

# Minimizing Adverse Effects on Patients of Involuntary Relocation From Long-Stay Wards to Community Residences

John Farhall, M.A.

Tom Trauer, Ph.D.

Richard Newton, M.B.B.S., F.R.A.N.Z.C.P.

Peter Cheung, M.D.

**Objectives:** This study examined the incidence of, and variables associated with, relocation trauma among 85 patients who moved from long-stay psychiatric wards to community care units as part of a hospital closure in Melbourne, Australia. **Methods:** Some participants moved directly from wards and some moved first to transitional units on the hospital grounds. Preparation for the transition, such as visits to the community care unit before the move, was documented, and severity of symptoms, aggressive behaviors, and preferences for living environments one month before and one month after the move were compared. Relocation trauma was measured one month after the move. After significant factors associated with trauma were determined, additional tests further discriminated these factors. **Results:** Although 66 percent of participants were happy with community care units one month after the move, 18 percent preferred hospital living. Of 81 participants who had data on relocation trauma, 20, or 25 percent, met relocation trauma criteria. Preparation in a transitional unit reduced the likelihood of trauma, as did making six or more premove visits to the new facility and having a preparation period of more than 16 weeks. When preparation in a transitional unit, number of premove visits, and duration of preparation were considered together, only the number of premove visits and duration of preparation remained significantly associated with relocation trauma. **Conclusions:** Adverse effects of relocation on long-stay psychiatric patients may be minimized by the preparation of patients over a period of four months or more, with inclusion of six or more visits to the new facility. Moving via a transitional environment is not essential. (*Psychiatric Services* 54:1022–1027, 2003)

Moving to a new place of residence can be a stressful experience even for healthy adults. For persons with illnesses or disabilities, relocation stress may exac-

erbate symptoms and impair functioning. Adverse outcomes of relocation from one care facility to another, sometimes referred to as relocation trauma, have been reported for nonpsychiatric

elderly patients and persons with cognitive disability. Outcomes have included higher death rates, depression, and disturbed behaviors (1,2). Both psychological and immune-system indicators of stress have been directly associated with relocation (3).

Few studies have addressed relocation trauma among psychiatric patients, and most of these studies have examined relocation within the same hospital. Transfer from acute to rehabilitation wards has been associated with increased aggression (4) and interhospital transfer with deterioration in social and self-care behaviors, which mostly resolved within six months (5). Other studies (6) have documented a similar pattern of deterioration followed by recovery, especially for the more disabled patient groups, but with relatively small effects (7,8).

Several studies have suggested ways in which relocation trauma may be minimized (9,10). A qualitative study reported patients' suggestions for improving relocation procedures, including visits to the new location and introductions to the new staff and residents before the move (11). Another study attributed the success of intra-hospital relocation to continuity of staff care and a continuous schedule of supportive activities both before and after the move (7). Early involvement in the relocation process may give chronically mentally ill patients a greater sense of control over transfers, and preparatory counseling has been shown to increase activity levels, morale, and satisfaction (12). Transfer

Mr. Farhall is affiliated with the School of Psychological Science at La Trobe University, Bundoora, Victoria 3086, Australia (e-mail, [j.farhall@latrobe.edu.au](mailto:j.farhall@latrobe.edu.au)). Mr. Farhall and Dr. Cheung are with North Western Mental Health in Melbourne. Dr. Trauer and Dr. Cheung are with the department of psychiatry at the University of Melbourne. Dr. Trauer and Dr. Newton are with the department of psychological medicine at Monash University in Melbourne. Dr. Newton is also with Southern Health at Frankston Hospital in Frankston, Victoria.

to a better environment may also improve outcomes (13). Practical recommendations for successful relocation from hospital to community facilities have included allowing sufficient time for preparation, arranging site visits, involving relatives, and giving patients as many choices as possible (9).

We studied the incidence of relocation trauma and the effects of different levels of preparation for relocation during the closure of a 600-bed psychiatric hospital complex in Melbourne, Australia, from 1994 to 1999. As part of the deinstitutionalization, all the patients in long-term open wards were nominated for transfer to community care units to be constructed—20-bed suburban cluster housing developments with 24-hour multidisciplinary staff teams. The mission of the community care units was both clinical care and rehabilitation of residents. Our first study documented outcomes for patients in the first year of relocation (14).

The second study, reported here, aimed to determine whether patients experienced relocation trauma and whether adjustment in the first month after the move was associated with the transition process. For several reasons, a high incidence of relocation trauma was not anticipated. The community care unit was a less restrictive residential facility and provided a superior living environment, factors associated with patient preference and better outcome, respectively. In addition, patients' preferences for hospital or community living have consistently indicated that patients favor living outside the hospital (15), which suggested that in this study we might encounter few instances of stress associated with resistance to relocation. Most important, the study implemented strategies to minimize adverse reactions. Strategies included the opportunity for patients and family members to express preferences for specific community care units, visits before the move to the community care units and local services, purchase by patients of clothing and personal effects for their new environment, patients' involvement in the choice of roommates, retention of memorabilia of hospital life, and participation in farewell functions.

The nature of the redevelopment process meant that some patients moved to their community care units relatively soon after nomination but that others had to wait for months or years. Some moved directly from a ward to a community unit. Others moved to one of three transitional community care units on the hospital grounds, in which the routines for the new community care units were implemented as a form of preparation. Most community care units accepted redeployed hospital staff, thus providing a level of continuity of staffing care. Actual levels of transition preparation varied across individuals—for many reasons, including nomination of patients for specific community care units at different times, the speed with which the allocated units became available for occupancy, and differences in implementation of preparation activities across wards.

On the basis of the literature reviewed and our perceptions of the relocation process, the five expectations we studied were that the living preferences of patients—both in the hospital and after relocation—would favor community living, that the community care unit environment would be less restrictive than that of the wards, that relocation trauma would be evident among only a minority of patients at one month after the move, that patients moving to a destination community care unit after preparation in a transitional unit would be less likely to show relocation trauma one month after the move than those moving directly from a ward, and that more transition preparation would be associated with less likelihood of relocation trauma one month after the move.

## Methods

### Sample

The study participants were all 87 patients who moved to one of seven new community care units in the 16-month study period from May 1995 to September 1996. The main psychiatric disorder among the patients was schizophrenia. All patients had experienced either very long or repeated hospital stays and continued to have high levels of symptom severity, functional disability, and comorbid medical and other

conditions; details are shown in Table 1.

The north eastern metropolitan psychiatric services research and ethics committees approved the study.

### Measures

Background and clinical information was collected for each participant before the move. Trained research assistants assessed participants one month before the move to their community care units and one month after the move on the Positive and Negative Syndrome Scale (PANSS) (16) for severity of psychopathology. PANSS possible scores range from 30 to 210, with a higher score indicating greater severity. Nursing staff used the Staff Observation Aggression Scale (SOAS) (17) to record the number of incidents of and details of verbal and physical aggression by each participant during the four weeks before moving and during the four weeks after arrival at the community care unit.

The Patient Attitude Questionnaire (PAQ) (18), used to inquire about living preference, was administered by a research assistant one month before the move and one month after the move. The restrictiveness or regimentation of the living environment for each ward and community care unit was assessed with the Residential Practices Profile (RPP), which is also known as the Hospital and Hostel Practices Profile (19,20). This questionnaire comprises 52 items grouped into six subscales: restrictiveness, possessions, meals, health, rooms, and services. Possible scores range from 0 to 52, with higher scores indicating greater regimentation. A research assistant administered one profile to the unit manager of each ward before the move and one profile to the unit manager of each community care unit at one month after the move.

A recording form, the transition preparation record, was devised for this study to collate information about the nature, extent, and duration of preparation for transition experienced by each participant. The unit manager of the ward or transitional community care unit from which the participant was to be transferred completed the transition preparation record for each participant before the

**Table 1**

Characteristics of a sample of patients who were moved involuntarily from long-stay wards to community residences<sup>a</sup>

Characteristic	N or mean	%
Age (mean±SD years) (N=85; range, 24–63)	41.7±9.8	
Number of admissions (mean±SD) (N=61; range, 1–25)	12.7±8.2	
Duration of current admission (mean±SD years) (N=75; range, <1–36.3)	6.9±7.1	
Age at onset (mean±SD years) (N=69)	17.6±6.4	
Gender		
Male	54	64
Female	31	37
Marital status		
Married	1	1
Single	70	82
Divorced or separated	14	16
Highest level of education		
University degree	3	4
Trade or technical certificate	12	16
Completed high school	11	15
Did not complete high school	48	65
Primary diagnosis		
Schizophrenia	74	88
Schizoaffective disorder	3	4
Bipolar disorder	2	2
Intellectual disability	2	2
Organic condition	2	2
Other	1	1
Legal status		
Voluntary	14	16
Involuntary	71	84

<sup>a</sup> Ns vary because of missing data.

move. The form included questions about the period during which preparation occurred, participation in specific preparatory activities—such as the number of visits to the participant's prospective community care unit under construction—group activities with prospective community care unit coresidents, farewell parties, and collection of memorabilia.

#### **Relocation trauma criteria**

In the absence of a consistent measure in the literature, we considered relocation trauma to be present if a participant manifested one or both of these factors: worsening of symptoms, measured by the PANSS total score and defined as a rise of more than one standard deviation in the premove-to-postmove change score, or the presence of aggressive behavior after the move, measured by the SOAS, when there had been none before the move.

Further analysis of relocation trauma was approached by checking for significant associations between the pres-

ence or absence of relocation trauma and premove environment and preparation variables and then using the automatic interaction detection method (21) to determine their precedence.

#### **Results**

##### *Transition*

Of the 87 participants who transferred to community care units, 85 were reassessed one month after the move. One participant had returned to the hospital because of disturbed behavior, and one had died of natural causes. Data for the two participants who left the study were dropped from the premove analyses. Thus all analyses included data for 85 participants.

##### *Comparison of living environments*

The RPP was used to determine differences among the living environments of the wards, the transitional community care units, and the destination community care units. Premove scores on the RPP were avail-

able for three of the four long-term open wards, because one ward had closed before rating was done; for the three transitional community care units; and for the seven destination community care units. Scores for the destination community care units were available one month after the move. The mean±SD score on the RPP for the three wards was 30±5.2 and for the three transitional units was 18±7. The mean±SD score for the seven community care units one month after the move was 16.3±4. The RPP scores for each of the individual transition and destination community care units were all lower than the RPP scores for the wards. The RPP scores of the three transitional units on the hospital grounds were close to those of the community care units in the community. A one-way analysis of variance of mean scores was significant ( $F=8.3$ ,  $df=2, 10$ ,  $p=.007$ ), and post hoc comparisons showed that it was the differences between the wards and both of the other settings that were significant.

#### *Participants' living preferences*

The PAQ was used to explore living preferences. At the premove assessment, 54 participants (64 percent) said they wanted to leave the hospital, 22 (26 percent) were not asked or gave unclassifiable answers, and nine (11 percent) did not want to leave. One month after the move, 56 participants (66 percent) preferred the community care unit to the hospital, 15 (18 percent) preferred the hospital, and six (7 percent) did not give a preference.

#### *Participants with relocation trauma*

For the 78 patients for whom we had complete PANSS data, symptom change scores were computed by subtracting the postmove PANSS total score from the premove total score. These differences ranged from an improvement of 31 points to a worsening of 74 points. The difference scores were roughly normally distributed, with a mean±SD score of .69±16.1. A significant deterioration was defined as a worsening of at least one standard deviation in the change score. Ten of 78 participants (13 per-

cent) met this criterion. On the SOAS, 12 of 85 participants (14 percent) had no recorded aggressive incidents in the premove period but had at least one in the postmove observation period. On the basis of all available PANSS and SOAS data, 81 participants could be classified as having relocation trauma or not at one month postmove. Of these, 61 (75 percent) did not meet either of our criteria for relocation trauma. One month after the move, eight participants (10 percent) met only the PANSS criterion, ten (12 percent) met only the SOAS criterion, and two (2 percent) met both, resulting in a total of 20 participants (25 percent) who by these criteria were considered as displaying relocation trauma. Also important to note is that one month after the move, nine of 81 participants (11 percent) improved their scores on the PANSS by one standard deviation or more, eight of 85 (9 percent) improved on the aggression criterion, and one of 81 (1 percent) improved on both of these criteria—in total, a number similar to those who met the relocation trauma criterion.

#### ***Relocation trauma and severity of disorder***

To ascertain whether relocation trauma was associated with higher levels of symptoms at transfer or longer periods of hospitalization, we compared mean PANSS total scores, mean length of current hospitalization, and mean lifetime number of admissions for participants with relocation trauma and those without. None of these differences was statistically significant.

#### ***Relocation trauma and living preference***

None of the participants who initially wanted to stay in the hospital met the criteria for relocation trauma when assessed one month after transfer. Sixteen of the 20 participants with relocation trauma (80 percent) expressed a preference for leaving the hospital; no ratable response was obtained from the other four.

#### ***Relocation trauma and living in a transitional unit***

It was expected that participants who transferred by way of a transitional

community care unit would adjust to the community care unit's way of life and would therefore be at less risk of relocation trauma when the time came for permanent relocation. Only six of 43 participants (14 percent) who went to a destination community care unit by way of a transitional community care unit showed relocation trauma, compared with 14 of 42 participants (33 percent) who went to a destination community care unit directly from a ward. The association between relocation trauma status and transfer to a community care unit, either by way of a transitional community care unit or direct from a ward, was statistically significant (Fisher's exact test,  $p=.037$ ).

#### ***Relocation trauma and preparation***

Complete transition preparation record data were available for 81 of the 85 participants. Nine items of the transition preparation record were analyzed separately, by a t test for continuous variables and a chi square test for categorical variables, to assess the capacity of the items to predict relocation trauma status. Two items emerged as statistically significant: the length of preparation for the move, measured in weeks, and the number of premove visits to the participant's prospective community care unit or its environs. Because the distributions of both of these variables were highly skewed, they were reduced to dichotomies by splitting. The length of preparation proved to be a relatively bimodal measure; it was split between 16 weeks or fewer, classified as shorter preparation ( $N=50$  participants), and 17 weeks or more, classified as longer preparation ( $N=31$  participants). Visits were split between five visits or less, classified as fewer visits ( $N=39$ ), and six visits or more, classified as more visits ( $N=42$ ).

A method known as automatic interaction detection (21) was used to examine the precedence of these two categorical predictors: preparation and visits, and preparation at a transitional community care unit. This method determines which of several dichotomous predictors makes the best discrimination, then enters other predictors in turn according to how

much further classification they can effect. Both relocation trauma status and transition preparation data were available for a total of 77 participants.

Two of these variables—length of preparation and number of visits—showed significant associations with relocation trauma. The best predictor was number of visits. That variable alone correctly predicted the relocation trauma condition of 50 (65 percent) of 77 participants. The association between number of visits and relocation trauma status was highly significant ( $\chi^2=7.86$ ,  $df=1$ ,  $p=.005$ ). The odds of a participant with fewer visits developing relocation trauma was .69, compared with .15 for those with more visits.

For the participants with more than five visits, the length of preparation further accounted for relocation trauma status. Of the 40 participants with more than five visits, 29 (73 percent) were correctly classified. For those who had more than five visits, the association between relocation trauma status and the length of preparation was significant ( $\chi^2=5.09$ ,  $df=1$ ,  $p=.02$ ), and the odds of a participant with shorter preparation developing relocation trauma was .41, compared with the odds of .04 for participants with longer preparation. For those with fewer visits, the association between length of preparation and relocation trauma approached significance ( $p=.09$ ). Participants with longer preparation had an odds of .41 of developing relocation trauma, compared with an odds of 1.27 for those with shorter preparation.

#### ***Discussion and conclusions***

As expected, the community care units were a less regimented environment than the long-stay wards. The transitional community care units were also less regimented than the wards, suggesting that despite their hospital location, the transitional units achieved a level of freedom for patients similar to that of the destination community care units. In addition, most participants wanted to leave the hospital, and after one month in a community care unit, participants' preferences were strongly in favor of living in a community care unit rather than in a hospital ward.

Both of these factors should have minimized the incidence of relocation trauma.

Although forced relocation was expected to be associated with relocation trauma, none of the participants who wanted to stay in the hospital showed relocation trauma subsequently. In fact, only one still expressed a preference for hospital living in the assessment one month after the move. It is reassuring that, in the situation of the closing of institutions, acting against the preferences of some participants was not associated with adverse consequences by the variables we measured.

Our criterion for relocation trauma—deterioration in symptom ratings or emergence of aggressive behavior or both—was a pragmatic choice based on concerns of clinical staff and observations in previous studies. By that criterion, about a quarter of relocated participants had an adverse reaction to the move, despite the strategies implemented to minimize trauma, suggesting that long-stay patients are vulnerable to the stressful effects of relocation. The person who returned to the hospital within a few days may have represented an additional case of relocation trauma. However, we were unable to obtain confirmatory symptom and aggression measures at the time.

It was reassuring that two of the measures designed to minimize relocation trauma—living in transitional preparation units and visiting the prospective community care unit before moving—were strongly associated with less trauma. In addition, a preparation time of more than 16 weeks was also associated with a lower likelihood of trauma. Visits and preparation time were relatively independent predictors and almost equivalent in their power to predict relocation trauma. Both were more powerful predictors than living in a transitional unit. When considered together, the ability of visits and preparation time to predict relocation trauma status of the sample was striking—of the 26 patients who were fortunate enough to have made more than five visits to their prospective community care unit and to have had more than 16 weeks of preparation, only one ex-

hibited relocation trauma after one month at the community care unit; in contrast, just over half of the 30 patients who had fewer than six visits and received less than 16 weeks of preparation exhibited relocation trauma at the same time point. In fact, the odds of this latter group having relocation trauma was 32 times that of the former group, suggesting a powerful effect of these forms of preparation.

It is important to note that although the symptoms and behavior of some participants deteriorated following the move, a similar number of participants improved by the same criterion. It was clear that many participants were excited about the prospect of moving to a community care unit and were delighted with the first few weeks. Although moving to a community living setting may cause adverse reactions among some patients, for others it may stimulate measurable improvement.

Transitional preparation environments have received criticism in the rehabilitation literature (22). However, this study illustrates one beneficial application of that strategy. Compared with participants who went directly to their destination community care unit, those who moved by way of a transitional community care unit were less likely to experience relocation trauma. This finding may have been due to the transitional units' addressing several criticisms of transitional settings. In particular, they were similar to the destination units in staffing, philosophy, freedom, routines, and form of housing.

However, if minimizing relocation trauma is the only goal, a transitional preparation setting may be unnecessary if other key factors are in place. Premove visits and length of preparation were more effective in predicting relocation trauma status than was the route to the community care unit, transitional or direct. This finding was consistent with that of the study that found that early involvement in the relocation process gave chronically mentally ill patients an increased sense of control (12). Our finding also lent support to the selection of time by Adshead and colleagues (9) as the first essential ingredient of a relocation program. These authors suggest that "months and years rather than

days or weeks" of preparation were required.

The key considerations appear to be that major change requires considerable adaptation, and for persons with high levels of disability, the adaptation process can be expected to take a long time. Our findings suggest that several months of preparation may be sufficient to reduce the risk of relocation trauma for long-stay hospitalized patients. However, because we did not study a group who had no preparation, we cannot be sure whether time alone leads to psychological adaptation or whether it simply allows for a sufficient number or variety of preparation activities to occur.

More premover visits to the participants' prospective community care units were significantly associated with a reduction in relocation trauma. The intention of these visits was to familiarize the participants with local facilities and to support reality-based appraisals of their units. During the preparation period we observed several participants who responded with disbelief, delusional ideas, and denial to the prospect of relocation. Actual visits may be an effective antidote to such reactions.

The study had some limitations. It was a naturalistic rather than an experimental one. Patients were not randomly allocated to community care units or to preparation or visit conditions. Earlier or later allocation of a patient to a community care unit was made primarily on the basis of expressed preferences and locality of origin, and we had no reason to assume the presence of any systematic differences among participants with longer preparation that may have explained our results. We were fortunate that on many variables of interest there was a wide range of scores or relatively even numbers in categories, thus strengthening the possibility of detecting relationships. However, given the exploratory nature of the analysis, the predictors that emerged are likely to have capitalized on chance variation as well as underlying relationships, and future studies may not show such strong effects.

Although the study was of long-stay patients transferring to a community residential service, the finding of time

as one important predictor of adjustment after change may be more broadly applicable. Mental health systems have many change points that require adjustment by the patient, such as changes in residence, care teams, and intensity of service. Previous research has identified variables such as transfer of training and continuity of care as important predictors of the outcome of transitions (23). Our study suggests that the length of transition preparation may be a critical factor to be studied further as a predictor of outcome in other contexts, such as transfers from assertive community treatment to less intensive forms of care or from one case management agency to another. ♦

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Submissions to the journal's Datapoints column are invited. Areas of interest include diagnosis and practice patterns, treatment modalities, treatment sites, patient characteristics, and payment sources. National data are preferred. The text ranges from 350 to 500 words, depending on the size and number of figures used. The text should include a short description of the research question, the database and methods, and any limitations of the study.

Inquiries or submissions should be directed to Harold Alan Pincus, M.D., or Terri L. Tanielian, M.S., editors of the column. Contact Ms. Tanielian at Rand, 1200 South Hayes Street, Arlington, Virginia 22202 (terri\_tanielian@rand.org).