

Data Mining To Help Focus your Community Health Efforts

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**Arkansas Assessment Initiative
Arkansas Hometown Health Coalition**

Available Data on the ADH Statistical Query System Website

- ⦿ Mortality data
- ⦿ Infant Mortality data
- ⦿ Low birth weight data
- ⦿ Fertility data

Rates

- ⊙ A rate is the frequency of *defined events* for a given *time period* in a *specified population*
- ⊙ A rate consists of a numerator and a denominator multiplied by a constant.

$$\text{Rate} = \frac{\text{Event}}{\text{Population at Risk}} \times 100,000$$

Comparing Rates

- ◎ Only compare rates when the numerator and denominator (i.e., events and population) are defined consistently over time and place.

Look for :

- Consistency in definition of event
 - Consistency in coding scheme
 - Consistency among populations defined by geography
 - The same multiplier
-
- ◎ If comparing age-adjusted rates, compare rates that have been adjusted to the same standard population.

Crude Mortality Rate vs. Adjusted Mortality Rates

- ◎ Crude rates are recommended when a summary measure is needed and it is not necessary or desirable to adjust for other factors.
- ◎ Age-adjustment is a statistical process applied to rates of disease, death, injuries or other health outcomes that allows communities with different age structures to be compared.

Where Does this Data Come From?

- ◎ Arkansas Vital Records Birth and Death Certificates
- ◎ Derived from Arkansas birth certificate data for **1990-2005**
- ◎ And death certificate data for **1990-2006**.
- ◎ US Census bureau

International Classification of Diseases (ICD) Codes

- ◎ Coding is used to classify diseases and other health problems recorded on many types of health and vital records including death certificates and health records.

The following website will help you if you have questions about exactly what is included in each coding area.

<http://www.who.int/classifications/apps/icd/icd10online>

Notes About Using Small Numbers:

- ◎ Most programs in the Division of Chronic Disease Prevention and Adult Health do not calculate incidence or mortality rates for geographic areas smaller than counties because for many areas, the rates for even the most common diseases are not stable enough to be meaningful.
- ◎ One way is to combine the number of cases or deaths over several years
- ◎ Using five-year average annual rates instead of single year rates.
- ◎ Number of cases or deaths can be combined across geographic areas

Access To the Website

- ◎ From inside the Health Department
Begin at the ADH Webpage
<http://healthycolleagu/>
- ◎ From outside the Health Department
Begin at
www.healthyarkansas.com

**Suppose You are Wondering
About Deaths From Diabetes
in Your County**



Arkansas Center for Health Statistics Query System

- Low Birthweight Report
- Fertility Report
- Cause of Death Report
- Cause of Infant Death Report

This is the main page of the Arkansas Center for Health Statistics Query System.

- Drop down one of the menus above for a selected query topic.
- You will be asked to fill out a form with the details of the exact query that you want.
- Note that some selections may be mandatory, while others are optional.
- When you have made your selections, click any of the buttons labeled "Submit Request" to generate your query report.
- If you wish to clear all the selections on the form, click any of the buttons labeled "Reset Form". If you wish to clear the selections in one selection list, click the button labeled "CLEAR" under the list.
- After the form is submitted, your selections will be used to run a query using one or more database(s) in the system and a resulting table or map of results will be displayed.
- In tabular reports, some of the cells may be replaced by "- masked -" to protect confidential health information of individuals. ([Details of Masking Criterion](#))
- You can return to this page by clicking on the title [Arkansas Center for Health Statistics Query System](#) above the menus on any page in this system.

This request took 0.19 seconds of real time (v9.1 build 1461).

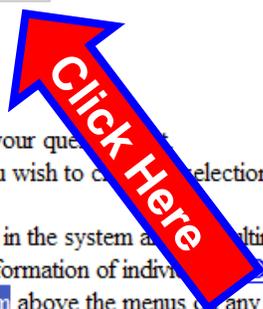


Arkansas Center for Health Statistics Query System

- Low Birthweight Report
- Fertility Report
- Cause of Death Report
- Cause of Infant Death Report
- ICD9 COD Report
- ICD10 COD Report

This is the main page of the Arkansas Center for Health Statistics Query System.

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- You can return to this page by clicking on the title [Arkansas Center for Health Statistics Query System](#) above the menus on any page in this system.



This request took 0.16 seconds of real time (v9.1 build 1461).

Arkansas DOH ICD9 Cause of Death Query System SAS Version 9.1 - Windows Internet Explorer

http://healthstat01/scripts/broker.exe?_service=default&_program=arcode.ICD9_welcome_live.sas&_debug=

File Edit View Favorites Tools Help

Arkansas DOH ICD9 Cause of Death Query System SA...

Health Statistics Branch

Department of Health

Arkansas Center for Health Statistics Query System

Low Birthweight Report Fertility Report Cause of Death Report Cause of Infant Death Report

Number of Visitors: 435 Number of Queries Run: 2100

ICD9 Cause of Death Tabular Report

General Instructions:

- Follow steps to perform desired search. Some steps contain more detailed instructions.
- Lists allowing multiple selections are marked "(Multiple)".
- For multiple selection lists, first **CLICK** to select a single item, then either **CTRL-CLICK** to select/deselect multiple separate items or **SHIFT-CLICK** to select a range of items. **CLICK-DRAG** will also select a range of items.
- Characteristics with nothing selected will imply that there is no subset for that characteristic.
- The **CLEAR** button below each list will deselect all items on that list.

1 Step 1. Select Counties and Time Span (Required)

Counties: (Multiple)

Or Regions: (Multiple)

Or Entire State:

Time Span: to

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Arkansas DOH ICD10 Cause of Death Query System SAS Version 9.1 - Windows Internet Explorer

http://healthstat01/scripts/broker.exe?_service=default&_program=arcode.ICD10_welcome_live.sas&_debug=

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Arkansas DOH ICD10 Cause of Death Query System S...

Step 2. Select Type of Rate (Required):

- Crude and Age-adjusted Death Rates with 95% Confidence Intervals
- Age-specific Rates with 95% Confidence Intervals

Step 3. Select ICD10 Cause of Death Diagnosis Codes (Required)

List

| Num | Description |
|------|---|
| 018 | Other and unspecified infectious and parasitic diseases and their sequelae. ICD10 Codes A00,A05,A20-A30 |
| 019* | Malignant neoplasms. ICD10 Codes C00-C97 |
| 044 | In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior. ICD10 Codes D00-D09 |
| 045 | Anemias. ICD10 Codes D50-D64 |
| 046 | Diabetes mellitus. ICD10 Codes E10-E14 |
| 047* | Nutritional deficiencies. ICD10 Codes E40-E64 |
| 050 | Meningitis. ICD10 Codes G00,G03 |
| 051 | Parkinson's disease. ICD10 Codes G20-G21 |

(Multiple)

CLEAR

List

| Num | Description |
|-----|-------------|
|-----|-------------|

Level 1 Diagnosis: (* indicates diagnosis category contains subcategories in Level 2.)

Level 2 Diagnosis: (* indicates diagnosis category contains

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Arkansas DOH ICD10 Cause of Death Query System SAS Version 9.1 - Windows Internet Explorer

http://healthstat01/scripts/broker.exe?_service=default&_program=arcode.ICD10_welcome_live.sas&_debug=

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Arkansas DOH ICD10 Cause of Death Query System S...

Level 3.)

3.3 Level 3 Diagnosis:
(* indicates diagnosis category contains subcategories in Level 4.)

(Multiple)

CLEAR

List

| Num | Description |
|-----|-------------|
|-----|-------------|

(Multiple)

CLEAR

3.4 Level 4 Diagnosis:

List

| Num | Description |
|-----|-------------|
|-----|-------------|

(Multiple)

CLEAR

Bar Chart Graphics:

Please select how you would like to view your output: Browser PDF Excel

Submit Request Reset Form

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ICD10 Cause of Death Query Results SAS Version 9.1 - Windows Internet Explorer

http://healthstat01/scripts/broker.exe

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ICD10 Cause of Death Query Results SAS Version 9.1

Characteristics Selected for Records Search

| Search Characteristic | Values Selected |
|-------------------------------------|-----------------|
| Counties | Drew |
| Years | 1990 to 2006 |
| Region | |
| List Number(s) of Selected Cause(s) | 046 |

532 records matched the search criteria.

Age-adjusted Death Rate Arkansas, 1990 - 2006 For Selected County/Countries For ICD10 Cause of Death Code(s) = "Diabetes mellitus (E10-E14)"

* Rows with less than 10 Population have been masked.
SAS Version 9.1.3

| County | Number of Selected Deaths | Total Population | Crude Death Rate Per 100,000 Population | 95% Confidence Interval | Age-Adjusted Death Rate Per 100,000 Population | 95% Confidence Interval |
|--------------------------|---------------------------|------------------|---|-------------------------|--|-------------------------|
| Drew County | 135 | 311,346 | 43.43 | 36.42 - 51.40 | 42.91 | 35.96 - 50.79 |
| Combined Counties | 135 | 311,346 | 43.43 | 36.42 - 51.40 | 42.91 | 35.96 - 50.79 |

This report is based on the following data:
[Arkansas Vital Records Death Certificates](#)
[ICD9-ICD10 Comparability Ratios](#)

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**Suppose You are Wondering
About Deaths from Diabetes
in *All* Counties in the Entire
State from 1990 - 2006**

ICD10 Cause of Death Query Results SAS Version 9.1 - Windows Internet Explorer

http://healthstat01/scripts/broker.exe

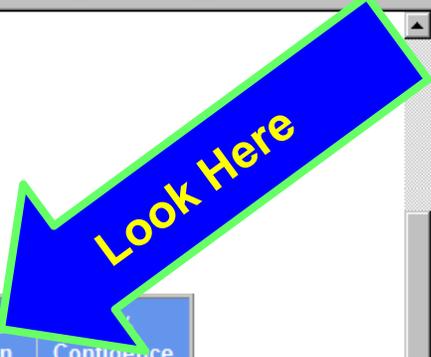
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ICD10 Cause of Death Query Results SAS Version 9.1

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Age-adjusted Death Rate Arkansas, 1990 - 2006 Entire State (All Regions, All Counties) For ICD10 Cause of Death Code(s) = "Diabetes mellitus (E10-E14)"

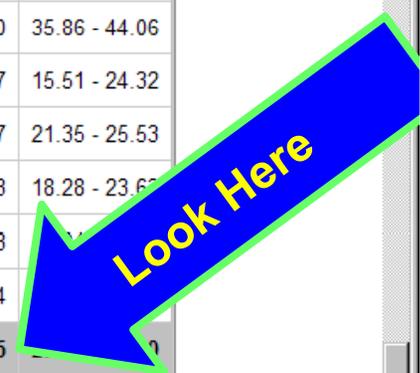
* Rows with less than 10 Population have been masked.
SAS Version 9.1.3



| County | Number of Selected Deaths | Total Population | Crude Death Rate Per 100,000 Population | 95% Confidence Interval | Age-Adjusted Death Rate Per 100,000 Population | Connuence Interval |
|------------------|---------------------------|------------------|---|-------------------------|--|--------------------|
| Arkansas County | 126 | 353,131 | 35.64 | 29.68 - 42.44 | 29.37 | 24.43 - 34.99 |
| Ashley County | 127 | 408,325 | 31.21 | 26.02 - 37.12 | 28.50 | 23.76 - 33.90 |
| Baxter County | 266 | 626,793 | 42.47 | 37.52 - 47.89 | 23.08 | 20.23 - 25.99 |
| Benton County | 371 | 2,440,989 | 15.19 | 13.68 - 16.81 | 14.37 | 12.93 - 15.92 |
| Boone County | 115 | 556,130 | 20.66 | 17.05 - 24.80 | 16.53 | 13.62 - 19.86 |
| Bradley County | 55 | 207,973 | 26.22 | 19.72 - 34.16 | 20.07 | 14.99 - 26.21 |
| Calhoun County | 41 | 96,956 | 42.75 | 30.73 - 57.89 | 34.58 | 24.77 - 46.74 |
| Carroll County | 77 | 406,950 | 18.82 | 14.84 - 23.54 | 15.56 | 12.26 - 19.46 |
| Chicot County | 70 | 244,410 | 28.51 | 22.21 - 36.04 | 24.72 | 19.21 - 31.27 |
| Clark County | 104 | 391,740 | 26.50 | 21.65 - 32.11 | 23.99 | 19.52 - 29.13 |
| Clay County | 101 | 297,231 | 34.01 | 27.70 - 41.32 | 24.24 | 19.64 - 29.49 |
| Cleburne County | 95 | 389,794 | 24.32 | 19.67 - 29.73 | 16.66 | 13.40 - 20.31 |
| Cleveland County | 37 | 141,783 | 26.23 | 18.49 - 36.13 | 23.86 | 16.80 - 32.85 |
| Columbia County | 134 | 433,345 | 30.87 | 25.86 - 36.57 | 25.18 | 21.04 - 29.86 |

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| | | | | | | |
|--------------------------|---------------|-------------------|--------------|----------------------|--------------|----------------------|
| Franklin County | 30 | 159,302 | 24.00 | 17.07 - 33.01 | 19.20 | 13.00 - 20.40 |
| Pulaski County | 1,405 | 6,132,781 | 22.92 | 21.73 - 24.15 | 24.64 | 23.37 - 25.97 |
| Randolph County | 78 | 301,310 | 25.76 | 20.35 - 32.17 | 19.58 | 15.44 - 24.41 |
| Saint Francis County | 123 | 487,734 | 25.28 | 21.01 - 30.15 | 26.39 | 21.93 - 31.49 |
| Saline County | 274 | 1,347,283 | 20.37 | 18.03 - 22.93 | 21.54 | 19.04 - 24.28 |
| Scott County | 46 | 183,682 | 25.20 | 18.47 - 33.58 | 20.88 | 15.26 - 27.79 |
| Searcy County | 28 | 135,217 | 20.88 | 13.90 - 30.13 | 13.88 | 9.22 - 19.60 |
| Sebastian County | 599 | 1,893,430 | 31.62 | 29.13 - 34.25 | 30.45 | 28.05 - 32.99 |
| Sevier County | 56 | 260,117 | 21.34 | 16.10 - 27.74 | 20.21 | 15.22 - 26.28 |
| Sharp County | 79 | 279,417 | 28.10 | 22.23 - 35.05 | 17.18 | 13.44 - 21.34 |
| Stone County | 64 | 188,194 | 34.19 | 26.35 - 43.63 | 25.82 | 19.80 - 32.90 |
| Union County | 380 | 775,403 | 48.98 | 44.18 - 54.17 | 39.80 | 35.86 - 44.06 |
| Van Buren County | 84 | 264,725 | 31.59 | 25.19 - 39.13 | 19.67 | 15.51 - 24.32 |
| Washington County | 493 | 2,573,810 | 19.16 | 17.50 - 20.92 | 23.37 | 21.35 - 25.53 |
| White County | 243 | 1,095,068 | 22.19 | 19.49 - 25.16 | 20.83 | 18.28 - 23.60 |
| Woodruff County | 39 | 150,080 | 26.17 | 18.63 - 35.73 | 21.23 | 17.00 - 25.46 |
| Yell County | 90 | 344,073 | 26.07 | 20.95 - 32.05 | 22.44 | 19.00 - 25.88 |
| Combined Counties | 11,489 | 44,208,911 | 25.99 | 25.52 - 26.47 | 23.95 | 22.40 - 25.50 |



This report is based on the following data:

[Arkansas Vital Records Death Certificates](#)

[ICD9-ICD10 Comparability Ratios](#)

[U.S. Census Populations With Bridged Race Categories](#)

http://healthstat01/scripts/broker.exe?_service=default&_program=arcode.ICD10_welcome_live.sas&_debug=

File Edit View Favorites Tools Help

Arkansas DOH ICD10 Cause of Death Query System S...

Arkansas Department of Health

Health Statistics Branch

Arkansas Center for Health Statistics Query System

Low Birthweight Report Fertility Report Cause of Death Report Cause of Infant Death Report

Number of Visitors: 358 Number of Queries Run: 4577

ICD10 Cause of Death Tabular Report

General Instructions:

- Follow steps to perform desired search. Some steps contain more detailed instructions.
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Similar Reports can be Generated for the Above Four Categories by Following this Same Procedure for Each Area of Interest

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For Information on the Class in Data Mining

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