Medicines used in Mental Health
Years 2009/10 – 2018/19
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Introduction

The Government’s Mental Health Strategy 2017-27 aims to improve mental health services, promote mental wellbeing and prevent mental illness and to achieve parity between mental and physical health. There are forty key actions grouped under five themes in the strategy:

- Prevention and early intervention
- Access to treatment and joined-up, accessible services
- The physical wellbeing of people with mental health problems
- Rights, information use, and planning
- Data and measurement

Five main categories of medicines for the treatment of mental health problems are covered within this Medicines Used In Mental Health publication; Hypnotics & Anxiolytics, Antipsychotics and related drugs, Antidepressants, Drugs used for Attention Deficit Hyperactivity Disorder (ADHD) and Drugs for Dementia.

Readers should note that medicines herein are classified according to their main original licensed use. However, there are a significant number used for reasons other than their original licensed indication. Examples of this include amitriptyline (licensed for major depression but also used for pain) and fluoxetine (licensed for major depression but also used for bulimia nervosa). As the reason for prescribing is not available from the Prescribing Information System (PIS), it is not appropriate to extrapolate that the use of a particular drug / drug class definitely represents use only in the original licensed indication.

Drug therapy is just one way that these conditions are treated. Treatment can also involve social, psychological, behavioural or educational interventions or therapy. Information on access to mental health support services can be found on the ISD website.

Cost of medicines in this report are defined as Gross Ingredient Cost (GIC). This is the cost of drugs reimbursed to the dispensing pharmacists before deduction of any dispenser discount and is used to make comparisons at an item level.

Changes to this publication:

A number of changes have been made to this report of 22nd October 2019 compared to previous releases. In September 2019 the ISD Prescribing Team consulted with known stakeholders and mental health prescribing data users to seek their views on proposed changes to this report in line with United Kingdom Statistics Authorities guidance on changes to National Statistics releases. Feedback was collected and collated in October 2019 and informed the content of this report.

The primary change is that main measure of the use of medicines is patient level Defined Daily Doses (DDDs) instead of dispensed items. One DDD is the assumed average maintenance dose per day for a drug when used for its main indication in adults, as defined by World Health Organisation. DDD measurements are based on medicine quantity and strength and are therefore a more accurate measurement of use of medicines than the
previously used measure of dispensed items. This is because the quantity of a medicine that is counted as a single dispensed item can vary – e.g. a pack of 28 or 56 tablets of a medicine of the same strength would both be counted as one item. Pack sizes prescribed may vary between NHS Boards, so DDDs are a more accurate measurement of use of a medicine and is therefore used in the main commentary here. Data on total DDDs (patient level DDDs plus the DDDs of items dispensed where patient was unknown) and items dispensed are still available in supplementary data available in the List of Tables.

There has been a change to the measure used in this report for cost of medicines, to provide a more accurate reflection of the costs to NHS Scotland. For previous years this publication reported the cost measure as Gross Ingredient Cost excluding Broken Bulk. For this 2019 publication this measure has been changed to Gross Ingredient Cost including Broken Bulk, as this excludes cases where items were not collected by a patient and thus the medicine cost was not paid to the pharmacy (as it could be returned to stock). The cumulative effect on 2018/19 data is small - a reduction of 0.2% of overall costs. More detail can be found in the Changes To This Publication section of Appendix 1 – Background information.

Additional analysis has been included in this report on the use of medicines used in mental health within age groups. Previous reports have shown the number of patients prescribed medicines by age group. This report now provides analysis on the number of patients by age group prescribed medicines as a proportion of the total population within that age group. This provides more meaningful commentary on medicine use within an age group than patient numbers only. Patient numbers by age group are still available in supplementary data available in the List of Tables.

Please note that prior to the 2017 publication, releases of this report have used BNF section classifications for reporting of drugs used in mental health. Since the October 2017 report, the structure of British National Formulary (BNF) medicines classification has changed and the section descriptions used are no longer applicable to the new BNF structure. In order to maintain consistency and comparability with previous years of reporting, as of the October 2018 release this report uses the “legacy BNF” structure, consistent with what has been used in previous years. The “legacy BNF” is not publically available to view online, however the medicines attributed to the relevant BNF sections (BNF 4.1, 4.2, 4.3, 4.4 and 4.11) are available in a supplementary file in the List of Tables. Up to date information on the availability and therapeutic uses of medicines can be found on the BNF - British National Formulary website.

Please note: ISD is not responsible for the contents of external internet sites referenced in this publication report.
Hypnotics & Anxiolytics

Background

Hypnotics and anxiolytics are used to treat insomnia and anxiety respectively. Insomnia is difficulty getting to sleep or staying asleep for long enough to feel refreshed the next morning, despite there being enough opportunity to sleep. The most common problem with insomnia is difficulty falling asleep (sleep-onset insomnia). An insomniac may also experience:

- waking in the night
- not feeling refreshed after sleep and not being able to function normally during the day
- feeling irritable and tired and finding it difficult to concentrate
- waking when they have been disturbed from sleep by pain or noise
- waking early in the morning

Anxiety is a feeling of unease, such as worry or fear, which can be mild or severe. Everyone experiences feelings of anxiety at some point in their life and feeling anxious is sometimes perfectly normal. However, people with generalised anxiety disorder (GAD) find it hard to control their worries. Their feelings of anxiety are more constant and often affect their daily life. There are several conditions for which anxiety is the main symptom. Panic disorder, phobias and post-traumatic stress disorder can all cause severe anxiety.

Further information about insomnia and anxiety can be found on this website: [http://www.nhsinform.co.uk/mentalhealth](http://www.nhsinform.co.uk/mentalhealth)

Drug Treatment

Hypnotics and anxiolytics are indicated for the treatment of anxiety and insomnia as described by the Legacy British National Formulary (BNF) section 4.1.

- Legacy BNF 4.1.1 - Hypnotics are indicated for the relief of insomnia but only after the underlying causes have been established and treated. Long-term use of these drugs, especially benzodiazepines, should be avoided.
- Legacy BNF 4.1.2 - Anxiolytics are indicated for short-term relief (two to four weeks only) of anxiety that is severe, disabling or causing unacceptable distress to the patient. Using these drugs to treat short-term mild anxiety should be avoided. In those instances where the patient has chronic anxiety, that is lasting more than four weeks, it may be more appropriate to use an antidepressant (Legacy BNF section 4.3). Note that some anxiolytics, especially diazepam, are also used for some musculoskeletal and muscle spasm conditions.
- Legacy BNF 4.1.3 - The intermediate-acting barbiturates have a place only in the treatment of severe intractable insomnia in patients already taking barbiturates. Their use
should be avoided in the elderly.

**Antipsychotics and related drugs**

**Background**

Antipsychotic drugs are used to treat psychoses and related disorders. People experiencing psychoses may report hallucinations or delusional beliefs, and may exhibit personality changes and thought disorder. Depending on its severity, this may be accompanied by unusual or bizarre behaviour, as well as difficulty with social interaction and impairment in carrying out daily life activities.

Information on psychoses and related disorders, including treatment and prevalence, can be found on the following websites:

- Royal College of Psychiatry
- Mind, a mental health charity
- Scottish Association for Mental Health

**Drug Treatment**

Section 4.2 of the Legacy British National Formulary lists the drugs licensed for the treatment of psychoses and related disorders. This section contains three sub-sections:

- Legacy BNF 4.2.1 - Antipsychotic drugs, also known as neuroleptics. Severe anxiety attacks can also be treated, in the short term, with antipsychotics.

- Legacy BNF 4.2.2 - Antipsychotic depot injections. Long-acting injections used for maintenance therapy, especially when compliance with oral treatment is unreliable.

- Legacy BNF 4.2.3 - Antimanic drugs - Used to control acute attacks and prevent their recurrence.

Antipsychotic drugs (Legacy BNF 4.2.1) can be divided into two classes:

- The older ‘typical’ (or conventional) antipsychotics were developed in the 1950s, principally to treat schizophrenia. These can be further divided into the low and high potency drugs. For example, fluphenazine and haloperidol are examples of high-potency antipsychotics, and chlorpromazine is an example of a low-potency antipsychotic. The high-potency drugs tend to be associated with extrapyramidal (EPS) side effects (tremors, muscle spasms, irregular muscle movements etc.). EPS side effects are less evident with the low potency drugs.

- Atypical antipsychotics are used principally to treat schizophrenia, but can be used to treat other conditions. The first atypical, clozapine, was introduced in 1989, followed by risperidone in 1994, olanzapine and sertindole in 1996 (the latter was withdrawn in 2001 after concern was expressed about cardiac effects), amisulpride and quetiapine in 1997, zotepine in 1998, with the latest drug, aripiprazole, coming on to the market in 2004. It
should be noted that some of these drugs are primarily supplied by hospitals and their use may be underestimated in this report (community prescribing of clozapine) therefore not appear in this dataset.

Antidepressants

Background

Antidepressant drugs are licensed to treat major depression. Health professionals use the words depression, depressive illness or clinical depression to refer to depression. It is a serious illness and very different from the common experience of feeling unhappy or fed up for a short period of time. Depressed people may have feelings of extreme sadness that can last for a long time. These feelings are severe enough to interfere with daily life, and can last for weeks, months or years, rather than days.

Information on depression, its treatment and prevalence, can be found on the Mind website.

Drug Treatment

There are four types of antidepressant drugs, as described in the Legacy British National Formulary section 4.3, which are used in the treatment of depression:

- **Legacy BNF 4.3.1** - Tricyclic antidepressants are used to treat depression, but also have a role to play in the treatment of migraine, panic disorder, obsessive compulsive disorder, recurrent headaches and in the relief of neuropathic pain.

- **Legacy BNF 4.3.2** - MAOIs - Monoamine-oxidase inhibitors are used less frequently than either the tricyclics or Selective Serotonin Re-uptake Inhibitors (SSRIs) and related antidepressants because of the high risk of dietary and drug interactions.

- **Legacy BNF 4.3.3** - SSRIs - Selective serotonin re-uptake inhibitors are a group of drugs used to treat depression and other conditions such as bulimia, panic disorder and obsessive-compulsive disorder.

- **Legacy BNF 4.3.4** - Others - Drugs that do not fit any of the above categories. For example, duloxetine inhibits the re-uptake of both serotonin and noradrenaline and is therefore termed a Serotonin and Noradrenaline Re-uptake Inhibitor (SNRI). Other drugs in this group are flupentixol (also used in the treatment of psychoses), mirtazapine, reboxetine, tryptophan and venlafaxine.

It should be noted that antidepressant drugs are used for indications other than depression (e.g. migraine, chronic pain, Myalgic Encephalomyelitis (ME) and a range of other conditions). Therefore the statistics on these drugs do not relate solely to prescribing for depression.
**Drugs used for Attention Deficit Hyperactivity Disorder (ADHD)**

**Background**

Attention Deficit Hyperactivity Disorder (ADHD) and Attention Deficit Disorder (ADD) refer to a range of problem behaviours associated with poor attention span. These may include impulsiveness, restlessness and hyperactivity, as well as inattentiveness; behaviours that often prevent children and adults from learning and socialising. ADHD is sometimes referred to as Hyperkinetic Disorder (HD).

The prevalence of ADHD among males is thought to be four times that of females¹, which concurs with the published figures of patients by gender in this report.

**NHS Healthcare Improvement Scotland** completed a follow-up review of services for children and young people with ADHD, published in 2012.

**Drug Treatment**

There are five drugs, as described in the Legacy British National Formulary section 4.4, which are used in the treatment of ADHD or ADD:

- Atomoxetine (Strattera®)
- Amfetamines (Dexamfetamine sulfate (Dexedrine®))
- Guanfacine hydrochloride (Intuniv®)
- Lisdexamfetamine dimesylate (Elvanse®)
- Methylphenidate hydrochloride (Ritalin®, Concerta XL®, Equasym®, Equasym XL®, Medikinet®, Medikinet XL®, Tranquilyn®)

A very small amount of caffeine citrate is also recorded against Legacy BNF section 4.4. Note that some ADHD drugs are used for reasons other than their licensed indication.

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Drugs for Dementia

Background
Dementia is a disease that leads to a progressive loss of brain function typified by memory loss, confusion, speech difficulties and problems in understanding. There are over 100 different types of dementia. The most common forms are:

- Alzheimer's disease
- Vascular dementia
- Dementia with Lewy bodies
- Pick's disease
- Huntington's disease
- Alcohol-related dementia
- HIV / AIDS related dementia

It has been estimated that 75% of people diagnosed with dementia will either have Alzheimer's or vascular dementia or a combination of the two (Alzheimer Scotland - Dementia Factsheet). Dementia mainly affects older people, but can also occur in people as young as thirty due to either alcohol abuse or HIV / AIDS. Roth et al\(^2\) estimated that 30% of people diagnosed with dementia have the mild form of the disease, 42% are at the moderate stage and 28% have severe dementia. Detailed information on the various types of dementia can be found on the Alzheimer Scotland website and also on the website of the Alzheimer’s Society.

Drug Treatment
No cure for dementia currently exists. However, drugs may slow the rate of decline or in some patients make a small improvement in symptoms. Despite this, disease progressions is inevitable. The Legacy British National Formulary lists four drugs that are licensed for the treatment of dementia:

- Donepezil hydrochloride (Aricept® & Aricept Evess®)
- Galantamine (Reminyl® & Reminyl XL®)
- Memantine hydrochloride (Ebixa®)
- Rivastigmine (Exelon®)

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\(^2\) Roth et al. (1998) CAMDEX, the Cambridge Examination for Mental Disorders of the Elderly. Cambridge University Press
Memantine is the only drug licensed to treat moderate to severe dementia; all others are for use in the mild to moderate form of the disease. The use of medicines licensed for the symptomatic treatment of Alzheimer’s dementia may be prescribed for other conditions. Such use is unlicensed and the clinical reason for this is not available from PIS.
Main Points

- The dispensed volume of antipsychotics, antidepressants, drugs for ADHD and drugs for dementia has been steadily increasing over the past ten years. Dispensed volume of hypnotics and anxiolytics has slightly decreased over the past ten years.

- The cost to NHS Scotland for antidepressants and ADHD drugs has increased in the past ten years, which reflects an increase in usage. The cost for dementia drugs has decreased in the past ten years, primarily due to reductions in drug prices and drugs coming out of patent. Costs of antipsychotics and of hypnotics and anxiolytics has been more variable over the past ten years due to periods of drug shortages.

- All of the mental health drugs considered in this report show more use of mental health drugs by people living in more deprived areas. For dementia drugs this pattern is less pronounced. This corresponds with evidence that people living in deprived areas report poorer mental wellbeing.

- For four out of the five groups of mental health drugs there are substantially more drugs dispensed to females than males. The exception to this is ADHD, where almost 80% of dispensing is to males.
Results and Commentary

Hypnotics and Anxiolytics

NHS Scotland

The total amount of hypnotic and anxiolytic prescription drugs dispensed, measured as Defined Daily Doses (DDDs), changed very little between 2017/18 and 2018/19 (a slight increase of 1.3%). The overall amount of drugs dispensed has slightly decreased over the past ten years (Figure 1).

Figure 1: Number of DDDs\(^1\) (millions) – Hypnotics & Anxiolytics; 2009/10 to 2018/19

1. Number of DDDs is based on Dispensed Quantity from 2009/10 to 2014/15, and on Paid Quantity from 2015/16 onwards.

The rate of use of hypnotics and anxiolytic drugs has fallen in Scotland over the past ten years: from 32 DDDs per 1,000 population per day in 2009/10 to 28 in 2018/19. See the List of Tables for supplementary data.

Cost of medicines in this report are defined as Gross Ingredient Cost (GIC). This is the cost of drugs reimbursed to the dispensing pharmacists before deduction of any dispenser discount and is used to make comparisons at an item level.

The costs of hypnotics and anxiolytics have shown much more fluctuation (Figure 2) than the number of dispensed items over the past ten years. The total cost for hypnotics and anxiolytics decreased from £13.5 million to £13.0 million (a decrease of 3.6%) between 2017/18 and 2018/19. Prior to 2012/13, the cost had been falling since 2009/10. The increase from 2012/13 to 2013/14 is due in part to the higher price of temazepam due to it being in short supply during 2012 through to April 2014. The introduction of two unlicensed
versions of melatonin into the unbranded medicines section of the Scottish Drug Tariff also means that more melatonin products, which were previously processed as unlicensed items (which cannot be easily included in analysis), are now recorded in the corresponding BNF Section and so are included in this report. These melatonin products may be used for treatment of insomnia, particularly in children with conditions such as ADHD.

In Scotland, around 361 thousand patients were dispensed at least one hypnotic or anxiolytic drug in 2018/19. This is a slight decrease of 0.9% from 2017/18 and an increase of 3.3% since 2009/10. The patient numbers follow a similar trend to the data on the total Defined Daily Doses, as shown in Figure 1.

In 2018/19, 62% of patients who received treatment with a hypnotic or anxiolytic drug were female while 38% were male. This is consistent with previous years for which data are available (See the List of Tables for supplementary data).

Hypnotics and anxiolytics are, in general, licensed for patients aged 15 years and over, however items can be prescribed ‘off label’ – i.e. not for their specific licensed medicinal use - based on specialist recommendation. Figure 3 shows the number of patients prescribed hypnotic & anxiolytic drugs by age group as a proportion of that age group population. The proportion of patients dispensed these drugs increases from age group 5-9 years to an initial peak for patients aged 45-49 years (91 patients per 1,000 population). This decreases slightly as patients get older but increases again from age group 70-74 years to a peak in those patients age over 90 years (153 patients per 1,000 patients) (Figure 3). This pattern by age group is also seen for previous years.
Figure 3: Patients per 1,000 population by age group – Hypnotics & Anxiolytics; 2018/19

Figure 4 gives a breakdown by Scottish Index of Multiple Deprivation (SIMD) for 2018/19. SIMD is a measure of patient deprivation, and in this publication is reported using quintiles; where SIMD 1 is the most deprived and SIMD 5 is the least deprived group. For Hypnotics and Anxiolytics there is a clear gradient, showing increasing patient counts and amount of drugs dispensed with increasing deprivation. This pattern is likely to be the case when looking Hypnotics or Anxiolytics separately.

Figure 4: Number of Patients by Patient SIMD – Hypnotics & Anxiolytic; 2018/19
NHS Board

Information on prescribing for hypnotics and anxiolytic drugs at NHS Board level has also been presented. Figures 5 and 6 show prescribing of drugs by NHS Board as number of DDDs per 1,000 population per day for drugs used in the treatment of insomnia and anxiety, respectively.

Seven of the fourteen NHS Boards have shown a reduction in the prescribing of hypnotics (mostly for treatment of insomnia) when comparing the number of DDDs per 1,000 population per day for the periods 2009/10 and 2018/19.

**Figure 5: Hypnotics - Number of Defined Daily Doses per 1,000 Population (aged 15+) per day; 2009/10 and 2018/19**

The majority of NHS Boards have shown a decrease in the prescribing of anxiolytics in the last nine years. The largest fall occurred in NHS Greater Glasgow and Clyde, where the number of DDDs dispensed per 1,000 population per day fell from 17.3 daily doses to 11.2 between 2009/10 and 2018/19. The next largest Board, NHS Lothian, showed usage that decreased from 17.6 to 12.2 over the same period.
Figure 6: Anxiolytics - Number of Defined Daily Doses per 1,000 Population (aged 15+) per day; 2009/10 and 2018/19
Antipsychotics and related drugs

NHS Scotland

The total amount of drugs dispensed, measured as Defined Daily Doses (DDDs), for treatment of psychoses and related disorders increased between 2017/18 and 2018/19, from 19.1 million DDDs to 19.3 million; an increase of 1.4%. This follows a gradual increase over the past ten years; the total amount of drugs dispensed has increased by 26% between 2009/10 and 2018/19 (from 15.3 million DDDs in 2009/10) (Figure 7).

Figure 7: Number of DDDs$^2$ (millions) – Psychoses and related disorders; 2009/10 to 2018/19

The rate of use of drugs dispensed for psychoses and related disorders has increased in Scotland over the past ten years, from 9.6 Defined Daily Doses per 1,000 population per day in 2009/10 to 11.6 in 2018/19. See the List of Tables for supplementary data.

Figure 8 shows that the cost of drugs for psychoses and related disorders (BNF 4.2) has decreased by 10% from £38.7 million in 2017/18 to £34.8 million in 2018/19. The cost of antipsychotic drugs (BNF4.2.1) increased by 224% from £11 million in 2016/17 to £35.7 million in 2017/18. The cost has reduced since, to £31.7 million in 2018/19. In 2017/18, there was a prolonged period of shortages for the main oral antipsychotics including olanzapine, quetiapine and risperidone. As a result the price per tablet was significantly higher than in previous years. It should be noted that opportunities for switching to alternative medicines are limited, particularly in existing stable patients.
The cost of depot injections (BNF 4.2.2) increased by 8% from £1.9 million in 2017/18 to £2 million in 2018/19, while antimanic drugs (BNF 4.2.3) decreased by 1% from £1.06 million to £1.05 million during the same time period (Figure 8).

**Figure 8: Gross Ingredient Cost (£m) – Psychoses and related disorders; 2009/10 to 2018/19**

In Scotland around 101 thousand patients received at least one dispensed item for treatment of psychoses and related disorders in 2018/19. This is an increase of 2.5% compared to 2017/18 and an increase of 39.9% since 2009/10. In 2018/19, 54% of patients who received treatment with drugs for psychoses and related disorders were female while 46% were male. This is consistent with previous years (See the List of Tables for supplementary data).

Figure 9 shows the number of patients prescribed drugs for psychoses and related disorders by age group as a proportion of that age group population. The proportion of patients dispensed drugs for psychoses and related disorders substantially increases in patients 75 years and over, to a peak for those aged over 90 years. This pattern by age group is also seen for previous years (see supplementary tables).
Figure 9: Patients per 1,000 population by Age Group – Psychoses & Related Disorders; 2018/19

Figure 10 gives a breakdown by Scottish Index of Multiple Deprivation (SIMD) for 2018/19. For antipsychotics and related drugs there is a clear gradient, showing increasing patient counts and amount of drugs dispensed with increasing deprivation.

Figure 10: Number of Patients by Patient SIMD – Psychoses & Related Disorders; 2018/19
NHS Board

As the majority of the drugs used in the treatment of psychoses and related disorders are antipsychotic drugs (BNF section 4.2.1), only these drugs are presented by NHS Boards for 2009/10 and 2018/19 in Figure 11.

Almost all NHS Boards show increased prescribing of antipsychotic drugs since 2009/10. The use of antipsychotic drugs (BNF 4.2.1) has increased from 7.3 to 9.6 DDDs per 1,000 population per day between 2009/10 and 2018/19. Five of the fourteen NHS Boards dispensed above the 2018/19 national average for antipsychotic drugs (BNF 4.2.1); with NHS Dumfries & Galloway being the highest at 12.3 DDDs per 1,000 population per day (for patients aged 15+ years) (Figure 11).

**Figure 11: Antipsychotic Drugs (BNF 4.2.1) – Number of Defined Daily Doses per 1,000 Population (age 15+) per day; 2009/10 and 2018/19**
Antidepressants

NHS Scotland

The total amount of antidepressant prescription drugs dispensed, measured as Defined Daily Doses (DDDs), increased by 6% between 2017/18 and 2018/19, from 274 to 291 million DDDs. This has increased consistently over the past ten years, rising by 76.3% overall, from 165 million DDDs in 2009/10 (Figure 12).

Figure 12: Number of DDDs³ (millions) – Antidepressants; 2009/10 to 2018/19

3. Number of DDDs is based on Dispensed Quantity from 2009/10 to 2014/15, and on Paid Quantity from 2015/16 onwards.

The rate of use of antidepressants has increased in Scotland in the past ten years: from 103 DDDs per 1,000 population per day in 2009/10 to 174 in 2018/19. See the List of Tables for supplementary data.

As the total amount of antidepressant medicines dispensed has increased over the past ten years, the cost of antidepressants has also increased. Overall it increased by 29% between 2009/10 and 2018/19, from £32 million to £42 million. However, over the last year the cost of antidepressants has decreased by 7% from £45 million in 2017/18 (Figure 13).
Patient level data are available for analysis from April 2009 onwards. Data on the total number of patients dispensed an antidepressant should be interpreted with caution: it does not equate to people being treated for depression because many drugs classified as antidepressants can also be used for conditions other than depression including neuropathic pain, post-traumatic stress disorder and anxiety disorders.

In Scotland around 936 thousand patients were dispensed at least one antidepressant during 2018/19. This is an increase of 4% compared to 2017/18 and an increase of 48% since 2009/10. In 2018/19, 66% of patients who received antidepressant treatment were female while 34% were male, which is consistent with previous years (see See the List of Tables for supplementary data).

Figure 14 shows the number of patients prescribed antidepressant medicines by age group as a proportion of that age group population. The proportion of patients dispensed antidepressant drugs substantially increases from age group 15-19 years to a peak for patients aged 50-54 years (251 patients per 1,000 population) This decreases as patients get older but increases again from patients aged 70-74 years and then reaches a peak for patients aged 85-90 years (255 patients per 1,000 population), This pattern by age group is also seen for previous years.
Figure 14: Patients per 1,000 population by Age Group – Antidepressants; 2018/19

Figure 15 gives a breakdown by Scottish Index of Multiple Deprivation (SIMD) for 2018/19. For antidepressants there is a clear gradient, showing increasing patient numbers and amount of drugs dispensed with increasing deprivation.

Figure 15: Number of Patients by Patient SIMD – Antidepressants; 2018/19
NHS Boards

Information on the NHS Board of prescribing for antidepressants has also been analysed. Figure 16 shows prescribing of drugs by NHS Board in terms of the number of DDDs per 1,000 population per day.

In Scotland an average of 174 DDDs were dispensed per 1,000 population per day during 2018/19. Eight NHS Boards prescribed higher than the national average for antidepressants in 2018/19, of which NHS Ayrshire and Arran and NHS Lanarkshire prescribed the highest both with 195 DDDs per 1,000 population per day.

All NHS Boards showed an increase in number of Defined Daily Doses per 1,000 population between 2009/10 and 2018/19.

**Figure 16: Number of Defined Daily Doses per 1,000 Population (aged 15+) per day – Antidepressants; 2009/10 and 2018/19**
Drugs used for Attention Deficit Hyperactivity Disorder (ADHD)

NHS Scotland

The total amount of ADHD prescription medicines dispensed, measured as Defined Daily Doses (DDDs), rose by 18% between 2017/18 and 2018/19 from 4.4 million to 5.3 million DDDs. The amount of medicines has been increasing over the past ten years, rising by 120% overall since 2009/10. Prescribing of methylphenidate hydrochloride is the most commonly prescribed item in BNF section 4.4, accounting for 71% of ADHD drugs dispensed in 2018/19 (Figure 17).

Figure 17: Number of DDDs$^4$ (millions) – ADHD Drugs; 2009/10 to 2018/19

The rate of use of drugs for ADHD has increased in Scotland over the past ten years: from 5.5 Defined Daily Doses per 1,000 population per day in 2009/10 to 12.5 in 2018/19. See the List of Tables for supplementary data.

Over the past ten years the cost of ADHD drugs has shown a similar trend to the amount of medicine dispensed, rising by 112% from £3.5 million in 2009/10 to £7.4 million in 2018/19. Over the last year the cost of ADHD drugs rose by 13.7% from £6.5 million in 2017/18 (Figure 18).
In Scotland around 15 thousand patients were dispensed at least one drug for treatment for ADHD in 2018/19. This is an increase of 12% compared to 2017/18 and an increase of 122% since 2009/10. In 2018/19, 76% of patients who received drug treatment for ADHD were male while 23% were female. This is consistent with previous years (See the List of Tables for supplementary data).

Figure 19 shows the number of patients prescribed ADHD medicines by age group as a proportion of that age group population. This shows that the age grouping with the greatest proportion of patients who received drug treatment for ADHD was 10-14 years, with 17 patients per 1,000 population in that age group in 2018/19. ADHD drugs are in general licensed for the ages 5–18. Initiating treatment of ADHD in adulthood is uncommon, however for those who were initially prescribed ADHD drugs when younger treatment may continue into adulthood.
Figure 19: Patients per 1,000 population by Age Group – ADHD Drugs; 2018/19

Figure 20 gives a breakdown by Scottish Index of Multiple Deprivation (SIMD) for 2018/19. For ADHD drugs there is also a clear gradient, showing increasing patient counts and amount of drugs dispensed with increasing deprivation.

Figure 20: Number of Patients by Patient SIMD – ADHD Drugs; 2018/19
NHS Boards

All fourteen NHS Boards showed an increase in dispensing of ADHD drugs between 2009/10 and 2018/19. Among the NHS Boards, the highest recorded rate of DDDs per 1,000 population per day for 2018/19 was 29 in NHS Tayside, increasing from 10 in 2009/10. (Figure 21). Dispensing in NHS Borders and NHS Fife was also substantially higher than the national average for 2018/19.

Figure 21: Number of Defined Daily Doses per 1,000 Population (aged 0-19) per day – ADHD Drugs; 2009/10 and 2018/19
Drugs for Dementia

NHS Scotland

The total amount of prescription medicines dispensed, measured as Defined Daily Doses (DDDs), for dementia increased by 4%, from 8.7 million in 2017/18 to 9 million in 2018/19. This had been increasing steadily over the past nine years, and has risen by 80% overall since 2009/10 (Figure 22). Note that the use of medicines licensed for the symptomatic treatment of Alzheimer’s dementia may be prescribed for other conditions. Such use is unlicensed and the clinical reason for this is not available from prescription data. The total amount of memantine has increased sharply over the last seven years (by 1,295% between 2010/11 and 2018/19). This is likely to be due to the change in guidance over its use in 2011 whereby it became recommended for use by NICE (National Institute for Clinical Excellence).

Figure 22: Number of DDDs$^5$ (millions) – Dementia Drugs; 2009/10 to 2018/19

The rate of use of drugs for dementia has increased in Scotland over the past ten years: from 11.6 Defined Daily Doses per 1,000 population per day in 2009/10 to 18.2 in 2018/19. See the List of Tables for supplementary data.

The cost of dementia drugs had grown steadily from £12.3 million in 2009/10 to £15 million by 2011/12 (an increase of 22%). However, the cost of dementia drugs then decreased for several years; falling to £3.2 million in 2017/18 (Figure 24); down 79% from 2011/12. However, there was a slight increase of 1.2% compared 2017/18. The main reason for the
decreasing cost in the past 10 years is likely to be the availability of generic versions of most of the drugs.

**Figure 23: Gross Ingredient Cost (£m) – Dementia Drugs; 2009/10 to 2018/19**

Patient level data can be reported for dementia drugs from April 2009. The CHI capture rate for drugs for dementia in 2018/19 was 97%. This is an increase on the previous year (96%), however historically it has been slightly lower for dementia than for some other sections. This is likely due to differing models of dementia services provision in NHS boards.

In Scotland around 28 thousand patients were dispensed at least one drug for dementia during 2018/19. This is stable compared to 2017/18 but an increase of 100% since 2009/10. This is consistent with the increasing amount of dementia drugs being dispensed over the last nine years (Figure 22), however the rise in CHI Capture rate should be taken into account when interpreting these figures.

In 2018/19, 63% of patients who were dispensed dementia drugs were female while 37% were male. This is consistent with previous years (See the List of Tables for supplementary data).

The majority of patients being prescribed dementia drugs are aged 70 years and above. This is due to the late onset of the condition in life. Figure 24 shows the number of patients prescribed dementia by age group as a proportion of that age group population. The age group with the greatest proportion of patients to receive a drug for dementia was 90+ years, with 87 patients per 1,000 population in 2018/19.

Please note that age grouping analysis for the Drugs for Dementia section of this report and the supplementary Excel table data differs to other sections presented. Age groupings for drugs for dementia have been expanded to ensure that small numbers continue to be protected, thereby ensuring patient confidentiality.
Figure 24: Patients per 1,000 population by Age Group – Drugs for Dementia; 2018/19

![Bar chart showing patients per 1,000 population by age group.]

Figure 25 gives a breakdown by Scottish Index of Multiple Deprivation (SIMD) for 2018/19. For drugs for dementia there is not such a clear gradient as with the previous sections; SIMD Quintile 1 (the most deprived) shows a lower number of both DDDs and patients (Figure 25), with Quintile 2 and 3 showing both higher DDDs and patients. Thereafter, both counts reduce as deprivation decreases. As dementia is more likely to present in older age groups, the impact of lower life expectancy associated with more deprived SIMD group is likely to affect the amount of drugs for dementia received.

Figure 25: Number of Patients by Patient SIMD – Drugs for Dementia; 2018/19

![Bar chart showing number of patients by SIMD quintile.]

NHS Boards
In Scotland, an average of 18 DDDs were dispensed per 1,000 population per day during 2018/19. Six NHS boards dispensed above the national average for dementia, of which NHS Borders prescribed the highest with 26.1 DDDs per 1,000 population per day. NHS Lothian had the second highest prescribing rate with 24.9 DDDs per 1,000 population per day. 13 NHS Boards show an increase in dispensing of drugs for dementia between 2009/10 and 2018/19.

Figure 26: Number of Defined Daily Doses per 1,000 Population (aged 60+) per day – Dementia Drugs; 2009/10 and 2018/19
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD</td>
<td>Attention deficit hyperactivity disorder</td>
</tr>
<tr>
<td>Approved Drug Name</td>
<td>As listed in BNF, being the recognised official non-proprietary title (recommended International Non-Proprietary Name - rINN).</td>
</tr>
<tr>
<td>British National Formulary (BNF)</td>
<td>A standard classification of drugs into conditions of primary therapeutic use, the aim is to provide prescribers, pharmacists and other healthcare professionals with sound up-to-date information about the use of medicines.</td>
</tr>
<tr>
<td>Defined Daily Dose (DDD)</td>
<td>Assumed average maintenance dose per day for a drug when used for its main indication in adults, as defined by World Health Organisation.</td>
</tr>
<tr>
<td>Dispensed Item</td>
<td>An instance of dispensing of a medicine or device. E.g. a packet of 100 paracetamol 500mg tablets is one item if so prescribed.</td>
</tr>
<tr>
<td>Gross Ingredient Cost (GIC)</td>
<td>Cost of drugs and appliances reimbursed before deduction of any dispenser discount (this definition differs from other parts of the UK). This is used to make comparisons at an item level.</td>
</tr>
<tr>
<td>Prescribable Item Name</td>
<td>The drug name written on the prescription - can be by approved name or a brand name.</td>
</tr>
<tr>
<td>Prescribed Health Board</td>
<td>The NHS Board with which the prescriber holds a contract to prescribe, i.e. GP, Dentist, Non-medical prescriber.</td>
</tr>
<tr>
<td>Prescription item</td>
<td>An item is an individual product prescribed e.g.100 aspirin tablets of 300mg.</td>
</tr>
<tr>
<td>Quantity</td>
<td>Quantity dispensed of an individual item e.g. 100 tablets</td>
</tr>
<tr>
<td>SIMD</td>
<td>Scottish Index of Multiple Deprivation - A measure of deprivation for Scotland.</td>
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## List of Tables

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<thead>
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<td>Hypnotics and Anxiolytics</td>
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<td>Psychoses and related disorders</td>
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<td>Antidepressants</td>
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<td>Attention Deficit Hyperactivity Disorder</td>
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<td>Dementia</td>
<td>Excel 161kb</td>
</tr>
<tr>
<td>Medicines used in mental health – Legacy BNF</td>
<td>Excel 42kb</td>
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</tbody>
</table>
Contact

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Further Information

Further Information can be found on the ISD website.
For more information on Mental Health see the Mental Health section of our website. For related topics, please see the Prescribing and Medicines pages.

The next release of this publication will be 23 October 2020.

Rate this publication

Please provide feedback on this publication to help us improve our services.
Appendices

Appendix 1 – Background information

How the data are obtained

Practitioner Services process all NHS prescriptions for payment of pharmacists, dispensing doctors and appliance suppliers. This gives a full record from which trends in prescribing can be investigated at a detailed level. The data includes prescribing by GPs, nurses, dentists, pharmacists and hospitals, where the latter was dispensed in the community. Hospital dispensed prescriptions are not included in the figures. The Information Services Division (ISD) cannot ascertain what proportion of the drug dispensed is actually consumed. Prescriptions processed internally by Boards for payment purposes instead of being presented to Practitioner Services Division for payment are not included in these data.

Changes to this publication – October 2019

Defines Daily Doses and medicines volume

A number of changes have been made to this report of 22nd October 2019 compared to previous releases. The main change is that primary measure of the use of medicines is now reported as patient level Defined Daily Doses (DDDs) instead of dispensed items. One DDD is the assumed average maintenance dose per day for a drug when used for its main indication in adults, as defined by World Health Organisation. DDD measurements are based on medicine quantity and strength and are therefore a more accurate measurement of use of medicines than the previously used measure of dispensed items. This is because the quantity of a medicine that is counted as a single dispensed item can vary – e.g. a pack of 28 or 56 tablets of a medicine of the same strength would both be counted as one item. Pack sizes prescribed may vary between NHS Boards, so DDDs are a more accurate measurement of use of a medicine and is therefore used in the main commentary here. Data on total DDDs (patient level DDDs plus the DDDs of items dispensed where patient was unknown) and items dispensed are still available in supplementary data available in the List of Tables.

Medicines costs

There has been a change to the measure used in this report for cost of medicines, to provide a more accurate reflection of the costs to NHS Scotland. For previous years this publication reported the cost measure as Gross Ingredient Cost excluding Broken Bulk. Broken bulk payments relate to when a contractor has supplied part of a container of a medicine (e.g. 12 tablets from a pack of 24) that is rarely dispensed by that contractor. They are reimbursed the value of the whole pack, but if the contractor supplies broken bulk for the same medicine again within 6 months of the original claim, the cost of the first prescription’s balance is reclaimed by NHS Scotland. For this 2019 publication this measure has been changed to
Gross Ingredient Cost including Broken Bulk. Recent investigation has shown that, as with the comparison between dispensed and paid items for item volume, GIC excluding Broken Bulk includes the cost of items where items were not dispensed by the pharmacist or items that were not collected by a patient. The cost of these medicines is not paid to the pharmacy as they can be returned to stock, however this cost is recorded in GIC excluding Broken Bulk figure. GIC including broken bulk reflect the reimbursement payments made to contractors for items dispensed, and so while this includes payments for broken bulk dispensing as described, it also excludes the cost of medicines which were not dispensed or not collected. Therefore it is regarded as the more accurate measure of cost to NHS Scotland, and is used for 2018/19 data. Note that previous years of data have not been revised, but the cumulative effect on 2018/19 data is small - a reduction of 0.2% of overall costs.

**Age group analysis**

Appendix 1 – Background information

Additional analysis has been included in this report on the use of medicines used in mental health within age groups. Previous years reports have shown the number of patients prescribed medicines by age group. This report now provides analysis on the number of patients by age group prescribed medicines as a proportion of the total population within that age group. This provides more meaningful commentary on medicine use within an age group than patient numbers only. Patient numbers by age group are still available in supplementary data available in the List of Tables.

**Previous changes to this publication**

**NHS Health Board boundary changes**

On the 1st April 2014 a number of changes were made to NHS Health Board boundaries to support the integration of NHS and Local Authority services. These revisions resulted in small changes to the resident populations of the majority of Scottish NHS Health Boards. NHS Greater Glasgow & Clyde and NHS Lanarkshire saw the largest changes to resident populations, with approximately 72,000 residents being reassigned from NHS Greater Glasgow & Clyde to NHS Lanarkshire. A small number of GP Practices and Community Pharmacies that had previously been affiliated to NHS Greater Glasgow and Clyde were also transferred to sit within the revised NHS Lanarkshire boundary. The impact of these changes should be taken into consideration when comparing trends in NHS Board activity over time.

**Prescribing Dispensed to Paid Items**

Prior to the release of the 9 October 2018 Medicines used in Mental Health report, information was provided based upon measures from the prescribing dataset that are classed as relating to dispensed items. However, a review of this data showed that this includes prescription items that were not dispensed (generally because the patient did not require a particular item on a prescription) or that were not collected by the patient. Normally such
prescriptions would not result in a cost to NHS Scotland. Such items are recorded as an artefact of the payment process but may not represent all instances where a prescription was written but not dispensed or not collected and so the information provides no reliably meaningful information beyond what is available from paid measures of activity and cost. As of the 9 October 2018 release the medicine volume measure paid items is used rather than dispensed items. This is because paid item information best reflects the activity and costs associated with prescribing and the supply of medicines to patients in NHSScotland. Comparison between Dispensed Items and Paid Items for 2014/15 and 2015/16 was made and the differences are found to be negligible, therefore comparison between Dispensed Items and Paid Items between 2015/16 and previous years is valid for these data.

SIMD Analysis – Paid Items to Patient Numbers

In Medicines used in Mental Health publications prior to 9 October 2018, SIMD analysis has been presented by item numbers by deprivation quintile. Based on clinical advice the measure used has been updated to patient number as of the report of 9 October 2018, as this is regarded as a better measure to relate to patient deprivation.

BNF changes and use of “Legacy BNF”

Releases of this report prior to the 2017 publication have used existing BNF section classifications for reporting of drugs used in mental health. In 2018 the structure of BNF medicines classification changed and the section descriptions used are no longer applicable to the new structure. In order to maintain consistency and comparability with previous years reports from the October 2018 publication use the “legacy BNF” structure, consistent with what has been used in previous years. The “legacy BNF” is not publically available to view online, however the medicines attributed to the relevant BNF sections (BNF 4.1, 4.2, 4.3, 4.4 and 4.11) are available in a supplementary file in the List of Tables.

Patient Based Analysis & Defined Daily Doses (DDDs)

Patient based analysis has been included in this publication at Scotland level since the September 2012 report, which published 2011/12 data. DDD trend data at NHS Board level have been retained to allow comparisons between NHS Boards (and with other countries) and to show longer trends over time. The inclusion of patient information is intended to further inform health decision-making in NHSScotland.

Patient Based Analysis

Patient based analysis is now possible because comprehensive patient identifiable data is available in the prescribing dataset. All NHS Scotland patients have a unique Community Health Index (CHI) number; this makes it possible to identify which prescription items have been dispensed for individual patients. Prior to April 2009, the proportion of prescriptions with a valid CHI number recorded was generally not high enough to make patient based analysis
possible. For medicines used in mental health the CHI capture / completeness rates are now high enough to permit accurate patient analyses. The CHI capture rate for each topic contained within this report is as follows:

Table 6: CHI Capture rates for Scotland by drug type 2009/10 to 2018/19

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<thead>
<tr>
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<tr>
<td>Hypnotics &amp; Anxiolytics</td>
<td>90.8%</td>
<td>92.7%</td>
<td>93.2%</td>
<td>94.5%</td>
<td>96.0%</td>
<td>96.4%</td>
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<td>Psychoses &amp; related disorders</td>
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<td>94.3%</td>
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<td>96.5%</td>
<td>97.0%</td>
<td>97.2%</td>
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<td>Antidepressants</td>
<td>93.4%</td>
<td>95.4%</td>
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<td>97.0%</td>
<td>98.2%</td>
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<td>ADHD</td>
<td>87.6%</td>
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<td>91.4%</td>
<td>93.3%</td>
<td>93.3%</td>
<td>93.6%</td>
<td>92.7%</td>
<td>93.6%</td>
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<tr>
<td>Dementia</td>
<td>84.0%</td>
<td>87.3%</td>
<td>87.0%</td>
<td>88.3%</td>
<td>92.1%</td>
<td>93.6%</td>
<td>94.7%</td>
<td>95.4%</td>
<td>96.1%</td>
<td>96.8%</td>
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</table>

Table 6 shows the percentage of dispensed (2009/10 to 2014/15) and paid (2015/16 to 2018/19) items that have a valid CHI number attached and are therefore included in the patient based analysis. This rate should be considered when interpreting any trends in patient data (see comments on this in the Interpretation of Results section below). CHI completeness is highest for GP prescribing. The rate is lower for some types of drugs (such as dementia drugs) because these drugs are often prescribed through specialist hospital clinics rather than GPs, although there are ongoing improvements in capturing CHI across all areas.

The patient count for any given year shows the total number of patients who have been dispensed at least one prescription item during the course of that year.

Defined Daily Doses

Defined Daily Doses (DDDs) are a measure derived from data on international use of the substance in question. DDDs were developed by the World Health Organisation (WHO) and are defined as “the assumed average maintenance dose per day used on its main indication in adults”. The WHO states that “It should be emphasised that the defined daily dose is a unit of measurement and does not necessarily reflect the recommended or Prescribed Daily Dose”. DDDs do not provide an exact picture of drug use, but can be used to give an estimate of levels of drug consumption. By providing a fixed unit of measurement, they allow the trend of drug consumption over time or for other regions or countries to be compared. Occasionally the WHO recommended DDD for a drug will change. The data in this report are presented by current DDD for all years in order to allow meaningful trend analysis.

Note that in this report the lead measure of drug use is patient level DDDs. This is the number of DDDs dispensed to patients where the patient CHI was accurately captured. Data is also available on total DDDs, which is the patient DDD number plus the DDDs dispensed
where the patient CHI is unknown. This additional volume is a small proportion of total dispensing.

Advantages of Patient Analyses

In the past, the number of daily maintenance doses dispensed was used to produce an estimate of the proportion of the population making daily use of these drugs. For example, 10 DDDs per 1,000 population per day correspond to a daily use of the drug by 1% of the population. This is an estimate based on the assumed daily maintenance dose and so does not show the actual proportion of the population being prescribed a particular medicine. Due to the improvement of CHI capture, it is now possible to carry out accurate patient based analyses, thereby making available information on the actual number of patients who have been dispensed a particular drug during a specified period.

Interpretation of Results

When interpreting trends in patient counts over time, the underlying CHI completeness rate must also be considered. It is difficult to identify with certainty how much impact an increasing CHI completeness has on the number of patients identified. However, the evidence available suggests that the impact is small when considering the scale of change in CHI completeness presented in this report. CHI capture is based on the number of items with a valid CHI attached; in reality, a single patient will have some items with a valid CHI and others without. The count of patients looks for ‘at least one’ item dispensed in a given period and analysis shows that most patients will be counted, even if not all items dispensed to them had a valid CHI attached. Variations in CHI capture over time for data presented in this report are not thought to be significantly affecting trends in patient counts.

It should be noted that patient counts and DDDs are measuring different things. The patient based figure counts the number of people who have been prescribed the drug within the specified time period (in this case a year), whereas the DDD is an estimate of the average number of people taking it on any one day during the year. The patient based figure will usually be higher, since some people might only be on the drug/s for a short period or at a low dose.

For example, in the DDD analysis, one person on a maintenance dose for 12 months will count the same as six people taking this drug for 2 months each. The patient based analysis will count all six people.
## Appendix 2 – Publication Metadata

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<th>Description</th>
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<td>Description</td>
<td>Summary and detailed statistics on prescribing and dispensing in the community in Scotland including: Medicines used in mental health (based on Legacy BNF section 4.1, 4.2, 4.3, 4.4 and 4.11) presented for NHS Scotland and by NHS board. The number of patients, number of items, gross ingredient cost and Defined Daily Doses are shown.</td>
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<td>Format</td>
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<td>Data source(s)</td>
<td>Prescribing Information System (PIS). All data held in PIS is sourced from Practitioner Services Division (PSD) within NHS National Services Scotland who are responsible for the remuneration and reimbursement of dispensing contractors within Scotland.</td>
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<td>Data are acquired on a monthly basis from PSD following payment approximately 2 calendar months after the end of the month being claimed for payment by contactors</td>
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<td>Release date</td>
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<td>Continuity of data</td>
<td>Data are held in PIS for the most recent 12 years and is stored in archive files back to 1993/94. The definition of the main measures such as gross ingredient cost and number of items are unchanged over this period, with the exception of the change of the main measurement of Items from Dispensed Items to Paid Items from 2015/16 and of GIC excluding Broken Bulk to GIC including Broken Bulk from 2018/19. A number of changes have been made to this report of October 2019 compared to previous releases. The primary change is that main measure of the use of medicines is now reported as patient level Defined Daily Doses (DDDs) instead of dispensed items. One DDD is the assumed average maintenance dose per day for a drug when used for its main indication in adults, as defined by World Health Organisation. DDD measurements are based on medicine quantity and strength and are therefore a more accurate measurement of use of medicines than the previously used measure of dispensed items. This is because the quantity of a medicine that is counted as a single dispensed item can vary – e.g. a pack of 28 or 56 tablets of a</td>
</tr>
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</table>
A medicine of the same strength would both be counted as one item. Pack sizes prescribed may vary between NHS Boards, so DDDs are a more accurate measurement of use of a medicine and is therefore used in the main commentary here. Data on total DDDs (patient level DDDs plus the DDDs of items dispensed where patient was unknown) and items dispensed are still available in supplementary data available in the List of Tables.

There has been a change to the measure used in this report for cost of medicines, to provide a more accurate reflection of the costs to NHS Scotland. For previous years this publication reported the cost measure as Gross Ingredient Cost excluding Broken Bulk. Broken bulk payments relate to when a contractor has supplied part of a container of a medicine (e.g. 12 tablets from a pack of 24) that is rarely dispensed by that contractor. They are reimbursed the value of the whole pack, but if the contractor supplies broken bulk for the same medicine again within 6 months of the original claim, the cost of the first prescription’s balance is reclaimed by NHS Scotland. For this 2019 publication this measure has been changed to Gross Ingredient Cost including Broken Bulk. Recent investigation has shown that, as with the comparison between dispensed and paid items for item volume, GIC excluding Broken Bulk includes the cost of items where items were not dispensed by the pharmacist or items that were not collected by a patient. The cost of these medicines is not paid to the pharmacy as they can be returned to stock, however this cost is recorded in GIC excluding Broken Bulk figure. GIC including broken bulk reflect the reimbursement payments made to contractors for items dispensed, and so while this includes payments for broken bulk dispensing as described, it also excludes the cost of medicines which were not dispensed or not collected. Therefore it is regarded as the more accurate measure of cost to NHS Scotland, and is used for 2018/19 data. Note that previous years of data have not been revised, but the cumulative effect on 2018/19 data is small - a reduction of 0.2% of overall costs.

Additionally, drug products are first licensed as proprietary medicines but generic versions often appear once the original patent expires. This can affect the price and uptake of these drugs. The Scottish Government sets the reimbursement price of generic drug products via the Scottish Drug Tariff which is updated and issued quarterly. Population figures have been updated as explained in the ‘Changes to Data’ section, which affects the trend of DDDs per 1,000 population.

**Revisions statement**

Data are sourced from monthly pharmacy payments data on an ongoing basis therefore once published there is no routine requirement to revise historical data. Retrospective revisions can occur in the classification of drugs in the British National Formulary (BNF). Where this occurs and is deemed to be significant in line with ISD's Revisions policy, a revision will be made to published data. This
will be notified on the website.

<table>
<thead>
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<th>Revisions relevant to this publication</th>
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<tr>
<td>The populations used have been updated to the NRS re-based estimates based on the 2011 census. Changes have been applied to all data in the accompanying tables (showing 2009/10 – 2018/19 data).</td>
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<tr>
<td>SIMD based analysis has been updated from item numbers to patient numbers as of the October 2018 report. This is regarded as a better indicator of prescribing activity in relation to deprivation.</td>
</tr>
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<td>As of 2018/19 age group based patient analysis has been expanded to include analysis of patient numbers within age groups as a proportion of the age group population. This replaces patient numbers by age group analysis within the report but these data remain available in the supplementary Excel tables.</td>
</tr>
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<td>As described in above in Continuity Of Data, the measure of cost has been revised from GIC excluding Broken Bulk to GIC including Broken Bulk for the October 19 report.</td>
</tr>
<tr>
<td>Up to the 2016/17 release, this report had used existing BNF section classifications for reporting of drugs used in mental health. Since the report of October 2017 the structure of BNF medicines classification has changed and the section descriptions used are no longer applicable to the new structure. In order to maintain consistency and comparability with previous years this report uses the “legacy BNF” structure, consistent with what has been used in previous years. The “legacy BNF” is not publically available to view online, however the medicines attributed to the relevant BNF sections (BNF 4.1, 4.2, 4.3, 4.4 and 4.11) are available in a supplementary file in the List of Tables. Up to date information on the availability and therapeutic uses of medicines can be found on the <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/763693/BNF-2021.pdf">British National Formulary</a> website.</td>
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<table>
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<th>Concepts and definitions</th>
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<td>These statistics are the primary source of patient level data on</td>
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prescribing for mental health within Scotland. They are also used to compare prescribing patterns across Health Boards and over time

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<tbody>
<tr>
<td>The data are sourced from a payment system and routine monthly checks are carried out by PSD on a random sample of approximately 5% of prescription payments. These check all data captured for payment and the accuracy of the payment calculation and have a target accuracy of 98% which is routinely met. Data that is captured but is not mandatory for payment purposes can be of lower quality; principally this includes the prescriber code which links a prescription back to the individual prescriber (e.g. GP and their organisation including NHS Board). Routine monitoring of unallocated prescriptions is carried out and correct codes are applied before publication. This ensures that unallocated prescriptions account for fewer than 2% of all prescriptions. For remaining unallocated prescriptions, the prescribing NHS Board is assumed to be the same as the dispensing NHS Board.</td>
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<tr>
<th>Completeness</th>
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<tr>
<td>The Prescribing Information System holds information on 100% of NHS Scotland prescriptions dispensed within the community and claimed for payment by a pharmacy contractor (i.e. pharmacy, dispensing doctor or appliance supplier). It does not include data on prescriptions dispensed but not claimed (likely to be very small) or prescriptions prescribed but not submitted for dispensing by a patient. Some research has estimated these latter prescriptions to account for around 6% of all prescriptions issued to patients. It is not possible to determine from payment data how much of the medicine dispensed to patients is actually taken in accordance with dosage instructions.</td>
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<th>Comparability</th>
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<td>The main measures of drug ingredient cost and volumes of medicines dispensed in the community are comparable across the UK countries. However it should be noted that the Gross Ingredient Cost (GIC) within Scotland is equivalent to the Net Ingredient Cost (NIC) in England, i.e. the reimbursement cost of drugs before any pharmacy discounts are applied. Also each country determines its own dispensing fees based on separate contractual arrangements with dispensing contractors in each country. A common formulary called the British National Formulary (BNF) is used to classify drugs based on therapeutic use.</td>
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<th>Accessibility</th>
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<tr>
<td>It is the policy of ISD Scotland to make its web sites and products accessible according to published guidelines.</td>
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<th>Coherence and clarity</th>
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<tr>
<td>All prescribing tables are accessible via the ISD website. Prescribing statistics are presented within excel spreadsheets for NHS Scotland and where appropriate broken down by NHS Board.</td>
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<tr>
<td><strong>Value type and unit of measurement</strong></td>
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<tr>
<td><strong>Disclosure</strong></td>
</tr>
<tr>
<td><strong>Official Statistics designation</strong></td>
</tr>
<tr>
<td><strong>UK Statistics Authority Assessment</strong></td>
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<td><strong>Last published</strong></td>
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<td><strong>Next published</strong></td>
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<td><strong>Date of first publication</strong></td>
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<td><strong>Help email</strong></td>
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<td><strong>Date form completed</strong></td>
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Appendix 3 – Early access details

Pre-Release Access
Under terms of the "Pre-Release Access to Official Statistics (Scotland) Order 2008", ISD is obliged to publish information on those receiving Pre-Release Access ("Pre-Release Access" refers to statistics in their final form prior to publication). The standard maximum Pre-Release Access is five working days. Shown below are details of those receiving standard Pre-Release Access.

Standard Pre-Release Access:
Scottish Government Health Department
NHS Board Chief Executives
NHS Board Communication leads
Appendix 4 – ISD and Official Statistics

About ISD

Scotland has some of the best health service data in the world combining high quality, consistency, national coverage and the ability to link data to allow patient based analysis and follow up.

Information Services Division (ISD) is a business operating unit of NHS National Services Scotland and has been in existence for over 40 years. We are an essential support service to NHSScotland and the Scottish Government and others, responsive to the needs of NHSScotland as the delivery of health and social care evolves.

**Purpose:** To deliver effective national and specialist intelligence services to improve the health and wellbeing of people in Scotland.

**Mission:** Better Information, Better Decisions, Better Health

**Vision:** To be a valued partner in improving health and wellbeing in Scotland by providing a world class intelligence service.

Official Statistics

Information Services Division (ISD) is the principal and authoritative source of statistics on health and care services in Scotland. ISD is designated by legislation as a producer of ‘Official Statistics’. Our official statistics publications are produced to a high professional standard and comply with the Code of Practice for Official Statistics. The Code of Practice is produced and monitored by the UK Statistics Authority which is independent of Government. Under the Code of Practice, the format, content and timing of statistics publications are the responsibility of professional staff working within ISD.

ISD’s statistical publications are currently classified as one of the following:

- National Statistics (ie assessed by the UK Statistics Authority as complying with the Code of Practice)
- National Statistics (ie legacy, still to be assessed by the UK Statistics Authority)
- Official Statistics (ie still to be assessed by the UK Statistics Authority)
- other (not Official Statistics)

1. Further information on ISD’s statistics, including compliance with the Code of Practice for Official Statistics, and on the UK Statistics Authority, is available on the ISD website.