

A review of prescribing patterns in 24-hour nurse-staffed community residences in Ireland

Fionnuala O'Loughlin*

Mental Health Commission, St. Martin's House, Waterloo Road, Dublin, Ireland

First published online 15 September 2014

Introduction

There is currently no available accurate number of 24-hour nurse-staffed community residences in Ireland, but a good estimate, based on previous inspections by the Inspectorate is 140 residences. These residences, previously designated as high support hostels, are located throughout Ireland and provide 24-hour nursing care for residents with long-term mental illness. Although many of these residents were transferred when traditional psychiatric hospitals closed, the age range of residents indicate that there is also a population of new long-stay residents. The policy document on provision of mental health services in Ireland, Planning for the Future (1984), recommended the provision of 25–33 places per 100 000 population in nurse-staffed community residences in areas where there was a 'backlog' of patients from a psychiatric hospital. Where there was no psychiatric hospital in the area, 15–20 places per 100 000 population were recommended (Planning for the Future 1984). In 2006 the policy document for mental health services, A Vision for Change (2006) stated there 'would be a requirement for 30 places in large urban areas, with fewer required in areas with low deprivation levels' (p. 109).

Residents in community residences live in homes where there is at least one nurse on duty 24 hours each day and suffer from a variety of illness, most commonly schizophrenia and affective disorders. One of the functions of the nursing staff is to administer medication. Psychotropic medication is prescribed by the treating psychiatrist and the objective of this survey was to review prescribing patterns in a sample of community residences located throughout Ireland.

There have been very few studies in the literature describing prescribing practices in psychiatric community residences. Most of the literature on prescribing has been conducted on in-patients in acute units (Waddington *et al.* 1998; Patrick *et al.* 2006; Paton *et al.*, 2008; Finnerty 2011), patients attending outpatient facilities (Essock *et al.* 2011; Howes *et al.* 2012; Grech

et al. 2012) and community or residential care for elderly residents, often with a diagnosis of dementia (Kirby *et al.* 1999; Kogut *et al.* 2005; Fischer *et al.* 2011). The most comparable studies this author found was a study of a stable patient population in long-stay wards in a large psychiatric hospital in Newcastle in England (Clarke & Holden 1987) and Finnerty's study of in-patients, which included a number of residents in long-stay units in Ireland in 2011. However, the residents in our study do not fit neatly into any of these categories.

Preliminary results from the 2011 data were published in the Annual Report of the Inspector of Mental Health Services in 2012.

Method

The Mental Health Act 2001 was enacted in Ireland in 2006. It stipulates that only facilities which are registered by the Mental Health Commission can provide in-patient psychiatric care. These facilities are designated as approved centres, defined as 'a hospital or other in-patient facility for the care and treatment of persons suffering from mental illness or mental disorder' (Mental Health Act 2001). All approved centres are inspected by the Inspectorate of Mental Health Services on an annual basis, as directed by the Mental Health Act (2001). In addition to these mandatory inspections, the Inspectorate carries out inspections of community facilities where mental health services are provided. These include community residences, day hospitals and day centres.

In the two years from 2011 to 2012, a total of 35 community residences were inspected. These residences were located in 18 different catchment areas (out of a total of 32 catchment areas) and from each of the four Health Service Executive regions. On the day of each inspection, inspectors obtained a photocopy of individual prescription kardexes or prescription sheet under powers granted by the Mental Health Act (2001), section 51(2)(c). This section permits the Inspector 'to examine and take copies of, or extracts from, any record or other document made available to him or her as aforesaid or found on the premises'. Information was anonymised and provided to the author. Information on non-psychotropic medication

*Address for correspondence: Dr Fionnuala O'Loughlin, MRCPsych, Mental Health Commission, St. Martin's House, Waterloo Road, Dublin 4, Ireland.
(Email: fionnuala.oloughlin@mhcir.ie)

was not considered in this survey. The survey reviewed the prescribing patterns of the following medications: benzodiazepines, hypnotics, antipsychotic medications, antidepressant medications and lithium. Analysis of antipsychotic prescribing included the use of polypharmacy and high dose prescribing. The definition used to calculate high-dose medication is described as a dose prescribed which is more than 100% of the BNF maximum adult daily dosage as published by the British Medical Association. When calculating total daily dose, only medication prescribed daily was counted; pro re nata (PRN) dosages were not included in assessing the total daily dose of medication taken.

Results

Prescription details were obtained for 428 residents (56% male, 44% female), with an age range from 20 to 87 years. Rehabilitation teams were responsible for the care of residents in 16 of these residences, whilst others were under the care of the community mental health team (CMHT) (17 residences), mental health of intellectual disability team (one residence) or had shared care between the CMHT and rehabilitation team (one residence). Rehabilitation teams focus on the needs of service users with long-term and complex mental health problems.

Eleven residents were not prescribed any psychotropic medication. Seven residents were prescribed an antidepressant only, five were prescribed a hypnotic only and three residents were prescribed a benzodiazepine only. In 12 residences, all residents were on antipsychotic medication.

Forty-nine per cent of residents were prescribed more than one antipsychotic concurrently. One hundred and ten residents (26%) were prescribed high-dose antipsychotic medication. Eighty-seven residents (20%) were prescribed clozapine. Just over a quarter of all residents were prescribed an antipsychotic long-acting injection and 41% were prescribed an antidepressant medication.

The findings are outlined in the tables below.

Medications prescribed

The most frequently prescribed antipsychotic medication was olanzapine, followed by clozapine and chlorpromazine. Seventy-five per cent of antipsychotics prescribed (424) were second-generation antipsychotics. Table 2 shows the antipsychotic medications used.

Of the 120 residents prescribed an antipsychotic long-acting injection, 99 (75%) were also prescribed an oral antipsychotic.

A wide range of antidepressants were used in the community residences. The most frequently prescribed was citalopram/escitalopram, followed by

Table 1. Medications prescribed

	Number of residents	
	(n = 428)	%
Number on regular benzodiazepines	111	26
Number on more than one benzodiazepine	2	0.5
Number on PRN benzodiazepine	138	32
Number on benzodiazepine hypnotic	40	9
Number on non-benzodiazepine hypnotic	78	18
Number on PRN hypnotics	58	14
Number on antipsychotic medication	385	90
Number on more than one antipsychotic medication	209	49
Number on high-dose antipsychotic medication	110	26
Number on PRN antipsychotic medication	107	25
Number on long-acting injection antipsychotic	120	28
Number on antidepressant medication	175	41
Number on more than one antidepressant	23	5
Number on lithium	46	11

PRN, pro re nata.

Table 2. Antipsychotic medication prescribed

Name of medication	Total number of prescriptions = 561	%
Olanzapine	127	22.6
Clozapine	90	16
Chlorpromazine	67	11.9
Quetiapine	65	11.6
Risperidone	64	11.4
Haloperidol	50	8.9
Amisulpiride	42	7.5
Aripiprazole	36	6.5
Trifluoperazine	15	2.7
Thioridazine	3	0.5
Zuclopenthixol	2	0.4

venlafaxine and mirtazapine. Fifty two per cent of prescriptions for antidepressants were for selective serotonin reuptake inhibitors (SSRIs), followed by 5-Hydroxytryptamine-N-acetylase (5HTNA) reuptake inhibitors (22%), presynaptic agonists (15%), tricyclics (6.6%) and prazosin (3%). Table 3 shows the antidepressant medications used.

Discussion

The standards set by the National Institute for Clinical Excellence (NICE) 2010 Guidelines, the Royal College of Psychiatrists, the Department of Health and Children

Table 3. Antidepressant medication prescribed

Name of antidepressant	Total number of prescriptions = 156
Citalopram/escitalopram	47
Venlafaxine XL	26
Mirtazapine	25
Fluoxetine	21
Sertraline	14
Duloxetine	11
Amitriptyline	5
Reboxetine, dothepin (each)	2
Lofepramine, trimipramine, clomiramine (each)	1

(2002) and the College of Psychiatrists of Ireland EAP Position Paper, 2012 for the prescribing of psychotropic drugs including benzodiazepines, hypnotics and antipsychotic medications are well known. Guidelines issued by the NICE group recommend that benzodiazepines should not be used for more than 2–4 weeks, and in the non-benzodiazepine hypnotic group of medications, they should be only used for a maximum of between 2–4 weeks.

One-quarter of residents were prescribed a benzodiazepine on a regular basis. The rate of prescribing benzodiazepines in acute in-patient units ranged from 20% to 52% in Scotland (Summers *et al.* 1998) to 51% in Ireland (Hallahan *et al.* 2009). In residents in long-stay wards in psychiatric hospitals or units in Ireland, the rate was 60% (Finnerty 2009). In elderly populations in Ireland and Australia the rates were 17.3% (Kirby *et al.* 1999) and 16.6% (Jorm *et al.* 2000), respectively. Rates in the general adult population range from 7.7% in the United Kingdom (Dunbar *et al.* 1989), to 9.1% in a Swiss adult population (Petitjean *et al.* 2007). The results of this author's study found a rate between those two populations of in-patients and people living in the community. It was not possible from the examination of the prescription kardexes or prescription sheets to determine what the duration or indications for use of benzodiazepines were.

Antipsychotic polypharmacy

Three hundred and eighty-five of the 428 residents were prescribed antipsychotic medication (90%) and almost half (209) were prescribed more than one antipsychotic medication concurrently. The issue of antipsychotic polypharmacy has been reported many times in the literature, with no real evidence that the concurrent use of two or more antipsychotic medications is an effective treatment (Waddington *et al.*

1998; Patrick *et al.* 2006; Fischer *et al.* 2011; Paton *et al.* 2008). Yet, despite best practice guidelines by the Royal College of Psychiatrists and the NICE guidelines (Core interventions for Schizophrenia) which do not recommend the use of more than one antipsychotic drug at a time (except in exceptional situations), the use of polypharmacy is commonplace in the treatment of psychiatric illness. Reports of the prevalence of antipsychotic polypharmacy in the United States vary from 7% to ~50%, with most studies finding prevalence rates of between 10% and 30% (Correll *et al.* 2009). Vijayalakshmy *et al.* found a rate of 42% in a US state hospital in 2001, which fell to 31% in 2002 after a programme instituted to reduce this practice. In the UK, the POMH UK study of 3942 in-patients found a polypharmacy rate of 43%. An Irish study found that 29% of in-patients were on more than one antipsychotic (Finnerty) and in a long-stay unit in a Newcastle hospital in the United Kingdom, a rate of 76% of polypharmacy was found. Studies in an outpatient setting in the United States recorded a polypharmacy rate of 13% of antipsychotic prescribing (Essock *et al.* 2009) while a study of all patients (both in-patient and outpatients) just before commencing clozapine, found a rate of 36.2% (Howes *et al.* 2012). The figure of 49% of our residents on more than one antipsychotic concurrently must be considered high, given that these are patients who no longer require in-patient care and whose illness must be judged to be stable.

Polypharmacy is not without risk to the patient. Problems with overweight are commonplace and several studies have shown an increased risk for the development of diabetes and cardiovascular disease (Correll *et al.* 2009) with antipsychotic medication use. A study in Finland examining mortality in patients with schizophrenia who were taking neuroleptic medication (Joukama *et al.* 2006) found that the number of neuroleptic drugs prescribed was related to the subsequent mortality of the subjects and posed the question whether 'the high mortality in schizophrenia is attributable to the disorder itself or the antipsychotic medication'. Risk factors for mortality in schizophrenia, other than drug treatment include cardiovascular and respiratory disease, accidents and smoking (Brown 1997, Brown *et al.* 2010). Diabetes (Ryan *et al.* 2003), unrelated to neuroleptic medication use has also been cited as contributing to the risk factors. In addition, a lack of exercise and unhealthy diet have also been considered as contributing to premature deaths in this cohort of patients (Connolly & Kelly 2005). A report by Waddington *et al.* (1998) found that reduced survival was related to the greater number of antipsychotics prescribed.

In contrast, however, another Finnish study of patients with schizophrenia reported in *The Lancet*

(Tiihonen *et al.* 2009) found that the long-term exposure to any antipsychotic medication was associated with lower mortality than no drug use.

The Consensus Statement of the Royal College of Psychiatrists (CR 138) states that the addition of a second antipsychotic to clozapine may be considered for people with treatment-resistant schizophrenia. In this study, 21% of residents were prescribed clozapine, but the number on combined clozapine and an additional antipsychotic accounted for only 22% of polypharmacy prescribing in the community residences.

High-dose antipsychotic prescribing

Another significant concern in patients on antipsychotic medication is that of prescribing high doses. The Maudsley Prescribing Guidelines state that 'there is no firm evidence that high doses of antipsychotics are any more effective than standard doses' (Taylor *et al.* p. 54). This view is confirmed by the Consensus statement on high-dose antipsychotic medication (CR138) published by the Royal College of Psychiatrists (2006) who go on to state that 'it is self-evident that the risk and intensity of the majority of unwanted effects from antipsychotic drugs increase with dose' (p. 16). Most studies on this topic have concluded that the main culprit in high dose prescribing was the use of antipsychotic polypharmacy (College Consensus statement CR 26, 1993; Harrington *et al.* 2002; Noir 2008; Paton *et al.* 2008; Paton *et al.* 2008; Barnes *et al.* 2009) and PRN prescribing (Paton 2008).

The Consensus Statement on high-dose antipsychotic medication published by the Royal College of Psychiatrists (2006) reported that 25% of in-patients were prescribed a high-dose of antipsychotic medication, which most often occurred in the context of antipsychotic polypharmacy. The group also commented that that 'there are only limited data on the frequency of prescription of high-dose antipsychotics in psychiatric patients receiving care in the community' (CR138). The POMH UK (2008) study of in-patients found a rate of high dose prescribing of 36%. A similar rate (34%) was reported in a study of outpatients just before commencing clozapine (Howes 2012). Other studies report lower figures than this: Kogurt *et al.* (2005) 6% in outpatients, Finnerty (2011), 10% in patients in long-stay wards, Connolly *et al.* (2007), 16% in in-patients and Noir (2008), 24% in an in-patient setting in a secure hospital. In our study of residents living in the community, the rate of high dose prescribing of 26% must be considered high in light of the figures above.

Antipsychotic long-acting injections

Twenty-eight per cent of residents were prescribed a long-acting injection of antipsychotic medication. This rate was similar to that of an outpatient population

with schizophrenia in the United Kingdom which reported a rate of between one-quarter and one-third (Barnes *et al.* 2009). Our study did not elicit information on diagnosis. Most residents who were prescribed a depot antipsychotic were also prescribed oral antipsychotics (75%). The use of both oral and long-acting antipsychotics contributes to polypharmacy and can be a factor in high dose prescribing.

Lithium

Lithium is an established treatment with bipolar affective disorder, although its use may be in decline. In a study, Baldessarini *et al.* (2007) found an initial prescription rate of lithium in patients with bipolar disorder of 7.5%. In a US study of outpatients with bipolar disorder, the authors found the rate of prescribing lithium declined from 50.9% between 1992 and 1995 to 30.1% between 1996 and 1999 (Blanco 2002). However, a UK study published by Lloyd *et al.* (2003) found that the rate of lithium prescriptions was remarkably similar when comparing prescribing patterns in outpatient populations with bipolar disorder in Manchester between 1994 and 1998 (51%) with patients in Newcastle between 2000 and 2001 (53%). Our study found a rate of lithium prescribing of 11% which was more in line with that of the US study, but as our study did not illicit any information on diagnosis, it is not possible to draw any conclusions from this figure.

Conclusion

Almost all residents of the 35 community residences in this study were on psychotropic medication. Over half were prescribed polypharmacy in relation to antipsychotic medication and 26% were prescribed high doses. As this level of prescribing of psychotropic medications was more in line with that of in-patient populations there must be some concern that perhaps much of this prescribing is historic in nature rather than currently clinically indicated. It is recommended that a more strident effort to review and reduce the level of prescribing of such medications be considered by treating teams particularly as many in this population are already elderly and face the concomitant health problems associated with this age group.

Acknowledgement

The author would like to thank Inspectorate colleagues for their help in gathering the data during the course of inspections and the Mental Health Commission for its support.

Conflicts of Interest

None.

References

- A Vision for Change** (2006). *Report of the Expert Group on Mental health Policy*. Government Publication Office: Dublin.
- Barnes T, Shingleton-Smith A, Paton C** (2009). Antipsychotic long-acting injections: prescribing practice in the UK. *The British Journal of Psychiatry* **195**, s37–s42.
- Baldessarini R, Leahy L, AArcona S, Gause D, Zhang W, Hennen J** (2007). Patterns of psychotropic drug prescription for U.S. patients with diagnoses of bipolar disorders. *Psychiatric Services* **58**, 85–91.
- Blanco C, Laje G, Olfson M, Marcus S, Pincus H** (2002). Trends in the treatment of bipolar disorder by outpatient psychiatrists. *American Journal of Psychiatry* **159**, 1005–1010.
- British Medical Association & Royal Pharmaceutical Society of Great Britain** (2005). *British National Formulary*, 50th edn. BMA & Royal Pharmaceutical Society of Great Britain: London.
- Brown S** (1997). Excess mortality of schizophrenia. A meta-analysis. *British Journal of Psychiatry* **171**, 502–508.
- Brown S, Kim M, Mitchell C, Inskip H** (2010). Twenty-five year mortality of a community cohort with schizophrenia. *British Journal of Psychiatry* **196**, 116–121.
- Clarke AF, Holden NL** (1987). The persistence of prescribing habits: a survey and follow-up of prescribing to chronic hospitals in-patients. *The British Journal of Psychiatry* **150**, 88–91.
- Connolly M, Kelly C** (2005). Lifestyle and physical health in schizophrenia. *Advances in Psychiatric Treatment* **11**, 125–132.
- Connolly A, Rogers P, Taylor D** (2007). Antipsychotic prescribing quality and ethnicity – a study of hospitalised patients in south east London. *Journal of Psychopharmacology* **21**, 191–197.
- Correll C, Rummel-Klugr C, Corves C, Kane J, Leucht S** (2009). Antipsychotic combinations vs monotherapy in schizophrenia: a meta-analysis of randomised controlled trials. *Schizophrenia Bulletin* **35**, 443–457.
- Dunbar GC, Perra MH, Jenner FA** (1989). Patterns of benzodiazepine use in Great Britain as measured by a general population survey. *The British Journal of Psychiatry* **155**, 836–841.
- Essock S, Covell N, Leckman-Westin E, Lieberman J, Sederer L, Kealey E, Finnerty M and members of the Scientific Committee** (2009). Identifying clinically questionable psychotropic prescribing practices for Medicaid recipients in New York State. *Psychiatric Services* **60**, 1595–1602.
- Essock SM, Schooler NR, Stroup TS, McEvoy J, Rojas I, Jackson C, Covell N, The Schizophrenia Trials Network** (2011). Effectiveness of switching from antipsychotic polypharmacy to monotherapy. *American Journal of Psychiatry* **168**, 702–708.
- Finnerty S** (2009). An audit of benzodiazepine and hypnotic prescribing in Irish in-patient psychiatric units. *Irish Psychiatrist* **10**, 238–240.
- Finnerty S** (2011). An audit of antipsychotic prescribing in Irish in-patient psychiatric units. *Irish Psychiatrist* **12**, 26–27.
- Fisher CE, Cohen C, Forest L, Schweizer T, Wasylenk D** (2011). Psychotropic medication use in Canadian long-term patients referred for psychogeriatric consultation. *Canadian Geriatrics Journal* **14**, 73–77.
- Grech P, Taylor D** (2012). Long-term antipsychotic polypharmacy: how does it start, and why does it continue? *Therapeutic Advances in Psychopharmacology* **2**, 5–11.
- Hallahan BP, Murray IT, McDonald C** (2009). Benzodiazepine and hypnotic prescribing in an acute adult psychiatric in-patient unit. *Psychiatric Bulletin* **33**, 12–14.
- Harrington M, Paton C, Okocha C, Duffett R, Sensky T** (2002). The results of a multi-centre audit of the prescribing of antipsychotic drugs for in-patients in the UK. *Psychiatric Bulletin* **26**, 414–418.
- Howes OD, Vergunst F, Gee S, McGuire P, Kapur S, Taylor D** (2012). Adherence to treatment guidelines in clinical practice: study of antipsychotic treatment prior to Clozapine initiation. *The British Journal of Psychiatry* **201**, 481–485.
- Jorm AF, Grayson D, Creasy H, Waite L, Broe G** (2000). Long-term benzodiazepine use by elderly people living in the community. *Australian and New Zealand Journal of Public Health* **24**, 7–10.
- Joukamaa M, Heliövaara M, Knekt P, Aromaa A, Raitasalo R, Lehtinen V** (2006). Schizophrenia, neuroleptic medication and mortality. *The British Journal of Psychiatry* **188**, 122–127.
- Kirby M, Denihan A, Bruce I, Radic A, Coakley D, Lawlor B** (1999). Benzodiazepine use among the elderly in the community. *International Journal of Geriatric Psychiatry* **14**, 280–284.
- Kogut SJ, Yam F, Dufresene R** (2005). Prescribing of antipsychotic medication in a Medicaid population: use of polytherapy and off-label dosages. *Journal of Managed Care Pharmacy* **11**, 17–24.
- Mental Health Act** (2001). Government of Ireland (2001) Mental Health Act. Dublin: Stationery Office.
- National Institute for Clinical Excellence** (2010). The NICE Guideline on core interventions in the treatment and management of schizophrenia in adults in primary and secondary care. Guideline No 82, NICE: London.
- Noir T** (2008). High-dose and combination antipsychotic prescribing in a high security hospital. *The British Journal of Psychiatry*.
- Patrick V, Schleifer S, Nurenberg J, Gill K** (2006). An initiative to curtail the use of antipsychotic polypharmacy in a state psychiatric hospital. *Psychiatric Services* **57**, 21–23.
- Paton C, Barnes T, Cavanagh MR, Taylor D, Lelliott P, POMH-UK Project Team** (2008). High-dose and combination antipsychotic prescribing in acute adult wards in the UK: the challenges posed by P.R.N. prescribing. *The British Journal of Psychiatry* **192**, 435–439.
- Petitjean S, Ladewig D, Meier C, Amrein R, Wiesbeck G** (2007). Benzodiazepine prescribing to the Swiss adult population: results from a national survey of community pharmacies. *International Clinical Psychopharmacology* **22**, 292–298.
- Planning for the Future** (1984). *The Psychiatric Services – Planning for the Future. Report of a Study Group on the Development of the Psychiatric Services*. Stationery Office: Dublin.
- Royal College of Psychiatrists** (2006). Consensus statement on high dose antipsychotic medication. Council Report CR 138, Royal College of Psychiatrists.
- Royal College of Psychiatrists** (2012). *National Audit of Schizophrenia Recommendations*. Royal College of Psychiatrists: London.

- Ryan MCM, Collins P, Thakore JH** (2003). Impaired fasting glucose tolerance in first episode, drug naïve patients with schizophrenia. *American Journal of Psychiatry* **160**, 284–289.
- Summers J, Brown KW** (1998). Benzodiazepine prescribing in a psychiatric hospital. *Psychiatric Bulletin* **22**, 480–483.
- Taylor D, Paton C, Kapur S (editors)** (2012). *Maudsley Prescribing Guidelines in Psychiatry*, **11th edn**. Wiley-Blackwell.
- Tiihonen J, Lonnqvist J, Wahlbeck K, et al.** (2009). 11-year follow-up of mortality in patients with schizophrenia: a population-based cohort study (FIN 11 study). *Lancet* **374**, 620–627.
- Waddington JL, Joussef HA, Kinsella A** (1998). Mortality in schizophrenia. Antipsychotic polypharmacy and absence of adjunctive anticholinergics over the course of a 10-year prospective study. *The British Journal of Psychiatry* **173**, 325–329.