THE SOCIAL BREAKDOWN SYNDROME IN A COHORT OF LONG-STAY PATIENTS IN THE DUTCHESS COUNTY UNIT, 1960–1963

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The establishment of the Dutchess County Unit was predicated on the opinion that "chronic hospitalization and disability can be reduced by . . . a comprehensive psychiatric service based upon a small, community-oriented, open public mental hospital [providing] maximum continuity of care. . . ."[1] It was believed that such a reduction in chronic hospitalization and disability could be achieved among the long-stay patients from Dutchess County already in the Hudson River State Hospital when the Unit opened. Consequently, the majority of these patients were transferred into the buildings housing the Unit shortly before it opened, and later, as beds became available, most of this group came into the Unit. One segment of the evaluation studies is concerned with estimating the effect of the Unit on the behavior and functioning of this cohort of long-stay patients.

Initially, two hypotheses were developed:

1. that more Dutchess County residents on long-stay services in the hospital in October 1959 would be rehabilitated to the extent of being able to leave the hospital; and

2. that the long-stay patients would come to function at a higher level and be less deteriorated than if the Unit had not been established.

The first step in testing these hypotheses was to identify the group of long-stay patients to be studied. In October 1959, before the Unit was opened, a census was made of all Dutchess County patients in the hospital except those on the admission, medical, and tuberculosis services. As a comparison, to estimate what the experience of these patients

would have been if they had not been placed in the Unit, the non-Dutchess County patient on the same ward closest in age was matched to each Dutchess County patient. Thus the comparison group was comparable for age, sex, and ward location in October 1959. The Dutchess County cohort numbered 449, and the comparison cohort, 444. The discrepancy in numbers was a result of erroneous residence allocations which were discovered too late to permit correction.[2]

The plan of the study was to survey behavior indicating the functioning for each patient in the two cohorts in December 1959, and to repeat this survey semiannually during the next few years.

DATA GATHERING

To accomplish this, a schedule was developed to collect the information required for estimating a patient's level of function. This was done during the fall of 1959, was pretested for a random group of patients, and was ready for use on the base-line survey in December 1959. Subsequently surveys were scheduled every six and one-half months. This plan was adhered to through the sixth survey in August 1962. The seventh and final survey was made ten months later in June 1963. Thus the total follow-up period was about three and one-half years.

Instructions, both written and oral, were given to the ward staffs on how to fill out the schedules. Control procedures to maintain the completeness and accuracy of the schedules were developed. However, during the first and, to a lesser extent, the second survey such procedures were almost nonexistent and as a result we have a distressingly large number of incomplete or missing schedules on these surveys.

During the period some patients were discharged, placed on convalescent care, or were on leave during the survey week. When this occurred, interviewers were sent to the patient's home at the end of the survey week, and obtained the information needed to fill out the schedules from the patient and his family.

When the cohort of non-Dutchess County patients was selected, it included a considerable number of patients from outside the usual catchment area of the Hudson River State Hospital. No concern was felt for this at the time, but we later discovered that these patients, mostly from New York City, had been transferred to the hospital in several large groups of "mass transfers" during the previous 30 years, to relieve overcrowding in the state hospitals serving New York City.

It was believed that these patients represented a more deteriorated group than the patients from the usual catchment area, and the findings from the first few surveys confirmed this. Since this would tend to bias the conclusions based on the surveys in favor of the Dutchess County cohort, an attempt was made to select replacements for these transferred patients on the basis of the ward lists for October 1959, when the original cohorts were selected. This was accomplished, and the additional patients were added to the non-Dutchess County cohort for the sixth and seventh surveys.[3]

The first hypothesis to be investigated stated that the Dutchess County patients would leave the hospital at a faster rate than they would have if they had not been in the Unit. The best test of this hypothesis that can be made from the available information is to compare the number of patients out of the hospital at the time of each survey in both the Dutchess County and non-Dutchess County cohorts, and the total number in each cohort out during the three and one-half year follow-up period. However, there are several reservations concerning these comparisons. One is that the Unit is located in the county of residence of its patients, whereas the cohort to which they are being compared is a minimum of 30 miles from home and in some cases as much as 150 miles. This factor probably had a differential effect on the readiness of the hospital staff to release patients in the two cohorts. A second reservation concerns the assumption that differences in release may be attributed to the operation of the Unit. The data necessary for a conclusion are not currently available, but it is not unlikely that prior to the opening of the Unit the rate of return of long-stay Dutchess County patients to their homes was higher than for non-Dutchess County patients.

A comparison of releases at each survey within the two cohorts of patients by sex is given in Table 1. The most frequent mode of release is by death. By the seventh and last survey, 21 per cent of the male patients and 18 per cent of the females in both cohorts had died. The Dutchess County males did move out of the hospital more rapidly than did members of their comparison cohort. On the fourth and later surveys, about 10 per cent of the male patients from Dutchess County were on family care, compared to only 1 per cent of the non-Dutchess County males. At the time of the last survey, 3.6 per cent of the Dutchess County males were on convalescent care and 5.7 per cent had been discharged and not readmitted, while for the comparison group these percentages were 1.1 and 1.6. Among the females

there was a similar contrast in family care placements, 10 per cent of the Dutchess County patients and 2 per cent of the matched patients being on family care at the seventh survey. The proportions in the community were not very different, however, in the two groups. Nine per cent of the Dutchess County females and 7 per cent of the comparison patients were on convalescent care or had been discharged.

This hypothesis may also be tested by considering the total number ever out of the hospital during the study period, even though subsequently some returned. Table 2 gives the percentage of each cohort ever discharged or placed on convalescent or family care during the study period. The experience of the Dutchess County males is more favorable than that of their comparison group. Only 3.7 per cent of the latter were released either by discharge or convalescent care placement during the three and one-half years, compared to 14 per cent in the former cohort. The differences between the two cohorts of female patients is negligible. The greater utilization of family care placement for Dutchess County patients is again clear. This was a result of a vigorous effort by the social work staff of the Unit to establish family care households in the county.

TABLE 1. PERCENTAGE DISTRIBUTION OF STATUS OF DUTCHESS COUNTY AND NON-DUTCHESS COUNTY COHORTS AT THE BEGINNING OF EACH SURVEY, BY SEX

	Survey Number												
	Males							*Females*					
Status	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
	Dutchess County Patients													
	N = 193							N = 256						
In hospital	95.3	83.9	78.3	72.5	70.5	69.4	58.5	99.2	90.6	84.8	79.7	70.5	69.9	62.9
Discharged or on C.C.	2.1	4.6	5.7	6.8	6.7	5.7	9.3	0.4	2.3	4.3	5.5	7.5	6.6	9.0
Discharged	0	0.5	0.5	1.6	4.1	3.6	5.7	0	0	1.2	1.6	2.0	2.7	3.5
Convalescent care	2.1	4.1	5.2	5.2	2.6	2.1	3.6	0.4	2.3	3.1	3.9	5.5	3.9	5.5
Family care	2.6	6.2	7.3	9.3	10.4	9.8	11.4	0.4	3.5	3.9	5.9	7.0	8.6	9.8
Dead	0	5.2	8.8	11.4	12.4	15.0	20.7	0	3.5	6.6	9.0	12.9	14.8	18.4
	Non-Dutchess County Patients													
	N = 189							N = 255						
In hospital	99.5	95.8	86.2	85.8	82.0	78.8	75.7	96.8	89.8	87.1	83.9	81.2	77.6	73.7
Discharged or on C.C.	0	1.0	1.6	2.7	3.2	3.2	2.7	1.2	4.7	5.9	6.3	6.3	6.6	6.6
Discharged	0	0.5	0.5	1.1	2.1	2.1	1.6	0	0	1.2	1.2	2.4	3.1	3.9
Convalescent care	0	0.5	1.1	1.6	1.1	1.1	1.1	1.2	4.7	4.7	5.1	3.9	3.5	2.7
Family care	0.5	0.5	1.1	1.1	1.1	1.1	1.1	2.0	2.0	0.8	2.0	2.0	1.2	2.0
Dead	0	2.6	7.9	10.6	13.8	16.9	20.6	0	3.5	6.3	7.8	10.6	14.5	17.6

TABLE 2. PER CENT OF DUTCHESS COUNTY AND NON-DUTCHESS COUNTY PATIENTS EVER RELEASED FROM HOSPITAL DURING STUDY PERIOD, BY SEX AND TYPE OF RELEASE

	Males		*Females*	
Type of Release	*Dutchess County*	*Non-Dutchess County*	*Dutchess County*	*Non-Dutchess County*
Number of Patients	193	189	256	255
Discharge or convalescent care	14.0	3.7	10.5	10.2
Discharge	7.3	2.6	4.7	4.3
Convalescent care	11.9	2.1	9.8	10.2
Family care	18.1	1.1	13.3	3.5

The significantly higher percentage of releases among long-stay male patients from the Unit in contrast to their comparison group supports the validity of the first hypothesis. The comparison cohort patients were remarkably immobile. The female patients were released in about the same proportion in each cohort, except for family care placements. If the experience of the non-Dutchess County cohorts, with the "transferred" patients mentioned previously removed and their replacements included is considered,[4] the patterns of release and the resulting conclusions are unchanged.

To test the second hypothesis, that the patients in the Dutchess County Unit would show greater improvement in social function and less deterioration than if they had not been in the Unit, the information from the survey schedules were utilized.

The distributions of the social breakdown syndrome gradient at each survey for each cohort, reduced by mortality, are given in Appendix Table 1.

As was mentioned previously, there was a relatively large number of patients on the first two surveys with missing or incomplete schedules for whom we were unable to compute the grade for these two surveys. We have attempted to allocate the unknowns into the two categories of "severe" and "not severe" by considering their scores on the next survey and assigning the unknown scores to yield the same distribution on the two surveys as was observed for patients with known scores on both surveys.

The percentage rated as "severe" and "not severe" among the survivors of each cohort at each survey is shown in Table 3 by age[5] and sex. Among males under 65 years of age in both groups there were slightly over 35 per cent estimated to be without disability on the

TABLE 3. SBS RATINGS ON EACH SURVEY OF PATIENTS IN EACH COHORT BY AGE AND SEX

	Survey Number													
	Males							*Females*						
SBS Rating	*1**	*2**	*3*	*4*	*5*	*6*	*7*	*1**	*2**	*3*	*4*	*5*	*6*	*7*
Dutchess County Patients Under 65 Yrs. of Age														
No. of patients	120	117	116	115	115	115	113	148	146	142	140	139	139	139
% non-severe SBS	37.5	45.3	56.1	55.6	54.8	53.9	38.9	35.8	50.0	50.7	46.4	44.6	46.7	44.6
% severe SBS	59.2	53.8	38.8	44.3	40.8	40.0	54.0	60.1	48.6	43.6	52.1	49.6	47.5	43.2
% unknown	3.3	0.9	5.2	0	4.3	6.1	7.1	4.1	1.4	5.6	1.4	5.8	5.8	12.2
Non-Dutchess County Patients Under 65 Yrs. of Age														
No. of patients	119	119	117	117	115	112	107	148	147	146	146	145	144	143
% non-severe SBS	35.3	37.0	33.3	24.8	33.9	37.5	41.1	37.8	38.8	41.1	37.7	45.5	43.7	52.5
% severe SBS	63.9	62.2	59.8	72.7	61.8	57.1	54.2	60.8	58.5	51.3	62.3	51.1	47.9	40.6
% unknown	0.8	0.8	6.8	2.6	4.3	5.4	4.7	1.4	2.7	7.5	0	3.4	8.3	7.0
Dutchess County Patients 65 Yrs. or Over														
No. of patients	73	66	60	56	54	49	40	108	101	97	93	84	79	70
% non-severe SBS	34.2	34.8	43.4	41.0	42.6	36.7	47.5	25.0	33.7	23.7	23.7	28.6	25.3	31.4
% severe SBS	61.6	63.6	51.7	59.0	57.4	63.2	50.0	74.1	66.3	72.1	76.4	70.2	72.1	62.9
% unknown	4.1	1.5	5.0	0	0	0	2.5	0.9	0	4.1	0	1.2	2.5	5.7
Non-Dutchess County Patients 65 Yrs. or Over														
No. of patients	70	65	57	52	48	45	43	107	99	93	89	83	74	67
% non-severe SBS	28.6	26.2	33.3	26.9	29.1	31.1	23.2	15.9	21.2	20.4	16.8	19.3	20.3	35.9
% severe SBS	70.0	73.8	66.7	73.0	66.6	64.4	74.5	83.2	78.8	78.5	83.2	80.7	77.0	59.7
% unknown	1.4	0	0	0	4.2	4.4	2.3	0.9	0	1.1	0	0	2.7	4.5

* Unknown cases allocated according to known cases on adjacent surveys.

first survey (Figures 1 and 2). In the Dutchess County cohort this increased to 55 per cent by the third survey and stayed at this level until the last survey when it dropped back to 40 per cent. In the comparison group of non-Dutchess County patients this percentage decreased after the second survey and then rose again until at the seventh survey it was the same as that observed in the Dutchess County patients. Thus during much of the follow-up period, freedom from severe social breakdown syndrome (SSBS) among the younger Dutchess County males was significantly greater than in their comparison group.

Among males over 65 years of age the proportion scored as "not severe" varied btween 35 and 45 per cent in the Dutchess County patients and between 25 and 35 per cent in the matched group. Except on the final survey, the differences between the two cohorts in the rates of non-severe SBS were of about the same magnitude as those observed on the first survey. During the study period, the percentage of elderly Dutchess County male patients considered not severe SBS was usually slightly in excess of that observed on the initial survey,

so that the Unit may have exerted a small beneficial influence on the functioning of these patients.

The experience of the younger Dutchess County female patients, with respect to freedom from severe SBS, was better, but not significantly so, than that of the non-Dutchess County group during the

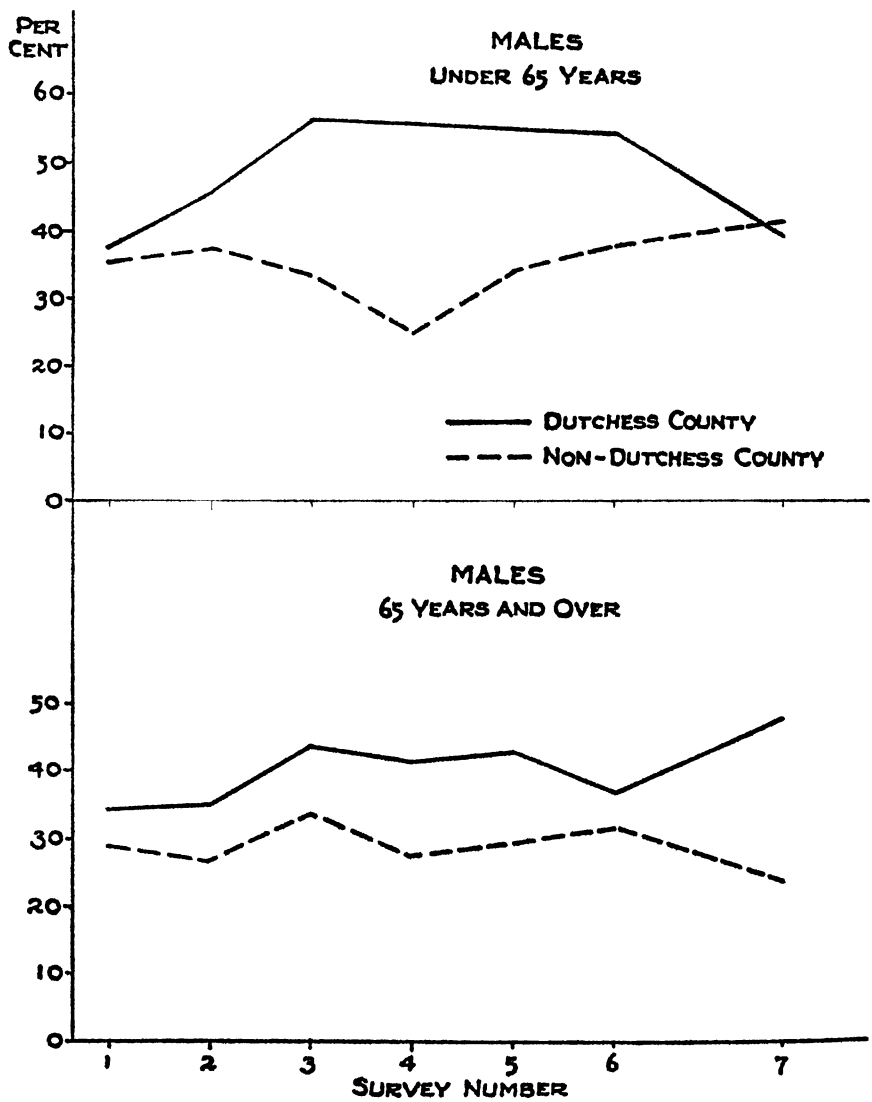

Figure 1. Per cent of each cohort not severe SBS on each survey, by age: males.

early part of the study period. Improvement in the latter group helped to eliminate this difference over the last three surveys. From the first survey, there were more non-severe patients among the older Dutchess County females than among the comparison cohort, and this difference, though small, was maintained through the sixth survey.

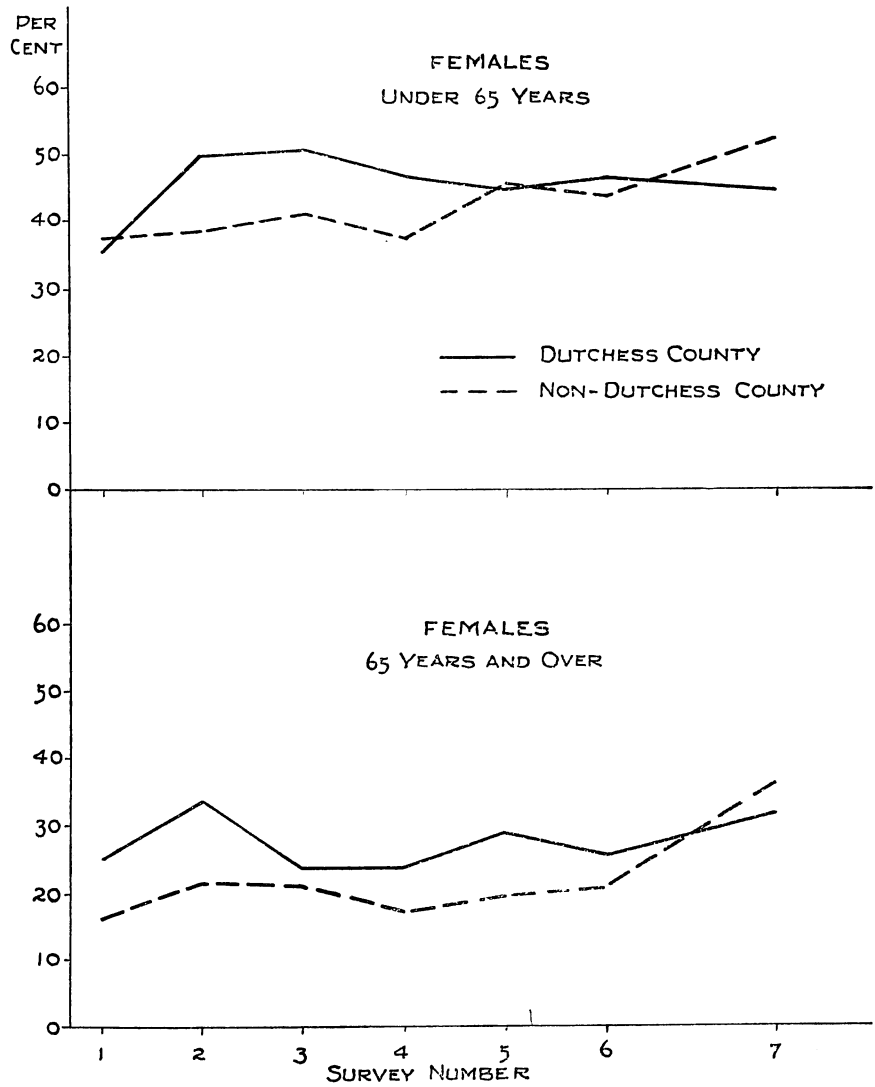

Figure 2. Per cent of each cohort not severe SBS on each survey, by age: females.

In all four age-sex groups, the percentage of patients considered "not severe" was usually higher in the Dutchess County cohort than in the matched cohort. Some of this difference may have been a result of the presence of the "mass transfers," mentioned previously, among the non-Dutchess County patients. A revision of Table 3, with the "transferred" patients and their Dutchess County matches removed from the cohorts, is given in Table 4. The general effect of this revision is to reduce the differences between the two cohorts in the percentage of non-severe patients over those observed between the complete cohorts (Figure 3 and 4). Among the younger males, the Dutchess County patients still had greater freedom from severe SBS than did their comparison group over most of the study period. By a small but consistent amount, the older male patients from Dutchess County suffered less severe SBS after the third survey than did the non-Dutchess County patients. Among female patients, the removal of the "transfers"

TABLE 4. SBS RATINGS ON EACH SURVEY OF PATIENTS IN EACH COHORT BY AGE AND SEX, EXCLUDING "TRANSFERRED" NON-DUTCHESS COUNTY PATIENTS AND THE MATCHING DUTCHESS COUNTY PATIENTS

	Survey Number													
	Males							*Females*						
SBS Rating	*1**	*2**	*3*	*4*	*5*	*6*	*7*	*1**	*2**	*3*	*4*	*5*	*6*	*7*
	Dutchess County Patients Under 65 Yrs. of Age													
No. of patients	90	88	87	86	86	86	85	109	108	105	104	104	104	104
% non-severe SBS	34.4	45.5	54.0	54.6	50.0	48.8	35.3	38.5	47.2	42.9	45.2	43.2	43.2	39.4
% severe SBS	61.1	53.4	42.5	45.4	45.4	44.3	56.5	57.8	50.9	49.5	52.8	50.9	52.0	48.1
% unknown	4.4	1.1	3.4	0	4.7	7.0	8.2	3.7	1.9	7.6	1.9	5.8	4.8	12.5
	Non-Dutchess County Patients Under 65 Yrs. of Age													
No. of patients	91	91	90	90	88	85	81	111	110	109	109	108	108	108
% non-severe SBS	37.4	41.8	34.5	26.6	37.5	43.5	44.4	39.6	38.2	40.4	37.6	45.3	39.8	52.8
% severe SBS	61.5	57.1	58.8	70.0	56.8	49.4	49.3	59.5	59.1	51.5	62.4	50.0	51.0	38.0
% unknown	1.1	1.1	6.7	3.3	5.7	7.1	6.2	0.9	2.7	8.3	0	4.6	9.3	9.3
	Dutchess County Patients 65 Yrs. or Over													
No. of patients	60	54	48	45	43	38	31	76	71	68	66	59	54	48
% non-severe SBS	35.0	31.5	43.8	42.2	41.8	42.1	48.4	21.1	26.8	20.6	19.7	23.7	25.9	27.1
% severe SBS	61.7	66.7	49.9	57.7	58.2	57.9	48.4	77.6	73.2	75.0	80.4	74.6	72.3	64.6
% unknown	3.3	1.9	6.2	0	0	0	3.2	1.3	0	4.4	0	1.7	1.9	8.3
	Non-Dutchess County Patients 65 Yrs. or Over													
No. of patients	55	51	43	38	34	32	32	73	68	63	61	55	48	44
% non-severe SBS	34.5	31.4	37.3	31.5	32.3	37.4	31.2	17.8	25.0	25.4	21.3	27.3	25.0	45.5
% severe SBS	63.6	68.6	62.8	68.4	64.7	56.1	65.6	82.2	75.0	72.9	78.7	72.8	70.8	52.3
% unknown	1.8	0	0	0	2.9	6.2	3.1	0	0	1.6	0	0	4.2	2.3

* Unknown cases allocated according to known cases on adjacent surveys.

from the comparison cohort eliminated almost all differences previously observed between the two cohorts in the numbers considered not severe.

It was stated earlier in this report that not all of the Dutchess County patients under study were transferred into the Unit when it opened, and some were never transferred during the entire study period.

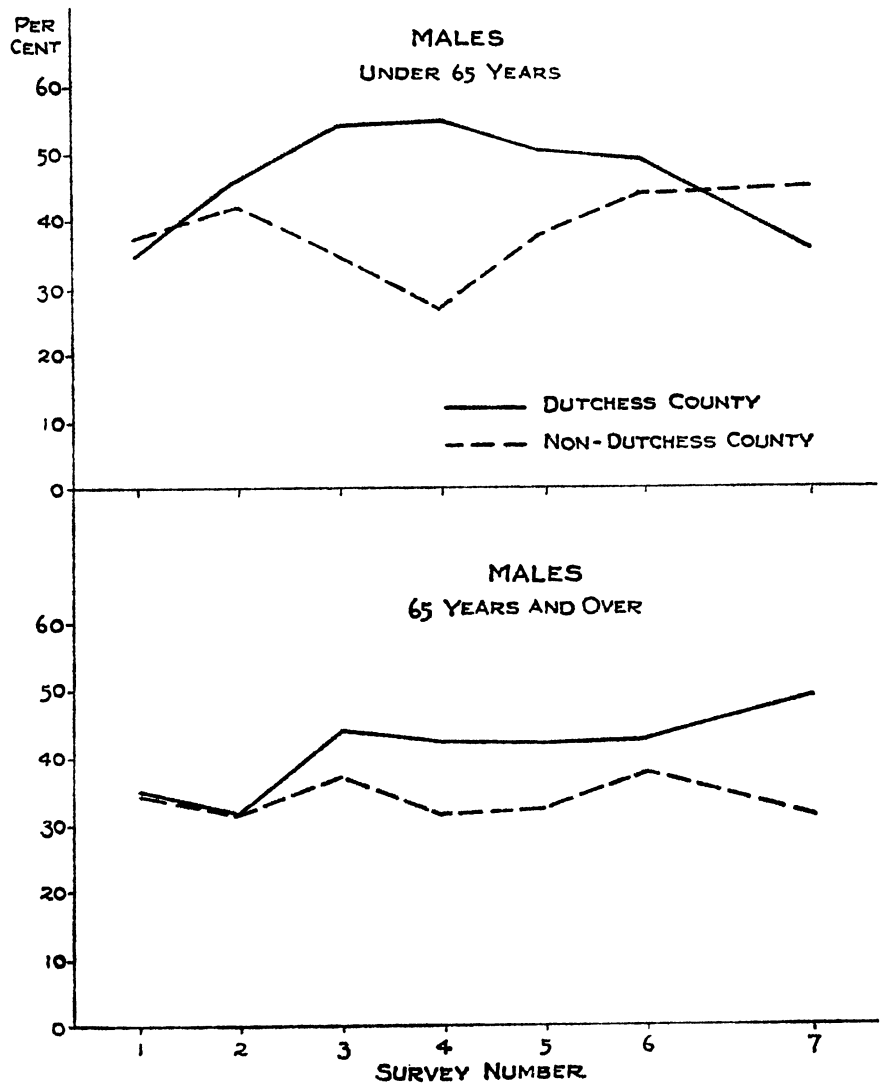

Figure 3. Per cent of each cohort not severe SBS on each survey, by age, excluding "transferred" non-Dutchess County patients and the matching Dutchess County patients: males.

Figure 4. Per cent of each cohort not severe SBS on each survey, by age, excluding "transferred" non-Dutchess County patients and the matching Dutchess County patients: females.

TABLE 5. SBS RATINGS ON EACH SURVEY OF DUTCHESS COUNTY FEMALE PATIENTS IN THE DUTCHESS COUNTY UNIT AND THE MATCHING NON-DUTCHESS COUNTY PATIENTS, BY AGE

	Survey Number											
	Dutchess County Patients						*Non-Dutchess County Patients*					
SBS Rating	*2**	*3*	*4*	*5*	*6*	*7*	*2**	*3*	*4*	*5*	*6*	*7*
	Under 65 Yrs. of Age											
No. of patients	96	94	94	94	94	100	95	94	96	97	96	102
% non-severe SBS	53.1	52.2	51.0	47.9	45.8	48.0	44.2	44.7	40.6	49.4	44.8	55.9
% severe SBS	44.8	41.5	49.0	50.0	49.9	40.0	52.6	45.7	59.4	47.5	46.9	38.3
% unknown	2.1	6.4	0	2.1	4.3	12.0	3.2	9.6	0	3.1	8.3	5.9
	65 Yrs. or Over											
No. of patients	41	40	41	42	38	35	42	42	41	42	37	37
% non-severe SBS	43.9	25.0	22.0	23.8	28.9	22.9	16.7	16.7	14.6	21.5	18.9	27.0
% severe SBS	56.1	67.5	78.0	73.8	71.1	65.7	83.3	83.3	85.3	78.5	81.0	67.5
% unknown	0	7.5	0	2.4	0	11.4	0	0	0	0	0	5.4

* Unknown cases allocated according to known cases on adjacent surveys.

To assess the effect of the Unit's services on the Dutchess County patients more accurately, the analysis should be restricted to those members of the Dutchess County cohort who, at each survey, were either in, or had passed through, the Unit and to members of the comparison cohort with whom they were paired.

Almost all the long-stay male patients from Dutchess County were in the Unit by the third survey, and the previous findings for this group reflect whatever influence the Unit may have exerted on them. A substantial number of long-stay female patients from Dutchess County were retained in the rest of the hospital for varying periods, and percentages rated as "severe" and "not severe" among female patients in the Unit at each survey and their matches in the comparison group are given in Table 5. The pattern of differences between these two reduced cohorts in proportions of patients free of severe SBS on each survey is similar to those observed between the complete cohorts (Figure 5). The high proportion of not severe SBS elderly patients in the Unit on the second survey appears to be associated with intense utilization of occupational therapy during the early period of the Unit's operations.

Summarizing these observations on prevalence of not severe SBS in the cohorts under study, we could say that the Unit appears to have had a positive effect in promoting freedom from severe SBS among its patients, with the possible exception of the elderly females. Among

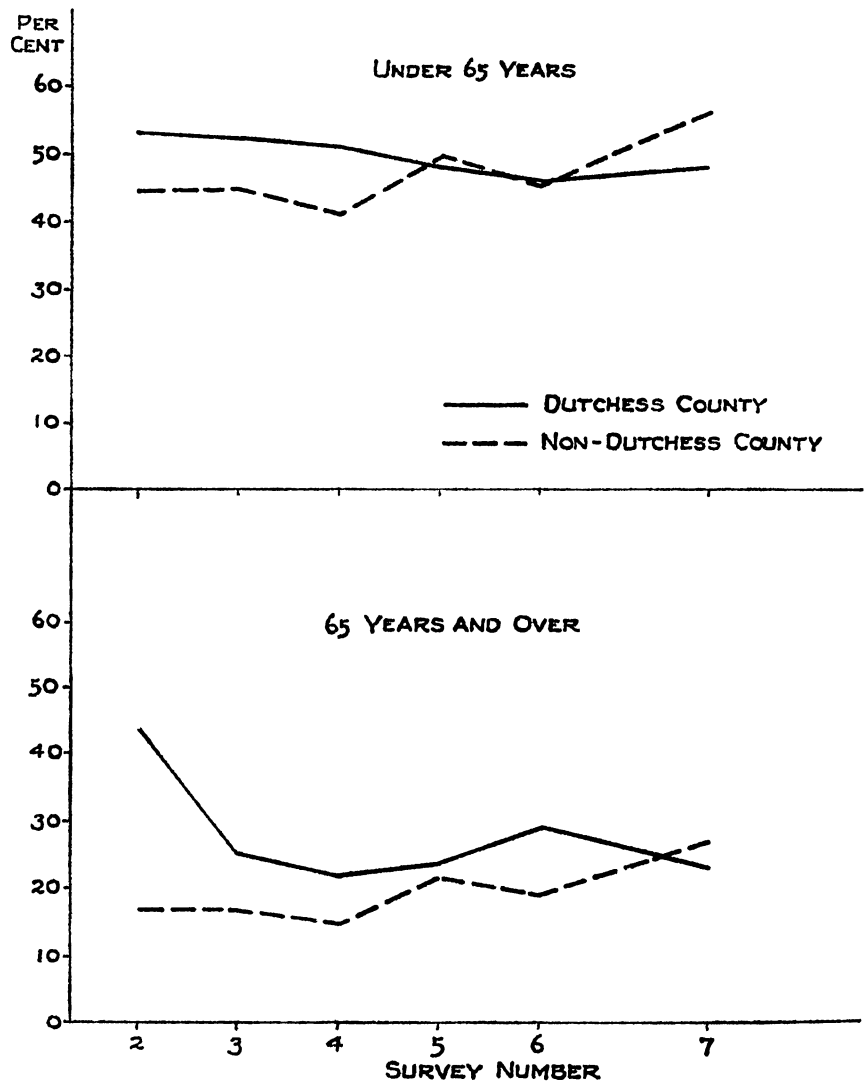

Figure 5. Per cent of female patients in the Dutchess County Unit and the matching non-Dutchess County patients not severe SBS on each survey, by age.

TABLE 6. PER CENT OF "SEVERE SBS" PATIENTS IN EACH COHORT RATED AS "NOT SEVERE SBS" ON FOLLOWING SURVEY, BY AGE, SEX, AND SURVEY

	Survey Number											
	Males						*Females*					
	*1**	*2**	*3*	*4*	*5*	*6*	*1**	*2**	*3*	*4*	*5*	*6*
D.C. patients under 65 yrs.												
no. severe SBS	70	63	45	51	47	45	88	68	61	73	69	66
% not severe SBS on following survey	34.3	47.6	31.1	29.4	19.1	15.6	30.7	20.6	21.3	28.8	20.3	27.3
Non-D.C. patients under 65 yrs.												
no. severe SBS	76	72	70	84	69	61	89	85	75	90	73	69
% not severe SBS on following survey	13.2	18.1	17.1	22.6	23.2	24.6	21.3	16.5	17.3	26.7	27.4	36.2
D.C. patients 65 yrs. or over												
no. severe SBS	41	37	27	32	27	24	74	64	66	63	54	48
% not severe SBS on following survey	17.1	24.3	29.6	31.3	14.8	25.0	17.6	3.1	9.1	12.7	11.1	18.8
Non-D.C. patients 65 yrs. or over												
no. severe SBS	45	41	34	35	29	27	81	72	70	69	60	50
% not severe SBS on following survey	13.3	17.1	14.7	20.0	13.8	11.1	6.2	6.9	5.7	10.1	8.3	18.0

* Unknowns estimated.

TABLE 7. PER CENT OF "NOT SEVERE SBS" PATIENTS IN EACH COHORT RATED AS "SEVERE SBS" ON FOLLOWING SURVEY, BY AGE, SEX, AND SURVEY

	Survey Number											
	Males						*Females*					
	*1**	*2**	*3*	*4*	*5*	*6*	*1**	*2**	*3*	*4*	*5*	*6*
D.C. patients under 65 yrs.												
no. not severe SBS	45	52	64	64	63	61	53	73	71	64	62	65
% severe SBS on following survey	33.3	25.0	26.6	20.3	11.1	36.1	22.6	15.1	32.4	28.1	16.1	21.5
Non-D.C. patients under 65 yrs.												
no. not severe SBS	42	44	39	28	39	40	56	57	60	55	66	62
% severe SBS on following survey	21.4	31.8	56.4	28.6	28.2	30.0	23.2	15.8	35.0	21.3	28.8	17.7
D.C. patients 65 yrs. or over												
no. not severe SBS	24	23	26	22	22	16	26	33	23	21	24	20
% severe SBS on following survey	33.3	21.7	46.2	40.9	36.4	18.8	19.2	36.4	34.8	23.8	45.8	25.0
Non-D.C. patients 65 yrs. or over												
no. not severe SBS	19	16	18	13	14	14	17	21	19	14	14	15
% severe SBS on following survey	36.8	25.0	50.0	38.5	35.7	42.9	11.8	28.6	42.1	35.7	28.6	6.7

* Unknowns estimated.

all male patients and among the younger female patients, the percentage scored as "not severe" rose after the initial base-line survey and this level was maintained through most of the study period. Only among the younger group of male patients were any of the differences between the Dutchess County and comparison cohorts statistically significant. The relatively small differences in absence of severe SBS among younger females in the two cohorts during the earlier part of the study period vanished by the fifth survey. This was caused partially

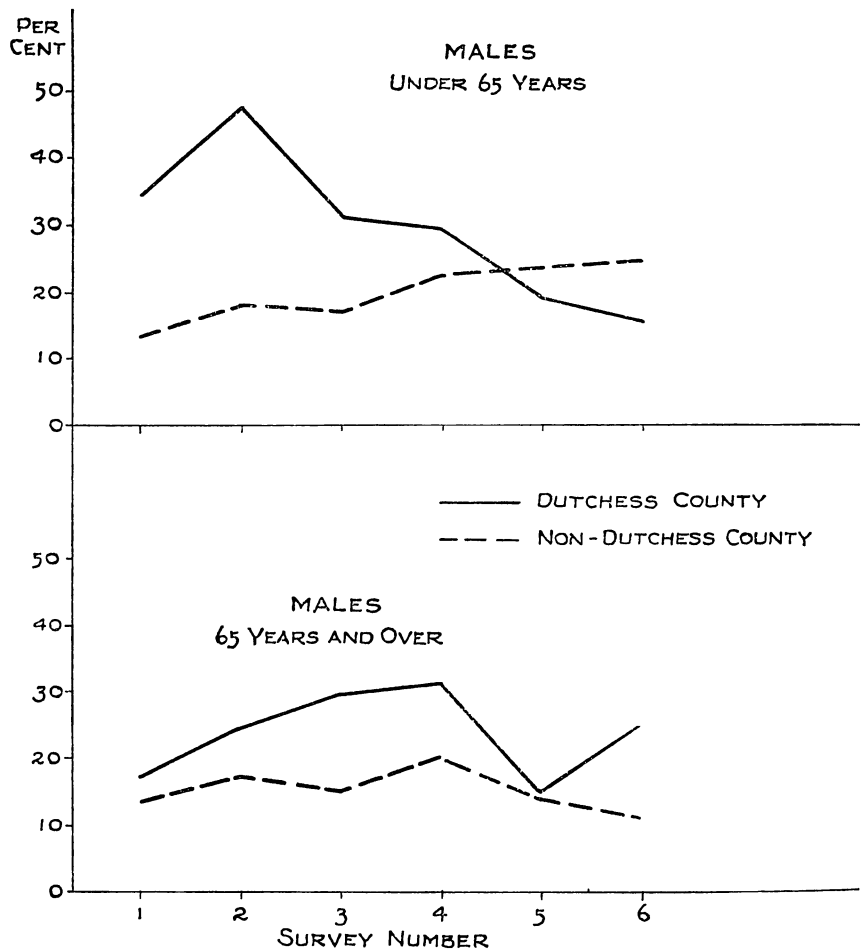

Figure 6. Per cent of severe SBS patients in each cohort rated as "not severe SBS" on following survey, by age: males.

by an increase in the proportion among the non-Dutchess County patients found to be not severe SBS. This is compatible with the impression that by 1962 some of the larger female services in the rest of the hospital were greatly improved over their condition at the beginning of the study in 1959, and this may have stimulated the small but consistent increase in the number of non-severe SBS patients in the comparison group.

Another approach to the question of the effectiveness of the Dutchess County Unit in promoting improved social functioning among its long-stay patients is to consider the rate at which severe SBS patients became free of severe SBS and, conversely, the rate at which patients

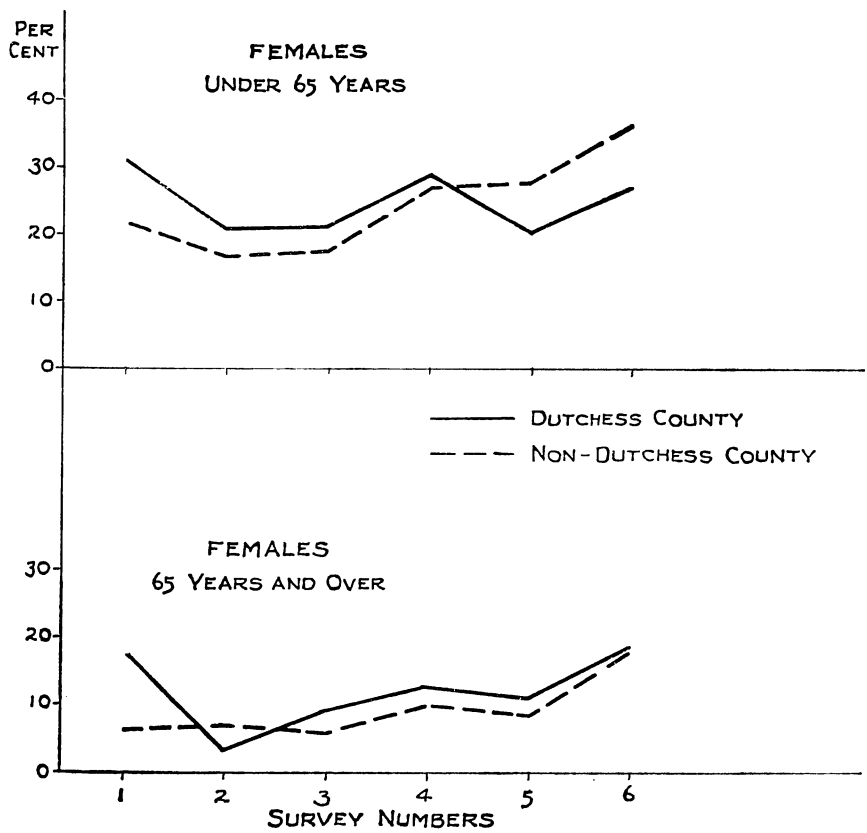

Figure 7. Per cent of severe SBS patients in each cohort rated as "not severe SBS" on following survey, by age: females.

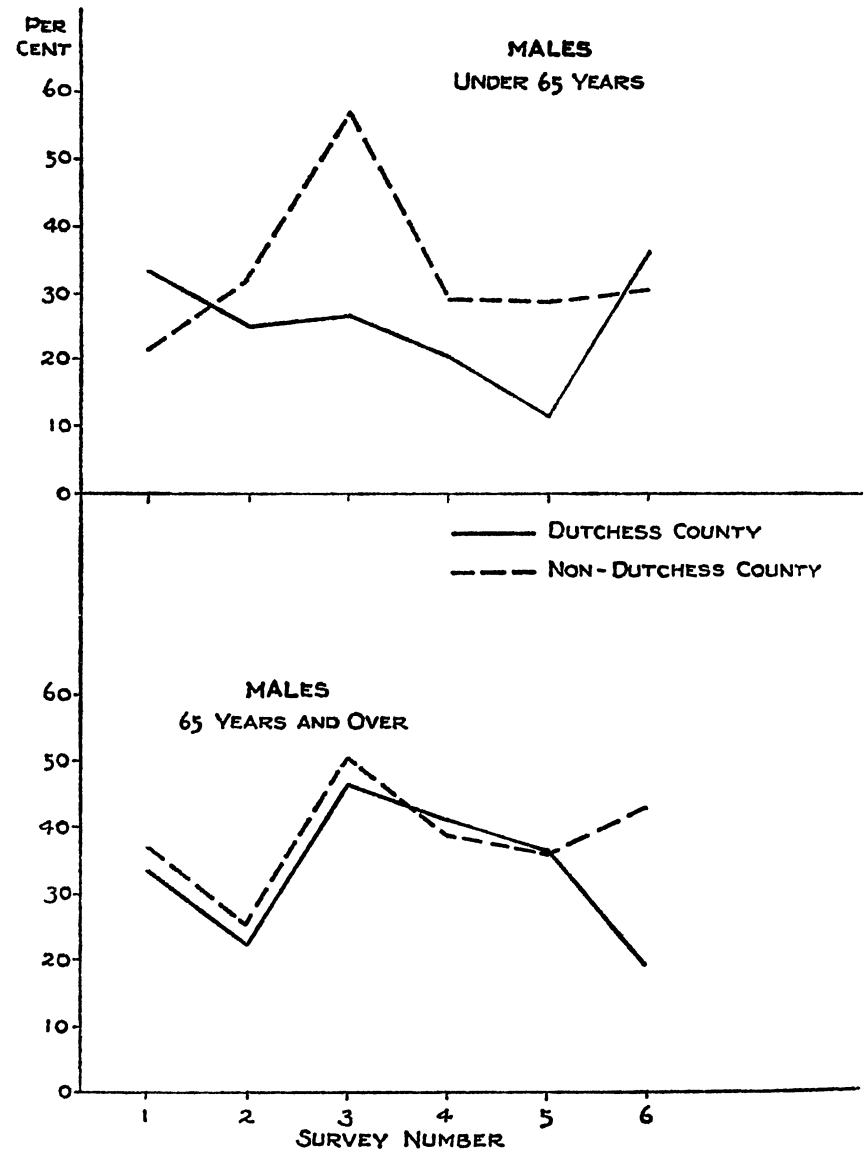

Figure 8. Per cent of "not severe SBS" patients in each cohort rated as severe SBS on following survey, by age: males.

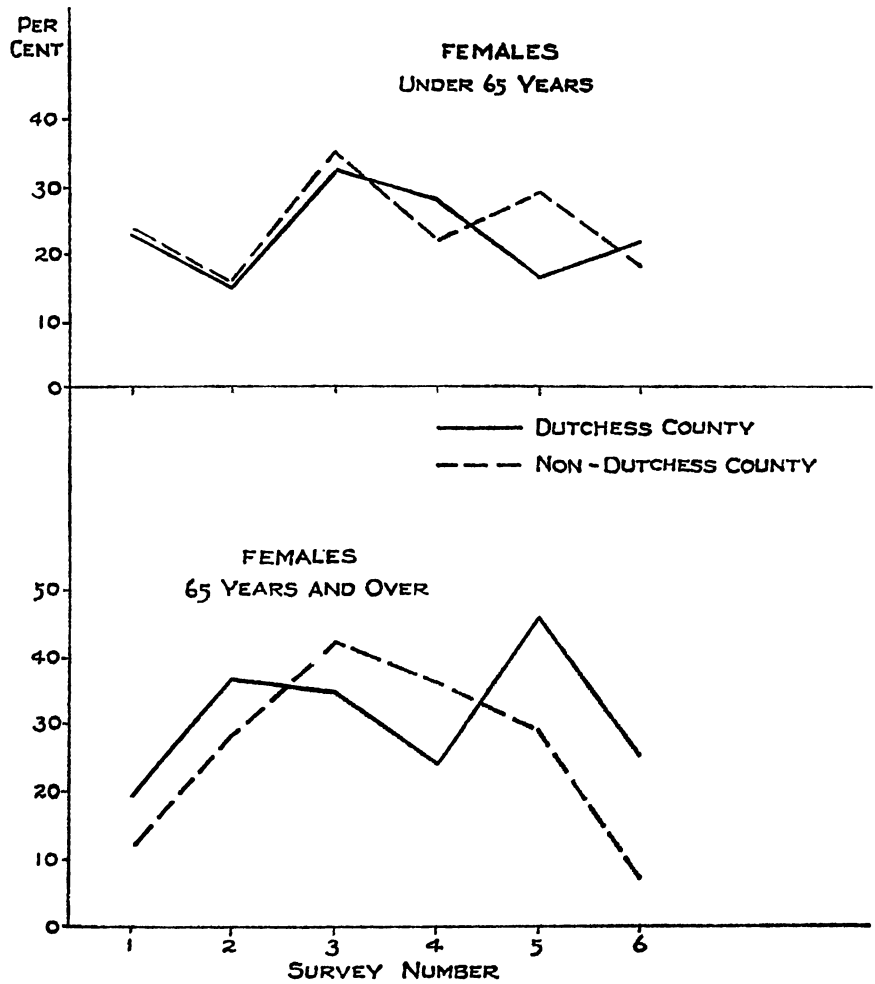

Figure 9. Per cent of "not severe SBS" patients in each cohort rated as severe SBS on following survey, by age: females.

TABLE 8. PER CENT OF PATIENTS, CONTINUOUSLY SEVERE SBS, RATED FREE OF SEVERE SBS ON EACH SURVEY BY COHORT, AGE, AND SEX

	Males				*Females*			
	Dutchess County		*Non-Dutchess County*		*Dutchess County*		*Non-Dutchess County*	
Survey Number	*No. continuously severe SBS on prior surveys*	*% not severe SBS for 1st time*	*No. continuously severe SBS on prior surveys*	*% not severe SBS for 1st time*	*No. continuously severe SBS on prior surveys*	*% not severe SBS for 1st time*	*No. continuously severe SBS on prior surveys*	*% not severe SBS for 1st time*
	Patients Under 65 Yrs.							
1*	120	37.5	119	35.3	148	35.8	148	37.8
2*	72	33.3	77	13.0	93	29.0	91	20.9
3	48	39.6	66	13.6	63	23.8	71	12.7
4	29	13.8	57	7.0	47	10.6	62	9.7
5	25	20.0	52	5.8	42	11.9	55	9.1
6	20	5.0	48	14.6	37	16.2	50	10.0
7	19	0	38	18.4	31	6.5	45	22.2
	Patients 65 Yrs. or Over							
1*	73	34.2	70	28.6	108	25.0	107	15.9
2*	42	16.7	46	13.0	75	17.3	82	6.1
3	29	17.2	33	15.2	59	1.7	72	8.3
4	22	18.2	25	8.0	55	7.3	63	6.3
5	17	23.5	22	13.6	44	4.5	55	1.8
6	12	16.7	18	5.6	39	2.6	48	8.3
7	7	0	17	0	30	10.0	38	7.9

* Unknowns estimated.

without severe SBS became severe SBS cases. The percentage of patients found to have severe SBS on each survey who were rated as "not severe SBS" on the following survey is shown in Table 6 and Figures 6 and 7.

The Dutchess County male patients in both age groups changed from severe SBS to not severe SBS at a consistently greater rate than did the comparison cohort during the earlier part of the study period. This differential disappeared among the younger patients after the fifth survey, associated with a steady decrease in the rate of improvement in Dutchess County patients after the third survey. The corresponding differences between the two cohorts of female patients were small.

The younger Dutchess County male patients changed from not severe SBS to severe SBS at a lower rate than their matched group over most pairs of surveys (Table 7 and Figures 8 and 9). For the older male patients the two series of percentages were almost identical with

the exception of those based on the last two surveys. There was little consistent difference between the two groups of younger female patients in this short-term development of severe SBS. Among the older females, there was a consistent decrease in the incidence of severe SBS among the small numbers of not severe SBS patients in the comparison group after the third survey which was not duplicated in the Dutchess County cohort.

Whether the members of the two cohorts differed with respect to improvement of function during the study period may also be studied by determining at each survey how many patients with severe SBS on

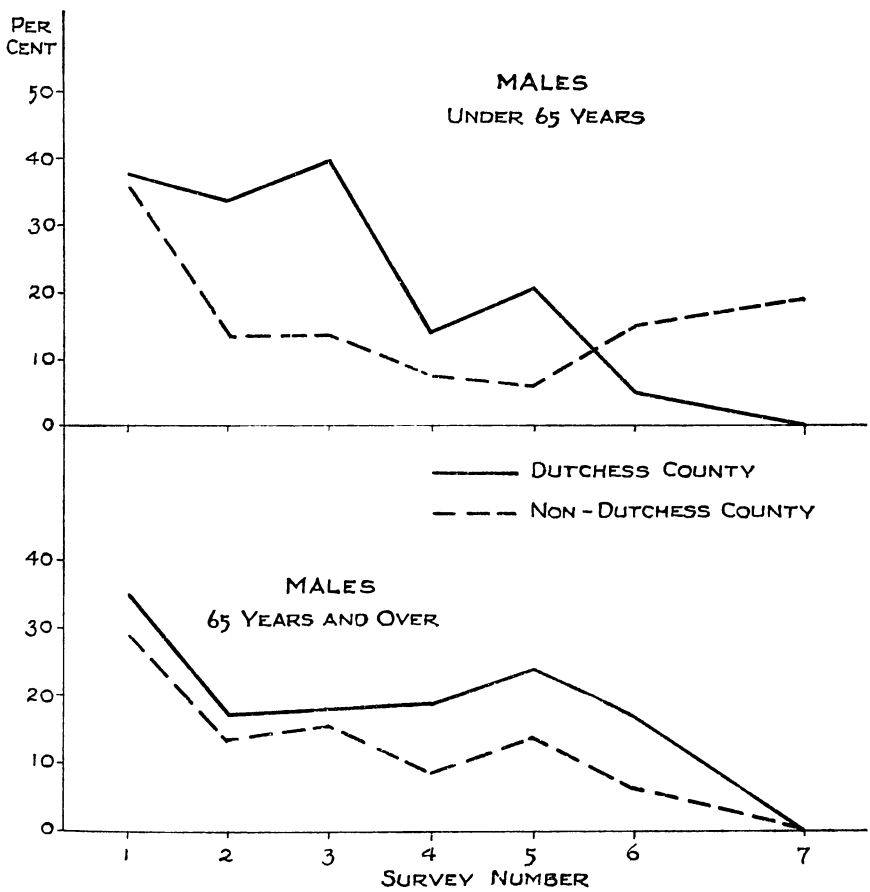

Figure 10. Per cent of patients in each cohort, continuously severe SBS, rated free of severe SBS on each survey, by age: males.

all previous surveys were not severe SBS on that survey (Table 8 and Figures 10 and 11).

The patients with unknown gradient levels on the first or second surveys again created a problem for this type of analysis. The "unknowns" were allocated as for the previous analyses, and it is believed that the trends over the study period shown in the tables represent a reasonably accurate picture of the actual changes. Between the second and fifth surveys the rate of occurrence of not severe SBS in previously severe SBS patients was higher in the younger group of Dutchess County males than in the matched group. Among the older males this was true between the second and sixth surveys, although the differences were smaller. The rate among younger females was higher

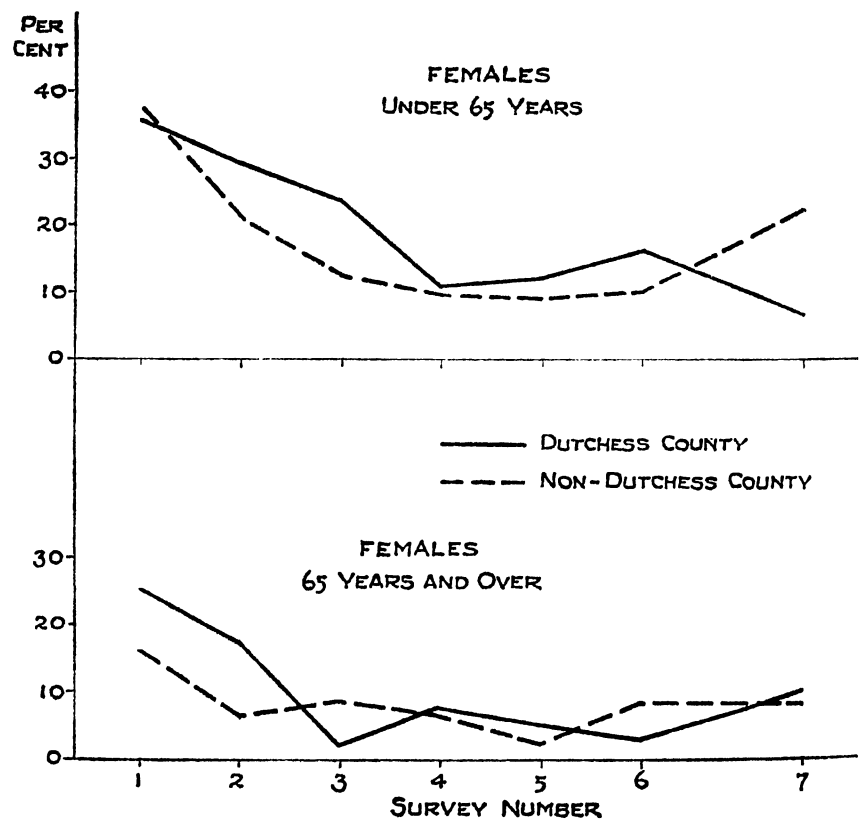

Figure 11. Per cent of patients in each cohort, continuously severe SBS, rated free of severe SBS on each survey, by age: females.

TABLE 9. PER CENT OF PATIENTS RATED AS CONTINUOUSLY FREE OF SEVERE SBS OR CONTINUOUSLY SEVERE SBS AT EACH SURVEY BY COHORT, SEX, AND AGE

Severe SBS Status	*Survey Number*													
	Males							*Females*						
	*1**	*2**	*3*	*4*	*5*	*6*	*7*	*1**	*2**	*3*	*4*	*5*	*6*	*7*
Dutchess County Patients Under 65 Yrs.														
No. of patients	120	117	116	115	115	115	113	148	146	142	140	139	139	139
% never severe SBS	37.5	27.4	23.3	20.0	18.3	18.3	15.9	35.8	31.5	31.7	24.3	18.7	17.3	15.1
% continuously severe SBS	59.2	41.0	25.0	21.7	17.4	16.5	16.8	60.1	45.2	33.8	30.0	26.6	22.3	20.9
Non-Dutchess County Patients Under 65 Yrs.														
No. of patients	119	119	117	117	115	112	107	148	147	146	146	145	144	143
% never severe SBS	35.2	28.6	23.1	12.0	11.3	8.9	6.5	37.8	30.6	28.1	20.5	15.2	13.9	13.3
% continuously severe SBS	63.9	56.3	48.7	45.3	42.6	36.6	29.0	60.8	49.0	42.5	38.4	34.5	31.2	24.5
Dutchess County Patients 65 Yrs. or Over														
No. of patients	73	66	60	56	54	49	40	108	101	97	93	84	79	70
% never severe SBS	34.2	25.8	23.3	17.8	16.7	16.3	15.0	25.0	21.8	14.4	12.9	9.5	8.9	10.0
% continuously severe SBS	61.6	53.0	40.0	32.1	24.1	20.4	17.5	74.1	61.4	59.8	54.8	50.0	48.1	38.6
Non-Dutchess County Patients 65 Yrs. or Over														
No. of patients	70	65	57	52	48	45	43	107	99	93	89	83	74	67
% never severe SBS	28.5	20.0	15.8	9.6	6.2	2.2	0	15.9	16.2	11.8	5.6	3.2	1.4	1.5
% continuously severe SBS	70.0	61.5	49.1	44.2	40.0	37.8	39.5	83.2	77.8	71.0	66.3	65.1	59.5	52.2

* Unknowns estimated.

by a small amount for Dutchess County patients between the second and sixth surveys. The differences in rates were generally small and inconsistent among the older females.

A similar analysis was attempted for the rate of severe SBS among patients previously not severe SBS but for the later surveys the numbers became so small and the resulting rates so variable as to prevent any sensible comparisons.

The results of this analysis may be presented in somewhat different form by showing the percentage of patients at each survey who had been without severe SBS up to and including that survey and the percentage of the cohort who had been continuously severe SBS (Table 9 and Figures 12 and 13).

By the seventh survey 15 per cent of the older male and 10 per cent of the older female patients in the surviving Dutchess County

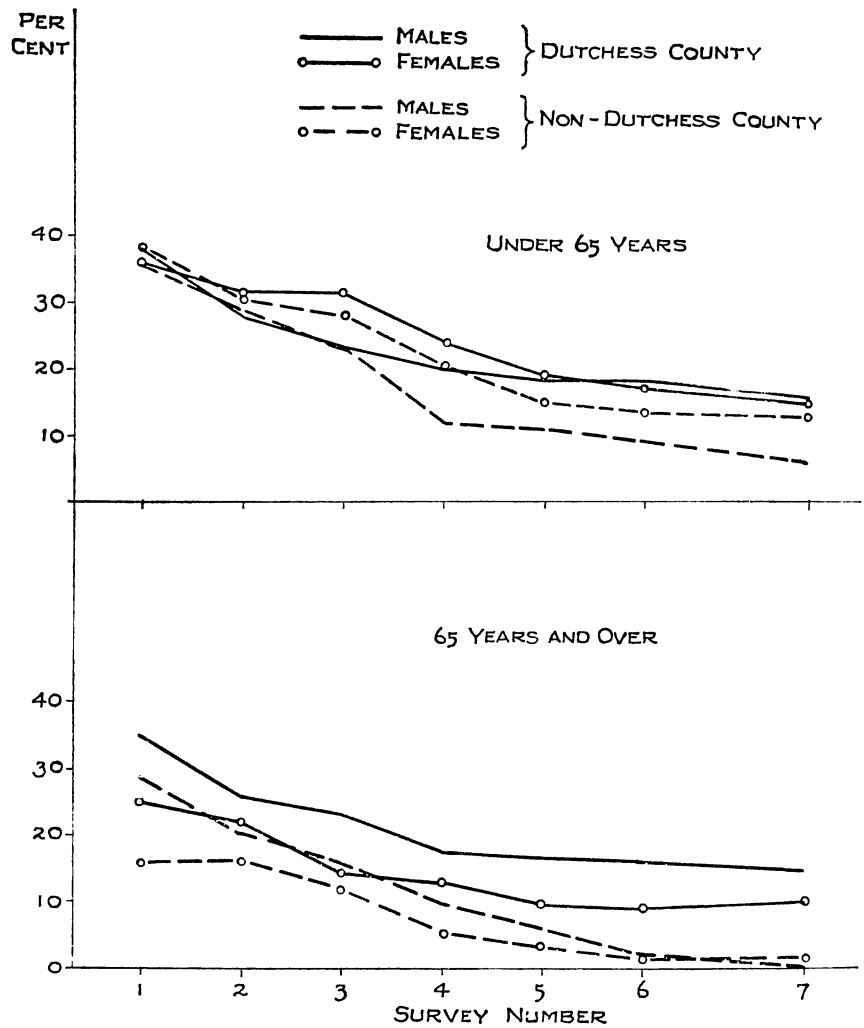

Figure 12. Per cent of patients in each cohort rated as continuously free of severe SBS at each survey, by sex and age.

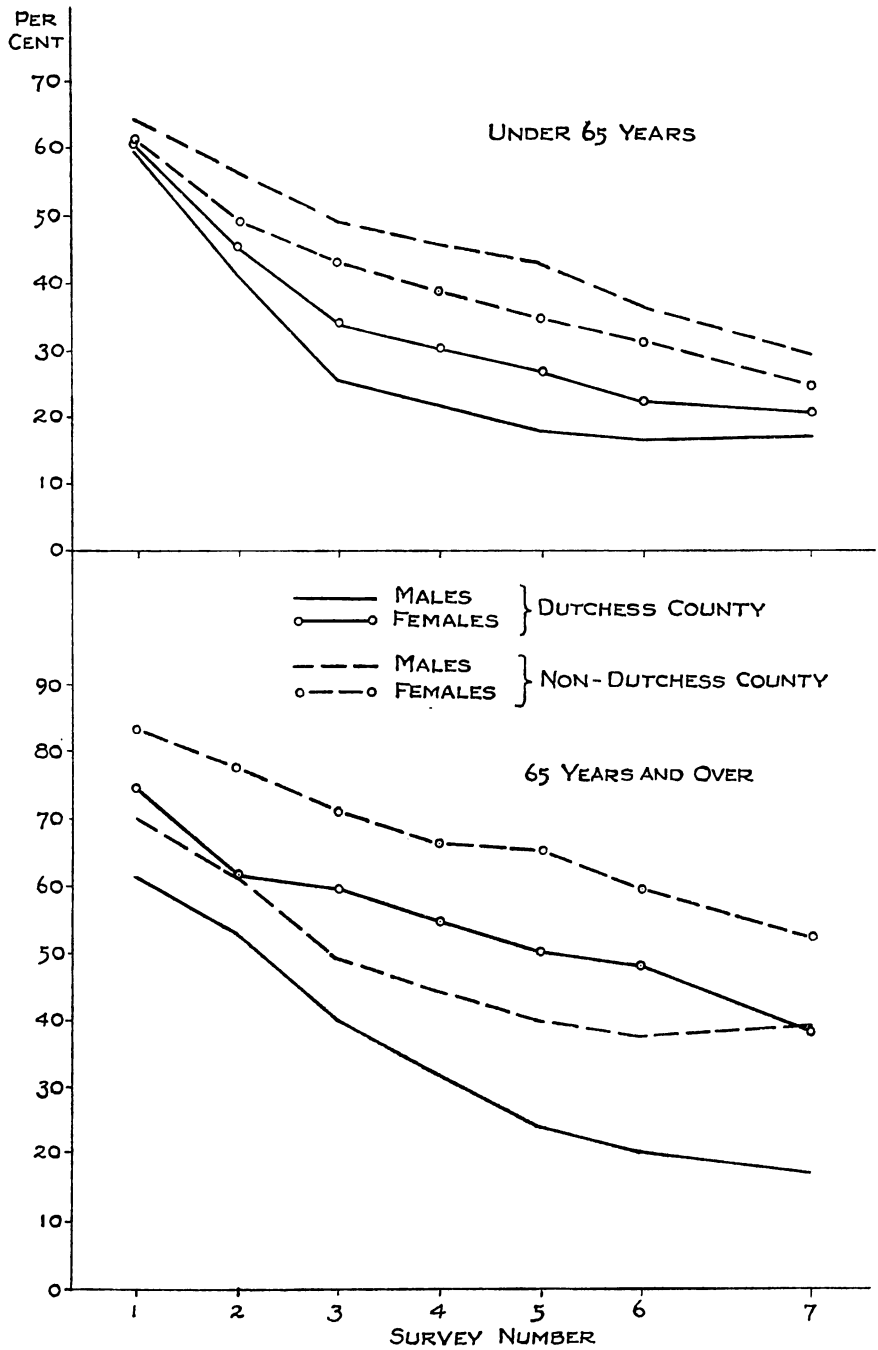

Figure 13. Per cent of patients in each cohort rated as continuously severe SBS at each survey, by sex and age.

cohort had been free of severe SBS over all seven surveys. This is in contrast to percentages of 0 and 1 per cent continuously without severe SBS in the non-Dutchess County patients. At each survey the differences in these proportions were in the same direction and were somewhat larger for males than for females. In the groups of younger patients these differences were less pronounced but, after the third and fourth surveys, were in the same direction. At the conclusion of the study period, 15 per cent of the younger Dutchess County patients had been found without severe SBS over the entire period, compared to 6 per cent of the males and 13 per cent of the females in the comparison cohort.

The converse of this, the per cent continuously showing severe SBS, is consistently lower in patients under 65 for the Dutchess County patients than in the matched cohort. At the end of the final survey, the proportion of Dutchess County patients continuously showing severe SBS appeared to be leveling off at about 20 per cent or less while the downward trend for the comparison groups seemingly would continue. In the groups of older patients the percentages continuously showing severe SBS among the survivors at each survey were always lower for the Dutchess County cohort than for the comparison cohort of the same sex. However, the proportions for both groups of male patients were usually lower than those for females.

It appears that in promoting improvement and preventing regression of social function of patients the Unit has had a favorable, if unspectacular, effect on some segments of the long-stay patients in the Dutchess County cohort. During the first two years of its operation, short-term improvement, from one survey to the next, was greater among male patients than in the comparison group, and among younger males deterioration was less. For all patients, the services and environment of the Unit seemed better able to prevent development of long-term continuous occurrence of the severe chronic social breakdown syndrome than did the other services of the hospital. In addition, the Unit maintained a larger group of patients continuously free of this syndrome, than did the other services.[6]

Toward the end of the study period, the experience of the Dutchess County patients seems to have become less favorable relative to that of the non-Dutchess County patients. This may have been a result of changes in administrative policy of the Unit and the effect of increased pressure on the staff from changes in the composition of the patient population of the Unit. During its third year of operation,

there was a revision in policy with respect to the long-stay patient by the Unit's administration.[7] Also, there was a gradual but steady increase in the number of elderly, senile female patients in the Unit. This may have imposed a burden on the staff of the female wards which prevented adequate application of procedures for preventing severe SBS, and may be reflected in the relatively poorer performance of female patients in the Unit as compared with that of the males.

In general, the Dutchess County Unit appears to have had a beneficial effect on its long-stay patients. If only their experience is considered, without reference to that of the comparison cohort, the prevalence of the severe social breakdown syndrome was lower within several of the age-sex groups during much of the study period than that observed on the base-line survey before the Unit was in operation. Among those groups in which there was no marked increase in prevalence of patients free of severe SBS neither was there any notable decrease. In addition, there is some evidence that the Unit was more successful in modifying the severe chronic social breakdown syndrome and in preventing its occurrence than were most of the other services of the hospital. It should also be recognized that some of these other services were also undergoing changes and were inducing improvement in the social functioning of members of the comparison cohort.

APPENDIX TABLE I. NUMBER OF PATIENTS IN EACH COHORT RECEIVING EACH INDEX SCORE ON EACH SURVEY, BY AGE AND SEX

	Survey Number													
	Males							*Females*						
	1	*2*	*3*	*4*	*5*	*6*	*7*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
	Dutchess County Patients Under 65 Yrs. of Age													
Total	120	117	116	115	115	115	113	148	146	142	140	139	139	139
5	8	20	11	19	22	24	24	20	20	22	15	16	17	24
4	25	30	54	45	41	38	20	23	45	50	50	46	48	38
3	13	11	9	16	5	10	10	12	6	11	11	16	9	14
2	20	31	23	22	23	22	34	29	30	29	37	29	32	26
1	16	15	11	11	16	13	16	28	24	21	22	22	17	20
0	1	2	2	2	3	1	1	6	2	1	3	2	8	0
Unknown	37	8	6	0	5	7	8	30	19	8	2	8	8	17
	Non-Dutchess County Patients Under 65 Yrs. of Age													
Total	119	119	117	117	115	112	107	148	147	146	146	145	144	143
5	10	11	6	2	7	8	14	20	13	14	12	18	16	33
4	23	29	33	27	32	34	30	24	35	46	43	48	47	42
3	9	15	16	15	18	9	17	11	14	12	12	14	15	9
2	24	27	30	38	31	24	20	27	40	37	58	34	33	32
1	22	26	21	25	19	30	20	24	17	21	16	23	13	14
0	3	2	3	7	3	1	1	7	4	5	5	3	8	3
Unknown	28	9	8	3	5	6	5	35	24	11	0	5	12	10
	Dutchess County Patients 65 Yrs. or Over													
Total	73	66	60	56	54	49	40	108	101	97	93	84	79	70
5	2	8	1	4	1	5	6	7	8	2	2	4	0	4
4	16	12	25	19	22	13	13	15	24	21	20	20	20	18
3	6	10	6	10	12	2	3	3	9	7	6	5	5	1
2	12	11	19	17	12	18	11	27	18	29	20	17	15	13
1	17	15	5	5	7	10	5	32	23	23	30	27	25	23
0	0	2	1	1	0	1	1	6	11	11	15	10	12	7
Unknown	20	8	3	0	0	0	1	18	8	4	0	1	2	4
	Non-Dutchess County Patients 65 Yrs. or Over													
Total	70	65	57	52	48	45	43	107	99	93	89	83	74	67
5	2	1	3	2	3	2	1	5	3	3	1	3	2	6
4	15	14	16	12	11	12	9	8	17	16	14	13	13	18
3	2	6	7	10	11	9	6	3	8	7	9	7	6	2
2	18	26	19	18	10	11	12	36	28	35	30	23	24	22
1	19	11	11	6	8	7	6	28	25	17	20	24	20	15
0	3	3	1	4	3	2	8	10	11	14	15	13	7	1
Unknown	11	4	0	0	2	2	1	17	7	1	0	0	2	3

REFERENCES

[1] Hunt, Robert C., Gruenberg, Ernest M., Hacken, E., and Huxley, Matthew, A Comprehensive Hospital-Community Service in a State Hospital, *The American Journal of Psychiatry,* 117, 817–821, March, 1961.

[2] An ideal control group would have been identical in every respect except its participation in the Unit program. A random half of the Dutchess County residents would have made up such a group, but administrative considerations did not permit such a controlled experiment.

Moreover, it cannot be said with confidence that the patients in the rest of Hudson River State Hospital did not have exactly the same experience they would have had if the Dutchess County Unit had not been created.

For these two reasons, the hypotheses as stated were not tested; rather, the study tested the hypothesis that the Dutchess County cohort and the comparison cohort did not differ on the observed variables.

[3] When these additions were made, it was anticipated that the follow-up surveys would continue beyond the six that were finally done. If information had been available from several surveys on these new patients, it might have been feasible to make estimated revisions in the data for the original comparison groups on the earlier surveys, to allow for the presence of the "transfers." Since the follow-up was terminated at the seventh survey, just when the replacement process was completed, such revisions seemed unjustified and have not been done for this report. On the two surveys for which schedules were collected for part or all of this new group of patients, the comparison cohort with the new patients replacing the "transfers," in general, differs less from the Dutchess County cohort than does the original comparison cohort with the "transfers" included.

[4] The location of the replacements for the "transferred" patients is known for each survey.

[5] Age is taken as of December 31, 1959 in all tables.

[6] These conclusions must be considered tentative until further analyses are made with the "transferred" patients and their matched Dutchess County patients omitted, and with the Dutchess County cohort of females restricted to those with residence in the Unit.

[7] *See* Snow, Herman B., The Dutchess County Project After Five Years, p. 57 of this volume.