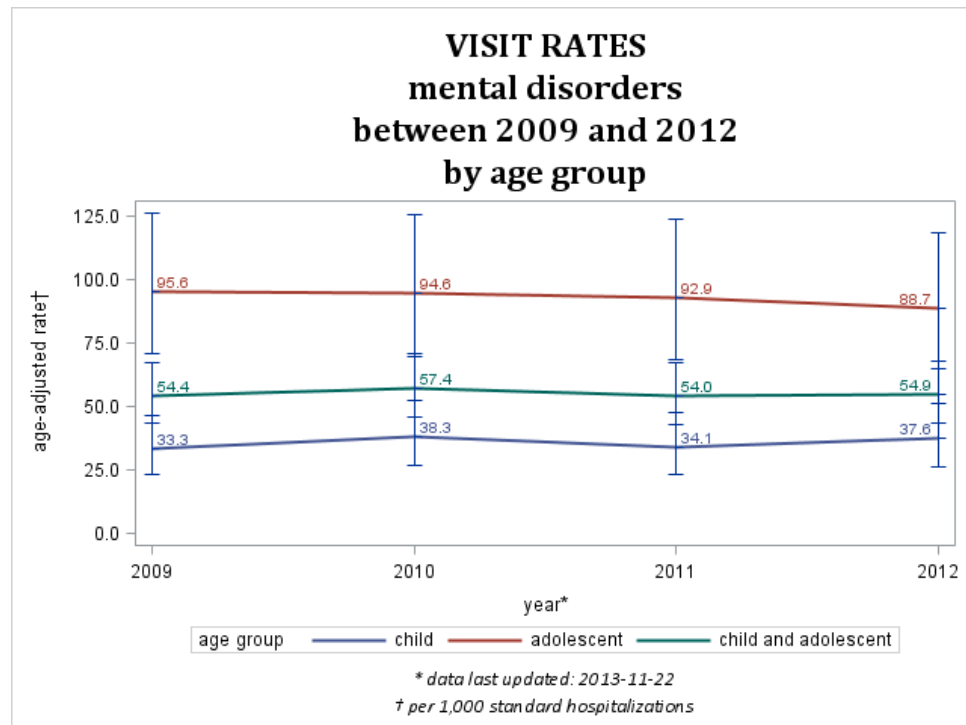


Figure 34



citations

1. Center for Health Information Analysis. www.chiaunlv.com/index.php.
2. Nevada State Demographer. nvdemography.org.
3. Surveillance, Epidemiology, and End Results Program. seer.cancer.gov.

additional resources

Body Mass Index of Nevada Students

health.nv.gov/PUBLICATIONS/2011-2012_BMI_report_v_1.0_2013-07-30.pdf

2013 Nevada Youth Risk Behavior Survey Report

health.nv.gov/PUBLICATIONS/2013_Nevada_YRBS_Report_e_1.0_2014-02-13.pdf

Maternal and Child Health Services Title V Block Grant: State Narrative for Nevada

health.nv.gov/Cancer/MCH_TitleVBlockGrantApplication.pdf

Pertussis in Nevada: 2003-2012

health.nv.gov/PUBLICATIONS/2003-2012_Pertussis_e_1.1_2014-03-04.pdf

point-of-contact

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