

Improving Health and Social Care Service

Resilience over Public Holidays

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Improving Health and Social Care Service Resilience over Public Holidays

Supplement Report for the Public Holiday Review

Data Analysis of Service Usage

Prepared by Information Services Division

NHS National Services Scotland (ISD, NSS)

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Appendix A

Analytical Team Membership

1 Purpose of this document

This supplementary report shows relevant data analysis and intelligence to underpin the deliberations and findings of the Public Holiday Review. This report was prepared by Information Services Division (ISD) of NHS National Services Scotland (NSS). It shows some of the available evidence, drawn from national information sources, which illustrate aspects of health and social care that are distinctive during extended public holiday periods. Specifically, it quantifies demand for health and social care at occasions when a weekend is prolonged into extended public holidays such as Christmas, New Year or Easter. Unless otherwise stated data from the most recent financial year (2016-17) are used in this report.

2 Introduction

Across Scotland care services that provide emergency and urgent care twenty four hours a day, Monday to Friday also have the additional challenge of meeting urgent public demand during weekends and, the focus of this analysis, during extended holiday periods. These extended holiday periods, which happen at Christmas, New Year and at Easter, often involve changes in the availability of certain services over the four consecutive days of the period. In the case of Christmas and New Year the two four day periods run consecutively.

Services affected include: General Practice, Community Pharmacy, NHS 24, Primary Care Out of Hours, (PC OOH), the Scottish Ambulance Service (SAS), Accident & Emergency, acute hospital services and acute social care services, as well as the professional care services that mainly deliver social care in the longer term.

As the public make contact with and receive care or advice from these services, service data usage is recorded. In many cases these data are collated by ISD at national level enabling ISD analysts to interrogate and summarise the available data.

3 Key findings

The following key findings are shown from the nationally sourced data:

- There are differences in the pattern of service activity for many care services over the course of four-day public holidays compared with a typical weekend.
- The changes in use of the different service types are most evident during the Christmas and New Year holiday periods. Although service pattern at Easter are similar to those occurring at Christmas and New Year holidays, they do not lead to the same pressures as the latter period, with two extended public holidays in close proximity.
- Due to the increase in demand, the time it takes to see patients during these holidays takes up one hour longer at Primary Care Out of Hours services (PC OOH) and up to 30 minutes in Accident and Emergency services during these holidays.
- The demand for the Scottish Ambulance Service (SAS) in the early hours of New Years day is particularly high.
- NHS 24 and PC OOH see up to a 60% increase in demand for their services on days three and four of the Christmas and New Year public holidays
- There is variation in the average length of stay according to the day of the week that people are admitted to hospital in the period around the Christmas and New Year holiday. This variation occurs throughout the rest of the year. Compared with the period either side of the festive holidays, a patient admitted as an emergency on Christmas Eve, Christmas Day and New Year's Eve can expect to be in hospital around 1 day longer on average.
- Information from a sample of local authorities suggests a big reduction in new home care packages starting during an extended period of several weeks from Christmas Eve onwards.

4 Sources of national information

The information presented in this supplementary report has been sourced from the following national datasets held by ISD:

4.1 The [Unscheduled Care Datamart](#) (UCD) links patients' data to show the pathway they have taken through the different emergency and urgent care services this includes;

- NHS 24 calls
- Primary Care Out of Hours Services contacts
- Scottish Ambulance Service incidents
- Accident & Emergency attendances
- Acute Emergency Inpatients admissions (including mental health admissions)
- Deaths

The UCD has been used in this report as the main source of information for the above services.

4.2 [General/Acute Inpatient and Day Case record](#) – SMR01, is an episode-based patient record relating to all inpatients and day cases discharged from non-obstetric and non-psychiatric specialties.

4.3 Prescribing - ISD has held data on medicines prescribed within NHS Scotland for several decades. These data are generated as part of prescription processing for the payment of dispensing contractors by the Practitioner Services in NHS National Services Scotland (now part of Practitioner and Counter Fraud Services, P&CFS). We currently have data on over one billion prescriptions, which we make available to customers through routine reporting, bespoke analysis and online tools. You can find out more information [here](#).

4.4 District Nursing – person based records available from district nurses began collection nationally in 2015. Therefore, this is still a relatively new dataset and work is ongoing to improve the completeness. More information can be found [here](#).

4.5 Care Homes

Information on residents in Scotland's care homes is available from two different sources nationally. The [Scottish Care Home Census](#) (SCHC) is collected on an annual basis and is intended to cover all adult care home establishments that are registered with the Care Inspectorate. Information derived from the SCHC is used in this report.

A second source of information on care home residents funded by local authorities is part of the Source Social Care Dataset, collected by ISD. At present only a small sample of local authorities provide this information although as noted in the main report it is planned that this will change in future.

4.6 Home Care packages

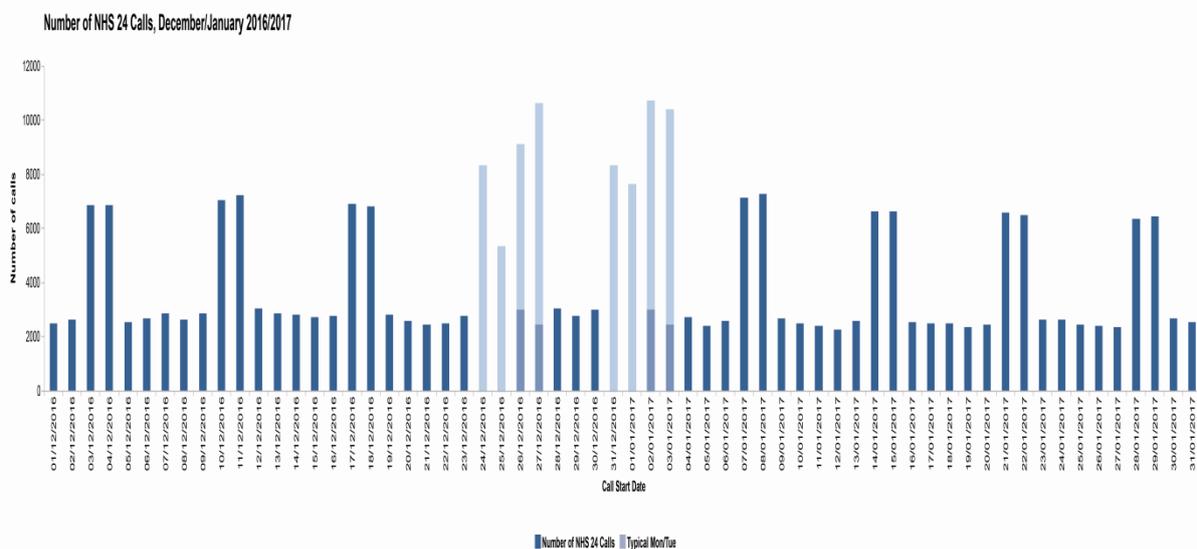
Data on Home Care packages are available from the SOURCE social care data collection which began receiving data nationally in 2015. Information on the dataset, definitions and guidance can be found [here](#). Please note, this collection is currently under review and following consultation is expected to develop further next year.

5 What we learn from national evidence

5.1 NHS 24

NHS 24 receives calls 24 hours of the day, seven days a week. An analysis of the number of calls each day shows clearly the distinctive pattern of call volumes with a regular increase in calls evident at weekends (Chart 1). It also shows the distinctive pattern during the Christmas and New Year holiday periods. Specifically the chart shows the daily picture during the month of December and early January in 2016/17 when Christmas Day and New Year's Day fell on a Sunday. The distinctive pattern begins on the Saturday before, with higher volumes occurring compared to a typical weekend. The two days after Christmas Day and New Year's Day, a Monday and Tuesday, are markedly different from the typical Monday and Tuesday during these winter months and are at levels higher than experienced during a typical weekend.

CHART 1

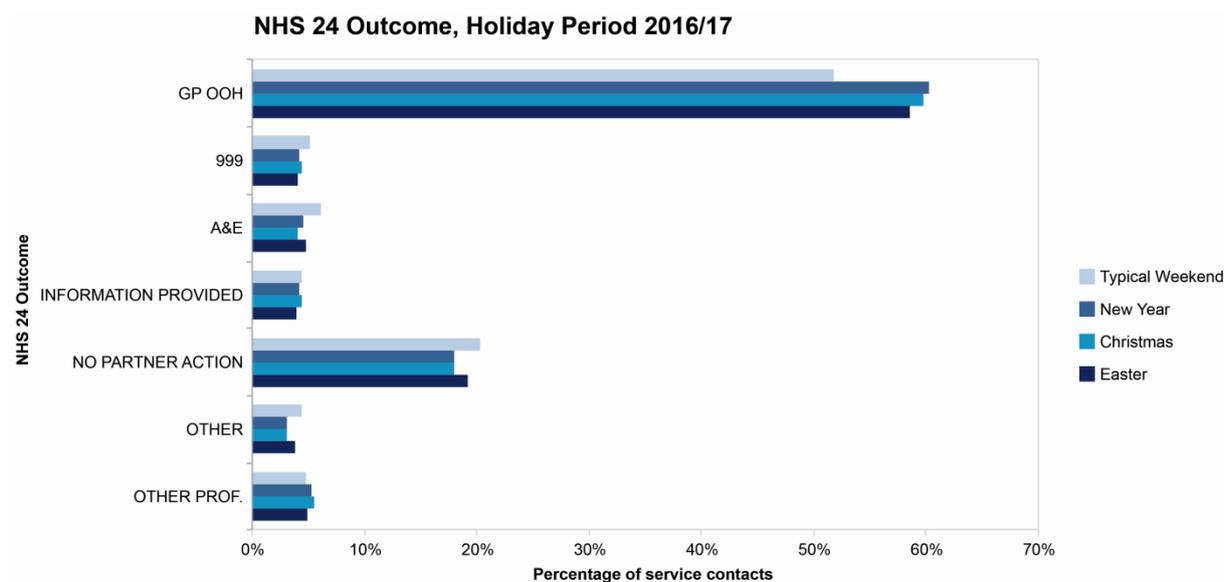


It not unreasonable to assume that this increased number of calls can largely be explained by the limited availability or closure of primary care services during the 4 days of each holiday period.

These extra calls to NHS 24 then translate into a pattern of increased contacts with (mainly) Primary Care Out of Hours (PC OOH), as evidenced in Chart 2 below.

Proportionally more patients calling NHS 24 are being referred to PC OOH during these holiday periods than during a typical weekend. Following contact with NHS 24 marginally less people are advised to attend A&E or have an ambulance called during public holidays. This is demonstrated by comparing a typical weekend day when around 20,830 calls are made to NHS 24. Of those, just over half (around 10,790 calls) resulted in the patient being referred to PC OOH. On Christmas Day 2016, there were 36,015 calls to NHS 24 and of these 6 out of 10 patients (21,511) were referred to PC OOH.

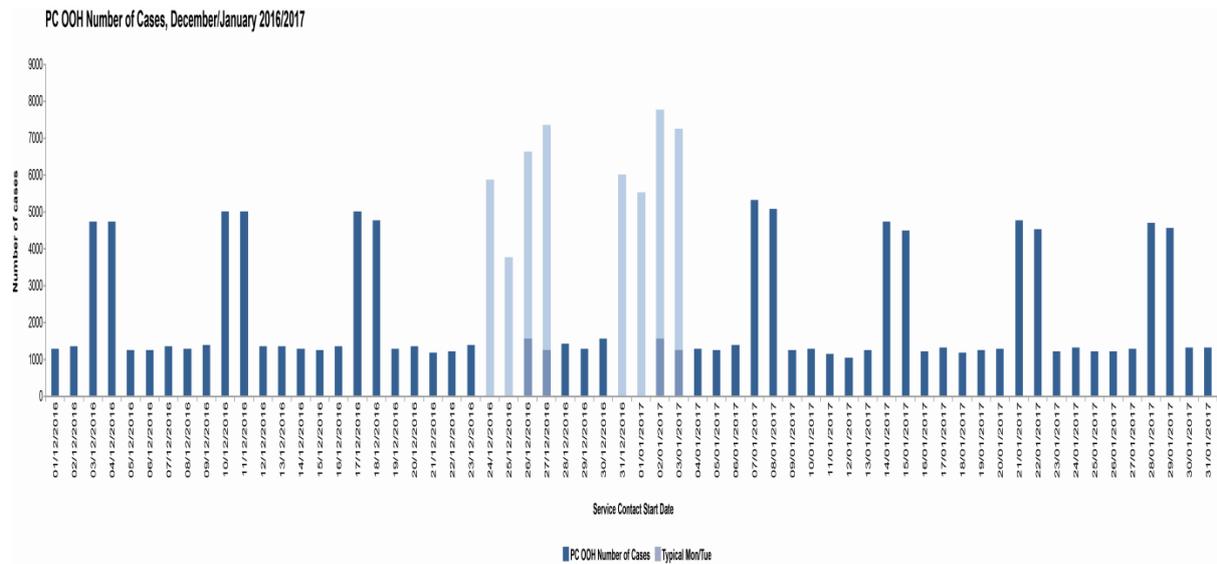
CHART 2



5.2 Primary Care Out of Hours (PC OOH)

5.2.1 The pattern of referrals to PC OOH corresponds closely to that experienced by NHS 24 – for example a marked increase on the Saturday before Christmas compared to a typical Saturday - and the following Monday and Tuesday experiencing a markedly higher level of activity even compared with a typical weekend (Chart 3).

CHART 3



5.2.2 Alongside the absolute increase in number of people treated by PC OOH services is an increase in the time taken for patients to be seen, irrespective of whether at home or at a Urgent Care Centre. The two charts (4a and b) below show the distribution of time to see the patient in the two settings. The curves further to the right of the typical weekend curve signify a longer wait. In summary there is nearly an extra hour added to the wait for some patients compared with a typical weekend, though very urgent cases will be prioritised and seen quickly.

CHART 4a

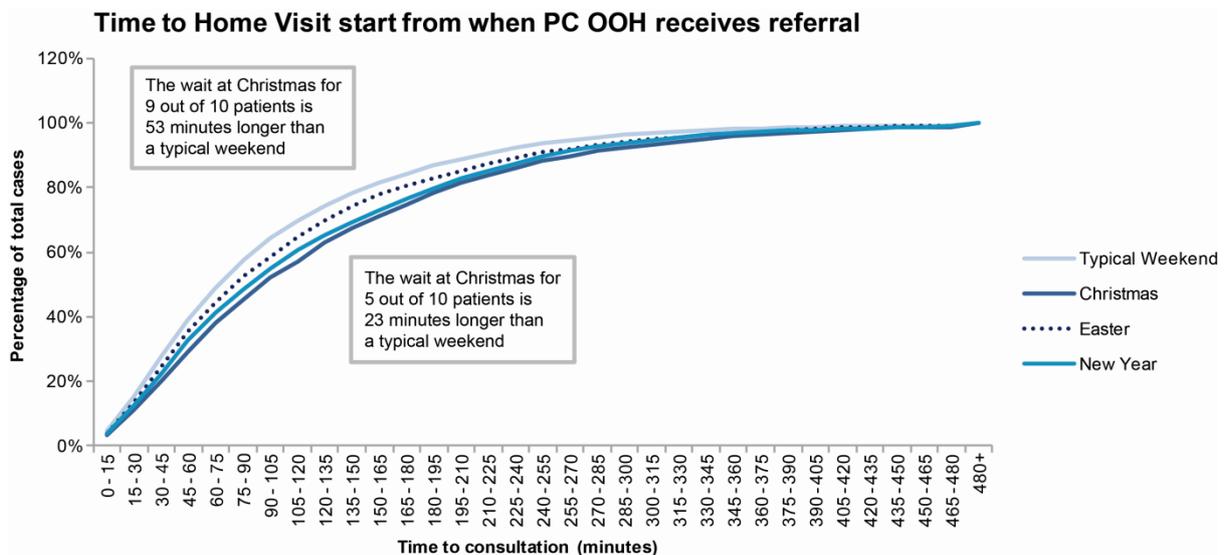
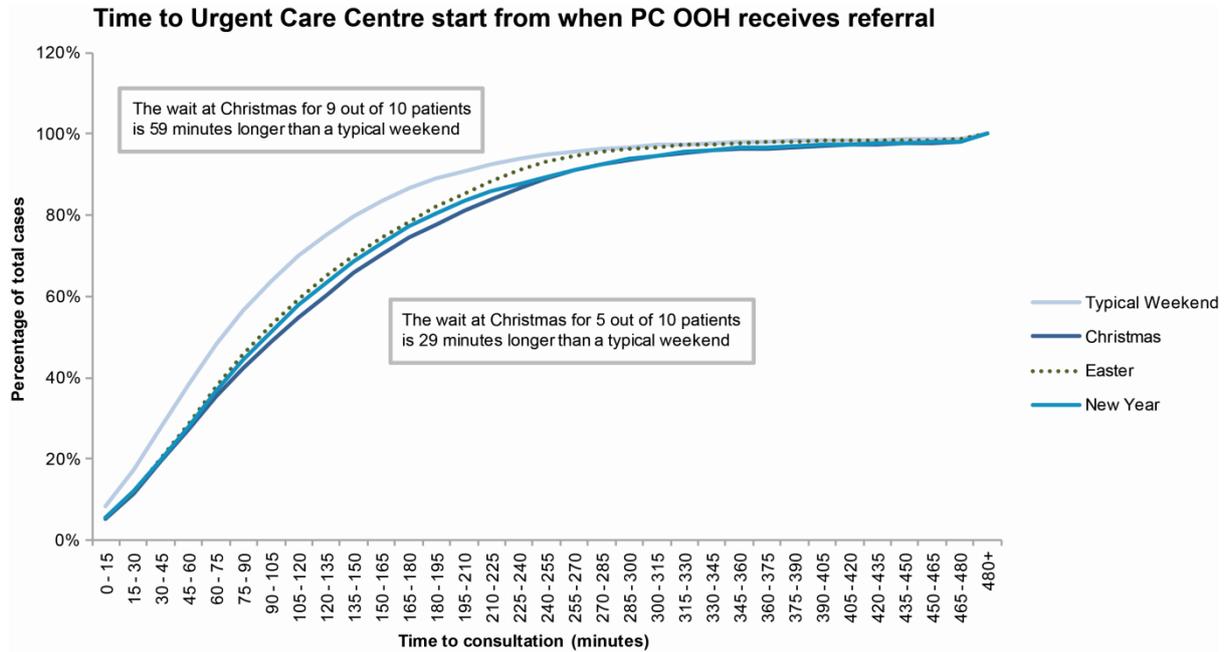


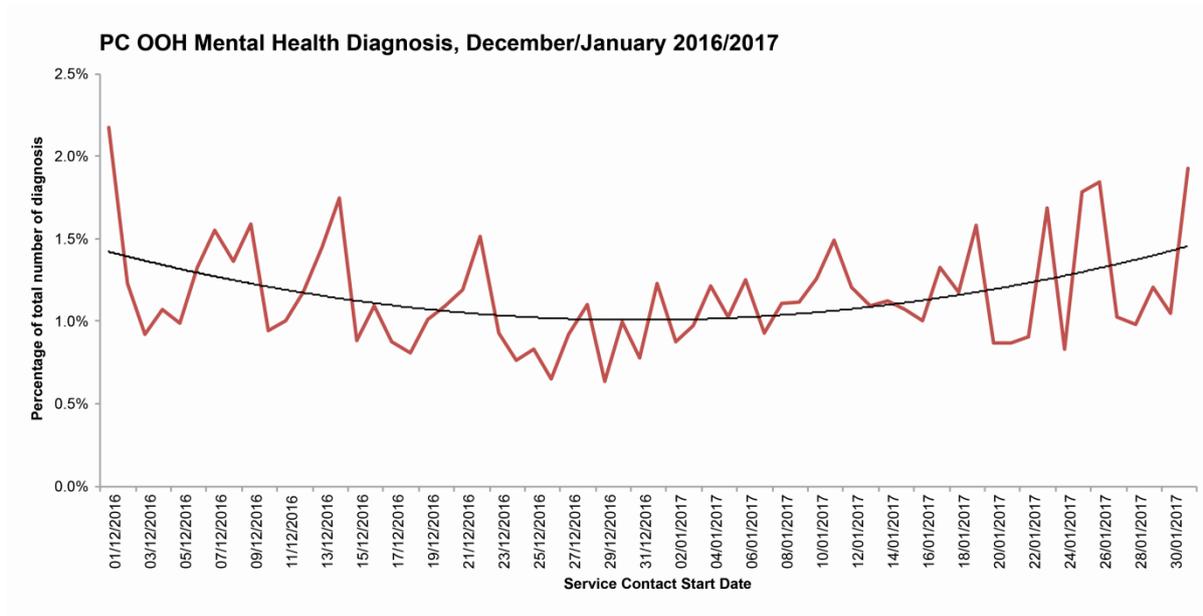
Chart 4b shows the additional wait experienced by patients attending Urgent Care Centres.

CHART4b



5.2.3 The Public Holiday Review Report stresses that its Key Messages apply to both physical and mental illness services. It has been suggested that acute mental health presentations are more common around the Christmas and New Year period. Chart 5 shows the pattern in the recorded diagnoses of anxiety and stress for PC OOH. Chart 5 indicates that these presentations appear to higher earlier in December and later in January than apparent during the immediate festive period. However this simple analysis may mask variation in the complexity and intensity of anxiety and stress and further work is required to elucidate this.

CHART 5

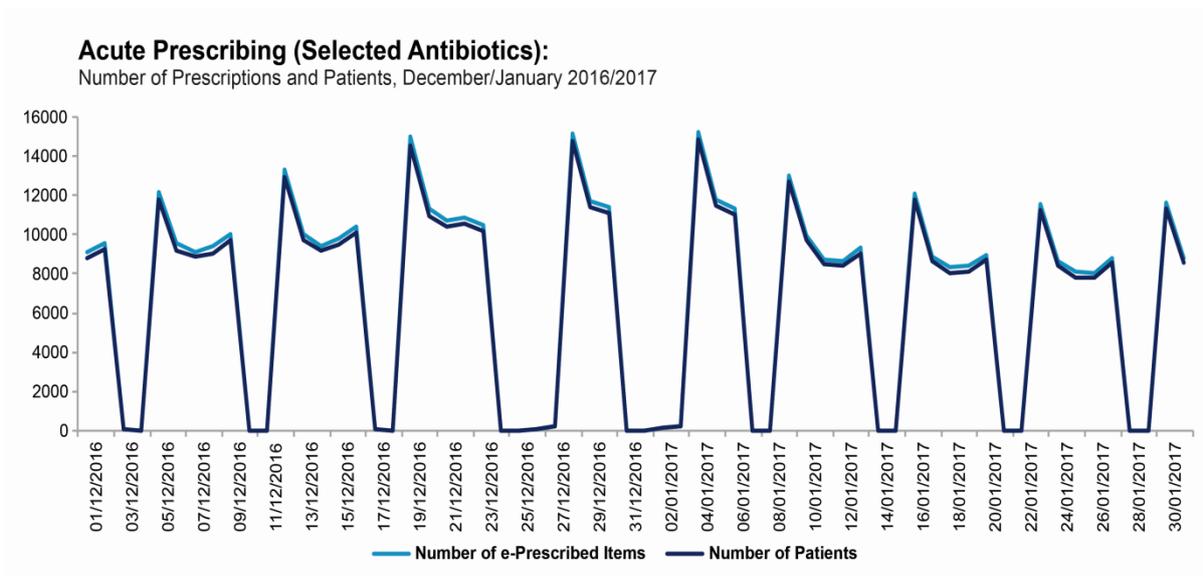


5.3 Prescribing

5.3.1 The general trend in prescribing items continues to increase. In 2007/08 the total number of items dispensed across Scotland was just over 80 million, in 2016/17 this had increased to over 100 million. More information is available [here](#).

5.3.2 Although the reasons for a different pattern in the timing of prescriptions can't be ascertained from present available data, it is interesting to observe the marked rise in the number of patients prescribed antibiotics by GPs in hours in the week before Christmas (Chart 6). This is likely to be people going to see their GP as they don't want to be ill over Christmas. The daily numbers are also higher than normal during the (fewer) in hours days between Christmas and the New Year and the week after New Year.

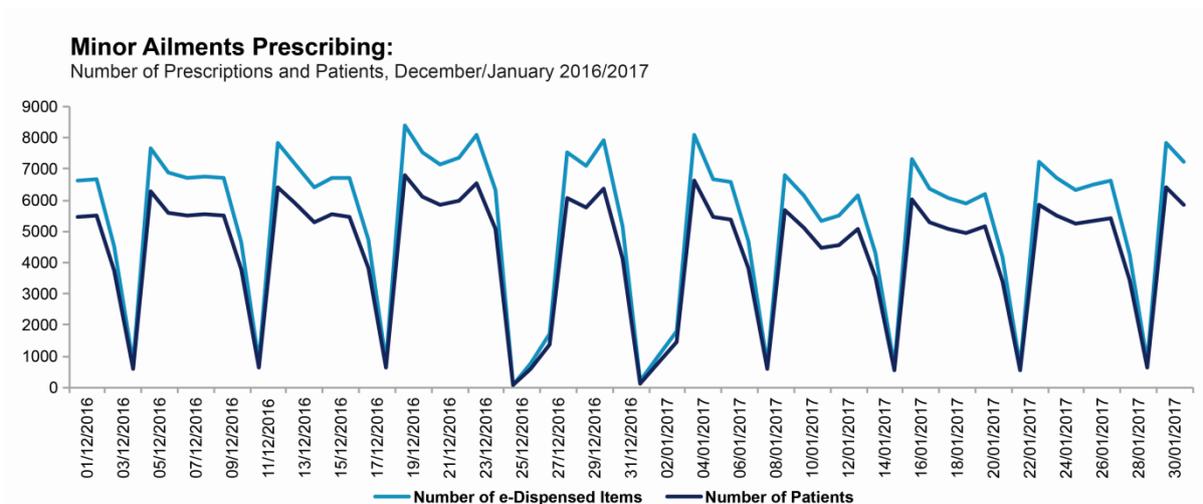
CHART 6



5.3.3 Usage of Minor Ailments Service

A broadly similar pattern is observed in the use of the Minor Ailments Service (MAS) by the public (Chart 7). In the run-up to the festive period this service is more heavily used compared to normal usage. However, the data show that during days three and four of both Christmas and New Year public holidays, fewer people are using this service. This may be due to a number of pharmacies operating reduced opening hours or will be closed, therefore access will be reduced.

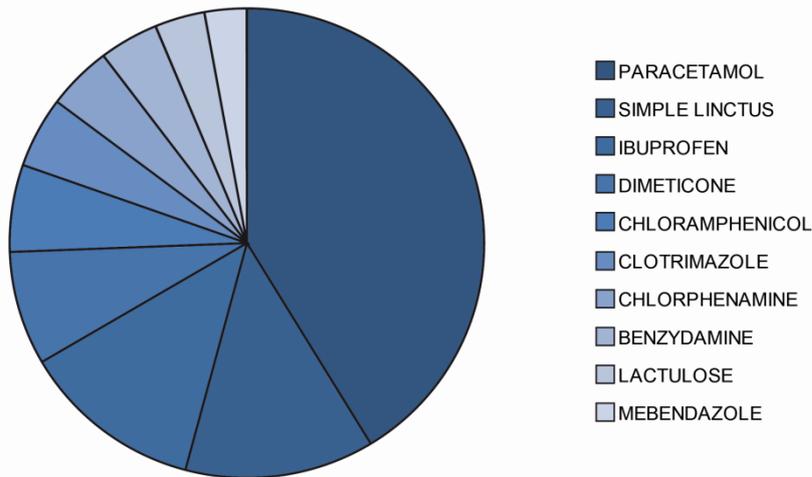
CHART 7



The medicines that are most commonly dispensed via the MAS, are listed in Chart 8. Most of the items that are in the top ten (paracetamol significantly the highest by volume), are similar to dispensing patterns for the rest of the year.

CHART 8

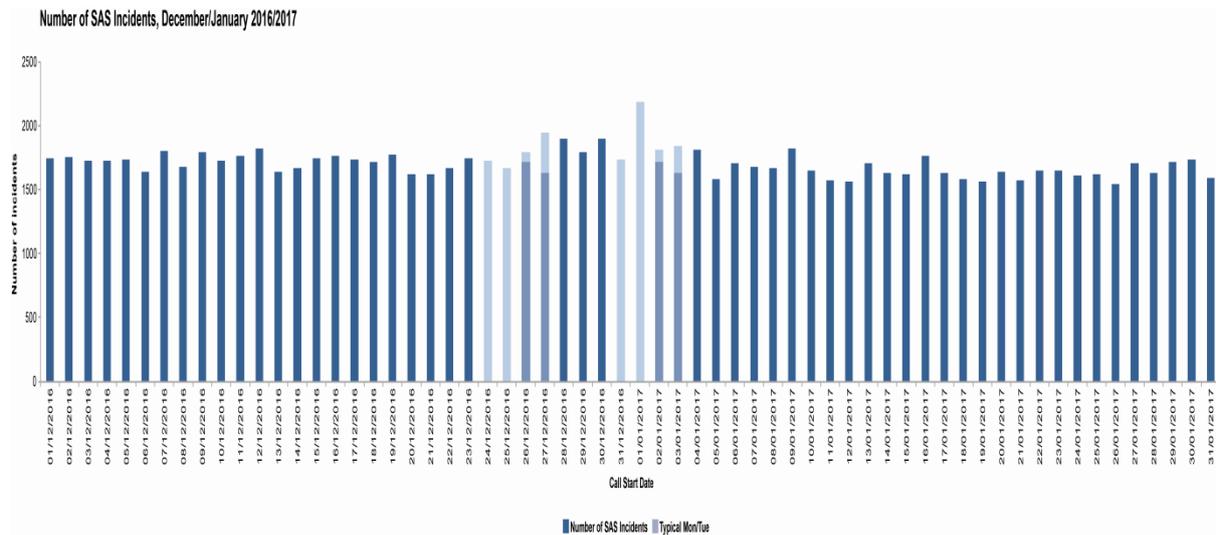
Top 10 MAS items, December/January 2016/2017



5.4 Scottish Ambulance Service (SAS)

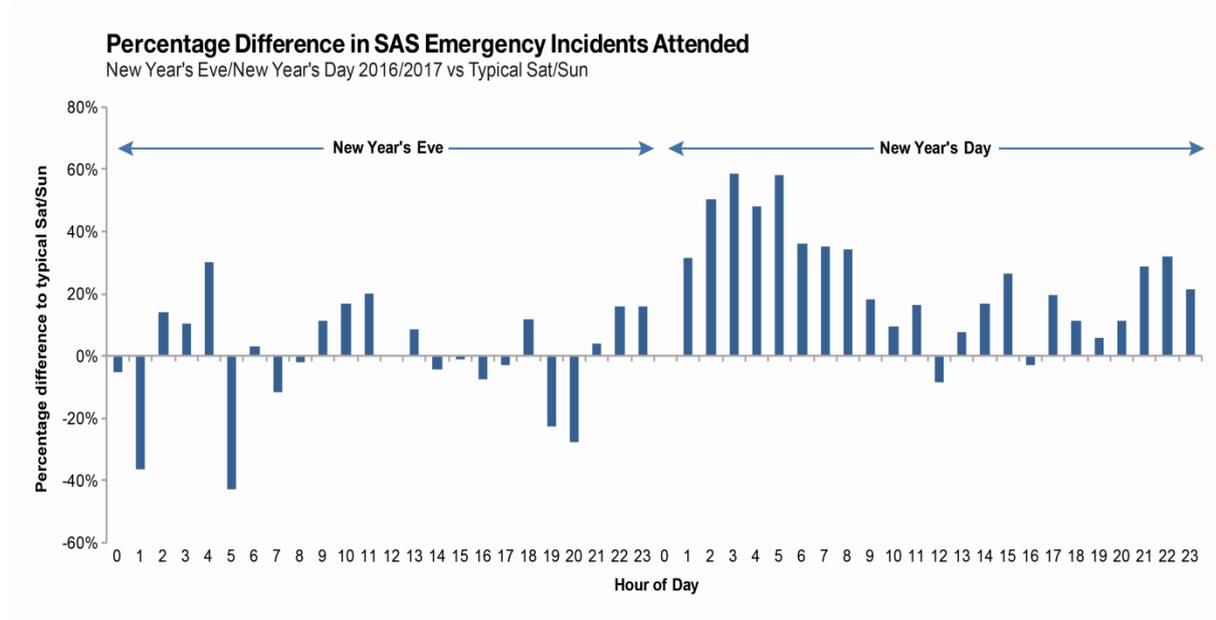
5.4.1 It is useful to look at the way that the SAS daily demand pattern may differ, over the course of extended holiday periods. While there is no marked difference overall in activity on Christmas Day and the Saturday preceding, there is a marked rise in demand after Christmas, especially on the day after Boxing day, compared with a typical day (Chart 9). At the New Year holiday, 1 January is by far the busiest day for incidents though most of this occurs in the early hours of New Year's day.

CHART 9



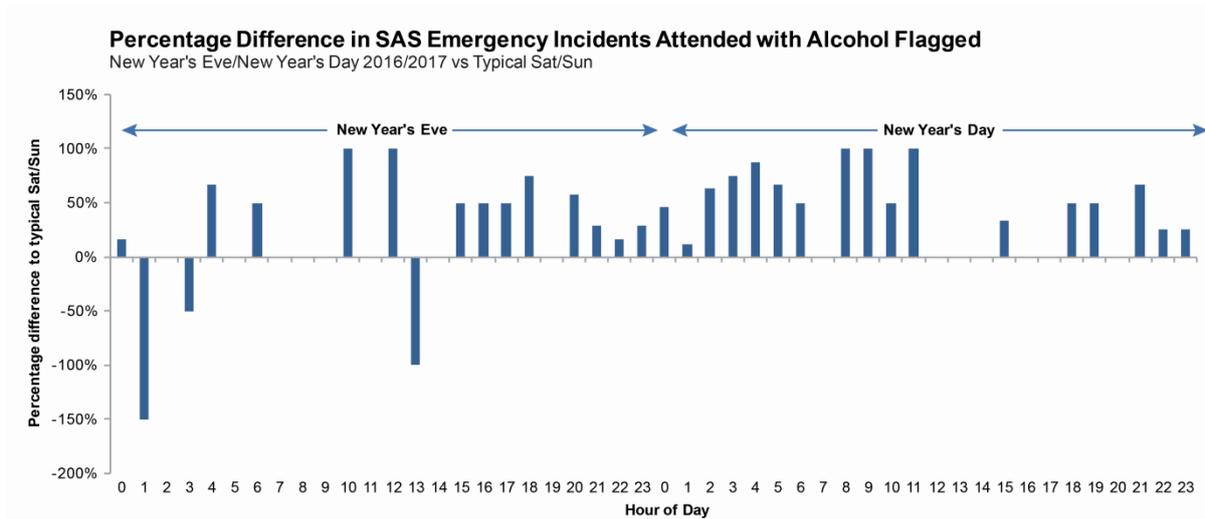
5.4.2 The following data has been provided from the Scottish Ambulance Service clinical system. A proportionately high number of incidents are experienced during the early hours of New Year's day as evidenced in Chart 10a.

CHART 10a



The paramedics will record if they suspect that alcohol is involved whilst attending an incident. While the recording of alcohol related problems is generally undercounted the available data reveal a pattern that is striking: a 21% rise on New Year's Eve and a 53% rise on New Year's Day, Chart10b.

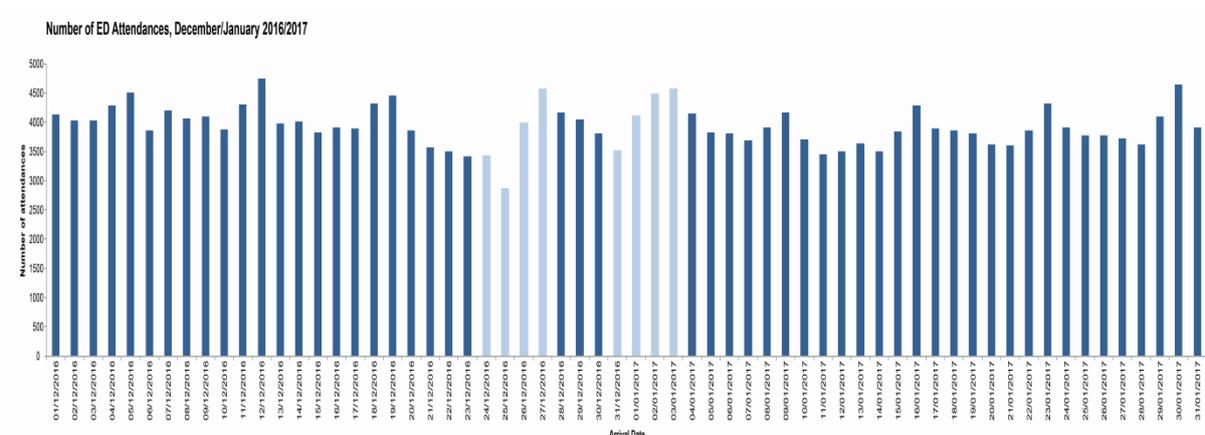
CHART 10b



5.5 Accident and Emergency Services

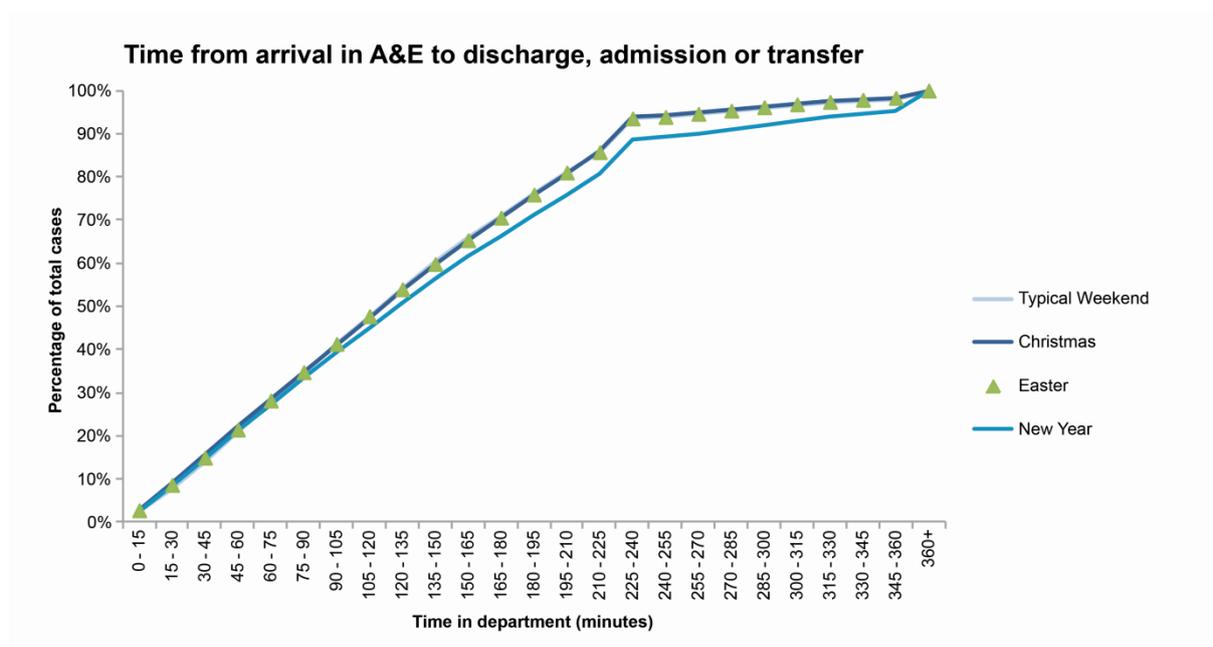
5.5.1 At A&E services, the number of people attending reduces gradually in the five days leading up to Christmas. During the days immediately following Christmas, numbers return to the more typical pattern (Chart 11). Numbers rise again from New Year's Day before returning to the typical pattern a few days later.

CHART 11



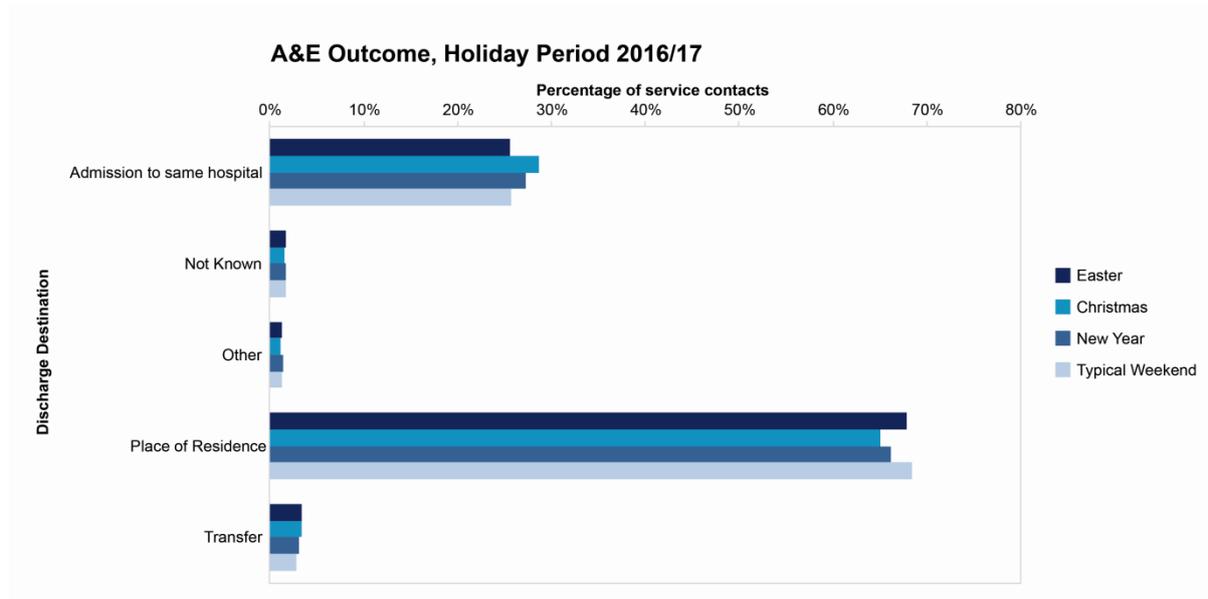
5.5.2 The chart below suggests that the time to be discharge, admit or transfer a patient in A&E, at both Christmas/New Year and Easter holidays is similar to a typical weekend (Chart 12). The data for the New Year period show that on average patients attending A&E wait 30 minutes longer before being admitted, transferred or discharged compared to a typical weekend.

CHART 12



5.5.3 Chart 13 presents information on discharge destination following A&E attendances. It shows that in 2016/17 (a similar pattern existed in 2015/16) a slightly higher proportion of patients attending A&E were admitted to hospital during the Christmas and New Year periods overall, than during a typical weekend.

CHART 13

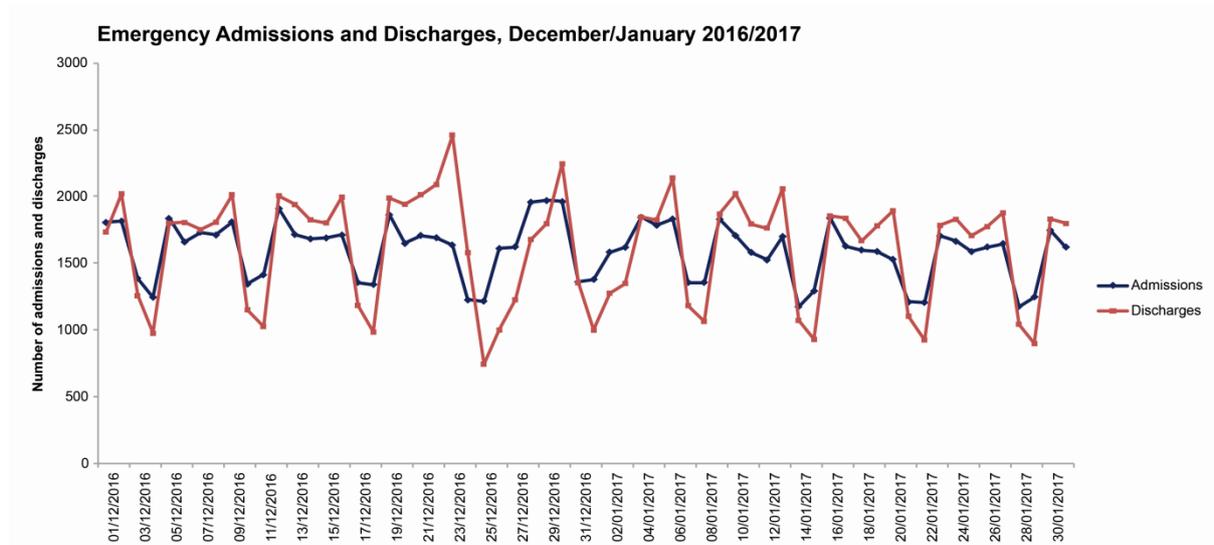


5.6 Emergency Admissions/discharges

5.6.1 The 2016/17 trend analysis in Chart 14 shows that the number of discharges from hospital peaks on the Friday before Christmas and on the Friday before New Year. Inspection of previous years' data shows that this sharp increase in discharges is typical the day before Christmas and New Year.

Emergency admissions drop over the Christmas holiday period. When general practices reopen following a four day break, admissions to hospital increase steadily before dropping again over the New Year period. Chart 14 illustrates how the relative numbers of admissions and discharges varies during the Christmas and New Year festive period for 2016/17.

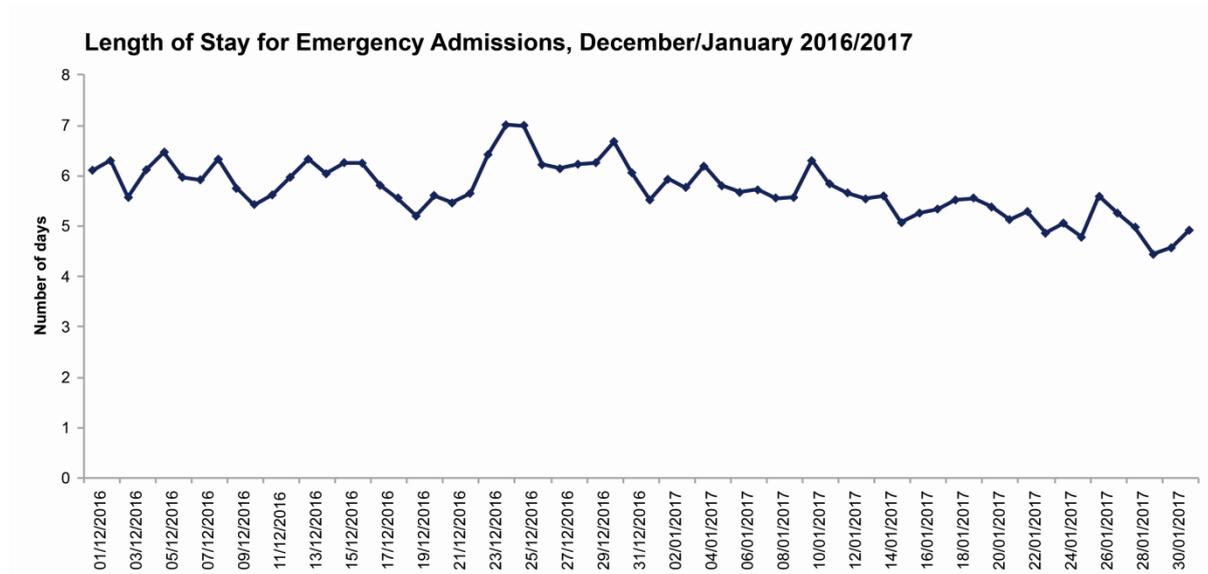
CHART 14



5.6.2 During a typical week there are around 12,000 planned (ie non-emergency) admissions to day-case and inpatient facilities in Scotland’s hospitals. Over the period between Christmas Day and New Year’s day, this is reduced to around 6,000 planned admissions per week. This is likely because hospitals adjust for the holidays and ensure that there is capacity available for emergency and urgent care.

5.6.3 There is variation in the average length of stay according to the day of the week that people are admitted to hospital in the period around the Christmas and New Year holiday. This variation occurs throughout the rest of the year. Compared with the period either side of the festive holidays a patient admitted as an emergency on Christmas Eve, Christmas Day and New Year’s Eve can expect to be in hospital around 1 day longer on average.

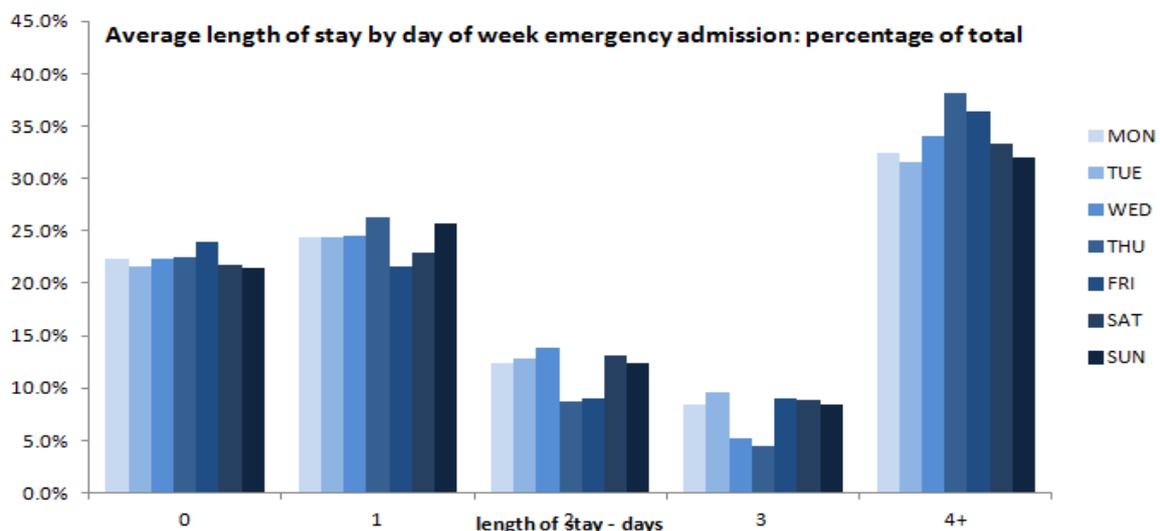
CHART 15



5.6.4 As a corollary to this analysis it is instructive to look at the variation in length of stay by day of admission at other times of the year. An analysis of four months (July to October 2016) of emergency admissions for the main acute hospitals in Scotland, shows that the percentage of patients who are admitted on a Thursday or a Friday is higher than the percentage who were admitted on a Monday or Tuesday and have a longer length of stay (Chart 16). There may be many individual reasons for this variation, including the impact of the weekend on the likelihood of discharge.

The admission and discharge patterns for children are very similar to those above.

CHART 16



6 Summary of comparison with typical weekends for the four emergency and urgent response services

6.1 It is instructive to look again at the overall pattern across the four urgent and emergency care services, to see the variable impact of the extended public holiday period on the individual services (Charts 17a and b). The charts show the percentage difference in activity volume for the four services compared with a typical weekend.

CHART 17a

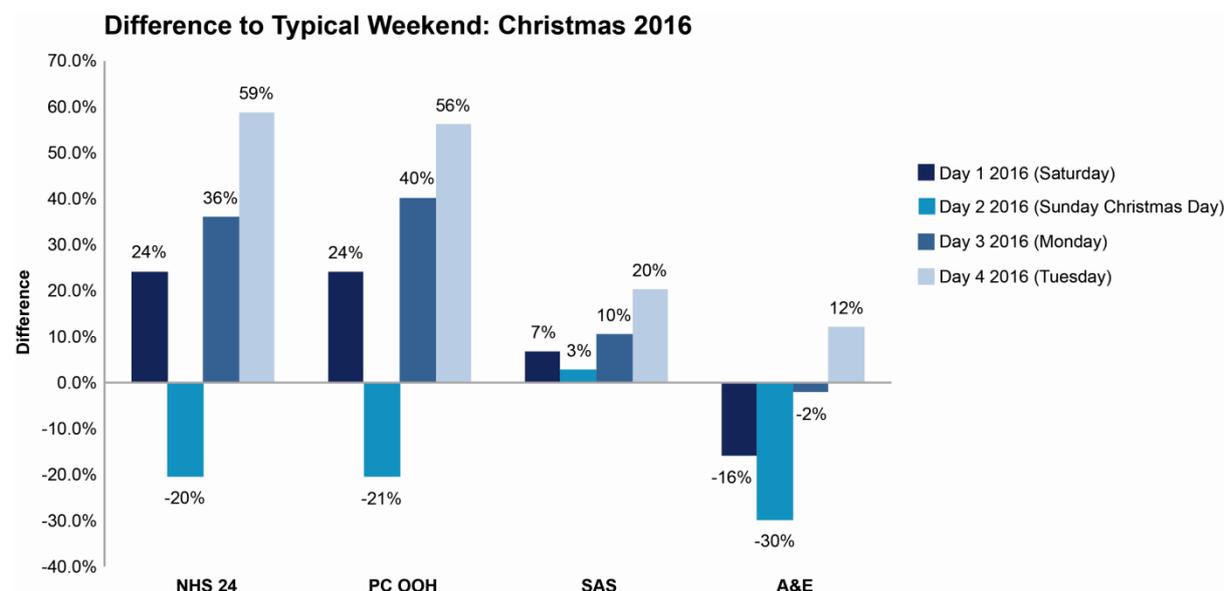
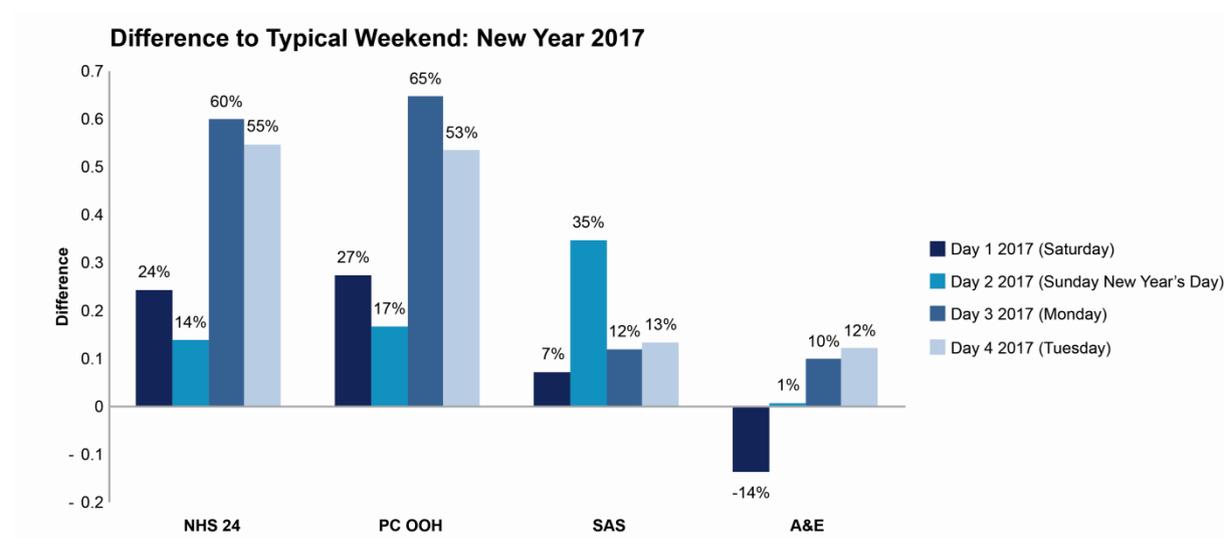


CHART 17b



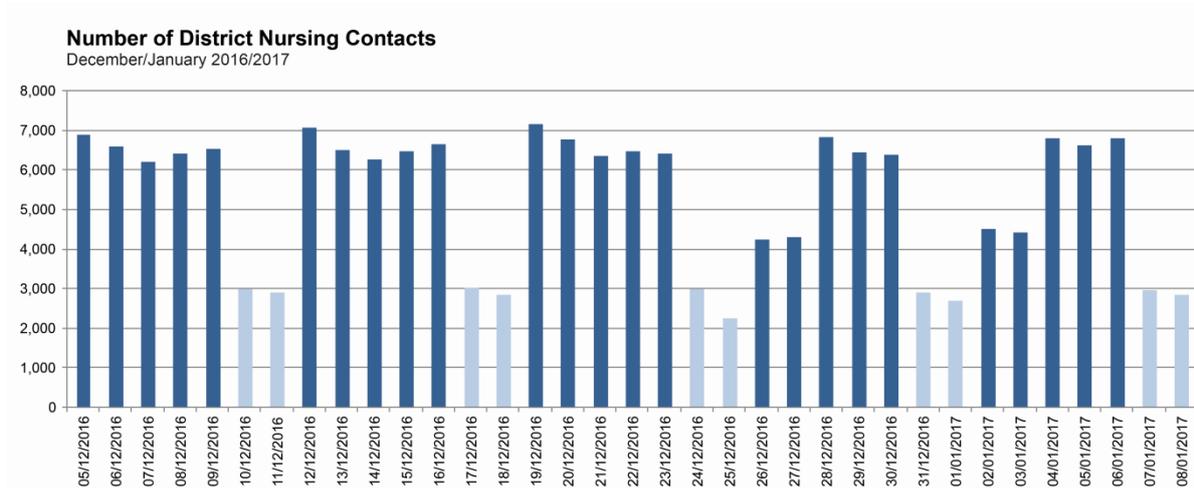
7 Social Care and other Community Services

At present national information on other health and social care services are limited in terms of content and completeness, but it is nevertheless possible to contrast certain features of care over the extended holiday period in the winter with other days during December and January.

7.1 District Nursing Services

Information about the delivery of district nursing care is new and is currently only available from a sample¹ of areas in Scotland. Information from this sample in the winter period in 2016-17 shows that the number of district nursing contacts during Christmas and New year days is slightly lower to that occurring during typical weekends (Chart 18). On the third and fourth day of both holiday periods the volume of contacts rises but is still lower than the normal week day level.

CHART 18

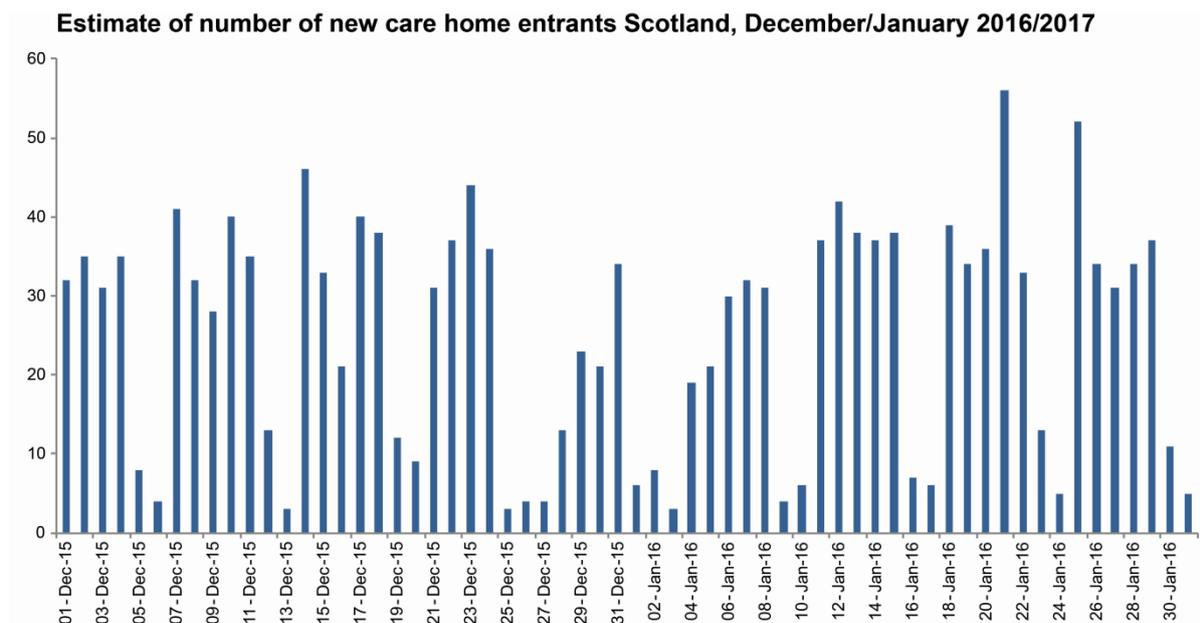


1. Analysis includes data from five NHS Boards: NHS Forth Valley, NHS Greater Glasgow & Clyde, NHS Highland, NHS Lanarkshire, NHS Lothian.

7.2 Care homes

Admissions to care homes are typically low at weekends and lower still during the first three days of a public holiday when care homes will be focussed on the festive aspects of care home life. The period after the extended holidays has lower numbers of admissions than happens at other times in December (Chart 19).

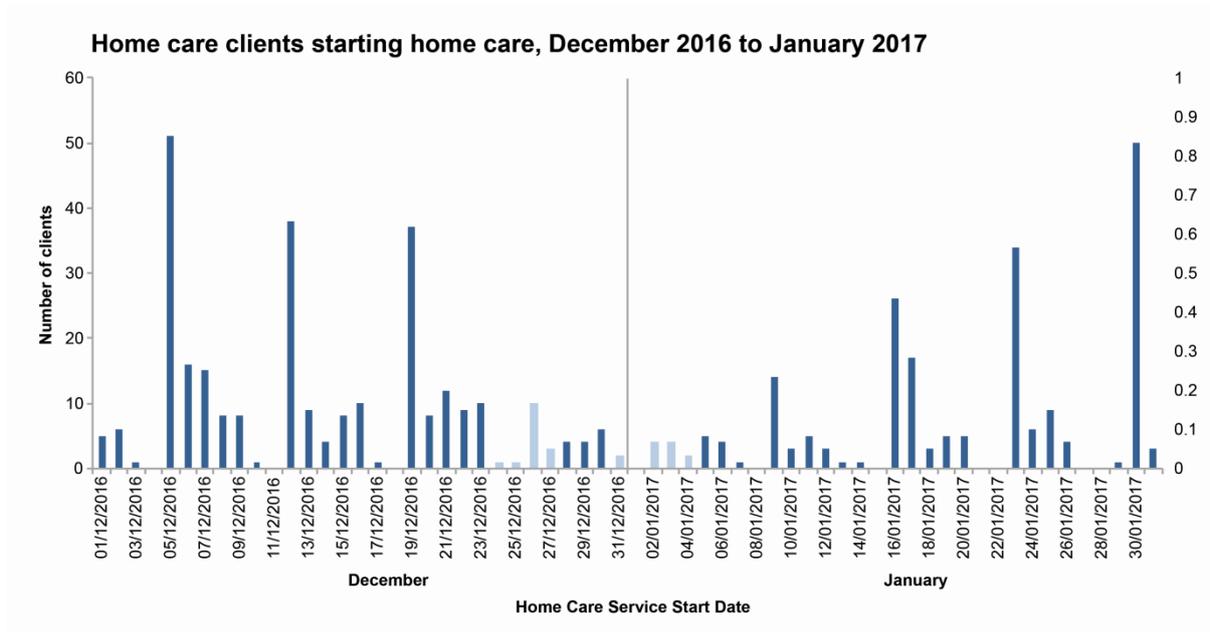
CHART 19



7.3 Home care packages

Information about people receiving new home care packages by day of the week is new and is currently only available from a sample of areas in Scotland¹. The available information shows that the volume of new starts around the winter holiday period is much lower than in other days in December and January (Chart 20). It is also more generally suggested from this analysis that few new starts begin during weekends.

CHART 20



1. Analysis includes data from: City of Edinburgh, Dumfries and Galloway, East Lothian and Stirling

8 Next steps for ISD

ISD have listed below actions they can undertake which could assist with the delivery of several of the recommendations in the main report, subject to agreement and resourcing. These will cut across Primary Care, Acute Care and Social Care.

Short term actions - for winter 2017/18:

1. In order to assist NHS Boards to make full use of the information and predictions included in [System Watch](#) for planning purposes, ISD will produce a 'how to use System Watch' guide for users.
2. ISD will investigate making System Watch available to Integrated Joint Boards (IJB) – currently only available NHS (on N3 network).

Longer term – by winter 2018:

1. ISD will establish a Short Life Working Group with representatives from NHS Boards and IJBs to review the content and functionality of System Watch. This would be to ensure the tool is timely and fit for purpose and assists with an intelligence led service.
2. These developments may focus on including additional predictions, inclusion of weekly A&E data, further syndromic surveillance, investigate the impact that the weather has on services. This also links with the AC.5 recommendation around case-mix and predicting the conditions people will use urgent and emergency care for, over public holidays.
3. ISD could work with and provide local unscheduled care staff with analyses on clinical reasons that people have contact urgent and emergency care hospital services over public holidays.
4. Subject to the successful completion of the on-going programme to develop the Source social care data as the unifying social care dataset for Scotland, individual level social care data will become available at national level for multiple purposes, including informing the work of Health and Social Care Partnerships in their planning and delivery of joined up care.
5. There is currently a gap around urgent care delivered at Primary Care in Hours (generally working hours Monday to Friday). A programme of work is underway

to be able to answer specific questions for primary care not just urgent care. A link to this can be found at the following web page: <http://spire.scot/>

Appendix A

Analytical Team Membership

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