STATE OF COLORADO

Division of Tuberculosis Hospitalization

ANNUAL REPORT

1958

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STATE DEPARTMENT OF PUBLIC WELFARE

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Annual Report for 1958

Description of the Tuberculosis Hospitalization Program

Foreword

The hospitalization of persons with tuberculosis, who are eligible for care under the state law, 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. Liaison is maintained with the Division of Tuberculosis Control of the State Department of Public Health, which functions as the case finding agency.

An individual who has had twelve months of continuous residence in Colorado and who finds that he has active tuberculosis and is unable financially to assume all or even part of the cost of hospitalization may sign at once an application, furnished by his local county welfare department, for care under the Division of Tuberculosis Hospitalization. An investigation in connection with his application is made by the local welfare department. After the facts have been substantiated by the county welfare department, his application is forwarded to the Division of Tuberculosis Hospitalization together with his chest x-rays and a medical report by his physician or clinic. The case is then rapidly reviewed medically and the person is assigned to one of eight different institutions. The whole process, on the average, should not take over two weeks (13 days in 1958) from the time the patient signs his application until the time he is in bed in a hospital or sanatorium. True emergencies can usually be processed within twenty-four to forty-eight hours. There has been no waiting list for a bed under the program at any time for the last ten years.

Hospitalization of our patients is carried on at the following institutions, which have been approved by the Colorado State Board of Public Welfare and by the Director of the

Division of Tuberculosis Hospitalization for the care of state patients and which are licensed by the Colorado State Board of Public Health.

Colorado General Hospital	Denver
Cragmor Sanatorium	Colorado Springs
Denver General Hospital	Denver
Glockner Penrose Hospital	Colorado Springs
Lutheran Sanatorium	Wheat Ridge
National Jewish Hospital (children only)	Denver
St. Mary's Hospital (temporary care)	Grand Junction
Swedish Hospital and Sanatorium	Englewood

Five of these eight institutions are general hospitals with special departments or isolation facilities for the treatment of tuberculosis. This is a situation which, I think, is likely to replace tuberculosis sanatoria throughout the country in time and Colorado has been in the lead in this trend.

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 every two months by a group composed of the physician in charge of the patient, a consulting chest surgeon, the head nurse, the medical social worker, occupational therapist and by the Director. Conferences of a similar nature are held every month on patients undergoing tuberculosis drug therapy paid for by the Division in the Denver Tuberculosis Clinic. Reviews of the Division's patients undergoing treatment in the El Paso, Pueblo and Trinidad TB Clinics of the State Health Department are held at less frequent intervals. The net cost of care in 1958 under the Division of Tuberculosis Hospitalization was $459,351.97, which cost was divided equally between the state and the counties from which the patients originated.

Results in 1958

There was about the same number of cases given care in 1958 by the Division as in 1957, as shown in Table I.

TABLE I

Total Number of Cases Given Care for Tuberculosis

1952	501
1953	541
1954	505
1955	474
1956	398
1957	414
1958	415

The tables in the back of this report indicate that over 80% of our hospitalized patients discharged in 1958 had a good result from their period of hospitalization. We discharge very few patients completely at the end of their period of hospitalization, but instead transfer them to Clinic or Outpatient care to continue on tuberculosis drug therapy until they have completed at least a total of eighteen months to two years. In this way they are kept under close observation during their period of increasing physical activity including vocational rehabilitation, when indicated. Almost every case transferred to Clinic or Outpatient care has reached at least an arrested stage of the disease at the time of hospital discharge, which means a sputum negative for tubercle bacilli and a stable chest x-ray. Some of the cases discharged to the Outpatient Department return to the care of the referring physician, when the physician indicated a desire to assume this care and the patient wishes to re-establish this relationship. Most of the patients discharged to the Outpatient Department exhibit a strong desire to remain under the care of the physician under whose direction they have been during their period of hospitalization. I find that very few internists and general practitioners now wish to take care of a case of tuberculosis.

Our discharge against medical advice rate continues to be one of the lowest for public tuberculosis hospital care programs in the country. It fell to a new low in 1958 of 8.8%, as shown in Table II. We consider any patient as having left against medical advice who leaves without medical consent and is not rehospitalized by us within 30 days. If those patients who left against medical advice, but were

TABLE II

Percentage of Total Discharges Leaving Hospitalization Against Medical Advice

1951	23 %
1952	19.2
1953	17
1954	13.4
1955	13.4
1956	13.1
1957	12
1958	8.8

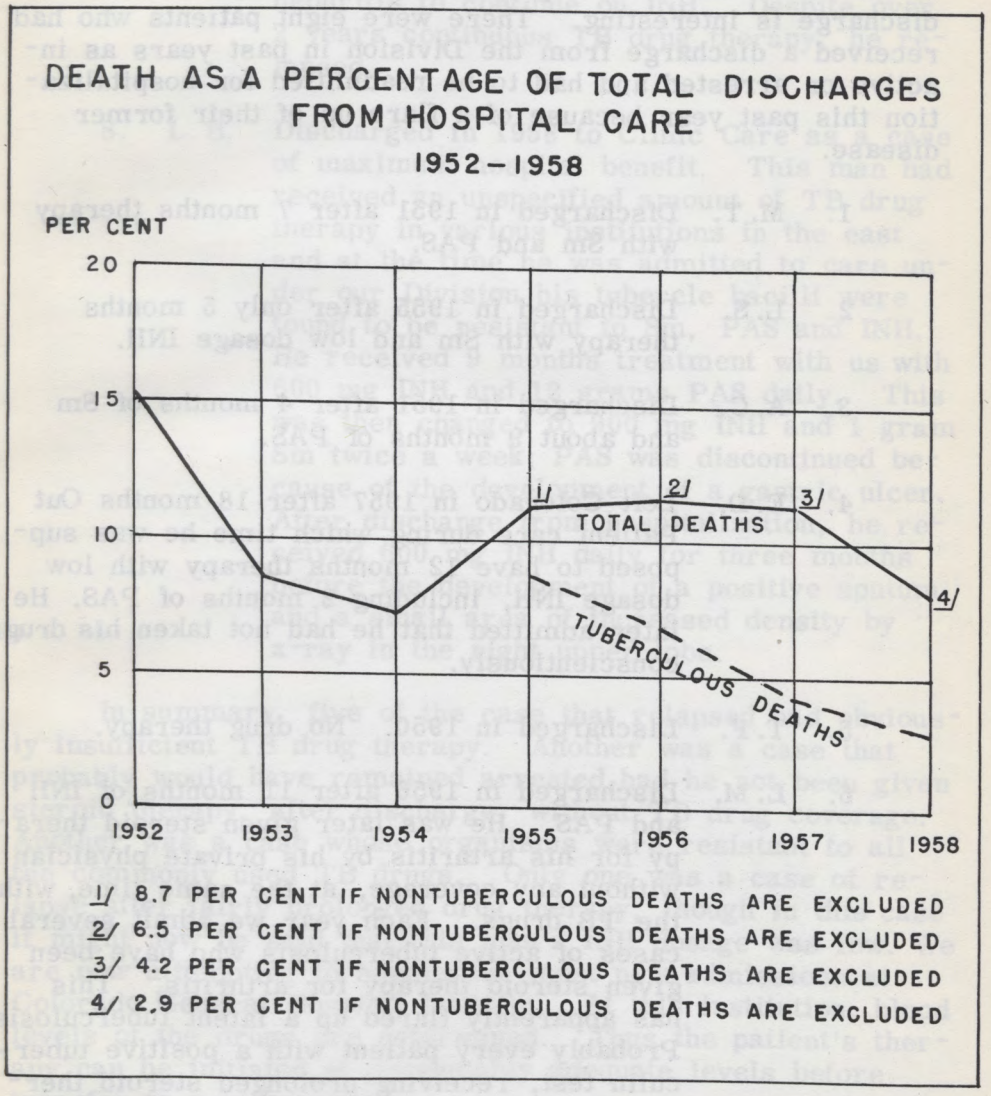
rehospitalized within 30 days, are included the rate would be 12.8 instead of 8.8. This also is a new low. Using the new American Trudeau Formula for determination of the irregular discharge rate, the figure is 16.8.

There were only two patients who received disciplinary discharges in 1958. One was a case of arrested tuberculosis who refused to have psychiatric examination because of her refusal to accept a medical discharge. The other case was for excessive drinking. This man was rehospitalized, under our Division, at another institution within a day or two.

There were only five deaths from tuberculosis among our hospitalized patients. This figure included our only surgical death. One outpatient died of tuberculosis. There were fourteen deaths, (including Outpatient and Clinic deaths), from other causes, chiefly diseases of the circulatory system. From our experience, as illustrated in Chart A, the point is fast approaching when it can be said that tuberculosis is no longer a fatal disease. Certainly it should be possible to stop the further progress of the disease in almost every patient receiving adequate therapy who is willing to cooperate in treatment. The death rate from tuberculosis in the United States in 1957 (latest available) was 7.7 per 100,000 population and in Colorado it was 6.6. Preliminary figures for Colorado would indicate that the figure for 1958 has fallen to almost 5 -- a figure which no longer classifies a disease as an important cause of death in the opinion of public health

Officials. This is a far cry from the death rate from tuberculosis just ten years ago, when it was six times as high.

CHART A



We continue to be agreeably surprised by the small number of relapses of tuberculosis among our patients who have received a medical discharge as "arrested" or inactive." These patients for the most part return to the sub-marginal living conditions from whence they came, yet despite this the vast majority remain well from tuberculosis which has always been considered to have a high relapse rate. A study of the cases that did relapse in 1958 after a previous medical discharge is interesting. There were eight patients who had received a discharge from the Division in past years as inactive or arrested and had to be readmitted for hospitalization this past year because of a flare up of their former disease.

1. M. T. Discharged in 1951 after 7 months therapy with Sm and PAS.

2. L. S. Discharged in 1955 after only 5 months therapy with Sm and low dosage INH.

3. A. C. Discharged in 1951 after 4 months of Sm and about 9 months of PAS.

4. E. D. Left Colorado in 1957 after 18 months Out Patient care during which time he was supposed to have 12 months therapy with low dosage INH, including 2 months of PAS. He later admitted that he had not taken his drugs conscientiously.

5. T. F. Discharged in 1950. No drug therapy.

6. L. M. Discharged in 1956 after 11 months of INH and PAS. He was later given steroid therapy for his arthritis by his private physician without any coverage, at the same time, with the TB drugs. Each year we admit several cases of active tuberculosis who have been given steroid therapy for arthritis. This has apparently flared up a latent tuberculosis. Probably every patient with a positive tuberculin test, receiving prolonged steroid therapy, should be given the protection of TB drug therapy as a prophylactic measure.

7. B. T. Discharged in 1956 as "inactive." This man had 4 months of Sm and low dosage INH during a period of hospitalization in 1953. He relapsed in 1955. He was given low dosage INH (300mg) and Sm for one year and then INH alone for another 6 months. He was then discharged as "inactive" to a convalescent home because of senility and severe nephritis to continue on INH. Despite over 2 years continuous TB drug therapy, he relapsed.

8. L. B. Discharged in 1958 to Clinic Care as a case of maximum hospital benefit. This man had received an unspecified amount of TB drug therapy in various institutions in the east and at the time he was admitted to care under our Division his tubercle bacilli were found to be resistant to Sm, PAS and INH. He received 9 months treatment with us with 600 mg INH and 12 grams PAS daily. This was then changed to 900 mg INH and 1 gram Sm twice a week; PAS was discontinued because of the development of a gastric ulcer. After discharge from hospitalization, he received 600 mg INH daily for three months before the development of a positive sputum and a small area of increased density by x-ray in the right upper lobe.

In summary, five of the case that relapsed had obviously insufficient TB drug therapy. Another was a case that probably would have remained arrested had he not been given steroid therapy, after discharge, without TB drug coverage. Another was a case whose organisms were resistant to all the commonly used TB drugs. Only one was a case of relapse after fairly prolonged drug therapy, though in this case it might now be said that this man's INH dosage was low. We are now attempting to hospitalize most new admissions at Colorado General Hospital initially. At this institution, blood levels of the drugs are determined. Thus the patient's therapy can be initiated at presumably adequate levels before transfer to a sanatorium.

The number of cases on Clinic or Out Patient care (especially on Clinic Care) has increased markedly in recent years while the number of patients under hospital care has decreased as shown in Table III.

TABLE III

Total Cases Given Care

	Hospital	Clinic**	Out Patients
1953	498	11	61
1954	438	32	61
1955	377	35	62
1956	346	49	102
1957*	325	93	140
1958*	265	151	143

* Represents 413 individuals in 1957 and 415 in 1958
** State Health Department Clinics

It is still strongly urged that every case of tuberculosis have an initial period of hospitalization before care at home is started. This permits a careful study of the case, a determination of the patient's tolerance to the TB drugs without allergic response and permits the patient to learn about the disease and how to protect others.

If 93 patients discharged from Clinic and Out Patient care are combined, 69% were discharged in 1958 as inactive cases of tuberculosis, 6.4% died (only 1 case died from a condition probably closely related to tuberculosis--spontaneous pneumothorax); 2.2% received disciplinary discharges for lack of cooperation; and 22.4% were transferred into the sanatoria. Most of the cases readmitted to hospitalization were for the delivery of babies, including post partum care and observation, psychiatric study or for some intercurrent infection.

There was a total of 5 patients hospitalized under our Division under compulsion by health department order in 1958. As stated in last year's report, these individuals are not placed under lock and key but instead are given

the freedom of the institution, of course depending on their medical condition. Unless they themselves tell other patients that they are there under compulsion this fact is not known to their fellows. The system in general works well. Only one case, I believe, has given any habitual trouble by wandering off and having to be returned by the sheriff.

All of our patients, except those in one institution, now have adequate occupational therapy available and all have the benefit of medical social work coverage. Mrs. Florence Douglas has given invaluable service to our patients at Cragmor, Glockner Penrose and Swedish National Sanatorium--institutions which do not have their own workers in this field. Mrs. Martha Reichert has just joined our staff to assist in formulating our medical social policies and to serve in the field with our Clinic Care cases. Her availability in some of the health department clinics, we hope will be helpful in pre- and post-hospitalization planning and in liaison between this Division and the Division of Tuberculosis Control. Our relations with the Health Department have been excellent this year and regular monthly meetings are held between the staffs of the two Divisions.

Mr. Russell Haase and Mr. Hugh Hohenstein of the Vocational Training Division of the Colorado State Department of Education are now regularly attending many of our hospital and clinic conferences, which should accelerate rehabilitation plans for our patients.

Colorado General Hospital and Denver General Hospital now have good facilities for psychiatric consultation and assistance on their tuberculosis wards. The problems with alcohol have seemed less acute this past year. Perhaps the staffs of our institutions are working more effectively with the alcoholic or perhaps the more adequate psychiatric and social service help that we have been able to furnish our patients has been the answer.

A study team has completed this past year a very comprehensive review of the handling of tuberculosis in Colorado by state and local official agencies. This study team was composed of five members from the United States Public Health Service plus a representative from Welfare

and a sanatorium medical director. The representative from Welfare and the sanatorium medical director came from outside of the state. The study comprises two volumes and will probably soon be released by Governor McNichols.

The 1958 results of the Division of Tuberculosis Hospitalization are very encouraging and the best to date. The credit for these results should go to a number of individuals who have given valuable time and energy to the program. Dr. James J. Waring, Dr. Roger S. Mitchell, Chief of Chest Diseases at the Colorado Medical Center; Dr. Fred Harper, Chief of Chest Surgery, Dr. Robert K. Brown, Dr. William Condon, Dr. Hugh MacMillan, Dr. Mordant Peck and Dr. William Wierman of his surgical staff. The interest and cooperation of Mr. Guy Justis and the State Board of Public Welfare and my own office staff deserve special mention. Without the help of all these people and many more, these results would not have been possible.

SURGICAL PROCEDURES PERFORMED ON TUBERCULOSIS PATIENTS COLORADO STATE DEPARTMENT OF PUBLIC WELFARE 1958

PROCEDURE	NUMBER	PROCEDURE	NUMBER
Amputation Right Leg	1	Gastrojejunostomy	1
Appendectomy	1	Hemorrhoidectomy	2
Arthroplasty	1	Incision of Toe Nail	1
Closure of Bronchopleural Fistula	1	Ischiorectal Abscess	1
Cystoscopy	2	Ligation of Ulnar Nerve	1
Cystoscopy and Cautery	1	Lobectomy	9
Decortication	3	Obstetrical Care	1
Drainage of Empyema	2	Pleural Biopsy	1
Excision and Biopsy of Scalene Nodes and Fat Pads	4	Pneumonectomy	1
Exploratory Laparotomy and Lysis of Adhesions	1	Pulmonary Resection	7
Gastrectomy	1	Spinal Fusion	2
		Thoracoplasty	5
		Transurethral Resection for Cancer of Bladder	1

EXPENDITURES DIVISION OF TUBERCULOSIS HOSPITALIZATION COLORADO STATE DEPARTMENT OF PUBLIC WELFARE 1958

Total amount expended for patients in sanatoria		$434,947.15
Amount expended for Out-Patient Department	$11,683.84	
Amount expended for Transportation	801.79	
Amount expended for Burials	279.30	
Amount expended for Clinic Care	21,187.53	33,952.46
Total Gross Expenditures		$468,899.61
Less partial reimbursement by patients and relatives		9,547.64
Net Expenditures		$459,351.97

Patient Days	75119
Average cost per day including Clinic Care and Out-Patient.	$6.24
Average cost per day excluding Clinic Care and Out-Patient.	$11.35

TUBERCULOSIS HOSPITALIZATION

ANNUAL STATISTICAL REPORT

Year 1958

Period: 12-25-57 through 12-24-58

APPLICATIONS

1.	Applications pending from last year	3
2.	Received during year	186
3.	Total during year	189
4.	Disposed of during year	182
	a. Approved for sanatoria	136
	New - 113 Readmit - 6 Reopen - 17	
	b. Approved for Clinic Care	28
	New - 20 Readmit - 2 Reopen - 6	
	c. Not placed under care	11
	Withdrawn by county - 8	
	Disapproved - 3	
	d. Directly to Outpatient	7
5.	Pending at end of fiscal year	7

CASES UNDER CARE

		SANATORIA	CLINIC CARE	OUTPATIENT
6.	Cases continued from last year	108	64	82
7.	Added during year	157	87	61
	a. Approved applications	136	28	7
	b. Transferred from Outpatient	6	5	xxxx
	c. Transferred from Clinic Care	15	xxxx	1
	d. Transferred from Sanatoria	xxxx	54	53**
* 8.	Total under program during year	265	151	143
9.	Terminated during year	173	51	48
	a. Discharged	20	32	32
	b. Death	14	1	5
	c. Left against advice	16	0	0
	d. Disciplinary	2	2	0
	e. Non-tuberculous	7	0	0
	f. No longer in need	1	0	0
	g. Transferred to Outpatient	53	1	xxxx
	h. Transferred to Clinic Care	54	xxxx	5
	i. Transferred to Sanatoria	xxxx	15	6
	Not previously hospitalized	xx	3	1
	Previously hospitalized	xx	12	5
	j. To another facility	6	0	0
10.	Continued to next year	92	100	95

* Represents 415 individuals.

** 6 O.P. checkups not included.

ANALYSIS OF CASES DISCHARGED

Type of Tuberculosis	Inactive	Arrested	Active	Improved		Total
Sanatoria (Item 9a)						20
Pulmonary	11	4	3	1	19	
Pulmonary and Bone	1				1	
Outpatient (Item 9a)						32
Pulmonary	32					
Clinic Care (Item 9a)						32
Pulmonary	30				30	
Bone and Peritoneal	1				1	
Meningeal and Peritoneal	1				1	

NUMBER OF COLORADO STATE TUBERCULOUS PATIENTS WHO RECEIVED CARE IN SANATORIA AND OUTPATIENT DEPARTMENTS DURING 1958 BY COUNTY

County	Under Care at the Beginning of 1958			Added During 1958			Total Under Care During 1958		
	Sanatoria	Outpatient	Clinic Care	Sanatoria	Outpatient	Clinic Care	Sanatoria	Outpatient	Clinic Care
Total	108	82	64	157	61	87	265	143	151
Adams	1	4	-	3	3	1	4	7	1
Alamosa	-	-	-	4	-	-	4	-	-
Arapahoe	-	2	-	4	1	-	4	3	-
Archuleta	-	-	-	1	-	-	1	-	-
Baca	-	-	-	-	-	-	-	-	-
Bent	-	-	-	-	-	-	-	-	-
Boulder	-	3	-	4	1	1	4	4	1
Chaffee	1	-	-	-	-	-	1	-	-
Cheyenne	1	-	-	-	-	-	1	-	-
Clear Creek	-	1	-	-	-	-	-	1	-
Conejos	2	1	-	1	2	-	3	3	-
Costilla	-	-	-	-	-	-	-	-	-
Crowley	1	1	-	-	-	1	1	1	1
Custer	-	-	-	-	-	-	-	-	-
Delta	-	1	-	3	1	-	3	2	-
Denver	35	13	41	64	12	34	99	25	75
Dolores	-	-	-	-	-	-	-	-	-
Douglas	-	-	-	2	1	-	2	1	-
Eagle	-	-	-	1	1	-	1	1	-
Elbert	1	-	-	1	-	-	2	-	-
El Paso	9	11	5	8	2	5	17	13	10
Fremont	-	-	-	-	-	-	-	-	-
Garfield	-	1	-	2	1	-	2	2	-
Gilpin	-	-	-	1	-	-	1	-	-
Grand	1	-	-	-	-	-	1	-	-
Gunnison	-	-	-	1	1	2	1	1	2
Hinsdale	-	-	-	-	-	-	-	-	-
Huerfano	1	1	-	4	-	1	5	1	1
Jackson	-	-	-	-	-	-	-	-	-
Jefferson	3	6	-	1	1	-	4	7	-
Kiowa	-	-	-	-	-	-	-	-	-
Kit Carson	-	-	-	-	-	-	-	-	-
Lake	-	-	-	-	-	-	-	-	-
La Plata	1	-	-	3	2	-	4	2	-
Larimer	5	-	1	3	2	-	8	2	1
Las Animas	4	1	6	6	-	9	10	1	15
Lincoln	-	-	-	-	-	-	-	-	-
Logan	2	-	-	-	2	-	2	2	-
Mesa	-	2	-	4	2	-	4	4	-
Mineral	-	-	-	-	-	-	-	-	-
Moffat	1	1	-	1	1	1	2	2	1
Montezuma	-	-	-	-	-	-	-	-	-
Montrose	4	4	-	3	3	-	7	7	-
Morgan	1	1	-	5	3	-	6	4	-
Otero	4	-	1	4	2	8	8	2	9
Ouray	1	-	-	-	-	-	1	-	-
Park	-	-	-	-	-	-	-	-	-
Phillips	-	-	-	-	-	-	-	-	-
Pitkin	-	1	-	-	-	-	-	1	-
Prowers	5	-	-	1	4	-	6	4	-
Pueblo	15	8	9	11	2	22	26	10	31
Rio Blanco	-	1	-	-	-	-	-	1	-
Rio Grande	1	4	-	-	-	-	1	4	-
Routt	-	1	-	-	-	-	-	1	-
Saguache	2	-	-	2	2	1	4	2	1
San Juan	-	-	-	1	-	-	1	-	-
San Miguel	-	-	-	1	1	-	1	1	-
Sedgwick	-	1	-	-	-	-	-	1	-
Summit	-	-	-	-	-	-	-	-	-
Teller	-	-	-	-	-	-	-	-	-
Washington	-	-	-	-	-	-	-	-	-
Weld	6	11	1	7	8	1	13	19	2
Yuma	-	1	-	-	-	-	-	1	-

COLORADO STATE TUBERCULOSIS HOSPITALIZATION

PATIENTS PLACED UNDER CARE DURING 1958

BY AGE AND STAGE OF DEVELOPMENT

AGE	TOTAL CASES	PULMONARY									NON-PULMONARY					
		Total Pulmonary	Minimal	Moderately Advanced	Far Advanced	Silico	Miliary	Primary	Pulmonary and Other	Evaluation	Pleural Effusion	Glandular	Bone	Renal	Tuberculosis of Cervical Nodes	Tuberculosis of Duodenum and Mesentery
Total	136	117	12	37	50	3	1	13	1	8	1	4	1	3	1	1
0 - 9	17	16	2	2	-	-	-	12	-	1	-	-	-	-	-	-
10 -19	8	6	-	1	3	-	-	1	1	1	1	-	-	-	-	-
20 -29	17	14	4	5	5	-	-	-	-	1	-	1	-	-	1	-
30 -39	18	14	1	8	5	-	-	-	-	-	-	2	-	2	-	-
40 -49	23	21	2	5	14	-	-	-	-	1	-	-	-	-	-	1
50 -59	20	17	2	7	8	-	-	-	-	2	-	-	-	1	-	-
60 -69	15	15	1	2	9	2	1	-	-	-	-	-	-	-	-	-
70 -79	18	14	-	7	6	1	-	-	-	2	-	1	1	-	-	-

TOTAL CASES

	Number	Percentage
Far advanced	50	36.76
Moderately advanced	37	27.21
Minimal	12	8.82
All other	37	27.21
Total	136	100.00

COLORADO STATE HOSPITALIZED TUBERCULOSIS CASES DISCHARGED AS ARRESTED, APPROACHING ARREST, OR INACTIVE DURING 1958 BY TOTAL LENGTH OF HOSPITALIZATION

Number of months	Number of persons
1	3
2	6
3	6
4	6
5	6
6	5
7	12
8	14
9	5
10	6
11	4
12	4
13	5
14	4
15	5
16	2
17	3
19	1
20	3
36	1

Average length of hospitalization ..... 8.9 months
Median length of hospitalization ..... 7.5 months

STATEMENT OF NUMBER OF PERSONS UNDER COLORADO STATE CARE FOR TUBERCULOSIS DURING 1958

Type of Care	No. of Persons
Total	415
Sanatoria only	233
Clinic Care only	92
Outpatient only	86
Sanatoria and Outpatient	3
Sanatoria and Clinic Care	1

Last year there were 39 patients transferred from Sanatoria to Clinic Care, whereas this year there are 54. Also, last year there were 60 patients transferred from Sanatoria to Outpatient, whereas this year there are 53.

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DATE DUE BORROWER'S NAME

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