clinical indicators
2007
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The full report in electronic or paper form is available on request from the NHS QIS Equality and Diversity Officer.
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This report – the twelfth in a series presenting clinical indicators for NHSScotland – presents data on three topics: depression, arthritis, and upper gastrointestinal conditions. Putting a spotlight on these areas dovetails with current health policy in Scotland which puts an emphasis on the management of chronic conditions and on healthcare provided in the community.

For both arthritis and gastrointestinal conditions, data sources used for previous reports in this series are employed once again to produce a suite of clinical indicators. There are indicators on consultations with general practice and also on prescribing in the community. These are presented together with data about inpatient services for the relatively small percentage of people who require care in hospital (eg data on admissions).

In comparison with ‘physical health’, there continues to be a paucity of data about mental health. It was recently stated that depressive and anxiety disorders are the biggest causes of misery in the UK today, replacing unemployment as the country’s biggest social problem. To illustrate important issues about depression in this report, information from additional sources has been sought to augment the more tried and tested datasets - and there is fuller discussion of the data on depression.

Health care systems need a range of data to monitor, and facilitate improvement in, the quality of clinical care they provide – and there are two core challenges to be met if the power of data is to be truly realised. First, it is essential that data are technically robust. Second, and of equal importance, data need to be embedded in systems that support the appropriate and influential use of this information in practice.

As well as drawing attention to the importance of collecting and using data, a main objective of publishing this report is to provide those involved in the delivery of clinical care with information they can use to reflect on clinical practice and identify opportunities for improvement. However, the clinical indicators in this report cannot be used to make reliable external judgements about the quality of patient care provided throughout the country, and should not therefore be used to do so.

On behalf of NHS QIS and the Clinical Outcomes Group, I would like to thank the many people who contributed to the production of this report – in particular the clinicians who provided their expert opinions on an earlier draft of the report, and the analysts who worked on the data herein.

Dr Dorothy Moir
Chairman, Clinical Outcomes Group

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What is a clinical indicator?

A clinical indicator is a quantitative measure that provides some information about a specific aspect of the delivery or outcomes of clinical care, eg the proportion of people who survive following admission to hospital with a heart attack.

Clinical indicators, drawn from centrally maintained national datasets, rarely (if ever) provide a direct measure of quality. Instead, indicators serve as flags or pointers, and can identify potential opportunities for improvement by allowing comparisons to be made, eg between different service providers, across a period of time. That is, clinical indicators do not provide answers, but rather they draw attention to areas where further quality improvement activities might be beneficial. Additional information (eg from local clinically led data systems) is often then required to gain insight into areas highlighted by clinical indicators. Furthermore, a clinical indicator is only a tool – whether it contributes to improvement in the quality of patient care will depend not only on the technical aspects of the indicator, but also on how the indicator is used in practice.

Recent years have witnessed an upsurge in the production and use of clinical indicators, and there is now a bewildering array of approaches worldwide. Developing clinical indicators and reporting these, in many cases publicly, has become a widely accepted – yet complex and controversial – method of improving both quality and accountability.

Clinical indicators in Scotland

In Europe, Scotland led the way in the production and public release of clinical indicators. Clinical indicators for the NHS in Scotland were first published in 1993 by the Clinical Resource & Audit Group (now a part of NHS QIS). A series of clinical indicators reports has been published since, with the topics covered changing from year to year – this is the twelfth report in the series. Clinical indicators are also produced for various other projects in Scotland.

NHS QIS was set up by the Scottish Parliament in 2003 to act as the lead organisation in facilitating improvements in the experiences of patients, and the outcomes from their treatment, while in the care of NHSScotland. Using data is vital if wider efforts to improve the quality, safety, and effectiveness of clinical care are to be successful – and so following publication of the 2005 indicators report, NHS QIS produced its clinical indicators strategy. The strategy describes the approach that NHS QIS will take over the coming years to provide the lead regarding the way that clinical indicators are used throughout the country – with a focus on supporting more effective use of clinical indicators by NHSScotland, which will ultimately lead to improvements in the delivery and outcomes of patient care.
Setting the scene

NHS QIS’ clinical indicators strategy

NHS QIS commissioned a systematic review of the worldwide research literature on clinical indicators specifically to inform the development of its strategy. The review highlights the following principles, which form the foundation for the strategy:

- Organisations that provide patient care are often the most responsive to clinical indicators and should, together with their front line clinical staff, be the prime target audience for such information.

- Clinical indicators are most effective when used as flags or pointers, to identify areas worthy of further investigation. Indicators should be used locally in the context of learning and as part of wider clinical governance activities – and not for making external judgments about quality/performance.

- Clinical indicators need to be technically robust, relevant and interpretable.

- While the balance of attention is often directed to the development of technically robust indicators, of equal importance is ensuring they are embedded in systems that support the use of these data in practice.

Following from these principles, NHS QIS’ clinical indicators work programme has two broad streams:

First, NHS QIS will continue to publish clinical indicators, complementing the data produced by other groups. The objectives of this are to i) draw attention to the important role that data play in facilitating improvements to the delivery and outcomes of clinical care, and ii) provide NHSScotland with data on a variety of topics, and which can be used locally to stimulate reflection on clinical practice and identify opportunities for improvement. This report presents a suite of clinical indicators for each of three topics: depression, arthritis, and upper gastrointestinal conditions.

Second, NHS QIS will carry out a new range of support activities to i) facilitate improvements to the data that are available in Scotland, and ii) help local NHS organisations and their clinical staff who provide care to patients to use the information in a systematic and consistent fashion.

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How clinical indicators should – and should not – be used

Clinical indicators do:

- flag up areas where further investigation and quality improvement activities might be beneficial
- provide useful clues and evidence about the delivery/outcomes of clinical care
- draw attention to possible areas of good practice
- provide information, to be used by those delivering clinical services, to stimulate reflection on clinical practice

Clinical indicators do not:

- provide a basis for making reliable external judgments about the quality of patient care
- constitute a ‘league table’ of performance

Presentation of indicators

Various techniques can be used to present clinical indicators, and the way in which data are displayed influences the way they are interpreted and acted upon. The use of statistical process control charts has become increasingly popular, and this technique is employed to present some data in this report, and will be used more systematically in future clinical indicators reports.

Information available on internet

The figures from this report, together with supplementary information (eg tables corresponding with some of the graphs from the report, and information on statistical process control charts), are available to download at the website of the Clinical Indicators Support Team:

www.indicators.scot.nhs.uk

Frequently asked questions

Where do the data for indicators come from?

When a person comes into contact with the health service in Scotland, selected details about their health and healthcare are routinely recorded. Personal health information is kept in the individual's medical case record folder or on a computer. The information recorded enables appropriate care of the person, and helps NHSScotland improve healthcare for other people by allowing it to check that services are running efficiently and to plan services for the future.

How is personal information protected?

The confidentiality and security of all personal information are regarded with utmost importance by NHSScotland. A number of measures are taken to protect patient confidentiality, eg all staff working in the NHS abide by a strict code of practice which protects patient confidentiality. In addition, the Data Protection Act gives each individual important rights about how their personal information is used. Further details about personal information, including a guide for patients on these rights and how NHSScotland uses personal health information, can be found at the website: www.show.scot.nhs.uk/confidentiality

Does this report include 'league tables'?

No. The indicators are not league tables and should not be used as a basis for inappropriate and premature conclusions about which NHSScotland organisations provide the best healthcare. The reasons for this are outlined on pages vi-vii.

What changes can be expected as a result of publishing this report?

The data presented in this report will highlight areas that local NHSScotland services will want to explore further. In some cases, this may lead to changes in clinical practice or in the way services are organised and managed, resulting in a higher quality of care being provided for patients. It is also hoped that publication of this report will stimulate discussion and action about the collection, analysis and use of data.

What happens if the data suggest more resources are needed?

Sometimes improvements in the quality of care can be made without additional resources. Realistically, more resources are sometimes needed to improve existing services, and each NHSScotland organisation will review this locally taking into account all the evidence available and competing demands.

Why do some data appear out of date?

Sometimes it is helpful to provide data for a number of years so that the health service can monitor its performance over a longer period of time, ie to establish whether performance is improving, worsening or staying the same. At other times, the available data are not as current as would be liked.

What will the public make of this information?

This report contains detailed information about healthcare across Scotland and is aimed primarily at health service staff with expertise in the relevant area. However, this information may also be of interest to the increasingly informed public, and the key findings are presented in a summary at the beginning of each chapter and in the short guide that accompanies this report.
Background

- Depression is a common mental illness, characterised by low mood and loss of interests. Depressive episodes affect about 1 in 5 people at some time in their lives.

- While depression is common and costly (in both human and economic terms), it is also treatable. However, it is acknowledged that many people do not have timely access to the full range of interventions and supports for depression.

- Current evidence-based guidelines recommend that most people with depression should have access to psychological therapies. It is also recommended that antidepressants should be considered for treatment of moderate to severe depression.

- Other approaches to treatment range from lifestyle changes (eg diet and exercise) and social care, to electroconvulsive therapy (ECT).

- Through the Scottish Intercollegiate Guidelines Network, NHS Quality Improvement Scotland is currently supporting the development of a guideline on the non-pharmacological management of mild to moderate depression in primary care.

- Health care systems require a range of data to monitor, and facilitate improvement of, the quality of the clinical services they provide. Collecting and using data on the delivery and outcomes of clinical care are vital if wider efforts to improve the quality, safety and effectiveness of patient care are to be successful.

- This chapter presents a package of indicators on depression. The aims of publishing these data are to i) draw attention to the important role that data should play in providing safe and effective care for people with depression, and ii) encourage and support best use to be made of the nationally consistent data currently available.

- Specifically, there are data on: consultations with general practice; prescribing antidepressants; discharge from – and readmission to – a psychiatric hospital; ECT; and postnatal depression. These data are designed to be interpreted and used by those organisations/individuals that provide care for people with depression.
Key messages

- Depression is a common illness – it is estimated that about 6 women in 100 in Scotland in 2005-6 consulted a general practitioner for depression, double the rate for males. The rate of people consulting general practice for depression was highest for those aged 25-44 years. This rate rose steadily as the level of social deprivation increased.

- The rate at which antidepressants were dispensed in the community increased dramatically during the 1990s and continues to do so (although this rate of increase appears to be levelling off). It more than quadrupled between 1992-3 and 2005-6 – largely due to an increase in prescribing newer antidepressants (selective serotonin reuptake inhibitors). The steep growth in antidepressant prescribing was not matched by an increase in people consulting general practice for depression.

- There are no nationally consistent data about waiting times for, or the delivery and outcomes of, psychological therapies in Scotland. Such data are needed to inform service redesign, and monitor whether developments are resulting in improved clinical outcomes.

- While depression is seen commonly in primary care, only a small proportion of people with the illness receive care in a hospital setting. For recent years, the rate of people discharged from a psychiatric hospital in Scotland for depression was about 1 in 1,000 of the population.

- ECT was only given to a very small percentage of people who had a very serious depressive illness, and improved clinical outcomes were observed for the vast majority.

- The majority of general practices assessed women during the antenatal period for a history of depression, but there was also limited availability of psychological therapies for women with postnatal depression.
Depression is a common mental illness, and depressive episodes affect about 1 in 5 people at some time in their lives. Depression is not simply the gloom or feelings of sadness that most people experience from time to time – instead it can be a very serious illness, characterised by persistent sadness or low mood, a loss of interests and pleasure, and a lack of energy.

The symptoms of a depressive episode vary from person to person. The two core symptoms are low mood and loss of interests, and others may include: low self-confidence; feelings of guilt or worthlessness; disrupted sleep; poor concentration; diminished or increased appetite; loss of libido; withdrawal from social activities; and thoughts of suicide. Some people will have a few of these symptoms and will be able to carry on with their day-to-day lives without too much difficulty, whereas others will have more symptoms and the illness will be very distressing and disabling – and potentially life threatening. By counting symptoms, the severity of depression can be broadly categorised (eg mild, moderate, severe), although a simple symptom count cannot accurately reflect the true nature of a person’s illness.

Severity is not the only dimension on which depressive episodes vary, and the illness can occur in a range of contexts. For example, while low mood is the overriding experience for most people with depression, some will also have episodes of elevated mood and increased energy (mania), and this is called bipolar affective disorder. Depression is also associated with substance misuse.

It is not always clear what causes a depressive episode. The illness can be triggered by personal difficulties such as bereavement, serious physical illness, family problems, and unemployment. However, sometimes depression occurs for no apparent reason. The majority of people who experience depression will have an isolated episode of the illness, although other people will get depressed more than once and the illness can be long lasting. When a person first presents with depression, it is not possible to predict whether they will experience only a one-off episode, or if this will develop into a chronic illness.

It has been claimed that depressive and anxiety disorders have overtaken unemployment to become Britain’s biggest social problem – yet the scale of the problem is not widely acknowledged, due to the shame and stigma associated with mental illness.

Depressive disorders are costly, in both human and economic terms. More people receive Incapacity Benefit because of mental illness than receive unemployment benefits. Of greater importance, depression is a cause of misery to those people with the illness, and it also impacts on their family, friends and workplace. However, depression is also treatable. For example evidence-based guidelines recommend that, for many people, the symptoms of depression will improve following psychological therapy and/or treatment with an antidepressant. However, many people do not have timely access to the full range of interventions and supports for depression, even when there is good evidence of effectiveness.

Mental health is one of the most important health challenges in Scotland. The World Health Organization’s Mental Health Declaration for Europe emphasises the importance of i) improving and promoting the mental health and wellbeing of populations, ii) working to prevent mental health problems developing, and iii) ensuring that, when people do experience mental health problems, effective treatment and support are available to them.

8 www.euro.who.int/document/mnh/edoc06.pdf
Current NHS policy in Scotland also makes depression a priority area for action. First, mental health is one of the three national clinical priorities (the other two are cancer and cardiovascular disease). Second, policy puts a greater emphasis on the management of chronic conditions, together with self-care and preventative interventions. Depression clearly fits this profile (while recognising that the illness affects different people in different ways). For example, self-help approaches and psychological therapies can empower many people, helping them to take control of their lives and tackle the symptoms of depression. More recently, Delivering for mental health' sets out steps that will be taken to contribute to improvements to the care and treatment available in Scotland for people with mental health problems. Some of these commitments are referred to throughout this chapter.

The vast majority of people with depression will receive care and support in the community. For example, approaches to consider for people with mild depression include guided self-help and supervised exercise. When the illness is moderate or severe, then psychological therapy and/or treatment with an antidepressant is recommended. People involved in providing care may include the general practitioner, practice nurse, primary care mental health worker, and psychologist. For people whose illness is more severe, then care may be provided by more specialist teams (eg also including a community psychiatric nurse, social worker, psychiatrist), either in the community or in hospital. More complex psychological interventions may be delivered together with treatment with an antidepressant. In a very small proportion of cases electroconvulsive therapy may be given. Voluntary organisations also play a key role in providing information and support for people with depression and their families.

Services for people with depression are increasingly being delivered within a stepped care framework. Each step represents an increasing level of severity/complexity, and within each step are choices about the treatment options that best suit the person. When a person makes contact with the health service for depression, their care may be initiated at any of these steps, depending on the severity of their illness and previous history. The aim of the stepped care approach is to provide care to meet the needs of the person (eg reflecting the nature of their illness together with their social circumstances, and also preferences) while making the most effective use of resources.

Support for the utility of the stepped care approach for managing depression in Scotland was provided by the Doing Well by People with Depression programme (Doing Well). This was a three year project, managed by the Centre for Change and Innovation, designed to i) improve mental well being for people with depressive disorders, and ii) improve access to interventions which have an appropriate evidence base. The national evaluation report for Doing Well was published in 2006.

NHS QIS published its mental health strategy in 2005, and there is a resulting programme of work designed to facilitate improvements in mental health services. One of the themes of the strategy is nurturing a culture of ‘information mindedness’, as data/information are valuable tools in supporting decision making about the delivery of care and treatment. This report is one mechanism for encouraging such a culture, by making a suite of data on depression widely available. A further project NHS QIS is carrying out to support the development of services for people with depression is establishing an integrated care pathway for this illness.

This chapter does not aim to paint a complete picture of depression in Scotland – but instead presents a selection of data to draw attention to some important aspects of care and treatment. Further details of the data sources used and analyses carried out are provided in Appendix B, and on the website of the Clinical Indicators Support Team.

www.indicators.scot.nhs.uk

Consultations with general practice

Depressed mood is one of the most common reasons for consulting a general practitioner, and most depressive episodes are managed in primary care. Current NHS policy supports an approach whereby the majority of cases of depression are managed in primary care, yet there continues to be much debate about how this should be carried out. For example, it has been argued that a chronic disease management model, used for other conditions such as asthma, should also be used for depression\textsuperscript{12} – in recognition that depressive episodes can recur and become persistent. Accordingly, the emphasis would shift away from managing isolated acute episodes, and onto providing a package of acute, continuation, and maintenance phase interventions. However, in comparison with severe depression, the evidence about what is effective in managing mild to moderate depression is weak.\textsuperscript{13}

The General Medical Services Quality and Outcomes Framework now includes indicators on recognising and assessing depression in primary care. In addition, the Scottish Executive recently published an evidence-based practice guide on managing depression in primary care – and Delivering for mental health makes a commitment to ensure people presenting with depression have an assessment using a standardised tool and a matched therapy appropriate to the level of need.

The rate of people consulting the general practitioner for depression increased between 1998-9 and 2002-3, and then decreased (Figure 1.1). Between 1998-9 and 2005-6, the rate for females was more than double that for males. For example, the rate of females consulting the general practitioner increased from 74 to 84 per 1,000 population between 1998-9 and 2002-3, and then decreased to 65 per 1,000 population by 2005-6. The corresponding rates for males were 31, 37 and 30 per 1,000 population, respectively.

These data do not necessarily imply that depression is twice as prevalent in women than in men as, for example, males may be less likely to seek help for a depressive episode from their general practitioner. Similarly, the time trend data do not necessarily mean that the prevalence of depression is decreasing. There simply appears to have been a recent decrease in the rate of people consulting the general practitioner for depression.

**Figure 1.1 Rate of people consulting the general practitioner for depression – trends over recent years**

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\includegraphics[width=\textwidth]{figure1.png}
\caption{Rate of people consulting the general practitioner for depression – trends over recent years}
\end{figure}

\textsuperscript{12} Scott J. Depression should be managed like a chronic disease. British Medical Journal 2006;332:985-986.


Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
For 2005-6, the rate of people consulting the general practice team for depression was highest for those aged 25-34 and 35-44 years. This rate then decreased as people became older (Figure 1.2). For example, the rate of females consulting for depression increased from 66 per 1,000 population for 15-24 year olds to 109/108 per 1,000 population for those aged 25-34 and 35-44 years, respectively – before decreasing to 38 per 1,000 population for those aged 75 years and over.

Figure 1.2 Rate of people consulting the general practice team for depression – for 2005-6, presented by age and sex

For 2005-6, the rate of people consulting the general practice team for depression rose steadily as the level of social deprivation increased (Figure 1.3). The rate for areas of greatest social deprivation (64 per 1,000 population for quintile 5) was almost double that for areas of least social deprivation (34 per 1,000 population for quintile 1).

Figure 1.3 Rate of people consulting the general practice team for depression – for 2005-6, presented by social deprivation

Source: PTI, ISD Scotland (based on full PTI data including GP, practice nurse, district nurse and health visitor) and Community Health Index, PSD.

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Psychological therapies

Psychological therapies (or talking therapies) are approaches to treatment whereby thoughts and feelings are discussed with a trained therapist, and a systematic framework is used to understand and respond to these. Psychological therapies have been shown to be effective in the short term, and also have longer lasting effects (ie preventing relapse). This is because they empower people, by enabling them to challenge their negative thinking and to take control of their lives. There are various types of psychological therapy, including cognitive behavioural therapy, family therapy, psychodynamic psychotherapy, and guided self-help. In addition, psychological therapies are delivered by a range of trained practitioners.

Guidelines for England and Wales from the National Institute for Clinical Excellence (NICE) recommend that modern evidence-based psychological therapies should be available for most people with depression\(^{14}\). Yet, while evidence-based psychological therapies have been shown to be clinically and cost effective, they are not routinely available to people with depression. A recent report explains that the NICE guidelines cannot be implemented in England and Wales because there are not enough therapists to provide psychological interventions\(^{16}\). Even in areas where there are therapists, waiting times are unacceptably long (typically over nine months).

The scenario north of the border mirrors the UK picture – in that the demand for psychological therapy continues to outstrip supply, and there are notable inequities of access to services\(^{15}\). The limited access to talking therapies in Scotland is recognised in Delivering for mental health, where a commitment is made to ‘increase the availability of psychological therapies for all age groups in a range of settings and through a range of providers’ (commitment 4). NHS Education for Scotland is playing a key role in taking forward work around this commitment\(^{16}\).

Good quality data are clearly one of the tools necessary to shape the ways in which psychological therapies are delivered in Scotland – and also assess whether these developments are resulting in improved clinical outcomes. Unfortunately, the limited availability of psychological therapies is coupled with a paucity of data about those interventions that are delivered. Local services will collect some data on this, but there are currently no nationally consistent data which give a clear picture of such issues as: the number/range of professionals delivering psychological therapies; the availability of different therapies across Scotland; access to good quality clinical supervision; and clinical outcomes, including return to work.

When developing clinical indicators, it is important to acknowledge that there are relative advantages and disadvantages associated with process and outcome indicators – and a carefully chosen combination is recommended. Currently, there is no universally used outcome measure, although one measure is the Clinical Outcomes Routine Evaluation (CORE) which is validated, simple to administer, and in use in many psychology departments. Other contenders for outcome measures include return to work, while process indicators could be based around the stepped care models being implemented throughout Scotland, eg looking at access to psychological therapies at different tiers.

Whatever measures are chosen, it is vital that there is general consensus amongst those expected to use the data (e.g., those delivering psychological interventions) that the information collected will be helpful in gaining insights into the delivery and outcomes of care.

It has been shown that it is possible to collect data on the delivery and outcomes of psychological therapy (e.g., by the Doing Well programme). Consensus is now required on what Scotland-wide data are needed to inform developments to the way that psychological therapies are delivered, and to monitor the impact of these changes. Efforts should then focus on establishing systems for collecting and analysing these data, and for supporting the routine and influential use of this information.
1 Depression

Prescribing antidepressants

Antidepressants are medicines used to relieve the symptoms of depression. They work by increasing the activity levels of certain chemicals in the brain (e.g., serotonin), which helps lift mood. Current guidelines recommend that antidepressants should be considered for treatment of moderate to severe depression. They should often be prescribed in combination with other interventions, e.g., psychological therapies.

There are different types of antidepressant, and new medicines continue to be produced. Currently, the two main classes of antidepressant are tricyclics and selective serotonin reuptake inhibitors (SSRIs). Tricyclics were introduced in the 1950s and are still used to treat depression. Some tricyclics are also sedatives, and so may be prescribed if a person also feels anxious. Tricyclics can cause unpleasant side effects, such as dry mouth, blurred vision, constipation, and drowsiness. Tricyclics include amitriptyline and imipramine. SSRIs are a newer type of antidepressant, and many people prefer these to other antidepressants as they are less likely to cause side effects. Examples of SSRIs include citalopram, fluoxetine, and paroxetine. Other types of antidepressant include serotonin and noradrenaline reuptake inhibitors, and monoamine oxidase inhibitors (MAOIs – which are used less frequently because serious side effects can occur if certain foods are eaten when the medicines are being taken).

The NICE guidelines provide a number of recommendations about the prescribing of antidepressants for people with depression. For example, antidepressants should not be used for the initial treatment of mild depression, because the risk-benefit ratio is poor. Antidepressants can, however, be effective in treating the symptoms of moderate to severe depression. In addition, when an antidepressant is prescribed in routine care then it should be an SSRI, as these are less likely to be discontinued due to side effects.

It is known that there is a year-on-year increase in the level of prescribing antidepressants, and in Delivering for mental health the Scottish Executive set a target for the annual rate of increase in prescribing to be reduced to zero by 2009-10.

The following indicators on prescribing present data about the rate at which antidepressants are dispensed in the community across Scotland.
The rate of prescribing antidepressants in Scotland increased dramatically during the 1990s and continues to do so (although this rate of increase appears to be levelling off). It more than quadrupled between 1992-3 and 2005-6 – increasing from 19 to 85 defined daily doses (DDDs) per 1,000 population (Figure 1.4).

Most of the growth in prescribing rates was due to an increase in the prescribing of SSRIs, which rose from 5 to 54 DDDs per 1,000 population between 1992-3 and 2005-6. By contrast, the prescribing of tricyclics remained fairly constant during this time period, at 14-17 DDDs per 1,000 population. (The rate of prescribing MAOIs remained below 0.5 DDDs per 1,000 population, and so is not presented).

**Figure 1.4 Rate of prescribing antidepressants in Scotland**

Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
The year-on-year increase in the prescribing of antidepressants was observed throughout Scotland.

There was also some regional variation in absolute prescribing levels, and this variation increased as the prescribing rate rose. (Table 1.1 and Figure 1.5).

Figure 1.5 Rate of prescribing antidepressants by NHS Board

Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
For example, in 2005-6 the prescribing rate ranged from below 70 DDDs per 1,000 population for four NHS Boards (Grampian and the three Island NHS Boards) to more than 90 DDDs per 1,000 population for four NHS Boards (Argyll & Clyde, Ayrshire & Arran, Greater Glasgow, Lanarkshire). However, it should be noted that at present there is not sufficient information available to standardise the prescribing data to take account of factors such as age, sex and social deprivation. Some regional variation in absolute prescribing levels may therefore be expected.

Table 1.1 Rate of prescribing antidepressants by NHS Board

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<th>Prescribing NHS Board</th>
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Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)
Increasing prescribing levels for SSRIs were observed for all NHS Boards. The variation between NHS Boards in the rate of prescribing SSRIs also increased (Figure 1.6).

**Figure 1.6 Rate of prescribing selective serotonin reuptake inhibitors by NHS Board**

Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
At national level, the rate of prescribing tricyclics remained fairly constant – and this trend was also seen across NHS Boards (Figure 1.7).

Figure 1.7 Rate of prescribing tricyclics by NHS Board

Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
In 2005-6, the five most commonly prescribed antidepressants were fluoxetine and citalopram, followed by amitriptyline, venlafaxine and paroxetine (Figure 1.8).

Figure 1.8  Most commonly prescribed antidepressants in 2005-6

Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
**Inpatient services**

Between 1998 and 2004, the proportion of discharges from a psychiatric hospital with a diagnosis of depression remained just below 20% (Figure 1.9). Throughout this period, the population based rate of discharge from a psychiatric hospital for depression was just above 10 per 10,000 population.

**Figure 1.9 Percentage of discharges from a psychiatric hospital for depression, by NHS Board of residence**

Discharges are from specialties general psychiatry, child and adolescent psychiatry, forensic psychiatry and psychiatry of old age

Source: ISD Scotland (SMR04)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Between 1999-2000 and 2004-5, the rate of readmission to a psychiatric hospital for depression within 365 days of discharge for treatment for depression was constant at 20% (Figure 1.10). Delivering for mental health includes a target to reduce the number of readmissions (within one year) for those who have had a hospital admission of over 7 days by 10% by the end of December 2009.

Figure 1.10 Rate of readmission to a psychiatric hospital for depression within 365 days of discharge for depression, by NHS Board of residence

P 2004-05 figures should be treated with caution
Discharges are from specialties general psychiatry, child and adolescent psychiatry, forensic psychiatry and psychiatry of old age
Source: ISD Scotland (SMR04)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
To provide some context for the data on discharge from – and readmission to – a psychiatric hospital, the levels of staffed psychiatric beds are presented below (Table 1.2).

The rate of staffed psychiatric beds decreased year-on-year, dropping by a third between 1997-8 and 2005-6 from 18 to 12 beds per 10,000 population.

<table>
<thead>
<tr>
<th>Table 1.2</th>
<th>Rate of staffed psychiatric beds per 10,000 population, by NHS Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scotland</td>
<td></td>
</tr>
<tr>
<td>Argyll &amp; Clyde (GG)</td>
<td>26.0</td>
</tr>
<tr>
<td>Argyll &amp; Clyde (H)</td>
<td>22.6</td>
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<tr>
<td>Ayrshire &amp; Arran</td>
<td>12.9</td>
</tr>
<tr>
<td>Borders</td>
<td>17.8</td>
</tr>
<tr>
<td>Dumfries &amp; Galloway</td>
<td>22.3</td>
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<tr>
<td>Fife</td>
<td>16.8</td>
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<tr>
<td>Forth Valley</td>
<td>17.9</td>
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<tr>
<td>Grampian</td>
<td>15.1</td>
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<tr>
<td>Greater Glasgow</td>
<td>18.5</td>
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<tr>
<td>Highland</td>
<td>12.7</td>
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<tr>
<td>Lanarkshire</td>
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<tr>
<td>Lothian</td>
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<td>Orkney</td>
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<tr>
<td>Shetland</td>
<td>12.7</td>
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<tr>
<td>Tayside</td>
<td>23.6</td>
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<tr>
<td>Western Isles</td>
<td>16.1</td>
</tr>
</tbody>
</table>

Psychiatric specialties include: general psychiatry, child and adolescent psychiatry, forensic psychiatry and psychiatry of old age.

Source: ISD Scotland (ISD(S)1) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Electroconvulsive therapy

Electroconvulsive therapy (ECT) is a physical intervention that is sometimes used to treat severe depression. During ECT, a small electric current is briefly passed across the brain, producing an artificial seizure (or 'fit'). This affects the chemical messages across the entire brain, which in turn tackles the symptoms of depression.

When a person undergoes ECT they are first given a general anaesthetic, so they are unaware of the treatment when it is being administered. They are also given a muscle relaxant to prevent body spasms. When the person wakes up after ECT, they may have no side effects at all, but they may have a headache or feel confused for a short time. ECT is a safe, effective, painless and potentially life saving treatment. The risk of serious side effects is low and, while most people experience some temporary memory problems, there is no evidence that brain structures or intelligence are affected in the long term.

The National Institute for Clinical Excellence published evidence-based guidance on the use of ECT, recommending that it could be used for treatment of severe depression. It should only be used to gain rapid and short term improvement of severe symptoms after all other treatment options have failed, or when the situation is considered to be life-threatening.

Although ECT is safe and effective, the public opinion of this treatment can be somewhat different – perhaps because of the way ECT is portrayed in the media (where the purpose is to entertain or be controversial). The results of a Scotland-wide audit of ECT sites have shown that many of the concerns about the treatment are without foundation.

The Scottish ECT Accreditation Network (SEAN) was set up to collect/analyse data about various aspects of ECT (eg clinical practice, clinical outcomes, facilities, staffing), which could then be used to support improvements in the delivery and outcomes of this intervention. Two audit loops, covering all ECT centres in Scotland, were carried out in the late 1990s. Overall the audit found that the standard of ECT treatment in Scotland was high. The rate at which ECT was given was comparable with the lowest figures from previous audits in the UK – and clear clinical improvement was observed in most people who were given ECT to treat a depressive illness. SEAN continues to collect data from all ECT centres, and these are used to produce the following indicators.

Figure 1.11 Number of people who received ECT during April 2005-June 2006

The Scottish ECT Accreditation Network (SEAN) was set up to collect/analyse data about various aspects of ECT (eg clinical practice, clinical outcomes, facilities, staffing), which could then be used to support improvements in the delivery and outcomes of this intervention. Two audit loops, covering all ECT centres in Scotland, were carried out in the late 1990s. Overall the audit found that the standard of ECT treatment in Scotland was high. The rate at which ECT was given was comparable with the lowest figures from previous audits in the UK – and clear clinical improvement was observed in most people who were given ECT to treat a depressive illness. SEAN continues to collect data from all ECT centres, and these are used to produce the following indicators.

Figure 1.11 Number of people who received ECT during April 2005-June 2006

Source: Scottish ECT Accreditation Network.


Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
During a 15 month period in 2005-6, data are available for 428 different people who received ECT. More women than men received ECT (306 and 122 people, respectively), and the number peaked in the 40-49 year age group before steadily decreasing (Figure 1.11).

Guidelines state that valid consent should be obtained before ECT is given, unless the person is incapable of giving this consent in which case provision under the Mental Health (Care and Treatment) (Scotland) Act 2003 or the Adults with Incapacity Act 2000 should be used. ECT cannot be given to those with capacity who refuse treatment. Most people (82%) gave informed consent to receiving ECT, and 16% were incapable of granting consent (Figure 1.12).

To monitor the clinical effectiveness of ECT, the Montgomery Asberg Depression Rating Scale (MADRS) was administered both before and after treatment.

Using this scale, improved clinical outcomes were observed in the vast majority (93%) of people given ECT (Figure 1.13). ECT was not effective for everyone, but the small percentage of people (4%) whose symptoms became worse following treatment was less than would be expected without any intervention.

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Postnatal depression

Postnatal depression is a depressive illness experienced by a woman within a year of giving birth, and it affects between 10% and 15% of mothers. It is important to distinguish postnatal depression from the ‘baby blues’, which is itself a period of unhappiness and tearfulness that many women experience after giving birth (especially of their first baby). Postnatal depression occurs at a critical time for mother, baby and family. If left untreated, it can have an adverse impact not only on the mother, but also on the child’s development and the relationship between the woman and her partner.

The 2004 clinical indicators report presented data on consultations with the general practice team for both women who had, and who had not, given birth in the previous twelve months. Women who had recently given birth were more likely to be diagnosed with depression or anxiety compared with women who had not recently had a baby. Furthermore, the difference in rates of depression/anxiety between these two groups of women was greater for younger women.

In 2002, the Scottish Intercollegiate Guidelines Network (SIGN) published an evidence-based guideline on postnatal depression and puerperal psychosis\(^\text{19}\). This makes a number of recommendations about screening for and diagnosing postnatal depression, and how to manage the illness.

NHS Quality Improvement Scotland subsequently funded a national audit in relation to the SIGN guideline. A questionnaire survey of all NHS Boards was carried out to determine what policies for postnatal depression were in place. In addition, a representative sample of general practices was surveyed to gain insights into how postnatal depression is identified and managed in primary care. The audit findings were published in 2006\(^\text{20}\), and overall it was reported that the minimum standards as based on the SIGN recommendations were largely met at both policy and practice level. Some of the data from the survey of general practices are presented here to illustrate key issues about how postnatal depression is detected and managed in clinical practice.

The SIGN guideline recommends that all women are assessed during the antenatal period for a history of depression, and the majority of general practices reported that this happens (Figure 1.14).

Following the SIGN guideline, about 90% of general practices reported both that the Edinburgh Postnatal Depression Scale (EPDS) is used in the postnatal period as part of a screening programme – and that a diagnosis of postnatal depression is made on the basis of a clinical evaluation using the EPDS (Figures 1.15 and 1.16).

However, the audit raised concerns about the use of the EPDS in the antenatal period. About 50% of general practices reported that they used the EPDS in the antenatal period, even although there is no evidence to support the use of the scale in this way (Figure 1.17).

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Figure 1.14 General practices assessing for a history of depression

Figure 1.15 General practices using the EPDS in the postnatal period

Figure 1.16 General practices carrying out a clinical evaluation using EPDS

Figure 1.17 General practices using the EPDS in the antenatal period


Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
1 Depression

The SIGN guideline provides principles and recommendations about prescribing for women with postnatal depression. It advises that breastfeeding status should be considered when prescribing antidepressants, and most practices reported that this advice is followed (Figure 1.18).

Figure 1.18 General practices in which breastfeeding status influences the prescribing of antidepressants

As discussed previously in this chapter, psychological therapies will help many people with depression, and the SIGN guideline recommends that such interventions should also be considered for women with postnatal depression. However, only about 40% of practices reported that talking therapies (eg cognitive behavioural therapy) were routinely offered to mothers diagnosed with postnatal depression (Figure 1.19).

Figure 1.19 General practices offering psychological interventions


Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
This chapter presents a suite of data on several important issues concerning the care and treatment provided for people with depression. These data do not paint a complete picture – but they do provide some valuable insights about depression in Scotland.

The data clearly illustrate that depression is a common illness – it is estimated that about 6 women in 100 in Scotland currently consult with the general practitioner for depression, double the rate for males. Furthermore, for the vast majority of people care and treatment is provided in the community, and only a very small proportion of people with depression receive care on an inpatient basis: the rate of people discharged from a psychiatric hospital with a diagnosis of depression was about 1 in 1,000. The number of people who are given ECT to treat their depression is smaller still.

One of the main objectives of publishing data on depression is to highlight the importance of using such information to contribute to wider efforts to improve the care provided for people with this illness. This can be illustrated using the data on prescribing antidepressants as an example, as these are perhaps the most robust data presented in this chapter. Only by collecting this information is it possible to monitor prescribing levels, and by doing so it is clear that the rate at which antidepressants are dispensed in the community more than quadrupled between 1992-3 and 2005-6. The Scottish Executive set a target of reducing the annual rate of increase in antidepressant prescribing to zero by 2009-10, and indeed the rate of increase in prescribing levels does appear to be reducing.

Furthermore, viewing these indicators in the context of the data on consultations with general practice sheds some light on the possible reasons for this year-on-year increase. Are these increased levels of antidepressant prescribing caused by i) more people experiencing depression, ii) more people presenting to their general practitioner with the illness, or iii) general practitioners diagnosing more cases of depression? However, data presented in this report suggest that these factors do not account for the increase, as the dramatic rise in prescribing levels is not matched by a corresponding increase in the number of people who consult their general practitioner for depression.

Other possible reasons for the increase in antidepressant prescribing include i) people with depression being more willing to ask for or accept antidepressants, eg due to the reduced side effects associated with newer medicines, ii) people being prescribed antidepressants for longer than previously (eg the NICE guidelines recommend that antidepressants are prescribed for at least six months, and for two years if a person has experienced two episodes of depression), and iii) antidepressants being used to treat a wider range of conditions (eg panic disorder, sleep disorder), including non-psychological conditions. Further investigation is required to understand the contribution of these (and other) factors to prescribing patterns.

While the precise reasons for the growth in antidepressant prescribing remain unclear, the data presented here provide further important information about prescribing practices. For example, it is recommended that when an antidepressant is prescribed in routine care then it should be an SSRI. These drugs are as effective as older (tricyclic) antidepressants, and are less likely to be discontinued because of side effects. Indeed, the recent growth in prescribing levels is largely due to an increase in the prescribing of SSRIs, whereas the prescribing level for tricyclics has remained fairly constant. Furthermore, when prescribing an SSRI, consideration should be given to using a product in a generic form (eg fluoxetine or citalopram). In 2005-6, the most commonly prescribed antidepressants were fluoxetine and citalopram.

The clinical indicators on prescribing illustrate how data can draw attention to important issues about the delivery/outcomes of clinical care, and guide further quality improvement activities. However, while there are good nationally consistent data on some aspects of care and treatment (e.g., antidepressants dispensed in the community, electroconvulsive therapy) there is a striking lack of data about other aspects of care. For example, psychological therapy is not routinely available to people in Scotland with depression (even though this is recommended in current guidelines), and this is coupled by a lack of nationally consistent data about those psychological therapies that are provided. It is vital that nationally consistent data are collected on the range of approaches to care and treatment for depression, and this information is used to support developments to services that are provided for people across Scotland.
Background

- Arthritis is the term for a group of diseases that cause pain, swelling, stiffness, and loss of motion in the joints. The effects of arthritis vary from person to person, although they can be disabling and impact severely on quality of life, eg affecting a person’s family and social life and also their ability to work. There are many different types of arthritis, the most common of which is osteoarthritis, followed by rheumatoid arthritis.

- Osteoarthritis is like a wear-and-tear process. It was traditionally regarded as a disease of the cartilage, although it is now known that osteoarthritis also affects the other parts of the joint. Rheumatoid arthritis is caused by inflammation in the membrane (the synovium) surrounding the joint.

- There is no cure for either osteoarthritis or rheumatoid arthritis. However, once diagnosed, there are effective treatments that can be provided to control pain, improve the function of the joint, and reduce the worsening of the disease. There are a number of non-pharmacological approaches to treatment, and medicines can also be used to treat arthritis. Surgery can be carried out in some severe cases.

- The Scottish Intercollegiate Guidelines Network (SIGN) has published a guideline on the management of early rheumatoid arthritis. NHS Quality Improvement Scotland (NHS QIS) is currently funding a clinical audit against this guideline.

- Health care systems require a range of data to monitor, and facilitate improvement in, the quality of the clinical services they provide. Collecting and using data on the delivery and outcomes of clinical care are vital if wider efforts to improve the quality, safety and effectiveness of patient care are to be successful.

- A recent survey by the National Rheumatoid Arthritis Society demonstrated considerable variation across Scotland in the services provided for people with inflammatory arthritis. This included the lack of a Scotland-wide approach to collecting and using data about the care provided for people with inflammatory arthritis.

- This chapter presents a suite of clinical indicators on osteoarthritis and rheumatoid arthritis. The aims of publishing these indicators are to i) draw attention to the important role that data play in providing safe and effective care for people with arthritis, and ii) encourage and support best use to be made of the nationally consistent data currently available.

- Specifically, there are clinical indicators on: consultations with general practice; joint replacement surgery; admissions to hospital; and prescribing in the community. These clinical indicators are designed to be interpreted and used by those organisations/individuals that provide care for people with arthritis.
Key messages

• Between 1998-9 and 2005-6, the rate of people consulting a general practitioner for osteoarthritis decreased by about a third. Throughout this period, this rate was notably higher for females than males.

• The rate of prescribing standard non-steroidal anti-inflammatory drugs decreased between 1998-9 and 2003-4, before increasing. Conversely, the rate of prescribing Cox II selective inhibitors increased rapidly from the late 1990s, peaking in 2003-4 before falling sharply by 2005-6.

• The rate of hip arthroplasty (joint replacement surgery) was fairly constant between 1996-7 and 2001-2, and then increased. This rise was due to increased rates of hip arthroplasty for those aged 65 years and over. The rate of knee arthroplasty increased between 1996-7 and 2005-6. About 85-90% of hip and knee arthroplasties were for osteoarthritis.

• The rate of people consulting a general practitioner for rheumatoid arthritis decreased between 1998-9 and 2005-6. Throughout this period, the rate for females was more than double that for males.

• Between 1996-7 and 2005-6, the rate of prescribing disease modifying anti-rheumatic drugs increased year-on-year, and nearly doubled during this period. The rate at which these medicines were dispensed in the community rose from 529 to 1,012 defined daily doses per 1,000 population.

• For females, the rate of admission to hospital (daycases and inpatients) for rheumatoid arthritis decreased between 1997-8 and 2002-3, and then steadily increased. The admission rate for males – which was notably lower than that for females – was more constant during this time period. The admission rate was notably higher for women over 45 years of age.

• The rate of admission to hospital for rheumatoid arthritis was influenced by social deprivation. The admission rate for areas of greatest social deprivation was about double that for the most affluent areas.
Introduction

Arthritis is the term used for a group of diseases that cause pain, stiffness, swelling, and loss of motion in the joints. More than seven million people in the UK have a long-term health problem due to arthritis or a related condition — and it is expected that the prevalence of arthritis will increase with rising levels of obesity and the ageing of the population. The effects of arthritis vary from person to person – some people have relatively mild difficulties, whereas for others the disease can be severe and disabling resulting in persistent pain and stiffness, loss of mobility and even premature death. The disease can impact severely on quality of life, affecting a person’s family and social life and also their ability to work – arthritis is the second most common cause of time off work.

There are many different types of arthritis, the most common of which is osteoarthritis, followed by rheumatoid arthritis. Broadly speaking, osteoarthritis is like a wear-and-tear process whereas rheumatoid arthritis is caused by inflammation. These are two very different diseases, which require different approaches to care and treatment. The Scottish Intercollegiate Guidelines Network (SIGN) has published a guideline on the management of early rheumatoid arthritis, and guidelines on the treatment of both osteoarthritis and rheumatoid arthritis are due to be issued by the National Institute for Health and Clinical Excellence towards the end of 2007 and 2008, respectively.

Osteoarthritis

Osteoarthritis was traditionally regarded as a disease of the cartilage – the tissue covering the ends of the bones in a joint, and whose smooth, slippery surface allows the bones to glide over each other. The cartilage wears away, causing the bones to rub together, resulting in pain, swelling, and a loss of movement in the joint. However it is now known that osteoarthritis affects not only the cartilage, but also the rest of the joint – including the ligaments that keep the bones in place, and the membrane (the synovium) and capsule surrounding the joint. A clinical review of osteoarthritis was published in the British Medical Journal.

Almost any joint can be affected by osteoarthritis. It is most commonly found in the knees, hips, and hands, but can also affect joints such as the shoulder and elbow. Osteoarthritis develops slowly, often over a number of months or even years. It usually occurs in older people, and is uncommon in those under 40 years of age. Osteoarthritis is more common in women, and being overweight also increases the risk of developing the disease (especially in the knee). Younger people sometimes get osteoarthritis, mostly resulting from joint injuries.

The main symptoms of osteoarthritis are stiffness, pain and swelling in the affected joint, and reduced movement. After rest, the stiffness may dissipate as the joint starts moving again. However the pain can be worse when the joint is moving, and also at the end of the day. The joint may also ‘creak’ or ‘crack’ when it moves.

The diagnosis of osteoarthritis is usually based on these signs and symptoms, and then confirmed by radiography. There is no cure for osteoarthritis but, once diagnosed, there are effective treatments that can be provided to control pain, improve the function of the joint, and reduce the worsening of the disease.

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22 Arthritis Research Campaign, www.arc.org.uk
There are a number of non-pharmacological approaches to treatment that should be considered first. These include: weight loss (for overweight patients with osteoarthritis of the knee or hip); low impact aerobic exercise and other physical therapy; and knee braces and orthotics. Drugs can also be used to treat osteoarthritis – including simple painkillers (analgesics) such as Paracetamol, or non-steroidal anti-inflammatory drugs (NSAIDs) to relieve pain and stiffness. Surgery (eg joint replacement) can be considered for people whose symptoms do not improve after other treatment approaches and who experience unbearable pain, a significant loss of function (eg walking) or an impaired ability to work or sleep.

Osteoarthritis affects different people in very different ways, eg for some people the main problem is pain, and for others it is the lack of mobility. Treatment should therefore be planned on an individual basis, and a combination of methods is often required.

Rheumatoid arthritis

Rheumatoid arthritis is caused by inflammation in the membrane (the synovium) surrounding the joint, although it is not known what triggers this inflammation. The synovium produces synovial fluid which lubricates the joint, keeping the cartilage slippery and helping the joint to move smoothly. In rheumatoid arthritis, the inflammation leads to an excess of synovial fluid being produced. This causes the joint to swell and the capsule to become stretched, which is painful. The chemicals produced by the inflammation also irritate nerve endings, resulting in more discomfort. The inflammation also causes stiffness in, and damage to, the joint.

Rheumatoid arthritis occurs in people of all ages, including children and young adults, although the disease typically starts in middle age (40-50 years) and is most common among older people. It is also more common in women.

The early signs of rheumatoid arthritis are typically pain, swelling and stiffness in the joints. These are often worse on waking up in the morning or after inactivity. The most commonly affected joints are in the hands and feet, and if one hand or foot has the disease then it is likely that the other does too. People with rheumatoid arthritis may also experience ‘flu-like’ symptoms such as fatigue. There is no single test for rheumatoid arthritis, and a diagnosis is usually made on the basis of the above signs and symptoms, radiography, and laboratory tests.

The way in which rheumatoid arthritis progresses varies from person to person. For some the disease remains relatively mild and causes few problems, whereas for others it is a severe disease that becomes progressively worse and causes serious joint damage. For many people the symptoms come and go – there are times when the symptoms get worse (relapses) and times when they are better (remissions).

While there is currently no cure for rheumatoid arthritis, it is important that the disease is diagnosed early so it can be treated as quickly as possible and managed effectively – and in 2000 the Scottish Intercollegiate Guidelines Network published a guideline on the management of early rheumatoid arthritis. The aims of treatment are to control joint inflammation and pain, reduce joint damage and loss of function, and maintain or improve quality of life.

People with rheumatoid arthritis can make lifestyle changes that will help them take care of their joints. For example strategies can be used to reduce the strain on joints when carrying out everyday activities, and exercises of low to moderate aerobic intensity are also beneficial. At the same time, it is recommended that rheumatoid arthritis is treated early with disease modifying anti-rheumatic drugs (DMARDs), which delay the progression of the disease and thus help symptoms improve over time. NSAIDs can also be prescribed to relieve symptoms more quickly, although they should be reduced/withdrawn when a good response to DMARDs is achieved.
Tumour necrosis factor alpha (TNF-α) is a substance in the body whose over expression is implicated in the inflammation in rheumatoid arthritis, and some people with the disease may benefit from treatment with newer drugs called anti-TNF therapy (or biologic therapy). In 2001, the British Society for Rheumatology set up a Biologics Register to monitor the long-term safety of anti-TNF therapy in people with rheumatic diseases.

The results of a snapshot survey carried out in 2006 by the National Rheumatoid Arthritis Society demonstrate considerable variation across Scotland in the services provided for people with inflammatory arthritis (the most common form of which is rheumatoid arthritis). The report also highlights the lack of a Scotland-wide approach to collecting and using data to monitor, and support improvements to, services provided for people with inflammatory arthritis. For example, while DMARDs are recommended for the treatment of rheumatoid arthritis, none of the 11 NHS Boards that took part in the survey reported that they measure the use of these medicines – even though there are robust nationally consistent data on the prescribing of DMARDs in the community (and which are presented in this report).

In addition, NHS Quality Improvement Scotland is currently funding a clinical audit of the management and care of people with newly diagnosed rheumatoid arthritis in 7 centres. The audit, which is against the SIGN guideline on rheumatoid arthritis, aims to identify whether there are significant variations in the provision and outcomes of care in Scotland. The report from this audit is due to be published in the autumn of 2008.

Prescribing for arthritis

As already highlighted, NSAIDs are used to treat pain and stiffness in osteoarthritis and for the short-term management of pain in rheumatoid arthritis. All NSAIDs are associated with side effects, and in particular they may cause gastrointestinal problems, eg stomach ulcers or bleeding, and potentially life threatening perforations in the wall of the stomach or intestine. (Clinical indicators on upper gastrointestinal conditions are presented in the next chapter of this report). Particular types of NSAID – cyclo-oxygenase (Cox) II selective inhibitors – were marketed as being less likely to cause gastrointestinal problems, although more recently these too have been shown to be associated with potentially serious side-effects, including increased risk of myocardial infarction.

Clinical indicators presented

This chapter presents a suite of clinical indicators on arthritis under three headings: osteoarthritis, rheumatoid arthritis, and prescribing for arthritis. Specifically, there are clinical indicators on: consultations with general practice; joint replacement surgery; admissions to hospital; and prescribing of NSAIDs and DMARDs. Further details about the data sources and analyses for these clinical indicators are provided in Appendix B.

Osteoarthritis

Between 1998-9 and 2005-6, the rate of people consulting a general practitioner for osteoarthritis decreased by about a third. Throughout this period, this rate was notably higher for females than males (Figure 2.1).

For example, the rate of females consulting a general practitioner for osteoarthritis decreased from 40 to 26 per 1,000 population between 1998-9 and 2005-6. For males, the rate decreased from 25 to 15 per 1,000 population.

Figure 2.1 Rate of people consulting general practitioner for osteoarthritis – trends over recent years

For 2005-6, the rate of people consulting the general practice team for osteoarthritis was relatively low for those under 45 years of age, and it then increased steadily with age (Figure 2.2). For females, this rate increased from 21 per 1,000 population for 45-54 year olds to 76 per 1,000 population for those aged 75 years and over. For males, the rate for these age groups was 12 and 61 per 1,000 population, respectively.

Figure 2.2 Rate of people consulting the general practice team for osteoarthritis – presented by age and sex, for 2005-6

Source: PTI, ISD Scotland (based on full PTI data including GP, practice nurse, district nurse and health visitor) and Community Health Index, PSD.

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Social deprivation appeared to have little systematic impact on the rate of people consulting the general practice team for osteoarthritis (Figure 2.3).

**Figure 2.3  Rate of people consulting the general practice team for osteoarthritis – presented by social deprivation, for 2005-6**

Source: PTI, ISD Scotland (based on full PTI data including GP, practice nurse, district nurse and health visitor) and Community Health Index, PSD.

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
The rate of hip arthroplasty was fairly constant between 1996-7 and 2001-2, and then appeared to increase (Figure 2.4). This rise was due to increased rates of hip arthroplasty for those aged 65 years and over. For example, the rate of hip arthroplasty for females aged 65-74 years increased from 36 to 52 per 10,000 population between 2001-2 and 2005-6. The corresponding rates for males were 28 and 41 per 10,000 population, respectively.

For both males and females, the rate of hip arthroplasty was highest for the 65-74 year age group, followed by those aged 75 years and over, and then 55-64 year olds. (The rates for males and females under 45 years of age remained below 2 per 10,000 population, and so are not presented). For each of these age groups, the rate of hip arthroplasty was consistently higher for females than for males. 84% of people who had a hip arthroplasty had a principal diagnosis of osteoarthritis.

**Figure 2.4** Rate of hip arthroplasty in Scotland by age and sex

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Social deprivation appeared to have little systematic impact on the rate of hip arthroplasty (Figure 2.5).

For 2003-6, there was some variation throughout Scotland in the rate of hip arthroplasty (Figure 2.6). The standardised rate of hip arthroplasty was significantly higher than the national average for five NHS Boards (Grampian, Highland, Shetland, Tayside and Western Isles), and was significantly lower than the national average for five NHS Boards (Ayrshire & Arran, Dumfries & Galloway, Forth Valley, Greater Glasgow, Lanarkshire).

Figure 2.5  Rate of hip arthroplasty presented by social deprivation, for 2005-6

![Bar chart showing rate of hip arthroplasty by social deprivation quintile for 2005-6.](image)

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Figure 2.6  Rate of hip arthroplasty - standardised rates presented by NHS Board of residence, for 2003-6

![Line chart showing rate of hip arthroplasty by NHS Board of residence for 2003-6.](image)

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Note: A list of NHS Board ciphers is in Appendix B.
For both males and females, the rate of knee arthroplasty was typically highest for those aged 65-74 years, followed by those aged 75 years and over, and then for 55-64 year olds (Figure 2.7). (The rates for males and females under 45 years of age remained below 1 per 10,000 population, and so are not presented).

The rate of knee arthroplasty increased between 1996-7 and 2005-6. For example, for females aged 65-74 years, the rate of knee arthroplasty increased from 23 to 48 per 10,000 population – and for males in this age group the rate increased from 23 to 45 per 10,000 population. 91% of people who had a knee arthroplasty had a principal diagnosis of osteoarthritis.

Figure 2.7  Rate of knee arthroplasty in Scotland by age and sex

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Social deprivation appeared to have little systematic impact on the rate of knee arthroplasty (Figure 2.8).

Figure 2.8  Rate of knee arthroplasty - presented by social deprivation, for 2005-6

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
For 2003-6, there was some variation throughout Scotland in the rate of knee arthroplasty (Figure 2.9). The standardised rate of knee arthroplasty was significantly higher than the national average for two NHS Boards (Greater Glasgow, Shetland), and was significantly lower than the national average for two NHS Boards (Dumfries & Galloway, Western Isles).

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).
Note: A list of NHS Board ciphers is in Appendix B.
Rheumatoid Arthritis

The rate of people consulting a general practitioner for rheumatoid arthritis decreased between 1998-9 and 2005-6. Throughout this period, the rate for females was more than double that for males (Figure 2.10).

For example, the rate of females consulting a general practitioner for rheumatoid arthritis decreased from 6 to 4 per 1,000 population between 1998-9 and 2005-6. For males, the rate decreased from 3 to 2 per 1,000 population.

Figure 2.10 Rate of people consulting general practitioner for rheumatoid arthritis – trends over recent years

The rate of people consulting the general practice team for rheumatoid arthritis was relatively low for those under 45 years of age, and then increased for older people (Figure 2.11). For females, this rate increased from 7 per 1,000 population for 45-54 year olds to 14 per 1,000 population for 65-74 year olds – before decreasing to 9 per 1,000 population for those aged 75 years and over. For males, the rates for these age groups were 3, 6 and 6 per 1,000 population, respectively.

Figure 2.11 Rate of people consulting the general practice team for rheumatoid arthritis – presented by age and sex, for 2005-6

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Social deprivation appeared to have little systematic impact on the rate of people consulting the general practice team for rheumatoid arthritis (Figure 2.12).

Figure 2.12 Rate of people consulting the general practice team for rheumatoid arthritis – presented by deprivation, for 2005-6

Source: PTI, ISD Scotland (based on full PTI data including GP, practice nurse, district nurse and health visitor) and Community Health Index, PSD.

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
For females, the rate of admission to hospital (daycases and inpatients) for rheumatoid arthritis decreased between 1997-8 and 2002-3, and then steadily increased. The admission rate for males – which was notably lower than that for females – was more constant during this time period (Figure 2.13). The admission rate was notably higher for women over 45 years of age.

For example, for 2005-6 the admission rate for females was 24 per 10,000 population for 45-54 year olds, rising to 38/39 per 10,000 population for 55-64/65-74 year olds, before decreasing to 22 per 10,000 population for those aged 75 years and over. For males, the rates for these age groups were 6, 13, 11, and 9 per 10,000 population, respectively.

Figure 2.13 Rate of admission to hospital for rheumatoid arthritis by age and sex

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
For 2005-6, the rate of admission to hospital for rheumatoid arthritis appeared to be influenced by social deprivation (Figure 2.14).

Specifically, the admission rate for areas of greatest social deprivation (15 per 10,000 population for quintile 5) was about double that for the most affluent areas (8 and 7 per 10,000 population for quintiles 1 and 2, respectively).

For 2003-6, there was some variation throughout Scotland in the rate of admission to hospital for rheumatoid arthritis (Figure 2.15). The standardised rate of admission was significantly higher than the national average for three NHS Boards (Greater Glasgow, Highland, Lanarkshire), and was significantly lower than the national average for eight NHS Boards (Ayrshire & Arran, Borders, Dumfries & Galloway, Fife, Forth Valley, Lothian, Tayside, Western Isles).

Figure 2.14 Rate of admission for rheumatoid arthritis - presented by deprivation quintile, for 2005-6

Figure 2.15 Rate of admission for rheumatoid arthritis – standardised rates presented by NHS Board of residence, for 2003-6

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Prescribing for arthritis

The rate of prescribing standard NSAIDs decreased from 15,718 to 12,542 defined daily doses (DDDs) per 1,000 population between 1998-9 and 2003-4, before increasing to 14,720 DDDs per 1,000 population by 2005-6 (Table 2.1 and Figure 2.16). This trend was observed across Scotland.

In 2005-6, the rate of prescribing standard NSAIDs ranged from less than 12,500 DDDs per 1,000 population for two NHS Boards (Borders and Lothian) to greater than 17,500 DDDs per 1,000 population for two NHS Boards (Ayrshire & Arran and Lanarkshire).

Table 2.1 Rate of prescribing non-steroidal anti-inflammatory drugs ('standard' medicines) by NHS Board

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Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Figure 2.16 Rate of prescribing non-steroidal anti-inflammatory drugs ('standard' medicines) by NHS Board

Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Conversely, the rate of prescribing Cox II selective inhibitors increased rapidly from the late 1990s, peaking in 2003-4 at 5,036 DDDs per 1,000 population, before falling sharply to 1,224 DDDs per 1,000 population by 2005-6 (Table 2.2 and Figure 2.17). This pattern was also seen across the country.

There was considerable variation in prescribing levels throughout Scotland. For example, for 2005-6 the prescribing level was less than 1,000 DDDs per 1,000 population for five NHS Boards (Borders, Lothian, Shetland, Tayside and Western Isles) and greater than 2,000 DDDs per 1,000 population for one NHS Board (Lanarkshire).

Table 2.2 Rate of prescribing non-steroidal anti-inflammatory drugs (Cox II selective inhibitors) by NHS Board

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Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Figure 2.17 Rate of prescribing non-steroidal anti-inflammatory drugs (Cox II selective inhibitors) by NHS Board

Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Between 1996-7 and 2005-6, the rate of prescribing DMARDs increased year-on-year, rising from 529 to 1,012 DDDs per 1,000 population (Table 2.3 and Figure 2.18). This increase in prescribing levels was observed throughout Scotland.

In 2005-6, the rate of prescribing DMARDs was less than 700 DDDs per 1,000 population for two NHS Boards (Forth Valley and Highland), and greater than 1,200 DDDs per 1,000 population for three NHS Boards (Dumfries & Galloway, Fife, and Greater Glasgow).

However, it should be noted that at present there is not sufficient information available to standardise the prescribing data to take account of factors such as age, sex and social deprivation. Some regional variation in absolute prescribing levels may therefore be expected.

Table 2.3  Rate of prescribing disease modifying anti-rheumatic drugs by NHS Board

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Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Figure 2.18 Rate of prescribing disease modifying anti-rheumatic drugs by NHS Board

Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
3 Gastrointestinal conditions

Background

• Gastro-oesophageal reflux disease (GORD) is a condition in which gastric contents are brought back from the stomach to the oesophagus (gullet), and sometimes even to the throat and mouth. For some people the reflux of gastric contents causes such frequent and severe symptoms that it is considered a disease.

• For most people with GORD, the symptoms can be treated effectively by a combination of lifestyle changes and drug therapy, in particular a course of acid suppressing medicines called proton pump inhibitors (PPIs).

• A peptic ulcer is a break in the lining of the gastrointestinal tract, usually found in the stomach (gastric ulcer) or the duodenum (duodenal ulcer), the upper region of the small intestine. While peptic ulcers sometimes heal without treatment, they can also result in serious – and potentially life-threatening – complications, eg bleeding and perforation.

• Peptic ulcer disease (PUD) is most commonly caused by the helicobacter pylori bacterium, and antibiotics can be prescribed to treat the infection and ulcer. PUD can also be induced by pain medications called non-steroidal anti-inflammatory drugs, in which case an acid suppressing drug (usually a PPI) can be prescribed to relieve the symptoms and allow the ulcer to heal.

• Health care systems require a range of data to monitor, and facilitate improvement of, the quality of the clinical services they provide. Collecting and using data on the delivery and outcomes of clinical care are vital if wider efforts to improve the quality, safety and effectiveness of patient care are to be successful.

• This chapter presents a suite of clinical indicators on gastrointestinal conditions. The aims of publishing these indicators are to i) draw attention to the important role that data should play in providing safe and effective care for people with gastrointestinal conditions, and ii) encourage and support best use to be made of the nationally consistent data currently available.

• Specifically, there are clinical indicators on: consultations with general practice for GORD and PUD; admissions to hospital for PUD; admission for – and mortality from – gastrointestinal bleed; rate of endoscopy; and prescribing PPIs. These clinical indicators are designed to be interpreted and used by those organisations/individuals that provide care for people with gastrointestinal conditions.
Key findings

- Between 1998-9 and 2005-6, the rate of females consulting their general practitioner for gastro-oesophageal reflux disease fluctuated between 7 and 9 per 1,000 population, and the rate for males fluctuated between 6 and 8 per 1,000 population. The rate of people consulting the general practice team for gastro-oesophageal reflux disease generally increased with age.

- The rate of prescribing PPIs increased year-on-year between 1996-7 and 2005-6, and more than trebled during this time period. This rate increased from 6,486 to 22,815 defined daily doses per 1,000 population.

- The rate of people consulting general practice for peptic ulcer disease decreased steadily between 1998-9 and 2005-6. Throughout this period, this rate was consistently higher for males than for females. The rate of people consulting the general practice team for peptic ulcer disease generally increased with age.

- The rate of admission to hospital for peptic ulcer disease decreased between 1996-7 and 2005-6. This rate increased with age and, for each age group, was consistently higher for males than for females.

- The rate of admission to hospital for peptic ulcer disease increased as the level of social deprivation rose – the admission rate for areas of greatest social deprivation was almost double that for the least deprived areas.

- The rate of admission to hospital for gastrointestinal bleed was fairly constant between 1996-7 and 2005-6. The rate of mortality for gastrointestinal bleed was also fairly constant during this period.

- The rate of admission to hospital for gastrointestinal bleed increased as the level of social deprivation rose. The rate for areas of greatest social deprivation (14 per 10,000 population) was more than treble the rate for the most affluent areas (4 per 10,000 population).
Introduction

The digestive system consists of a series of organs that break down and absorb the food we eat, so that the nutrients we need are transported into the blood stream and delivered to cells throughout the body. The term dyspepsia, meaning ‘bad digestion’, refers to a range of symptoms arising from the upper gastrointestinal tract – which itself comprises the mouth, throat, gullet (oesophagus), stomach and small intestine. In 2003, the Scottish Intercollegiate Guidelines Network published a guideline on the investigation and treatment of dyspepsia in adults (although this does not cover gastro-oesophageal reflux disease). The following year the National Institute for Clinical Excellence published guidelines on the management of dyspepsia in primary care, together with information for people with dyspepsia, and the public. Two of the most common causes of dyspepsia are gastro-oesophageal reflux disease and peptic ulcer disease.

Gastro-oesophageal reflux disease

Gastro-oesophageal reflux disease (GORD) is a common condition in which gastric contents are brought back up from the stomach into the oesophagus, and sometimes even into the throat or mouth. Most people experience reflux at some time, and it occurs when there is a transient relaxation of the sphincter (or ‘gate’) that keeps the lower end of the oesophagus closed when a person is not swallowing. The most common symptom is heartburn, which is an uncomfortable, rising, burning sensation behind the breastbone that usually occurs after a meal. However, for some people the reflux of gastric contents causes such frequent and severe symptoms, or mucosal damage, that it is considered a disease. A clinical review of GORD was published in the British Medical Journal last year.

GORD can have a significant impact on a person’s quality of life. Individuals with the disease typically experience heartburn or regurgitation of gastric acid, although symptoms can also include difficulty with swallowing and chest pains. The disease is also associated with other serious health conditions including oesophageal adenocarcinoma – and there is some evidence of an association with asthma. GORD may also lead to a condition called Barrett’s oesophagus, which is a pre-malignant condition affecting the lining of the lower gullet.

The prevalence of GORD increases with age, and is slightly higher for women. Genetic factors may contribute to the development of GORD, although lifestyle factors may also be implicated. For example, smokers and obese people are more likely to experience reflux symptoms, and consequently lifestyle changes can help reduce the frequency and severity of reflux.

The underlying causes of GORD remain unknown, although a key factor is the structure and function of the gastro-oesophageal junction. As the condition becomes more severe, the risk of reflux during transient relaxations of the lower oesophageal sphincter increases. The volume of gastric contents that enter the oesophagus also increases, and these extend further up the oesophagus.

In the past, if a person presented with reflux symptoms then it was likely that an endoscopy would be carried out. This is when a flexible tube with a camera at the end (an endoscope) is guided through the mouth to examine the lining of the oesophagus and stomach. However, the link between reflux symptoms and endoscopic findings is weak, and it is now recommended that people diagnosed with GORD are initially offered a course of drug treatment.

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For most people with GORD, the symptoms can be treated safely and effectively with proton pump inhibitors (PPIs) – drugs that suppress the production of gastric acid. If reflux symptoms persist, then other medicines (H2 blockers and prokinetics) can be prescribed, although these are less effective than PPIs. Anti-reflux surgery is an option for some people whose symptoms recur following drug treatment and whose quality of life is significantly impaired. However, surgery should not be routinely offered to people with persistent GORD. The National Institute for Clinical Excellence has issued guidance on two interventional procedures for GORD.\textsuperscript{31,32}

Peptic ulcer disease

A peptic ulcer is a break in the lining of the gastrointestinal tract. Peptic ulcers are usually found in the stomach (gastric ulcer) or the duodenum (duodenal ulcer), the upper region of the small intestine. There are a number of defences that protect the lining of the stomach and duodenum, including a thick mucous layer that acts as a barrier against acid and a digestive enzyme called pepsin. If these defences fail then the lining of the stomach or duodenum may become exposed to digestive juices, which in turn may cause an ulcer to form.

The signs and symptoms associated with peptic ulcer disease (PUD) vary from person to person, and some ulcers produce no symptoms at all. The most common symptoms include pain or discomfort (usually in the upper abdomen), intense hunger or bloating, lack of appetite, nausea, vomiting, and bleeding. Gastric and duodenal ulcers also tend to cause different symptoms. For example, people with a duodenal ulcer often experience a burning or gnawing sensation in the upper abdomen, which is typically worse when the stomach is empty (ie two to five hours after a meal, or during the night) and may be relieved after eating. On the other hand, people with a gastric ulcer are more likely to experience a severe pain shortly after meals which is less frequently alleviated by eating.

While peptic ulcers sometimes heal without treatment, they can also result in serious, and potentially life-threatening, complications. The most common complications are bleeding and perforation (where the ulcer creates a hole in the lining of the stomach or intestine). It is therefore important that peptic ulcers are diagnosed and treated.

Peptic ulcers most commonly result from an infection caused by the bacterium helicobacter pylori (H. pylori) which damages the mucus layer of the stomach or duodenum. However, not all people with peptic ulcers have H. pylori infection. The second most common cause of ulcers is the use of pain medications called non-steroidal anti-inflammatory drugs (NSAIDs). These drugs, which are often used in the treatment of arthritis and heart disease, can also damage the coating of mucus and result in the formation of an ulcer. While H. pylori or NSAIDs are implicated in most cases of peptic ulcer disease, genetic or lifestyle factors may also play a role. For example, smoking increases the risk of developing an ulcer, and also delays the healing of an ulcer.

A diagnosis of PUD can be suspected from the patient’s symptoms. However, the symptoms of ulcers are associated with a variety of other conditions, and so further tests are required to confirm the diagnosis. If it is suspected that a person has a peptic ulcer, then the presence of H. pylori infection can be tested for. In addition, in some cases (eg for people who are older or who have additional symptoms such as weight loss or anaemia) an upper intestinal endoscopy can be carried out to examine the lining of the stomach and duodenum.

If a diagnosis of PUD is suspected, then it is recommended that the general practitioner tests for H. pylori infection – and if the bacterium is present then a course of antibiotics can be prescribed to treat the infection and ulcer (a PPI is also prescribed during the antibiotic course). On the other hand, if H. pylori is not present – or the ulcer is NSAID-induced – then an acid suppressing drug (usually a PPI) can be prescribed to relieve the symptoms and allow the ulcer to heal. For people whose NSAID therapy must continue (eg those with severe arthritis), then another medicine can be prescribed to protect the stomach against the effects of the NSAID.

This chapter presents clinical indicators on some gastrointestinal conditions. Specifically, there are indicators on: consultations with the general practice team for GORD and PUD; admission to hospital for PUD; admission to hospital for, and mortality from, gastrointestinal bleed; endoscopy, and; prescribing of PPIs.
Gastro-oesophageal reflux disease

The rate of people consulting a general practitioner for GORD was fairly constant between 1998-9 and 2005-6 – and this rate was consistently higher for females than for males (Figure 3.1). The rate of females consulting a general practitioner for GORD fluctuated between 7 and 9 per 1,000 population, and the rate for males fluctuated between 6 and 8 per 1,000 population.

It should be noted that it is likely that the data on consultations with a general practitioner will cover a heterogeneous group of conditions. This is because the diagnostic codes used for these analyses were allocated in primary care, although the investigations that can be performed to formulate a more definitive diagnosis are typically not carried out in primary care.

Figure 3.1  Rate of people consulting general practitioner for gastro-oesophageal reflux disease – trends over recent years

Source: PTI, ISD Scotland (based on GP-only information) and Community Health Index, PSD.
The rate of people consulting the general practice team for gastro-oesophageal reflux disease generally increased with age (Figure 3.2). For example, this rate was less than 4 per 1,000 population for those aged 5-24 years. It peaked for the 65-74 year age group (14 and 11 per 1,000 population for females and males respectively), before dropping to 11 and 10 per 1,000 population for females and males (respectively) aged 75 years and over. The rate of infants (0-4 years) consulting the general practice team for gastro-oesophageal reflux disease was 7 per 1,000 population.

Social deprivation had little systematic impact on the rate of people consulting the general practice team for gastro-oesophageal reflux disease (Figure 3.3).

Source: PTI, ISD Scotland (based on full PTI data including GP, practice nurse, district nurse and health visitor) and Community Health Index, PSD.

Figure 3.2 Rate of people consulting the general practice team for gastro-oesophageal reflux disease – presented by age and sex, for 2005-6

Figure 3.3 Rate of people consulting the general practice team for gastro-oesophageal reflux disease – presented by deprivation, for 2005-6

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Peptic ulcer disease

The rate of people consulting a general practitioner for peptic ulcer disease decreased steadily between 1998-9 and 2005-6. Throughout this period, this rate was consistently higher for males than for females (Figure 3.4). For example, the rate of males consulting a general practitioner for peptic ulcer disease decreased from 5 to 1 per 1,000 population between 1998-9 and 2005-6. For females, the rate decreased from 4 to less than 1 per 1,000 population.

It should be noted that it is likely that the data on consultations with a general practitioner will cover a heterogeneous group of conditions.

This is because the diagnostic codes used for these analyses were allocated in primary care, although the investigations that can be performed to formulate a more definitive diagnosis are typically not carried out in primary care.

The rate of people consulting the general practice team for peptic ulcer disease generally increased with age (Figure 3.5).

Gastrointestinal conditions

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Social deprivation had little systematic impact on the rate of people consulting the general practice team for peptic ulcer disease (Figure 3.6).

**Figure 3.6** Rate of people consulting the general practice team for peptic ulcer disease – presented by deprivation, for 2005-6

Source: PTI, ISD Scotland (based on full PTI data including GP, practice nurse, district nurse and health visitor) and Community Health Index, PSD.

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
The rate of admission to hospital (inpatients and daycases) for peptic ulcer disease decreased between 1996-7 and 2005-6 (Figure 3.7). This rate increased with age and, for each age group, was consistently higher for males than for females.

For example, for males aged 75 years and over, the rate of admission to hospital for peptic ulcer disease decreased from 28 to 17 per 10,000 population between 1996-7 and 2005-6. For females aged 75 years and over, the admission rate decreased from 17 to 13 per 10,000 population.

Admissions are included in these analyses if a diagnosis of PUD is present on the hospital discharge record in the main diagnosis position.

Figure 3.7 Rate of admission to hospital for peptic ulcer disease in Scotland by age and sex

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
The rate of admission to hospital for peptic ulcer disease increased as the level of social deprivation rose (Figure 3.8). The admission rate for areas of greatest social deprivation (quintile 5) was almost double that for the least deprived areas (quintiles 1 and 2).

For 2003-6, the standardised rate of admission to hospital for peptic ulcer disease was significantly higher than the national average for one NHS Board (Fife), and was significantly lower than the national average for two NHS Boards (Dumfries & Galloway, and Forth Valley). (Figure 3.9).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
To provide some context for these admission rates, information is provided about the rate of people seen as an elective day case or admitted to hospital as an inpatient (on either an elective or non-elective basis) for peptic ulcer disease (Figure 3.10). For example, the ratio of elective day cases to elective hospital admissions varied throughout Scotland.

Figure 3.10 Rate of admission to hospital for peptic ulcer disease by type of admission

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Gastrointestinal bleed

The rate of admission to hospital for gastrointestinal bleed was fairly constant between 1996-7 and 2005-6 (Figure 3.11). This rate increased with age and, for each age group, was consistently higher for males than for females.

For example, for 2005-6, the rate of admission for gastrointestinal bleed for males was 13 per 10,000 population for those aged 55-64 years, and this increased to 20 and 36 per 10,000 population for those aged 65-74 years, and 75 years and over, respectively. The respective rates for females were 6, 12 and 31 per 10,000 population.

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
For 2005-06, the rate of admission to hospital for gastrointestinal bleed increased as the level of social deprivation rose (Figure 3.12). The rate for areas of greatest social deprivation (quintile 5 – 14 per 10,000 population) was more than treble the rate for areas of least social deprivation (quintile 1 – 4 per 10,000 population).

Figure 3.12 Rate of emergency admission for gastrointestinal bleed - presented by deprivation quintile, for 2005-6

For 2003-6, the standardised rate of admission to hospital for gastrointestinal bleed was significantly higher than the national average for five NHS Boards (Borders, Greater Glasgow, Highland, Lanarkshire, Western Isles), and was significantly lower than the national average for four NHS Boards (Fife, Forth Valley, Grampian, Lothian). (Figure 3.13).

Figure 3.13 Rate of emergency admission for gastrointestinal bleed - standardised rates presented by NHS Board of residence

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
The rate of mortality for gastrointestinal bleed was fairly constant between 1996-7 and 2005-6 (Figure 3.14). This rate was highest for those aged 75 years and over, followed by the 65-74 year age group. (The rates for those aged under 65 years are very low and therefore not presented).

For example, for 2005-6, the rate of mortality following gastrointestinal bleed was greater than 4 per 10,000 population for those aged 75 years and over, and was less than 1 per 10,000 population for those aged 65-74 years.

Figure 3.14 Rate of mortality for gastrointestinal bleed

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Endoscopy

Figure 3.15 shows the rate of endoscopy of the upper gastrointestinal tract by NHS Board of residence, for day case and inpatient (elective and non-elective admissions).

Endoscopy procedures were carried out for a wide range of diagnoses, of which GORD and PUD were among the most frequent: 20% of procedures had a main diagnosis of GORD and 5% had a main diagnosis of PUD.

Figure 3.15 Rate of endoscopy of upper gastrointestinal tract by NHS Board of residence (year ending March 2006)

Source: ISD Scotland (SMR01) and GRO(S) (mid-year population estimates).

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
### Prescribing of proton pump inhibitors

The rate of prescribing PPIs increased year-on-year between 1996-7 and 2005-6. This rate more than trebled, rising from 6,486 to 22,815 DDDs per 1,000 population (Table 3.1 and Figure 3.16). This increase in prescribing levels was seen throughout Scotland.

For 2005-6, the rate of prescribing PPIs was less than 20,000 DDDs per 1,000 population for three NHS Boards (Grampian, Lothian, and Shetland), and greater than 25,000 DDDs per 1,000 population for four NHS Boards (Forth Valley, Greater Glasgow, Lanarkshire, Western Isles).

However, it should be noted that at present there is not sufficient information available to standardise the prescribing data to take account of factors such as age, sex and social deprivation. Some regional variation in absolute prescribing levels may therefore be expected.

### Table 3.1 Rate of prescribing proton pump inhibitors by NHS Board

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Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)

Please note - all data presented in this report should be interpreted in accordance with the guidance given at the start of this document (see page vii)
Figure 3.16 Rate of prescribing proton pump inhibitors by NHS Board

Source: PIS Data Warehouse, ISD Scotland and GRO(S) (mid-year population estimates)
Appendices

Appendix A – Membership of Clinical Outcomes Group

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*Chief Operating Executive for Patient Services, NHS Ayrshire & Arran*

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*Consultant Surgeon, NHS Grampian*

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Appendices

Appendix B – Data sources & analyses

Consultations with general practice

The clinical indicators on consultations with general practice (for depression, arthritis and dyspepsia) were derived from two sources:

• Practice Team Information (PTI): This dataset, maintained by the Information Services Division of NHS National Services Scotland (ISD), comprises data collected from a sample of general practices (covering approximately 6% of the Scottish population). Detailed information is collected from each face-to-face consultation between a patient and the general practitioner or, from 2003-4 onwards, any clinician in the general practice team (general practitioner, practice or district nurse, health visitor). For each consultation, the general practitioner can record up to ten diagnoses (‘morbidities’) using Read codes, while the nursing disciplines can record up to four activities (each with up to four associated morbidities). Each Read code is recorded as either a first occurrence or an ongoing diagnosis. The diagnostic codes used to produce the clinical indicators presented in this report are available from the website of the Clinical Indicators Support Team: www.indicators.scot.nhs.uk. The PTI dataset was formerly called Continuous Morbidity Recording (CMR).

• Community Health Index (CHI): This dataset is maintained by the Practitioner Services Division, and mid-financial year registration data were used to determine the size of the population – for PTI sample practices and for Scotland – by age, sex and deprivation category. Deprivation quintiles were based on the Scottish Index of Multiple Deprivation (SIMD), calculated in 2005. A deprivation quintile was assigned to each patient by linking the PTI data with the SIMD file, based on the person’s postcode. Whenever the postcode was missing, the average deprivation quintile for the practice was used.

The rate of people consulting general practice for a particular condition was calculated by i) totaling the number of different people with that diagnosis recorded during the consultation, ii) dividing this by the number of people registered with the PTI practices, and iii) multiplying this number by 1,000 to obtain a rate per 1,000 population.¹

To take account of differences between the PTI sample and the Scottish population with regard to age, sex, and deprivation, the method of direct standardisation was applied. The rates presented by age and sex were standardised by deprivation, and the rates presented by deprivation were standardised by age and sex. It should be noted that there are other factors that were not taken into account (ie not standardised for) and which may influence the rates of consulting general practice for the conditions covered in this report.

PTI data are based on diagnoses recorded in general practices. It should be noted that general practices do not provide information on how diagnoses are made, and some of the figures presented in this report will reflect both confirmed and working diagnoses. For example, it is likely that the data on consultations with general practice for gastro oesophageal reflux disease and peptic ulcer disease will cover a heterogeneous group of conditions, and will therefore overestimate the true rate. This is because, while the diagnostic codes used for these analyses were allocated in primary care, the investigations that can be performed to formulate a more definitive diagnosis are typically not carried out in primary care.

¹ A person may consult with general practice about a particular condition more than once in a year. As well as calculating the rate of people who consulted general practice for each condition, the overall rate of consultations was similarly derived. While not presented in this report, these data are available from the internet: www.indicators.scot.nhs.uk.
Rates were calculated using population estimates based on the number of people registered with a general medical practice. Some people are not registered with a practice, whereas for others there will be periods when they are registered with more than one practice (eg when moving house). Given the latter category is likely to be larger than the former, the population sizes may be slightly overestimated – resulting in the rates of people consulting general practice being underestimated.

Prescribing

The clinical indicators on community dispensed prescriptions (for depression, arthritis and gastrointestinal conditions) were derived from two sources:

- Prescribing Information System (PIS) Data Warehouse: this dataset, maintained by NHS National Services Scotland, contains detailed information (eg medicine name, strength, formulation and quantity) on all NHS prescriptions dispensed in the community. There are data on all prescriptions dispensed in the community, regardless of where they were written (and also those written in Scotland but dispensed elsewhere in the UK). The vast majority of these prescriptions are written by general practitioners, and the remainder are written mostly by nurses and dentists. Prescriptions are dispensed by community pharmacies, dispensing doctors and a small number of specialist appliance suppliers. The database does not contain information on prescriptions that are dispensed within hospitals.

- The General Register Office for Scotland (GRO(S)) provided mid-year population estimates at both Scotland and NHS Board level.

The defined daily dose (DDD) is used to enable direct comparisons of different strengths and formulations of medicines. The World Health Organization (WHO) describes the DDD as ‘the assumed average maintenance dose per day for a drug used for its main indication in adults’.\(^2\) The DDD methodology was developed by the WHO Collaborating Centre for Drug Statistics Methodology to convert and standardise readily available volume data from sales statistics or pharmacy inventory data (quantity of packages, tablets or other dosage forms) into medically meaningful units.\(^3\) The DDD then takes into account the strength, form and quantity of drug given to the patient. However, a disadvantage of the DDD is that it can only be calculated for medicines of single medical ingredients.

The prescribing rate was calculated by dividing the total number of DDDs dispensed by the population estimate, and then multiplying this by 1,000 to produce a rate per 1,000 population.

The following medicines are covered by the clinical indicators presented in this report:

**Depression**

Selective serotonin reuptake inhibitors: BNF section 4.3.3.

Tricyclics: BNF section 4.3.1.

Antidepressants: BNF sections 4.3.1, 4.3.2, 4.3.3, 4.3.4.

**Arthritis**

Non-steroidal anti inflammatory drugs – Cox II selective inhibitors: Celecoxib, Etoricoxib, Lumiracoxib, Rofecoxib, Valdecoxib.

Non-steroidal anti inflammatory drugs – standard: BNF section 10.1.1 excluding the above.

Disease modifying anti rheumatic drugs: BNF section 10.1.3.

**Gastrointestinal conditions**

Proton pump inhibitors: BNF section 1.3.5.

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Presently, only the minimum amount of information is available from the community dispensed prescription to facilitate reimbursement payment to pharmacies. It should be noted that there is currently not sufficient information available to standardise the prescribing data to take account of factors such as age, sex and social deprivation. Some regional variation in absolute prescribing levels may therefore be expected.

Inpatients

Data on admissions to hospital (for rheumatoid arthritis, peptic ulcer disease, and gastrointestinal bleed) were derived from three sources:

- Scottish Morbidity Record (SMR01) scheme: this dataset, which is maintained by ISD, contains information on hospital discharges from general/acute specialties. An SMR01 record is completed each time a person is discharged from an episode of care. The diagnostic codes used to produce the clinical indicators presented in this report are available from the website of the Clinical Indicators Support Team: www.indicators.scot.nhs.uk.

- General Register Office for Scotland (GRO(S)) mid-year population estimates were used to give Scotland and NHS Board of residence population estimates from June 1996 to June 2005. These data were used in the analysis of annual trends.

- 2001 census: Population estimates based on the 2001 census populations at data zone level were used to produce standardised admission rates, and rates presented by deprivation profile. Data zones are groups of census output areas with populations of between 500 and 1,000 residents, which contain households with similar social characteristics.

Deprivation quintiles were based on the Scottish Index of Multiple Deprivation (SIMD), which was calculated in 2005. Quintiles were assigned to admission records using postcodes.

The crude admission rate (presented by age group and sex) was calculated by dividing the total number of admissions for the particular condition by the corresponding GRO(S) mid-year population estimate – and then multiplying this by 10,000 to obtain a rate per 10,000 population.

The crude admission rate was calculated by deprivation quintile, by dividing the total number of admissions between 1 April 2005 and 31 March 2006 in each deprivation quintile by the total population resident in that particular quintile.

NHS Board rates of admission to hospital across the three-year period ending March 2006 were indirectly standardised for age, sex and deprivation, taking the total for Scotland over this three-year period as the reference. A more detailed explanation of indirect standardisation can be found in Annex 7 of the 2002 Clinical Outcome Indicators Report.4

The analysis of data on hospital admissions was based on the total number of admissions with a primary diagnosis of the condition in question. It should be noted that a number of patients were admitted to hospital on more than one occasion in the same financial year.

It should also be noted that data were only available for patients who were admitted to acute hospitals. Patients who were treated in an accident and emergency (A&E) department only were therefore not included in these analyses. Some hospitals may admit patients directly to a ward while others are more likely to treat patients in A&E only. Hospitals operating a policy of direct admissions to a medical assessment unit may yield higher admissions figures than hospitals admitting all emergency patients via A&E. Differences in admission policies among acute hospitals may therefore partly explain some of the variation across NHS Boards.

It is also likely that the emergency admission rates for NHS Boards would be influenced by factors relating to hospital access, such as rurality.

The same data sources, and similar methods, were used to calculate rates of hip and knee arthroplasty. The data on discharge/readmission to hospital for depression were derived from the SMR04, rather than the SMR01 dataset. The SMR04 dataset contains information about discharges from psychiatric hospitals (from general psychiatry, child and adolescent psychiatry, forensic psychiatry and psychiatry of old age).

Analyses in this report presented at NHS Board level present figures for NHS Argyll & Clyde separately for the two components Argyll & Clyde (Highland) and Argyll & Clyde (Greater Glasgow) where possible. It was agreed by the ISD, Scottish Executive, NHS Boards and GRO(S) that analysis produced by ISD will present data in this way for the 3 years following dissolution of NHS Argyll & Clyde. After this time period NHS Board level analysis will be based on the current 14 legally constituted NHS Boards.

**NHS Board Ciphers used in control charts**

- A = NHS Ayrshire & Arran
- B = NHS Borders
- C(G) = NHS Argyll & Clyde – Greater Glasgow
- C(H) = NHS Argyll & Clyde – Highland
- F = NHS Fife
- G = NHS Greater Glasgow
- H = NHS Highland
- L = NHS Lanarkshire
- N = NHS Grampian
- R = NHS Orkney
- S = NHS Lothian
- T = NHS Tayside
- V = NHS Forth Valley
- W = NHS Western Isles
- Y = NHS Dumfries & Galloway
- Z = NHS Shetland
Depression

Two additional sources were used to present data on depression:

- Data on postnatal depression were derived from an audit, funded by NHS Quality Improvement Scotland, in relation to the SIGN guideline on postnatal depression and puerperal psychosis. A questionnaire survey of all Scottish NHS Boards was carried out to determine what policies for postnatal depression were in place. In addition, a representative sample of general practices was surveyed to gain insights into how postnatal depression is identified and managed in primary care. A selection of data from the audit are presented in this report. Further information about the audit, including a description of how the audit was carried out and the full results, is available in the published report of the audit:

  www.nhshealthquality.org/nhsqis/controller?p_service=Content.show&p_applic=CCC&pContentID=3164

- The Scottish ECT Accreditation Network (SEAN) was set up to collect/analyse data about various aspects of ECT (eg clinical practice, clinical outcomes, facilities, staffing), which could then be used to support improvements in the delivery and outcomes of this intervention. SEAN continues to collect data from all ECT centres, and some of these data are presented in this report. Further information about SEAN is available from the following website:

  www.sean.org.uk
## Appendix C – Glossary of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CHI</td>
<td>Community Health Index</td>
</tr>
<tr>
<td>CMR</td>
<td>Continuous Morbidity Recording</td>
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<tr>
<td>CORE</td>
<td>Clinical Outcomes Routine Evaluation measure</td>
</tr>
<tr>
<td>Cox</td>
<td>cyclo-oxygenase</td>
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<tr>
<td>DDD</td>
<td>defined daily dose</td>
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<tr>
<td>DMARD</td>
<td>disease modifying anti rheumatic drug</td>
</tr>
<tr>
<td>ECT</td>
<td>electroconvulsive therapy</td>
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<tr>
<td>GORD</td>
<td>gastro oesophageal reflux disease</td>
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<tr>
<td>GRO(S)</td>
<td>General Register Office for Scotland</td>
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<tr>
<td>H. pylori</td>
<td>helicobacter pylori</td>
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<tr>
<td>ISD</td>
<td>Information Services Division of NHS National Services Scotland</td>
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<td>MAOI</td>
<td>monoamine oxidase inhibitor</td>
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<tr>
<td>NHS QIS</td>
<td>NHS Quality Improvement Scotland</td>
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<tr>
<td>NICE</td>
<td>National Institute for Health &amp; Clinical Excellence</td>
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<tr>
<td>NSAID</td>
<td>non steroidal anti inflammatory drug</td>
</tr>
<tr>
<td>PPI</td>
<td>proton pump inhibitor</td>
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<tr>
<td>PSD</td>
<td>Practitioner Services Division</td>
</tr>
<tr>
<td>PTI</td>
<td>Practice Team Information</td>
</tr>
<tr>
<td>PUD</td>
<td>peptic ulcer disease</td>
</tr>
<tr>
<td>SEAN</td>
<td>Scottish ECT Accreditation Network</td>
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<tr>
<td>SIGN</td>
<td>Scottish Intercollegiate Guidelines Network</td>
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<tr>
<td>SIMD</td>
<td>Scottish Index of Multiple Deprivation</td>
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<tr>
<td>SSRI</td>
<td>selective serotonin reuptake inhibitor</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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