

THE HEALTH OF LINN COUNTY, IOWA

A COUNTY-WIDE ASSESSMENT OF HEALTH STATUS AND HEALTH RISKS

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Appendix A: Technical Notes and Definitions

General

Age-adjusted rates

Age-adjusted rates are used when comparing communities with different age structures, since the age of the population determines what the most common health problems in a community will be. The year 2000 United States population was used as the standard population to perform adjusting for this report.

Crude rates

Rates are preferred when comparing different areas or periods. Crude rates are calculated by determining the number of events in a given time frame per a set standard. Rates presented in this document are per 1,000 or 100,000 population. This comparison removes differences between sizes of the population being compared.

GIS Maps

GIS maps were created using the 2010 census SF1 dataset. Maps for all deaths, cancer, heart disease, stroke, chronic lower respiratory disease and unintentional injury were created using raw data and have not been age-adjusted.

Linn County 2020 Goals

Linn County 2020 goals were identified using the target-setting method for the corresponding objective in Healthy People 2020. If the target-setting method is 10% reduction, then the Linn County goal is a 10% reduction as well. The Linn County 2020 goal is developed from 2010 data when possible, and often utilizes a 3 year average value because data at the county level fluctuates more than national data annually.

Race and ethnicity

Definitions of race and ethnicity used for analysis are the definitions used in the source data. For example, definitions of race and ethnicity for births are the definitions used by the Iowa Department of Public Health Bureau of Vital Statistics, which is the source for birth data.

Small numbers

Small numbers of events present challenges with presenting and interpreting data. Reporting of a small number of events can compromise confidentiality and produce unstable rates. For example, 1 event has a bigger impact of percent change if there are 3 other events than if there are 300 other events. In this document, rolling averages or collapsing of several years of data was used to address the challenges presented by small numbers. In general, 20 events or more

are needed to produce stable age-adjusted rates and 10 events or more are needed to produce stable crude rates.

Trend analysis

Trend information is included in this document to show whether events are increasing, decreasing or remaining stable. Where applicable, Linn County 2020 Goals are included on the trend graphs to provide a reference point for the desired direction of the trend.

Chapter 1

Marriage and Dissolution

Iowa marriage rate is only by the location of the marriage, not the residence of the parties getting married. United States rates for 2001-2009 have been revised and are based on intercensal population estimates from the 2000 and 2010 censuses. Populations for 2010 rates are based on the 2010 census.

Urban and rural

As defined by the United States Census Bureau, urban includes urbanized areas and urban clusters. Urbanized areas are areas of 50,000 or more people, and urban clusters are more than 2,500 people but less than 50,000 people. Rural encompasses all populations not included within an urban area.

Chapter 2

Fertility rate: Rate of live births per 1,000 females aged 15 to 44 years.

Leading causes of death: Causes of death are categorized by ICD10 codes. Groups of ICD10 codes are used to describe causes of death for a disease category. For tabulating mortality statistics for this report, the [List of 113 Selected Causes of Death](#) as published by the Centers for Disease Control and Prevention, National Center for Health Statistics was used to describe cause of death categories in Linn County. The table below highlights the commonly used cause of deaths and corresponding ICD10 codes.

Cause of Death Category	ICD10 Code(s)
Diseases of heart (heart disease)	I00-I09, I11,I13, I20-I51
Malignant neoplasms (cancer)	C00-C97
Chronic lower respiratory diseases	J40-J47
Cerebrovascular diseases (stroke)	I60-I69
Accidents (unintentional injuries)	V01-X59, Y85-Y86
Alzheimer's disease	G30
Diabetes mellitus	E10-E14
Nephritis, nephrotic syndrome and nephrosis	N00-N07, N17-N19, N25-N27
Influenza and pneumonia	J09-J18
Intentional self-harm (suicide)	U03, X60-X84, Y87.0
Septicemia	A40-A41
Chronic liver disease and cirrhosis	K70, K73-K74
Essential hypertension and hypertensive renal disease	I10, I12, I15
Parkinson's disease	G20-G21
Pneumonitis due to solids and liquids	J69

Overall birth rate: Rate of live births per 1,000 population.

Teen birth rate: Rate of live births among females aged 15-19 years per 1,000 females aged 15 to 19 years.

Chapter 4

Adult Overweight and Obesity: Overweight is categorized as a body mass index (BMI) between 25.0 and 29.9. Obesity is categorized as a BMI of 30.0 or greater. Normal weight is categorized as a BMI between 18.5 and 24.9. Underweight is categorized as a BMI of 18.4 or less.

Asthma: Hospitalization data described uses the ICD 9 diagnosis code 493. Death data uses ICD10 code J45-J46.

Behavior Risk Factor Surveillance System (BRFSS): “United States” data in the report was obtained by querying “United States and D.C.” from the CDC Prevalence and Trends Database. State data was also obtained using the CDC database. Local data acquired from the SMART BRFSS database or calculated from the BRFSS dataset provided by the Iowa Department of Public Health Division of Tobacco Use Prevention and Control Iowa Department of Public Health.

Cancer incidence: Cancer incidence includes invasive cancer, with the exception of urinary bladder cancer, which includes in situ and invasive bladder cancers.

Child Overweight and Obesity: Data was obtained from two Linn County school districts, the Cedar Rapids and North Linn school districts for a total of 1239 kindergarten students and 1131

5th grade students. This is sample data and does not include all kindergarten and 5th grade students in Linn County. Overweight is defined as a BMI in the 85th to 94th percentiles. Obesity is a BMI in the 95th percentile or higher.

Chapter 5

Hepatitis B: Probable or Confirmed Acute Hepatitis B cases as determined by the Iowa Department of Public Health case definition.

HIV new diagnoses: Used data from CDC HIV Surveillance reports – Table: Estimated numbers of cases and rates (per 100,000 population) of HIV/AIDS, — 33 states with confidential name-based HIV infection. Since 1999, the following 33 areas have had laws or regulations requiring confidential name-based HIV infection reporting: Alabama, Alaska, Arizona, Arkansas, Colorado, Florida, Idaho, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming, and the U.S. Virgin Islands. Since July 1997, Florida has had confidential name-based HIV infection reporting only for new diagnoses.

The term HIV new diagnoses is used in place of incidence because people are often not diagnosed or diagnosed late, meaning cases are missed or they were infected in a different year than they are diagnosed.

Tuberculosis (TB) disease: TB disease is also known as active tuberculosis or infectious tuberculosis, often indicating the person is contagious to others. This differs from latent tuberculosis, where a person has been infected with the TB bacteria, but they show no signs or symptoms and are not contagious. For further information, visit:

<http://www.cdc.gov/tb/statistics/reports/2012/technotes.htm> .

Chapter 6

Fetal Death: A birth that fails to show any sign of life after delivery. Reportable fetal deaths in Iowa are those greater than 20 weeks gestation. The responsibility of determining if a birth meets this definition is that of the attending physician. Fetal death and stillbirth are synonymous terms.

Infant Death: Death of a live-born infant under one year of age, and includes both neonatal and postneonatal deaths.

Live Birth: A birth that shows any sign of life after delivery. The World Health Organization considers a sign of life as being the breathing or showing of any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary

muscles, whether or not the umbilical cord has been cut or the placenta is attached. The responsibility of determining if a birth meets this definition is that of the attending physician. In this publication, the terms live birth and birth are used synonymously.

Low Birth Weight: A weight at birth of less than 2,500 grams, or 5 pounds, 9 ounces.

Neonatal Death: Death of a live-born infant occurring within the first 27 days of life.

Perinatal Death: Death of a fetus of greater than 20 weeks gestation or death of a live-born infant under 28 days of life.

Postneonatal Death: Death of a live-born infant after the first 27 days of life, but before one year of age.

Prenatal Care: Data is reported for the year 2007 and after due to the 2003 birth certificate revision. States were transitioning to the 2003 revised birth certificate until 2007. Until the transition into the 2003 revision, states were using the 1989 birth certificate version. Month prenatal care began is calculated using the complete dates for the first prenatal care visit and the last normal menses. The trimester is determined, utilizing the following definition from the National Center for Health Statistics: 1st Trimester is less than 92 days elapsed; 2nd Trimester is between 92 and 182 days elapsed; and 3rd Trimester is between 183 and 304 days elapsed. If the number of days elapsed is more than 304 days, the trimester of first prenatal care visit is categorized as unknown. Additionally, if the month of the last normal menses is unknown and the obstetric estimate of gestation is known, then the first day of the last normal menses is estimated to be the date of birth minus the obstetric estimate of gestation.

Preterm birth: Live-born infant born before 37 completed weeks of gestation.

Chapter 7

Child maltreatment: Cases with founded or confirmed cases were included in analysis. For definitions used in Linn County and Iowa, please see Iowa Code 232.68.

- “Confirmed” means the department has determined that a preponderance of credible evidence (greater than 50 percent) indicates that child abuse has occurred.
- “Founded” means the department has determined that a preponderance of credible evidence (greater than 50 percent) indicates that child abuse has occurred AND the circumstances meet the criteria for placement on the central abuse registry (as defined in Iowa Code section 232.71D)

For national child maltreatment definitions see the [Child Maltreatment 2012](http://www.acf.hhs.gov/sites/default/files/cb/cm2012.pdf) report:
<http://www.acf.hhs.gov/sites/default/files/cb/cm2012.pdf>

Substantiated: An investigation disposition that concludes that the allegation of maltreatment or risk of maltreatment was supported or founded by state law or policy (State and National data).

Duplicate count: Counting a child each time he or she was a subject of a report. Because a child may be the alleged victim on more than one abuse report during the year, this section summarizes the total number of children by maltreatment level by county. If a child was on multiple reports in multiple counties, that child will be counted for each county and maltreatment outcome level indicated during the calendar year.

Unique count: Counting a child once, regardless of the number times he or she was a subject of a report. Each child abuse report may have multiple children indicated, and a single child may have more than one abuse report in a given year. This section of the report indicates only the most adverse outcome for the child during the calendar year. If a child had multiple reports in multiple counties, that child would be counted in the county in which the most adverse outcome was recorded.

Type of Abuse: Provides a breakdown of confirmed/founded maltreatment by the abuse type. For each child on each report, up to 10 maltreatment types may be indicated. This spreadsheet summarizes the number of each type of allegation which was confirmed or founded for all child protective reports during the calendar year.

Drowning: Cause of death with an ICD10 code of W65–W74.

Fall: Cause of death with an ICD10 code of W00-W19.

Homicide: Cause of death with an ICD10 code of U01–U02, X85–Y09, or Y87.1. Firearm homicides have an ICD10 code of U01.4 or X93-X95.

Motor Vehicle: Cause of death with an ICD10 code of V02–V04, V09.0, V09.2, V12–V14, V19.0–V19.2, V19.4–V19.6, V20–V79, V80.3–V80.5, V81.0–V81.1, V82.0–V82.1, V83–V86, V87.0–V87.8, V88.0–V88.8, V89.0, and V89.2.

Poisoning: Cause of death with an ICD10 code of X40–X49.

Suicide: Cause of death with an ICD10 code of U03, X60–X84, or Y87.0. Firearm suicide have an ICD10 code of X72-X74, poisoning suicide have an ICD10 code of X60-X69 and suffocation suicide has an ICD10 code of X70.

Unintentional Injury: Cause of death with an ICD10 code of V01–X59, Y85–Y86.

Violent crime: Includes murder and non-negligent manslaughter, forcible rape, robbery and aggravated assault. Data is only available for the Linn County cities of Cedar Rapids and Marion.

Chapter 9

Blood lead poisoning density map: The heat map was created by offsetting the actual location of the blood lead poisoning case and creating a radius around the point, forming a circle. In areas where circles overlap, different colors are used. As more circles overlap, the colors progress from green to yellow to orange to red.

Confirmed elevated blood levels: Any venous blood lead test result greater than or equal to 10 µg/dL; or a set of two capillary blood lead test results greater than or equal to 10 µg/dL conducted less than 12 weeks apart.

Critical violations: Until 2014, Linn County was utilizing the 2005 FDA Food Code. In this version, a critical item “means a provision of this Code, that, if in noncompliance, is more likely than other violations to contribute to FOOD contamination, illness, or environmental health HAZARD.” Examples of critical items include: hand washing and glove use, having clean restrooms, labeling all items, and storing food at proper temperatures. Additionally, the person in charge must demonstrate knowledge of hazard analysis and critical control, and employees shall eat, drink, or use tobacco only in the designated area, except for the use of a closed drink container.

Chapter 10

Access to exercise opportunities⁸⁹: Individuals are considered to have access to exercise opportunities if they: live in a census block within a half mile of a park, are a person living in an urban area and reside within one mile of a recreational facility or are a person living in a rural area and reside within three miles of a recreational facility.

Binge drinking⁹⁰: consuming 5 or more drinks by males and 4 or more drinks by females in around 2 hours.

Determinants of Health⁹¹: Factors that contribute to a person's current state of health. These factors may be biological, socioeconomic, psychosocial, behavioral, or social in nature. Scientists generally recognize five determinants of health of a population:

⁸⁹ This description was developed and is used by the County Health Rankings.

⁹⁰ NIAAA Newsletter. [Online] 2004.

http://pubs.niaaa.nih.gov/publications/Newsletter/winter2004/Newsletter_Number3.pdf.

- Biology and genetics. Examples: sex and age
- Individual behavior. Examples: alcohol use, injection drug use (needles), unprotected sex, and smoking
- Social environment. Examples: discrimination, income, and gender
- Physical environment. Examples: where a person lives and crowding conditions
- Health services. Examples: Access to quality health care and having or not having health insurance.

Heavy drinking⁹²: consuming 8 or more drinks per week for women, or 15 or more drinks per week for men.

Individual Risk Factors⁹³: Characteristics of a person that may explain health or behavior. Some examples include a person's age or whether a person smokes.

Physical Activity Guidelines (per week)⁹⁴:

- Children and adolescents: 1 hour (60 minutes) or more of physical activity each day
- Adults:
 - 2 hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity and muscle-strengthening activities on 2 or more days that work all major muscle groups OR
 - 1 hour and 15 minutes (75 minutes) of vigorous-intensity aerobic activity and muscle-strengthening activities on 2 or more days that work all major muscle groups OR
 - An equivalent mix of moderate- and vigorous-intensity aerobic activity and muscle-strengthening activities on 2 or more days that work all major muscle groups
- Older adults: For adults 65 years of age or older that are generally fit and have no limiting health conditions, the guidelines are the same as adults.

⁹¹ Definition adopted from the Centers for Disease Control and Prevention
<http://www.cdc.gov/socialdeterminants/Definitions.html>

⁹² NIAAA Newsletter. [Online] 2004.
http://pubs.niaaa.nih.gov/publications/Newsletter/winter2004/Newsletter_Number3.pdf.

⁹³ This description was developed and is used by the County Health Rankings.

⁹⁴ U.S. Department of Health and Human Services. 2008 Physical Activity Guidelines for Americans.
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