

Community Health Assessment Madison County, Georgia

Survey: February 18 – April 18, 2008
Community Presentation: April 30, 2008

Summary Report: July 23, 2008



Public Health

BACKGROUND:

Community concerns about increased morbidity in the area surrounding the Transcontinental Gas Pipeline (Booster Station #130) were expressed to the Chemical Hazards Division of Georgia Public Health. The Chemical Hazards Division consulted with the Northeast Health District and it was determined that they would work with local community partners to conduct a community health assessment. The Northeast Health District, working with the University of Georgia College of Public Health, investigated community concerns.

STUDY OBJECTIVE:

The objective of this project was to conduct a door-to-door community health assessment of residents living within a one-mile radius of the Williams Transco Booster Station #130 to determine if the level of mortality/morbidity in this area is higher than that of other similar populations.

STUDY DESIGN:

A cross-sectional study was developed to measure the amount of environmental exposure in relation to the amount of disease in the identified community. The 40-question survey tool included comprehensive questions, sub-questions, and history charts that included health topics including, but not limited to: behavioral/environmental exposure, demographics, maternal/child exposure, medical history, occupational exposure, and tobacco exposure.

The survey area was defined by using a Madison County Property Tax Map. The one-mile radius was determined prior to any information collection on property ownership, land use, or specific residential addresses. Survey collection times (11am to 8pm on weekdays and 10am to 8pm on two Saturdays) were also decided prior to the start of the data collection process.

A two-person team visited every household within one mile of the booster station (which included all or portions of: Coile Road, Duffell Martin Road, Herbert Miller Road, Highway 191, Transco Road, and Winns Lake Road) over a nine week period. To assure consistency, only one assigned individual asked the questions and recorded the answers throughout the entire survey process. Quality assurance and oversight was conducted by supervisory personnel throughout the entire process and specifically during several household visits. Each survey interview lasted between 15 minutes and two hours.

Survey participation was completely voluntary. Survey information was kept in strict confidence throughout the entire process. No data will be released containing specific names, addresses, or references. Data was analyzed via identification numbers, rather than any identifying personnel data.

SAMPLE POPULATION:

Fifty-nine residences were identified during the survey process. Sixty-four percent of those households voluntarily completed a health assessment survey interview. Of the 36% that did not participate, nineteen families refused and two properties were not physically accessible. The total sample population was 97 residents.

RESULTS:

Gender

- Survey respondents – 34% male and 66% female
- Household – 46% male and 54% female

Age

- Survey respondents – 32 to 88 years old, average age was 53 years
- Household – 5 months to 88 years old, average age was 40 years

Residential Location

- Length of time at current residence – average was 19 years

Past Residential Location

- Within two miles of current – 26%
- Greater than two miles from current, but within Madison County – 32%
- Outside of Madison County, but within Georgia – 34%
- Outside of Georgia, but within the United States – 8%

Health Behaviors

- Routinely participate in outdoor physical activity – 61% responded yes
- Consume red meat 0 to 3 times per week – 79% reported yes
- Eat vegetables & fruit more than 7 times per week – 95% reported yes
- Use tobacco, currently or previously – 50% reported yes

Environmental Exposure

- Routinely participate in outdoor physical activity – 61% responded yes
- Primary drinking water source is a well (84%) or bottled water (16%)
- Currently or previously exposed to household second hand tobacco smoke – 84% of respondents have been exposed

Health Outcomes

- Body Mass Index (BMI) is overweight or obese – 78% of respondents
- Have had a miscarriage – 24% of female respondents responded yes
- Delivered a preterm baby (<37 weeks gestation) – 3% of female respondents responded yes
- Delivered a low birth weight baby (<5 pounds 5 ounces) – 6% of female respondents responded yes

Morbidity

- Cardiovascular disease - 24% of survey population
- Psychological/neurological conditions - 11% of survey population
- Respiratory conditions - 8% of survey population
- Diabetes - 7% of survey population
- Other reported (non-cancer) conditions - 17% of survey population

Cancer

- Thirteen cases of cancer were reported for 12 individuals
- Average age of cancer diagnosis – 51 years of age
- Age of diagnosis at 45 years or older – 77% of cancer cases
- Of those surveyed
 - 7% had Skin Cancer
 - 2% had Breast Cancer
 - 1% had Bladder Cancer
 - 1% had Cervical Cancer
 - 1% had Leukemia
 - 1% had Prostate Cancer
 - 1% had Thyroid Cancer
- In this study, cancer case has been defined as: current residents reporting that they have been diagnosed with cancer one or more years after they moved into the area.

Study caveats

- The effect of random error was large due to the small sample size.
- Based on participant vs. non-participant comments, selection bias (defined as: individuals with a certain outcome are more or less likely to participate in a study than individuals with another outcome) existed in this survey.
- Therefore, no exposures could be statistically linked with any disease outcomes due to confounders, sample size, and selection bias.

Tobacco use

Although the Transco population cancer rate (562) is higher than the general Madison County population rate (503), there are two factors that negate the significance of this finding. As previously mentioned, random error due to the sample size is a factor. More importantly, however, is the prevalence of tobacco use in this population. Tobacco is recognized as the leading cause of cancer. Individuals exposed to tobacco are three times more likely to die of cancer than non-tobacco users. There may be other factors affecting the health of this community but outcomes will be masked by the high rates of tobacco use and exposure.

- 100% of the survey respondents with cancer have been exposed to tobacco (as tobacco users or presently/previously living with a smoker)
- 66% of the survey respondents with cancer have been or currently are tobacco users
- 19% of the general population in this area uses tobacco

State of Georgia Cancer Registry Data

-Age-Adjusted Cancer Incident Rates are shown on the following pages for the State of Georgia, Madison County, Zip Code 30629, and Zip Code 30633.

-Source: Georgia Comprehensive Cancer Registry, Georgia Department of Human Resources, Division of Public Health, 2008.

Age-Adjusted Cancer Incidence Rates for the State of Georgia

Site	Total		Males		Females	
	Cases	Rate	Cases	Rate	Cases	Rate
All Sites	177686	465.6	93008	571.7	84675	395.1
Oral Cavity	4539	11.5	3140	17.5	1399	6.5
Esophagus	1931	5.1	1475	8.9	456	2.2
Stomach	2392	6.4	1424	9.0	968	4.6
Colon and Rectum	18586	50.0	9576	60.1	9010	42.6
Liver	1578	4.1	1137	6.6	441	2.1
Pancreas	3976	11.0	1959	12.7	2017	9.6
Larynx	1905	4.8	1541	8.9	364	1.7
Lung and Bronchus	27409	74.4	16293	104.3	11115	53.4
Bone and Joints	348	0.8	188	0.9	160	0.7
Melanoma	7967	19.9	4539	26.3	3428	15.6
Breast	--	--	--	--	26168	120.6
Uterine Cervix	--	--	--	--	1986	9.0
Uterine Corpus	--	--	--	--	3761	17.4
Ovary	--	--	--	--	2771	12.9
Prostate	--	--	26503	163.7	--	--
Testis	--	--	911	4.0	--	--
Kidney and Renal Pelvis	5032	13.0	3066	18.1	1966	9.2
Bladder (Incl in situ)	6594	18.3	4905	33.1	1689	8.1
Brain and Other Nervous System	2566	6.3	1378	7.4	1188	5.5
Thyroid	3137	7.3	732	3.7	2405	10.8
Hodgkin Lymphoma	1033	2.4	553	2.6	480	2.1
Non-Hodgkin Lymphoma	6478	16.9	3471	20.6	3007	14.1
Multiple Myeloma	2223	6.0	1180	7.5	1043	5.0
Leukemias	4447	11.7	2485	15.2	1962	9.2

Average annual rate per 100,000, age-adjusted to the 2000 US standard population.

SOURCE: Georgia Comprehensive Cancer Registry, Georgia Department of Human Resources, Division of Public Health, 2008.

Age-Adjusted Cancer Incidence Rates, Madison County, Georgia

Site	Total		Males		Females	
	Cases	Rate	Cases	Rate	Cases	Rate
All Sites	668	503.1	375	632.9	293	406.0
Oral Cavity	19	~	14	~	5	~
Esophagus	<5	~	<5	~	<5	~
Stomach	8	~	<5	~	***	~
Colon and Rectum	75	57.1	42	71.0	33	45.1
Liver	9	~	***	~	<5	~
Pancreas	15	~	6	~	9	~
Larynx	18	~	***	~	<5	~
Lung and Bronchus	113	85.7	76	128.5	37	51.9
Bone and Joints	<5	~	<5	~	<5	~
Melanoma	24	18.4	17	~	7	~
Breast					92	126.9
Uterine Cervix					5	~
Uterine Corpus					13	~
Ovary					8	~
Prostate			95	160.3		
Testis			<5	~		
Kidney and Renal Pelvis	14	~	***	~	<5	~
Bladder (Incl in situ)	26	21.1	19	~	7	~
Brain and Other Nervous System	12	~	6	~	6	~
Thyroid	13	~	<5	~	***	~
Hodgkin Lymphoma	<5	~	<5	~	<5	~
Non-Hodgkin Lymphoma	27	19.8	17	~	10	~
Multiple Myeloma	<5	~	<5	~	<5	~
Leukemias	9	~	***	~	<5	~

Average annual rate per 100,000, age-adjusted to the 2000 US standard population.

SOURCE: Georgia Comprehensive Cancer Registry, Georgia Department of Human Resources, Division of Public Health, 2008.

Age-Adjusted Cancer Incidence Rates Zip Code 30629, Georgia

Site	Total		Males		Females	
	Cases	Rate	Cases	Rate	Cases	Rate
All Sites	110	475.2	54	542.4	56	443.5
Oral Cavity	5	~	<5	~	<5	~
Esophagus	<5	~	<5	~	<5	~
Stomach	<5	~	<5	~	<5	~
Colon and Rectum	9	~	<5	~	***	~
Liver	<5	~	<5	~	<5	~
Pancreas	<5	~	<5	~	<5	~
Larynx	<5	~	<5	~	<5	~
Lung and Bronchus	13	~	***	~	<5	~
Bone and Joints	<5	~	<5	~	<5	~
Melanoma	<5	~	<5	~	<5	~
Breast	--	--	--	--	16	~
Uterine Cervix	--	--	--	--	<5	~
Uterine Corpus	--	--	--	--	5	~
Ovary	--	--	--	--	<5	~
Prostate	--	--	14	~	--	--
Testis	--	--	<5	~	--	--
Kidney and Renal Pelvis	<5	~	<5	~	<5	~
Bladder (Incl in situ)	8	~	***	~	<5	~
Brain and Other Nervous System	<5	~	<5	~	<5	~
Thyroid	<5	~	<5	~	<5	~
Hodgkin Lymphoma	<5	~	<5	~	<5	~
Non-Hodgkin Lymphoma	<5	~	<5	~	<5	~
Multiple Myeloma	<5	~	<5	~	<5	~
Leukemias	<5	~	<5	~	<5	~

Average annual rate per 100,000, age-adjusted to the 2000 US standard population.

SOURCE: Georgia Comprehensive Cancer Registry, Georgia Department of Human Resources, Division of Public Health, 2008.

Age-Adjusted Cancer Incidence Rates Zip Code 30633, Georgia

Site	Total		Males		Females	
	Cases	Rate	Cases	Rate	Cases	Rate
All Sites	188	455.3	114	643.5	74	329.1
Oral Cavity	<5	~	<5	~	<5	~
Esophagus	<5	~	<5	~	<5	~
Stomach	<5	~	<5	~	<5	~
Colon and Rectum	23	57.3	15	~	8	~
Liver	<5	~	<5	~	<5	~
Pancreas	<5	~	<5	~	<5	~
Larynx	<5	~	<5	~	<5	~
Lung and Bronchus	29	68.9	21	113.1	8	~
Bone and Joints	<5	~	<5	~	<5	~
Melanoma	5	~	<5	~	<5	~
Breast	--	--	--	--	23	97.2
Uterine Cervix	--	--	--	--	<5	~
Uterine Corpus	--	--	--	--	<5	~
Ovary	--	--	--	--	<5	~
Prostate	--	--	27	169.9	--	--
Testis	--	--	<5	~	--	--
Kidney and Renal Pelvis	<5	~	<5	~	<5	~
Bladder (Incl in situ)	10	~	***	~	<5	~
Brain and Other Nervous System	<5	~	<5	~	<5	~
Thyroid	<5	~	<5	~	<5	~
Hodgkin Lymphoma	<5	~	<5	~	<5	~
Non-Hodgkin Lymphoma	9	~	***	~	<5	~
Multiple Myeloma	<5	~	<5	~	<5	~
Leukemias	<5	~	<5	~	<5	~

Average annual rate per 100,000, age-adjusted to the 2000 US standard population.

SOURCE: Georgia Comprehensive Cancer Registry, Georgia Department of Human Resources, Division of Public Health, 2008.

CONCLUSION:

Four primary conclusions resulted from this study.

1. The cancer morbidity rates were not found to be at unexpected levels given the ages and confounding risk behaviors of the respondents. The identified skin cancers were highly correlated with outdoor sun exposure.
2. There was not a level of morbidity revealed by this study for respiratory or cardiovascular conditions or neoplasms that differed from other similar populations.
3. An analysis of cancer in this zip code by the State of Georgia Cancer Registry showed no unusual cancer levels.
4. The need for further assessment of this area is not indicated by the results of this study.

NOTES:

Scientific advice and expertise was provided throughout this project by: University of Georgia College of Public Health masters-level graduate epidemiology student, the University of Georgia College of Public Health professors, and the Northeast Health District epidemiologists.

In 2006, a community health assessment telephone survey was conducted within a 2-mile radius of the booster station. At that time, no unusual cancer levels were detected in the 51 respondents.

The primary causes of cancer in the United States are tobacco (30%) and adult diet/obesity (30%). These numbers represent the estimated percentage of total cancer deaths attributable to established causes of cancer according to the *Harvard Report on Cancer Prevention*. Other causes (each contributing 5% or less) are: sedentary lifestyle, occupational factors, family history of cancer, virus/other biological agents, perinatal factors/growth, reproductive factors, alcohol, socioeconomic status, environmental pollution (2%), ionizing/ultraviolet radiation, prescription drugs/medical procedures, and salt/food additives.

According to the American Cancer Society, half of all males and one out of three females will develop cancer in their lifetime.

