

Measuring the prevalence of antipsychotic use in care homes in Wales

Report of the Short Life Working Group

January 2019

Summary	3
1 Background	5
1.1 Dementia.....	5
1.2 Care homes and dementia	5
1.3 Use of antipsychotic medicines in dementia.....	6
1.4 Prevalence of antipsychotic prescribing in Wales	6
1.5 Risks of antipsychotic use in dementia.....	7
1.6 National Assembly for Wales Health and Social Care Committee Inquiry and Report	7
1.7 Short life working group.....	8
2 Measures of antipsychotic use in care homes	10
Literature review	10
3 Data routinely collected in Wales.....	11
3.1 Summary	11
3.2 Care Homes and care home residents.....	12
3.3 Data derived from the prescription pricing process	14
3.4 Data extracted from GP practice electronic records	17
3.5 Data reported by community pharmacies providing the Care Home National Enhanced Service.....	19
3.6 Electronic Medicines Administration Records (eMAR)	21
3.7 Limitations of data	21
4 Recommendations.....	23
5 Conclusions	25
Annex One – Summary of literature review.....	26
Annex two – Representatives and contributors.....	29

Summary

Antipsychotics are a group of medications usually used in the treatment of mental health conditions such as schizophrenia. There have been increasing concerns over recent years about the use of antipsychotics to treat the behavioural and psychological symptoms of dementia (BPSD).

The National Assembly for Wales' Health, Social Care and Sport Committee report the *use of antipsychotic medication in care homes in Wales* published in 2018 identifies the need to understand the extent to which antipsychotic medicines are used in the management of BPSD, particularly in care homes where previous inquiries have suggested their use may be excessive.

This report makes recommendations in relation to the use of routinely collected data to help understand the use of antipsychotic medicines amongst older people who are resident both in their own and in care homes, and more importantly to understand variation in use that, without prejudging its appropriateness, would warrant further investigation.

In reaching the recommendations in this report, members of a short life working group established by the Welsh Government considered the constraints of currently available data. Data regarding the dispensing of antipsychotic medication are comprehensive in so much as the number of prescriptions; volume and type of medications are all readily identifiable and attributable to GP practice and dispensing pharmacy. However other relevant information, including patients' ages and addresses, whilst available cannot be utilised (this is explored in section 3.3 of the report); and other information, in particular diagnoses, is not available. The short life working group were also aware of the limitations of considering all prescribing to be equivalent. In practice many patients will benefit from the considered efforts of healthcare professionals to limit antipsychotic prescribing to the lowest effective dose, for the shortest possible duration; such prescriptions cannot readily be distinguished from less prudent use at higher doses and for extended durations.

Overall members of the short life working group agreed good progress had been made by the NHS Wales Informatics Service to identify the number of people aged 65 or over prescribed antipsychotic medications in Wales. There was concern that presenting data at the level of individual care homes could be of limited value given care homes were a heterogeneous group both in size and the needs of residents; meaning data could not be standardised (this is explored in section 3.7 of the report).

Finally, members of the short life working group considered data from audits. This data indicated the risks of prescribing antipsychotic medications for the management of BPSD were not limited to residents in care homes. Demographic changes and the aspirations set out in the Welsh Government's plan for health and social care *A Healthier Wales*, would in future mean more people with dementia would be cared for in their own homes. Members of the short life working group concluded reduction in total antipsychotic medication use would benefit people regardless of where they live.

1 Background

1.1 Dementia

Dementia is caused by diseases of the brain and has symptoms which include the gradual loss of memory, reasoning and communication skills. There are different types of dementia, with the most common being Alzheimer's disease and vascular dementia.

Dementia is not a natural stage in the ageing process but a progressive illness that tends to affect the individual in a gradual manner, moving from initial memory problems to the loss of the essential elements of mental functioning. In the later stages of dementia, people can be very vulnerable because of its effects.

There are over 40,000 people living with dementia in Wales.¹ This is not just a problem affecting Wales; the most up-to-date statistics show that the numbers of people with dementia are rising across the UK and the world.

Anyone in society can be affected with dementia, irrespective of gender, ethnicity or class. It can affect adults of working age, people with learning disabilities and older people, with dementia becoming more common as people age. One in 14 people over 65, one in 6 people over 80, and one in three people over 95 has some form of dementia.²

1.2 Care homes and dementia

Many people with dementia move into care homes as their dementia progresses. Good quality care that preserves dignity, treats people with respect and promotes independence can improve the lives of people with dementia who live in care homes.

¹ Alzheimer's Society. The hidden cost of dementia in Wales. 2015 Available at: https://www.alzheimers.org.uk/sites/default/files/migrate/downloads/the_hidden_cost_of_dementia_in_wales.pdf [accessed 14 November 2018]

² The Alzheimer's Society fact sheet 400. Available at: https://www.alzheimers.org.uk/download/downloads/id/3416/what_is_dementia.pdf [accessed 14 November 2018]

Many people with dementia who live in care homes have high levels of healthcare needs as a result of the cognitive, physical, psychological and behavioural symptoms of dementia. On top of this, many people with dementia who live in care homes have another physical or mental health condition such as heart disease, stroke or depression.

It is estimated the average prevalence of people living with dementia in care homes is 63% of men and 71% of women and the overall prevalence of dementia in care homes rose from 56% to 70% of residents between 2002 and 2013.³

1.3 Use of antipsychotic medicines in dementia

Behavioural and psychological symptoms are common in dementia and most patients at some point in their illness will manifest these behaviours. They are the result of a complex interplay between the illness, the environment, physical health, mental wellbeing, medication and interactions with others. Although these symptoms can often remit spontaneously, they can also be persistent and severe, causing considerable distress to patients and carers and significantly impairing quality of life.

In general, antipsychotics are not licensed in the UK for the treatment of BPSD. However, antipsychotics are often prescribed off-label for this purpose.⁴ It has been suggested that around two thirds of prescriptions of antipsychotics for people with dementia are inappropriate.⁵

1.4 Prevalence of antipsychotic prescribing in Wales

Antipsychotics are a range of medicines that are used in the treatment of a number of mental health disorders. Most commonly they are used in the management of

³ Matthews, F et al. A two-decade comparison of prevalence of dementia in individuals aged 65 years and older from three geographical areas of England: results of the Cognitive Function and Ageing Study I and II – on behalf of the Medical Research Council Cognitive Function and Ageing Collaboration. 2013.

⁴ Szczepura A, Wild D, Khan AJ, et al Antipsychotic prescribing in care homes before and after launch of a national dementia strategy: an observational study in English institutions over a 4-year period *BMJ Open* 2016;6:e009882

⁵ National Assembly for Wales Health, Social Care and Sport Committee – Use of anti-psychotics medication in care homes. Available at: <http://www.assembly.wales/laid%20documents/cr-ld11556/cr-ld11556-e.pdf> [Accessed 14 November 2018]

schizophrenia but they are also commonly used to treat bipolar disorder. In some cases they can also be used to help in the treatment of severe anxiety or depression.⁶

In 2017, 780,000 prescriptions for antipsychotic medicines were dispensed in primary care in Wales, the indications for these prescriptions are not known.⁷ In the three month period 1 July to 30 September 2018, 9,713 individuals aged 65 or over were prescribed an antipsychotic medicine in primary care.⁸

1.5 Risks of antipsychotic use in dementia

Antipsychotics can cause serious side effects, especially when used for long periods. Possible side effects of antipsychotics include sedation, shaking and unsteadiness, and increased risk of falls. Importantly, antipsychotics are associated with an increased risk of cerebrovascular adverse events, eg, strokes and greater mortality when used in people with dementia. Studies estimate that there are at least 1,800 extra deaths each year among people with dementia as a result of their taking antipsychotics. The likelihood of premature death increases if people take these drugs for prolonged periods (i.e. months or years rather than weeks).⁹

1.6 National Assembly for Wales Health and Social Care Committee Inquiry and Report

In March 2017, the National Assembly for Wales' Health and Social Care Committee launched an inquiry into the use of antipsychotic medication in care homes in Wales. The inquiry concluded in May 2018 and a report containing 11 recommendations was published.

⁶ Royal College of Psychiatrists. Antipsychotics. Available at <https://www.rcpsych.ac.uk/mental-health/treatments-and-wellbeing/antipsychotics> [Accessed 11 January 2019]

⁷ Welsh Government. Prescriptions dispensed in the community. Available at <https://gov.wales/statistics-and-research/prescriptions-dispensed-community/?lang=en> [Accessed 9 January 2019]

⁸ Personal communication from the All Wales Therapeutics and Toxicology Centre.

⁹ Banerjee S. The use of antipsychotic medication for people with dementia: Time for action. 2009. Available at: http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/PublicationsandStatistics/Publications/PublicationsPolicyAndGuidance/DH_108303 [Accessed 14 November 2018]

Recommendations covered a wide range of areas including the inspection of care homes, access to non-pharmacological interventions for BPSD, compliance with guidance issued by the National Institute for Health and Care Excellence (NICE) and the availability of data regarding prescribing of antipsychotic medicines to care home residents. In the case of the latter the report specifically recommended:

“The Welsh Government should ensure that, within 12 months, all health boards are collecting and publishing standardised data on the use of antipsychotic medication in care homes and report back to this Committee on progress at the end of that 12 month period”

The report and its recommendations were discussed in Plenary on 11 July 2018.

1.7 Short life working group

In response to the Health, Social Care and Sport Committee’s report the Cabinet Secretary for Health and Social Services committed to convene a group of relevant experts to examine the usefulness of various data sources and provide advice on how they might best be used to support the Welsh Government’s aspiration to reduce inappropriate prescribing of antipsychotic medications.

In 2018, a short life working group were established to consider the recommendations of the Health, Social Care and Sport Committee with a particular focus on:

1. Reviewing current data collection and reporting of antipsychotic prescribing in care homes;
2. Exploring ways in which repeat prescription systems could trigger the need for medication review; and
3. Providing recommendations as to where this process could be improved

The short life working group brought together representatives from key agencies involved in the collection, processing or interpretation of prescribing and care home data along with experts in social care and prescribing policy including (figure one).

Antipsychotic prescribing data short life working group membership

NHS Wales Shared Services Partnership
NHS Wales Informatics Services
All Wales Therapeutics and Toxicology Centre
Care Inspectorate Wales
Senior Medical Officers – primary care and mental health, Welsh Government
Pharmacists – primary care and mental health, Local Health Boards
Statisticians - Knowledge and Analytical Skills, Welsh Government
Social Services and Integration Directorate, Welsh Government

Figure one: Organisations represented on short life working group

A full list of representatives and contributors is provided at Annex two.

The short life working group met three times between August and November 2018.

2 Measures of antipsychotic use in care homes

Literature review

A review of relevant UK and international peer reviewed studies regarding the use of antipsychotic medicines in care homes was commissioned by the Welsh Government to support the short life working group by identifying measures of antipsychotic use and potential data collection methods.

The review identified 15 relevant studies published since 2010, which measured the extent to which antipsychotics are used in care homes, assisted living facilities or the community (annex one). It should be noted that in general these studies were designed to measure use of antipsychotics at a population level (through aggregation of data from multiple sites), measure changes in individual care homes' prescribing practice or determine the factors which are positively or negatively associated with antipsychotic use. The short life working group found no studies which reported routine comparison of care home prescribing rates for the purposes of performance management or identifying poor practice.

Measures of antipsychotic prescribing in these studies included:

- Percentage of residents prescribed antipsychotic (or other relevant) medication for routine use;
- Percentage of residents prescribed antipsychotic medication;
- Percentage of residents with dementia prescribed antipsychotic medication;
- Number of prescriptions for antipsychotic (or other relevant) medication in defined daily dosages; and
- Percentage of residents taking antipsychotic medicines for off label indications.

The literature review also identified several studies which identified factors that are positively or negatively associated with antipsychotic use such as age and gender.

3 Data routinely collected in Wales

3.1 Summary

The short life working group prioritised identifying sources of routine data relating to:

- The number of care homes in Wales by local health board and local authority;
- The classification of care homes in particular in relation to the health needs of residents;
- The size of care homes (i.e. the number of beds);
- The demographics of care home residents;
- Data derived and routinely available from the prescription pricing process (e.g. number of prescriptions for antipsychotic medication);
- Data derived but **not** routinely available from the prescription pricing process (e.g. demographic characteristics of patients);
- Data extracted from GP practice electronic records (e.g. the National Prescribing Indicator related to antipsychotic prescribing in over 65s); and
- Data reported by community pharmacies providing the Care Home National Enhanced Service.

The short life working group also discussed data derived from audits of prescribing carried out in individual care homes and GP practices. The short life working group agreed audit provides the most detailed and comprehensive source of data regarding prescribing of antipsychotics in care homes but noted their completion is time consuming and resource intensive. The comprehensive and often qualitative nature of audit meant it might not always be suitable for measuring continuous quality improvement. The short life working group agreed that audit should be 'intelligence led' (i.e. based on signals that the practice of using antipsychotic medicines in a particular home or practice was sub-optimal), and were aware of the work undertaken to produce the Clinical Effectiveness Prescribing Programme (CEPP) *National Audit: Antipsychotics in Dementia* developed recently by the All Wales Prescribing Advisory Group (AWPAG). The short life working group agreed a consistent approach to the audit of antipsychotic use was valuable.

3.2 Care Homes and care home residents

Data provided by the Care Inspectorate Wales identified there to be 1,078 care homes in Wales providing a maximum capacity of just over 25,000 care beds. The breakdown of homes and beds is shown in table one.

Detail regarding the type of service provided (e.g. whether the home included provision for mental health) by a care home was less clear, largely because such distinctions are no longer routinely made between homes. The Regulation and Inspection of Social Care (Wales) Act 2016 came into effect in April 2018 for care homes (this includes children's homes), domiciliary support services, secure accommodation services and residential family centres. The 2016 Act replaces the Care Standards Act 2000 (CSA 2000) and requires providers registered under CSA 2000 to re-register. As a result, providers will have limited conditions of registration which specify the type of service provided, the location where the service is provided and the numbers of people accommodated (accommodation based services). However, Care Inspectorate Wales (CIW) will publish an online register displaying the type of service i.e. nursing or children's home, the named registered person, and will include the age range for which the service is registered.

Data on the number of care homes and residents are also maintained by the NHS Wales Shared Services Partnership. These data were found to differ from the CIW registry; 774 care homes were identified with a total of 17,782 residents. The reasons for this difference are as follows: data maintained by the NHS Wales Shared Services Partnership are extracted from the National Health Application and Infrastructure Services (NHAIS) database of patients registered with a GP in Wales. These data therefore represent actual care home residents and not bed numbers or capacity. The data are maintained for payment purposes but rely on a GP practice identifying care home residents in the NHAIS database. Data related only to those aged 65 or over.

Table one: Care home premises and maximum capacity by health board and local authority (September 2018)

Health Board	Local Authority	Premises	Maximum Capacity
Abertawe Bro Morgannwg University	Bridgend	36	1033
	Neath Port Talbot	54	1166
	Swansea	86	2182
	Total	176	4381
Aneurin Bevan University	Blaenau Gwent	22	516
	Caerphilly	56	1111
	Monmouthshire	33	747
	Newport	38	914
	Torfaen	23	690
Total	172	3978	
Betsi Cadwaladr University	Conwy	74	1587
	Denbighshire	76	1492
	Flintshire	36	931
	Gwynedd	49	1156
	Isle of Anglesey	29	639
	Wrexham	39	1378
	Total	303	7183
Cardiff and Vale University	Cardiff	86	2347
	Vale of Glamorgan	42	985
	Total	128	3332
Hywel Dda University	Carmarthenshire	87	2015
	Ceredigion	24	556
	Pembrokeshire	65	1270
	Total	176	3841
Cwm Taf University	Merthyr Tydfil	18	363
	Rhondda Cynon Taf	62	1625
	Total	80	1988
Powys Teaching	Powys	40	1169
Unspecified	Total	3	53
Wales	Total	1078	25925

In common with prescribing data, GP registration data can be aggregated at GP practice, primary care cluster, local authority and local health board levels. This means it should be possible to take account of the number of care home residents in any standardisation of data for the purposes of comparison between different GP practices, primary care clusters, local authorities or local health boards (figure two).

Standardising Prescribing Data

In order to make meaningful comparisons between prescribing between GP practices it is necessary to take account of differences in the size and demographics of the population each practice serves. The age structure of the population of each practice will differ as will the prevalence of specified diseases. The morbidity of disease, and as a result the way in which it is treated, will itself be influenced by population age structure.

In order to take account of variables such as age and disease prevalence, prescribing data is usually standardised or weighted using standardisation methods such as prescribing units. Standardisation methods are robustly developed and validated.

Figure two: Standardisation of prescribing data

The short life working group considered whether there would be merit in exploring whether prescribing data could be standardised taking into account the number of residents of care homes registered with GP practices. It was agreed this was not within the scope of the work the short life working group had been asked to complete. The short life working group were also aware that data on the number of residents of care homes registered with each GP practice and the proportion of the total list size they represented was in some cases small (mean number of care home residents aged 65 or over per GP practice = 46.8, Range 1 to 363, n = 396). This could mean adjusting for care home residents would have little impact on prescribing rates. Standardisation would have the effect of reducing apparent variation between care homes.

3.3 Data derived from the prescription pricing process

All NHS prescriptions for medicines dispensed by community pharmacies and dispensing doctors in Wales are submitted to the NHS Wales Shared Services Partnership for 'pricing' (i.e. calculating the reimbursement and remuneration payable to the dispenser). In order to accurately calculate the reimbursement (i.e. the repayment of acquisition costs incurred by the dispenser in purchasing a medicine for supply against a prescription) payable, it is necessary to extract from each prescription the data regarding the nature (name, form and strength) of the medicine and the quantity supplied.

Data extracted from prescriptions are aggregated at the GP practice, primary care cluster, local authority and local health board levels and made available for comparative analysis by practices and health boards. The NHS Wales Shared Services Partnership Primary Care Service makes this data routinely available for analysis (figure three).

Prescribing data and publications

CASPA (Comparative Analysis System for Prescribing Audit) - a Windows application for analysis and graphical presentation of prescribing data and trends.

Prescribing Audit Reports (PAR) – budget statements for individual practices

On-line catalogue - a hierarchical view of prescribing based on British National Formulary (BNF) category with access to images of the individual prescriptions from which the data are derived.

Figure three: Data and publications regarding prescribing routinely available from the NHS Wales Shared Services Partnership

Data derived from the prescription pricing process allows comparison of cost and volume of prescribing both between GP practices over time (table two). Data can be standardised to take account of population differences between practices. Data are extracted from a 2D barcode generated by the GP practice prescribing system.¹⁰ Data are highly accurate but limited; for example, no information is contained in the 2D barcode regarding the diagnosis underpinning the prescription. The 2D barcode does not contain any information regarding whether or not a patient is resident in a care home.

Whilst the information routinely collated from 2D barcoded prescriptions is limited to information on prescriber, cost and volume, additional potentially useful information is contained within the 2D barcode. This includes: the individual's NHS number, age, gender and postcode. However, this information cannot currently be routinely extracted from prescriptions because the NHS Wales Shared Services Partnership does not have the consent of individuals to process that data and their functions only

¹⁰ A small proportion of prescriptions are written outside GP practice prescribing systems and will not include a 2D barcode, for example prescriptions written by GPs during home visits, prescriptions written by dentists or by doctors in hospital outpatient departments

allow them to collect this data for the purpose of calculating the reimbursement and remuneration payable to the dispenser.

Table two: Example prescribing data: All prescriptions (items) for antipsychotic medications prescribed in Aneurin Bevan University Health Board clusters and selected practices April to June 2018.

	April	May	June
AB Unidentified Cluster	137	145	145
Blaenau Gwent East	1145	1313	1282
GP Practice 1	241	263	279
GP Practice 2	126	148	164
GP Practice 3	178	209	223
GP Practice 4	449	522	449
GP Practice 5	151	171	167
Blaenau Gwent West	1212	1330	1287
Caerphilly East	2173	2475	2212
Caerphilly North	3041	3237	2993
Caerphilly South	2871	2993	2708
Monmouthshire North	1266	1333	1348
Monmouthshire South	1097	1125	1054
Newport East	1924	1977	1913
Newport North	2236	2331	2306
Newport West	2551	2612	2528
Torfaen North	2370	2678	2319
Torfaen South	1915	2229	2086
Unknown	1811	1846	2014
Health Board Total	25749	27624	26195

The short life working group considered this to be a significant constraint on understanding the quality and appropriateness of prescribing of not only antipsychotic but also any other medication. The group agreed utilising these additional data would allow prescriptions to be:

1. Linked at the individual patient level – this would mean the length of time over which a patient had been prescribed an antipsychotic could be calculated and the number of patients prescribed antipsychotic medication for a period of three months or longer routinely presented; and
2. Aggregated by demographic characteristics such as age, gender and geographic area (e.g. Lower Super Output Area).

The utilisation of this data would greatly improve the understanding of prescribing behaviour. Therefore the short life working group have made a recommendation that arrangements should be reviewed and a solution sought to enable the collection, review and use of all data contained in NHS prescriptions. This work should be explored by considering the data sharing arrangements between the NHS Wales Shared Services Partnership and Public Health Wales as the latter's statutory

functions allows it to undertake the systematic collection, analysis and dissemination of information about the health of the people of Wales.

3.4 Data extracted from GP practice electronic records

All GP practices maintain electronic patient records containing personal information, diagnoses, test results and prescription information for each individual registered with the practice. Audit+ is a third-party GP data quality, audit and reporting software tool delivered and supported by the NHS Wales Informatics Service (NWIS). It allows data contained in GP practice systems to be linked, extracted and aggregated.

Since April 2017 data derived from Audit+ have been utilised to develop national prescribing indicators. In April 2018, a national prescribing indicator was developed using linked data derived from the Audit+ system, measuring the number and percentage of patients aged 65 or over prescribed an antipsychotic medication. Data for the period March to September 2018 by health board is shown in figure four.

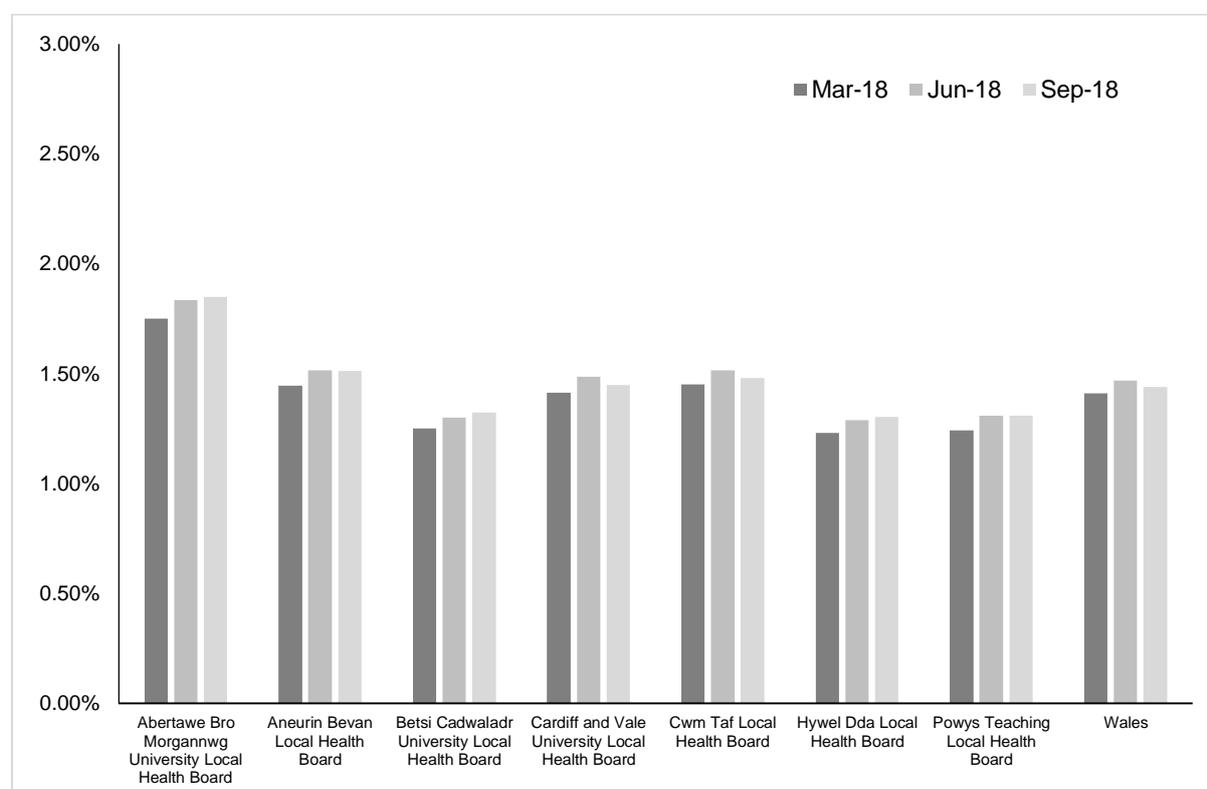


Figure Four: Percentage of GP registered population aged 65 or over and prescribed antipsychotic medication March to September 2018 by local health board

The national prescribing indicator provides a means of comparing variation in prescribing practice between primary care clusters, this includes being able to identify outlying clusters in which prescribing rates may be higher than average (figure five).

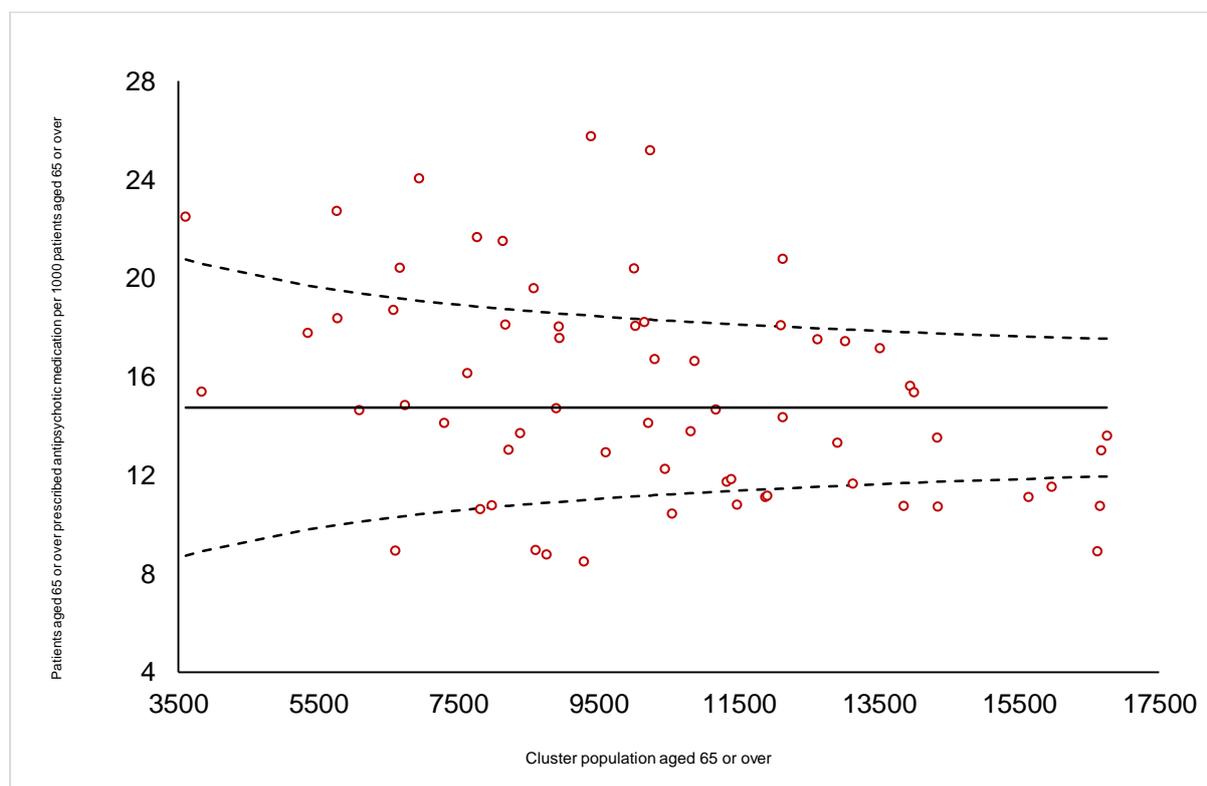


Figure Five: Funnel plot of antipsychotic medication prescribing rate 1000 patients aged 65 or over June to September 2018 by primary care cluster

The short life working group were aware the Health and Social Care Committee had received information about, and welcomed the introduction of, the antipsychotic patient safety indicator but also that the data did not differentiate between patients resident in care homes and in the community.

The short life working group, having considered the audit findings provided by Cardiff and Vale University Health Board, were mindful that the use of antipsychotics to manage BPSD was by no means restricted to care homes and the transformation set out in the Welsh Government’s plan for health and social care, *A Healthier Wales*, could see an increase in the number of people with dementia supported in their own homes in future.

The short life working group agreed the national prescribing indicator should be retained in its current form but that the feasibility of in addition, presenting the number of registered patients aged 65 or over, prescribed an antipsychotic and resident in a care home, should be explored. The short life working group considered the code used to identify a patient as a care home resident in the NHAIS database could provide a means of achieving this provided it could be identified using the Audit+ tool.

3.5 Data reported by community pharmacies providing the Care Home National Enhanced Service

In April 2018, health boards and Community Pharmacy Wales (CPW) agreed a specification for a national community pharmacy enhanced service for care home support.

The service aims to utilise the skills and expertise of pharmacists and their teams to contribute to the optimisation of medicines use in care homes and support the reduction of waste. The service is comprised of three tiers:

- the first focussed on improved systems and processes for ordering, storing, administering and disposing of medicines;
- the second on highlighting prescribing that might be considered to be high risk (through the collection and reporting of Patient Outcome Medicines Safety Indicators or POMSI); and
- the third on medication review.

The intention is for health boards to commence commissioning the tier one and two services in 2018-19.

The tier two (POMSI) element of the service requires a pharmacy to undertake biannual reviews of residents in each care home (with an interval of not less than 4 months between each review) and report against agreed POMSI (figure six).

Community Pharmacy Care Home National Enhanced Service – Patient Outcome Medicines Safety Indicators (POMSIs)

Number of residents prescribed:

1. A proton pump inhibitor at high or treatment dose for more than 8 weeks;
2. A hypnotic or anxiolytic for more than 4 weeks;
3. Antipsychotic medication;
4. Antipsychotic medication and who have a known diagnosis of dementia;
5. Non-Steroidal Anti-inflammatory Drug (NSAID) without gastroprotection;
6. NSAID for more than 3 months;
7. Bisphosphonate tablet and who is unable to stand or sit upright for at least 30 minutes after taking;
8. A medicine or combination of medicines with a combined anticholinergic effect on cognition score of 3 or more and who is aged 75 or over;
9. Antihypertensive medication and who have not had a blood pressure check in previous 6 months; and
10. Warfarin, methotrexate or lithium and who do not have an up to date monitoring booklet.

Figure six: Community Pharmacy Care Home National Enhanced Service – Patient Outcome Medicines Safety Indicators (POMSIs)

A sample of data collected under the care home enhanced service is shown in table three.

Table three: Example antipsychotic medication POMSI for selected care homes

	Beds	Currently prescribed antipsychotic	Currently prescribed antipsychotic with known diagnosis of dementia ¹¹	% of residents prescribed antipsychotic
Care Home 1	33	0	0	0.00%
Care Home 2	20	2	0	10.00%
Care Home 3	31	2	0	6.45%
Care Home 4	40	6	2	15.00%
Care Home 5	52	1	0	1.92%

The community pharmacy enhanced service data are the only routinely collected data aggregated at the level of individual care home. The short life working group noted that at the time of preparing its report coverage of the enhanced service was low and data were available for very few care homes. The short life working group considered the POMSI relating to antipsychotic use and noted its similarity to measures reported in peer reviewed literature. Some concerns were expressed

¹¹ Community pharmacists are unlikely to have access to information to confirm a diagnosis of dementia in which case they are unable to identify residents meeting these criteria.

about the use of this data primarily related to the likely low numbers of residents in most care homes (<100) and the very low absolute numbers of residents prescribed antipsychotics. It was felt that data collected would only really be of use for measuring improvements in individual care homes rather than making meaningful comparison between homes.

3.6 Electronic Medicines Administration Records (eMAR)

In most care homes medicines administration records (MARs) are paper charts detailing, amongst other information, the name, form and strength of each prescribed medicine alongside directions for their appropriate administration. Because MARs in the majority of care homes are physical documents reviewing data is, in common with audit, time consuming and resource intensive.

In some care homes paper MAR charts have been replaced by electronic MAR (eMAR) systems. The Welsh Government has previously provided grant funding through its *Health Technology and Telehealth Fund (HTTF)* to support the evaluation of eMAR systems in care homes. An evaluation of eMAR use in care homes in Wales demonstrated improvements in patient safety and reductions in medicines waste and identified significant potential for such systems to monitor the prescribing and administration of certain classes of medicines including antipsychotics.¹²

3.7 Limitations of data

Prescribing indicators are an important tool for stimulating quality improvement. Such indicators, no matter how sophisticated, cannot of themselves demonstrate good or poor practice.

Prescribing indicators can be successfully used to identify variation in significantly different prescribing to 'the norm'. Where indicators highlight such variation, further work is always needed both to quantify and qualify the appropriateness of practice.

¹² Al-Hamadani F et al. Telehealth Enabled Medicines Management for Care Home Residents. Cardiff University. 2015. Available at: https://www.cardiff.ac.uk/_data/assets/pdf_file/0009/193752/CUEvaluation.pdf [accessed 14 November 2018]

The short life working group did not support the isolated use of routine data including prescribing indicators, for performance management. However the group recognises they may form part of a comprehensive assessment of quality.

Data on prescribing for individual care homes specifically for older patients are not available. We have considered the range of data that are currently available and we can consider the use of anti-psychotic prescribing by GP practice. However there is not a straightforward way to identify either the antipsychotic dosage prescribed to individual patients or their diagnoses.

Estimates of low dose anti-psychotic prescribing have been developed using dosage assumptions informed by professional advice. However this does not accurately capture the precise dose given to any individual patient.

Whilst it is possible to determine an estimate of prescribing rates for individual care homes, for example using the POMSI measures, there is significant variation in the size of individual homes, with many having small (in a statistical sense) numbers of patients. The small numbers (sample sizes) would mean each estimate would be bounded by wide confidence intervals. This would mean that the data would need careful interpretation as many of those confidence intervals would overlap meaning they would not be statistically different from one another.

Considering these issues together the short life working group agreed that it would be most appropriate to measure the variations in anti-psychotic prescribing at a GP practice level, identifying those with higher prescribing rates. These practices could independently or with support from health boards, then undertake detailed audits to identify the appropriateness of antipsychotic prescribing. This would highlight qualified concerns about individual care homes.

4 Recommendations

1. Prescribing indicators are an important tool for stimulating quality improvement. They provide useful information regarding variation within systems and should be used as a source of intelligence to guide further investigation. They should not be used for performance management.
2. Given the resource implications associated with its completion, its point prevalence nature and its limitations for measuring continuous improvement, audit of antipsychotic use in care homes should be intelligence led.
3. Whenever antipsychotic use in care homes is audited, the national Clinical Effectiveness Prescribing Programme (CEPP) audit tool should be used and arrangements should be in place to allow audit data to be reported to a central database from which reports can be generated to facilitate comparative analysis and track progress over time.
4. The central reporting system should be accessible to care homes, GP practices and pharmacies. Only summary data should be available to health boards to discourage inappropriate intervention that would discourage audit and have a negative effect on improvement.
5. Restrictions in regard to utilising data contained within 2D barcoded prescriptions prevents us from fully understanding prescribing numbers by location, age and gender. These arrangements should be reviewed and a solution sought to enable the collection and review of all data contained in NHS prescriptions.
6. Once arrangements allowing prescription and demographic data to be linked are in place, a national indicator measuring the number of patients over 65 prescribed for more than six weeks should be developed and reported at GP practice level.
7. The national prescribing safety indicator measuring the use of antipsychotic medication in patients aged 65 or over should be adapted to also report the number of those patients who are resident in a care home as a percentage of all patients aged 65 or over.
8. An indicator should be developed in the Audit+ system which can be used as the basis for a real time practice report which identified patients aged 65 or over prescribed for greater than six weeks.

9. Arrangements should be put in place for all pharmacies providing services to care homes to report Patient Outcome Medicines Safety Indicators (POMSI) measures at least biannually.
10. Arrangements should be put in place to facilitate Electronic Medicines Administration Records (eMAR) systems which report to a central data repository being used in all care homes in Wales.

5 Conclusions

For some time there have been concerns regarding the overuse of antipsychotics where not clinically appropriate and, in particular, in care homes. There continues to be concern about the use of antipsychotic medicines being prescribed to control some of the behavioral symptoms of dementia.

When considering what measures might be put in place to substantiate and address these concerns, the short life working group identified a number of areas where data are routinely collected. The short life working group prioritised certain data in order to establish whether the volume of prescribing of antipsychotic medication in care homes was inappropriate. Data regarding the dispensing of antipsychotic medication; number of prescriptions; volume and type of medications are all readily identifiable and attributable to GP practice and dispensing pharmacy. However other relevant information, including the age and address of individual patients, whilst available cannot be utilised.

The short life working group consider the recommendations in this report represent a proportionate approach to measuring the scale of the problem and driving improvement given the constraints of the data currently available. The short life working group has made recommendations for relatively straightforward improvements to data collection which can be implemented promptly. Further work is required regarding the secondary use of prescription data but the short life working group strongly believe prescription data has significant potential in this and other situations.

Annex One – Summary of literature review

Study	Year	Description of study	Setting	Measures
Ivers NM et al. Public reporting of antipsychotic prescribing in nursing homes: population-based interrupted time series analyses. <i>BMJ Qual Saf</i> Published Online First: 30 July 2018.	2018	Time series analysis	636 nursing homes in Ontario, Canada	% of residents with a prescription dispensed for any antipsychotic medication and % of residents with a prescription for benzodiazepine and/or trazodone
Carnaham RM et al. Impact of programs to reduce antipsychotic and anticholinergic use in nursing homes. <i>Alzheimer's and Dementia: Translational Research and Clinical Interventions</i> 2017; 3(4): 553-561	2017	Quasi-experimental longitudinal study comparing intervention and non-intervention homes	Nursing homes in Iowa USA	% of residents prescribed antipsychotics
Breining A et al. Exposure to psychotropics in the French older population living with dementia: a nationwide population-based study. <i>International Journal of Geriatric Psychiatry</i> 2017; 32(7): 750-760	2017	Prospective cohort study	Community and nursing homes in France	% of patients chronically exposed to antipsychotics (and other medicines) defined as at least three prescriptions per year
Frankenthal D et al. The impact of facility characteristics on the use of antipsychotic medications in nursing homes: a cross-sectional study. <i>Israel Journal of Health Policy Research</i> 2016 5:12	2016	Retrospective cross-sectional study	Nursing homes in Tel Aviv, Israel	% of residents prescribed antipsychotics
Mansbach WE et al. Predicting Off-Label Antipsychotic Medication Use in a Randomly Selected Nursing Home Sample Based on Resident and Facility Characteristics. <i>Research in gerontological nursing</i> 2016; 9(6): 257-266	2016	Observational study	Nursing homes	% of residents taking off-label antipsychotic medicines

Szczepura A et al. Antipsychotic prescribing in care homes before and after launch of a national dementia strategy: an observational study in English institutions over a 4-year period. <i>BMJ Open</i> 2016; 6:e009882.	2016	Retrospective analysis of prescribing patterns using information from electronic medicines management system	616 long term care institutions in England	% of residents prescribed antipsychotics
Backhouse T et al. Behavioural and psychological symptoms of dementia and their management in care homes within the East of England: a postal survey, <i>Aging & mental health</i> 2014; 18(2): 187-193	2014	Postal survey	Care homes in four counties in East England	Number and % of residents prescribed at least one antipsychotic medication (regular and PRN prescriptions)
Foebel AD et al. Use of Antipsychotic Drugs Among Residents With Dementia in European Long-Term Care Facilities: Results From the SHELTER Study. <i>Journal of the American Medical Directors Association</i> 2014; 15(12) 911-917	2014	Cross-sectional, retrospective cohort	57 nursing homes in seven European countries and Israel	% of residents with dementia prescribed antipsychotic medication
Prentice A and Wright D. Reducing antipsychotic drugs in care homes. <i>Nursing Times</i> 2014; 110(23): 12-15	2014	Audit	463 care homes in Great Britain	Number and % of residents prescribed antipsychotic medication
Rapp MA et al. Agitation in Nursing Home Residents With Dementia (VIDEANT Trial): Effects of a Cluster-Randomized, Controlled, Guideline Implementation Trial. <i>Journal of the American Medical Directors Association</i> 2013; 14(9): 690-695	2013	Cluster randomized controlled trial	18 nursing homes in Berlin, Germany	Number of neuroleptics, antidepressants, and cholinesterase inhibitors (ChEIs) prescribed in defined daily dosages (DDDs)

Schultze J et al. Prescribing of antipsychotic drugs in patients with dementia: a comparison with age matched and sex matched non-demented controls. <i>Pharmacoepidemiology and Drug Safety</i> 2013; 22(12): 1308-1316	2013	Secondary analysis of health insurance claims data	Germany	% of patients with dementia prescribed antipsychotic medication
Richter T et al. Prevalence of psychotropic medication use among German and Austrian nursing home residents: A comparison of 3 cohorts. <i>JAMDA</i> 2012; 13(2): 187 e7-e187	2012	Cross-sectional comparison of data from 3 large studies performed between 2004 and 2007	136 nursing homes in Hamburg, Morin and Vorarlberg	% of residents with at least one prescription for psychotropic medication
Barro-Belaygues N et al. Patterns of dementia treatment use in assisted living facilities: A cross sectional study of 1975 demented residents. <i>JAMDA</i> 2011; 12(9): 648-654	2011	Cross sectional study	236 assisted learning facilities in France	% of residents prescribed cholinesterase-inhibitors also included % of residents prescribed concomitant antipsychotic medication
Wetzels RB et al. Prescribing pattern of psychotropic drugs in nursing home residents with dementia. <i>International psychogeriatrics</i> 2011; 23(8): 1249-1259	2011	Prospective cohort study	14 dementia special care units in 9 care homes in the Netherlands	% of residents prescribed antipsychotics

Annex two – Representatives and contributors

Andrew Evans (Chair)	Chief Pharmaceutical Officer, Welsh Government
Dr Elizabeth Davies	Senior Medical Officer Deputy Director Mental Health and Vulnerable Groups, Welsh Government
John Morris	Head of Health, Social Services and Population Statistics, Welsh Government
Andrea Giordano	Deputy Director Improvement, Welsh Government
Dr Andrew Havers	Senior Medical Officer for Primary Care, Welsh Government
Simon Scourfield	Primary Care Operations Management Lead - NHS Wales Informatics Service (NWIS)
Kath Haines	Head of Welsh Analytical Prescribing Support Unit - All Wales Therapeutics & Toxicology Centre (AWTTC)
Claire Thomas	Pharmacist - All Wales Therapeutics & Toxicology Centre (AWTTC)
Neil Jenkins	Head of Modernisation & Technical Services - NHS Wales Shared Services Partnership
James Goddard	NHS Wales Shared Services Partnership
Fiona Walker	Cardiff & Vale UHB, Primary, Community & Intermediate Care
Victoria Gimson	Specialist Mental Health Pharmacist - Cardiff & Vale UHB, Pharmacy
Karen May	Cardiff & Vale UHB – Pharmacy – Primary Care
Wendy Davies	Cardiff & Vale UHB – Pharmacy – Secondary care
Sarah Glynn-Jones	Head of Adult and Children's Services Inspection - Care Inspectorate Wales (CIW)
Louise Armstrong-Rodgers	Team Manager Adult Services Inspection - Care Inspectorate Wales (CIW)
Darren Ormond	Secretariat, Welsh Government