

# The Maine and Vermont Three-Decade Studies of Serious Mental Illness

## II. Longitudinal Course Comparisons

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**Background.** This paper supplements the cross-sectional outcome comparisons of the companion paper by providing a brief account of the longitudinal courses of the Maine and Vermont samples across several outcome domains.

**Method.** A Life Chart method was used to document changes in individual lives over the domains of residence, work, income source, and use of community resources over a 20-year period. Reliability studies between states were conducted.

**Results.** Throughout much of the period, more Vermont subjects lived independently, were working, and were less likely to use community resources compared to Maine subjects.

**Conclusions.** Differences in both policies and programmes contributed to course differences between the groups. System characteristics that may lead to better outcomes are discussed.

The companion paper has demonstrated major outcome differences between the Maine and Vermont groups. This paper fills out these statistical outcome differences by providing a more detailed descriptive comparison of the longitudinal courses of the two samples across several outcome domains.

The evolution of developments in each state are also documented to account for policy and programme events extraneous to the rehabilitation programme (DeSisto *et al*, 1991). These events are then overlaid with the longitudinal course data for both groups to study the interplay between the natural history of individuals and the systems of care.

### Methods and procedures

A modified version of the Meyer-Leighton Life Chart (Leighton & Leighton, 1949; Meyer, 1951) was used to document retrospectively the yearly course of several life domains for each subject. The entire instrument battery has been described previously (Harding *et al*, 1987a). The Life Chart (Harding *et al*, 1981) documented cohort statuses over a 32-year period in Vermont and a 36-year period in Maine. Outcome domains included work; source of income; residence; hospitalisations; medication; and community resources used. Life-event domains included: presence of significant others; deaths;

health; relationships; legal entanglements; finances; and changes in family structure.

A trained clinician interviewer and the subject worked together over a 75 to 90 min period to complete the Life Chart and other elements of the longitudinal questionnaire. A specific set of probes was asked for each year beginning with the most recent year and working back to earlier years. All data were verified by informants who knew the subject well. For deceased subjects, the Life Chart was completed with family members and significant others. Most subjects and families gave good accounts of their histories, a phenomenon noted earlier by others (Bleuler, 1978; Harding, 1986).

Inter-rater reliability trials resulted in an overall agreement (kappa; Fleiss, 1973) between Maine clinicians of 0.75 ( $n=48$  cases), between Vermont clinicians of 0.79 ( $n=36$  cases), and 0.65 ( $n=20$ ) between Maine and Vermont clinicians.

Data reduction of the Life Chart was conducted as follows:

**Residence.** Residence categories included: hospital; independent living; rehabilitation or halfway house; and boarding or nursing home. The percentage of any year that a person resided in a category was coded. For example, if in a particular year a subject spent 4 months in the hospital and 8 months living

independently, then 'hospital' would be coded as 33% and 'independent living' as 67%.

**Work.** The work domain had three categories: full-time (30 hours or more with pay); part-time or unpaid (combining housewife, volunteer, part-time, and volunteer full-time); and unemployed. For a particular year, a subject was classified into one of these categories if it represented their status for more than six months.

**Community resources.** Scores reflected receipt of services from any of the following: community mental health centre; vocational rehabilitation (VR); private practitioner.

The status of the Maine and Vermont groups for each outcome domain was compared by determining the percentage of subjects that were in a particular status for each year from 1960 to 1980. A Bonferroni adjusted chi-square comparison of proportions using an  $\alpha = 0.0024$  was performed to achieve a nominal 0.05 alpha overall for the 21 year period.

A similar format was used to document the year-by-year developments in mental health policies and programmes for each state. The domains included: policy and legal changes; hospital programmes; community residential programmes; vocational programmes; mental health centres; and entitlements. Information about changes in these domains was obtained from a review of state laws, hospital annual reports, published hospital and programme histories, and personal interviews with period policy makers and division heads.

### Results

Table 1 briefly summarises domain and period-specific differences between the Maine and Vermont subjects.

Due to mortality, the total number of Life Charts available from 1960 to 1980 for Maine and Vermont ranged from 224 to 143, and 243 to 173, respectively.

**Residence.** Maine subjects spent significantly more time (50% v. 13%) in the hospital from 1960 through 1975 compared to Vermont subjects. The Vermont residential experience consisted predominantly of more independent living between 1960 and 1971, more residence in halfway houses between 1960 and 1963, and more use of boarding homes from 1963 to 1971.

**Work and income source.** A significantly greater percentage of Vermont subjects were employed full-time between 1960 and 1975 (30.9% v. 12.7%). In

Table 1  
Life chart course comparisons summary

Domain	Years <sup>1</sup>	Maine (%) <sup>2</sup>	Vermont (%) <sup>2</sup>
<b>Residence</b>			
Hospital	60-75	50.0	13.0
Independent	60-71	25.6	46.4
Halfway house	60-63	0.3	6.2
Boarding home	63-71	3.9	14.4
<b>Work</b>			
Full-time	60-75	12.7	30.9
Part-time	60	1.8	7.9
Unemployed	74, 75, 77-79	60.2	41.3
<b>Community resources used</b>			
None	60-78	12.9	43.3
VR	60-70	0.0	16.9
CMHC	62, 64-69	11.0	2.7

1. Years for which significant differences between Maine and Vermont were observed.

2. Average percentage for years where significant differences were observed.

VR = vocational rehabilitation; CMHC = community mental health centre.

contrast, more Maine subjects were unemployed from 1974 to 1975, and 1977 through 1979 (60.2% v. 41.3%). Naturally, the proportion of individuals described as unemployed would tend to increase over time as individuals age.

**Community resources.** On average, throughout most of the period from 1960 to 1978, Vermont subjects were not making use of community programmes at the same level as Maine subjects (43.3% v. 12.9%). However, more Vermonters were enrolled in VR between 1960 and 1970. This can be contrasted to the higher percentage of Mainers enrolled in community mental health centre programmes in 1962 and between 1964 and 1969.

### Discussion

The longitudinal course comparisons demonstrate clearly that the Vermont programme had a significant impact on the course for Vermont subjects compared to that of Maine subjects. Perhaps the most important aspect of the programme was that it gave Vermont patients an earlier opportunity to adapt to life in the community. This opportunity, when combined with an array of residential, work, and social opportunities, resulted in a more diverse and favourable course compared to the Maine group across the domains studied.

Early differences in residential status can be attributed directly to the policy and programme

differences between the states. The Vermont rehabilitation programme, which began in 1955, had both a rehabilitation goal and a depopulation goal. Therefore, alternative residences such as independent living, boarding homes, and halfway houses were needed and developed much earlier in Vermont. Depopulation was not pursued in Maine until 1971, and alternative residences were not available or used until this time. Therefore, Maine subjects spent more time in hospital between 1960 and 1975, while Vermont subjects spent more time in independent residences between 1960 and 1971, in boarding homes between 1963 and 1971, and in halfway houses between 1960 and 1963. Once Maine pursued a policy of depopulation, these differences in residential status disappear.

Over the entire period, the percentage of Vermonters engaged in some form of employment, either full-time or part-time paid work or volunteer work, ranged between 35 and 60%. For full-time work alone, the range was 25 to 30%. For Maine subjects, the range for some kind of employment was 12 to 30%, and for full-time work, 10 to 12%. While not directly comparable, employment rates from short-term cross-sectional studies have ranged from 20 to 30% for full-time employment one year post-discharge (Anthony *et al*, 1972). The Vermont rehabilitation programme was an eclectic programme that integrated the knowledge from social psychiatry, including principles of milieu therapy, therapeutic community, and interpersonal psychiatry, with the use of medicine and vocational rehabilitation (Chittick *et al*, 1961). The programme created a comprehensive system of care prior to the development of community mental health centres and community support systems (Morrissey & Goldman, 1984; DeSisto *et al*, 1991).

The relationship with vocational rehabilitation was abandoned in 1970 when Vermont pursued a policy of regionalisation which made mental health centres the primary referral and aftercare agents. This paradigm shift (Kuhn, 1962) from a rehabilitation programme which emphasised work and self-sufficiency, to a treatment programme which emphasised cure of illness through treatment by mental health centres, resulted in some loss of continuity and comprehensiveness.

The Vermont legacy is not to be found, as Bachrach (1989) has suggested, in the details of the programme or the methods used. Instead, its legacy is the values and principles which guided it. Perhaps the most important value was that the programme had a pervasive attitude of hope and optimism about human potential, through the vision that, if given the opportunity, persons with mental illness could

become self-sufficient. Anecdotal literature and personal accounts in both the medical and psychiatric fields support the notion that hope is an important factor in recovery (Deane & Brooks, 1963; Cousins, 1979; Lovejoy, 1984). With this hope and optimism, however, there were realistic expectations that not everyone would proceed at the same pace. There was the assumption that people were unique, and that the dignity and integrity of the person must be respected. This respect was honoured by asking sufferers about what they wanted, how things were going, whether the programme was meeting their needs, and by involving them in programme planning. Thus, collaboration was the hallmark of the programme. In addition, services had to be comprehensive, deal with all aspects of life, be flexible because needs and situations changed over time, and have long-term continuity. Finally, there was a concern about what happened to people over the long-term and a recognition of the need to keep in touch in order to find out.

Both the Maine and Vermont cohorts became ill during a period when law and society allowed long periods of hospitalisation. They were hospitalised prior to the availability of modern pharmacological treatment and changes in family structure and demography that have occurred over the past 30 years. Nonetheless, the individual Life Charts and course trajectories for both groups confirm the heterogeneity of the long-term course of serious mental illness (Ciompi & Müller, 1976; Bleuler, 1978; Harding *et al*, 1987a,b; Harding, 1988; Harding *et al*, 1989). In addition, the accumulated domain-specific courses in this report have demonstrated that the natural history of individuals and policy and programme events affect the course of specific outcome domains.

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