



MEMORANDUM

Date: May 30, 2017

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator 

Re: **Tucson International Airport Area Superfund Site Update and Recent Discussion Regarding 1,4-Dioxane**

Attached is an update and supporting information from Assistant County Administrator Dr. Francisco Garcia and Department of Environmental Quality (DEQ) Director Ursula Nelson regarding the Tucson International Airport Area Superfund Site. The report is self-explanatory.

Both the Health Department and DEQ are actively engaging the community in a number of activities related to educating the public about this issue and continued health-related concerns of trichloroethylene (TCE) contamination. The community has been traumatized by this event in the past; and it is important they receive accurate, detailed and complete information regarding health risks associated with potential contaminants.

If you require further information, please contact either Dr. Garcia or Ms. Nelson.

CHH/anc

Attachment

c: Jan Leshar, Chief Deputy County Administrator
Dr. Francisco Garcia, Assistant County Administrator for Community and Health Services
Ursula Nelson, Director, Pima County Department of Environmental Quality



PIMA COUNTY

MEMORANDUM

DATE: May 22, 2017

TO: C. H. Huckelberry
County Administrator

FROM: Ursula Nelson *UEN*
Director, PDEQ

Francisco Garcia *[Signature]*
Assistant Co. Administrator

RE: Tucson International Airport Area Superfund Site Update

The Tucson International Airport Area (TIAA) Superfund Site is being decontaminated through the combined efforts of federal, state and local agencies as well as potentially responsible parties. Groundwater contaminants include trichloroethylene (TCE) and 1,4-dioxane. TCE contamination as a consequence of defense related manufacturing in the area was identified early in the response; however, 1,4-dioxane was only recently identified as a probable human carcinogen. In order to treat all groundwater contaminants identified at the site, the treatment process was modified in 2014 to add appropriate treatment for 1,4-dioxane. Tucson Water conducts regular tests at various points of the treatment process including the final treated water before it enters the distribution system to ensure it meets drinking water standards, including the recommended levels for 1,4-dioxane, since there is no established maximum contaminant level for 1,4-dioxane.

The Pima County Health Department (PCHD) and the Pima Department of Environmental Quality (PDEQ) are working together to provide information to the community. Both current and past residents of the TIAA area continue to express concern regarding possible health effects including potential cancer, lupus and congenital anomaly risk. In order to respond to these concerns, PDEQ and PCHD are taking the following actions:

- Participating at the Unified Community Advisory Board (UCAB) meetings for this site to provide information about health and decontamination process, analysis and monitoring data. The UCAB meets quarterly to discuss technical information regarding the site, including treatment methods, groundwater plume size and groundwater sampling results. PDEQ presents information as requested, and at least annually to provide results of the annual private-well groundwater sampling. This sampling, done under contract with the Tucson Airport Authority, is not part of PDEQ's regulatory program.
- Meetings with residents as requested to provide health and technical information. PCHD has met with some area residents at their request to provide information regarding an epidemiologic analysis of health risk data for the TIAA area. PCHD has not found any elevated risks that could be associated with the area.

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- Participation in multi-agency conference calls to coordinate community outreach and information sharing. Multi-agency calls include EPA, Arizona Department of Environmental Quality (ADEQ), Arizona Department of Health Services (ADHS), Agency for Toxic Substances and Disease Registry (ATSDR - the federal agency that supports Superfund sites with public health information and analysis), Arizona Poison and Drug Information Center, PCHD and PDEQ. The purpose of the calls is to communicate across all organizations to coordinate activities for the benefit of the community.

As a result of the above actions, PCHD and PDEQ are developing a community “teach-in” event regarding the TIAA site for the residents. The teach-in is still in the planning phase, but is tentatively scheduled for mid-July. Residents have indicated a preference for Sunday afternoon as the most convenient time for their attendance. The anticipated presenters include PCHD, Tucson Water, Agency for Toxic Substances and Disease Registry (ATSDR), Environmental Protection Agency (EPA), Arizona Department of Environmental Quality (ADEQ), PDEQ, El Rio Health Center, UofA College of Public Health, Arizona Poison and Drug Information Center and others. The plan is to provide an introductory overview of the site and general background information. After that overview, there will be small classroom breakout sessions with a short presentation and the opportunity for a robust question and answer session, as well as table-top presentation opportunities for topics that don’t require a full breakout session. The goal is to ensure that all information is presented so it is readily understandable by the non-technical audience. We are evaluating ways to make the information available in English and Spanish to facilitate in-depth understanding of the topics discussed.

UKN/vb

cc: Jan Leshner, Chief Deputy to the County Administrator
Carmine DeBonis, Jr., Deputy County Administrator

Epidemiologic Analysis of Health Risk Data

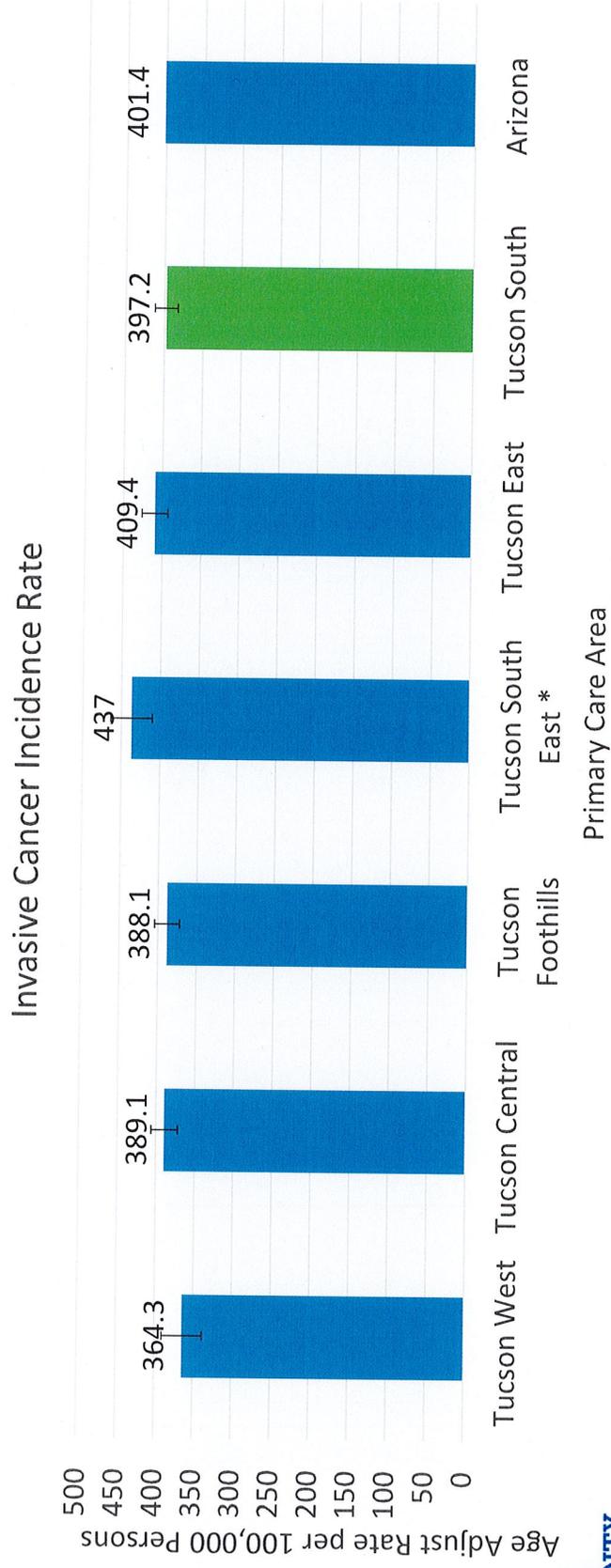
April 20, 2017

Francisco García, MD, MPH

Assistant County Administrator for Health Services & Chief Medical Officer

Arizona Cancer Registry, 2010-2014

- 85706 and the Tucson International Airport Area is in the Tucson South Primary Care Area.
- The cancer rate for Tucson South is not significantly different than Arizona rates.



Primary Care Area
A Healthy Pima County. Everyone. Everywhere. Everyday.

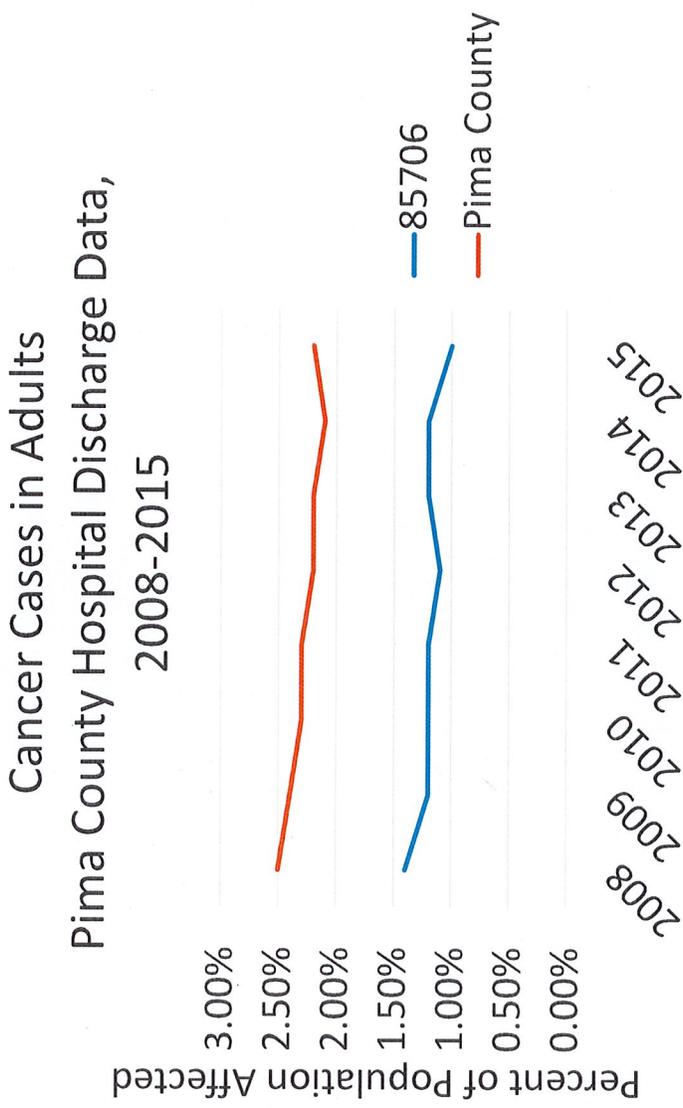
Arizona Cancer Registry, 2010-2014

Results of Review: None of the cancer types reviewed had rates higher than expected in the Tucson South PCA when compared to the Arizona rate.

| Reviewed Cancer Type | Result |
|--|------------------------------------|
| All Cancer combined | No different than the Arizona Rate |
| Lung | No different than the Arizona Rate |
| Leukemia | No different than the Arizona Rate |
| Lymphoma | No different than the Arizona Rate |
| Brain & Central Nervous System (CNS) | No different than the Arizona Rate |
| Colorectal | No different than the Arizona Rate |
| Female Breast | Lower than the Arizona Rate |
| Bladder | Lower than the Arizona Rate |
| Prostate | Lower than the Arizona Rate |
| Cervix | No different than the Arizona Rate |
| All Childhood Cancer (age 0-19 years) combined | No different than the Arizona Rate |

Pima County Hospital Discharge Data, 2008-2015

- Cancer cases in adults living in 85706 are less than the rest of Pima County



Arizona Cancer Rates by Community Health Analysis Area

<http://www.azdhs.gov/gis/community-health-analysis-area/index.php>

Cancer by Community Health Analysis Area (CHAA) >> Age Adjusted Incidence Rate of All Cancers >> 2005-2009

Select Cancer Rate

Legend

- 110.6 - 326.7
- 326.8 - 393.1
- 393.2 - 421.1
- 421.2 - 457.0
- 457.1 - 710.6

Other Population 20,000+

Interstates

Counties

Background Mapping

Map

Download Data

Table CHAA

| ID | Rate | Count |
|-------------------------|--------|-------|
| 97 All-Chin | 200.6 | 6 |
| 98 Collidge | 489.5 | 230 |
| 99 Casa Grande | 400.72 | 1,037 |
| 100 Eloy | 435.35 | 289 |
| 101 Ajo | 364.86 | 121 |
| 102 Marana | 424.69 | 1,032 |
| 103 Tucson NW | 420.38 | 1,673 |
| 104 Catalina | 382.32 | 274 |
| 105 Tucson NE | 400.18 | 3,586 |
| 106 Tucson Verde | 417.41 | 3,451 |
| 107 Tucson W | 441.47 | 1,422 |
| 108 Tucson N Central | 396.62 | 1,101 |
| 109 Tucson E Central | 388.32 | 1,723 |
| 110 Tucson SW | 381.45 | 1,397 |
| 111 Tucson Central | 349.56 | 804 |
| 112 Tucson E | 395.47 | 1,164 |
| 113 Tucson SE | 387.9 | 888 |
| 114 Continental | 468.64 | 882 |
| 115 San Xavier District | 245.11 | 24 |

Comparison Data

State Rate

Rate

412.41

Time Series Chart

A Healthy Idea County. Every Where. Every Day.

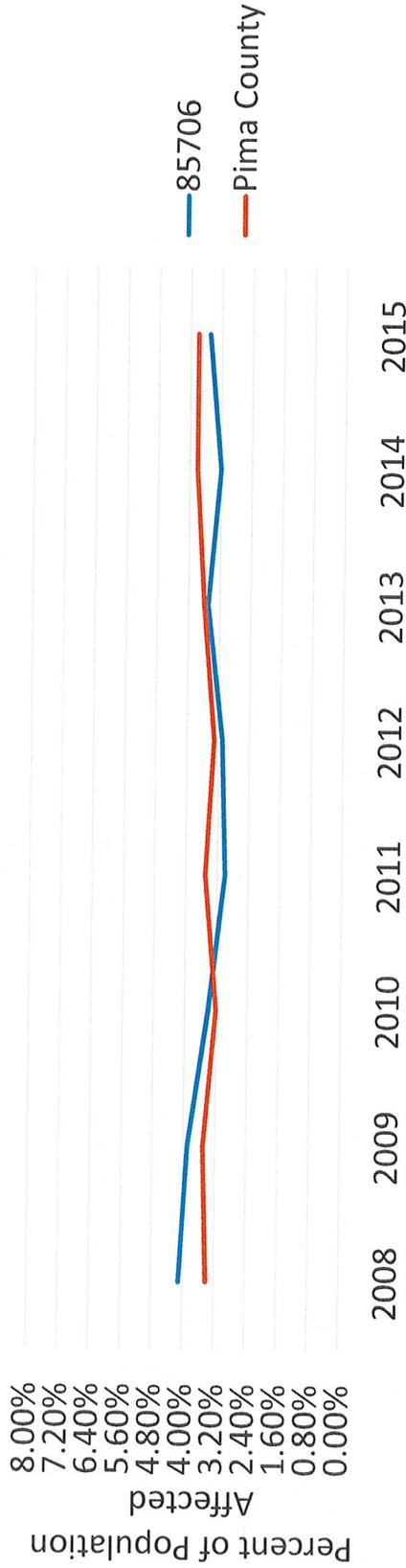
Arizona Birth Defects Monitoring Program, 1996-2011

- There is no significant difference in birth rates for those living in 85706 compared with the rest of Pima County.
- The following birth defects were reviewed:
 - Congenital heart defect
 - Orofacial cleft
 - Neural tube defect
 - Choanal atresia
 - Limb reduction defect

Pima County Hospital Discharge Data, 2008-2015

- There is not a significant difference in birth defect rates for children born to parents in 85706 when compared to the rest of Pima County from 2008 to 2015.

Congenital Birth Defect Cases in Children, 18 & Under
Pima County Hospital Discharge Data, 2008-2015



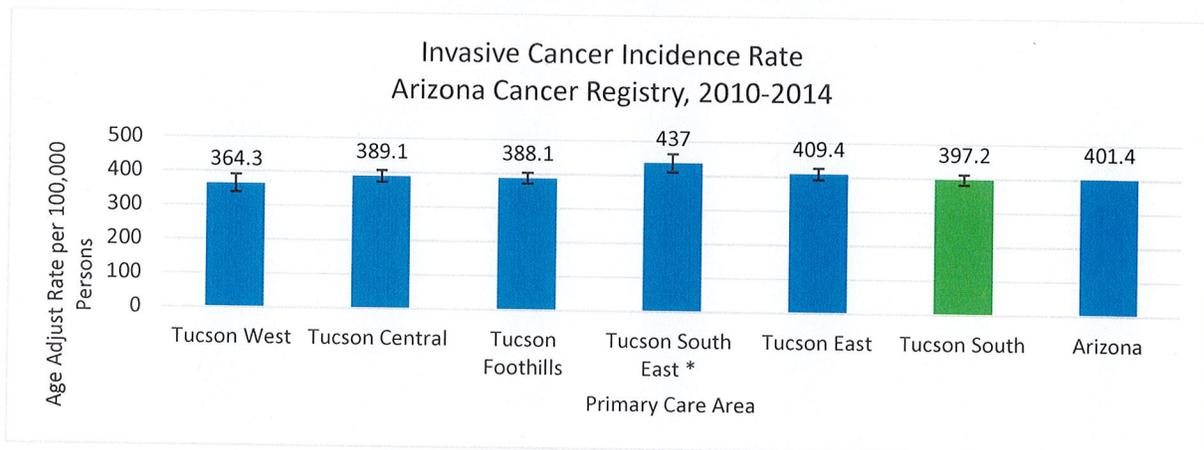
Epidemiologic Analysis of Health Risk Data

Reported Cancer and Birth Defects in Pima County

Cancer

The Arizona Cancer Registry and Pima County Hospital Discharge data provides a snapshot of the number of individuals diagnosed with cancer and seeking treatment at hospitals within Pima County. The community areas affected by trichloroethylene (TCE) contamination have been compared to the rest of Pima County and Arizona to show any significant differences in cancer rates.

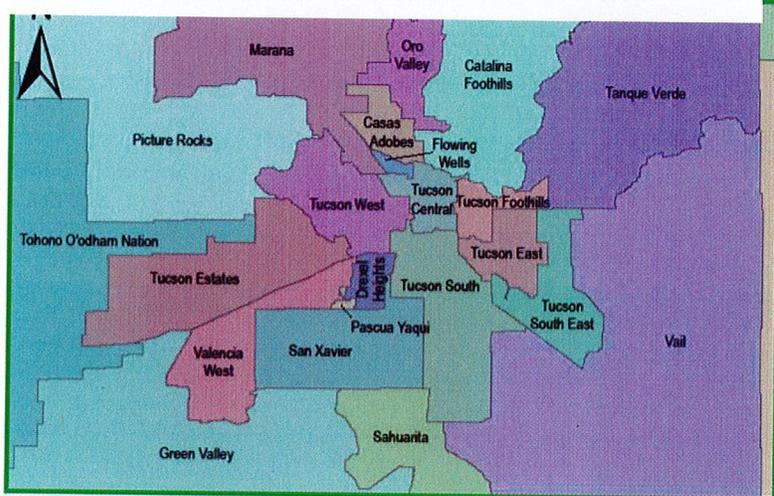
Arizona Cancer Registry, 2010-2014



The Tucson South Primary Care Area includes 85706. Tucson South East is the only area analyzed that has a cancer rate that is higher than expected when compared to the Arizona state rate. Invasive cancer rates include all cancer cases combined. The following cancer types were also reviewed for the Tucson South area and were not found to have a higher than expected rate when compared to Arizona:

- Lung
- Leukemia
- Lymphoma
- Brain & Central Nervous System (CNS)
- Colorectal
- Female Breast
- Bladder
- Prostate
- All Childhood Cancer (age 0-19 years)

Pima County Primary Care Area Map



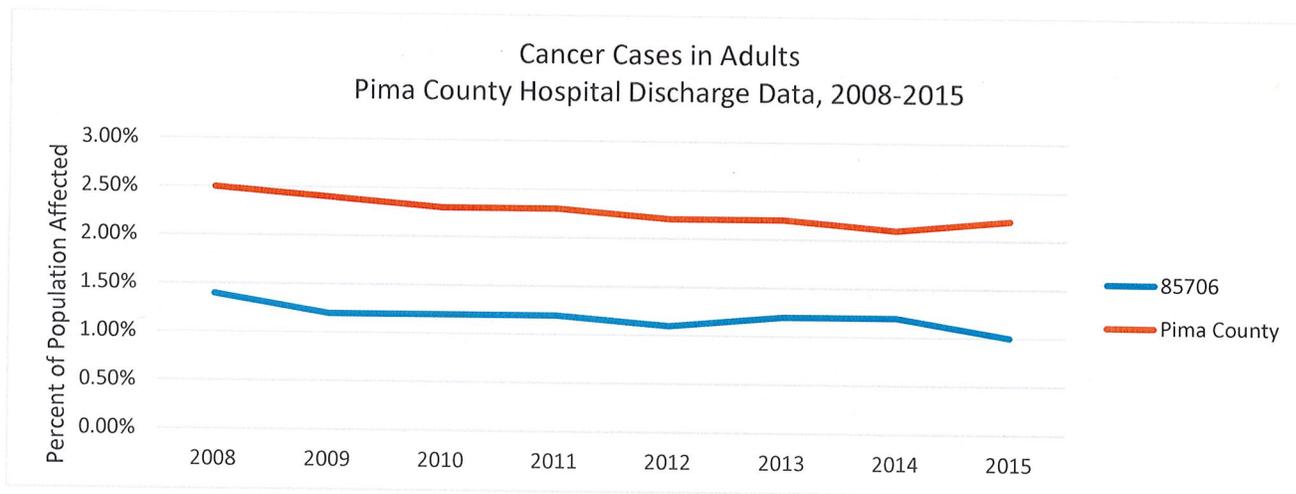
Where did Arizona Cancer Registry Data come from?

The Arizona Cancer Registry is a surveillance system that helps to monitor the incidence, survival, and death rates of individuals diagnosed with cancer. Hospitals, clinics, physicians, dentists, registered nurse practitioners, and doctors of naturopathic medicine must

report cases to the registry as required by law. These are the reported diagnosed cancer cases from 2010 to 2014.

Pima County Hospital Discharge Data

Pima County Hospital Discharge data indicates that adults in the TCE area zip codes (85706 and 85756) have lower hospital visit rates for cancer cases than the rest of Pima County. Similarly, the rate of children visiting hospitals for cancer living in the TCE area was less than those living outside the TCE area.



Where did Pima County Hospital Discharge data come from?

Pima County Hospital Discharge data represents the medical diagnosis of patients as written in their medical records upon their release from the hospital. The rate of cancer cases for the TCE area zip codes (85706 and 85756) were compared to the rest of the zip codes in Pima County. These hospital visits are from 2008 to 2015.

What are the limitations of the Pima County Hospital Discharge Data?

Individuals must receive healthcare at a local hospitals to be included. Individuals who move away or seek healthcare in other counties or states are not included. The data also relies on individuals self-reporting their zip code. They could interpret that as the zip code they currently reside in, or one in which they previously lived.

Birth Defects

The Arizona Birth Defects Monitoring Program and Pima County Hospital Discharge data provides a snapshot of the number of adults living with birth defects (congenital anomaly) or children born with birth defects within Pima County. The community areas affected by the Superfund contamination have been compared to the rest of Pima County and Arizona to show any significant differences in birth defect rates.

The analysis of reported birth defects from the years 1996 to 2011 indicate that there is no significant difference in birth defect rates for those living in 85706 compared with the rest of Pima County.

Birth defects were selected as they have been indicated in previous research as being potentially associated with trichloroethylene exposure. The following birth defects are considered in the Arizona Birth Defects Monitoring Program.

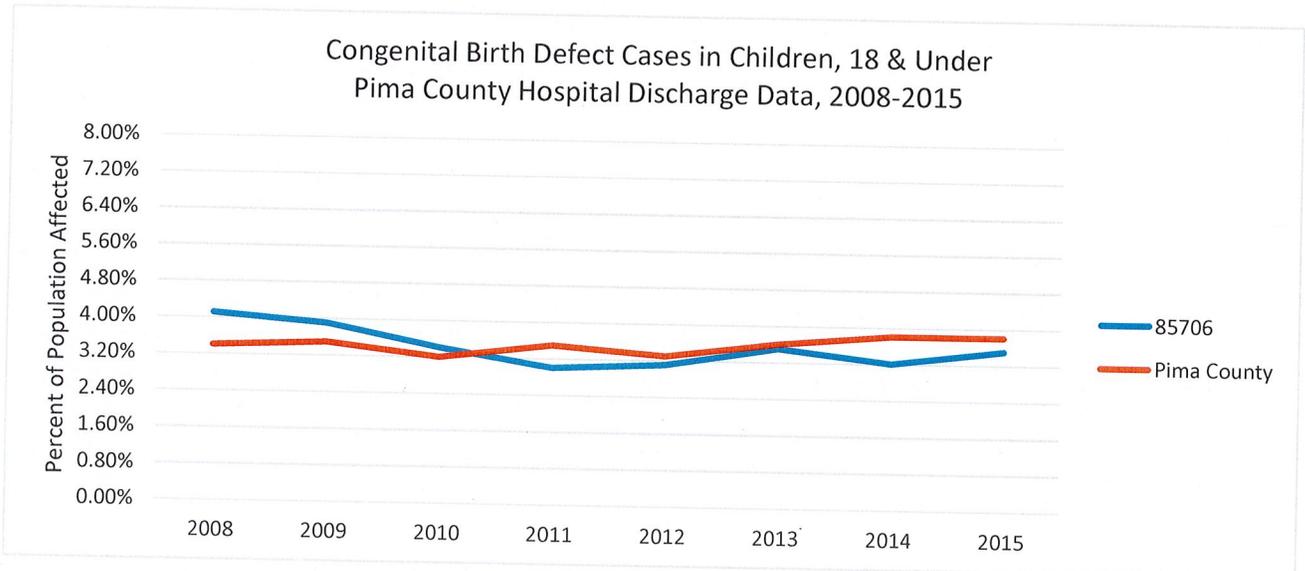
- Congenital heart defect
- Orofacial cleft
- Neural tube defect
- Choanal atresia
- Limb reduction defect

Where did the Arizona Birth Defects Monitoring Program data come from?

Hospitals and medical facilities throughout Arizona report birth defects of children born in Arizona.

Pima County Hospital Discharge Data

There is not a significant difference in birth defect rates for children born to parents in 85706 when compared to the rest of Pima County from years 2008 to 2015.



Where can I look at the Arizona Cancer Rates data for myself?

Arizona Cancer Rates by Community Health Analysis Area (CHAA) is available on the Arizona Department of Health Services website: <http://www.azdhs.gov/gis/community-health-analysis-area/index.php>. A mapping tool can help look closely at cancer rates in specific community health analysis areas.

Can I get my water tested?

Drinking water testing for TCE, 1,4-Dioxane and other contaminants are available at a cost. Laboratories certified by the EPA are recommended to ensure accurate results. A list of EPA approved laboratories can be found at <https://www.epa.gov/dwucmr/list-laboratories-approved-epa-third-unregulated-contaminant-monitoring-rule-ucmr-3>. For testing 1,4-Dioxane, labs certified for the EPA 522 method is recommended.