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PREVENTABLE DEATHS IN NORTH CAROLINA

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### Two Assumptions

This study of preventable deaths in North Carolina is founded on two basic assumptions. The acceptance of these primary principles is necessary to approving the findings of the study. These assumptions are: (1) The geo-physical conditions in rural and urban areas of North Carolina are as favorable to a low death rate as in any other state; and (2) The people of North Carolina are as sound biologically as are the peoples in any other state. Therefore, death rates comparable to the lowest in the nation are to be expected in North Carolina.

However, 37 states had lower adjusted <sup>1/</sup> death rates than North Carolina in 1940. Therefore, if the above statements are accepted, it must be concluded that medical care in North Carolina is not what it should be. Obviously, the people of North Carolina do not receive all the medical care services that they need. Although it is not the purpose of this paper to place the blame for the poor medical care, it may be said that both public and private agencies and personnel are inadequate.

### What is a Preventable Death?

There are several methods of measuring preventable deaths. Perhaps the deaths most usually thought of as preventable are those connected with accidents or communicable diseases of childhood. It is generally agreed that a great many of the infant deaths and maternal deaths are preventable.

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<sup>1/</sup> Based on the deaths from 1 to 75 years and adjusted to the age distribution of the United States population in 1940.

These definitions are good as far as they go, but we have available a much more inclusive and accurate definition which has meaning for both layman and statistician.

In this report, preventable deaths are those deaths which would not have occurred if the death rates by age in North Carolina had been as low as those in any other state's major residential group. It may be safely assumed that the death rate for each age group in the state could be lowered to the lowest death rate that prevails in any age and residence group in the nation. This is possible by means of a complete medical care program that will reach the needs of everyone.

In 1940, Nebraska had the lowest adjusted death rate of any state in the nation and South Carolina had the highest. This adjusted death rate, however, is not the standard against which the people of North Carolina should measure their position and it is not the position for which they should strive. The minimum standard should be death rates comparable to the lowest residence and age group rates in the nation. The problem, therefore, resolved itself into finding the residence class, rural and urban, and age group having the lowest rates in 1940.<sup>2/</sup> These lowest rates are found among white people in the following states: <sup>3/</sup>

<u>Age Group</u>	<u>Residence and State</u>	<u>Population, 1940</u>	<u>Rate per 1,000</u>
Under 1 yr.	Rural Oregon	8,871	28.4
1 - 4	Urban Wisconsin	97,477	1.4
5 -14	Rural Arizona	55,100	0.5
15-24	Urban Rhode Island	119,419	0.8
25-34	Urban Massachusetts	596,621	1.3
35-44	Rural Kansas	131,620	2.6
45-54	Rural Iowa	171,325	5.2
55-64	Rural Arizona	16,740	11.5
65-74	Rural Arizona	8,142	27.3
75-up	Rural Arizona	3,010	72.8

<sup>2/</sup> In 1940, some areas such as specific cities or counties had death rates lower than these, but it was thought infeasible to use such rates in North Carolina.

<sup>3/</sup> Vital Statistics Rates in the United States, 1900-1940; Table 11.

The estimated number of deaths that would have occurred in the state is obtained by applying these rates to the population for North Carolina as enumerated by the Census Bureau in 1940. The difference between the number of deaths that actually occurred in 1940 and the number that should have occurred, is the number of preventable deaths.

Number and Distribution of Preventable Deaths

In 1940, there were 31,904 deaths in the state, but if North Carolina had experienced the low rates shown above there would have been 16,642 fewer deaths. Actually this would have meant 52.2 per cent fewer deaths, or 52.2 per cent of all deaths in the state were preventable in that year.

By the same standard, there would have been 8,915 or 44 per cent fewer deaths in the white population and 7,727 or 66.3 per cent fewer nonwhite deaths. These deaths were preventable in the sense that they need not have occurred during the year.

Table 1.

Preventable Deaths in North Carolina  
by Residence and Color, 1940.

Residence and color	Deaths, 1940	Estimated deaths, 1940	Preventable deaths	
			Number	Per cent
Total	31,904	15,262	16,642	52.2
White	20,257	11,342	8,915	44.0
Nonwhite	11,647	3,920	7,727	66.3
Rural	21,924	11,227	10,697	48.8
White	14,548	8,436	6,112	42.0
Nonwhite	7,376	2,791	4,585	62.2
Urban	9,980	4,035	5,945	59.6
White	5,709	2,906	2,803	49.1
Nonwhite	4,271	1,129	3,142	73.6

Source: U. S. Census and U. S. Vital Statistics, 1940.

Death rates in the rural population are still lower than for residents in urban areas of the state. It follows, therefore, that the

proportion of deaths classified as preventable is lower for rural than urban areas. Rural death rates more nearly approach the low rates used as the basis of this study. Even so, nearly half, 48.8 per cent of the deaths among rural residents were preventable as compared with six out of each ten, or 59.6 per cent, preventable deaths in urban areas. The loss of life among nonwhite urban residents is excessive - 73.6 per cent of these deaths were preventable.

Table 2.

Preventable Deaths in North Carolina  
by Size of Urban Center and Color, 1940.

Size of urban center and color	Deaths, 1940	Estimated deaths, 1940	Preventable deaths	
			Number	Per cent
100,000 - up	951	390	561	59.0
White	507	280	227	44.8
Nonwhite	444	110	334	75.2
50,000 - 99,999	2,503	1,027	1,476	59.0
White	1,306	714	592	45.3
Nonwhite	1,197	313	884	73.9
25,000 - 49,999	1,695	605	1,090	64.3
White	952	420	532	55.9
Nonwhite	743	185	558	75.1
10,000 - 24,999	2,513	1,007	1,506	59.9
White	1,424	715	709	49.8
Nonwhite	1,089	292	797	73.2
2,500 - 9,999	2,318	1,005	1,313	56.6
White	1,520	777	743	48.9
Nonwhite	798	228	570	71.4

Source: U. S. Census and U. S. Vital Statistics, 1940.

Table 2 shows a distribution of preventable deaths in urban areas by size of center. The proportion of deaths which are preventable is highest for cities with 25,000 - 49,999 population and cities with 2,500 - 9,999 population would have the smallest proportionate saving in life. On a percentage basis, nonwhite preventable deaths in North Carolina are most numerous in the city with a population of over 100,000;

also, death rates in the white population in this city more nearly approach the lowest rates than other size cities.

As shown above, death rates are not uniform throughout the state. There are three or four large geographical areas in the state. In many ways these are much more than geographical areas and in some respects, they more nearly approach the idea of cultural regions. These areas are Mountain, Piedmont and Coastal Plain; sometimes the Coastal Plain is divided so as to form a Tidewater area.

The proportion of deaths which need not have occurred in 1940 decrease from east (Coastal Plain) to west (Mountain). In fact, if the Tidewater area is included as a separate region, this situation is even more extreme: 58.7 per cent of the Tidewater deaths are preventable as compared with 42.9 per cent of the deaths in the Mountain area. Deaths in the white population follow the same pattern: highest in the east and lowest in the west. Preventable nonwhite deaths are about the same in the Coastal Plain and Piedmont but still lowest in the Mountain area.

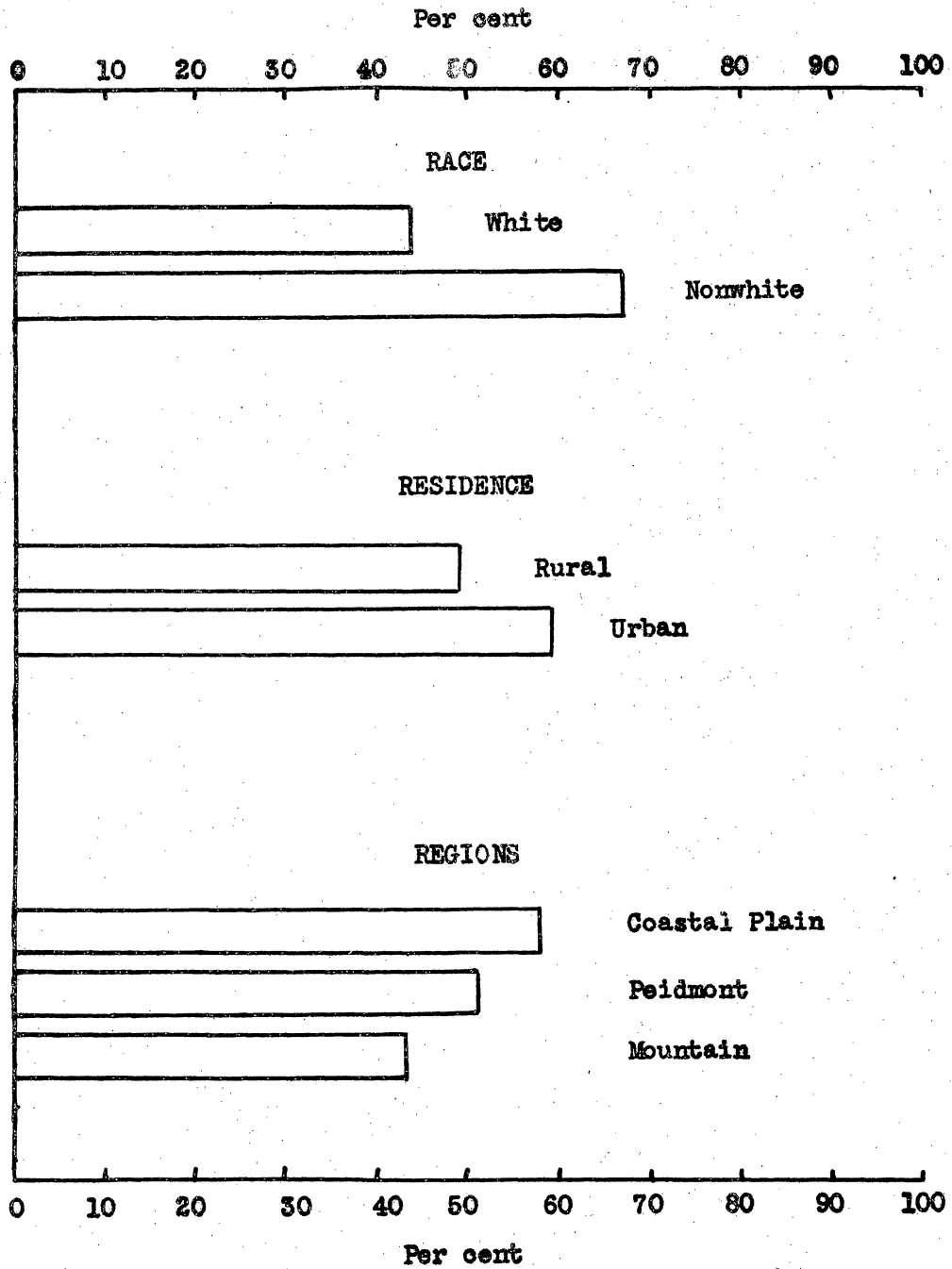
Table 3.

Preventable Deaths in North Carolina  
by Region and Color, 1940.

Region and color	Deaths, 1940	Estimated deaths, 1940	Preventable deaths	
			Number	Per cent
Coastal Plain	12,177	5,154	7,023	57.7
White	6,135	3,117	3,018	49.2
Nonwhite	6,042	2,037	4,005	66.3
Piedmont	14,501	7,126	7,375	50.9
White	9,453	5,448	4,005	42.4
Nonwhite	5,048	1,678	3,370	66.8
Mountain	5,226	2,984	2,242	42.9
White	4,669	2,775	1,894	40.6
Nonwhite	557	209	348	62.5

Source: U. S. Census and U. S. Vital Statistics, 1940.

PERCENTAGE OF PREVENTABLE DEATHS IN NORTH CAROLINA BY  
RACE, RESIDENCE AND REGIONS, 1940





military service show a regional pattern similar to that for preventable deaths.

There is great variation among the counties with respect to the percentage of deaths in 1940 that can be classified as preventable. The following demonstrates this point of range:

<u>Rank</u>	<u>County</u>	<u>Per cent</u>
(1) Lowest	Alexander	19.0
(100) Highest	Wayne	71.8

The percentage of preventable deaths is under 25.0 in two counties, and an additional 47 counties are in the percentage class of 25.0 - 49.9. This means, then, that at least half of all deaths in 51 counties of the state are preventable.

The county range for the white population is also very great as the following shows:

<u>Rank</u>	<u>County</u>	<u>Per cent</u>
(1) Lowest	Alexander	15.8
(100) Highest	Burke	60.8

The percentage of preventable deaths is under 25.0 in six counties and an additional 74 counties are in the percentage class of 25.0 - 49.9. In the remaining 20 counties, one-half or more of the white deaths need not have occurred in 1940.

A much greater proportion of the nonwhite than white deaths are preventable. In 1940, 82.4 per cent of all nonwhite deaths in Wayne County were preventable; this is the highest proportion for any county. In four counties, more than three-fourths of the deaths need not have occurred in 1940. In 80 counties, 50.0 - 74.9 per cent of the deaths were preventable. In the remaining 16 counties the lives saved would have been less than 50 per cent.

Table 4. Preventable Deaths in North Carolina,  
by Color, 1940.

County	White				Nonwhite			
	Deaths, 1940	Preventable deaths Number	Percent	Rank	Deaths, 1940	Preventable deaths Number	Percent	Rank
Alamance	316	117	37.0	20	96	55	57.3	33
Alexander	76	12	15.8	1	8	4	50.0	17
Alleghany	61	13	21.3	3	3	1	33.3	5
Anson	134	67	50.0	80	144	88	61.1	46
Ashe	205	89	43.4	44	7	5	71.4	86
Avery	93	33	35.5	15	2	1	50.0	17
Beaufort	232	126	54.3	93	221	161	72.8	92
Bertie	108	52	48.1	69	165	107	64.8	56
Bladen	139	69	49.6	78	111	66	59.5	38
Brunswick	110	61	55.5	96	76	53	69.7	76
Buncombe	747	299	40.0	32	214	150	70.1	81
Burke	390	237	60.8	100	28	13	46.4	13
Cabarrus	334	149	44.6	52	118	83	70.3	82
Caldwell	255	114	44.7	53	31	19	57.6	34
Camden	37	19	51.4	87	30	21	70.0	78
Carteret	149	68	45.6	59	45	34	75.6	97
Caswell	77	26	33.8	13	68	32	47.1	15
Catawba	317	119	37.5	24	53	31	58.5	37
Chatham	153	65	42.5	43	76	42	55.3	29
Cherokee	140	55	39.3	28	3	2	66.7	66
Chowan	57	26	45.6	59	66	41	62.1	50
Clay	42	11	26.2	7	3	2	66.7	66
Cleveland	319	126	39.5	30	75	28	38.3	7
Columbus	258	131	50.8	84	165	110	66.7	66
Craven	151	70	46.4	62	227	165	72.7	91
Cumberland	302	153	50.7	83	232	154	66.4	63
Currituck	47	22	46.8	63	30	20	66.7	66
Dare	53	24	45.3	56	7	5	71.4	86
Davidson	361	159	44.0	47	67	44	65.7	61
Davie	111	42	37.8	25	33	23	69.7	76
Duplin	214	106	49.5	77	131	79	60.3	40
Durham	393	172	43.8	46	344	242	70.3	82
Edgecombe	201	108	53.7	92	267	163	61.0	45
Forsyth	646	287	44.4	51	568	422	74.3	95
Franklin	147	68	46.3	61	105	55	52.4	22
Gaston	467	182	39.0	27	125	77	61.6	48
Gates	66	37	56.1	97	61	38	62.3	51
Graham	37	11	29.7	9	5	4	80.0	99
Granville	118	52	44.1	48	147	89	60.5	42
Greene	68	30	44.1	48	56	27	48.2	16
Guilford	902	394	43.7	45	411	294	71.5	88
Halifax	168	65	38.7	26	323	195	60.4	41
Harnett	253	124	49.0	76	132	87	65.9	62
Haywood	237	86	36.3	18	12	8	66.7	66
Henderson	222	91	41.0	37	39	29	74.4	96
Hertford	73	33	45.2	55	131	86	65.6	60
Hoke	52	25	48.1	69	84	50	59.5	38
Hyde	48	19	39.6	31	28	15	53.6	25
Iredell	329	133	40.4	34	146	104	71.2	85
Jackson	141	57	40.4	34	20	14	70.0	78

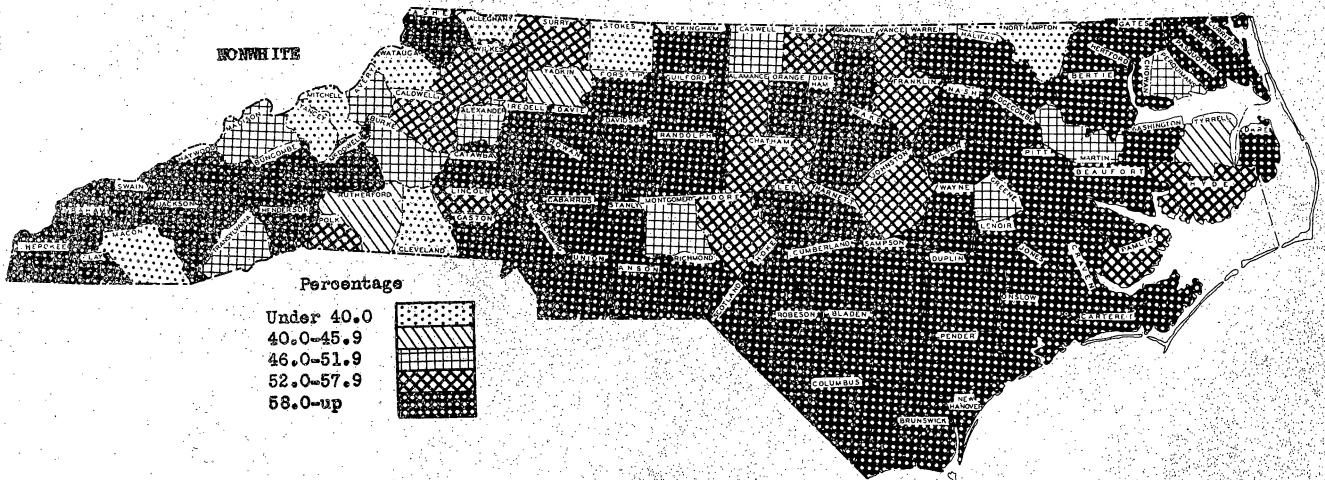
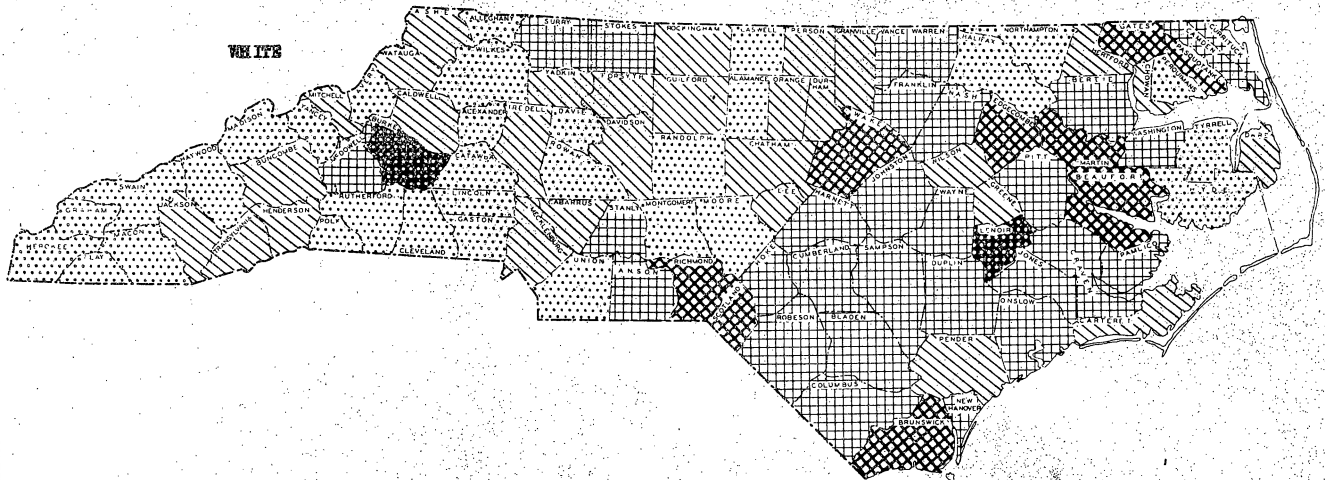
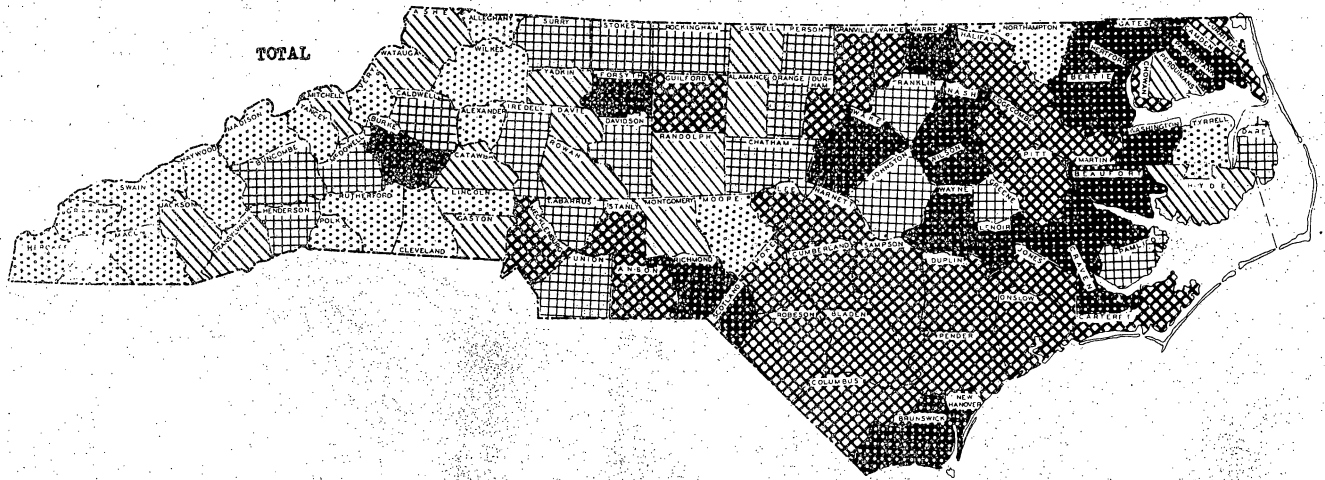
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Table 4. Continued

County	White				Nonwhite			
	Deaths 1940	Preventable deaths			Deaths 1940	Preventable deaths		
		Number	Percent	Rank		Number	Percent	Rank
Johnston	374	180	48.1	69	120	67	55.8	31
Jones	54	27	50.0	80	43	25	58.1	36
Lee	105	43	41.0	37	83	61	73.5	94
Lenoir	227	133	58.6	99	210	143	68.1	73
Lincoln	151	54	35.8	17	31	17	54.8	27
McDowell	179	85	47.5	66	30	20	66.7	66
Macon	107	29	27.1	8	4	1	25.0	4
Madison	161	57	35.4	14	2	1	50.0	17
Martin	129	74	57.4	98	92	43	46.7	14
Mecklenburg	767	321	41.9	41	585	427	73.0	93
Mitchell	119	48	40.3	33	0	0	0	1
Montgomery	95	35	36.8	19	33	17	51.5	21
Moore	144	31	21.5	5	89	50	56.2	32
Nash	282	146	51.8	89	272	181	66.5	65
New Hanover	303	156	51.5	88	316	243	76.9	98
Northampton	75	16	21.3	3	104	35	33.7	6
Onslow	122	62	50.8	84	70	49	70.0	78
Orange	140	62	44.3	50	77	50	64.9	57
Pamlico	62	29	46.8	63	31	17	54.8	27
Pasquotank	123	64	52.0	90	113	76	67.3	72
Pender	81	34	42.0	42	107	71	66.4	63
Perquimans	45	16	35.6	16	39	18	46.2	12
Person	119	54	45.4	57	77	41	53.2	23
Pitt	250	121	48.4	74	298	194	65.1	58
Polk	66	13	19.7	2	15	8	53.3	24
Randolph	294	110	37.4	23	46	28	60.9	44
Richmond	217	119	54.8	94	133	87	65.4	59
Robeson	297	142	47.8	67	409	256	62.6	52
Rockingham	332	138	41.6	40	137	88	64.2	54
Rowan	350	110	31.4	12	170	116	68.2	74
Rutherford	280	104	37.1	21	47	21	44.7	11
Sampson	248	120	48.4	74	164	101	61.6	48
Scotland	101	56	55.4	95	120	73	60.8	43
Stanly	238	121	50.8	84	36	22	61.1	46
Stokes	178	86	48.3	73	18	7	38.9	8
Surry	334	161	48.2	72	27	15	55.6	30
Swain	60	13	21.7	6	19	12	63.2	53
Transylvania	97	44	45.4	57	6	3	50.0	17
Tyrrell	28	11	39.3	28	15	6	40.0	9
Union	215	80	37.2	22	120	83	69.2	75
Vance	136	65	47.8	67	130	75	57.7	35
Wake	691	368	53.3	91	514	369	71.8	89
Warren	81	38	46.9	65	185	119	64.3	55
Washington	62	31	50.0	80	79	56	70.9	84
Watauga	145	60	41.4	39	1	0	0	1
Wayne	273	136	49.8	79	568	468	82.4	100
Wilkes	276	83	30.1	10	28	15	53.6	25
Wilson	213	96	45.1	54	284	206	72.5	90
Yadkin	160	65	40.6	36	10	4	40.0	9
Yancey	115	36	31.3	11	1	0	0	1

Source: U. S. Census and U. S. Vital Statistics, 1940.

PERCENTAGE OF DEATHS WHICH ARE PREVENTABLE,  
NORTH CAROLINA, 1940.



Percentage

Under 40.0	
40.0-45.9	
46.0-51.9	
52.0-57.9	
58.0-up	

Many of the preventable deaths occur during childhood and youth. If in 1940, the death rate in North Carolina had been 28.4 for infants under 1 year, there would have been 2,640 fewer deaths; or 56.9 per cent of all infant deaths in the state were preventable.

The greatest proportionate saving would have been in the age group 15 - 24 years and 68.8 per cent of all these deaths would not have occurred that year; and the greatest proportionate unnecessary loss of life for both rural and urban populations is in this age group. In 1940, 65.4 per cent of the rural and 75.0 per cent of the urban deaths among people of this age were preventable. This is also true for both white populations and for the urban nonwhite, but for the rural nonwhite population the saving of lives would be greatest in the age group 25 - 34 years. In urban centers of the state, 87.4 per cent of the nonwhite deaths were preventable in the age group 15 - 24 as were 86.0 per cent of those in the 25 - 34 age class.

The very sudden drop in the percentage of nonwhite deaths which are preventable in the two oldest age groups, and especially the oldest, should be viewed with caution. The number of nonwhites 65 years of age and over recorded by the Census Bureau in North Carolina for 1940, is much greater than could have reasonably been expected on any basis. Well recognized incentives undoubtedly had a great deal to do in this situation.

#### Marshalling Forces

The preceding section tells a story of stark reality - a story of thousands of North Carolinians who should not have died in the year in which they did. The direct results of these preventable deaths are broken hearts and homes, of grim tragedy measurable only in terms of social and economic waste of the first magnitude.

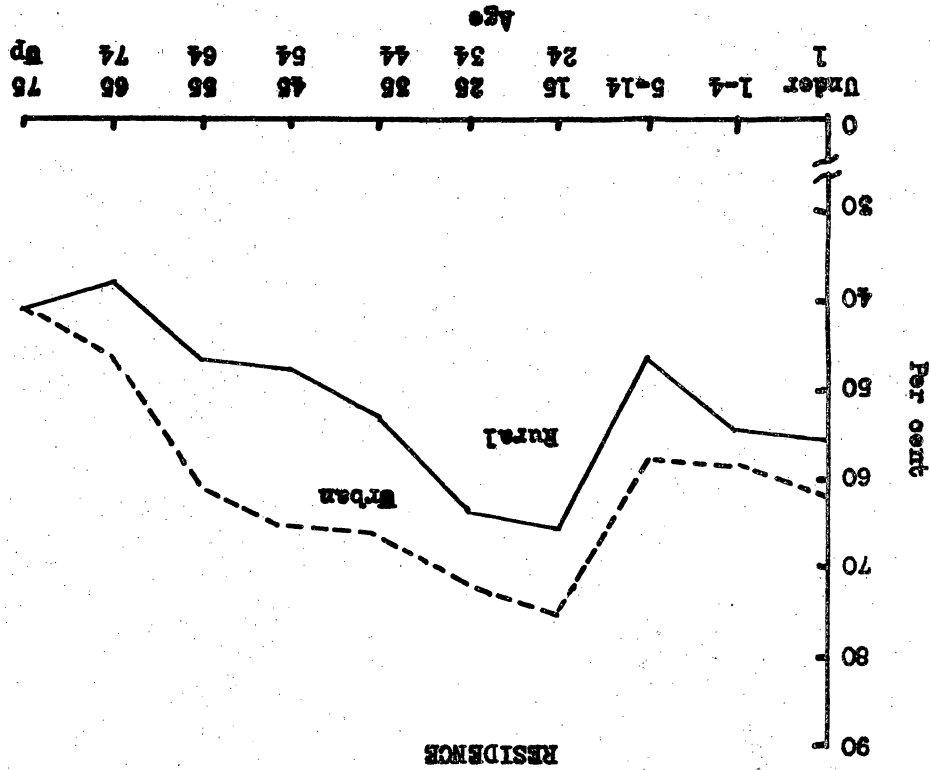
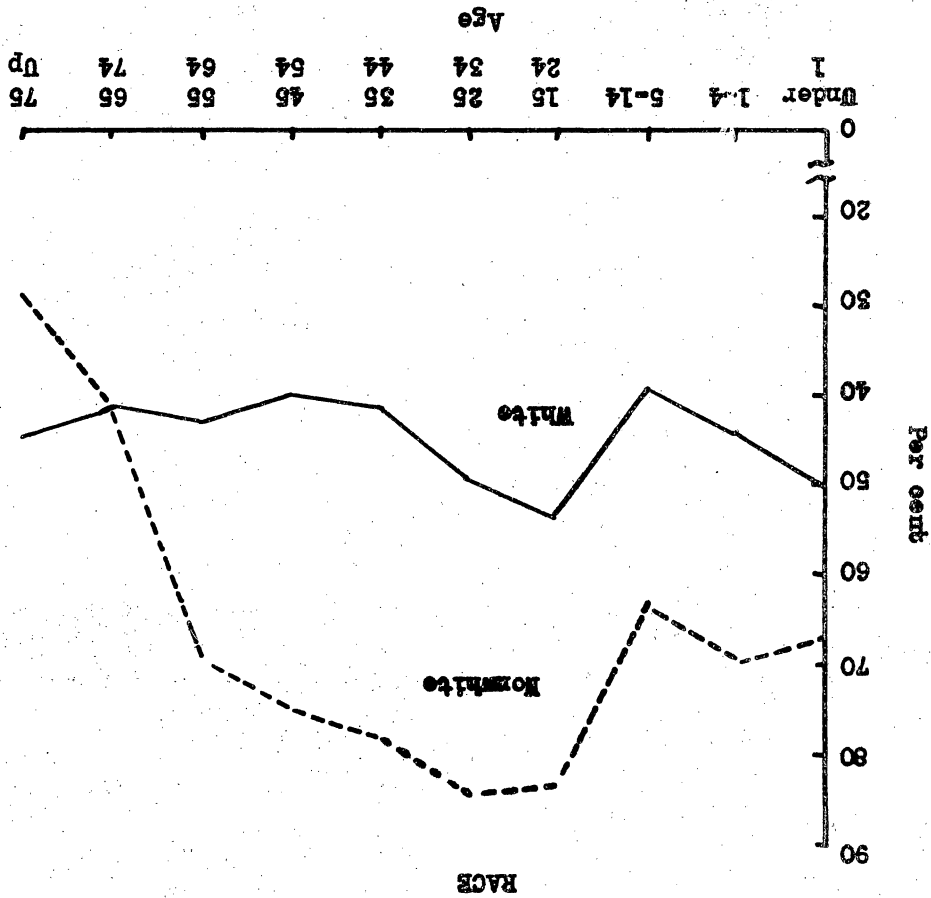
There is a bright side to this picture and definite progress along

Table 5.  
Number and Percentage Distribution of Preventable Deaths  
In North Carolina by Residence, Color and Age, 1940.

Age	Preventable deaths			
	Rural		Urban	
	Number	Per cent	Number	Per cent
	<u>Total</u>			
Total	10,697	48.8	5,945	59.6
Under 1	1,950	55.4	690	61.4
1 - 4	412	54.7	124	58.8
5 -14	267	46.5	114	57.3
15-24	836	65.4	495	75.0
25-34	923	64.9	649	72.3
35-44	827	53.5	729	66.6
45-54	1,000	47.8	933	65.9
55-64	1,428	46.5	997	61.3
65-74	1,461	38.5	713	46.7
75-up	1,593	41.1	501	40.9
	<u>White</u>			
Total	6,112	42.0	2,803	49.1
Under 1	1,036	48.9	304	50.2
1 - 4	184	43.8	50	45.9
5 -14	121	36.0	53	48.2
15-24	346	52.5	134	54.3
25-34	376	50.1	177	50.7
35-44	329	37.4	230	47.8
45-54	433	33.9	383	52.4
55-64	819	38.8	513	51.6
65-74	1,108	38.5	505	46.5
75-up	1,360	43.6	454	45.6
	<u>Nonwhite</u>			
Total	4,585	62.2	3,142	73.6
Under 1	914	65.3	386	74.5
1 - 4	228	68.5	74	72.5
5 -14	146	61.3	61	68.5
15-24	490	79.0	361	87.4
25-34	547	81.5	472	86.0
35-44	498	74.7	499	81.3
45-54	567	69.4	550	80.4
55-64	609	63.4	484	76.7
65-74	353	38.6	208	47.1
75-up	233	30.9	47	20.5

Source: U. S. Census and U. S. Vital Statistics, 1940.

PERCENTAGE OF PREVENTABLE DEATHS IN NORTH CAROLINA BY AGE, RACE AND RESIDENCE, 1940



this line is observable and measurable. The rate at which people die has been decreasing in North Carolina for both the white and Negro population. The result is now that people can expect to live longer, from a given age, than in former years. This progress can be measured in terms of lives saved. General progress in medical science and extension of public health programs and practices meant a saving of about 12,000 lives in 1940 as compared with death rates of two decades previously; that is, there would have been about 12,000 more deaths in 1940 if the 1920 death rates had prevailed.

The process of saving human lives can be speeded up. Well known are the factors which, when put into operation, can prevent these deaths from occurring.

These lives can be saved by means of a complete hospital and medical care program. Such a program embodies three specific points, all of which will need to be considered at the same time. The three points in such a dynamic program are: (1) To insure meeting adequately the medical care needs of all the people; there is urgent need for increased facilities and personnel. The need is urgent in North Carolina for more doctors, hospital and clinical facilities, dentists, nurses, and public health educators and personnel. (2) The people must become conscious of the need for complete medical care. An awareness must be aroused and the people must want good medical care service. With this must come the knowledge of the existing services available through present facilities and especially through local public health programs. In simplest terms this is an appreciation by the people for the need of adequate medical care. (3) A method must be found that will enable the people to pay for the necessary amount and quality of modern medical science. The economic barrier between the people and the facilities and personnel must be eliminated.

The above three points are not isolated units and they are so interwoven as to form a pattern of complete medical care services. The



physical and personnel equipment, the educational equipment, and the economic equipment must be repaired and basically improved at the same time. The welfare of all the people is too important to hesitate longer. The time for action is now!

#### Continuous Vigilance

States used in this study with the lowest death rates are also interested in more adequate medical care. Especially important is the more equitable distribution of medical care services available to people in rural areas. When these low rates become a reality in North Carolina, vigilance must be continued because the ultimate limits to which age specific death rates can be lowered is not known now.

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