

*This report covering the continental United States is made jointly by the Tuberculosis Program, Division of Special Health Services, Public Health Service, and the National Tuberculosis Association.*

# Change in Tuberculosis Beds Occupied

—Spring 1954–Fall 1954—

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**I**NFORMATION concerning the changes taking place in tuberculosis bed occupancy has been incomplete and has given rise to conflicting speculation. Because of this, the survey reported in this paper was undertaken to provide current trends in this important area of tuberculosis control. The results of this survey indicate that there has been an average decline of slightly more than 6.5 percent in the number of tuberculosis beds occupied in the continental United States in the 8-month period between April 1, 1954, and November 30, 1954.

For the last 50 years, emphasis has been largely placed upon providing more and more tuberculosis beds to accommodate the large number of patients who needed tuberculosis hospitalization. In the past, most States lacked enough beds for the care of the known tubercu-

losis patients. In many instances, the beds that were provided left much to be desired in terms of proximity to patients, adequacy of the physical plant in which they were located, and scope and quantity of services provided. In terms of numbers, however, the supply had begun to catch up to the demand in some places. Within the last year or so, a few States have been indicating that they have more than enough beds to take care of all of their tuberculosis patients and that beds were being closed, or were going unused in relatively large numbers. In an effort to determine the average degree of the downward trend and the variation from State to State, the Public Health Service and the National Tuberculosis Association have undertaken the study reported in this paper.

## **Study Pattern**

The Tuberculosis Program of the Public Health Service annually collects information about the number of tuberculosis patients hospitalized in the United States. This information is obtained directly from the hospitals which take tuberculosis patients for treatment or for temporary care. The information collected in connection with this inquiry for April

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1, 1954, was used as the study baseline (1).

In the fall of 1954, the National Tuberculosis Association inquired (2) as to the number of tuberculosis beds occupied in each hospital with tuberculosis beds. These data do not give information about any single day, but refer only to the day on which the replies were prepared. However, most of the data show the situation in November 1954. For convenience in notation, the data for April 1, 1954, are designated as "spring 1954," and the data collected subsequently by the National Tuberculosis Association and by the Public Health Service (as specified below) are designated as data for "fall 1954." In general, the data cover an 8-month span and are treated in this paper as though they were based on observations 8 months apart.

The number of non-Federal hospitals reporting in each week interval is shown here (2, 4-6) :

<i>Week</i>	<i>Number of hospitals</i>
<b>1954 :</b>	
Prior to November 14-----	7
November 14-----	223
November 21-----	108
November 28-----	25
December 5-----	8
December 12-----	5
December 19-----	38
December 26-----	29
<b>1955 :</b>	
January 3-----	10
January 10-----	7
January 17-----	2
January 24-----	1
Total -----	463

The National Tuberculosis Association data include information on the number of tuberculosis beds occupied in 450 non-Federal institutions. To this number the Public Health Service staff has added occupancy data for 145 hospitals (mostly Federal hospitals) bringing the total number of institutions in this study to 595. (Data for the 145 additional institutions were obtained from State health department reports, sanatorium reports, and Federal agency reports.) This paper presents the information resulting from the analysis and comparison of the data collected in the fall of 1954 with the data collected in the spring of 1954. For convenience, the term "TB bed occupancy" as used in this paper means the "number of TB beds

occupied," and does not denote "the percentage of TB bed capacity which is occupied."

### Estimate of Average Decrease

In the 595 Federal and non-Federal hospitals for which we had information, the decrease in occupancy in the 8-month period is 6.7 percent (table 1). We have no doubt that the seasonal fluctuation in tuberculosis bed occupancy is responsible for some part of this decrease. However, because we have little information about the magnitude of the seasonal fluctuation, we cannot estimate with confidence the percent decrease on an annual basis.

### Non-Federal Hospitals

Information obtained from the inquiry conducted by the Tuberculosis Program in the spring of 1954 indicated that on April 1, 1954, there were 75,951 patients occupying tuberculosis beds in 568 non-Federal institutions (1, 3). In the fall of 1954 data were available for 463 hospitals including 31 which had ceased to take tuberculosis patients sometime after April 1, 1954, and two new hospitals which were not in operation in the spring of 1954, but which had tuberculosis patients occupying beds in the fall of 1954. The number of tuberculosis beds occupied in the 463 hospitals declined by more than 7 percent in the 8-month period (table 1). These 463 hospitals represent about 82 percent of the non-Federal institutions which had 5 or more tuberculosis beds on April 1, 1954; 89 percent of the non-Federal tuberculosis beds which were occupied on that date were in these 463 hospitals (1-3).

Three hundred forty-seven of the 463 non-Federal hospitals are tuberculosis hospitals. In this group the decrease in beds occupied is 7 percent. The remaining 116 hospitals in the non-Federal group are chiefly general hospitals which have a specified number (5 or more) of tuberculosis beds. The number of tuberculosis beds occupied in these hospitals has declined by 9.5 percent (table 1).

A comparison of the number of tuberculosis beds occupied in non-Federal hospitals between the spring and fall of 1954 is shown by States in table 2. The analysis of data for the United

States in terms of the individual States as units has many disadvantages because of the lack of homogeneity within States and because of the lack of comparability between States. However, in spite of the fact that the State must be considered an arbitrary and—in some statistical senses—an unsatisfactory unit of comparison, it is a unit that is generally accepted and understood. It will serve here to illustrate the great differences geographically in the change in tuberculosis bed occupancy over the 8-month period under consideration. Observe, for instance, that while one State experienced a decrease of 24.6 percent in the number of non-Federal tuberculosis beds occupied, another State experienced an increase of 18.0 percent.

For these two States, every hospital that reported in the fall also reported in the spring. If reporting had been as complete for all other States, the greatest percent increase might have been more than 18 percent and the greatest percent decrease more than 24.6 percent, but neither of the extremes could have been smaller. Nineteen States showed decreases of less than 5 percent; 9 showed decreases of between 5 and 10 percent, and 13 had decreases of 10 percent or more. Seven showed increases ranging from about 2 percent to 18 percent.

#### Pattern of Change

There is no apparent geographic pattern to the changes in absolute numbers or percentages.

**Table 1. Change in number of tuberculosis beds occupied, by type and control of hospital, continental United States, spring 1954–fall 1954**

Type and control	Number of hospitals <sup>1</sup>	Number of TB beds occupied		Increase or decrease in beds occupied spring 1954–fall 1954	
		Spring 1954	Fall 1954	Number	Percent
Total.....	595	86, 530	80, 751	-5, 779	-6.7
Non-Federal hospitals.....	463	67, 405	62, 445	-4, 960	-7.4
Tuberculosis hospitals.....	347	57, 816	<sup>2</sup> 53, 766	-4, 050	-7.0
State.....	86	24, 211	23, 477	-734	-3.0
Local government (city, county, district).....	181	27, 417	24, 953	-2, 464	-9.0
Other (private, eleemosynary, nonprofit).....	80	6, 188	5, 336	-852	-13.8
Other hospitals with assigned tuberculosis beds.....	116	9, 589	8, 679	-910	-9.5
State.....	8	544	543	-1	-0.2
Local government (city, county, district).....	76	7, 881	7, 190	-691	-8.8
Other (private, eleemosynary, nonprofit).....	32	1, 164	946	-218	-18.7
Federal hospitals.....	132	19, 125	18, 306	-819	-4.3
Veterans Administration.....	<sup>3</sup> 108	15, 739	15, 334	-405	-2.6
Tuberculosis hospitals.....	21	7, 787	7, 514	-273	-3.5
Other hospitals.....	87	7, 952	7, 820	-132	-1.7
Other Federal hospitals.....	24	3, 386	2, 972	-414	-12.2

<sup>1</sup> Thirty-one of these hospitals had tuberculosis patients in the spring of 1954 but were closed to tuberculosis patients by the fall of 1954 and two new hospitals were not in operation in the spring of 1954 but had tuberculosis patients occupying beds in the fall of 1954. No hospitals are included which had less than 5 beds for the care of tuberculosis patients.

<sup>2</sup> Since this study relates to continental United States only, 150 Alaska native patients hospitalized under contract are not included. Fourteen of these are in local government hospitals; 136 in other private hospitals.

<sup>3</sup> In the spring of 1954 there were 95 hospitals with 5 or more tuberculosis beds; in the fall of 1954, there were 108. For comparative purposes the number of beds occupied has been enumerated on the basis of the reporting method in effect in the fall of 1954—by type of bed patient.

SOURCE: References 1-6.

**Table 2. Change in number of tuberculosis beds occupied in non-Federal Hospitals, by State, continental United States, spring 1954-fall 1954**

State	Number of hospitals <sup>1</sup>	Percent coverage <sup>2</sup>	Number of tuberculosis beds occupied		Increase or decrease in number of TB beds occupied, spring 1954-fall 1954	
			Spring 1954	Fall 1954	Number	Percent
Total.....	463	87.4	67,405	62,445	-4,960	-7.4
Alabama.....	6	78.0	566	560	-6	-1.1
Arizona.....	15	95.8	430	412	-18	-4.2
Arkansas.....	2	100.0	1,566	1,512	-54	-3.4
California.....	47	93.5	6,635	5,967	-668	-10.1
Colorado.....	13	86.7	874	784	-90	-10.3
Connecticut.....	9	100.0	1,374	1,087	-287	-20.9
Delaware.....	1	100.0	171	165	-6	-3.5
District of Columbia.....	4	100.0	939	891	-48	-5.1
Florida.....	6	100.0	1,814	1,803	-11	-0.6
Georgia.....	2	95.1	1,887	1,744	-143	-7.6
Idaho.....	1	100.0	75	74	-1	-1.3
Illinois.....	31	97.1	3,719	3,582	-137	-3.7
Indiana.....	8	69.7	939	900	-39	-4.2
Iowa.....	5	91.9	570	491	-79	-13.9
Kansas.....	3	100.0	394	362	-32	-8.1
Kentucky.....	9	65.9	945	917	-28	-3.0
Louisiana.....	6	55.8	626	598	-28	-4.5
Maine.....	4	100.0	329	273	-56	-17.0
Maryland.....	7	97.3	1,589	1,622	+33	+2.1
Massachusetts.....	22	91.2	2,369	2,152	-217	-9.2
Michigan.....	27	100.0	4,528	4,342	-186	-4.1
Minnesota.....	10	85.8	1,267	1,054	-213	-16.8
Mississippi.....	2	95.5	466	459	-7	-1.5
Missouri.....	5	90.2	1,453	1,349	-104	-7.2
Montana.....	1	100.0	178	210	+32	+18.0
Nebraska.....	2	100.0	179	168	-11	-6.1
Nevada.....	2	100.0	27	22	-5	-18.5
New Hampshire.....	2	100.0	128	121	-7	-5.5
New Jersey.....	14	81.0	2,139	2,037	-102	-4.8
New Mexico.....	2	13.7	50	57	+7	+14.0
New York.....	54	94.8	10,186	8,885	-1,301	-12.8
North Carolina.....	18	85.5	1,820	1,756	-64	-3.5
North Dakota.....	1	100.0	201	160	-41	-20.4
Ohio.....	23	96.0	3,322	3,140	-182	-5.5
Oklahoma.....	3	58.9	375	350	-25	-6.7
Oregon.....	5	100.0	504	525	+21	+4.2
Pennsylvania.....	24	72.5	4,023	3,904	-119	-3.0
Rhode Island.....	2	100.0	452	341	-111	-24.6
South Carolina.....	5	87.1	734	715	-19	-2.6
South Dakota.....	1	100.0	106	109	+3	+2.8
Tennessee.....	9	79.4	1,323	1,265	-58	-4.4
Texas.....	12	42.9	1,362	1,300	-62	-4.6
Utah.....	1	100.0	72	70	-2	-2.8
Vermont.....	1	28.9	35	37	+2	+5.7
Virginia.....	5	83.7	1,191	1,212	+21	+1.8
Washington.....	10	100.0	1,320	<sup>3</sup> 1,039	-281	-21.3
West Virginia.....	3	73.3	777	683	-94	-12.1
Wisconsin.....	18	92.0	1,376	1,239	-137	-10.0
Wyoming <sup>4</sup> .....	0	0				

<sup>1</sup> Number of hospitals for which reports were available in the fall of 1954.

<sup>2</sup> The proportion of tuberculosis beds in the State in April 1954 for which reports were available in the fall of 1954, based upon the rated tuberculosis capacity of the respondent hospitals, not upon the number of beds occupied.

<sup>3</sup> Adjusted for Alaska natives occupying beds.

<sup>4</sup> No data reported.

SOURCE: References 1-6.

**Table 3. Change in number of tuberculosis beds occupied in non-Federal hospitals, by size (TB rated capacity) and type of hospital, continental United States, spring 1954–fall 1954**

Size <sup>1</sup> (TB rated capacity) and type of hospital	Number of hospitals <sup>2</sup>	Number of TB beds occupied		Increase or decrease in number of TB beds occupied spring 1954–fall 1954	
		Spring 1954	Fall 1954	Number	Percent
All sizes (total)	463	67,405	62,445	-4,960	-7.4
Tuberculosis	347	57,816	53,766	-4,050	-7.0
All other <sup>3</sup>	116	9,589	8,679	-910	-9.5
5–49 beds	122	2,733	2,140	-593	-21.7
Tuberculosis	62	1,577	1,191	-386	-24.5
All other <sup>3</sup>	60	1,156	949	-207	-17.9
50–99 beds	101	5,844	5,051	-793	-13.6
Tuberculosis	82	4,774	4,113	-661	-13.8
All other <sup>3</sup>	19	1,070	938	-132	-12.3
100–149 beds	76	6,997	6,365	-632	-9.0
Tuberculosis	62	5,706	5,169	-537	-9.4
All other <sup>3</sup>	14	1,291	1,196	-95	-7.4
150–249 beds	67	10,460	9,553	-907	-8.7
Tuberculosis	57	8,759	8,042	-717	-8.2
All other <sup>3</sup>	10	1,701	1,511	-190	-11.2
250–499 beds	66	19,468	18,410	-1,058	-5.4
Tuberculosis	55	16,311	15,426	-885	-5.4
All other <sup>3</sup>	11	3,157	2,984	-173	-5.5
500–2,999 beds	31	21,903	20,926	-977	-4.5
Tuberculosis	29	20,689	19,825	-864	-4.2
All other <sup>3</sup>	2	1,214	1,101	-113	-9.3

<sup>1</sup> Intervals in this column represent the official tuberculosis bed capacity for each of the hospitals included in that interval and are different from the corresponding column in table 6, in which the intervals show the decrease in the number of patients occupying tuberculosis beds between spring and fall of 1954.

<sup>2</sup> Number of hospitals for which reports were available in the fall of 1954.

<sup>3</sup> Chiefly general hospitals with facilities for tuberculosis patients.

SOURCE: References 1–6.

Furthermore, there is no relationship between the changes in tuberculosis beds occupied and the rate of newly reported tuberculosis cases or deaths, or in the changes in these rates. On the other hand, the States which show the largest decline in tuberculosis bed occupancy are the ones which, in general, have the greatest number of tuberculosis beds per newly reported active tuberculosis case. This relationship is apparent when the data for all States are considered. It is even more obvious when the observation is based only on those States from which information about 95 percent or more of their tuberculosis beds was available.

An analysis of official rated bed capacity indicates that the greatest average percentage decline in number of TB beds occupied has oc-

curred in the smallest hospitals. Hospitals with less than 50 beds showed the largest decrease. The average decrease in beds occupied for this group is almost 22 percent. For hospitals with between 50 and 99 tuberculosis beds, the average decrease was close to 14 percent, and for hospitals with between 100 and 149 beds the average decrease was 9 percent. Table 3 shows that this relationship extends to the groups of still larger hospitals—the larger the hospital, the smaller the average percentage decline in number of beds occupied. This is apparent when all types of hospitals are grouped by size, as well as when the tuberculosis hospitals are considered separately by size.

Tables 1 and 4 show changes in bed occupancy by ownership of hospitals. The non-Federal

groups called "other" in these tables are, for convenience, called private in the text. They are all nongovernment hospitals. This classification, however, refers to the ownership of the hospitals and not to the source of funds for the care of the tuberculosis patients. The care of some patients in nongovernment hospitals is provided at public expense. Some of the changes in TB bed occupancy in private hospitals may be due to changes in the availability of public money for the care of patients in private hospitals.

When the ownership of the hospital is considered, it is evident, as shown in table 1, that

the smallest average decline in the occupancy of tuberculosis beds occurred among the State-owned hospitals. The largest average decline in occupancy was among the private hospitals, with the local government hospitals falling in between. There is a pronounced relationship between the ownership of tuberculosis hospitals and their size. On the average, State tuberculosis hospitals are the largest, local government hospitals are intermediate in size, and private hospitals are the smallest (table 1).

There arises, therefore, the question of whether the relative changes in tuberculosis bed occupancy are associated with the hospitals be-

**Table 4. Change in number of tuberculosis beds occupied in non-Federal hospitals by size (TB rated capacity) and type of hospital, continental United States, spring 1954-fall 1954**

Size <sup>1</sup> (TB rated capacity) and control of hospital	Number of hospitals <sup>2</sup>	Number of TB beds occupied		Increase or decrease in number of TB beds occupied spring 1954-fall 1954	
		Spring 1954	Fall 1954	Number	Percent
All sizes (total).....	463	67,405	62,445	-4,960	-7.4
State.....	94	24,755	24,020	-735	-3.0
Local government.....	257	35,298	32,143	-3,155	-8.9
Other non-Federal.....	112	7,352	6,282	-1,070	-14.6
5-49 beds.....	122	2,733	2,140	-593	-21.7
State.....	4	98	103	+5	+5.1
Local government.....	70	1,680	1,306	-374	-22.3
Other non-Federal.....	48	955	731	-224	-23.5
50-99 beds.....	101	5,844	5,051	-793	-13.6
State.....	7	468	459	-9	-1.9
Local government.....	62	3,560	3,161	-399	-11.2
Other non-Federal.....	32	1,816	1,431	-385	-21.2
100-149 beds.....	76	6,997	6,365	-632	-9.0
State.....	18	1,835	1,648	-187	-10.2
Local government.....	45	4,077	3,698	-379	-9.3
Other non-Federal.....	13	1,085	1,019	-66	-6.1
150-249 beds.....	67	10,460	9,553	-907	-8.7
State.....	17	2,478	2,490	+12	+0.5
Local government.....	35	5,684	5,180	-504	-8.9
Other non-Federal.....	15	2,298	1,883	-415	-18.1
250-499 beds.....	66	19,468	18,410	-1,058	-5.4
State.....	34	9,971	9,834	-137	-1.4
Local government.....	28	8,299	7,358	-941	-11.3
Other non-Federal.....	4	1,198	1,218	+20	+1.7
500-2,999 beds.....	31	21,903	20,926	-977	-4.5
State.....	14	9,905	9,486	-419	-4.2
Local government.....	17	11,998	11,440	-558	-4.7
Other non-Federal.....					

<sup>1</sup> Intervals in this column represent the official tuberculosis bed capacity for each of the hospitals included in that interval and are different from the corresponding column in table 6, in which the intervals show the decrease in the number of patients occupying tuberculosis beds between spring and fall of 1954.

<sup>2</sup> Number of hospitals for which reports were available in the fall of 1954.

SOURCE: References 1-6.

cause of their size or because of their ownership. Table 4, while it does not present an unequivocal picture, shows that size is probably a more important determinant of the change in tuberculosis bed occupancy than is ownership. For instance, among institutions with less than 50 beds there are relatively large numbers of institutions in the categories of local government hospitals and of private hospitals. For each of these categories, the percent decrease is substantially the same. In the group of hospitals with between 100 and 149 tuberculosis beds, the State hospitals have the largest percentage decrease and the private hospitals have the smallest percentage decrease. This group is composed of a fairly large number of hospitals and a fairly large number of beds in each category. Among the large hospitals that have from 250 to 499 tuberculosis beds, the local government hospitals have the largest percent decrease in tuberculosis bed occupancy while the State and private hospitals show very small changes. In the largest group of hospitals—those that have more than 500 tuberculosis beds—the State and local government hospitals have decreases of about the same magnitude. It is interesting to notice, by way of contrast, that while the local government and private hospitals show smaller decreases in tuberculosis bed occupancy as we go up the size scale, the State-owned hospitals do not show this trend.

#### *Distribution of Closed Facilities*

Thirty-one of the 463 non-Federal hospitals which took tuberculosis patients in the spring of 1954 were closed by the fall of 1954 or had closed their tuberculosis units. These 31 hospitals had a total of 2,362 tuberculosis beds (official rated capacity). In the same period it is known that 2 new tuberculosis hospitals opened with a capacity of 470 tuberculosis beds. This resulted in a net decrease of 1,892 in the number of tuberculosis beds in the continental United States as a result only of the closing of old hospitals and the opening of new hospitals. The corresponding net decrease in tuberculosis bed occupancy is 1,341.

The 31 closed institutions were all located in 10 States; 9 of the institutions were in 1 State which has a progressive program of new

construction to replace small outmoded institutions (1, 2, 4-6).

Twenty-five of the closed institutions were tuberculosis hospitals, the majority of which were old and had a fairly small capacity for tuberculosis patients. Five of the 25 were from 51 to 86 years old; 8 were from 36 to 50 years; 10 were from 14 to 29 years; and only 2 were fairly new, 4 to 5 years old. Eleven of these tuberculosis facilities had less than 50 beds; 6 had from 50 to 74 beds; and the remaining 8 hospitals had 75 beds or more. Table 5 shows the distribution of closed hospitals by rated capacity for tuberculosis. (The size classification shown in tables 3, 4, and 5 is in terms of rated capacity for tuberculosis, as distinguished from the size classification given in table 6, which is in terms of the numerical change in the number of beds occupied.) Six of the 25 tuberculosis facilities were privately owned, 2 were State owned, and all others were owned by the local government—city, county, or district.

The remaining 6 hospitals in the non-Federal group were general hospitals which closed their tuberculosis wards. These facilities were mostly in old hospitals ranging from 35 to 61 years old, the only exception being a 14-year-old hospital. Three of the 6 hospitals had less than 25 tuberculosis beds; only 1 had more than 50 beds (table 5). All except one were owned by the local government; it was privately owned.

Twenty-four of the 31 closed institutions had less than 50 tuberculosis patients each on April 1, 1954. The other 7 institutions had 50 or more patients hospitalized on that date (table 6).

#### **Federal Hospitals**

In the 132 Federal hospitals for which data were available in the fall of 1954, there is a decrease in tuberculosis bed occupancy of 4.3 percent (table 1). One hundred and eight of the Federal hospitals (about 82 percent) are Veterans Administration hospitals in which there were 15,334 beds occupied by tuberculosis patients in the fall of 1954. This number represents 83.8 percent of the total number of tuberculosis beds occupied in the 132 Federal hospitals.

Data furnished by the Department of Medi-

**Table 5. Distribution of closed non-Federal tuberculosis facilities, by size, spring 1954–fall 1954**

Size of hospital (TB rated capacity) <sup>1</sup>	Total		Closed TB hospitals		Closed TB sections in general hospitals	
	Number of closed TB facilities	Number of TB beds occupied April 1, 1954	Number of institutions	Number of TB beds occupied on April 1, 1954	Number of institutions	Number of TB beds occupied on April 1, 1954
Total	31	1, 581	25	1, 481	6	100
5-24	6	62	3	31	3	31
25-49	10	218	8	185	2	33
50-74	7	275	6	239	1	36
75-99	1	40	1	40	0	0
100-149	3	135	3	135	0	0
150-249	2	250	2	250	0	0
250 and over	2	601	2	601	0	0

<sup>1</sup> Intervals in this column represent the official tuberculosis bed capacity for each of the hospitals included in that interval and are different from the corresponding column in table 6, in which the intervals show the decrease in the number of patients occupying tuberculosis beds between spring and fall, 1954.

SOURCE: References 1-6.

cine and Surgery of the Veterans Administration show that the number of tuberculosis beds occupied in the Veterans Administration hospitals has decreased by 2.6 percent in the 8-month period. This decrease appears to be small by comparison with the average decrease and by comparison with the decreases in some other classes of hospitals. This figure, however, reflects only the change in the number of persons hospitalized for tuberculosis in VA hospitals; it does not take account of those persons hospitalized under contract in other hospitals. The number of tuberculosis patients receiving care under VA auspices in contract hospitals has been decreasing since February 1947, and in the 8-month period between March 31 and November 30, 1954, decreased from 916 to 528. This policy of decreasing contract hospitalization and making maximum use of VA hospitals in the presence of a decreased demand for tuberculosis beds is responsible for part of the decrease in bed occupancy in other Federal hospitals and in non-Federal hospitals. Because of the effect of this policy, the average decrease of 6.7 percent for the whole United States has more meaning as a summary figure than the average decrease of 7.4 percent for non-Federal hospitals only. The total number

of patients hospitalized by VA in both its own and in contract hospitals decreased by about 5 percent.

Also of importance in connection with the demand for tuberculosis beds is reliable data about waiting lists. Although such data cannot be assembled for the whole United States, it is available for VA beneficiaries. On March 31, 1954, there were 947 such veterans awaiting admission as compared with 456 veterans on November 30, 1954. Thus, the total number of tuberculous veterans hospitalized and awaiting admission to VA hospitals was 17,614 on March 31, 1954. By comparison there were 16,358 on November 30, 1954, or a decline of slightly more than 7 percent. Here, however, one must recognize that a substantial number of patients may have obtained hospitalization elsewhere before they were reached on waiting lists.

If the VA hospitals are eliminated from the Federal data, the decline in the occupancy of tuberculosis beds in the remaining 24 Federal hospitals is 12.2 percent (table 1).

#### The Meaning of the Data

The decrease in tuberculosis bed occupancy discussed in this paper is a phenomenon of rela-



tively recent times. Previously, the trend has been steadily upward. Construction of hospital facilities solely for tuberculosis patients started just before the turn of the century. By 1904 there were fewer than 10,000 tuberculosis beds in the United States. This number increased until on April 1, 1953, in the continental United States, there were almost 110,000 tuberculosis beds in which there were more than 96,000 patients. While the number of tuberculosis beds continued to increase, the number of tuberculosis patients hospitalized, however, has shown a decline since April 1, 1953.

During the first half of the century there was urgent need for more tuberculosis beds. As tuberculosis hospital facilities were increased, the number of tuberculosis patients hospitalized increased proportionately. During this period a continuous backlog of patients exerted pressure for the construction of more tuberculosis hospital facilities. However, even with this

**Table 6. Distribution of non-Federal hospitals by change in number of tuberculosis beds occupied, spring 1954-fall 1954**

Change in TB beds occupied (number of beds) <sup>1</sup>	Number of hospitals reporting	Number of hospitals still open	Number of closed TB facilities	
			Tuberculosis hospitals	Tuberculosis sections in general hospitals
Total.....	463	432	25	6
No change.....	36	36		
Increase.....	102	102		
Decrease.....	325	294	25	6
1-9.....	156	154	1	1
10-19.....	68	61	3	4
20-29.....	30	26	4	0
30-39.....	28	20	7	1
40-49.....	16	13	3	0
50-99.....	18	15	3	0
100-199.....	7	5	2	0
200-299.....	1		1	0
300 and over.....	1		1	0

<sup>1</sup> Intervals in this column represent the decrease in the number of patients occupying tuberculosis beds between spring and fall, 1954, in each of the hospitals included in that interval and are different from the corresponding column in tables 3, 4, and 5, in which the intervals represent the size (TB rated capacity) of the hospitals.

SOURCE: References 1-6.

pressure, it was considered normal for 10 to 15 percent of the tuberculosis beds to remain unoccupied.

The decreases which are apparent may be assigned to three causes: reduced demand for tuberculosis hospital facilities, seasonal fluctuation in the data, and representativeness of the reporting hospitals.

While the data available for this paper are much more comprehensive than the occasional reports about bed occupancy which were available around mid-1954, even the data used here leave much to be desired. Although the response rate was remarkably high on the whole, many States are represented by only a small proportion of the total number of beds in the State (table 2). Confidence in the results of this study must be based upon the magnitude of the response rather than upon knowledge of its representativeness. Although the response rate is quite high, we do not know whether the respondents are representative of the whole United States. Nor do we know whether the respondents in a given State adequately represent that State unless every hospital with tuberculosis beds reported in the fall of 1954. The smaller the proportion of beds reported, the less our confidence in the representativeness of the available data.

Moreover, it is not safe to assume that there is a uniform surplus of beds in a State even when all hospitals report, and when the State shows a decrease in tuberculosis bed occupancy. Even this situation may mask serious bed shortages in some parts of the State, or for some classes of patients. For instance, Missouri shows a decrease of 7.2 percent in the number of non-Federal beds occupied over the 8-month period under consideration. However, there are no beds available in Kansas City for children under 12 years of age. Children who need treatment are given limited hospitalization at the Kansas City General Hospital isolation ward. If continued care is indicated, children under 12 must be sent out of the State to a private hospital. Moreover, in Missouri, in spite of the decrease in tuberculosis bed occupancy shown by this study, there were, in October, 41 patients awaiting admission to the State sanatorium at Mount Vernon. In Kansas, which showed a decrease in tuberculosis bed occupancy

of 8.1 percent, there is usually a 3- to 4-week waiting period for admission to State hospitals. In Kentucky, which showed a small decrease of 3 percent in tuberculosis bed occupancy, there is a waiting period of several weeks.

The decrease in tuberculosis bed occupancy for the State of Alabama is so small in the 8-month period that it may be entirely discounted on the grounds of its being due to non-representativeness or to seasonal fluctuation. However, because there does appear to be a slight decrease (table 2), it is useful to notice that at the time the 1954 annual report for the Jefferson Tuberculosis Sanatorium in Alabama was written, there were more than 80 Negro patients awaiting admission to the institution (7). Mississippi also shows a very small decrease but according to the report of a Public Health Service staff member on April 18, 1955, there are 245 Negroes on the waiting list, and it is believed that this number is an underestimate of the actual number of patients waiting for beds since many applications have not been filed because of the already long waiting list.

The preceding paragraphs illustrate that a decrease in bed occupancy can occur in a given State even in the presence of a need for additional beds. It is apparent from the foregoing that these figures, at best, reflect only changes in demand. Since there is a considerable difference between demand and need, these data should not be used as a direct measure of the change in need for tuberculosis hospital beds. Moreover, more beds than are now occupied or needed would be required if tuberculosis case finding and followup were more aggressively implemented. In "Tuberculosis Case Finding in Iowa," (8) for instance, it is pointed out that three-fourths of all of the cases of tuberculosis diagnosed in Iowa during 1952 came to diagnosis "because of symptoms associated with tuberculosis." Many of these cases could have been found earlier by aggressive case finding.

A careful study in Polk County, Iowa, including the city of Des Moines, showed that about 60 percent of the 83 new tuberculosis cases discovered during 1952 and 1953 came to diagnosis because of symptoms. Moreover, for two-thirds of the cases, earlier occasions were identified when a diagnosis of tuberculosis might have been made. Forty percent of

the missed opportunities were attributed to a break in the followup procedure. It is especially interesting to note that the "missed opportunities" were identified only among the moderately and far advanced cases; none could be found for the minimal cases (9).

Additional evidence that X-ray case finding has not yet reached the limit of its usefulness is found in the facts that:

A million and a half more case-finding films were taken in 1953 than in 1952 without a decrease in the yield of new cases resulting from the case-finding efforts (10). Moreover, 78 percent of the newly reported active and probably active cases for which the extent of disease was specified in 1953 were in the moderately or far advanced stage of disease at the time they were reported. There was essentially no change between 1952 and 1953 in the proportion of cases reported as minimal, moderately advanced, and far advanced (11).

About 5 percent of all newly reported tuberculosis cases were first made known to the health department only at the time of death (11).

## Summary

1. The overall average decrease in the number of tuberculosis patients occupying beds in all types of hospitals, Federal and non-Federal, in the continental United States, was 6.7 percent in the 8-month period between April 1954 and November 1954.

2. States which show the largest decline in non-Federal tuberculosis bed occupancy are the ones which, in general, have the largest ratios of tuberculosis beds per annual newly reported active tuberculosis case.

3. The greatest percentage decrease in number of non-Federal tuberculosis beds occupied has occurred in the smaller hospitals; the larger the hospital the smaller the average percentage decrease in number of beds occupied.

4. There is wide variation in the changes in bed occupancy in non-Federal hospitals from State to State. More States show decreases than increases; however, not all of the States which show decreases have a surplus of beds.

5. The average decrease in number of tuberculosis patients occupying beds in all Federal hospitals is 4.3 percent. The Veterans Admin-

istration hospitals, accounting for about 82 percent of the beds in the Federal group, show an average decrease in tuberculosis bed occupancy of 2.6 percent. This average becomes about 5 percent when contract hospitals are combined with Veterans Administration hospitals. The average decrease in tuberculosis bed occupancy in the remaining Federal hospitals (Army, Navy, Air Force, Public Health Service, and the former Bureau of Indian Affairs) is 12.2 percent.

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### Institutes in Care of Prematures

Three physician-nurse institutes in the care of premature infants have been scheduled during 1955-56 at the New York Hospital-Cornell Medical Center.

The institutes, now in their seventh year, are sponsored by the New York State Department of Health and the Children's Bureau of the Department of Health, Education, and Welfare. They are designed for physicians and nurses in charge of hospital premature nurseries and special premature centers and for medical and nursing directors and consultants of State and local premature programs.

The institutes, of 2 weeks' duration for physicians and 4 weeks for nurses, start September 26, 1955; November 21, 1955; and January 30, 1956. If the number of applicants is sufficient, additional institutes will be scheduled in 1956 beginning April 2 and May 21. Each institute is limited to six physician-nurse teams.

Participants pay no tuition fee, and stipends are provided to help cover expenses during attendance.

Early application is essential in planning the institutes. Additional information may be obtained by writing: Box 143, Institute in the Care of Premature Infants, New York Hospital, 525 East 68th Street, New York 21, N. Y.