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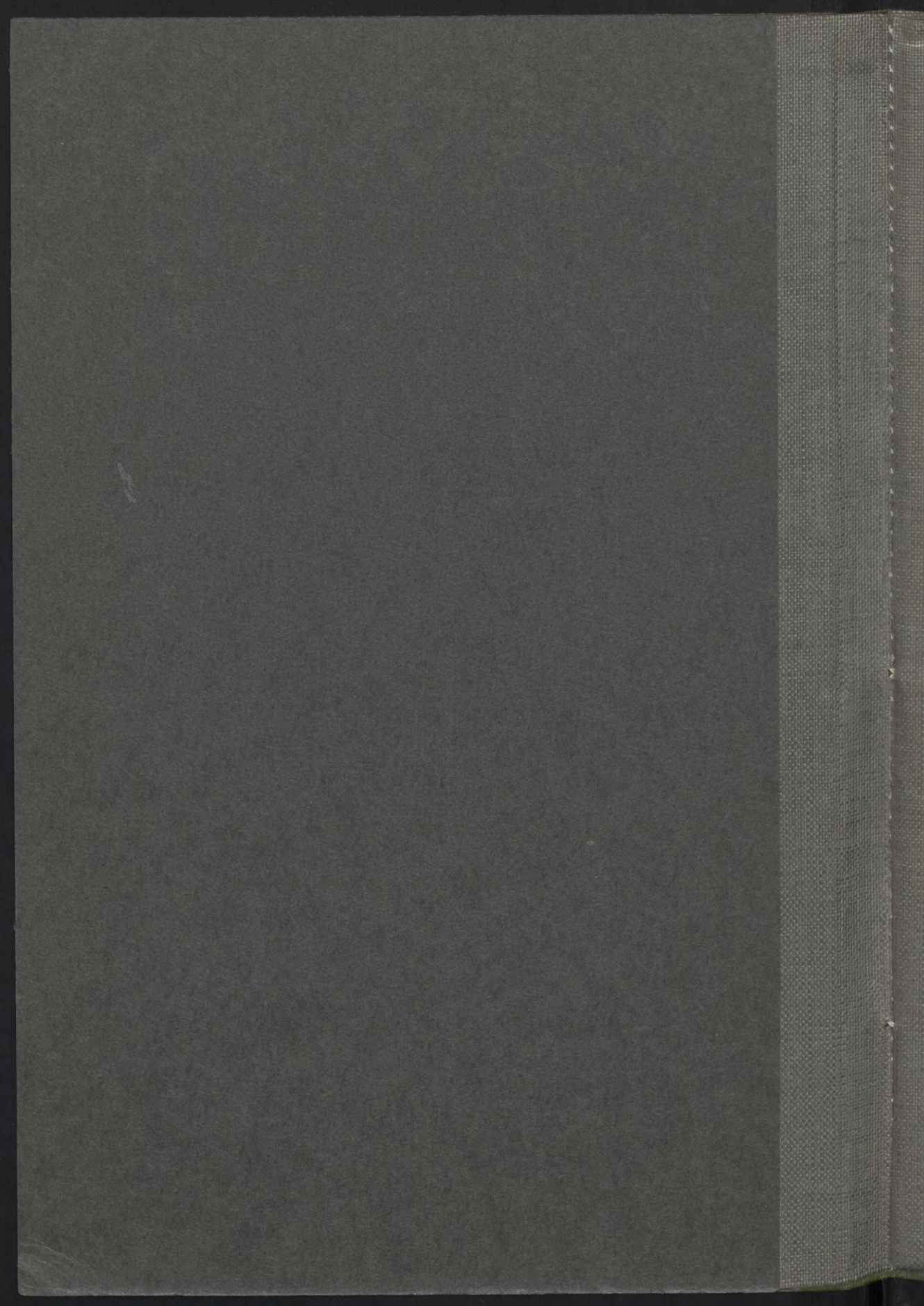
Annual Report of the Division of  
Tuberculosis Hospitalization.

Colo. State Dept. of Public Welfare  
Division of Tuberculosis Hospitalization

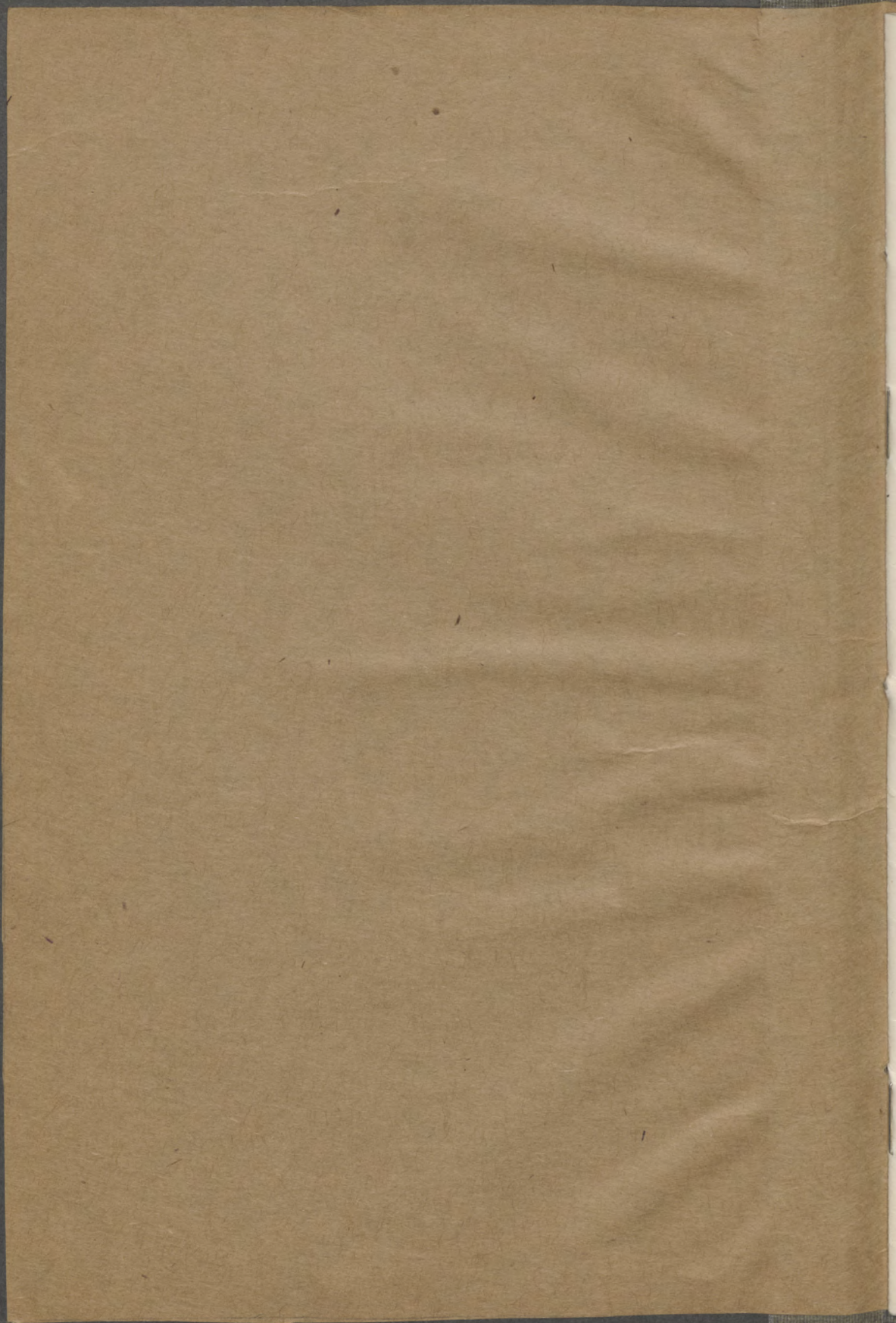
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STATE OF COLORADO

# Division of Tuberculosis Hospitalization

ANNUAL REPORT

1955

EDWARD N. CHAPMAN, M. D., *Director*

1452 Pennsylvania Street

Denver 3, Colorado



STATE DEPARTMENT OF PUBLIC WELFARE

GUY R. JUSTIS, *Director*

ED JOHNSON

*Governor*

DUKE W. DUNBAR

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1956

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Division of Tuberculosis  
Hospitalization

ANNUAL REPORT

1925

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Geo. H. Jones, Director

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CHART A

ANNUAL REPORT FOR 1955

In Colorado the care of tuberculosis is a function of the Colorado State Department of Public Welfare. This Department operates the Division of Tuberculosis Hospitalization as a separate medical care division. As close liaison as possible is maintained between this Division and the Division of Tuberculosis Control of the Colorado State Health Department, and I am glad to report that regular conferences between the two Divisions, to discuss mutual problems, are now held each month. This is one of the new developments in 1955 and should lead not only to more efficient hospitalization of new cases, but also to a better follow-up of cases discharged, especially cases discharged against medical advice.

TABLE I

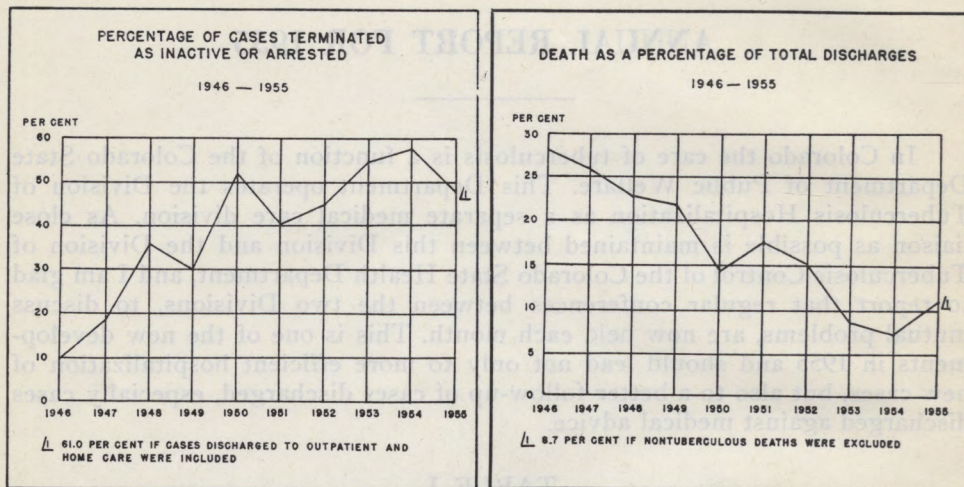
TOTAL NUMBER OF CASES GIVEN CARE  
FOR TUBERCULOSIS

1946	338
1947	343
1948	379
1949	413
1950	442
1951	479
1952	501
1953	541
1954	505
1955	474

There was a 6% decline in the number of cases given care in 1955 by the Division of Tuberculosis Hospitalization, as compared with 1954. The results obtained this past year do not appear to be quite as good statistically as those in 1954. There are reasons for this. In the first place, the percentage of far advanced and moderately advanced cases admitted increased somewhat in 1955 over the previous year and the percentage of minimal cases declined. The chief reason why the percentage of cases discharged as inactive or arrested (see Chart A) has declined slightly over 1954, is that we are now discharging certain favorable cases to our Out-Patient Department and Home Care earlier than we have done in the past—too early to definitely classify them as

CSD PW 6-1-56 True

CHART A



inactive under the NTA classification. Also we have kept some cases in the sanatoria on ambulant care who are undergoing vocational rehabilitation, since this gives them a more favorable environment in which to live during their training than would a cheap hotel or boarding house. If corrections are made for these above-mentioned changes, our results would compare favorably with 1954, which was an outstanding year.

There has been a decline in the length of hospitalization during the last year. The median length of stay under hospitalization has declined from 11½ months in 1954 to slightly under 10 months in 1955.

Until some new drug, more effective for tuberculosis than the three now commonly used, is discovered, or an improvement in surgical procedure is evolved, I do not expect much improvement over present results on a group of cases such as ours. Roughly two-thirds get well, ten percent die, and the remaining leave against medical advice or have such advanced disease, or persistently positive sputum, that they have to live out their lives in an institutional environment. The tuberculosis drugs certainly prolong the lives of those whom they do not cure.

Cases originating from Denver County increased considerably this year. This is chiefly due to the fact that, under a new policy placed in effect by Dr. Roger Mitchell, who is in charge of the Denver General Hospital Tuberculosis Ward, an attempt is made to transfer all patients eligible for the State Program to our care. It is therefore not indicative of an increase in the amount of tuberculosis in the City of Denver.

Again there was a very low percentage of cases leaving against medical advice (13.4%), which is an indication of the satisfaction on the part of patients with the type of care they receive.



TABLE II  
 PERCENTAGE OF TOTAL DISCHARGES LEAVING  
 AGAINST MEDICAL ADVICE

1946 .....	27.5%
1947 .....	17.0%
1948 .....	18.0%
1949 .....	22.4%
1950 .....	16.5%
1951 .....	23.0%
1952 .....	19.2%
1953 .....	17.0%
1954 .....	13.4%
1955 .....	13.4%

There were only five cases admitted in 1955 who had previously been discharged as arrested or inactive from the state care program who showed definite evidence of relapse. An additional seven were admitted because they were thought to be relapsing by their physician or clinic, but intensive study failed to reveal either gastric cultures positive for tubercle bacilli or evidence of X-ray spread. It is wrong to consider a patient as having a recurrence of tuberculosis because one positive sputum smear or culture is discovered—especially if this comes at a time when a respiratory infection is present. Very few individuals are probably sterilized of all tubercle bacilli by the new drugs. A rare positive sputum is of little significance, either to the individual or to public health, unless it is accompanied by X-ray changes or persistent symptoms suggesting tuberculosis. Rehospitalization should be prompt if sputum is persistently positive or if X-ray changes suggesting a relapse of tuberculosis are present.

In every case where Vocational Rehabilitation is indicated and where the individual has been willing to give the necessary time and effort, rehabilitation has been arranged. In this I want to acknowledge the help given our patients by Mr. Russell Haase of the Colorado State Department of Vocational Rehabilitation. This help has been extremely valuable.

Research has been completed in 1955 on the question as to why the cases of active tuberculosis on the state register of the Colorado State Health Department are not in hospitals. In this study, which was a combined effort of this Division, the Colorado Tuberculosis Association, the Colorado State Health Department and the Colorado State Medical Society, much of the time of Miss Gertrude Loos of our Medical Social Department was contributed. Data on every unhospitalized tuberculosis case living outside the City of Denver was obtained. If recent data could not be readily obtained from the Health Department records or from the records of private physicians, the

patient was sought out for a personal interview. It has been the most comprehensive study yet made of this problem anywhere and the results will soon be published. There were 138 cases of active tuberculosis unhospitalized on the date selected for the study. Insofar as the results of this study touch the work of this Division, it was found that in four cases the means test acted as a barrier to hospitalization. A group of 12% of the total recommended for hospitalization were receiving welfare aid, such as Old Age Pension or Aid to the Needy Disabled, which may have influenced the individuals to remain out of the hospital. Veterans' benefits, paid the unhospitalized veteran, quite evidently was a strong influence against hospitalization. Almost one-third of the unhospitalized cases were in this category. It seems stupid and inefficient, when good beds for tuberculosis patients are empty and good care is available, to subsidize individuals with active tuberculosis so that they can live at home, prolong their own disability and spread their disease to others. With regard to the operation of the means test, county welfare departments are becoming increasingly liberal in their interpretation of the means test, and they should be, since in Colorado they have an obligation under the law to help protect public health. Hospitalization should be encouraged in every way possible.

As statistics become available from various parts of the country, home care for tuberculosis seems to be less than half as efficient in changing a positive to a negative sputum or in arresting the disease as does hospitalization. Certainly home care should not be offered to an individual without a preceding period of hospitalization during which he can be educated to the seriousness of his disease and how to protect others. His ability to take the tuberculosis drugs, without serious reaction, can then be studied. Individuals have come to us who have been on home care and who have been ideal candidates for surgery a year or so prior to hospitalization. Either this fact has not been recognized by their physician, or the surgery, if recommended, has been refused by the patient because he has not been able to see the good results of surgery as he would have done had he been in an institution. Thus the help that surgery might give is lost. Certainly most patients with positive sputum should be segregated and away from their families. The danger of infection to others is too great. Recent reports from many of our larger cities, in which home care programs have been encouraged by health departments, indicate an alarming rise in new cases of tuberculosis. Quite possibly home care is the cause.

We have limited home care under our Program strictly to cases which have had previous hospitalization and whose intelligence and home situation give every promise that treatment will be successful. These individuals must submit to close public health nursing supervision of the home and be faithful in their follow-up examinations at the clinic or hospital. We have enlarged our Out-Patient Department so that patients sent out on home care can return to the institution from which they were discharged for intensive, periodic check-up. This brings them back to the physician who handled their case originally and therefore to an individual well acquainted with the problems involved.

All our patients this past year have had medical social coverage, and this has aided in our low rate of discharge against medical advice. The faithful work of Mrs. Dorothy Adams, who has covered the institutions where there is no staff worker, has been most helpful. Miss Gertrude Loos left in October

to take a position with the National Tuberculosis Association. She had been with this Division for seven years, and her aid had been invaluable not only in her social service to patients, but also to the Director in helping with matters of policy.

We have continued to send our patients to Colorado General Hospital for chest surgery and for special studies not available in sanatoria. I wish to acknowledge the skillful assistance given our patients by Dr. Roger Mitchell, head of the Chest Medical Service there, and by Dr. Fred Harper and his Chest Surgical Staff.

Hospitalization of our patients has been carried on at the following institutions which have been approved by the Colorado State Board of Public Welfare and by the Director for the care of state patients:

- Colorado General Hospital, Denver
- Cragmor Sanatorium, Colorado Springs
- Craig Colony, Lakewood (ambulant care only)
- Glockner-Penrose Hospital, Colorado Springs
- Lutheran Sanatorium, Wheatridge
- Mennonite Hospital, La Junta
- National Jewish Hospital, Denver (children only)
- St. Mary's Hospital, Grand Junction (temporary care only)
- Sunnyrest Sanatorium, Colorado Springs (ambulant care only)
- Swedish National Sanatorium, Englewood

Regular conferences are held with the staffs of these institutions by the Director of the Division and others on his staff. Thus each patient's case is discussed at least once every two months by a group composed of the physician in charge of the patient, a chest surgeon, the head nurse, medical social worker, occupational therapist, and by the Director. Conferences of a similar nature are held every month on cases undergoing home care in the Denver Home Care pilot study group. The services of Dr. K. V. Kuiper have been valuable to our patients in the Denver area who have needed psychiatric consultation. The net cost of care in 1955 under the Division of Tuberculosis Hospitalization was \$467,202.79, which cost was divided equally between the state and the counties from which the patients originated.

I wish to take this opportunity to thank the members of the Colorado State Board of Public Welfare and the Executive Director, Mr. Guy R. Justis, for unfailing support of our Division during the year, and my own staff for their interest and devotion to their work without which our results could not have been accomplished.

**SURGICAL PROCEDURES  
PERFORMED ON TUBERCULOSIS PATIENTS  
COLORADO STATE DEPARTMENT  
OF PUBLIC WELFARE**

1955

PROCEDURE	NUMBER	PROCEDURE	NUMBER
Amputation of finger .....	1	Hemorrhoidectomy .....	1
Appendectomy .....	2	Inguinal herniorrhaphy .....	4
Arthrodesis of hip .....	1	Laminectomy .....	1
Arthrodesis of toe .....	1	Laminectomy with costo transversectomy .....	1
Biopsy .....	11	Lobectomy .....	15
Breast amputation .....	1	Nephrectomy .....	3
Cataract .....	1	Plombage .....	1
Cholecystojejunostomy .....	1	Pneumonectomy .....	1
Cholecystectomy .....	2	Rachiotomy .....	1
Choledochotomy .....	1	Radical mastoidectomy .....	1
Cutaneous ureterostomy .....	1	Resection (lung) .....	4
Decortication .....	1	Resection of sigmoid polyp ..	1
Delivery .....	3	Revision of prosthesis .....	1
Duodenotomy .....	1	Sequestrectomy .....	1
Esophageal diverticulum .....	1	Skin graft .....	2
Excision tumor of mediastinum .....	1	Spinal fusion .....	5
Exploration of fusion .....	1	Thoracoplasty .....	7
Exploratory laparotomy .....	1	Thoracotomy .....	7
Gastric resection .....	1	Thyroidectomy .....	1
		Tracheotomy .....	1

**EXPENDITURES  
DIVISION OF TUBERCULOSIS HOSPITALIZATION  
COLORADO STATE DEPARTMENT OF  
PUBLIC WELFARE**

1955

Total amount expended for patients in sanatoria.....		\$448,783.43
Amount expended for Out-Patient Department .....	\$4,367.88	
Amount expended for transportation.....	1,039.54	
Amount expended for burials.....	200.00	
Amount expended for Home Care.....	6,320.00	11,927.42
Total gross amount expended.....		\$460,710.85
Patient days.....	58,751	
Average cost per day.....	\$ 7.64	
Partial reimbursement by patients and relatives.....		6,491.94
Total net amount expended.....		\$467,202.79

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TUBERCULOSIS HOSPITALIZATION

ANNUAL STATISTICAL REPORT

Year of 1955

Period: 12-25-54 through 12-24-55

I. Compiled Monthly Reports

A. Applications

Pending at the beginning of year.....	5
Received during the year.....	242
Total .....	247
Disposed of during the year.....	242
Approved for sanatoria.....	205
New .....	168
Readmission .....	10
Reopened .....	27
Approved for home care.....	17
New .....	11
Readmission .....	3
Reopened .....	3
Not placed under care.....	19
Withdrawn by county.....	6
Disapproved .....	9
Death before approval.....	1
Refused to be hospitalized.....	1
Denied for home care.....	2
Admitted directly to outpatient.....	1
Pending at the end of the year.....	5

B. Cases Under Care—Sanatoria

Number in sanatoria at beginning of year.....	162
Added during the year.....	215
Approved applications.....	205
Transferred from outpatient.....	10
Total .....	377

Terminated during the year.....	223
Discharged .....	110
Death .....	25
Left against advice.....	30
Disciplinary .....	10
Nontuberculous .....	7
No longer in need.....	10
Transferred to outpatient.....	27
Transferred to home care.....	4
Number in sanatoria at end of year.....	154
<b>C. Cases Under Care—Outpatient</b>	
Number under care at the beginning of year.....	34
Added during the year.....	28
Approved applications.....	1
Transferred from sanatoria.....	27
Total .....	62
(Two of these cases were scheduled for and were given check-up.)	
Terminated during the year.....	23
Discharged .....	12
Transferred to home care.....	1
Transferred to sanatoria.....	10
Number under care at the end of the year.....	39
<b>D. Home Care Cases</b>	
Under care at the beginning of the year.....	13
Added during the year.....	22
Approved applications.....	17
Transferred from outpatient.....	1
Transferred from sanatoria.....	4
Total .....	35
Terminated .....	16
Discharged .....	13
Left against advice.....	2
Disciplinary .....	1
Under care at the end of the year.....	19

## E. Analysis of Cases Discharged During the Year

## 1. Sanatoria

	Total	Inactive	Arrested	Active
Pulmonary .....	105	38	63	4
Pulmonary plus bone.....	1			1
Pulmonary plus meningeal.....	1		1	
Pulmonary plus glandular.....	2	1	1	
Pul. plus renal plus meningeal	1		1	
Total .....	110	39	66	5

## 2. Outpatient

	Total	Inactive	Arrested	Active
Pulmonary .....	8	7	1	
Bone .....	1			1
Renal .....	1	1		
Pulmonary plus bone.....	2	2		
Total .....	12	10	1	1

## 3. Home Care

	Total	Inactive	Arrested	Active
Pulmonary .....	11	10		1
Bone .....	1		1	
Renal .....	1	1		
Total .....	13	11	1	1

**TUBERCULOUS PATIENTS RECEIVING CARE IN SANATORIA  
AND OUTPATIENT DEPARTMENTS, COLORADO STATE  
DEPARTMENT OF PUBLIC WELFARE, BY COUNTIES, 1955**

County	Under care at the beginning of 1955			Added during 1955			Total under care during 1955		
	Sana- toria	Out- patient	Home care	Sana- toria	Out- patient	Home care	Sana- toria	Out- patient	Home care
Total .....	162	34	13	215	28	22	377	62	35
Adams .....	2	1	....	4	2	....	6	3	....
Alamosa .....	....	1	....	....	....	....	....	1	....
Arapahoe .....	2	....	....	10	3	....	12	3	....
Bent .....	....	....	....	2	....	....	2	....	....
Boulder .....	7	1	....	3	1	....	10	2	....
Chaffee .....	2	....	....	1	....	....	3	....	....
Cheyenne .....	....	....	....	1	....	....	1	....	....
Clear Creek .....	....	....	....	1	....	....	1	....	....
Conejos .....	1	....	....	6	....	....	7	....	....
Costilla .....	1	....	....	....	....	....	1	....	....
Crowley .....	2	....	....	2	....	....	4	....	....
Delta .....	....	1	....	4	2	....	4	3	....
Denver .....	55	10	13	95	8	21	150	18	34
Elbert .....	....	1	....	....	....	....	....	1	....
El Paso .....	10	1	....	12	....	....	22	1	....
Fremont .....	1	....	....	3	....	....	4	....	....
Garfield .....	1	....	....	....	....	....	1	....	....
Gilpin .....	1	....	....	1	....	....	2	....	....
Huerfano .....	1	2	....	1	....	....	2	2	....
Jefferson .....	4	....	....	4	2	1	8	2	1
Lake .....	1	....	....	....	....	....	1	....	....
La Plata .....	1	....	....	3	....	....	4	....	....
Larimer .....	4	1	....	....	1	....	4	2	....
Las Animas .....	7	2	....	9	2	....	16	4	....
Logan .....	....	....	....	1	1	....	1	1	....
Mesa .....	6	1	....	8	....	....	14	1	....
Moffat .....	1	....	....	....	....	....	1	....	....
Montezuma .....	1	....	....	....	....	....	1	....	....
Montrose .....	1	....	....	2	....	....	3	....	....
Morgan .....	3	....	....	....	....	....	3	....	....
Otero .....	9	1	....	2	1	....	11	2	....
Ouray .....	1	....	....	....	....	....	1	....	....
Prowers .....	1	1	....	4	....	....	5	1	....
Pueblo .....	16	7	....	20	1	....	36	8	....
Rio Blanco .....	....	....	....	2	....	....	2	....	....
Rio Grande .....	5	....	....	6	....	....	11	....	....
Saguache .....	2	....	....	2	1	....	4	1	....
Washington .....	....	....	....	1	....	....	1	....	....
Weld .....	13	3	....	5	3	....	18	6	....



**TUBERCULOUS PERSONS PLACED UNDER CARE  
 COLORADO STATE DEPARTMENT OF PUBLIC WELFARE  
 BY AGE AND STAGE, 1955**

AGE	TOTAL CASES	PULMONARY								NON-PULMONARY				
		Total Pulmonary	Minimal	Moderately advanced	Far advanced	Silico	Miliary	Primary	Pleural effusion	Pulmonary plus other TB complications	Evaluation	Glandular	Bone	Renal
Total	205	187	13	58	94	3	3	6	3	7	8	5	2	3
0- 9	11	10	2	....	....	....	1	6	1	....	....	....	1	....
10-19	11	8	....	4	1	....	1	....	1	1	2	1	....	....
20-29	32	25	5	8	12	....	....	....	....	....	2	3	....	2
30-39	25	22	2	7	11	....	....	....	1	1	1	1	....	1
40-49	51	49	1	20	25	1	....	....	....	2	1	....	1	....
50-59	39	38	1	10	22	1	1	....	....	3	1	....	....	....
60-69	16	16	1	2	12	1	....	....	....	....	....	....	....	....
70-79	12	11	....	3	8	....	....	....	....	....	1	....	....	....
80 and over	8	8	1	4	3	....	....	....	....	....	....	....	....	....

**Pulmonary Cases**

	Number	Percentage
Total .....	187	100.00
Far advanced .....	94	50.27
Moderately advanced .....	58	31.02
Minimal .....	13	6.95
All other .....	22	11.76

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CASES DISCHARGED AS ARRESTED OR INACTIVE IN 1955  
BY TOTAL LENGTH OF HOSPITALIZATION

Number of months	Total number of persons		Arrested	Inactive
	Total	105		
1	4	4	....	4
2	2	2	2	....
3	3	3	....	3
4	7	7	4	3
5	6	6	6	....
6	4	4	4	....
7	8	8	8	....
8	7	7	7	....
9	6	6	6	....
10	6	6	5	1
11	5	5	3	2
12	7	7	4	3
13	6	6	5	1
14	4	4	2	2
15	6	6	2	4
16	1	1	....	1
17	3	3	2	1
18	1	1	....	1
19	2	2	1	1
21	3	3	....	3
23	1	1	1	....
26	3	3	....	3
36	1	1	....	1
38	2	2	1	1
50	1	1	....	1
51	1	1	1	....
52	1	1	....	1
56	2	2	....	2
62	1	1	1	....
108	1	1	1	....
Arrested:			1955	1954
Average			12.6 Mo.	12.3
Median			8.3 mo.	8.7
Inactive:				
Average			18.0 mo.	18.3
Median			14.1 mo.	13.7
Total:				
Average			14.6 mo.	14.0
Median			9.9 mo.	11.5

Prepared by Division of Research and Statistics  
Colorado State Department of Public Welfare

January 23, 1956

## APPROVALS BY OCCUPATION

Occupation	Number	Percentage
Total .....	205	100.00
Housewives .....	42	20.49
Foodhandlers and service .....	39	19.02
None .....	23	11.22
Semi-skilled labor .....	22	10.73
Agriculture .....	19	9.27
Unskilled labor .....	18	8.78
Office and sales people.....	17	8.29
Skilled labor .....	16	7.81
Professional .....	9	4.39

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CASES DISCHARGED BY OCCUPATION

Occupation	Number	Percentage
Professional	9	4.39
Skilled labor	16	7.81
Office and sales people	17	8.30
Unskilled labor	18	8.78
Agriculture	19	9.27
Semi-skilled labor	22	10.73
None	28	13.53
Foodhandlers and service	39	19.05
Housewives	42	20.19

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	1955	1954
Active:		
Average	126 mo.	127
Median	83 mo.	87
Inactive:		
Average	180 mo.	181
Median	141 mo.	152
Total:		
Average	146 mo.	145
Median	94 mo.	111

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Colorado State Department of Public Welfare  
January 25, 1956

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