INTRODUCTION

ORGANIZATION OF THE REPORT

This publication by the Arizona Department of Health Services, ***Arizona Health Status and Vital Statistics 2012***, is the annual update of information on vital statistics and the health status of Arizona residents. It provides population-wide data on *pregnancies*, *births*, *abortions*, *stillbirths*, *reportable diseases*, *deaths*, *marriages*, *divorces, hospital inpatient discharges, emergency department visits,* and the *population* of the State.

The year 2012 report highlights both statewide trends as well as inequalities in health by subgroups including race/ethnicity, gender, and county. When possible, the data for 2012 are placed in a temporal context by comparison with the data for preceding years. The information in this volume consists of frequencies and rates of vital events for the State's residents (except as noted).

The updated *Index to Tables* in this report contains entries referring to specific health conditions, risk factors, disease categories, diagnostic groupings, procedures performed on hospital inpatients, and causes of death. The year 2012 report provides the mortality data for *morbid obesity* and enterocolitis due to *Clostridium difficile*; the latter a disease often acquired in hospitals and other health care institutions with long-term patients and residents.

Since 1992, the report has been organized into three major parts, reflecting differences in geographic coverage:

*Part I is concerned with **statewide** statistics,*
*Part II presents **county-level** information,*
*Part III is focused on **community-level** data.*

The first two parts are further divided into sections on reproductive and perinatal health, mortality, utilization of hospital care, and the status on year 2020 health objectives.

Not all health statistics are available at the community level. Hence, information about pregnancies, stillbirths, abortions, inpatient discharges, emergency room visits, reportable diseases, marriages, and marriage dissolutions is given only for the State and by county.

Part I of the report, ***THE STATE,*** has four chapters. The first chapter deals with *reproductive and perinatal health*, i.e., characteristics of women who became pregnant, factors related to the course of their pregnancies, and the status of pregnancy outcomes. Much of these data are given for each year from 2002 to 2012. The natality section of this report is concerned with fertility and birth rates, the general health of newborns as indexed by birthweight, prematurity, and selected demographic and prenatal care characteristics of the women giving birth.

The second chapter is focused on *trends and patterns in mortality*. It compares the annual age-adjusted profile of leading causes of death by gender from 2002 to 2012. Urban/rural and racial/ethnic differences in cause-specific mortality are also examined for Arizona residents. The five leading causes of death are discussed for infants (<1 year), children (1-14 years), adolescents (15-19 years), young adults (20-44 years), middle-aged adults (45-64 years), and the elderly (65 or more years). For each age group, cause-specific mortality is compared between urban (Maricopa, Pima, Pinal, and Yuma counties) and rural (Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Mohave, Navajo, Santa Cruz, and Yavapai) regions and between genders by year from 2002 to 2012. Urban and rural regions are compared in gender-specific total mortality. The chapter on mortality concludes with an examination of patterns of premature mortality by gender and race/ethnicity.

Morbidity, levels of disease in the population, is the topic of the third chapter. The presentation is limited to data on diseases reported for the entire population of the State by statutory mandate. Separate sections focus on non-sexually transmitted diseases, sexually transmitted diseases, and human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS).

Chapter 4 is focused on *inpatient hospital care*, as well as *emergency room care* in Arizona in 2012. An inpatient discharge occurs when a person who was admitted to a hospital leaves that hospital. A person who has been admitted to the emergency room or as a hospital inpatient more than once in a given calendar year will be counted multiple times as a discharge and included more than once in the hospital discharge data set; thus, the statistics on inpatient hospital care and emergency room care in this report are for discharges, not persons.

The available data are for State-licensed hospitals including psychiatric facilities. Federal, military, and the Department of Veteran Affairs hospitals are not included. All discharges are for the residents of Arizona. Discharges of out-of-state residents are not included in this report. Diagnostic groupings and code numbers are based on the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM).

Beginning in 2008, up to twenty-five diagnoses are coded for each discharge. In sections 4A and 7A, discharges are presented by first-listed (or principal) diagnosis, which is the first listed on the discharge summary of the medical record. The number of first-listed diagnoses is the same as the number of discharges.

The data on the number of procedures in sections 4B and 7B are for inpatients only. Procedures include surgical and non-surgical operations, diagnostic procedures, and special treatments reported on the medical record. Up to six procedures were included for each discharge. These all-listed procedures include all occurrences of the procedure regardless of the order on the medical record.

Preceding the tabulated data in the first four chapters is a narrative description of the findings. This description is not meant to be exhaustive but rather is a presentation of the major highlights to be gleaned from the data.

Part II and Part III contain information with no accompanying narrative.

Part II, ***THE COUNTIES***, presents the tabulated data on 1) trends and patterns in health status and vital statistics by county of residence in Chapter 5, and 2) county profiles and statewide trends on indicators for assessing health status and monitoring Arizona's progress toward Healthy People 2020 objectives in Chapter 6. The health indicators are organized around ten subject areas: *maternal, infant, and child health*, *responsible sexual behavior*, *vaccine preventable diseases*, *injury and violence*, *cancer*, *diabetes*, *heart disease and stroke*, *respiratory diseases*, *human immunodeficiency virus (HIV) disease*, and s*ubstance abuse*; 3) hospital inpatient and emergency room statistics by disease category, diagnosis group, and all-listed procedures by patient's county of residence in Chapter 7 and; 4) selected historical vital events including births, deaths, infant deaths, marriages, and dissolutions of marriage by year and county in the State for 1950-1999 in Chapter 8.

Part III, ***THE COMMUNITIES***, provides readers with selected community-level data on live births and deaths in Arizona in 2012 (Chapter 9).

Chapter 10 presents population denominators for Arizona by gender, age groups, county of residence, and race/ethnicity.

To use ***Arizona Health Status and Vital Statistics 2012*** effectively, the reader should become familiar with the *Technical Notes* at the end of the report. They provide definitions of terms used in the report, as well as information about the sources of data. *Technical Notes* also provide a link to detailed comparability ratios used to make comparisons between cause-of-death data classified by the Ninth and Tenth Revisions of the International Classification of Diseases.

In addition to the bound form, the ***Arizona Health Status and Vital Statistics 2012*** report, as well as previously published reports for 2000-2011, are available online at:

http://www.azdhs.gov/plan/report/ahs/index.htm

ADDITIONS TO 2012 REPORT

CELL SUPPRESSION

The 2012 *Arizona Health Status and Vital Statistics* report is the first report in this series to include cell suppression. Using suppression rules similar to those used by the National Center for Health Statistics (NCHS), this report now attempts to maintain the anonymity of the individuals whose vital records are summarized herein.

Cell suppression is a method of removing potentially identifiable information from tables. In cell suppression, the first tasks is *primary suppression*, or removing non-zero counts in the body of a table that fall below a certain number. Primary cells that were less than six but greater than zero were suppressed and identified with an asterisk (*). Next, *secondary suppression* is used to obfuscate the totals or sums with components, or *addends*, that fall below the threshold for primary suppression. These totals are typically reported in the margins of table rows and columns. Column or row totals that contained a non-zero addend less than 6 were rounded to the nearest tens-unit and identified with a dagger (†). Rates, ratios, and percentages that were based on a non-zero numerator less than six were suppressed and identified with a double asterisk (**). In certain cases where these rules would have dictated the rounding of a row or column total, or suppression of an overall rate/ratio/percentage, but the value of the information contained in the total was identified as important or attainable from other sources, these rules were relaxed and the original value was reported.

Bridging Race/Ethnicity

To calculate the rates used in this report, it was necessary to standardize race and ethnicity for both the vital events (in the birth, death, and fetal death data) and the population denominators. In these data sources, information on race and ethnicity is collected and categorized in a number of different ways, requiring a standard method of classifying race and ethnicity.

To create frequency counts of race and ethnicity that were adequate to compute statistically reliable rates, race was "bridged", or essentially collapsed into 5 categories; White non-Hispanic, Hispanic or Latino, Black or African American, Native American or Alaskan Native, and Asian or Pacific Islander. When an individual was identified as both Hispanic and any other race, that person was included in the racial/ethnic group with the lowest population. For example, a person identified as both White and Hispanic would be coded as Hispanic, where a person identified as American Indian and Hispanic would be coded as American Indian. Please refer to the technical appendix for further explanation of the racial bridging used in this report.

Revised Population Denominators

The 2012 Arizona Department of Health Services population denominators were estimated using the 2012 population projections obtained from the Office of Employment and Population Statistics within the Arizona Department of Administration (ADOA). Denominators calculated for census years have used the census counts, but denominators for inter-censal years have been estimated using various sources of information. For example, the 2011 population denominators were created using the 2011 CDC bridged-race population estimates in combination with county-level population estimates provided by the ADOA. Due to differences in the data sources used to calculate population denominators, variation in rates from 2011 to 2012 may in part be due to differences in denominator estimates.

For example, the estimate for Arizona's Native American population decreased by 15 percent from 2011 (n = 360,414) to 2012 (n = 305,029). For Native American young adults (age 20 – 44), the number of deaths increased by a modest 7.1 percent from 2011 (n = 364) to 2012 (n = 390). In contrast, the age-adjusted mortality rate for Native Americans increased 27.1 percent from 2011 (276.5/100,000) to 2012 (351.4/100,000).

As the illustration above shows, the difference in methods used to calculate population denominators can lead to variation in rates that do not accurately reflect changes in the number of events occurring in the population. We recommend analyzing the underlying counts for each event before interpreting variation in rates from 2011 to 2012.

KEY FINDINGS

Stability in number of resident births

In 2012, there were 85,725 resident births, a slight increase from last year's 85,190 births, which was the lowest annual number of resident births in the past decade. Compared to 2011, the number of births increased for all racial/ethnic groups excluding Native Americans, who had a 4.5 percent decrease.

Selected Characteristics of the Women Giving Birth in 2012

Among women who gave birth in Arizona in 2012:

- 45,511 births (53.1 percent) were paid for by the Arizona Health Care Cost Containment System (AHCCCS).
- 38,770 (45.2 percent) were unmarried, which may signify absence of emotional, social, and financial resources.
- 32,341 (37.7 percent) had a serious medical condition such as hypertension, anemia, or diabetes.
- 27,159 (31.7 percent) experienced complications during labor and/or delivery.
- 14,712 (17.2 percent) received late or no prenatal care.
- 6,765 (7.9 percent) were teenagers 19 years old or younger.
- 3,851 (4.5 percent) smoked and/or used alcohol during pregnancy.

Teen Pregnancies

In 2012, both the number of teen pregnancies and the teen pregnancy rate were the lowest they have been in at least the past decade. From 2007 to 2012 the number of teen pregnancies decreased by 35.4 percent and the pregnancy rate by 37.2 percent. From 2011 to 2012 the number of teen pregnancies decreased by 5.4 percent and the pregnancy rate by 6.2 percent.

The magnitude of the decrease in the number of teen pregnancies was the most pronounced among Hispanic or Latino teens: from 8,545 pregnancies in 2007 to 5,085 in 2012. The decline of 3,460 in the number of pregnancies among Hispanic or Latino teens accounted for 64.9 percent of the overall decrease of 5,328 in teen pregnancies from 2007 to 2012 ((3,460/5,328)*100=64.9)).

Teenage females also received fewer abortions in

2012 (n = 1,539) than in 2011 (n = 1,785). For White non-Hispanic and Hispanic teenage females, the number of abortions from 2011 to 2012 decreased on average around 24 percent.

TOTAL MORTALITY

During 2012, 48,459 Arizona residents died, 912 more than in 2011. The 2012 age-adjusted mortality rate decreased from 699.6 per 100,000 residents in 2011 to 687.2 per 100,000 residents in 2012. The median age at death in 2012 was 77 years.

INFANT MORTALITY

In 2012, 495 infants died before reaching their first birthday, 206 fewer than the latest peak of 701 infant deaths in 2007. The infant mortality rate (IMR) decreased from 5.9 infant deaths per 1,000 live births in 2011 to 5.8/1,000 in 2012, the lowest IMR in the State's history.

Newborn weight at birth is one of the most important predictors of an infant's survival chances. In 2012, the mortality rate among babies weighing less than 500 grams at birth was 90.1 percent. Together, births of infants weighing less than 1,500 grams accounted for 1.2 percent of births and 48.4 percent of all infant deaths

CAUSE-SPECIFIC MORTALITY

In 2012, the number of deaths ***in motor vehicle accidents*** decreased from 787 in 2011 to 747 in 2012, a 5.1 percent decrease. In 2012, 191 Arizonans died from ***obesity*** as the underlying cause of death. The number of completed ***suicides*** in 2012(n = 1,070) was a slight decrease from the high of 1,113 observed in 2011. In 2012, males accounted for 78.2 percent of suicides. In 2012, ***suicide*** was the 9th leading cause of death among males. It ranked as the 12th leading cause of mortality for females. The age-adjusted suicide rate decreased from 17.2 per 100,000 residents of the State in 2011 to 16.2 suicides per 100,000 in 2012.

From 2009 to 2012 the number of deaths from ***diabetes*** increased by 57.5 percent, from 1,078 deaths in 2009 to 1,698 deaths in 2012. In 2012, there were 1,698 deaths that had diabetes assigned as the underlying cause. Another 2,442 deaths had diabetes assigned as a contributing factor. The diabetes-related death rate of 57.4/100,000 (**Table 6A-6**) was 2.4 times greater than the rate for diabetes as underlying cause (23.5/100,000). The diabetes-related death rate includes all mentions of diabetes on the death certificate as the underlying cause or other than underlying cause.

HOSPITAL CARE

In 2012, there were 662,932 inpatients discharged, excluding newborn infants, from non-Federal short stay hospitals in Arizona. Among those admitted as inpatients, 2,870 Arizonans were hospitalized with the diagnosis of enterocolitis due to ***Clostridium difficile,*** a bacterial inflammation of the intestines. The disease is of growing public health concern because it is often acquired in hospitals and other health care institutions with long-term patients as residents.

In 2012, 2,619 Arizonans were admitted as inpatients with the diagnosis of ***depression*** as first-listed diagnosis. In addition there were 7,637 emergency room records with depression as the first-listed diagnosis (for a total of 10,256 hospital encounters).

EMERGENCY ROOM CARE

During 2012, more than 2.0 million visits were made by Arizona residents to hospital emergency rooms (ER), about 31.3 visits per 100 persons. In 2012, ***abdominal pain***, ***chest pain***, ***acute upper respiratory infection***, ***mental disorders***, ***contusion with intact skin surfaces***, and ***spinal disorders*** were the leading diagnostic categories, accounting for approximately one-fourth (25.2 percent) of all visits

Almost nineteen hundred Arizonans (1,852) were treated in an emergency room with the diagnosis of ***exposure to excessive natural heat*****.** In addition, 397 were hospitalized as inpatients with this diagnosis.

A comparison of some of the basic findings for the State for 2002, 2007, and 2012 is presented on the following page.