

Progress in risk and recovery and moves along the therapeutic care pathway. A D-FOREST Study from Dundrum Hospital.



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Introduction:

Secure forensic psychiatric hospitals provide specialised care and treatment for mentally ill offenders, along with managing the risks they pose, in particular, their risk of violence (1). Primary objectives of forensic hospitals include the treatment of mental illness and reduction in violent recidivism. Secondary objectives include safe discharge from secure treatment facilities and re-integration of patients back into their communities as soon as is feasible. Treatment within forensic psychiatric hospitals, is facilitated by an environment of therapeutic security which involves a combination of environmental, relational and procedural security measures and can exist at varying levels within the same forensic hospital (2). The aim of therapeutic security is to provide a safe space for therapists to address the unmet needs of patients with a history of violence and to safely challenge maladaptive coping mechanisms in order to help patients develop pro-social coping skills.

Patients move forward on their care pathway to units with ever decreasing levels of security, which are designed to form a coherent pathway through secure care. It is important that forward moves are based on the individual patients risks and needs and not on the amount of time that has elapsed since admission, as might be the case in a prison system. Secure forensic services aim to move patients forward to a less secure setting depending on their individual therapeutic progress. Progress in forensic settings includes more than just recovery from psychotic symptoms. Other areas such as a reduction in violence, need for therapeutic security and responses to interventions and treatments are of importance(3). Length of stay in forensic hospitals appears to be increasing internationally and when hospitals have limited resources, active management of length of stay is particularly relevant when balancing the needs of an individual patient.

Discharge from a forensic hospital requires a careful balance between a reduction in the restrictions placed upon patients, with the serious risks that each individual may pose in a community setting. Backward moves on the secure care pathway typically occur in emergency situations, such as when an acute relapse of psychosis occurs, or when a patient engages in serious violence or substance misuse on their current ward. Moving a patient forward before they have achieved the sufficient level of recovery and engagement for that next step on the pathway, increases their risk of a subsequent backward move. Positive moves on the pathway must be carefully considered, with a thorough evaluation of readiness for the move, as backward moves have serious negative implications for the individual patient and the service as a whole.

Aim:

The aim of this research was to ascertain if progress over time in mental health and offending domains, as well as recovery in a broad sense, was associated with moves between differing levels of security on a secure care pathway.

Methods:

This study was completed at the Central Mental Hospital, Dundrum, Dublin, the site of the National Forensic Mental Health Service (NFMHS) in Ireland, which is the single secure hospital serving the population of the Republic of Ireland, approx. 4.9 million. The NFMHS has therapeutically secure units at high, medium and low levels of security, which form one coherent care pathway through secure care. This study was completed as part of the Dundrum Forensic Redevelopment Evaluation Study (D-FOREST), which is being carried out with a planned relocation of the hospital due to occur in 2022.

This was a prospective cohort study involving the full cohort of inpatients at the Central Mental Hospital, including those who were onsite and those who were off-site in staffed community residences. Patients were rated for PANSS (Positive and negative syndrome scale), Dundrum-3 (Programme completion)& Dundrum-4 (Recovery) scales and the HCR-20 (Historical Clinical and Risk Mangement tool, every 6 months over an 18 month period. This yielded 4 distinct time points at which data was collected. The primary outcome measures were moves between levels of therapeutic security.

Demographics and data pertaining to diagnoses were gathered by registrars working in forensic psychiatry from electronic records. PANSS interviews were carried out by registrars in forensic psychiatry who had attended training on PANSS assessment completion. HCR-20 and Dundrum 3&4 scores were completed by consultant lead multi disciplinary teams and subsequently obtained from electronic records by registrars who recorded them. Moves to levels of higher security/lower security at each data point were identified and recorded.

Data was anonymised and analysed using SPSS. Repeated measures in the same individuals were studied using General Estimating Equations (GEE's). A custom model was used in all cases, with normal distribution and identity as the link function. Case number was used to identify the subject variable, time period as within-subject variable. A main effects model was used for model building using the independent factor with subsequent addition of covariates, with intercept not included in the model. The scale parameter estimate was maximum likelihood estimation. Model effects analysis was type III and 95% confident intervals. Wald X2 statistics were calculated. Corrected Quasi Likelihood under Independence Model Criterion (QICC) was used to test goodness of fit, with information criteria in 'smaller-is-better' form. Competing models were compared on this basis. Marginal means for the independent determinant were calculated.

Ethical approval was granted by the Central Mental Hospital Audit, Research and Ethics Committee.

Results:

HCR-20 and Dundrum-3(Programme Completion) and Dundrum-4 (Recovery) scale structured tool assessments were available for 153 patients at 4 distinct data points. PANSS were available for 101 patients at 3 data points. The majority of participants were male (86%;N=134). The most common diagnosis was schizophrenia (66%; N=101) followed by schizoaffective disorder (19%; N=29).

Better scores on the Dundrum-3 (Programme completion) and Dundrum 4 (Recovery) scales significantly predicted positive moves. This was the case both when analysed as single variables (Table 1) and when analysed in the main effects model (Table 2) with Wald=X² 56.2, p=0.001 for Dundrum-3 and Wald X² = 48.5, p=0.009 for Dundrum-4. HCR-20 total score and PANSS positive score predicted positive moves when analysed as single variables (Table1) **but** when included in the main effects model **only** Dundrum-3 (Programme completion) and Dundrum-4 (Recovery scales) remained significant (Table 2).

For the PANSS, only better scores on the PANSS 'positive' subscale were associated with positive moves and with a much weaker effect than seen with the Dundrum 3&4 and HCR-20 scales. (Table 1). When the PANSS was added to the main effects model, the number of participants included in the analysis reduced from 153 to 101. After this addition ,all scales, including the HCR-20, Dundrum 3&4 and the PANSS itself, lost their previously observed significant associations (Table 2).

For negative moves, after analysis in the main effects model, only poorer scores on the **Dundrum-4(Recovery) scale** were significantly predictive of a backward move on the pathway (Table 4).

Table 1: Predictors of positive moves to less secure places on the care pathway

POSITIVE MOVES				
Variable	n		Wald X ²	df p
HCR-20-Historical	153	544	49.9	10 <0.001
HCR-Clinical			43.5	11 <0.001
HCR-Risk			46.7	8 <0.001
HCR-dynamic			47.7	15 <0.001
HCR-20-total			51.5	17 <0.001
DUNDRUM-3 programme completion			52.5	17 <0.001
DUNDRUM-4 recovery			57.6	18 <0.001
PANSS positive	101	214	7.8	2 0.021
PANSS negative			7.1	6 0.314
PANSS general			6.6	6 0.362
PANSS total			8.7	6 0.189
PANSS S3			6.5	3 0.090

Table 2: Main effects model for predictors of positive moves to less secure places on the care pathway

POSITIVE MOVES : Dundrum 3&4 alone				
Variable	n		Wald X ²	df p
DUNDRUM-3	153	544	56.2	28 0.001*
DUNDRUM-4			48.5	28 0.009*
POSITIVE MOVES : Dundrum 3&4 with HCR-20 added				
Variable	n		Wald X ²	df p
DUNDRUM-3	153	544	63.9	28 <0.001*
DUNDRUM-4			57.7	28 <0.001*
HCR-20-total			10.8	10 0.373
POSITIVE MOVES: Dundrum 3&4, HCR-20 & PANSS				
Variable	n		Wald X ²	df p
DUNDRUM-3	101	214	22.6	24 0.541
DUNDRUM-4			20.29	19 0.377
HCR-20-total			10.3	8 0.244
PANSS pos			25.6	26 0.486

Table 3: Predictors of negative moves to more secure places on the care pathway

NEGATIVE MOVES				
Variable	n		Wald X ²	df p
HCR-20-Historical	153	544	19.8	6 0.003
HCR-Clinical			19.2	8 0.014
HCR-Risk			18.7	4 0.001
HCR-dynamic			20.7	6 0.002
HCR-20-total scale			20.0	10 0.029
DUNDRUM-3 programme completion			20.4	12 0.060
DUNDRUM-4 recovery			28.6	10 0.001
PANSS positive	101	215	3.2	3 0.361
PANSS negative			3.6	3 0.309
PANSS general			3.2	3 0.364
PANSS total			3.8	3 0.284
PANSS S3			3.1	2 0.211

Table 4: Main effects model for predictors of negative moves to more secure places on the care pathway

NEGATIVE MOVES: Dundrum 3&4 alone				
Variable	n		Wald X ²	df p
DUNDRUM-3	153	544	20.6	28 0.841
DUNDRUM-4			43.2	28 0.033*
NEGATIVE MOVES: Dundrum 3&4 with HCR-20 dynamic				
Variable	n		Wald X ²	df p
DUNDRUM-3	153	544	24.4	28 0.660
DUNDRUM-4			46.9	28 0.014*
HCR-20-dvn			29.4	20 0.080
NEGATIVE MOVES: Dundrum 3&4 with HCR-20 dynamic & H scales				
Variable	n		Wald X ²	df p
DUNDRUM-3	153	544	28.1	28 0.459
DUNDRUM-4			50.3	28 0.006*
HCR-20-dyn			29.3	20 0.081
HCR-20-H			15.1	12 0.235
NEGATIVE MOVES: HCR-20 dynamic and H scales alone				
Variable	n		Wald X ²	df p
HCR-20-dyn	153	544	20.6	17 0.243
HCR-20-H			17.6	12 0.128

Discussion:

We found that progress in secure hospital settings ie. forward moves on the secure care pathway, was linked to engagement in treatment programmes aimed at reducing violence and other factors e.g. overall levels of engagement, rapport and working alliance, insight and stability. We found that patients who had negative moves on their care pathways back to more secure units in the hospital struggled particularly in these areas (ie those areas measured by Dundrum-4).

A notable limitation of our study was that many patients, in particular those who were known to be severely unwell by clinical staff, did not participate in the PANSS collection which is an interview rated measure. This could likely have lead to data biases, as only the more recovered patients or better engaged patients would have been included. To counter this, we also utilised the objective measures of the HCR-20 and Dundrum 3&4 which were available for all patients, ensuring information regarding the most unwell patients was also captured in our results.

Conclusion:

While important, symptomatic recovery is not the only important factor in recovery for forensic patients. Recovery across a wide variety of domains, including symptoms of psychosis, risk of violence but also therapeutic programmes and recovery in a broad sense, are important for patients in secure forensic hospitals. Interview rated measures may not always be appropriate or lead to accuracy in secure population cohorts where there are typically large numbers of very unwell patients. Developing our knowledge base on factors that are associated with positive and negative moves within secure forensic facilities is vital for supporting active management of length of stay and aiding with proactive management of admission waiting lists.

References:

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