

# **MORTALITY PATTERNS AMONG FARMERS IN GEORGIA 1984-1989**

Prepared for Primary Health Care Section  
Division of Public Health  
Georgia

Prepared by

G. E. Alan Dever  
Mercer University School of Medicine  
Director, Clinical Epidemiology and Biostatistics

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## Mortality Patterns Among Farmers: Georgia 1984-1990

The primary purpose of this project is to analyze the mortality patterns among farmers (black and white) in the state of Georgia. The mortality pattern of the non-farmers (black and white) will be used as the comparison group.

### A. Methods:

Proportional mortality ratios (PMRs) adjusted for age at death (5 year intervals) and year of death will be calculated using the non-farmer as the standard. The PMR is the ratio of the proportion of deaths from a specific cause in farmers to the corresponding proportion in non-farmers. There will be 42 causes of death analyzed (Table 1). This will be determined for black and whites. Statistical significance of elevated or lowered PMRs will be assessed using the Poisson distribution if the expected number of deaths is less than 5 and the chi-square ( $\chi^2$ ) distribution will be used if expected number is greater than or equal to five. The methodology proposed and the selected causes of death to be investigated correspond to two recent studies completed in North and South Carolina. Thus, the completion of the Georgia study will provide a basis for comparing farmer mortality variations in other Southern states. In addition to significance levels, confidence intervals will be calculated for each PMR as defined by Miettinen. The formula is:

$$\text{Confidence Interval} = \text{PMR} \left( 1 \pm [100(1-1.96/2)] / \sqrt{\chi^2} \right)$$

**TABLE 1**  
**Causes of Death Analyzed by ICD Code**

ICD Code	Cause of Death	ICD Code	Cause of Death
001-999	All causes	250	Diabetes mellitus
001-139	Infectious diseases	290-319	Mental disorders
010-018	Tuberculosis	320-389	Nervous System diseases
140-208	Malignant neoplasms	390-459	Circulatory diseases
140-149	Buccal cavity cancer	401-405	Hypertensive disease
150	Esophagal cancer	410-414	Ischemic heart disease
151	Stomach cancer	415-429	Other heart diseases
153,154	Colorectal cancer	430-438	Cerebrovascular diseases
155	Liver cancer	460-519	Respiratory diseases
157	Pancreatic cancer	520-579	Digestive diseases
162	Lung cancer	580-629	Genitourin. diseases
172	Melanoma	680-709	Skin diseases
173	Other skin cancer	710-739	Musculoskeletal diseases
185	Prostate cancer	800-999	External causes
188	Bladder cancer	801-819	Motor vehicle accidents
191	Brain cancer	880-888	Accidental falls
200,202	Non-Hodgkins lymphoma	890-899	Fires
201	Hodgkins disease	900-909	Environmental factors
203.0	Multiple myeloma	910	Accidental drowning
204-208	Leukemia	950-959	Suicide
204	Lymphoid leukemia	960-969	Homicide
205	Myeloid leukemia		

where:

PMR = Proportional Mortality Ratio

$\chi^2$  = chi-square value.

**B. Data:**

The mortality data will be retrieved from the Georgia death certificates for the years 1984-1990. Occupation has been coded on the death certificate in Georgia since 1984. The occupational classification system used to code occupation on the death certificate will focus on codes W(473) through 489. These codes reflect only the farming occupations of the Occupation category of Farming, Forestry, and Fishing.

**C. Study Significance:**

The results of this study will be used to determine which causes of death are significantly higher in farmers compared to non-farmers. This assessment will provide input to the surveillance program by directing priorities to those problems which appear to be significant and farmer specific. Further, the study will provide a baseline of information on the mortality experience of farmers in Georgia. Presently, we do not have such information. The planning and policy issues relevant to the health of the farming population must be predicated on sound information. Thus, this proposed mortality study and the planned morbidity surveillance system will provide basic data which will guide our decisions to improve the health of farmers in Georgia.

Prepared by  
G.E. Alan Dever, Ph.D.  
Professor, Family and Community Medicine  
Director of Clinical Epidemiology and Biostatistics

**CAUSES OF DEATH IN FARMERS BY RACE AND SIGNIFICANCE, GEORGIA, 1984-1989**

**A. Causes of Death SIGNIFICANTLY HIGHER in Farmers:**

<b>White Farmers</b>	<b>ICD Code</b>	<b>Rank</b>	<b>PMR</b>	<b>Excess Deaths</b>
Accidental Drowning	910	1	216	10
External Causes	800-999	2	118	109
Genitourinary Diseases	580-629	3	118	39
Cerebrovascular Disease	430-438	4	115	134
Other Heart Diseases	415-429	5	108	100
Circulatory Diseases	390-459	6	106	312
Ischemic Heart Diseases	410-414	7	104	117

<b>Black Farmers</b>	<b>ICD Code</b>	<b>Rank</b>	<b>PMR</b>	<b>Excess Deaths</b>
Tuberculosis	010-018	1	199	15
Fires	890-899	2	195	32
Environmental Factors	900-909	3	178	9
External Causes	800-999	4	125	107
Cerebrovascular Disease	430-438	5	124	118
Homicide	960-969	6	123	29
Ischemic Heart Disease	410-414	7	118	179
Circulatory Diseases	390-459	8	110	254

**B. Causes of Death SIGNIFICANTLY LOWER in Farmers:**

<b>White Farmers</b>	<b>ICD Code</b>	<b>Rank</b>	<b>PMR</b>	<b>Fewer Deaths</b>
Melanoma	172	1	55	16
Bladder Cancer	188	2	73	20
Nervous System Diseases	320-389	3	75	53
Leukemia	204-208	4	76	23
Colorectal Cancer	153,154	5	81	46
Digestive Diseases	520-579	6	84	61
Malignant Neoplasms	140-208	7	86	351
Lung Cancer	162	8	89	106

<b>Black Farmers</b>	<b>ICD Code</b>	<b>Rank</b>	<b>PMR</b>	<b>Fewer Deaths</b>
Multiple Myeloma	203.0	1	56	14
Colorectal Cancer	153,154	2	70	35
Hypertensive Disease	401-405	3	75	47
Diabetes mellitus	250	4	81	20
Infectious Diseases	001-139	5	83	26
Malignant Neoplasms	140-208	6	84	231
Prostate Cancer	185	7	87	42
Lung Cancer	162	8	90	41

Proportional Mortality Ratios for Selected Causes of Death Among Farmers by Race in Georgia, 1984-1989

ICD Code Category	White Farmers				Black Farmers							
	Observed	Expected	PMR*	Chi Sq	LCL°	UCL°	Observed	Expected	PMR*	Chi Sq	LCL°	UCL°
001-999 All causes	11873	...	...	...	...	...	6975	...	...	...	...	...
001-139 Infectious diseases	151	160.2	94.2	.53	80.0	110.9	127	153.1	82.98	4.45*	69.5	99.0
010-018 Tuberculosis	15	10.1	148.2	2.35	88.6	247.9	31	15.6	199.1	15.29*	139.9	283.2
140-208 Malignant neoplasms	2192	2542.5	86.2	48.32*	92.6	89.9	1184	1415.4	83.7	37.84*	78.9	88.6
140-149 Buccal cavity cancer	52	50.4	103.3	.05	77.0	138.5	33	35.8	92.3	.21	65.1	130.9
150 * Esophageal cancer	35	47.2	74.2	3.14	52.9	103.9	54	62.0	87.1	1.03	66.3	114.5
151 Stomach cancer	47	51.7	91.0	.42	68.1	121.6	48	63.3	75.8	3.71	56.9	101.0
153,154 Colorectal cancer	199	244.8	81.3	8.57*	70.6	93.6	82	116.7	70.3	10.33*	56.4	87.5
155 Liver cancer	45	40.5	111.1	.50	82.6	149.2	16	20.9	76.5	1.15	46.4	126.1
157 Pancreatic cancer	94	106.2	88.5	1.40	72.0	108.8	45	59.5	75.6	3.53	56.2	101.8
162 Lung cancer	836	942.0	88.8	11.93*	82.8	95.1	371	412.4	89.9	4.16*	81.1	99.7
172 Melanoma	20	36.2	55.2	7.26*	35.5	85.9	4	2.3	171.7	1.20	64.3	458.5
173 Other skin cancer	17	13.6	125.5	.88	77.4	203.3	2	3.9	51.9	.89	12.8	209.3
185 Prostate cancer	309	333.9	92.5	1.86	82.5	103.7	271	312.7	86.7	5.56*	76.8	97.8
188 Bladder cancer	53	72.9	72.6	5.47*	55.2	95.5	26	25.8	100.9	.00	N/A	N/A
191 Brain cancer	36	48.4	74.5	3.15	53.4	103.9	13	10.6	122.6	.54	70.1	214.5
200,202 Non-Hodgkins lymphoma	56	71.5	78.3	3.38	60.0	102.2	13	21.6	60.1	3.45	34.7	103.9
201 Hodgkins disease	3	5.2	57.6	.94	18.4	179.7	0	1.85	0.0	1.85	N/A	N/A
203.0 Multiple myeloma	34	39.7	85.8	.81	60.9	120.7	18	32.4	55.6	6.37*	34.9	88.6
204-208 Leukemia	74	97.3	76.1	5.56*	60.3	95.9	38	34.3	110.9	.41	80.3	153.1
204 Lymphoid leukemia	24	32.0	75.1	1.98	50.0	112.7	10	10.1	99.1	.00	N/A	N/A
205 Myeloid leukemia	33	35.9	92.0	.23	65.0	130.2	17	14.7	115.5	.35	70.9	188.2
250 Diabetes mellitus	152	139.4	109.0	1.14	92.8	128.2	86	106.2	81.0	3.86*	65.2	100.4
290-319 Mental disorders	117	133.6	87.6	2.06	72.8	105.3	120	102.6	116.9	2.94	97.4	140.4
320-389 Nervous System diseases	157	210.1	74.7	13.41*	63.7	87.6	66	66.7	99.0	.01	86.0	122.2

ICD Code Category	White Farmers					Black Farmers						
	Observed	Expected	PMR*	Chi Sq	LCL°	UCL^	Observed	Expected	PMR*	Chi Sq	LCL°	UCL^
390-459 Circulatory diseases	5916	5604.3	105.6	17.33*	102.8	108.3	2838	2583.8	109.8	25.01*	105.8	114.0
401-405 Hypertensive disease	111	129.2	85.9	2.56	69.4	104.1	141	188.0	75.0	11.76*	63.4	88.7
410-414 Ischemic heart disease	3122	3005.2	103.9	4.54*	100.2	106.5	1138	958.6	118.7	33.57*	111.9	125.9
415-429 Other heart diseases	1376	1276.3	107.8	7.78*	102.2	113.8	825	824.9	100.0	.00	N/A	N/A
430-438 Cerebrovascular diseases	1021	887.1	115.1	20.20*	108.1	122.5	617	499.3	123.6	27.76*	114.0	133.9
460-519 Respiratory diseases	1385	1322.3	104.7	2.98	99.3	110.5	443	467.3	94.8	1.26	86.2	104.3
520-579 Digestive diseases	318	379.4	83.8	9.94*	74.9	93.8	172	193.5	88.9	2.40	76.3	103.5
580-629 Genitourinary diseases	258	218.6	118.1	7.09*	104.2	133.7	217	205.3	105.7	.67	92.3	121.0
680-709 Skin diseases	31	26.8	115.7	.66	80.1	165.9	28	27.3	102.6	.02	70.7	149.0
710-739 Musculoskeletal diseases	31	25.1	123.4	1.38	86.1	176.8	16	17.3	92.7	.09	55.7	154.2
800-999 External causes	722	612.7	117.8	19.49*	109.4	126.9	530	422.9	125.3	27.13*	114.9	136.7
801-819 Motor vehicle accidents	212	194.1	109.2	1.64	95.2	125.3	110	105.0	104.7	.24	86.7	126.5
880-888 Accidental falls	90	92.9	96.9	.09	78.5	119.6	27	29.0	93.2	.13	63.2	137.6
890-899 Fires	25	20.3	123.3	1.10	82.8	183.6	66	33.8	195.0	30.56*	153.1	248.4
900-909 Environmental factors	10	5.8	172.4	3.04	92.2	322.5	21	11.8	178.3	7.22*	116.0	273.9
910 Accidental drowning	19	8.8	216.2	11.86*	138.1	338.4	17	13.3	127.9	1.04	78.9	207.3
950-959 Suicide	167	148.9	112.2	2.2	96.1	130.9	36	35.6	100.9	.00	N/A	N/A
960-969 Homicide	49	42.4	115.7	1.04	86.9	153.8	151	122.4	123.4	6.68*	104.8	145.2

\* Proportional Mortality Ratio = Observed/Expected = Observed cause-specific deaths for farmers/Expected cause-specific deaths calculated with the mortality of non-farmers as the standard x 100.

- Interpretation of Chi square value for 1 degree of freedom is : >3.84 = .05 significance level  
>6.64 = .01 significance level  
>10.83 = .001 significance level

° LCL = Lower Confidence Level  
^ UCL = Upper Confidence Level

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Accidental Falls	880-888	<35	2	1.4	1	2.6
		35-44	3	3.8	0	1.5
		45-54	5	4.4	4	1.9
		55-64	4	4.6	4	3.6
		65-74	4	5.5	13	10.5
		75-84	7	4.4	31	32.7
		>84	2	4.8	37	39.9
		Total	271	29.0	90	92.9
		PMR		93.23		96.89
		Chi-square		.36		.3
Fires	890-899	<35	7	5.0	3	3.3
		35-44	9	3.3	2	1.2
		45-54	12	2.9	4	1.3
		55-64	8	4.7	2	2.9
		65-74	15	6.2	8	4.2
		75-84	11	8.9	5	6.0
		>84	4	2.9	1	1.7
		Total	66	33.8	25	20.3
		PMR		195.04		127.27
		Chi-square		5.53		1.05



Proportional Mortality Rates for Selected Causes of Death for Male Farmers  
by Age and Race, Georgia, 1984-1989

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Infectious Diseases	001-139	<35	10	13.7	7	9.6
		35-44	14	21.6	4	10.5
		45-54	10	11.8	6	6.5
		55-64	12	14.9	5	9.7
		65-74	28	33.0	26	30.1
		75-84	38	37.0	52	56.5
		>84	15	21.1	51	37.3
		Total		127	153.1	151
PMR			82.95		94.23	
Chi-square			2.11		.73	
Tuberculosis	010-018	<35	0	.5	0	.1
		35-44	2	1.3	0	.1
		45-54	4	2.4	0	.5
		55-64	5	2.3	1	1.0
		65-74	12	4.3	4	2.4
		75-84	5	4.4	9	5.5
		>84	3	.5	1	.7
		Total		31	15.6	15
PMR			199.10		148.22	
Chi-square			3.91		1.53	

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Malignant Neoplasms	140-208	<35	6	7.8	11	11.0
		35-44	25	26.0	22	21.2
		45-54	79	88.6	63	73.6
		55-64	183	213.9	239	273.4
		65-74	416	452.3	728	829.9
		75-84	351	471.2	811	943.7
		>84	124	155.6	318	389.8
		Total	1184	1415.4	2192	2542.5
		PMR	83.65	86.21		
		Chi-square	6.15	6.95		
Buccal Cavity Cancer	140-149	<35	0	.2	0	.1
		35-44	3	2.1	1	.6
		45-54	9	7.7	5	2.1
		55-64	11	9.7	10	7.4
		65-74	8	8.3	16	19.9
		75-84	2	4.4	12	14.5
		>84	0	3.4	8	5.6
		Total	33	35.7	52	50.4
		PMR	92.28	103.28		
		Chi-square	.46	.22		

Cause of Death	ICD Code	Age	Deaths		Black		White	
			Observed	Expected	Observed	Expected	Observed	Expected
Esophageal Cancer	150	<35	1	.1	0	.0	0	.0
		35-44	2	1.6	0	.4	0	.4
		45-54	8	9.5	0	1.2	0	1.2
		55-64	17	17.9	5	7.1	5	7.1
		65-74	20	20.0	12	20.4	12	20.4
		75-84	5	10.7	13	14.7	13	14.7
		>84	1	2.9	5	3.3	5	3.3
		Total		54	62.0	35	47.2	35
PMR			87.10		72.20		72.20	
Chi-square			1.01		1.77		1.77	
Stomach Cancer	151	<35	0	.1	0	.3	0	.3
		35-44	2	.8	0	.8	0	.8
		45-54	5	4.1	0	1.8	0	1.8
		55-64	6	8.6	4	6.1	4	6.1
		65-74	18	18.1	11	14.3	11	14.3
		75-84	13	24.9	24	20.2	24	20.2
		>84	4	6.7	8	8.3	8	8.3
		Total		48	63.3	47	51.7	47
PMR			75.81		91.00		91.00	
Chi-square			1.93		.65		.65	

Cause of Death	ICD Code	Age	Deaths		Black		White	
			Observed	Expected	Observed	Expected	Observed	Expected
Colorectal Cancer	153,154	<35	1	.7	0	.6	0	.6
		35-44	4	2.7	3	1.4	3	1.4
		45-54	2	5.7	10	6.0	10	6.0
		55-64	8	12.0	9	20.6	9	20.6
		65-74	20	38.0	63	70.3	63	70.3
		75-84	34	44.7	77	94.0	77	94.0
		>84	13	13.0	37	52.1	37	52.1
		Total	82	116.7	199	244.8	199	244.8
		PMR	70.25	81.29				
		Chi-square	3.21	2.93				
Liver Cancer	155	<35	0	.2	1	.2	1	.2
		35-44	1	1.3	1	.2	1	.2
		45-54	1	1.0	1	1.0	1	1.0
		55-64	5	3.4	6	4.6	6	4.6
		65-74	5	6.9	11	15.3	11	15.3
		75-84	4	7.1	20	14.0	20	14.0
		>84	0	1.0	5	5.3	5	5.3
		Total	16	20.9	45	40.5	45	40.5
		PMR	76.52	111.06				
		Chi-square	1.07	.71				

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Pancreatic Cancer	157	<35	0	.1	0	.1
		35-44	0	.9	1	.8
		45-54	6	3.6	0	3.5
		55-64	9	10.2	17	10.7
		65-74	13	20.6	29	36.3
		75-84	11	19.9	32	40.7
		>84	6	4.3	15	14.2
		Total	45	59.5	94	106.2

PMR 75.63 88.53  
 Chi-square 1.88 1.18

Lung Cancer	162	<35	1	.6	0	.5
		35-44	5	7.4	5	5.8
		45-54	26	31.8	22	32.9
		55-64	69	86.2	124	131.3
		65-7	156	155.4	336	368.9
		75-84	97	110.5	285	322.2
		>84	17	20.7	64	80.5
		Total	371	412.4	836	942.0

PMR 89.96 88.75  
 Chi-square 2.04 3.45

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Melanoma	172	<35	0	.1	2	.8
		35-44	0	.1	3	2.0
		45-54	1	.1	0	2.5
		55-64	1	.3	1	4.5
		65-74	0	.1	5	10.5
		75-84	0	.6	7	10.0
		>84	1	.5	2	5.9
		Total		4	2.3	20

PMR 171.67 55.22  
 Chi-square 1.20 2.69

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Other Skin Cancer	173	<35	0	.2	0	.3
		35-44	0	.2	0	.3
		45-54	1	.6	0	.5
		55-64	1	.9	3	1.6
		65-74	0	1.2	2	3.0
		75-84	0	.3	9	5.3
		>84	0	.5	3	2.7
		Total		2	3.9	17

PMR 51.95 125.46  
 Chi-square .94 .94

Cause of Death	ICD Code	Age	Deaths		Black		White	
			Observed	Expected	Observed	Expected	Observed	Expected
Prostate Cancer	185	<35	1	.0	0	.0	0	.0
		35-44	0	.1	1	.1	1	.1
		45-54	0	2.3	1	1.1	1	1.1
		55-64	18	17.8	5	10.8	5	10.8
		65-74	89	83.9	73	72.2	73	72.2
		75-84	112	141.9	135	155.7	135	155.7
		>84	51	66.8	94	94.0	94	94.0
		Total	271	312.7	309	333.9	309	333.9
PMR			86.66		92.53			
Chi-square			2.36		1.36			
Bladder Cancer	188	<35	0	.0	0	.0	0	.0
		35-44	1	.1	0	.1	0	.1
		45-54	3	.6	1	.6	1	.6
		55-64	1	2.4	1	4.0	1	4.0
		65-74	8	9.2	9	19.0	9	19.0
		75-84	8	11.6	29	32.5	29	32.5
		>84	5	1.9	13	16.8	13	16.8
		Total	26	25.8	53	73.0	53	73.0
PMR			100.93		72.62			
Chi-square			0.00		2.34			

Cause of Death	ICD Code	Age	Deaths		Black		White	
			Observed	Expected	Observed	Expected	Observed	Expected
Brain Cancer	191	<35	0	.8	1	1.4	1	1.4
		35-44	0	.7	1	1.5	1	1.5
		45-54	2	1.3	3	3.2	3	3.2
		55-64	5	2.1	5	7.4	5	7.4
		65-74	3	3.4	14	16.9	14	16.9
		75-84	3	2.4	7	15.3	7	15.3
		>84	0	0.0	3	2.6	3	2.6
		Total		13	10.6	36	48.4	36
PMR			122.64		74.46			
Chi-square			.73		1.77			
Non-Hodgkins Lymphoma	200-202	<35	0	.5	2	1.2	2	1.2
		35-44	0	1.3	0	1.6	0	1.6
		45-54	2	2.0	3	3.0	3	3.0
		55-64	2	2.3	4	7.0	4	7.0
		65-74	5	7.6	21	22.3	21	22.3
		75-84	2	5.6	20	26.5	20	26.5
		>84	2	2.4	6	9.9	6	9.9
		Total		13	21.6	56	71.5	56
PMR			60.07		78.28			
Chi-square			1.86		1.84			



Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Hodgkins Disease	185	<35	0	.4	0	.5
		35-44	0	.3	0	.3
		45-54	0	.3	0	.6
		55-64	0	.5	0	.6
		65-74	0	.0	2	2.0
		75-84	0	.3	1	.9
		>84	0	.0	0	.3
		Total		0	1.9	3

PMR 0.00 57.58  
Chi-square 1.36 .97

Multiple Myeloma	203.0	<35	0	.1	0	.0
		35-44	0	.4	0	.2
		45-54	1	1.4	1	.8
		55-64	3	3.9	4	3.4
		65-74	7	9.1	10	10.3
		75-84	3	11.9	16	18.4
		>84	4	5.8	3	6.6
		Total		18	32.4	34

PMR 55.64 85.75  
Chi-square 2.52 .9

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Leukemia	204-208	<35	2	1.6	2	2.4
		35-44	1	.7	0	1.6
		45-54	0	1.3	3	2.5
		55-64	3	4.0	7	8.2
		65-74	10	9.2	19	23.6
		75-84	17	10.4	27	35.3
		>84	5	7.2	16	23.8
<b>Total</b>		<b>38</b>	<b>34.3</b>	<b>74</b>	<b>97.3</b>	

PMR 110.88 76.08  
Chi-square .64 2.36

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Lymphoid Leukemia	204	<35	1	.6	0	1.1
		35-44	0	.1	0	.3
		45-54	0	.4	1	.1
		55-64	1	1.2	2	2.9
		65-74	4	2.8	7	7.7
		75-84	3	3.6	6	11.1
		>84	1	1.4	8	8.3
<b>Total</b>		<b>10</b>	<b>10.1</b>	<b>24</b>	<b>32.0</b>	

PMR 86.66 75.09  
Chi-square 2.36 1.41

Cause of Death	ICD Code	Age	Deaths		Black		White	
			Observed	Expected	Observed	Expected	Observed	Expected
Myeloid Leukemia	205	<35	1	.7	2	.8	0	.9
		35-44	1	.4	2	1.2	4	3.6
		45-54	0	.6	7	9.5	13	14.0
		55-64	1	1.7	5	5.9	1	2.4
		65-74	5	3.9	8	5.0	1	2.4
		75-84	8	5.0	1	2.4	17	14.7
		>84	1	2.4	33	35.9		
Total			17	14.7	33	35.9		

PMR 115.49 92.00

Chi-square .59 .48

Diabetes Mellitus	250	<35	0	1.2	0	1.0	5	1.9
		35-44	5	4.9	8	4.0	11	11.8
		45-54	8	9.0	21	33.9	24	31.4
		55-64	15	15.8	13	10.1	86	106.2
		65-74	21	33.9	152	139.4		
		75-84	24	31.4	152	139.4		
		>84	13	10.1	152	139.4		
Total			86	106.2	152	139.4		

PMR 80.95 109.04

Chi-square 1.96 1.07

Cause of Death	ICD Code	Age	Deaths				
			Black		White		
			Observed	Expected	Observed	Expected	
Mental Disorders	290-319	<35	6	2.6	1	1.9	
		35-44	19	12.3	4	3.2	
		45-54	22	16.3	4	3.7	
		55-64	12	15.5	6	9.8	
		65-74	23	21.3	16	20.0	
		75-84	23	19.8	35	43.3	
		>84	15	14.9	51	51.8	
		Total		120	102.6	117	133.6
		PMR			116.91		87.58
		Chi-square			1.71		1.44
Nervous System Diseases	320-389	<35	9	6.1	2	5.1	
		35-44	4	4.0	3	2.0	
		45-54	4	6.6	5	3.3	
		55-64	8	8.9	8	7.2	
		65-74	20	15.6	37	42.3	
		75-84	13	18.4	71	96.8	
		>84	8	7.2	31	54.4	
		Total		66	66.7	157	210.1
		PMR			98.95		74.73
		Chi-square			.1		3.66

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Circulatory Diseases	390-459	<35	20	15.1	11	12.3
		35-44	59	60.9	29	34.9
		45-54	158	141.5	112	111.4
		55-64	348	316.5	415	385.8
		65-74	751	717.1	1406	1303.8
		75-84	1022	887.1	2300	2177.8
		>84	480	445.7	1643	1578.5
		Total	2838	2583.8	5916	5604.3
		PMR	109.84			105.56
		Chi-square	5.00			4.16
Hypertensive Disease	401-405	<35	0	.6	0	.4
		35-44	3	6.3	0	1.0
		45-54	15	12.7	3	3.0
		55-64	13	31.2	14	8.6
		65-74	44	56.6	18	29.2
		75-84	41	54.8	46	49.8
		>84	25	25.9	30	37.3
		Total	141	188.0	111	129.2
		PMR	74.99			85.93
		Chi-square	3.43			1.60

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Ischemic Heart Disease	410-414	<35	3	2.2	4	2.8
		35-44	22	20.0	15	20.3
		45-54	65	51.4	80	71.7
		55-64	155	124.0	267	247.6
		65-74	325	267.3	864	780.9
		75-84	381	323.7	1176	1168.0
		>84	107	170.0	716	714.0
		Total		1138	958.6	3122
PMR			118.71		103.89	
Chi-square			5.79		2.13	
Other Heart Diseases	415-429	<35	13	8.8	7	6.3
		35-44	21	22.2	6	9.1
		45-54	39	47.4	14	23.8
		55-64	100	94.4	81	79.9
		65-74	197	219.4	276	268.1
		75-84	311	286.7	534	473.2
		>84	144	146.0	458	415.9
		Total		825	824.9	1376
PMR			100.01		107.81	
Chi-square			0.00		2.79	

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Cerebrovascular Diseases	430-438	<35	4	2.6	0	1.8
		35-44	9	10.1	7	3.2
		45-54	38	25.6	13	9.6
		55-64	70	58.4	41	33.0
		65-74	155	147.6	182	151.5
		75-84	245	175.3	426	372.7
		>84	96	79.7	352	315.3
Total		617	499.3	1021	887.1	

PMR 123.58 115.09

Chi-square 5.27 4.49

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Respiratory Diseases	460-519	<35	6	8.7	1	4.5
		35-44	12	12.7	1	3.4
		45-54	12	22.9	14	10.6
		55-64	48	43.6	62	59.2
		65-74	124	122.6	312	298.5
		75-84	155	176.5	579	546.6
		>84	86	80.2	416	399.4
Total		443	467.3	1385	1322.3	

PMR 94.80 104.7

Chi-square 1.12 1.73

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Digestive Diseases	520-579	<35	2	4.9	6	2.8
		35-44	16	13.2	9	9.2
		45-54	20	23.2	11	17.1
		55-64	28	32.6	42	42.8
		65-74	33	48.2	83	97.8
		75-84	49	47.4	107	123.0
		>84	24	24.0	60	86.7
		Total	172	193.5	318	379.4
		PMR	88.88			83.81
Chi-square	1.55			3.15		
Genitourinary Diseases	580-629	<35	1	1.7	1	1.1
		35-44	3	4.3	1	.8
		45-54	5	6.9	3	1.9
		55-64	15	18.0	7	6.8
		65-74	51	50.0	40	33.2
		75-84	91	77.3	108	88.9
		>84	51	47.1	98	86.1
		Total	217	205.3	258	218.6
		PMR	105.71			118.0
Chi-square	.82			2.66		



Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Skin Diseases	680-709	<35	0	.2	0	.1
		35-44	1	.3	0	.1
		45-54	1	1.0	0	.2
		55-64	1	1.4	0	.7
		65-74	8	6.9	2	3.3
		75-84	12	10.4	21	11.3
		>84	5	7.2	8	11.2
<b>Total</b>		<b>28</b>	<b>27.3</b>	<b>31</b>	<b>26.8</b>	

PMR 102.64 115.71  
Chi-square .14 .81

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Musculoskeletal Diseases	710-739	<35	1	.5	0	.3
		35-44	2	.9	0	.4
		45-54	2	.8	2	.5
		55-64	0	1.8	3	1.7
		65-74	7	5.5	7	7.4
		75-84	2	5.9	12	9.7
		>84	2	1.9	7	5.3
<b>Total</b>		<b>16</b>	<b>17.3</b>	<b>31</b>	<b>25.1</b>	

PMR 92.65 123.41  
Chi-square .3 1.17

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
External Causes	800-999	<35	172	114.6	194	138.6
		35-44	75	79.9	59	51.6
		45-54	67	59.7	50	42.4
		55-64	59	47.0	73	60.1
		65-74	79	50.2	112	103.7
		75-84	52	48.0	150	130.3
		>84	26	23.5	84	86.1
		Total	530	422.9	722	612.7
		PMR	125.33	117.8		
Chi-square	5.21	4.41				
Motor Vehicle Accidents	810-819	<35	35	32.5	90	65.2
		35-44	13	17.6	16	16.5
		45-54	18	15.8	10	13.2
		55-64	13	11.7	23	16.8
		65-74	16	11.9	28	31.5
		75-84	5	11.3	30	33.8
		>84	10	4.3	15	17.2
		Total	110	105.0	212	194.1
		PMR	104.74	109.20		
Chi-square	.49	1.28				

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Environmental Factors	900-909	<35	0	.5	1	.5
		35-44	3	1.0	0	.3
		45-54	0	1.4	1	.4
		55-64	5	1.8	2	1.1
		65-74	3	3.0	2	.9
		75-84	8	2.8	3	1.6
		>84	2	1.4	1	1.0
		Total	21	11.8	10	5.8
		PMR	178.27	172.41		
		Chi-square	2.69	1.74		
Accidental Drowning	910	<35	10	7.5	12	4.7
		35-44	2	2.4	2	.9
		45-54	3	1.2	0	.6
		55-64	0	.9	1	1.0
		65-74	1	1.4	1	.7
		75-84	0	0.0	0	.6
		>84	1	0.0	3	.3
		Total	17	13.3	19	8.8
		PMR	127.92	216.15		
		Chi-square	1.02	3.44		

Cause of Death	ICD Code	Age	Deaths			
			Black		White	
			Observed	Expected	Observed	Expected
Suicide	950-959	<35	21	10.3	34	26.3
		35-44	3	8.1	14	14.4
		45-54	3	4.3	16	11.8
		55-64	3	3.0	10	18.8
		65-74	4	4.1	33	32.7
		75-84	1	4.4	47	33.8
		>84	1	1.4	13	11.2
		Total	36	35.6	167	148.9
		PMR	100.90	112.15		
		Chi-square	0.00	1.48		
Homicide	960-969	<35	74	43.7	22	13.3
		35-44	27	30.0	14	7.2
		45-54	16	19.2	6	5.1
		55-64	9	9.9	3	5.2
		65-74	16	9.8	2	5.7
		75-84	9	5.9	1	3.3
		>84	0	3.8	1	2.6
		Total	151	122.4	49	42.4
		PMR	123.37	115.65		
		Chi-square	2.58	1.02		

DEATHS BY OCCUPATION CATEGORIES -1984-89

CATEGORY=FARMERS

AGES	SEX_RACE								TOTALS	DEATHS	
	FEMALE				MALE						
	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE			
10-14 YEARS				2						2	
15-19 YEARS	2	1	11	30						44	
20-24 YEARS	3	2	60	61						126	
25-29 YEARS	7	3	87	59						156	
30-34 YEARS	8	3	85	87						183	
35-39 YEARS	17	6	114	71						208	
40-44 YEARS	22	4	137	74						237	
45-49 YEARS	20	9	186	106						321	
50-54 YEARS	24	7	214	175						420	
55-59 YEARS	28	10	294	296						628	
60-64 YEARS	65	16	453	586						1120	
65-69 YEARS	82	20	686	1091						1879	
70-74 YEARS	131	32	907	1761						2831	
75-79 YEARS	140	43	1049	2275						3507	
80-84 YEARS	174	31	830	2087						3122	
85+ YEARS	257	54	878	2873						4062	
UNKNOWN									2		2
TOTALS	980	241	5995	11632						18848	

2.5% 2% 15.0% 10.7% 6.4%

DEATHS BY OCCUPATION CATEGORIES -1984-89

CATEGORY=NONFARMERS

AGES	SEX_RACE							
	FEMALE		MALE		MALE		TOTALS	
	BLACK	WHITE	BLACK	WHITE	BLACK	WHITE	DEATHS	DEATHS
0-4 YEARS	2109	1979	2574	2663	9325			
5-9 YEARS	163	192	218	299	872			
10-14 YEARS	106	210	211	383	910			
15-19 YEARS	229	656	632	1567	3084			
20-24 YEARS	444	689	1132	1886	4151			
25-29 YEARS	607	793	1320	2087	4807			
30-34 YEARS	797	928	1595	2354	5674			
35-39 YEARS	947	1124	1683	2506	6260			
40-44 YEARS	1093	1551	1731	2968	7343			
45-49 YEARS	1318	2042	2126	3784	9270			
50-54 YEARS	1737	2910	2513	5465	12625			
55-59 YEARS	2281	4485	3039	8453	18258			
60-64 YEARS	3199	6911	3948	11652	25710			
65-69 YEARS	4096	9300	4412	14333	32141			
70-74 YEARS	5089	12062	4570	15149	36870			
75-79 YEARS	5211	14982	3924	13889	38006			
80-84 YEARS	4567	16649	2420	10125	33761			
85+ YEARS	5605	27705	1830	8711	43851			
UNKNOWN	7	11	10	12	40			
TOTALS	39605	105179	39888	108286	292958			