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COLORADO'S AGING POPULATION AND SOME CHRONIC ILLNESS PROBLEMS

STATISTICS, CHARTS AND RESEARCH NOTES

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August 1952

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This compilation of statistics, charts, and research notes has been prepared, as an aid in obtaining preliminary information, for groups undertaking studies of aging and chronic illness in Colorado. Most of the source reports cited are available in the larger municipal and university libraries. The compilation was prepared in consultation with the Chief of the Chronic Disease and Tuberculosis Section.

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PART I - COLORADO POPULATION TRENDS IN RELATION TO MORTALITY

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A. TOTAL POPULATION GROWTH IN COLORADO *

Census	Both	Male	Female
1870.....	39,864	24,820	15,044
1880.....	194,327	129,131	65,196
1890.....	412,198	245,247	166,951
1900.....	539,700	295,332	244,368
1910.....	799,024	430,697	368,327
1920.....	939,629	492,731	446,898
1930.....	1,035,791	530,752	505,039
1940 ^x	1,123,296	568,778	554,518
1950 ^x	<u>1,325,089</u>	<u>665,149</u>	<u>659,940</u>
Urban.....	831,318	405,403	425,915
Rural nonfarm..	295,590	153,415	142,175
Rural farm.....	198,181	106,331	91,850

^xIncludes armed forces stationed in Colorado.

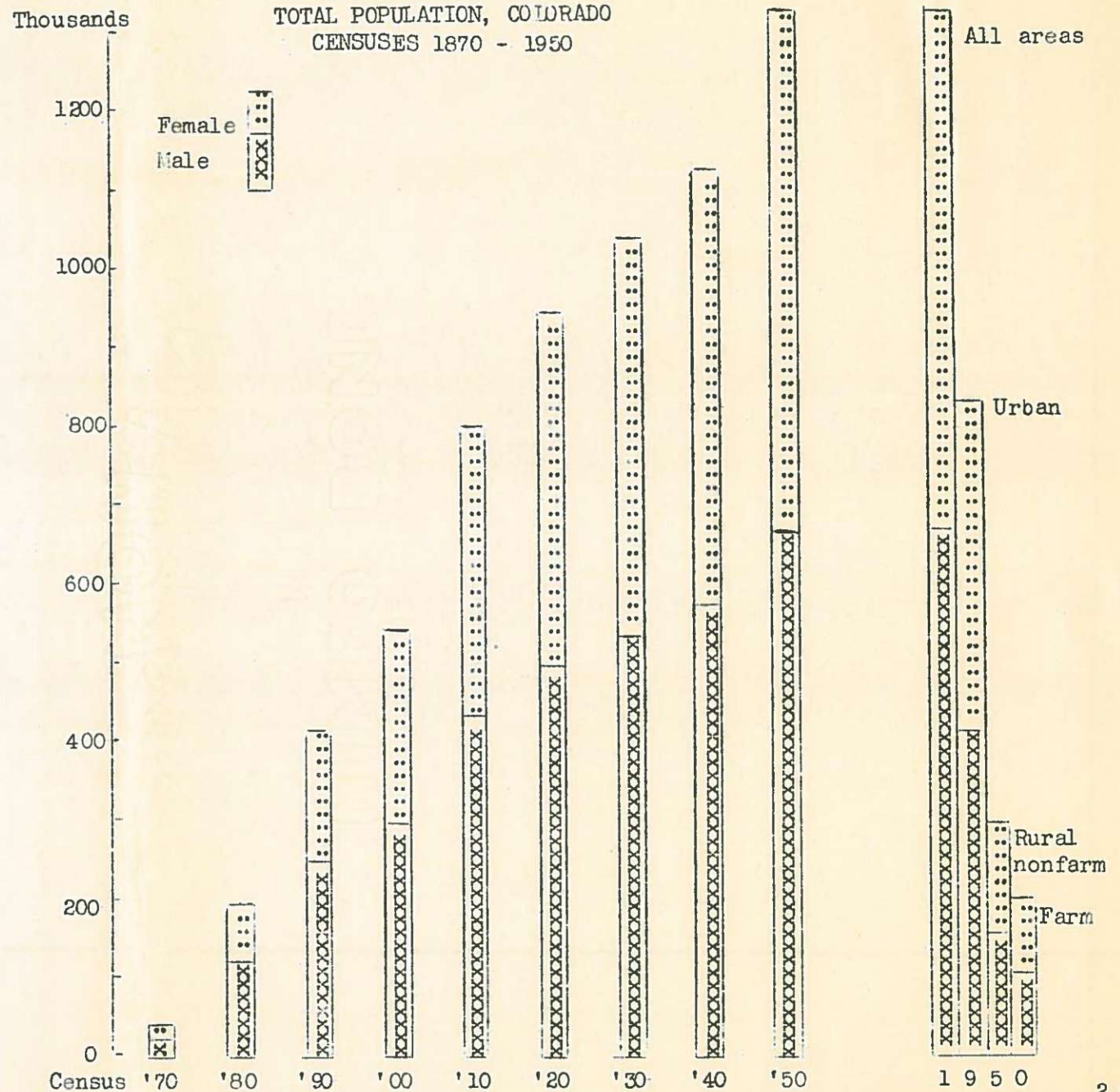
The excess of males over females has almost disappeared, the ratio in 1950 being 101 males to 100 females.

The decreasing proportion of males is attributable, in part, to a changed character of immigration into the state and also to the higher mortality rates of males.

The accelerated growth in the population from 1940 to 1950 reflects: the upsurge in births in the 1940's, especially in the postwar years; continued declines in the infant, maternal, and communicable disease mortality rates; and the increasing average life span, accompanied by a growing proportion of the aged.

The population now is predominantly urban. In 1950, the urban inhabitants represented 63 per cent of the total; the rural nonfarm group, 22 per cent; and the farm population, only 15 per cent. As defined for the 1950 census, the urban population includes all persons living in incorporated and unincorporated places of 2,500 or more, and also those in densely populated fringes around cities of 50,000 or more.

* U.S. Bureau of the Census reports.



B. NUMERICAL INCREASE IN THE AGED POPULATION OF COLORADO *

Census	Persons Aged 65 and Older		
	Both	Male	Female
1870.....	368	227	141
1880.....	1,876	1,128	748
1890.....	6,541	3,802	2,739
1900.....	13,749	7,836	5,913
1910.....	26,810	14,948	11,862
1920.....	41,403	22,850	18,553
1930.....	61,849	33,842	28,007
1940.....	86,438	44,194	42,244
1950.....	<u>115,591</u>	<u>55,630</u>	<u>59,961</u>
Urban.....	80,516	36,006	44,510
Rural nonfarm..	24,323	13,030	11,293
Rural farm.....	10,752	6,594	4,158

The aged population has increased much more rapidly than the general population. From 1900 to 1950, the group aged 65 and older multiplied nearly 8-1/2 times while the general population multiplied only 2-1/2 times.

The aged female population has increased more than the aged male population. From 1900 to 1950, the female group 65 and older multiplied 10 times; the male group 65 and older, only 7 times.

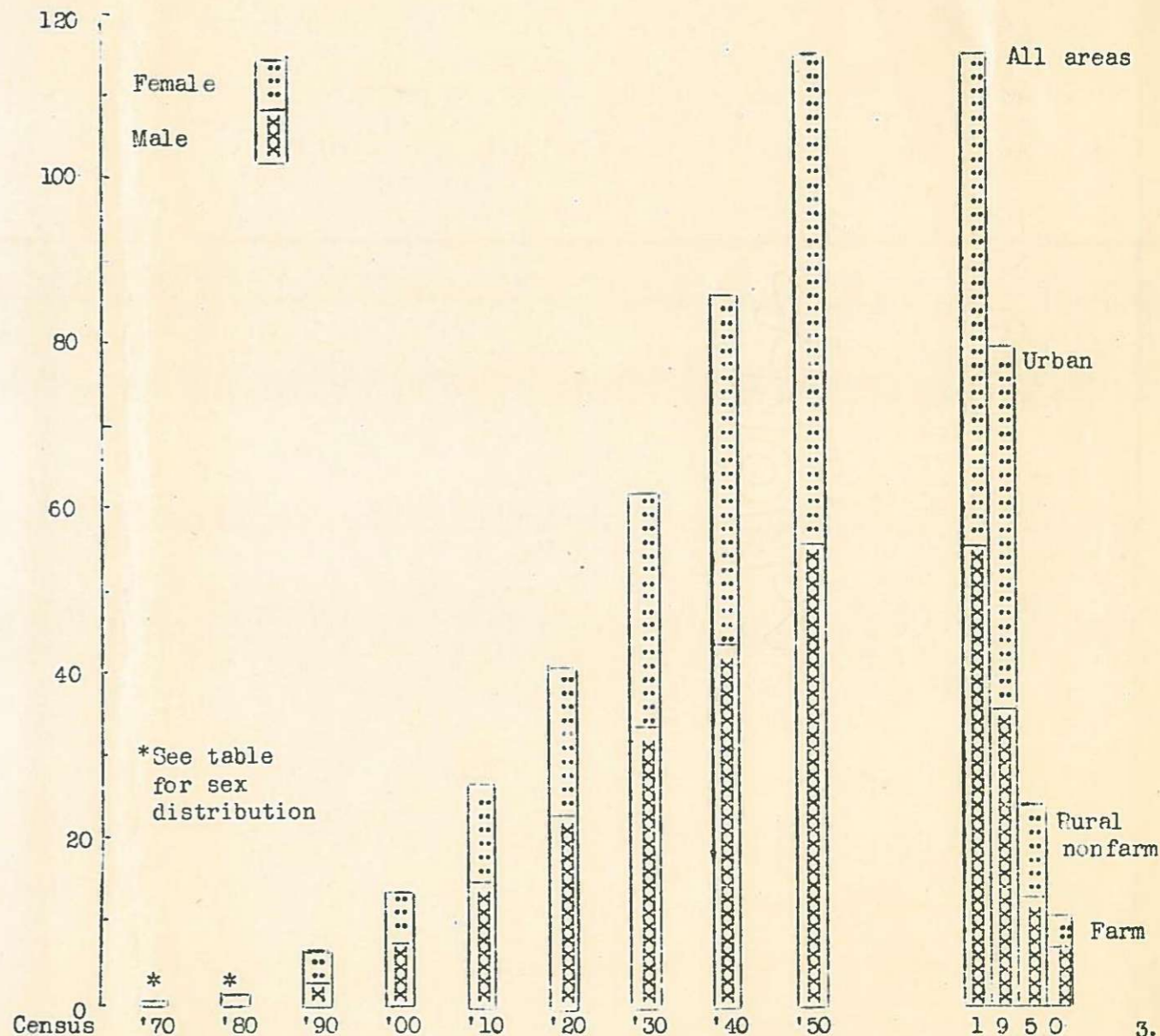
A larger proportion of the aged females than of the aged males live in urban places, according to the 1950 census:

Residence, 1950	Both	Male	Female
All areas.....	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>
Urban.....	69.7	64.7	74.3
Rural nonfarm.....	21.0	23.4	18.8
Rural farm.....	9.3	11.9	6.9

*U.S. Bureau of the Census reports.

POPULATION AGED 65 AND OLDER, COLORADO, CENSUSES 1870 - 1950

Thousands

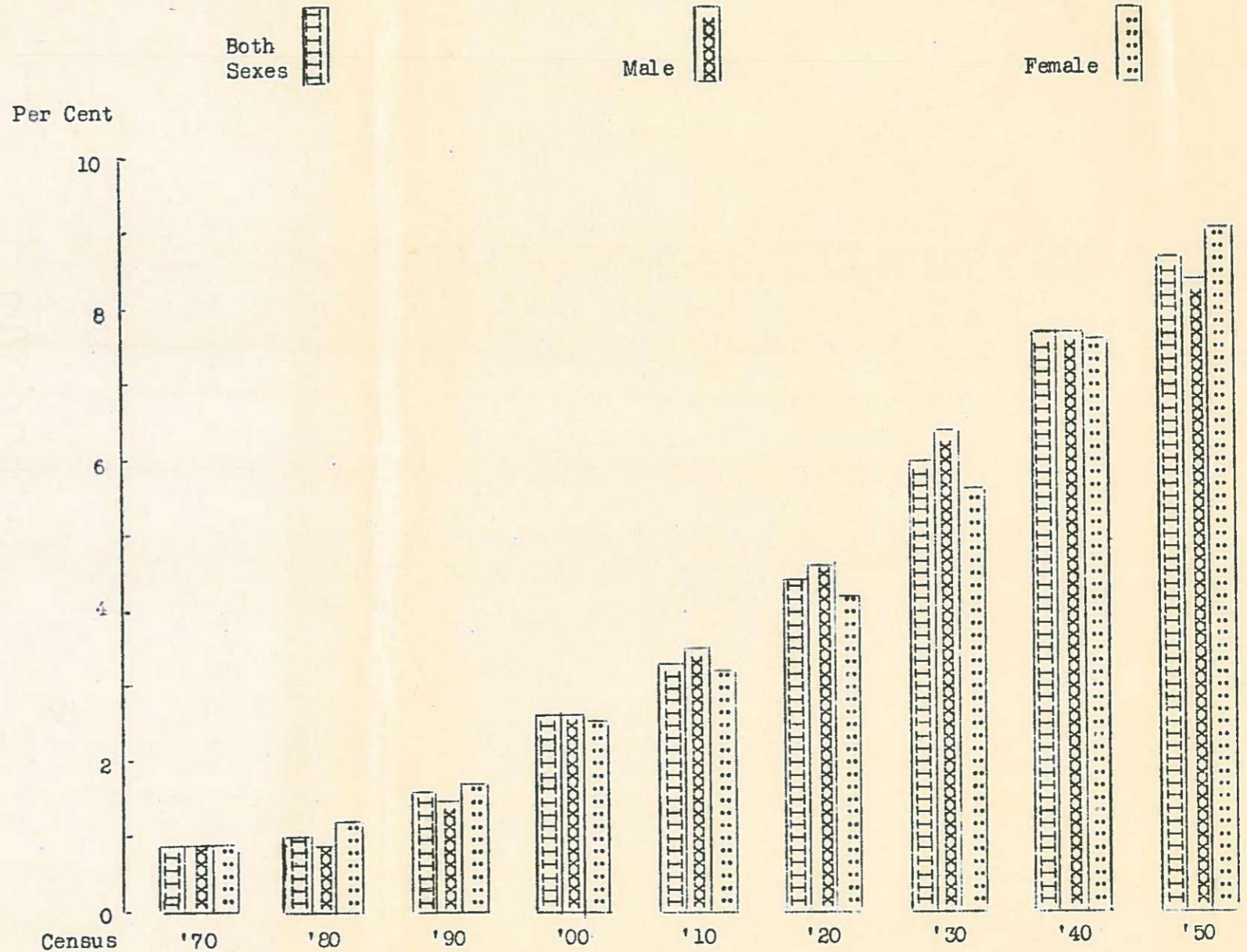


*See table for sex distribution

C. INCREASING PROPORTION OF THE POPULATION
IN THE AGED GROUP IN COLORADO *

PER CENT OF THE TOTAL POPULATION AGED 65 AND OLDER, COLORADO, CENSUSES 1870 - 1950

Sex and Census	% Aged 65 and Older
<u>Both:</u>	
1870.....	0.9
1880.....	1.0
1890.....	1.6
1900.....	2.6
1910.....	3.3
1920.....	4.4
1930.....	6.0
1940.....	7.7
1950.....	8.7
<u>Male:</u>	
1870.....	0.9
1880.....	0.9
1890.....	1.5
1900.....	2.6
1910.....	3.5
1920.....	4.6
1930.....	6.4
1940.....	7.7
1950.....	8.4
<u>Female:</u>	
1870.....	0.9
1880.....	1.2
1890.....	1.7
1900.....	2.5
1910.....	3.2
1920.....	4.2
1930.....	5.6
1940.....	7.6
1950.....	9.1



*U. S. Bureau of the Census reports.

D. TOTAL POPULATION AND PER CENT AGED 65 AND OLDER, COLORADO BY COUNTY, 1950 *
(Including armed forces stationed in the state.)

County	Population of All Ages	% Aged 65 and Older	County	Population of All Ages	% Aged 65 and Older
State.....	<u>1,325,089</u>	<u>8.7</u>			
Adams.....	40,234	4.6	Lake.....	6,150	5.7
Alamosa.....	10,531	5.6	La Plata.....	14,880	8.2
Arapahoe.....	52,125	6.1	Larimer.....	43,554	10.4
Archuleta.....	3,030	6.2	Las Animas.....	25,902	8.6
Baca.....	7,964	5.7	Lincoln.....	5,909	9.1
Bent.....	8,775	7.6	Logan.....	17,187	8.5
Boulder.....	48,296	10.1	Mesa.....	38,974	9.3
Chaffee.....	7,168	11.3	Mineral.....	698	8.6
Cheyenne.....	3,453	7.2	Moffat.....	5,946	6.8
Clear Creek.....	3,289	9.8	Montezuma.....	9,991	7.7
Conejos.....	10,171	5.3	Montrose.....	15,220	8.5
Costilla.....	6,067	5.0	Morgan.....	18,074	8.7
Crowley.....	5,222	8.2	Otero.....	25,275	9.0
Custer.....	1,573	10.9	Ouray.....	2,103	9.4
Delta.....	17,365	10.4	Park.....	1,870	9.4
Denver.....	415,786	9.4	Phillips.....	4,924	10.1
Dolores.....	1,966	5.1	Pitkin.....	1,646	9.1
Douglas.....	3,507	9.2	Prowers.....	14,836	7.7
Eagle.....	4,488	5.9	Pueblo.....	90,188	9.3
Elbert.....	4,477	8.2	Rio Blanco.....	4,719	5.1
El Paso.....	74,523	10.9	Rio Grande.....	12,832	6.4
Fremont.....	18,366	13.9	Routt.....	8,940	6.8
Garfield.....	11,625	9.1	Saguache.....	5,664	6.3
Gilpin.....	850	13.2	San Juan.....	1,471	6.9
Grand.....	3,963	5.2	San Miguel.....	2,693	6.2
Gunnison.....	5,716	6.0	Sedgwick.....	5,095	7.7
Hinsdale.....	263	11.0	Summit.....	1,135	7.5
Huerfano.....	10,549	9.4	Teller.....	2,754	11.5
Jackson.....	1,976	5.3	Washington.....	7,520	7.8
Jefferson.....	55,687	6.3	Weld.....	67,504	8.0
Kiowa.....	3,003	6.9	Yuma.....	10,827	9.3
Kit Carson.....	8,600	7.5			

E. POPULATION 65 AND OLDER, BY AGE
COLORADO, 1950 *

Sex and Age	Number	%
<u>Both:</u>		
Total 65 & older.....	<u>115,591</u>	<u>100.0</u>
65 - 69.....	44,836	38.8
70 - 74.....	32,182	27.8
75 - 84.....	32,565	28.2
85 and older..	6,008	5.2
<u>Male:</u>		
Total 65 & older.....	<u>55,630</u>	<u>100.0</u>
65 - 69.....	22,067	39.7
70 - 74.....	15,685	28.2
75 - 84.....	15,208	27.3
85 & older...	2,670	4.8
<u>Female:</u>		
Total 65 & older.....	<u>59,961</u>	<u>100.0</u>
65 - 69.....	22,769	38.0
70 - 74.....	16,497	27.5
75 - 84.....	17,357	28.9
85 & older...	3,338	5.6

*U. S. Bureau of the Census report.

*U. S. Bureau of the Census report.

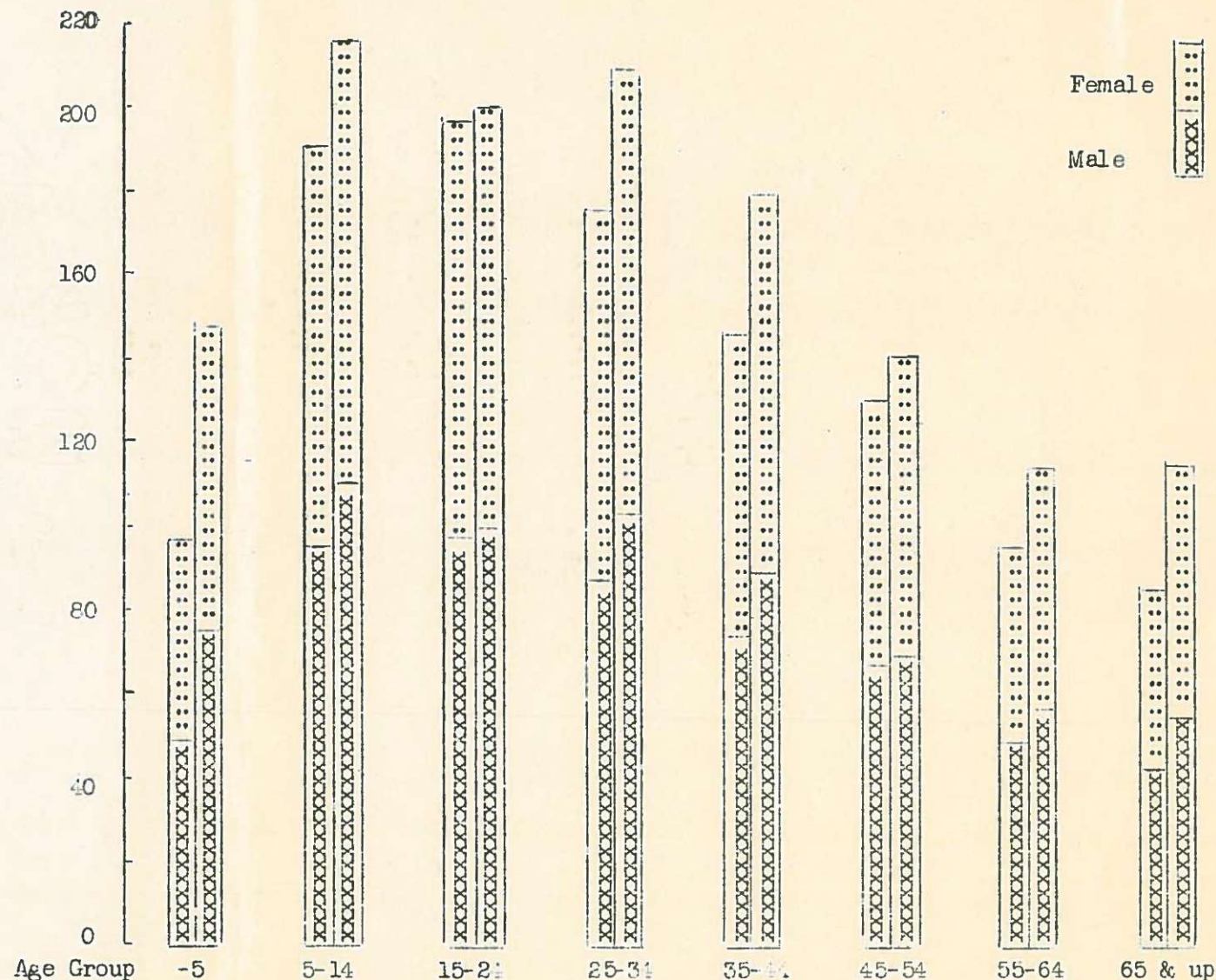
F. NUMERICAL INCREASE IN EACH AGE GROUP OF THE COLORADO POPULATION, 1940-1950 *

POPULATION, BY AGE GROUP, COLORADO, CENSUSES 1940 and 1950

1940 - Left bar of each age-group pair. 1950 - Right bar of each age-group pair.

Sex and Age	1940	1950
<u>Both:</u>		
All ages.....	1,123,296	1,325,089
Under 5.....	96,660	148,247
5 - 14.....	191,323	215,791
15 - 24.....	197,377	199,188
25 - 34.....	176,449	209,277
35 - 44.....	147,616	180,158
45 - 54.....	131,468	141,765
55 - 64.....	95,965	115,072
65 and older.....	86,438	115,591
<u>Male:</u>		
All ages.....	568,778	665,149
Under 5.....	49,099	75,348
5 - 14.....	96,510	110,114
15 - 24.....	98,125	100,359
25 - 34.....	98,102	104,259
35 - 44.....	74,494	90,009
45 - 54.....	68,217	71,243
55 - 64.....	50,037	58,187
65 and older.....	44,194	55,630
<u>Female:</u>		
All ages.....	554,518	659,940
Under 5.....	47,561	72,899
5 - 14.....	94,813	105,677
15 - 24.....	99,252	98,829
25 - 34.....	88,347	105,018
35 - 44.....	73,122	90,149
45 - 54.....	63,251	70,522
55 - 64.....	45,928	56,885
65 and older.....	42,244	59,961

Thousands

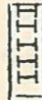




*U.S. Bureau of the Census reports.

G. PERCENTAGE INCREASE IN EACH AGE GROUP
OF THE COLORADO POPULATION, 1940-1950 *

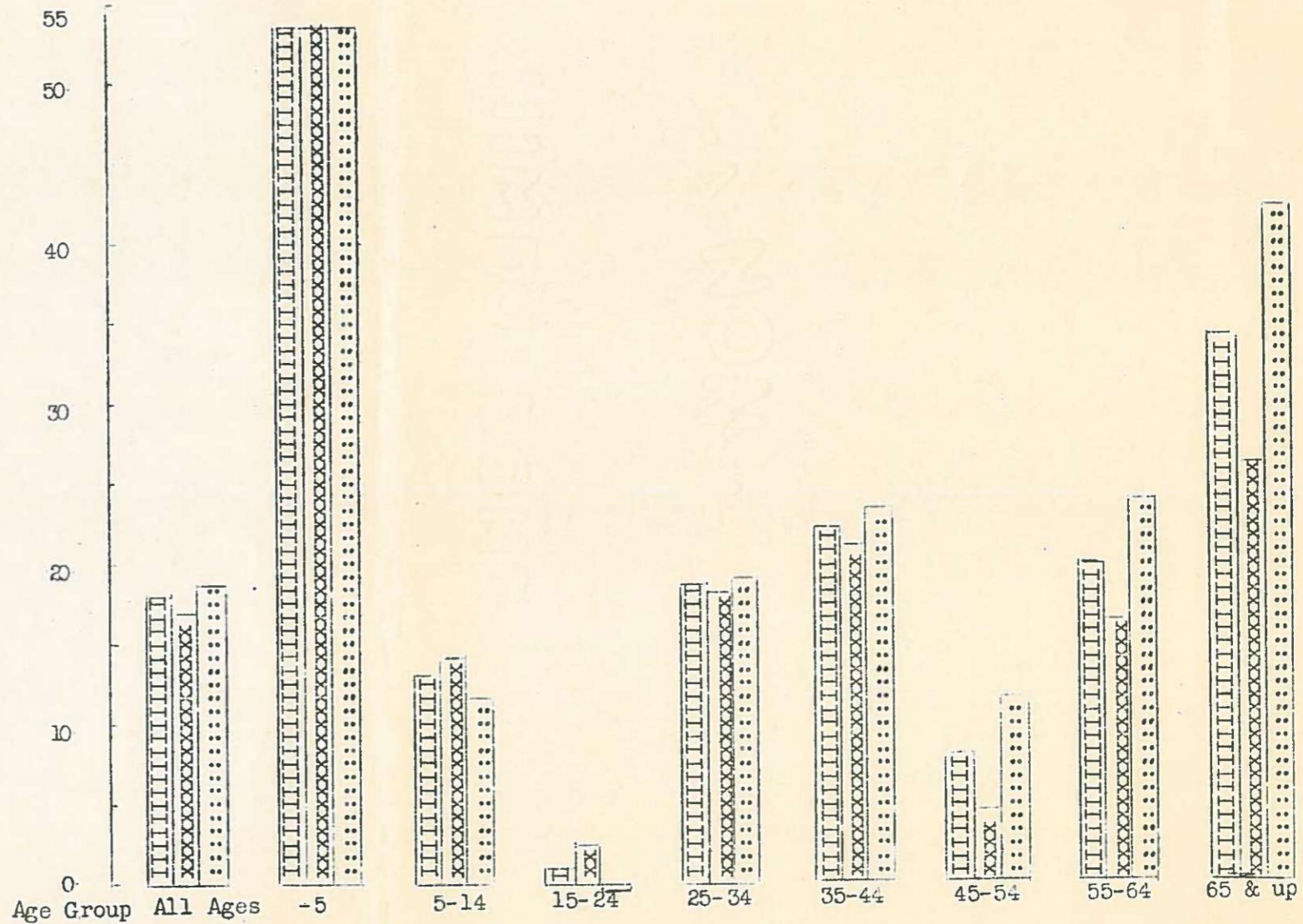
PERCENTAGE INCREASE IN EACH AGE GROUP, COLORADO, 1940 CENSUS TO 1950 CENSUS

Sex and Age	% Change 1940-1950
-------------	-----------------------

Both Sexes  Male  Female 

Both:	
All ages.....	18.0
Under 5.....	53.4
5 - 14.....	12.8
15 - 24.....	0.9
25 - 34.....	18.6
35 - 44.....	22.0
45 - 54.....	7.8
55 - 64.....	19.9
65 and older.....	33.7
Male:	
All ages.....	16.9
Under 5.....	53.5
5 - 14.....	14.1
15 - 24.....	2.3
25 - 34.....	18.3
35 - 44.....	20.8
45 - 54.....	4.4
55 - 64.....	16.3
65 and older.....	25.9
Female:	
All ages.....	19.0
Under 5.....	53.3
5 - 14.....	11.5
15 - 24.....	-0.4
25 - 34.....	18.9
35 - 44.....	23.3
45 - 54.....	11.5
55 - 64.....	23.9
65 and older.....	41.9

Per Cent



*U. S. Bureau of the Census reports.

H. AVERAGE LIFE EXPECTANCY AT SUCCESSIVE AGES
IN COLORADO

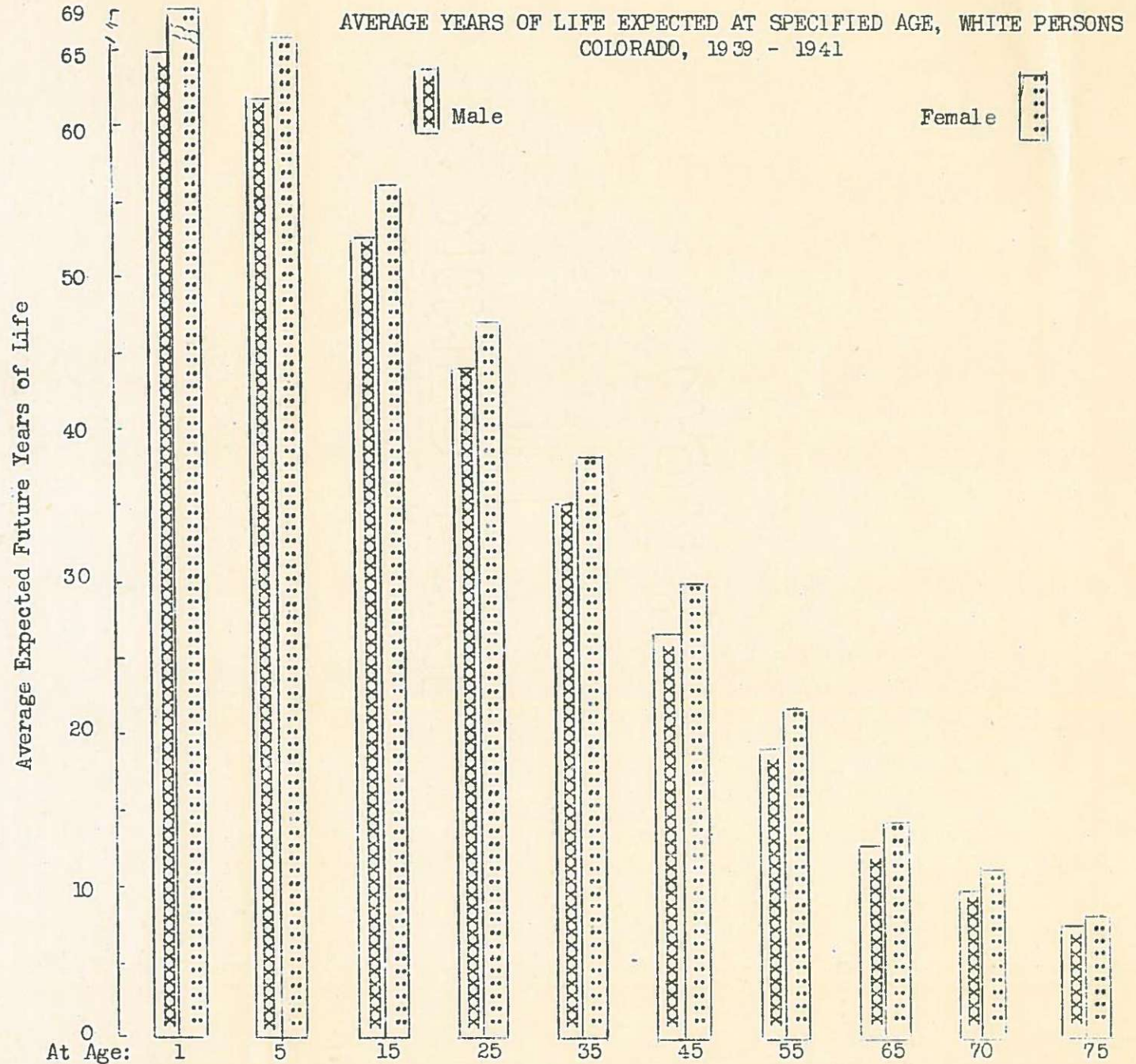
Average Years of Life Expected, For White Persons
In Colorado, 1939-1941 *

At Age:	For:	Males	Females
1 year.....		64.7	68.6
5 years.....		61.6	65.5
15 years.....		52.5	56.2
25 years.....		43.8	47.2
35 years.....		35.0	38.3
45 years.....		26.6	29.7
55 years.....		19.0	21.6
65 years.....		12.5	14.2
70 years.....		9.7	10.9
75 years.....		7.4	8.2

Although similar life table statistics for Colorado are not yet available for 1950, two conclusions may be drawn from the mortality statistics for the period 1940-1950: (1) Life expectancy has increased, as the general death rates have decreased for both sexes; (2) a differential between the longevity of males and females remains, as the death rates have continued higher for males than for females.

Vital Measure	Males	Females	Males Per Female
Population) 1940..	568,778	554,518	1.03
) 1950..	665,149	659,940	1.01
Deaths of) 1940..	7,046	5,135	1.37
Colo.Res.) 1950..	6,994	5,228	1.34
Deaths per) 1940..	12.39	9.26	-
100,000) 1950..	10.51	7.92	-
% Decrease.....	-15.17%	-14.47%	-

*State and Regional Life Tables, 1939-41, National Office of Vital Statistics, 1948.



I. LEADING CHRONIC DISEASE CAUSES OF DEATH, BY BROAD AGE GROUP
 COLORADO, 1950

The chronic diseases are today's leading mortality and illness problem. Sixty-three per cent of the total deaths occurring among Colorado residents in 1950 were attributable to two of the broad groupings of chronic diseases - the cardiovascular-renal group (diseases of the heart, other circulatory system, and the kidneys) and cancer. Although more characteristic of the older ages, these diseases bring illness and death to younger adults in considerable proportions; and also occur, with fatalities, in children.

Age	Sole or Principal Cause of Death Colorado Residents, Both Sexes, 1950			
	All Causes	Heart Disease ^x	Other Cardio-vas.-renal ^{xx}	Cancer ^{xxx}
All ages....	12,218	4,186	1,771	1,700
Under 5.....	1,337	-	3	16
5 - 14.....	145	14	6	17
15 - 24.....	254	15	15	19
25 - 44.....	888	152	55	125
45 - 64.....	2,823	1,000	303	622
65 and older...	6,771	3,005	1,389	901

Per Cent of Total Causes				
All ages....	100.0	34.3	14.5	13.9
Under 5.....	100.0	-	0.2	1.2
5 - 14.....	100.0	9.7	4.1	11.7
15 - 24.....	100.0	5.9	5.9	7.5
25 - 44.....	100.0	17.1	6.2	14.1
45 - 64.....	100.0	35.4	10.7	22.0
65 and older...	100.0	44.4	20.5	13.3

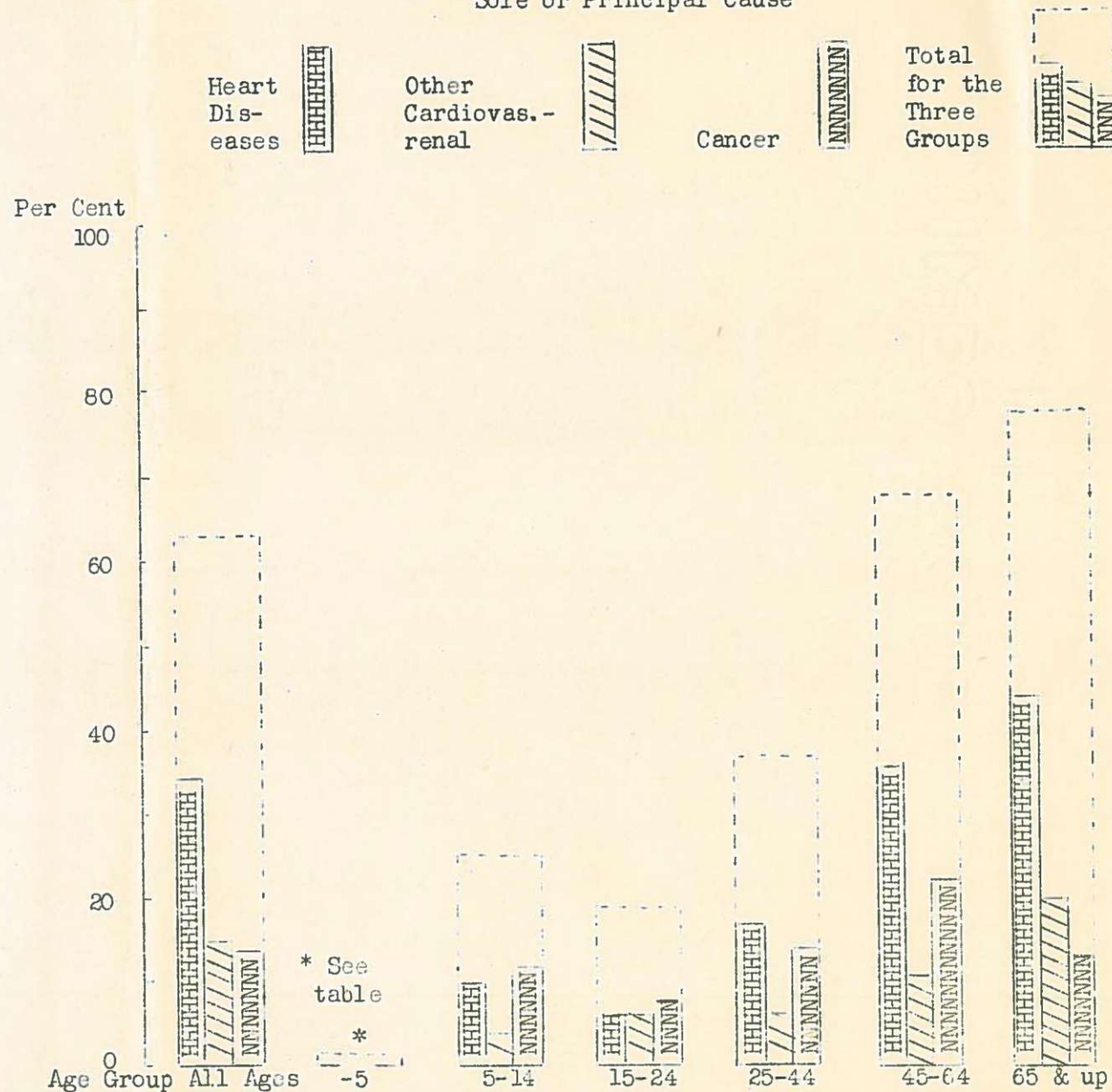
^xDeaths from rheumatic fever included.

^{xx}Diseases of the circulatory system, other than the heart, and of the kidneys.

^{xxx}Includes leukemias and Hodgkin's disease.

*Colorado State Department of Public Health reports.

PER CENT OF DEATHS DUE TO CARDIOVASCULAR-RENAL DISEASES AND CANCER
 COLORADO RESIDENTS, BOTH SEXES, 1950
 Sole or Principal Cause



J. SIGNIFICANCE OF THE POPULATION AND MORTALITY TRENDS

The problems of an increasing and aging population which are implied by the population and mortality statistics for Colorado are similar to those facing the United States. Therefore, the following quotations from national studies have been selected as summaries of the trends and their significance.

Population Changes

"Our population has been undergoing a marked change in its age composition. At each census up through 1940 we found a smaller proportion of children and an increasing proportion of the aged. In one respect this long-term trend has undergone an important reversal during the past decade. The census of 1950 will show that the number and proportion of our children have markedly increased. * * *

"At the other end of the scale we have the increased proportion of the aged. Here we find an accentuation of the long-time trend. * * *

"We have also experienced rather recently an important change in the distribution of the sexes. * * * This is hardly surprising in view of certain recent trends. In the first place the longevity of women has been improving at a faster rate than that of men. In addition, within the last two decades we have had a sharp reduction in immigration which, over many years, brought us more men than women. Lastly, there is the effect of World War II * * *. When we look into the details, however, we find that the present excess of women over men is concentrated, for the most part, at the higher ages * * *."

(Dublin, Louis I., Ph. D., The American Population Profile, Metropolitan Life Insurance Company, 1950.)

Sex Differences in Mortality

"Males have a higher death rate than females at every age of life, but the difference varies markedly from one age to another. * * *

"At present, the advantage enjoyed by females is greatest in the late teens and early 20's, when the mortality of men is almost 90 per cent higher than that of women. Another peak occurs in the early 50's, at which ages the excess of male mortality is about 75 to 80 per cent. The least differences in mortality are found in early childhood and at the later ages of life.

"The present situation is in marked contrast with that of a half century ago, when the disparity in the death rate between the sexes was considerably less. Then, the greatest excess of male over female mortality occurred in the first year of life, but it amounted to only 21 per cent. Indeed, at many ages the death rates for the sexes were about the same; at ages 15 and 16 the rate for males actually fell below that for females.

"Both sexes have experienced a marked reduction in mortality since the turn of the century, but the improvement has been greater for females than for males. * * *"

(Metropolitan Life Insurance Company, "Sex Difference in Mortality," Statistical Bulletin, Vol.31, No.9, Sept., 1950.)

Future Longevity Goals and Leading Causes of Death

"The expectation of life at birth in the United States has increased about 19 years since 1900. This major achievement in life conservation has resulted largely from the marked reduction in the mortality from the infectious diseases - heretofore the major targets of the medical sciences and the public health movement generally. The objectives of future efforts to increase longevity are clearly indicated by the number of years that could be added to life by the elimination of various causes of death. * * *

"By far the greatest increase in the expectation of life at birth would be attained through the elimination of the cardiovascular-renal diseases * * *. It is, of course, unrealistic to talk of wiping out the cardiovascular-renal diseases; yet it should be remembered that they account for

more than 200,000 deaths a year among white persons under age 65. If most of these deaths could be postponed until later years, the expectation of life would still be increased appreciably.

"The years of life sacrificed to cancer are second only to the toll exacted by the cardiovascular-renal diseases. The elimination of cancer as a cause of death would add 1.8 years to the expectation of life of white males and 2.5 years to that of white females. The figures vary little from birth to age 50, indicating that the increase in longevity would be achieved for the most part through the saving of people who are past midlife. * * *

"Future gains in longevity will be contributed by reductions in mortality from each of the conditions considered here, as well as from many others. The infectious diseases are by no means completely vanquished; their complete control - not a remote possibility - will add appreciably to our length of life. However, the greatest opportunities for further gains now lie in a better understanding of the chronic diseases, and it is in this direction that our medical investigators are devoting more and more attention."

(Metropolitan Life Insurance Company, "Future Goals in Longevity," Statistical Bulletin, Vol. 32, No. 3, March 1951.)

Excessive Mortality Among Our Elders

"The United States has one of the best mortality records in the world. Since the turn of the century the death rate in our country has been cut nearly in half and 20 years have been added to the average length of life. This remarkable achievement has come about mainly through the control of infectious diseases and consequent saving of large numbers of lives at the younger ages. As a result, our death rates in youth and early maturity compare very favorably with those of other countries. At the older ages, however, we lag behind other advanced nations. * * *

"The excessive mortality among our older people arises in large measure out of the relatively high death rates from several of the leading causes of death. Our accident record is particularly bad. * * *

"Far more important, however, is the effect of the high mortality from the cardiovascular-renal diseases, which accounts for three-fifths of all deaths after age 45 in our country. The situation is serious among older men in the United States * * *. Our older women, however, have average death rates from the cardiovascular-renal diseases.

"Still another factor in the high mortality of our elders is diabetes. In fact, this disease is the one leading cause of death for which women over 45 in the United States show exceptionally high rates. * * *

"With respect to other leading causes of death, the United States has average or below-average mortality at the older ages. Our mortality from tuberculosis, pneumonia and influenza, and other important infectious diseases is very favorable at the older ages as well as earlier in life. Cancer records average death rates above age 45.

"The main causes of death that account for our high mortality in old age, then, are accidents in both sexes, the cardiovascular-renal diseases among men, and diabetes among women. Were it not for the excessive mortality from these causes, the United States would rank very favorably among the countries of the world with respect to mortality at the older ages as well as in youth and midlife."

(Metropolitan Life Insurance Company, "Mortality Among Our Elders Too High," Statistical Bulletin, Vol. 32, No. 10, October 1951, based upon a paper by Louis I. Dublin, Ph. D. at the 79th Annual Meeting of the American Public Health Association, 1950.

PART II - CHRONIC ILLNESS STUDIES NEEDED IN COLORADO

Notes and estimates regarding:	Page
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D. Cancer illness among residents of the Denver Metropolitan Area, 1947....	14

A. NEED FOR COMPREHENSIVE STUDIES ON AGING, CHRONIC ILLNESS AND MEDICAL CARE IN COLORADO

If sound planning to meet the complex problems of aging and chronic illness in Colorado is to be accomplished, further coordination of existing information and additional detailed studies are needed.

In this regard, it has been recommended that a single, official state body be established: (1) To devote continuous study to the total problem of the treatment, prevention, and care of aging and infirmity, chronic illness, and mental illness in the state; (2) to evaluate and integrate the findings and recommendations of previous commissions and study groups; (3) to gather, evaluate and utilize information from other sources pertinent to the over-all problem; (4) to explore the possibility and feasibility of developing a demonstration program in a given area; and (5) to present specific recommendations to the General Assembly after adequate study.*

Many useful studies and analyses are lacking on illness and disability in Colorado according to important factors such as: age and sex; specific diseases; racial or nationality groups; economic status; medical care needs and receipt; and medical costs. Selected facts from several of the existing studies are presented in this section.

As reliable comprehensive surveys are costly in time and money, the more feasible first step often is to estimate the size and variations of a state's illness problems by applying to the state population statistics, according to categories, the rates and differentials found in national surveys and representative special studies elsewhere. For example, National Health Survey rates have been used in estimating the number of chronically ill in Colorado.** Such estimates are presented in Section B. In the Appendix, rates and percentages relating to a variety of factors in chronic illness are presented from several recent national surveys and special studies. These norms might be applied to Colorado population statistics.

*Colorado State Department of Public Health, statement at hearing of the Legislative Interim Committee on Care of the Needy Aged, May 1952.

**See: Colorado Commission on Chronic Illness and Rehabilitation, Report on Chronic Illness in Colorado, January 1951.

B. ESTIMATED POPULATION WITH CHRONIC DISEASE, BY BROAD AGE GROUP COLORADO, 1950

Approximately the following proportions of the national population have a chronic disease condition - according to findings in the National Health Survey of some years ago and corroborative facts from other studies.*

Of those under 15 years.....	5%
Of those 15 - 44 years.....	15%
Of those 45 - 64 years.....	30%
Of those 65 and older.....	50%

The estimated numbers of persons with chronic disease in Colorado, obtained by applying the above percentages to the final 1950 census statistics, follow:

Total, among all ages.....	240,000
Among those under 15 years.....	19,000
Among those 15 - 44 years.....	^x 86,000
Among those 45 - 64 years.....	77,000
Among those 65 and older.....	58,000

^xSomewhat reduced from 15% to allow for the good health of the armed forces, in the state, in this age group.

As to degree of disability, it is further estimated, from data in national studies, that the approximately 240 Coloradans with chronic disease are distributed as follows:

Total with chronic disease.....	100% or 240,000
Invalids (persons disabled one year or longer).....	6% or 15,000
Persons appreciably disabled.....	29% or 70,000
Persons with less handicapping symptoms or impairments which eventually will add to the chronically disabled.....	65% or 155,000

*The National Health Survey of 1935-1936 by the U. S. Public Health Service, and a survey of disabling illness prevalence in February 1949 made in connection with the Current Population Survey, U. S. Public Health Service; and monthly canvasses of illness in Baltimore, 1938-1943, U. S. Public Health Service.

C. PERCENTAGE DISTRIBUTION OF CAUSES OF IMPAIRMENT, BY MAJOR DIAGNOSIS, ACTIVE CASE LOAD, AID TO THE NEEDY DISABLED COLORADO, JUNE 1951 (2,153 PERSONS) *

June 1951 was the fifth month of the Aid to the Needy Disabled program in Colorado. Social facts and data from medical reports were analyzed, on the basis of the active case load June 1, by the State Department of Public Welfare. The average age of the recipients was 58 years; 29 per cent were between 60 and 70, and 16 per cent were 70 and older.**

<u>Major Diagnosis</u>	<u>Per Cent</u>
All diagnoses.....	<u>100.0</u>
Cardiovascular disease - heart disease, cerebral hemorrhage, arteriosclerosis.....	34.9
Conditions of bones and joints, inc. arthritis and loss of limbs.....	18.0
Nervous and mental disease.....	<u>14.8</u>
Organic.....	9.5
Psychopathic and neurotic.....	2.7
Epilepsy.....	2.6
Paralysis, exc. poliomyelitis and residuals.....	6.3
Chronic respiratory disease, exc. tuberculosis.....	3.8
Tuberculosis, all forms.....	3.3
Syphilis and residuals.....	3.0
Gastro-intestinal, digestive, endocrine, metabolic, and nutritional diseases.....	2.9
Loss or impairment of special sense organs.....	2.8
Cancer.....	2.0
Poliomyelitis and residuals.....	1.7
All other.....	6.5

*Modification of an unpublished table provided by the State Department of Public Welfare with a letter of August 4, 1952.

**Colorado State Department of Public Welfare, "Aid to the Needy Disabled in Colorado, June 1951," Public Welfare Statistics in Colorado, Vol. 9, No. 1, November 1951; includes also a table on causes of disability grouped according to body system.

D. CANCER ILLNESS AMONG RESIDENTS OF THE DENVER METROPOLITAN AREA IN 1947, UNITED STATES PUBLIC HEALTH SERVICE CANCER MORBIDITY SURVEY *

The Denver survey was made by the United States Public Health Service with the cooperation of the State Department of Public Health and the Denver County Medical Society, Hospital Council, and Health Department. Reports on all residents of the Denver Metropolitan Area (Denver, Adams, Arapahoe, and Jefferson Counties) who were diagnosed, treated, or seen for a check-up for any malignant neoplasm during the calendar year 1947 were requested from all physicians, hospitals, and clinics in the area.

Sex and age differences in the cancer illness rates were analyzed, and were summarized as follows:

The female incidence rate (392 cases newly diagnosed in 1947 per 100,000 female population) was 5 per cent higher than the male rate (372 cases newly diagnosed in 1947 per 100,000 male population). The female prevalence rate (577 cases diagnosed or treated in 1947, regardless of year of diagnosis, per 100,000 female population) was 18 per cent higher than that of males (474 such cases per 100,000 male population).

The median age of newly diagnosed cancer cases was 64 for males and 60 for females. Almost one-half of all newly diagnosed cases among males were in the age group 65 and over, compared to the female group with less than two-fifths of the newly diagnosed cases in this age category.

The lower median age for female cancer cases was attributed to the relatively large number of malignancies developing in the genital organs and breast among females. Cancers of these sites develop at younger ages than the predominant forms of cancer among males.

*Marcus, Samuel C., Cancer Illness Among Residents of Denver, Colorado, 1947, Cancer Morbidity Series, 4, 1951, U. S. Public Health Service.

PART III - COSTS OF LIVING AND MEDICAL CARE
IN RELATION TO INCOME

Facts and comments regarding:	Page
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B. An elderly couple's living costs, Denver, 1950, and related economic statistics.....	16
C. Money income of families and aged persons, Colorado, 1950.....	17

A. COSTS OF LIVING AND MEDICAL CARE FOR A CITY WORKER'S FAMILY OF FOUR PERSONS, DENVER, 1950-1951

The Denver costs shown below are as estimated by the United States Bureau of Labor Statistics from pricings of the items in an annual quantity budget designed for a modest but adequate level of living for an employed urban worker, his wife, and two children under 15 years old.*

<u>Pricing Month</u>	<u>Annual Budget</u>	<u>Medical Care</u>	<u>Other Serv. Goods, Rents</u>	<u>Other Costs and Taxes</u>
October 1950...	\$3,739	\$185 ^x	\$3,230	\$324
October 1951...	4,199	210 ^x	3,538	451

^xEstimated, from earlier pricings, as 5 per cent of total budget.

The medical care items provide for: average annual amounts of medical, dental, and hospital services; medical supplies; and eye glasses. Hospital services include family membership in a group hospitalization insurance plan.

The "other costs and taxes" include: personal taxes, Social Security deductions, life insurance, allowances for occupational expense.

B. COSTS OF LIVING AND MEDICAL CARE FOR AN ELDERLY COUPLE DENVER, 1950, AND RELATED ECONOMIC STATISTICS

The Denver costs presented next are as estimated by the United States Bureau of Labor Statistics from pricings of the items in an annual quantity budget for an elderly couple of about 65.** The budget was designed to provide the goods and services necessary to maintain

*Knapp, Eunice M., "Family Budget of City Worker, October, 1950," Monthly Labor Review, Vol. 72, No. 2, February 1951, giving data at June 1947, October 1949, and October 1950 price levels; and "City Worker's Family Budget for October 1951," Monthly Labor Review, Vol. 74, No. 5, May 1952.

**Knapp, Eunice M., and Cooperman, Mary T., "Budget for An Elderly Couple, Estimated Cost, October 1950," Monthly Labor Review, Vol. 73, No. 3, September 1951.

health and allow normal participation in community life by a husband and wife living in their own two- or three-room rented dwelling and able to get about and take care of themselves. No details as to medical care were given in the report cited.

The "budget couple" is said to be typical of many receiving old age retirement insurance benefits and of many potentially eligible for or actually receiving Old Age Assistance.

<u>Pricing Month</u>	<u>Annual Budget</u>	<u>Housing</u>	<u>Other</u>
October 1950.....	\$1,746	\$577	\$1,169

A survey of medical care expenditures of beneficiaries of Old Age and Survivors Insurance in three eastern cities, 1946-1949, showed:***

Median annual medical care expenditures of beneficiary couples aged 65 and older..... \$ 89
 Mean annual medical care expenditures of such couples..... 160

As of February 1951, 22,062 persons 65 and older in Colorado were receiving Old Age and Survivors Insurance benefits and 47,743 were recipients of Old Age Assistance. According to a national study in September 1950, more than 10 per cent of the aged Old Age and Survivors Insurance beneficiaries receive supplemental Old Age Assistance, and are included on both rolls. As of December 1951, the Old Age Assistance recipients in Colorado totaled 52,750.****

Illness or disability of the recipient is the reason for opening about 50 per cent of new Old Age Assistance cases, according to a national study, 1947-1949.

***"Medical Care Expenditures of Beneficiaries in Three Cities," Social Security Bulletin, Vol. 14, No. 11, November 1951.

****For this paragraph, the sources are: "Aged CASI Beneficiaries Outnumber OAA Recipients," Social Security Bulletin, Vol. 14, No. 8, August 1951; and Public Welfare Statistics in Colorado, Vol. 8, No. 7, December 1950, the annual report of the Colorado State Department of Public Welfare. "Reasons for Opening Cases for Public Assistance, 1947-1949," Social Security Bulletin, Vol. 13, No. 7, July 1950.

C. MONEY INCOME OF FAMILIES AND AGED PERSONS, COLORADO, 1950

Facts on money income of individuals and families are of especial interest, for this compilation, in relation to the estimated costs of adequate but modest budgets for a city worker's family of four and for an elderly couple - about \$3,740 and \$1,745, respectively, in Denver, at October 1950 price levels.

The term "money income" as used in this section implies: Money received (less losses) from all sources including public assistance and contributions for support from others. Colorado data from the 1950 census follow: *

Area	<u>FAMILIES AND UNRELATED PERSONS, COLO., 1950^x</u>	
	<u>Median Money Income</u>	<u>% with Money Income Under \$2,000</u>
State.....	<u>\$2,514</u>	<u>39.8</u>
Denver.....	2,877	34.1
Total urban.....	2,704	37.1
Rural nonfarm.....	2,206	45.2
Rural farm.....	2,182	45.8

^xIndividuals not living with any relatives were classified according to their own income; for family groups, the combined incomes of all members were treated as a single amount.

The money income data for the United States shown next were applied to the Colorado population statistics for 1950 in making our numerical estimates regarding aged individuals in Colorado (see opposite). The source report for the percentages for the United States also includes facts on money incomes of families according to age of the head.** Of families with heads aged 65 and older, 51.6 per cent had money incomes under \$2,000.

*Census of the Population: 1950, General Characteristics, Colorado, Series P-B86, U. S. Bureau of the Census.

**"Income of Families and Persons in the United States 1950," Current Population Reports, Consumer Income, Series P-60, No. 9.

UNITED STATES, 1950 - PER CENT

Money Income	<u>Per Cent of Persons 65 and Older</u>	
	<u>Male</u>	<u>Female</u>
Total.....	<u>100.0</u>	<u>100.0</u>
With no money income.....	10.1	46.1
With money income.....	89.9	53.9

Per Cent of Persons 65 and Older With Money Income

	<u>Male</u>	<u>Female</u>
	Total with money income	<u>100.0</u>
Under \$500.....	25.8	47.9
\$500 - 999.....	24.9	34.5
1,000 - 1,499.....	12.3	8.0
1,500 - 1,999.....	8.0	3.1
2,000 and over.....	29.0	6.5

COLORADO, 1950 - ESTIMATED NUMBERS

	<u>Number of Persons 65 and Older</u>	
	<u>Male</u>	<u>Female</u>
Total.....	<u>55,630</u>	<u>59,960</u>
With no money income.....	5,620	27,640
With money income.....	50,010	32,320

Number of Persons 65 and Older With Money Income

	<u>Male</u>	<u>Female</u>
	Total with money income	<u>50,010</u>
Under \$500.....	12,900	15,480
\$500 - 999.....	12,450	11,150
1,000 - 1,499.....	6,150	2,590
1,500 - 1,999.....	4,000	1,000
2,000 and over.....	14,510	2,100

APPENDIX - SELECTED DETAILED STATISTICS ON CHRONIC ILLNESS FROM NATIONAL STUDIES

Notes and statistics from studies on:	Page
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B. Prevalence of arthritis and rheumatism, civilian noninstitutional population, 14-64, September 1951.....	20
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D. Disabling illness from chronic diseases in a sample of families canvassed monthly, Baltimore, 1938-1943, by national and local research agencies.....	22-23

A. CHRONIC DISABILITY, CIVILIAN NONINSTITUTIONAL POPULATION, 14-64 UNITED STATES, SAMPLE STUDY, CURRENT POPULATION SURVEY, FEB. 1949

The averages and percentages shown in this section are selected findings from a sample study by the United States Public Health Service made with the Bureau of the Census to determine the prevalence, on day of interview, and the prior duration of disabling illnesses, injuries and impairments preventing civilians aged 14 through 64 years, not in institutions, from pursuing their usual activities.*

The measure of chronicity and severity of disability afforded by the study was the duration of disability prior to the interview. In general, the persons classified as disabled included those unable to work or carry out their regular activities on the day of visit because of illness in the ordinary sense, and also those with a residual condition, such as paralysis or loss of limb, completely preventing them from working.

Summary tables indicating variations in illness according to age, sex, race, and urban-rural residence follow.

Age:	Average Annual Days Disability Both Sexes
Total 14 - 64.....	17.2
14 - 19.....	11.4
20 - 24.....	11.7
25 - 34.....	10.4
35 - 44.....	14.3
45 - 54.....	22.5
55 - 64.....	37.1

*Woolsey, Theodore D., "Estimates of Disabling Illness Prevalence in the United States, Based on the February 1949 Current Population Survey," Public Health Reports, Vol. 65, No. 6, February 10, 1950; and Moore, Marjorie E., and Sanders, Barkev S., "Extent of Total Disability in the United States," Social Security Bulletin, Vol. 12, No. 11, November 1951.

Per Cent of Survey Population Disabled Over 6 Mos.

Age:	Both	Male	Female
Total 14 - 64.....	2.12	2.70	1.57
14 - 19.....	0.86	1.07	0.66
20 - 24.....	0.95	1.25	0.67
25 - 34.....	1.04	1.35	0.76
35 - 44.....	1.44	1.67	1.23
45 - 54.....	3.01	3.66	2.38
55 - 64.....	6.16	8.04	4.28

Race:	Both	Male	Female
All races, 14 - 64..	2.12	2.70	1.57
White.....	2.02	2.67	1.40
Nonwhite.....	3.14	3.05	3.21

Residence:	Both	Male	Female
All areas, 14-64.....	2.12	2.70	1.57
Urban.....	1.97	2.46	1.54
Rural nonfarm.....	2.15	2.94	1.39
Rural farm.....	2.61	3.24	1.94

Per Cent of Disabled Survey Population Disabled for:

Age:	Over 1 But Under 10 Yrs. ^x			10 Yrs. or More ^x		
	Both	Male	Female	Both	Male	Female
14 - 64.....	22.5	29.0	15.7	13.6	14.4	12.7
14 - 19.....	5.9	4.6	7.3	17.5	21.3	13.5
20 - 24.....	11.2	20.8	4.6	15.8	21.5	12.0
25 - 34.....	18.1	31.6	8.2	10.9	11.6	10.3
35 - 44.....	18.7	24.0	14.2	10.9	11.2	10.7
45 - 54.....	25.3	31.6	17.8	11.4	11.1	11.7
55 - 64.....	32.6	36.2	27.5	16.5	16.2	17.1

^xThe proportion of long-term cases among the disabled is relatively high because, in one-day prevalence surveys, the probability of finding a disabled person in the sample is proportional to the total length of his disability.

B. PREVALENCE OF ARTHRITIS AND RHEUMATISM, CIVILIAN NONINSTITUTIONAL POPULATION 14-64, UNITED STATES, SAMPLE STUDY, CURRENT POPULATION SURVEY, SEPT. 1951

This study was made by the United States Public Health Service, on a sample basis, with the Bureau of the Census.

Reported Diagnosis	Per Cent of Survey Population ^x				
	Total	Male	Female	White	Non-White
All cases reported....	9.3	7.6	10.8	9.2	9.9
Cases seen by doctor..	6.9	5.4	8.4	7.0	6.5
Doctor called it: ^{xx}					
Arthritis.....	4.3	3.0	5.4	4.4	3.2
Rheumatism.....	1.6	1.5	1.7	1.5	2.1
Other and unknown.	1.0	0.9	1.3	1.0	1.2
Cases not seen by doctor	2.3	2.2	2.5	2.2	3.4
			Rural	Rural	
	Urban		Nonfarm	Farm	
All cases reported.....	8.0		10.1	13.6	
Cases seen by doctor	6.0		7.9	9.5	
Doctor called it: ^{xx}					
Arthritis.....	3.9		5.1	5.0	
Rheumatism.....	1.2		2.0	3.0	
Other and unknown..	1.0		0.9	1.5	
Cases not seen by doctor	1.9		2.2	4.2	

^xBecause of dropping of part of the decimal fraction, the totals shown do not exactly equal the additions of the sub-items.

^{xx}The term "arthritis" includes all reported diagnoses including that word; "rheumatism" includes terms such as rheumatism, gout, lumbago, myositis, and fibrositis; more indefinite reported diagnoses are included under "other and unknown."

C. PERCENTAGE DISTRIBUTION OF CAUSES OF ILLNESSES DISABLING TWELVE MONTHS OR LONGER, BY SOLE OR PRIMARY DIAGNOSIS NATIONAL HEALTH SURVEY, 1935-1936 *

The National Health Survey, made by the United States Public Health Service on a sample basis, was a canvass of disabling illnesses on the day of visit and of the prior duration of the illnesses.

Sole or Primary Diagnosis of Persons Disabled for the Entire 12 Months Immediately Preceding Visit ^x	Per Cent
All diagnoses.....	100.0
Cardiovascular-renal diseases.....	24.6
Nervous and mental diseases.....	18.4
Rheumatism, arthritis and diseases of bones, joints etc..	10.7
Permanent results of accidents.....	8.8
Senility etc.....	5.8
Tuberculosis, all forms.....	5.2
Chronic diseases of the digestive system.....	4.8
Chronic diseases of the respiratory system.....	4.2
Blindness and diseases of the eye.....	3.6
Diabetes mellitus.....	2.4
Diseases of the genital and urinary organs.....	2.3
Chronic results of communicable diseases (about 2/3 due to poliomyelitis).....	2.0
Cancer and other tumors.....	2.0
Hernia.....	1.1
Congenital and early infancy causes.....	1.0
Deafness and diseases of the ear.....	0.9
Anemia.....	0.9
Diseases of the skin and cellular tissue.....	0.7
Diseases of the thyroid gland.....	0.6

^xInstitutionalized cases, as reported in the house-to-house canvass were included, but the reporting of such cases was incomplete; and, therefore, the percentages for nervous and mental diseases and for tuberculosis are somewhat low. Syphilis was omitted because of the incompleteness of reporting of this disease.

*Britten, Rollo H., et al, "The National Health Survey, Some General Findings as to Disease, Accidents, and Impairments in Urban Areas," Public Health Reports, Vol. 55, No. 11, March 15, 1940.

D. DISABLING ILLNESS FROM CHRONIC DISEASES IN A SAMPLE OF FAMILIES
CANVASSED MONTHLY, EASTERN HEALTH DISTRICT, BALTIMORE, 1938-1943

The data presented in this section are from a five-year study based upon monthly visits to a sample of the white population of the Eastern Health District of Baltimore. The District is a moderate residential area in which nearly three-fourths of the gainfully employed are in the clerical-sales, skilled, and semiskilled occupational groups. The Division of Public Health Methods, United States Public Health Service; the Milbank Memorial Fund; the Departments of Biostatistics and Epidemiology of the Johns Hopkins School of Hygiene and Public Health; and the Baltimore City Health Department cooperated in the study.*

Chronic diseases were identified primarily by medical diagnosis and by the patient's history prior to and during the study. Diagnoses that might be either acute or chronic were classified as acute if later inquiry revealed no further illness or symptoms and there was no prior history of the disease. Thus, in the study, chronic disease was considered as a single category; including temporary chronic illness and what has been called permanent chronic illness.

"A disabling chronic illness," in this section, signifies an attack or episode of a chronic disease preventing the individual from pursuing his usual activities for one day or longer.

*Collins, Selwyn D., et al, "Specific Causes of Illness Found in Monthly Canvasses of Families, Sample of the Eastern Health District of Baltimore, 1938-43," Public Health Reports, Vol. 65, No. 39, September 29, 1950; and "Disabling Illness from Specific Causes Among Males and Females of Various Ages, Sample of White Families Canvassed at Monthly Intervals in the Eastern Health District of Baltimore, 1938-43, Public Health Reports, Vol. 66, No. 50, December 14, 1951.

Age	DISABILITY DUE TO CHRONIC DISEASES Average Annual Number of Disabling Ill- nesses Per 1,000 Persons Observed	
	Male	Female
All ages.....	60	90
Under 5.....	5	10
5 - 14.....	31	53
15 - 24.....	23	25
25 - 34.....	27	40
35 - 44.....	69	116
45 - 54.....	110	136
55 - 74.....	168	232
75 and older.....	245	322

Age	Average Annual Number of Days of Disability per 1,000 Persons Observed	
	Male	Female
All ages.....	11.0	8.9
Under 5.....	0.1	5.3
5 - 14.....	10.4	5.1
15 - 24.....	2.8	5.3
25 - 34.....	6.2	2.5
35 - 44.....	7.4	6.3
45 - 54.....	18.0	7.3
55 - 64.....	26.3	23.1
65 - 74.....	44.1	28.8
75 and older.....	65.0	66.3

Age	Average Annual Number of Days of Disability per Disabling Case	
	Male	Female
All ages.....	183	99
Under 10.....	291	245
10 - 24.....	196	141
25 - 44.....	147	57
45 - 54.....	164	54
55 - 64.....	185	99
65 - 74.....	205	126
75 and older.....	266	206

ANNUAL NUMBER OF DISABLING ILLNESSES,* PER 1,000 WHITE PERSONS OBSERVED
FROM SPECIFIED CHRONIC CAUSES** WHICH EXHIBITED PROGRESSIVELY HIGHER ADULT RATES IN THE UPPER AGES
IN A SAMPLE OF FAMILIES CANVASSED MONTHLY, EASTERN HEALTH DISTRICT, BALTIMORE, 1938-1943***

Diagnosis Sole, Primary or Contri- butory	All Ages		Under 5		5 - 14		15 - 24		25 - 44		45 - 64		65 and Older	
	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.
Specified cardiovascular- renal diseases:														
Coronary heart disease and angina.....	6.87	5.05	-	-	-	-	-	-	1.75	.29	16.14	9.39	60.72	45.39
Other heart diseases except rheumatic.....	4.05	10.11	-	-	-	.62	.51	1.00	2.33	3.99	9.23	28.16	24.67	41.27
Hypertension and arter- iosclerosis.....	3.48	5.33	-	-	1.75	3.72	-	-	1.46	1.71	8.76	10.73	18.98	30.26
Varicose veins.....	1.32	2.30	-	-	-	-	.51	-	.58	.86	2.77	6.26	9.49	11.00
Nephritis.....	2.45	4.14	-	-	-	-	.51	.50	.58	2.57	6.92	9.39	15.18	19.26
Arthritis and chronic rheum.....	8.28	11.40	-	-	1.16	3.72	1.02	1.49	7.87	5.99	18.91	25.93	30.36	49.52
Cancer and other tumors.....	4.14	8.36	-	6.37	-	-	3.57	2.99	1.46	9.70	11.07	12.52	15.18	24.76
Diabetes.....	1.22	1.47	-	-	-	-	-	-	.65 ^x	.62 ^x	4.30 ^x	1.49 ^x	4.48 ^x	8.44 ^x

*Attacks or episodes of illness preventing the individual from pursuing usual activities for one day or longer.

**Chronic diseases were identified, in this study, primarily by medical diagnosis and by the patient's history prior to and during the study.

***From: Collins, Selwyn D., et al, "Disabling Illness from Specific Causes Among Males and Females of Various Ages, Sample of White Families Canvassed at Monthly Intervals in the Eastern Health District of Baltimore, 1938-43," Public Health Reports, Vol. 66, No. 50, December 15, 1951.

x The diabetes rates are for ages 35-44, 45-54, 55 and older.