

INTRODUCTION

ORGANIZATION OF THE REPORT

This publication by the Arizona Department of Health Services, *Arizona Health Status and Vital Statistics 2010*, 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 2010 report consists of 258 tables, 130 graphs, and accompanying text. It highlights both the statewide trends and patterns in the general population, as well as inequalities in the health status among ethnic groups and Arizona's counties. When possible, the data for 2010 are placed in a temporal context by comparison with the data for the preceding years.

The updated *Index to Tables* in this report contains more than 600 entries referring to specific health conditions, risk factors, disease categories, diagnostic groupings, procedures performed on hospital inpatients and causes of death. The year 2010 report for the second time 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.

The information in this volume consists of frequencies and rates of vital events for the State's residents (except as noted). The report contains approximately 4,900 age-adjusted and 6,200 age-specific mortality rates, and more than 15,000 other rates and ratios (fertility rates, pregnancy rates, crude death rates, rates of natural increase, etc.).

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, utilization of hospital care, mortality and the status on year 2010 health objectives.

Not all health statistics are available on a sub-county level. Hence, information about pregnancies, stillbirths, induced terminations of pregnancy (abortions), inpatient discharges,

emergency room visits, reportable diseases, marriages and marriage dissolutions is given only for the State and by county.

Part I, *THE STATE*, of the report 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 2000 to 2010. The natality section of this report is concerned with fertility and birth rates, the general health of newborns as indexed by birthweight and 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 2000 to 2010. Urban/rural and 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 (i.e. Maricopa, Pima, Pinal and Yuma counties) and rural (all other counties) regions and between genders by year from 2000 to 2010. 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.

Chapter 4 is focused on *inpatient hospital care*, as well as *emergency room care* in Arizona in 2010. An inpatient discharge occurs when a person who was admitted to a hospital leaves that hospital. A person who has been hospitalized more than once in a given calendar year will be counted multiple times as a discharge and included more than once in the hospital inpatient discharge data set; thus, the statistics 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 one 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; 2) County profiles and statewide trends on indicators for assessing health status and monitoring progress toward Arizona and national year 2010 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 substance abuse*; 3) Hospital inpatient and emergency room statistics by disease category, diagnosis group and all-listed procedures by patient's county of residence in the State, in Chapter 7 and; 4) Selected historical vital events 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 2010 (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 2010* effectively, the reader should become familiar with *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 2010*, as well as previously published reports for 2000-2009 also are available online at:

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

In order to be of maximum usefulness, the public health data must be timely. It is our pleasure to release *Arizona Health Status and Vital Statistics 2010* within eight months after the 2010 data became available for analysis. Below are some highlights from the report.

KEY FINDINGS

Compared to 2001-2009, there were some important changes when analyzing the 2010 data.

First, instead of using our own population estimates, used to compute the rates of vital events, we were dependent on the release schedule of the 2010 Arizona-specific population counts by the Census Bureau. They were made available online by the end of August 2011, i.e. at the time when the draft of this report has been historically finalized.

Second, in 2010, the Office of Vital Records (OVR) of the Arizona Department of Health Services implemented, for the first time since 1989, the new (2003) Standard U.S. death certificate. The death certificate now includes a new classification of the decedent's race/ethnic status, consistent with the revised federal standards for collecting and reporting racial and ethnic status. There are now 15 racial categories (including Guamanian or Chamorro; Samoan or Native Hawaiian) to choose from. It is also permitted to indicate more than one race for a decedent. The new format of the death certificate data required that we adjust our computer programs.

Third, in 2010, SB1304 was passed by the legislature that statutorily required the reporting of abortions and treatment of complications

associated with abortions. The collection of this information was begun July 29, 2010. The 2010 abortion data included the information collected prior to August in the older format.

DECLINE IN THE NUMBER OF RESIDENT BIRTHS

In 2010, there were 87,053 resident births, 15,634 fewer than the 102,687 in 2007. The magnitude of the reduction in the number of births was largest among Hispanics or Latinos (-24.9 percent).

DECLINE IN THE AGE-SPECIFIC MORTALITY

Among Non-Hispanic residents of Arizona aged 15-34 years, the number of deaths declined by 12 percent from 2007 to 2010. In contrast, the number of deaths among Hispanic or Latinos in this age group declined by 30.3 percent

RELATIVE FREQUENCIES OR RATES OF VITAL EVENTS

Changes in the absolute frequency counts of events such as births or deaths may mean two different things. First, the likelihood of an event may have changed (for example the risk of death among Hispanics aged 15-34 years declined from 2007 to 2009 and their survival chances improved quite substantially). Second, the size of the population or population subgroup changed (for example, there were fewer deaths among Hispanics aged 15-34 years because there were fewer Hispanics in this age group residing in Arizona in 2010 than there were in 2007).

Two years ago, in Section 1B of the *Arizona Health Status and Vital Status 2008* report we proposed the latter line of reasoning trying to make sense out of an unprecedented decline in the number of births among Hispanics or Latinos.

Under the circumstances, it is important to treat the 2008 - 2010 fertility, birth rates, and other rates of vital events (particularly for Hispanics) with caution. Perhaps, these rates have not declined; rather, the population denominators used to calculate them, did.

Unlike the numerators – the frequency counts of pregnancies, births, deaths, etc. – which reflect the true occurrence of registered vital events; the population denominators for 2001-2009 are not exact enumerations of the State's residents in different race/ethnic, gender, or age group categories. These denominators are extrapolations, which use past experience, and are not adjusted for the impact of current events. Unfortunately, the population denominators for 2008 and 2009 were overinflated and all rates of vital events based on them are artificially underestimated.

We won't know whether the birth or pregnancy rates actually declined from 2007 to 2009 until an updated series of population estimates is available, consistent with both the 2000 and the 2010 Census.

SELECTED CHARACTERISTICS OF THE WOMEN GIVING BIRTH IN 2010

Among women who gave birth in Arizona in 2010:

- 40,660 had no private insurance to pay for birth,
- 38,870 were unmarried (which may signify absence of emotional, social and financial resources)
- 30,160 had a serious medical condition such as hypertension, anemia or diabetes
- 25,280 experienced complications during labor and/or delivery
- 15,720 received late or no prenatal care
- 9420 were teenagers 19 years old or younger
- 4,330 smoked and/or used alcohol during pregnancy (all numbers are rounded to the nearest ten).

BIRTHS BY PAYER

Since 2001, the share of resident births paid for by AHCCCS (the State's Medicaid program) continued to exceed the share paid by private health insurance. In 2010, the Arizona Health Care Cost Containment System was the payment source in 53.3 percent of the deliveries.

TEEN PREGNANCIES

In 2010, both the number of teen pregnancies and the pregnancy rate were lower than they were in 2007 - 2009. From 2007 to 2010 the number of teen pregnancies decreased by 27.0 percent and the pregnancy rate by 28.2 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 5,918 in 2010. The decline of 2,627 in the number of pregnancies among Hispanic or Latino teens accounted for 64.7 percent of the overall decrease of 4,058 in teen pregnancies from 2007 to 2010 $((2,627/4,058)*100=64.7)$.

TOTAL MORTALITY

During 2010, 45,871 Arizona residents died, 806 more than in 2009. The 2010 age-adjusted mortality rose from 653.2 in 2009 to 679.9 in 2010. The median age at death slightly increased from 76 years in 2009 to 77 years in 2010.

INFANT MORTALITY

In 2010, 519 infants died before reaching their first birthday, 182 fewer than the latest peak of

701 infant deaths in 2007. The infant mortality rate (IMR) decreased from 6.8 infant deaths per 1,000 live births in 2007 to 5.9/1,000 in 2009 and 6.0 in 2010, the second lowest IMR in the State's history. Even if the risk of infant mortality remained the same as it was in 2007, 106 fewer infant deaths can be attributed to the absolute reduction in the number births by 15,634 from 2007 to 2010 ((15,634 x 6.8)/1,000) =106).

Newborn weight at birth is one of the most important predictors of an infant's survival chances. In 2010, the mortality rate among babies weighing less than 500 grams at birth was 89.9 percent.

Together, births of infants weighing less than 1,000 grams accounted for 0.5 percent of births, and 38.5 percent of all infant deaths

CAUSE-SPECIFIC MORTALITY

In 2010, the number of deaths *in motor vehicle accidents* declined to 711, the lowest annual number of deaths since 1991. In contrast, Arizonans experienced particularly large increase in the number of *accidental drug poisoning/overdoses* more than doubled from 414 deaths in 2001 to 798 deaths in 2010. Both in 2009 and 2010, the number of deaths from accidental poisoning by drugs exceeded the number of deaths from motor vehicle-related injuries

In 2010, 138 Arizonans died from *morbid obesity* as the underlying cause of death. In addition, another 388 deaths in 2010 had morbid obesity assigned as a contributing factor rather than the underlying cause.

The number of completed *suicides* in 2010 (1,070) was the highest ever recorded in Arizona's history. In 2010, males accounted for 79.1 percent of suicides.

In 2010, *suicide* was the 5th leading cause of death among males. It ranked as the 12th cause of mortality for females. The age-adjusted suicide rate increased by from 14.8 suicides per 100,000 residents of the State in 2008 to 16.1/100,000 in 2009, and 16.7/100,000 in 2010; the highest suicide rate since 1998.

Both men and women experienced a decline in mortality rates for *diabetes* from 2005 to 2009. From 2009 to 2010 the number of deaths from diabetes increased by 27.3 percent.

In 2010, there were 1,372 deaths that had diabetes assigned as the underlying cause. Another 1,987 deaths had diabetes assigned as a contributing factor. The diabetes-related death rate of 49.0/100,000 was 2.4 times greater than the rate for diabetes as underlying cause (20.1/100,000). The diabetes-related death rate includes all mentions of diabetes on the death certificate as the underlying or other than underlying cause.

HOSPITAL CARE

In 2010, there were 679,477 inpatients discharged, excluding newborn infants, from non-Federal short stay hospitals in Arizona. Among those admitted as inpatients, 2,702 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 2010, 1,226 Arizonans were admitted as inpatients with the diagnosis of *depression* as first-listed diagnosis. In addition there were 8,865 emergency room records with depression as the first-listed diagnosis (for a total of 10,091 hospital encounters).

Suicide attempt resulted in 4,429 inpatient hospitalizations, 57.8 percent more than in 2007.

EMERGENCY ROOM CARE

During 2010, more than 1.8 million visits were made by Arizona residents to hospital emergency rooms (ER), about 29 visits per 100 persons. In 2010, *abdominal pain, chest pain, acute upper respiratory infection, and mental disorders*, were the leading diagnostic categories.

In 2010 there were 8,015 *suicide* attempt-related ER visits, 72.3 percent more than in 2007.

Almost fifteen hundred Arizonans (1,493) were treated in an emergency room with the diagnosis of *exposure to excessive natural heat*. In addition, 399 were hospitalized as inpatients with this diagnosis.

A comparison of some of the basic findings for the State for 2000, 2005, and 2010 is presented on the following page.