Chart Audit of Inpatient Treatment of Schizophrenic Patients: Implications for Development of Coordinated Care Paths

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Hawaii's reputation for progressiveness in health care is being seriously challenged. Within both the public and private sectors resources are becoming more limited, particularly in the area of psychiatry. At the same time, the rising cost of care and the quality issues raised in the Department of Justice investigation of Hawaii State Hospital, the state's only public sector psychiatric facility, have created substantial concern from consumers, providers and payers regarding the effectiveness of mental health services.[1,2] This concern persists, despite the recent accreditation of the hospital by the Joint Commission on the Accreditation of Health Care Organizations, after a 20-year lapse.[3]

In response to these pressures, the use of coordinated care paths has gained widespread use.[4,5] A coordinated care path is a practice guideline developed by a multidisciplinary team which provides sequencing, timing of interventions, and expected patient outcomes for specific diagnostic groups. This usually includes participation of a nurse case manager to facilitate the implementation of the care path, monitor patient variances, and coordinate patient care. The limited literature on the successful use of care paths for the management of various diagnoses shows some promise in terms of decreasing costs while maintaining or improving quality.[6-12]

The purpose of this study was to use the RAND Criteria for Assessing Quality of Inpatient Treatment of Schizophrenia to obtain relevant clinical information concerning the acute inpatient treatment of schizophrenic patients hospitalized at the study site. The findings were used in the development of a coordinated care path to manage the inpatient care of acute schizophrenia patients.

Literature Review

The first part of the literature review focused on the *Phase I-A Literature Review: Treatment Approaches for Schizophrenia,* published by the Center for Mental Health Services Research at the University of Maryland at Baltimore[13-17] (see Anders, Tomai, Clute, & Olson,[18] for further information on the development of coordinated care paths). This review is a state-of-the-knowledge meta analysis of what is known concerning the treatment of schizophrenia. The analysis reveals that the vast majority of patients who are responsive to medications will be so with the range of 300-750 mg chlorpromazine equivalents; there is no evidence that loading doses improve treatment response; no adjunctive pharmocological agent has been clearly shown to benefit the majority of schizophrenic patients; individual and group therapy has not been shown to prevent relapse or to reduce psychiatric symptoms; family interventions may delay relapse; and there is no evidence that family interventions improve functional status or family well being.

The second part of the literature review focused on 50 research articles concerning the inpatient treatment of schizophrenic patients in a general hospital.[19] It revealed seven primary domains of treatment which should be addressed for hospitalized patients. The domains included aftercare linkages, medication management, social supports, family education, and the need to address substance abuse issues.

The final part of the review focused on the psychiatric nursing literature. Most notably, in a review of 77 studies dealing with outcome research in psychiatric nursing, Merwin & Mauck[20] found that few of the studies built upon previous research, weakening the scientific basis of the findings related to outcomes. In addition, studies involving nursing care provided to schizophrenic patients tended to lack descriptions of how the scientific validity of the care was determined.

Method

Records were reviewed for a stratified by month, random sample of all patients with schizophrenic (DSM IV 295, including subtypes). This included patients whose admissions and discharges took place between November 1994 and October 1995, in a 530-bed general non-profit hospital located in Honolulu, Hawaii. Psychiatric beds in this facility are located in three areas: a 10-bed crisis unit, a 22-bed locked unit, and a 24-bed open unit. All patients were evaluated and treated by attending psychiatrists.

The records review was facilitated by the development of a Psychiatric Records Abstract Instrument (PRAI). The instrument incorporates the RAND Criteria for Assessing Quality for Inpatient Treatment of Schizophrenia.[21] The resulting guidelines can be grouped into 12 categories: 1) demographic data; 2) general health status; 3) master treatment plan; 4) medications; 5) physician care; 6) nursing care; 7) teaching; 8) treatment of medical problems; 9) treatment of substance abuse; 10) intermediate outcome indicators; 11) discharge plan; and 12) discharge appropriateness.

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Table 1. Characteristics of Patient Sample (N=12)

	Number	Percent
Gender		
Men	7	58%
Women	5	42%
Marital Status		
Married	8	67%
Single	3	25%
Divorce	1	8%
Insurance		
Medicaid	6	50%
Medicare	3	25%
Quest (Managed Care Medicaid)	3	25%

Age *	**Number**
20-35 Years	6
36-50 Years	6

* S.D. 9.2 Days

Length of Stay**

Average 7.6 Days

**S.D. 3.2 Days

Table 2. Master Treatment Plan and Medications

Master Treatment Plan	Yes	No
Re-evaluate 72 hours	25%	75%
Weekly Review	71%	29%
Plan for Medication Use	66%	34%
Plan to use or not use family interventions	42%	58%
Physician Participation in Plan	50%	50%
Pharmacy & Psychology in Plan	33%	67%

The reviewer was a registered nurse with extensive experience in psychiatric nursing who was blinded to the research objectives. The principal investigator instructed the reviewer on the use of the tool and then piloted the PRAI with one medical record not included in the audit. Differences in findings plus any questions or issues concerning the use of the tool were clarified and revisions were made as a result of the pilot survey.

Findings

Demographics and General Health Status

A summary of the significant conclusions is grouped using the twelve categories found in the PRAI. Only the findings which varied markedly from the RAND study recommendations are discussed. The patterns of care for individual patients were scored and then an aggregate score for the entire sample was computed.

Patient characteristics are illustrated in Table 1. Each patient had a diagnosis on Axis I, II, and III. The number of diagnoses ranged from two to six. Ethnic groups were fairly evenly distributed, with patients of Caucasian, Japanese, Chinese, Filipino, Samoan, and part-Hawaiian ancestry represented. It should be noted that the lack of mixed ancestry is probably a function of self-reporting, rather than an actual absence of mixed ancestry patients.

The psychiatric evaluation was completed within 24 hours of admission for all subjects. The medical evaluation was also finished within 24 hours for 94% (11) of the patients. No patient information was collected about an EEG, PPD, or HIV test. A physical and sexual abuse history was completed in 58% (7) of the patients.

Treatment Plan and Medications

The initial treatment plan was documented within 24 hours of admission for all patients (See Table 2). A specific plan to use or not use medications was in place for all patients, while a plan to use or not use family interventions was absent in seven of the records reviewed. Documentation that the master treatment plan had been reviewed by the physicians within 72 hours was absent 75% of the time. The weekly review of the plan by the mental health team was also absent in 42% of the cases. In 50% of the charts there was evidence of physician collaboration with the multidisciplinary team concerning the master treatment plan. Psychology and pharmacy involvement was present in 33% (5) of the patients.

All of the patients had antipsychotic medications prescribed. As with the antipsychotic drugs, none of the antiparkinsonian dosages were outside the recommended ranges. In 58% (7) of the patients other drugs such as anticonvulsant, benzodiazepines, lithium carbonate, and antidepressants were given. These other drugs included lorazepam, sertraline, doxepin, diazepam, clonazepam, and nefazodone. For all of the medications, there was documentation that they were taken by the patient.

Nursing and Physician Care

The nursing care in 100% of the patients was directly provided by and supervised by a registered nurse. In addition, in all cases the initial assessment included a mental and physical status examination. In 83% (10) of the patients, the initial work-up included an assessment of suicidal potential, orientation and memory, and substance abuse. For all of the patients, these items were assessed by the physician within 24 hours of admission.

Three patients (25%) were placed in restraints during hospitalization. In each case, a clear statement of the reason for restraints was documented. In two of the instances, the reason involved imminent danger to self or others. In all three cases the patient was monitored continuously while in restraints.

There was a lack of adequate notation concerning the side effects of medications, with documentation present in only one chart. In all cases, the patients were told the names of their medication and their target symptoms. The majority of patients were taught about the side effects of their antipsychotic medications and half were taught about the signs and symptoms of recurring mental illness.

Intake and output and weight were not recorded daily, but simply on a case-by-case basis. However, vital signs were taken and recorded daily and patients were weighed weekly. The amount of meals eaten and elimination patterns were recorded daily.

There was excellent compliance with the recommended physician responsibilities. In all cases physicians saw their patients daily, made daily progress notes, completed initial evaluations, and as-

Table 3. Teaching and Discharge

Teaching	Yes	No
Side Effects Medications	75%	25%
Signs & Symptoms of Returning Mental Illness	50%	50%
Discharge Plan	**Yes**	**No**
Factors precipitating admission addressed	67%	33%
Importance of Taking Medications on Discharge Charge Documented	84%	16%
Specific Aftercare appointment made	58%	42%
Aftercare staff met with patient in hospital	50%	50%
Family/caregiver involved in plan	41%	59%
Discharge	**Yes**	**No**
At discharge factor(s) precipitating admission addressed	88%	12%
Significant reduction in psychiatric symptoms	88%	12%

sumed responsibility for the diagnosis and management of medications. The attending physician in 100% of the cases was a psychiatrist.

Treatment of Medical & Substance Abuse Challenges

Seven patients had an Axis III medical diagnosis. Five of these seven patients had a treatment plan for the medical problems completed within 72 hours of admission. Of the seven patients with medical problems, six treatment plans addressed the identified problem.

One third of the patients were identified as having a need for substance abuse treatment. Three of these individuals had a plan for concurrent treatment of the substance abuse and mental illness. These patients were referred to an aftercare program on discharge from the hospital. One of the four patients had a plan for management of alcohol withdrawal.

Outcome Indicators and Discharge

None of the patients committed or attempted suicide while in the hospital. Two patients (17%) were aggressive toward property or toward others while in the hospital and two patients were readmitted within one month of discharge.

Non-compliance with medication was a common reason patients were admitted. The compliance issue was usually addressed with the patient during the hospitalization. In the discharge plan, the factors precipitating admission were addressed for two thirds of the patients while for one third the precipitating event(s) were apparently not discussed (See Table 3).

By the time of discharge, the factors that had precipitated the admission had been addressed for eight of the patients. The psychiatric symptoms were also reduced a significant degree for eight of the patients. A Global Assessment of Functioning (GAF) score was not completed at either admission or discharge for any patient. Slightly half of the patients had a specific appointment made for their first aftercare visit. Aftercare staff met with 50% of the patients before they were discharge. Forty-one percent of the time the family or caregiver was involved with the discharge planning process.

Discussion

Although the findings suggest that the care of patients with a diagnosis of schizophrenia, and in need of acute hospitalization, was generally adequate when compared with the RAND recommendations, several opportunities for improvement were identified. These included medical tests, master treatment planning, documentation of care, patient teaching, and discharge planning.

The findings are discussed in the order they were identified on the PSRI. First, the finding that the GAF score on the Axis diagnoses was absent in all cases may suggest that psychiatrists find the scale too subjective as to be meaningful in actual practice or simply that psychiatrists are not skilled in its use. Further exploration of the meaning of this deficiency is needed.

Regarding medical practice, the use of PPD, EEG, and HIV testing was not evident in this audit. Given the high rate of homelessness, poor nutrition, and frequently impaired judgment with many schizophrenic patients it seems reasonable that TB and HIV testing should be done. However, in discussion with staff psychiatrists there seems to be some reluctance to order these tests. The reason for this objection was not identified.

The documentation of the master treatment plan was problematic, especially the review by the physician within 72 hours. Documentation by psychologists and pharmacists of their participation in the treatment planning process was frequently absent.

A major challenge for improving the documentation of nursing care is in the monitoring for side effects of medications. In this review 11 of 12 charts had no documentation of such monitoring. Nursing notes were generally very complete, describing in some detail the patients' behavior and interactions. However, notes concerning the effects of medications were lacking. It seems from this review many nurses are unclear about what is significant to chart.

As discussed in the results section, daily weights and intake and output flow sheets were not done. However, the audit revealed the nursing staff does monitor the percentage of meals eaten and the patients' elimination pattern. Weights are done on admission and then weekly. The monitoring of intake and output is more problematic. Some medications, such as lithium, require adequate hydration.

The teaching of signs and symptoms of when mental illness may be returning was lacking in the documentation of teaching activities. However, the documentation of teaching (other than medications) was found in the nursing notes. The lack of documentation from other disciplines may mean nursing is seen as having the responsibility for teaching. It is unclear if this means other professionals do not support the need to participate in documenting patient teaching or that other professionals simply do not chart their activities.

The last area for improvement relates to the discharge plan. The research literature and the expert panel clearly support the need to have the aftercare staff involved in the discharge planning. However, the compliance with these findings ranged from 58% to 50% respectively. This finding seems to support the notion that aftercare staff is frequently not involved in these interventions. The findings could also reflect the lack of appropriate administrative procedures in which aftercare staff is contacted prior to the patient's discharge. Also, the patient's caregiver or family member was involved with

the planning process in only 41% of the cases. This could mean these patients do not have caregivers and/or family. It may also reflect a lack of participation is a reflection of the inpatient staff to obtain input from families.

Nursing Issues

The RAND nursing recommendations are primarily related to assessments, medications, and the monitoring of the patient's physiological status. However, recommendations regarding psychosocial nursing interventions were missing. Research evidence to support these interventions with schizophrenia patients are rare. This is a significant limitation in the nursing literature.

Care Path Development

The findings of this records audit were shared with the mental health team responsible for the development of a coordinated care path to manage patients hospitalized with acute schizophrenia and with the behavioral health administrative group. The multidisciplinary team used the audit's findings in the development and refinement of the care path. The next challenge will be to evaluate how these interventions impact patient outcomes, in order to determine which interventions lead to improved patient outcomes.

Summary

This study offers important information regarding the standard of care provided to schizophrenic patients treated at one inpatient facility. The findings were particularly useful in the development of a care path for this specific population. Areas for improvement identified in this research include medical tests, master treatment planning, documentation of care, patient teaching, and discharge planning. Given the limited health care dollars and the lack of a cure for schizophrenia, this research emphasizes the fact that treatment guidelines need to be aggressively tested as to their relevance to practice.

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