CATALOGUE No.
83-504
OCCASIONAL

DOMINION BUREAU OF STATISTICS
OTTAWA - CANADA

Published by Authority of the Hon. Gordon Churchill, Minister of Trade and Commerce

Price 25 cents

RATES AND PROBABILITIES OF SEPARATION FROM MENTAL INSTITUTIONS

(1956-58)

This publication deals with absolute rates and probabilities of separation (discharge or death) for three diagnostic classes of patients in Canadian mental institutions.

The data were derived from tabulations of admissions and separations that are published in *Mental Health Statistics* and the supplements *Patients in Institutions* in the volumes for the years 1955 to 1958. The figures were calculated by applying life-table techniques of calculation to the published data.

For 1960 and the following years, however, it will be possible to calculate rates and probabilities with greater specificity as to duration intervals after admission, sex, order of admission (first admission or readmission), condition on discharge, and type of institution.

In calculating rates and probabilities of separation using life-table techniques, one overcomes the inadequacy of the mean length of stay of discharges as a measure, when applied to long-term patients. In institutions such as mental hospitals, training schools for mentally defectives and tuberculosis sanatoria an improvement in treatment could result in the discharge of a higher proportion of long-term patients during a given year. This higher proportion would raise the mean length of stay of the separations for this particular year with the paradoxical result, that (in a year) when more long-term patients—presumably as a result of better treatment—are discharged, the average length of stay will go up, thereby suggesting the opposite of the true situation.

There are two possible approaches to calculate rates and probabilities of separation: One may observe all patients that had been admitted during a certain period, e.g., a calendar year, until they are separated or for an arbitrary period, say, five years, whichever occurs first. This procedure is called the cohort method.

The other approach is called the census method. One observes all patients in hospital at the beginning of the observation period, all admissions and separations during the period, and all patients at the end of the period.

The following table was calculated according to the census method. The periods of observation were the calendar years 1956, 1957, and 1958. Both first admissions and readmissions were taken into account. Date of admission was the latest admission to a mental institution. Transfer from one mental institution to another was disregarded. Separations that fell in the observation period (calendar year) were all those where the date of separation fell within the calendar year, although a patient may have left the institution the previous year, since separations are dated at the end of the final probation period.

The length of stay for Ontario and Quebec patients was the actual number of days spent in hospital, i.e., excluding final probation period, unsuccessful probation periods, home visits, etc., whereas for all other provinces, hospital stay was calculated as the period from the latest admission other than by transfer to the date of finally leaving hospital, i.e., including intermediate periods of absence, but excluding the final probation period.

The data are based on cases with diagnoses of schizophrenia (300), mental deficiency (325), and psychoses of senium (304, 306).

The two types of separation are discharge and death. Discharge means live discharge regardless of medical advice or condition (improved, unimproved, etc.). Death means death within the institution or while on probation, home visit, etc.

The rate of discharge (or death) for a specific duration interval is defined as the number of patients discharged (or dying) during the interval

Prepared in the Institutions Section of the Health and Welfare Division

September, 1960
9002-533

The Queen's Printer and Controller of Stationery, Ottawa, 1960

divided by the number of patients that were subject to the risk of being discharged (dying) during the same duration interval.

Probability of discharge (or death) is defined as the number of patients being discharged (dying) during the specified duration interval divided by the number of patients at the beginning of the duration interval.

The rates of discharge are independent of the number of deaths, and the rates of death are independent of the number of discharges.

For further explanation regarding the method of calculation see *The Derivation of Rates of Separation From Mental Hospitals,* Report Series No. 1, Mental Health Division, Department of National Health and Welfare, Ottawa.

The data show increases of discharge rates between 1957 and 1958 for all classes except for long-term patients with psychoses of senium where the frequencies are very small.

The probabilities of discharge for all groups diminish rapidly with prolonged stay in hospital. This trend would be even more conspicuous, if the figures would have been based on uniform duration intervals.

Other noteworthy features are the comparatively low death rates for schizophrenics, the low rates of discharge for mentally defectives, and the high probabilities of death of patients with psychoses of senium.

Interpreting the data one has to take into account that not only changes in psychiatric treatment of in-patients, but also changes of admission and discharge policy will influence the rates of separation; and that the decisions, as to which patients are to be admitted and which patients are to be discharged, depend in turn on the availability of personnel, hospital space, out-patient facilities, and provision for after-care.

Absolute Rates and Probabilities of Discharge and Death for Specific Hospital Stay Periods by Selected Diagnosis, 1956-58

Duration interval	Schizophrenia I.C.D. No. 300			Mental deficiency I.C.D. No. 325			Psychosis of senium I.C.D. Nos. 304,306		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
Rates of discharge									
0- 1 month	.145	.145	.161	.064	.084	.085	.097	.094	.103
1- 4 months	.419	.418	.472	.090	.077	.101	.164	.156	.169
4- 8 months	.332	.335	.410	.047	.050	.058	.074	.070	.087
8-12 months	.183	.196	.275	.027	.030	.033	.047	.042	.045
1- 2 years	.269	.270	.377	.065	.048	.126	.070	.059	.065
2- 3 years	.160	.137	.234	.038	.031	.072	.034	.020	.036
3- 5 years	.168	.143	.256	.062	.036	.124	.057	.072	.042
5-10 years	.205	.190	.366	.104	.039	.217	.109	.097	.057
Rates of death									
0- 1 month	.003	.002	.002	.013	.009	.010	.133	.140	.127
1- 4 months	.001	.002	.005	.019	.010	.012	.169	.186	.185
4- 8 months	.003	.002	.002	.006	.016	.010	.138	.179	.168
8-12 months	.003	.004	.004	.010	.009	.009	.110	.100	.130
1- 2 years	.011	.014	.016	.015	.025	.014	.256	.281	.286
2- 3 years	.010	.012	.017	.018	.017	.028	.262	.264	.264
3- 5 years	.025	.012	.034	.043	.024	.025	.417	.501	.445
5-10 years	.091	.062	.091	.081	.064	.083	.667	.779	.672
Probabilities of discharge									
0- 1 month	.144	.144	.161	.063	.084	.085	.091	.088	.097
1- 4 months	.419	.418	.471	.089	.077	.100	.151	.143	.155
4- 8 months	.332	.334	.410	.047	.050	.057	.069	.064	.080
8-12 months	.183	.196	.275	.026	.030	.033	.045	.040	.042
1- 2 years	.268	.268	.374	.064	.047	.125	.061	.051	.056
2- 3 years	.159	.137	.232	.041	.031	.071	.030	.017	.031
3- 5 years	.166	.143	.253	.061	.036	.122	.045	.054	.033
5-10 years	.197	.185	.353	.100	.038	.209	.074	.060	.038
Probabilities of death									
0- 1 month	.003	.002	.002	.013	.009	.010	.127	.134	.121
1- 4 months	.001	.002	.003	.018	.009	.011	.156	.173	.171
4- 8 months	.003	.002	.002	.006	.015	.010	.133	.174	.161
8-12 months	.003	.003	.003	.010	.009	.009	.108	.098	.128
1- 2 years	.010	.012	.013	.015	.024	.013	.248	.274	.278
2- 3 years	.009	.011	.015	.018	.017	.027	.258	.262	.260
3- 5 years	.023	.011	.029	.042	.024	.024	.408	.487	.438
5-10 years	.082	.056	.075	.077	.063	.074	.642	.755	.660
Probabilities of separation									
0- 1 month	.147	.146	.163	.076	.093	.095	.218	.222	.218
1- 4 months	.420	.420	.474	.107	.086	.111	.308	.315	.326
4- 8 months	.334	.336	.412	.053	.065	.067	.202	.237	.241
8-12 months	.186	.199	.278	.037	.039	.042	.152	.138	.170
1- 2 years	.278	.280	.387	.079	.071	.138	.310	.324	.334
2- 3 years	.168	.148	.247	.058	.048	.098	.288	.279	.291
3- 5 years	.189	.154	.282	.103	.060	.146	.453	.541	.470
5-10 years	.278	.241	.427	.177	.101	.283	.716	.815	.698