

# Randomized controlled trial of teaching practice nurses to carry out structured assessments of patients receiving depot antipsychotic injections

TOM BURNS

ELAINE MILLAR

CAROL GARLAND

TONY KENDRICK

BROCK CHISHOLM

FIONA ROSS

## SUMMARY

**Background.** A third of patients with schizophrenia are out of contact with secondary services. Many of these patients receive maintenance medication as depot antipsychotics from practice nurses, most of whom have negligible training in mental health.

**Aim.** To examine the impact of a structured assessment on the process of care and clinical status of schizophrenia patients by practice nurses who received a one-day training course.

**Method.** All identified patients were randomly allocated to structured assessments and outcome, measured by the number of assessments and the changes in care recorded in primary care notes. A comprehensive assessment of clinical and social functioning and level of unmet need in intervention and control patients was carried out after one year by an independent researcher.

**Results.** A high rate of consultation and clinical need in this patient group was demonstrated. Practice nurses were more diligent in carrying out assessments than general practitioners (GPs), but there was no impact on treatment patterns or clinical outcome.

**Conclusions.** Structured assessments by practice nurses are feasible with this patient group, but training, targeted at both nurses and GPs, is needed if this intervention is to translate into health gain.

**Keywords:** randomized controlled trials; practice nurses; schizophrenia.

## Introduction

THERE are well over 100 000 people with long-term mental illnesses living in the community.<sup>1</sup> Many suffer from schizophrenia and require long-acting depot injections of maintenance antipsychotics. Around one-third have no contact with secondary services, and are entirely reliant on general practice.<sup>2</sup> However, very few practices have specific policies for this patient group,<sup>3</sup> and repeat prescriptions for psychotropic drugs may not be

reviewed for several years.<sup>4,5</sup>

Kendrick and colleagues tested the teaching to GPs of structured assessments of their long-term mentally ill patients.<sup>6,7</sup> Changes in treatment with neuroleptic drugs and referrals to community psychiatric nurses (CPNs) were significantly more frequent in the intervention group, but few patients received the assessments after the first six months. They concluded that teaching GPs about these problems can increase their involvement in psychiatric care, but regular, structured assessments were not feasible in routine surgeries. Special appointments with input from practice nurses might be more reliable.

A survey of general practice nurses in South West London revealed that two-thirds gave depot neuroleptic, but most lacked training and confidence in this role. A substantial proportion were willing to attend a training day on schizophrenia and the role of depot medication. This paper reports a randomized controlled trial of training practice nurses to use a structured patient assessment.

Impact was measured in terms of its use, changes in GP contacts, drug treatments, admissions, symptoms, and needs for care. Ethical approval was obtained from MSW ethics committee.

## Method

The 140 general practices in Merton Sutton and Wandsworth Health Authority (MSWA) employed 194 practice nurses, of whom 131 (68%) administered depot antipsychotics to a total of 278 patients. The 69 nurses (36%) treating four or more patients were invited to participate; 46 attended training and agreed to the study. From a potential sample of 169 patients, 20 (13 control and seven intervention) were excluded (seven failed to meet study criteria, six were not identifiable, four were withdrawn by nurses, two moved, one was entered twice). The final sample comprised 149 subjects: 79 intervention and 70 control.

Patients were identified by examination of the practice nurses' diaries. All patients over the age of 18 and receiving depot antipsychotic injections were included in the study. Allocation to intervention (structured assessment) and control (standard practice) conditions was by random number lists administered by the research secretary. Nurses were instructed to conduct structured assessment at three-monthly intervals with intervention patients, and to continue their normal practice with controls. They were visited regularly by the research nurses, who answered questions and gave encouragement.

At one year, the structured assessment cards were extracted and the number and timeliness of assessments, plus positive recordings, were transcribed. General practice notes were examined and components of the process of care recorded consistently for the 12 months from the first assessment in intervention patients, and from the same date in the controls. Patients were approached for an in-depth interview by a research nurse (Carol Garland) as near as possible to the end of the study year. The purpose of this was to gain a more detailed and reliable clinical description and to monitor for any possible treatment effects. The assessment included demographic data, the Brief Psychiatric Rating Scale (BPRS)<sup>8</sup> and the Krawiecka-Manchester scale<sup>9</sup> for

T Burns, FRCPsych, professor of community psychiatry; E Millar, BSc, RMN, RGN, research nurse; C Garland, BSc, RMN, RGN, research nurse; T Kendrick, FRCGP, senior lecturer in general practice and primary care; B Chilsholm, BA, research assistant; F Ross, PhD, RGN, DN, professor of primary care nursing, St George's Hospital Medical School, London. Submitted: 4 September 1997; final acceptance: 4 June 1998.

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clinical status, the Camberwell Assessment of Needs (CAN),<sup>10</sup> and the Abnormal Involuntary Movement Scale (AIMS)<sup>11</sup> for tardive dyskinesia and akathisia. Because of the increased mortality of schizophrenia patients, we recorded the level of health promotion activity.

Categorical variables were tested using chi-squared and Fisher's exact test when cells were small. The Mann-Whitney U-test was used for ranking, and the Student's *t* test for continuous variables.

## Results

The number of patients ranged from 4–13 per nurse, with one practice with three nurses yielding 20 subjects. The sample was predominantly white and middle aged; just under half of the patients were living with family members, but there were also sizeable minorities of black patients and patients living alone. About one-quarter lived in supervised accommodation, few were employed, and most received a range of state benefits. The only significant difference (Table 1) was a higher proportion of males in the controls.

Patients receiving depots were predominantly suffering from schizophrenia, with a significant minority of other psychoses including bipolar affective disorder and three with non-psychotic diagnoses: these three had had several diagnostic labels applied to them over time. The depot appeared to be used to stabilize volatile, chaotic interpersonal lives.

### Illness and treatment history

Most patients suffered from schizophrenia and had been ill over a 20-year period with several hospital admissions (Table 2). They had been on depot neuroleptics for over 13 years and virtually all were on the two older preparations, fluphenazine or flupenthixol. Most (69.8%) had some contact with secondary mental health services and most (79.2%) had a medication review in the past year (indicated by change of dose or comment in the general practice notes). About a quarter received structured day care (mostly in day centres); day hospital attendance was rare. Overall, 45 (30.2%) had no contact with secondary services during the year of the study.

### Assessments completed

From 79 intervention subjects, 63 (79.7%) checklists were collected after one year and 16 (20.3%) were unobtainable. All patients for whom a record could be retrieved received a minimum of one structured assessment, and over one-third received all four: a total of 191 assessments. Nurses who attended the

study day, rather than one-to-one training (Table 3), were more likely to complete assessments throughout the 12 months, although this only reached the significance of a trend ( $P = 0.061$ ). In 70% of cases, all assessments were by the same nurse.

The commonest symptoms reported were anxiety 61 times (31 patients) and depression 52 times (24 patients). Hallucinations were recorded 41 times (16 patients) and delusions 26 times (14 patients). Thought disorder was also recorded on 43 occasions (27 patients). Complaints of medication side-effects were reported 40 times (26 patients). For general symptoms, sleep disturbance was reported 37 times (21 patients) and pains 32 times (20 patients). This closely paralleled with the pattern of reported observations, with anxiety being the most frequent at 35 reports (16 patients), followed by 21 reports of depressed mood (15 patients), and 34 reports of drug side-effects. Movement disorders (Parkinsonism, akathisia, and tardive dyskinesia) were recorded 54 times altogether (11 patients). Self-neglect was reported 21 times (10 patients). Anxiety and depressed mood were the commonest individual observations. No statistical analysis was undertaken of these repeat assessments in the absence of any a priori hypotheses.

### Process and outcome of care

There were no significant differences between the intervention and control groups (Table 4) other than a higher rate of admissions in the control group.

There was a high rate of health promotion activity at baseline with no differences between intervention and control. Blood pressure was recorded in 42 (53.2%) and weight in 26 (32.9%) patients in the preceding year. Twelve (16.7%) received advice about smoking and six (7.6%) about alcohol in the same period. During the study, blood pressure was recorded in 23 patients (29.5%), weight in 17 (21.8%), smoking advice to was given to 11 (13.9%), and alcohol advice to three (3.8%). The accumulative recordings of these interventions is high. Cervical smears had been performed within five years in 23 women (68.7% of the at-risk population) and mammograms in eight (40% of the at-risk population). No differences reached statistical significance.

No significant differences in clinical or social outcome were found in either the mean sumscores or subscale scores in the structured assessments. The BPRS mean scores were 10.0 (SD = 6.2) and 10.7 (SD = 5.8) for intervention and control groups, indicating mild to moderate illness. The anxiety/depression, anergia, and thought disturbance subscales accounted for virtually all of the pathology in both groups, supporting the clinical impression of a fairly stable, anxious group with little hostility or agitation. The Krawiecka scores of 6.9 (SD = 3.7) and 7.5 (SD = 3.8) con-

**Table 1.** Initial characteristics.

Variable	Intervention (n = 79)				Control (n = 70)			
	n	%	n	%	n	%	n	%
Male/female <sup>a</sup>	30	38.0	49	62.0	39	55.7	31	44.3
White/non-white	65	82.3	14	17.7	50	72.9	16	21.3
Married/single (single-separated-divorced)	25	31.6	54	65.8	20	28.6	50	68.6
Living alone/not living alone	16	20.3	57	72.2	18	29.7	47	67.1
Supervised accommodation/ independent accommodation	19	24.1	49	62.0	16	22.5	47	67.1
O-levels and above/below	31	39.2	42	53.2	32	45.7	32	45.7
Employed/not employed	10	12.7	60	75.9	7	10.0	51	72.9
On benefits/not benefits	56	70.9	9	11.4	49	70.0	11	15.7
			Mean	SD			Mean	SD
Age in years			49.2	1.43			47.3	1.61

<sup>a</sup>  $P < 0.05$ , all others not significant by  $\chi^2$ . Age by *t*-test.

**Table 2.** Illness and treatment characteristics.

Variable	Intervention (n = 79)		Control (n = 70)		Test
	n	%	n	%	
Schizophrenia	68	86.1	58	82.9	c <sup>2</sup> ; 3 d.f.
Manic depression	5	6.3	5	7.1	
Other psychosis	5	6.3	4	5.7	
Non-psychosis	1	1.3	2	2.9	
Evidence of review, preceding year	68	86.1	50	71.4	c <sup>2</sup>
Fluphenazine (Modecate)	32	40.5	26	37.1	c <sup>2</sup>
Flupenthixol (Depixol)	36	45.6	30	42.9	c <sup>2</sup>
No contact with mental health services	22	27.8	22	31.4	c <sup>2</sup> ; 2 d.f.
OP only contact with mental health services	40	50.6	26	37.1	
Day care contact with mental health services	15	19.0	21	30.0	
Contact with psychiatrist	44	55.7	40	57.1	c <sup>2</sup>
Contact with community psychiatric nurse	30	38.0	18	25.7	c <sup>2</sup>
	Mean	SD	Mean	SD	
Age of onset (years)	28.8	8.8	26.0	8.9	t-test
Duration of illness (years)	21.1	9.7	28.8	10.8	t-test
Admissions (in lifetime)	3.5	1.5	3.8	1.5	t-test
Duration on depot (years)	14.1	6.8	13.0	7.3	t-test
Months since last review	10.0	15.7	2.9	21.4	t-test
GP contacts in preceding year	5.31	5.3	7.0	6.8	t-test

The differences were not significant.

**Table 3.** Structured assessment by training groups.

Number of assessments	Group training (n = 40)		One-to-one (n = 39)	
	n	%	n	%
0	3	7.5	13	33.3
1	4	10.0	2	5.1
2	8	20.0	6	15.4
3	10	25.0	5	12.8
4	15	37.5	13	33.3
Total	40		39	

c<sup>2</sup>; 4 d.f.; P = 0.061.

firm this. The AIMS sumscores were low (means of 1.5 [SD = 0.2] and 1.4 [SD = 2.2]), with many patients rated side-effect free. The mean number of needs assessed by the CAN was also low at 3.9 (SD = 2.6) and 4.6 (SD = 2.2) out of a possible 22.

## Discussion

This study confirms that the care of the long-term mentally ill in the community involves primary care teams to a significant extent. Many are in regular contact with practice nurses, affording an opportunity for continuity of care. One-third of this sample were not in contact with secondary services (which reflects previous reports), and their rate of consultation overall is around three times higher than the general population. We found an average of one GP consultation per two months, in addition to the practice nurse, for the depot contacts (two to four weekly). They represent, therefore, a significant responsibility of care.

### Completion of assessments

Practice nurses were more successful in completing the structured assessments than GPs,<sup>7</sup> where only 74% received any structured assessment and only 17% received all four over the two years. This confirms the feedback from the GP study that

completing the assessments opportunistically in ordinary surgeries was difficult, and that some form of scheduled appointments or 'clinic session' was preferable. The working practices of nurses are geared to fixed and reliable appointments and has scope for planning such assessments.

There was a remarkable difference between those who attended the teaching day and those who received one-to-one instruction. Nurses trained one-to-one failed to carry out a single assessment with a third of their patients, while those who attended the course did so with less than 10%. It is likely that less initial interest in this area of care (as expressed in difficulties attending the teaching) is responsible for this difference, rather than skill-acquisition.

Exit-interviews with the nurses confirm greater problems with some parts of the structured assessment than others. They felt more comfortable assessing anxiety and depression, and this is reflected in their high rate of recording. They were less confident with hallucinations and delusions and, where these core features of the disorder are reported, they are more consistent over time in a few patients. Feedback suggests that 'thought disorder' had not been fully understood and little confidence can be placed in the relatively high level of reporting.

### Process of outcome and care

The failure to demonstrate any significant changes in process measures of care (including attention to health promotion) other than a remarkable, and probably spurious, higher rate of admissions in the control group, is disappointing. The GP study found significant increases in psychotropic medication changes and referrals to secondary care. There is no evidence of such activity generated in this study by the structured assessments, despite the high rate of drug side-effects reported. A third of the patients reported medication side-effects and the nurses recorded observable side-effects in 11 of these patients.

Not surprisingly in such a long-term patient population, there were no significant differences in the clinical outcome measures. A reduction in AIMS might have been anticipated in the intervention group given the frequent detection of extra pyramidal

**Table 4.** Process of care in study year.

Treatment episodes	Intervention (n = 79)		Control (n = 70)	
	n	%	n	%
Psychiatric admissions <sup>a</sup>	6	7.6	15	21.4
Compulsory admissions	1	1.3	3	4.3
GP call outs	34	43.0	15	21.4
Psychiatrist contact	43	54.4	35	50.0
CPN contact	27	34.2	19	27.1
Other mental health worker (e.g. OT, SW)	25	31.7	24	34.3
Day hospital	2	2.5	2	2.9
Day centre	17	21.5	13	18.6
Other	16	20.3	13	18.6
	Mean	SD	Mean	SD
Inpatient days	42.6	27.1	41.3	35.0
GP appointments	6.2	6.3	7.3	6.5

<sup>a</sup>P<0.01; Fisher's exact test. All others are not significant.

side effects by the practice nurses. There is, however, no suggestion that these observations were translated into clinical activity.

Our results are consistent with the hypothesis proposed in an earlier study<sup>7</sup> that practice nurses might be more able to manage these structured assessments. Their rates of completion are significantly higher than those in the GP study, yet the impact on process of care is much less. Four interpretations present themselves. First, the level of training offered to the practice nurses was insufficient — although able and willing to conduct the interviews, they were not provided with sufficient skills and confidence to act on their observations. As a group, they considered themselves unprepared for this role, and the discrepancy in performance between those who attended the training days and those who did not probably represents a reluctance to undertake this role. The impact of the training day is more likely to be on raising awareness and enhancing confidence rather than skills.

Secondly, a block occurred in communication of problems from practice nurse to GP. No specific instructions were given to the nurses about how to act when they detected abnormalities. In the GP study, the GPs were interested in these patients and were willing to change practice. In this study, most GPs left the intervention to the practice nurse and were not lead to expect any major alterations in their own work. Nurses may have lacked the confidence to transmit their findings to the GPs, unsure both of their newly acquired (and still limited) skills and also of the reception from their employer. Exit-interviews, currently in progress, may shed light on this.

A third possibility is of contamination between intervention and control patients, since randomization was by patient rather than by nurse or by practice. Fourthly, the sample size may have been too small to detect differences, although this is unlikely since no consistent trends were observed.

The results of this study need to be interpreted in the context of the growing literature on improving the primary care of the long-term mentally ill in the community. Some GPs and practice nurses have expressed a desire for increased skills in the assessment and management of these individuals. Practice nurses, because of their more structured approach to their work, have demonstrated a greater ability to incorporate regular reviews. To translate these reviews into health gain for patients requires more extensive training than was possible in this study. Such training should develop greater understanding of severe mental illness and include practice in assessing the mental state, social factors, and general health status (including drug side-effects) of this vulnerable group. On the other hand, practice nurses may not have

the attitudes or aptitudes for increased involvement in mental health care — they have not chosen mental health nursing and most are not mental health trained.

Any training should also establish guidelines and thresholds for referral to the GP and either joint working between doctor and nurse or referral on to the secondary mental health services. The introduction of item-for-service payments for joint GP/practice nurse assessments of the long-term mentally ill has recently been evaluated in South West London.<sup>12</sup> While this may effectively engage GPs it is unlikely to remove the need for adequate training of doctors and nurses.

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## Address for correspondence

Professor Tom Burns, Department of General Psychiatry, St George's Hospital Medical School, Cranmer Terrace, London SW17 0RE.