



## Hospital "A" Data Request – A Geographic Information Systems (GIS) Approach

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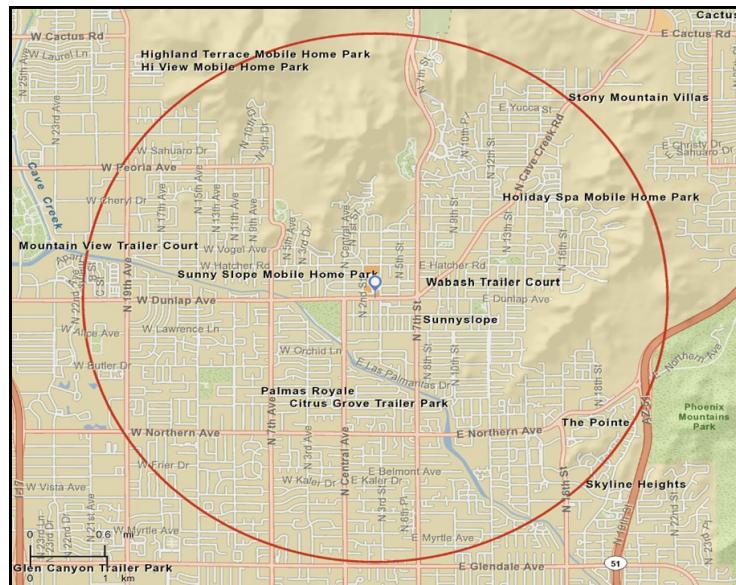
### I. Initial Request and Purpose:

MCDPH received a request for the demographics and health statistics of the population surrounding Hospital "A". This information would provide Hospital "A" with an understanding of what preventive services would be beneficial to their surrounding community.

### II. Analysis Approach:

MCDPH began by identifying the study area of concern utilizing GIS to create a two mile buffer around hospital "A." With the study area identified, ESRI® Business Analyst Online (BAO) was utilized to incorporate demographic data. ESRI® BAO is comprised of data retrieved from the U.S. Census Bureau. In addition, Arizona Vital Statistics Death data, and Hospital Discharge data were utilized to summarize the health statistics of the identified study area.

### Map of Study Area:



### III. Final Report

The final report consisted of a map of the study area, as well as tables describing both the demographics (age, race, ethnicity, household income, education level/enrollment, language, & employment details) and health statistics (causes of death, inpatient stays by diagnosis, ER visits by diagnosis, top 5 hospital visited, & top 5 In-patient/ER diagnoses) of those residing within the study area.

#### Sample Tables:

| Summary                       | Census 2010 | 2012   |
|-------------------------------|-------------|--------|
| Population                    | 54,829      | 55,468 |
| Households                    | 22,627      | 22,935 |
| Families                      | 12,306      | 12,323 |
| Average Household Size        | 2.39        | 2.38   |
| Owner Occupied Housing Units  | 11,808      | 11,464 |
| Renter Occupied Housing Units | 10,819      | 11,471 |
| Median Age                    | 36.4        | 36.8   |

#### 2011 Mortality Data

##### Causes of Death of Interest

| Cause of Death | Number of Deaths | Percent of All Deaths | Area Crude Rate per 100,000 Residents | Maricopa County Crude Rate per 100,000 Residents |
|----------------|------------------|-----------------------|---------------------------------------|--------------------------------------------------|
| Heart Disease  | 89               | 20.6%                 | 160.5                                 | 138.1                                            |
| Stroke         | 25               | 5.8%                  | 45.1                                  | 28.0                                             |
| Lung Cancer    | 24               | 5.6%                  | 43.3                                  | 36.3                                             |
| Diabetes       | 20               | 4.6%                  | 36.1                                  | 25.8                                             |
| All Causes     | 431              |                       | 777.0                                 | 656.4                                            |



## Teen Pregnancy Data Request – SAS© Approach

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### I. Initial Request and Purpose:

MCDPH received a request regarding the impact of teen pregnancy (ages 12-19). What areas of the county are most impacted? What populations are most affected? Can the rates and numbers of teen births be broken down by both demographics, as well as location (i.e. zip code?) What is the cost to the county?

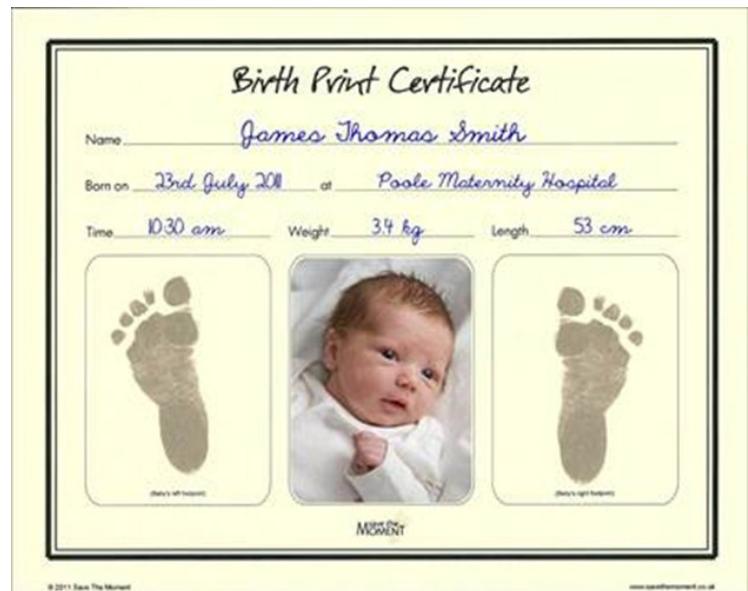
### II. Analysis Approach:

MCDPH began by conducting a literature review. This literature review focused on the cost of teen pregnancy, as well as the impacts of teen pregnancy. Next, a statistical analysis program was created in SAS©. This SAS© program pulled in various variables from the Arizona Vital Statistics Birth data over the course of 6 years (2006-2011).

### III. Final Report

The final report consisted of multiple tables output by SAS©. These tables first covered the demographics of the Maricopa County female teen population, broken down by age, race, and ethnicity. Next, the tables summarized teen birth rates in Maricopa County (i.e. teen births by age, race, and ethnicity, as well as change in birth rates over the 6 year course). Finally, there was a table for each zip code with 60 or more teen pregnancy births over the 6-year period, summarizing the demographics and teen birth rate changes in over 50 zip codes.

### Sample Birth Certificate



### Teen Birth Rates

|                      | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|----------------------|------|------|------|------|------|------|
| <b>Females 10-14</b> | 0.84 | 0.87 | 0.68 | 0.54 | 0.51 | 0.45 |
| <b>Females 15-19</b> | 63.8 | 61.3 | 55.6 | 48.1 | 39.3 | 36.0 |
| <b>Total</b>         | 64.7 | 62.3 | 56.4 | 48.7 | 39.8 | 36.5 |

### Teen Births by Race/Ethnicity

|                                | 2006  | 2007  | 2008  | 2009  | 2010  | 2011  |
|--------------------------------|-------|-------|-------|-------|-------|-------|
| <b>White (15-19)</b>           | 1,811 | 1,631 | 1,617 | 1,418 | 1,262 | 1,143 |
| <b>Hispanic (15-19)</b>        | 5,163 | 5,238 | 4,678 | 3,980 | 3,338 | 2,921 |
| <b>Black (15-19)</b>           | 421   | 430   | 456   | 426   | 395   | 416   |
| <b>American Indian (15-19)</b> | 325   | 319   | 282   | 284   | 212   | 234   |
| <b>Asian (15-19)</b>           | 61    | 66    | 68    | 58    | 61    | 62    |