Data Pack

Aberdeen Royal Infirmary Review

22 August 2014
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Explanatory Note

This Data Pack was prepared to support the short-life review of quality and safety in Aberdeen Royal Infirmary.

The pack was prepared as a working document, that was designed to support the review team by compiling key pieces of data/analyses. While not a formal published report in its own right, the Data Pack is being placed in the public domain alongside the main report of the review, given it is an important item of documentation considered for the review.

For this reason, the pack is being published in its entirety, as it was shared with the review team on 22 August 2014. Please note that:

- Throughout the pack, the references to Public Health & Intelligence (including in the data sources) should instead say Information Services Division. The Information Services Division provides health information, health intelligence, statistical services and advice that support the NHS in progressing quality improvement in health and care and facilitates robust planning and decision making. It is part of Public Health & Intelligence, which also provides an expert public health protection service to the people of Scotland.

- Subsequent, and independent, to the preparation of this pack, the Information Services Division reviewed the methodology for producing run charts for the Hospital Standardised Mortality Ratio (HSMR). A technical adjustment was then made so that, in line with accepted practice, the baseline is now calculated from the median of the first eight data points, instead of the mean which was used previously. While the original analyses (included in the Data Pack) indicated that the HSMR for Aberdeen Royal Infirmary had increased, the correct analyses – included in the main published report of the review – show that the HSMR for Aberdeen Royal Infirmary has not increased, nor is it relatively high.

There are two specific instances in the Data Pack where, due to confidentiality, the data/information have been redacted. These instances are in the sections on medical staff management and adverse events.
Introduction

This Data Pack has been prepared in order to support the Aberdeen Royal Infirmary review. Specifically, the data/information in the pack has been compiled to support the review team as it develops its key lines of enquiry. It is important to note that the data cannot be used as a sole basis for making reliable judgments about quality/performance at Aberdeen Royal Infirmary.

The approach taken in preparing this data pack involved identifying and prioritising key pieces of existing data – mostly from Scotland-wide data sets, with some additional data provided by NHS Grampian. The Data Pack comprises of 18 short chapters, each of which summarises some key patterns in the data and presents specific examples of data.

At this stage of the review, the focus has been on considering existing data/analyses – and minimal work has been carried out to request additional analyses, or alter the ways in which the data are presented.

It should be noted that this Data Pack is a working document, and throughout the course of the review additional analytical work will be carried out to support the review team. For example, as the review team is considering its findings, it is anticipated that additional, focused pieces of analysis will be required to augment the data in this pack, ie for triangulating findings from the review.
Chapter 1. Hospital Standardised Mortality Ratio

Key points:

- The Hospital Standardised Mortality Ratio (HSMR) is a clinical outcomes measure, for which crude data on hospital mortality are adjusted to take account of some factors known to affect a person’s risk of dying.

- The HSMR for Aberdeen Royal Infirmary is close to the Scottish average.

- The HSMR for Aberdeen Royal Infirmary has increased over the period October 2012-March 2014 – and this increase is driven by emergency medical admissions.

- The observed increase in HSMR is also seen in unadjusted hospital mortality data – both analyses produced from a national dataset, and data collected by NHS Grampian for a different mortality metric.

- It is unclear what factor(s) are causing this increase in HSMR (eg relating to changes in how the source data are captured, to the configuration of clinical services, to the quality of patient care).

- It should be noted that the increase in HSMR for Aberdeen Royal Infirmary coincides with the opening of the Emergency Care Centre in December 2012. It is currently unclear whether this is contributing to the observed increase in HSMR.

Additional information:

- The HSMR is calculated as the ratio of the actual number of deaths within 30 days of admission to hospital to the predicted number of deaths: HSMR = observed deaths/predicted deaths.

- Deaths within 30 days of admission to hospital are covered, including deaths within a hospital and those outwith a hospital. The Scottish HSMR is not a measure of all in-hospital mortality, because it does not include patients who die in hospital after 30 days from admission.

- The HSMR cannot be used in isolation to make reliable judgements about the quality of clinical care at a hospital (ie that the quality of care is poor, or indeed good). This is because there are a number of factors that can influence the HSMR, eg characteristics of the patients admitted to the hospital (case-mix), the completeness/accuracy of the source information used to produce the HSMR, the quality of clinical care.

- A high and/or increasing HSMR does not necessarily mean that the quality of care is poor. If a hospital has a high and/or increasing HSMR then it needs to look into this locally to understand what factors are causing this.
• The HSMR for Aberdeen Royal Infirmary has consistently been close to or below the Scottish average (see Figure 1.1 for the most recent data, covering January-March 2014).

• At Scotland level, there has been a significant reduction in HSMR over recent years. This has not been observed at Aberdeen Royal Infirmary, and for the most recent release an increase in HSMR is observed at the hospital over the period October 2012-March 2014. Specifically, an upwards shift (ie 6 consecutive data points above the median) is observed when the data are plotted on a run chart (see Figure 1.2).

• An increase in HSMR for Aberdeen Royal Infirmary was also seen three years previously (an upwards shift starting October-December 2009), although this was not sustained.

• This increase in HSMR is mirrored by an increase (upwards shift), over the same time period, in the observed number of hospital related deaths at Aberdeen Royal Infirmary (ie the numerator of HSMR). This pattern is also seen when unadjusted mortality data are presented as a percentage of admissions.

• There is also an increase (upwards shift) in the number of predicted deaths (ie the denominator of HSMR) dating from July-September 2011, as calculated using the statistical model used to produce the HSMR.

• Data on unadjusted hospital mortality are not formally assessed as part of the Scottish Patient Safety Programme, although NHS Grampian has provided data on this as part of the programme’s reporting system. The increase in HSMR is also mirrored by a sustained increase (upwards shift), over a similar time period, in unadjusted hospital mortality as reported by NHS Grampian (Figure 1.3). This measure differs from the HSMR (and related analyses) as, for example, it captures data on all in-hospital deaths only, and data are plotted monthly.

• The increase in HSMR is driven by emergency medical admissions. In contrast, there appears to have been a decrease in standardised mortality for elective surgical admissions.

• If a hospital is identified as having a relatively high (an outlier on a funnel plot) and/or increasing (an upwards shift on a run chart) HSMR, then Healthcare Improvement Scotland initiates a dialogue with the NHS board in question. This is to seek confirmation that the data are being taken seriously and, where necessary, acted upon. The dialogue with NHS Grampian about the HSMR for Aberdeen Royal Infirmary is being progressed as part of the wider review.

• It should be noted that the increase in HSMR for Aberdeen Royal Infirmary coincides with the opening of the Emergency Care Centre in December 2012. It is currently unclear whether this is contributing to the observed increase in HSMR.
Figure 1.1. Hospital Standardised Mortality Ratio (HSMR), for deaths within 30 days of admission to hospital. Data presented by hospital of admission. January-March 2014. Pre-release of provisional figures to be published on 26 August 2013. Aberdeen Royal Infirmary highlighted in red.

![Hospital Standardised Mortality Ratio (HSMR) Funnel Plot](image1)

Source: Public Health & Intelligence’s SMR01 database linked with National Records of Scotland death records. Published 26 August 2014.

Figure 1.2. Hospital Standardised Mortality Ratio (HSMR), for deaths within 30 days of admission to hospital. Data presented for Aberdeen Royal Infirmary. October-December 2006 to January-March 2014.

![Hospital Standardised Mortality Ratio (HSMR) Run Chart](image2)

Source: Public Health & Intelligence’s SMR01 database linked with National Records of Scotland death records. Published 26 August 2014.
Figure 1.3. Unadjusted in-hospital mortality. Data presented for Aberdeen Royal Infirmary. January 2012 to June 2014.

Key points:

- NHS boards across Scotland collect a range of data for the different Scottish Patient Safety programmes, and provide some data to the National Team in order to share their learning and to allow some monitoring of their progress. For this review, data that NHS Grampian has provided for the Acute Adult element of the programme have been considered.

- According to the programme’s new assessment process, NHS Grampian and primarily Aberdeen Royal Infirmary are on trajectory for all but two elements of the programme, the exceptions being ventilator acquired pneumonia and *Staphylococcus aureus* bacteraemia rates.

- Being on trajectory means that many sustained improvements have been made and that these are being spread throughout the NHS board around the Essentials of Safety. It also means that work is in progress around the point of care priorities and, while there may be a lot of improvement required here, the work is in progress and currently in line with national expectations to date.

- Current assessment does not indicate that NHS Grampian is performing significantly differently to other NHS boards in Scotland on the acute adult programme.

Additional information:

- Some improvement has been noted in relation to ventilator acquired pneumonia at Aberdeen Royal Infirmary’s Intensive Care Unit, though the goal of 300 days between recorded instances has not been met here (this has been met in some, but not all, other NHS boards). (Figure 2.1).

- For the rate of *Staphylococcus aureus* bacteraemia, the data provided for the Scottish Patient Safety Programme do not show sustained improvement (9 data points under a baseline median). However, NHS Grampian has demonstrated a reduction in the rate of *Staphylococcus aureus* bacteraemia with nationally available data, and so this might be a data gap rather than performance gap.

- Only 3 central venous catheter infections have been recorded since January 2012.

- Cardiac arrest, pressure ulcers, falls, and catheter associated urinary tract infections are the harms that make up the Scottish Patient Safety Indicator. NHS Grampian has not demonstrated any improvement in these harms, though there is not an expectation at this stage of the programme for NHS boards to do so. NHS Grampian is one of only six NHS boards currently reporting on cardiac arrest, pressure ulcers and falls. At this early stage of reporting these measures, comparisons cannot be made between NHS boards.
• Aberdeen Royal Infirmary is reporting against all Safety Essentials, and showing high levels of compliance and spread. For some of the Safety Essentials, there is reliability (95% process compliance) at 100% spread, such as pre-list briefing. Others, such as the peripheral vascular catheter bundle, are showing full spread but still heading towards achieving reliability at that level of spread. (Figures 2.2 & 2.3).

• Point of Care Priorities
  There are some newer process measures for the Point of Care Priorities arm of the programme, although these are too new to expect to see significant improvement or spread. NHS Grampian is again showing good engagement by reporting against some of these measures, whereas some other NHS boards are not. However, data for some older measures, such as venous thromboembolism and Sepsis, are not showing high levels of performance or signs of improvement within the data that are being reported. It should be noted that these data are only reported at a pilot ward level and are not intended to represent practice across the site (Figure 2.4 and 2.5).

**Figure 2.1. Number of days since a ventilator acquired pneumonia was last recorded. Data for Aberdeen Royal Infirmary’s Intensive Care Unit.**

![Graph showing days since last recorded VAP](Data Source: NHS Grampian – SPSP Reporting Template July 2014)
Figure 2.2. Pre-list Surgical Briefing – Attainment & Spread. Data for April 2012 – June 2014.

Data Source: NHS Grampian – SPSP Reporting Template July 2014

Figure 2.3. Peripheral vascular catheter Bundle – Attainment & Spread. Data for January 2012 – June 2014.

Data Source: NHS Grampian – SPSP Reporting Template July 2014
Figure 2.4. Venous thromboembolism – Completion of Risk Assessment. Data for February 2014 – July 2014 from Ward 507 ARI

Data Source: NHS Grampian – SPSP Reporting Template July 2014

Figure 2.5. SEPSIS SIX – IV Antibiotics within an hour and overall bundle attainment. Data for February 2014 – July 2014 from ARI Emergency Department

Data Source: NHS Grampian – SPSP Reporting Template July 2014
Chapter 3. Healthcare Associated Infections

**Key points:**

- Health Protection Scotland produces routine quarterly reports/data for the surveillance programmes it runs for *Staphylococcus aureus*, *Clostridium difficile* and surgical site infection, together with associated annual reports.

- When considering various measures about these healthcare associated infections, the data for NHS Grampian do not differ markedly from the rest of Scotland as a whole.

**Additional information:**

- The rate of *Staphylococcus aureus* bacteremia for NHS Grampian is below the Scottish mean and within control limits (Figure 3.1).

- The incidence rate of *Clostridium difficile* infections in patients aged 65 years and over for NHS Grampian is within control limits (Figure 3.2), and is currently meeting the level required for the Heat target.

- The incidence of surgical site infection in caesarean section and hip arthroplasty for NHS Grampian is not markedly different from the Scottish mean (Figure 3.3a/b).
Figure 3.1. Rate of *Staphylococcus aureus* bacteremia infections. Data presented by NHS board. 1 January 2014 to 31 March 2014.

Data Source: Health Protection Scotland. Quarterly Scottish *Staphylococcus aureus* bacteraemia surveillance report, January - March 2014

Figure 3.2. Incidence rate of *Clostridium difficile* infections in patients aged ≥65 years. Data presented by NHS board. 1 January 2014 to 31 March 2014.

Figure 3.3. Cumulative incidence of surgical site infection, for caesarean section (a) and hip arthroplasty (b). Data presented by NHS board. Data for 2013.

Data Source: Health Protection Scotland. Surveillance of Surgical Site Infection Annual Report from January 2009 to December 2013
Chapter 4. Scottish Intensive Care Society Audit Group

**Key points:**

- The Scottish Intensive Care Society Audit is one of a number of national clinical audits managed by Public Health & Intelligence (formerly Information Services Division). The latest national report from the Scottish Intensive Care Society Audit Group was published on 12 August 2014. This presents data for a range of measures, covering the period up until and including 2013.

- When considering the various measures presented in this report collectively, the data for Aberdeen Royal Infirmary do not appear to be strikingly different compared with the rest of Scotland as a whole.

**Additional information:**

- For this audit, data are reported on the management of patients admitted to Intensive Care Units (ICUs) and Combined Units (units with a combination of ICU and High Dependency Unit [HDU] beds), and also patients admitted to HDUs, during 2013. The report summarises data that have been collected via a bespoke electronic database (WardWatcher).

- All ICUs in Scotland now participate in the audit, and only four HDUs (excluding Obstetric HDUs) do not participate at this time. Five units at Aberdeen Royal Infirmary currently take part in the audit: ICU (denoted W on the charts); Surgical HDU (ward 503 – W2); Surgical HDU (ward 506 – W4); Cardiothoracic HDU (W5), and: Cardiothoracic ICU (W7). The Medical HDU is joining the audit in 2014. Aberdeen Royal Infirmary’s Neurological HDU closed in 2013, and currently these patients are admitted to their ICU.

- Mean bed occupancy is either close to or below the national average for each of the participating units from Aberdeen Royal Infirmary. The mean length of stay for each of these units is not significantly different from the Scottish average.

- The Standardised Mortality Ratio for the ICU at Aberdeen Royal Infirmary lies within the control limits, ie is not significantly different from the Scottish average (Figure 4.1).

- The rate of readmission to critical care (within 48 hours of discharge) for each of the five participating units at Aberdeen Royal Infirmary lies within the control limits, ie is not significantly different from the Scottish average.

- The percentage of night time admissions was significantly lower at Aberdeen Royal Infirmary’s Cardiothoracic ICU compared with the Scottish average (reflecting its predominantly elective workload). The percentage of night time admissions for the ICU was approaching 3 standard deviations above the national average (Figure 4.2).
• The percentage of delayed discharges is either close to or below the national average for each of the participating units from Aberdeen Royal Infirmary.

• Information is also reported on ten quality indicators developed by the Scottish Intensive Care Society Quality Improvement Group. As part of this, it is reported that the Cardiothoracic HDU at Aberdeen Royal Infirmary is one of two participating units that doesn’t fully comply with the standard for having all care bundles in place (for Ventilator Associated Pneumonia prevention; Central Venous Catheter insertion and maintenance, and: Peripheral Venous Cannula insertion and maintenance), reporting data to the Scottish Patient Safety Programme and feedback to staff. The audit’s Clinical Coordinator has explained it is the feeding back of these data to staff that was not happening at Aberdeen Royal Infirmary, and there is an expectation that this has now been addressed.

• In addition, the Cardiothoracic ICU has no end of life care policy in place, although they currently have this under review.

Figure 4.1. Standardised Mortality Ratio for Intensive Care Units and Combined Units (excluding X6 and W7). 2013 data.

Data source: Public Health & Intelligence, Scottish Intensive Care Society Audit Group
Figure 4.2. Percentage of Night Time Admissions to Intensive Care Units and Combined Units. 2013 data.

Data source: Public Health & Intelligence, Scottish Intensive Care Society Audit Group
Chapter 5. Waiting times

Key points:

- Referral to Treatment (RTT) and Treatment Time Guarantee (TTG) are two key waiting time targets for NHS boards (these targets are defined below).

- Many NHS boards are struggling with compliance with RTT and TTG targets. NHS Grampian’s performance has deteriorated recently in regard to both.

- NHS Grampian’s performance with RTT for admitted patients is below that of NHS Scotland.

- NHS Grampian’s performance with TTG and against the 8 Key Diagnostic Tests is also below that of NHS Scotland.

- In NHS Grampian, there are marked increases in the number of patients waiting over 9 weeks and over 12 weeks for a new outpatient appointment.

- The number of new outpatients with social unavailability has been increasing over the past year from a figure of 2,829 in March 2013 to a figure of 4,910 in March 2014. This is particularly prevalent within the Trauma and Orthopaedic specialty.

Additional information:

- Referral to Treatment (RTT) - The 18 Weeks Referral to Treatment (18 Weeks RTT) standard builds on previous waiting time targets, which set maximum waiting times for stages of treatment, for first outpatient consultation, diagnostic tests and for inpatient and day case treatment. 18 Weeks RTT focuses on the entire patient journey from the initial referral to the start of treatment.

- Treatment Time Guarantee (TTG) - The guarantee will mean that patients will have a legal right to receive treatment within a maximum of 12 weeks from when they are diagnosed and agree to the treatment. The guarantee is one of the rights in the Charter of Patient Rights and Responsibilities which brings together, in one place, a summary of the rights and responsibilities that patients have when using NHS services.

- The Scottish Government introduced a six week maximum waiting time for eight key diagnostic tests and investigations from 31st March 2009. This applies to the following: Endoscopy: Upper Endoscopy, Lower Endoscopy (excluding Colonoscopy), Colonoscopy, Cystoscopy, Radiology: CT Scan, MRI Scan, Barium Studies, Non-obstetric ultrasound.

- NHS Grampian’s combined performance to 18 weeks Referral to Treatment is broadly in line with that of NHS Scotland (Figure 5.1). NHS Grampian’s performance with Referral to Treatment for admitted patients has consistently been below that of NHS Scotland since June 2013 (Figure 5.2).
• NHS Grampian's performance against the Treatment Time Guarantee is below target (which is 100%), with performance below that of NHS Scotland as a whole (Figure 5.3). (Note that the Y Axis scale is from 90% to 100% in this graph).

• NHS Grampian's performance against the 6 week waiting time standard for 8 key diagnostic tests and investigations has recently dipped below the 95% target, as has NHS Scotland’s (Figure 5.4). However NHS Grampian’s performance is currently below 80%, which is markedly below that of NHS Scotland.

• Stage of Treatment targets feed into the Referral to Treatment (RTT) and Treatment Time Guarantee (TTG) targets. Stages of treatment are broken down into new outpatients, day case and inpatient.

• Stage of treatment data for inpatients and day cases were last reported in June 2013, and this stage of treatment data is no longer reported by Public Health & Intelligence.

• In NHS Grampian, there are marked increases in patients waiting over 9 weeks and over 12 weeks for a new outpatient appointment (Figure 5.5 and 5.6). Public Health & Intelligence has advised that the distribution of wait suggests there is a large volume of patients being treated just before the 12 week target, far more than any other NHS board, suggesting they are struggling to manage demand. It should be noted, however, that many other NHS boards are struggling with outpatient targets at the same time as managing inpatients under the legally-binding Treatment Time Guarantee.

• The recording of patient unavailability refers to when a patient’s waiting time clock is temporarily paused for specific reasons (medical or social) advised by the patient. In NHS Grampian, the number of new outpatients with social unavailability has been increasing over the past year from a figure of 2,829 in March 2013 to a figure of 4,910 in March 2014 (Figure 5.7). This is particularly prevalent within the Trauma and Orthopaedic specialty.

• Public Health & Intelligence has reported that NHS Grampian consistently has the highest proportion of patients recorded as being unavailable for outpatient appointment or inpatient treatment for ‘patient advised reasons’ – most often reportedly due to unwillingness of patients to travel outside the NHS board area for treatment and thus having to wait longer due to lack of capacity in NHS Grampian. For outpatients in particular, Grampian is a markedly noticeable outlier at around 20% of patients unavailable.
Figure 5.1. Percentage Compliance with 18 Weeks Referral to Treatment. Data presented by NHS board. April 2012 – April 2014.

Figure 5.2. Percentage Compliance with 18 Weeks Referral to Treatment – admitted. Data presented by NHS board. April 2012 – April 2014.

Data Source: Public Health & Intelligence. Waiting Times Warehouse.
Figure 5.3. Percentage compliance with Treatment Time Guarantee. Data presented by NHS board. October 2012 – March 2014.

Data Source: Public Health & Intelligence. Waiting Times Warehouse.

Figure 5.4. Percentage compliance with Six Week Waiting Time Standard for 8 Key Diagnostic Tests and Investigations. Data presented by NHS board. April 2012 – March 2014.

Source Data: NHS Board Monthly Aggregate Level DMMI return. Published to 31 March 14.
Figure 5.5. Number of new outpatients waiting over 9 weeks. Data for NHS Grampian. March 2012 to March 2014.

Figure 5.6. Number of new outpatients waiting over 12 weeks. Data for NHS Grampian. March 2012 to March 2014.

Data Source: Public Health & Intelligence. Waiting Times Warehouse.
Figure 5.7. Number of new outpatients unavailable for patient advised reasons. Data for NHS Grampian. March 2012 to March 2014.

Data Source: Public Health & Intelligence. Waiting Times Warehouse.
Chapter 6. Emergency Admissions and Readmissions

Key points:

- Public Health & Intelligence (formerly Information Services Division) routinely publishes data on emergency admissions, multiple emergency admissions, and readmissions for all NHS boards.

- Between 2003/4 and 2012/13, rates of emergency admission and multiple emergency admission for NHS Grampian are low compared with Scotland as a whole.

- Surgical readmissions at Aberdeen Royal Infirmary have shown some indication of increase during 2013, following a decrease in 2011-12.

- Medical readmissions at Aberdeen Royal Infirmary are relatively low compared to the Scottish average. There is some indication that medical readmissions might be increasing, but it is too early to say with more certainty.

Additional information:

- Between 2003/4 and 2012/13, the population based rate of emergency admission for NHS Grampian is consistently lower than the Scottish average and also the rates for two other NHS boards that could be considered to be comparable (Figure 6.1).

- Over the same time period, the level of multiple emergency admissions also appears to be relatively low for NHS Grampian. For example, the rate of patients with two or more emergency admissions is consistently lower for NHS Grampian compared with Scotland as a whole (Figure 6.2).

- There was a decrease in the standardised rate of surgical readmissions within 7 days, evident from a shift below the median from September 2011-December 2012. However, data for the most recent 4 quarters (March 2013-December 2013) are above the median and the Scottish average (Figure 6.4a). A similar pattern is observed for the standardised rate of surgical readmission within 28 days (Figure 6.4b).

- Between December 2006 and December 2013, the standardised rate of medical readmissions for Aberdeen Royal Infirmary (at both 7 and 28 days) was consistently lower than the Scottish average. The data for the most recent 5 quarters are above the median, which could be the beginning of an increase (upwards shift) or could be normal variation (Figure 6.5).
Figure 6.1. Rate of emergency admission. Data presented by NHS board. Data for 2003/4 to 2012/13.

Figure 6.2. Rate of patients with two or more emergency admissions. Data presented by NHS board. Data for 2003/4 to 2012/13.
Figure 6.3. Number of patients with three or more emergency admissions. Data presented by NHS board. Data for 2003/4 to 2012/13.

Data Source: Public Health & Intelligence: Hospital Care - Inpatient and Day Case Activity
Figure 6.4. Standardised rate of surgical readmissions within 7 days (a) and 28 days (b). Data for Aberdeen Royal Infirmary (green) and Scotland (blue). Data for December 2006 to December 2013.

Data Source: Public Health & Intelligence. Hospital Scorecard October 2013 – December 2013
Figure 6.5. Standardised rate of medical readmissions within 7 days. Data for Aberdeen Royal Infirmary (green) and Scotland (blue). Data for December 2006 to December 2013.

Data Source: Public Health & Intelligence. Hospital Scorecard October 2013 – December 2013
Chapter 7. Length of stay

Key points:

- Data on length of stay for 2006 to 2013, for both surgical and medical admissions, are included in the hospital scorecard produced by Public Health & Intelligence.

- While there has been a decrease in unadjusted average length of stay for surgical admissions at Aberdeen Royal Infirmary, there is some indication that the adjusted figures are showing an increase.

- Since 2009, average length of stay for medical admissions at Aberdeen Royal Infirmary has decreased, and has been below the level for Scotland. This is observed for both adjusted and unadjusted figures.

Additional information:

- For surgical admissions, unadjusted average length of stay for Aberdeen Royal Infirmary has typically been higher than Scotland level, although this gap has reduced as length of stay at the hospital has decreased (Figure 7.1a). Since June 2011, adjusted average length of stay for Aberdeen Royal Infirmary has consistently been above or on the median, and also the Scotland level (Figure 7.1b).

- For medical admissions, unadjusted average length of stay for Aberdeen Royal Infirmary has consistently been lower than Scotland level – and this has also decreased (Figure 7.2a). Specifically, the data for Aberdeen Royal Infirmary display a shift below the median from September 2010 which has been sustained until the most recent reporting period (December 2013). A broadly similar pattern is observed when the data are standardised – and indeed, following an initial downwards shift, there has also been a further shift below the new median (Figure 7.2b).
Figure 7.1. Average length of stay for surgical admissions – unadjusted (a) and adjusted figures (b). Data for Aberdeen Royal Infirmary and Scotland. Data from December 2009 to December 2013.

Data Source: Public Health & Intelligence. Hospital scorecard.
Figure 7.2. Average length of stay for medical admissions – unadjusted (a) and adjusted figures (b). Data for Aberdeen Royal Infirmary and Scotland. Data from December 2009 to December 2013.

Data Source: Public Health & Intelligence. Hospital scorecard.
Key points:

- Public Health & Intelligence publish data about nursing and medical workforce quarterly.

- The ratio of hospital nursing staff to staffed beds for NHS Grampian is below the Scottish average, and approaching a level that is lower than expected.

- This is noteworthy, particularly given the workforce plan for the next three years which indicates NHS Grampian are planning to reduce the number of nurses, particularly bands 5-9.

- Nurse vacancies as a percentage of establishments are significantly greater for NHS Grampian compared with the Scotland average.

- Other national workforce measures reviewed did not indicate that NHS Grampian were very different to Scotland overall. These include consultant levels, consultant vacancy levels and use of bank & agency staff.

- Unavailable through national reporting are use of consultant locums, sickness for other staff groups, and information below NHS board level.

- NHS Grampian also provided some data on the nursing and medical workforce.

- Nursing & Midwifery sickness absence data for three months, April to June 2014, indicate that Care of the Elderly had high sickness absence compared to General Surgery, A&E and NHS Grampian as a whole. However, additional data would be required to better understand sickness absence patterns.

- The annual spend on bank and agency nursing staff has increased over the last three financial years.

Additional information about national data:

- Workforce information is inputted to the Scottish Workforce Information Standard System (SWISS) by NHS boards and reported quarterly by Public Health & Intelligence (formerly Information Services Division). The latest data were published in July 2014 and cover the period up to March 2014.

Nursing

- The ratio of hospital nursing staff (all bands) to staffed beds for NHS Grampian is between 2 and 3 standard deviations below the Scottish average (1.6 staff per bed compared with 1.8, respectively). See Figure 8.1a.
• The ratio of band 5-9 hospital nursing staff to staffed beds for NHS Grampian is approaching 2 standard deviations below the Scottish average (1.2 staff per bed compared with 1.3, respectively). See Figure 8.1b.

• NHS Grampian’s ratio of hospital nursing staff (all bands) to population (rather than staffed beds) is similar to the Scottish average. This suggests they might have a high number of staffed beds but comparison of staffed beds to population indicates that NHS Grampian is similar to Scotland.

• The number of nurse vacancies as a percentage of establishment is relatively high for NHS Grampian, at more than 3 standard deviations from the Scotland average (Figure 8.2). NHS Grampian have been consistently higher than Scotland for the last 5 quarters (January-March 2013 to January-March 2014).

• The number of whole time equivalent bank and agency staff nursing and midwifery staff increased at a similar rate for both NHS Grampian and Scotland between 2003/04 and 2012/13. See Figure 8.3.

• In 2012/13 the use of bank and agency nursing and midwifery staff as a percentage of all nurse staff in post is higher in NHS Grampian compared to Scottish average but within the normal range.
Figure 8.1. Ratio of hospital nursing staff in post to average available staffed beds for all acute specialties. Nursing numbers do not include paediatric, mental health or Neonatal. Data presented for NHS boards. NHS Grampian highlighted as solid point. Data presented for AfC bands 1-9 (a) and 5-9 (b):

(a)

(b)

Data source: Public Health & Intelligence, Scottish Workforce Information Standard System (SWISS)
Figure 8.2. Hospital nurse vacancies (all bands) as a percentage of establishment. Data for NHS boards, with NHS Grampian highlighted as solid point. Data for January to March 2014.

Figure 8.3. Number bank and agency nursing and midwifery staff (whole time equivalent). Presented for NHS Grampian and Scotland. Data from 2003/2004 to 2012/2013.
Medical staff

- The ratio of consultants in post to staffed beds is below the Scotland average but within an expected range.

- The ratio of doctors on training to all medical staff is higher than the Scottish average but within an expected range. This is not surprising given the Aberdeen Royal Infirmary is a large teaching hospital.

- Consultant vacancies (whole time equivalent) as a percentage of consultant establishments are higher than the Scottish average but within normal range of variation.
Additional information about data provided by NHS Grampian:

- Charts illustrating monthly sickness absence for nursing and medical staff between April 2013 and March 2014, and annual sickness rates over 12 years don’t suggest any major change in the data over that period.

- NHS Grampian’s Workforce Plan 2013 indicates that NHS Grampian are planning to reduce the number of nurses, particularly 5-9 bands (between 1.5 to 3% reduction in first year), over the next three years.

Nursing staff

- NHS Grampian provided data on sickness, vacancies and use of nurse bank staff. The data were provided for NHS Grampian as a whole and for the specialties of General Surgery, Care of the Elderly and Accident & Emergency (Figure 8.4).

- Nursing & Midwifery sickness absence data for three months, April to June 2014, are insufficient to draw any conclusions but the data indicate that Care of the Elderly had a high sickness absence rate compared to General Surgery, A&E and NHS Grampian as a whole. At least 24 months data would be required to understand sickness patterns better.

Figure 8.4. Nursing and midwifery working hours lost through sickness as percentage of contracted hours. Data for NHS Grampian. April 2014 to June 2014.

- Numbers for nursing and midwifery vacancies were provided for each nursing band as at 30 June 2014. These numbers show A&E to have no outstanding vacancies, care of the elderly had seven Band 5-6 vacancies and General Surgery had 13.5. These data would be more useful if available for at least 24 months and presented as a percentage of the establishment.
- The number of bank nurses used for NHS Grampian and specialties were provided but it is not possible to understand the nurse bank usage without knowing nurse establishment.

- The annual spend on bank and agency nursing staff by NHS Grampian has increased over the last three financial years (Figure 8.5). High monthly spend is closely linked to financial quarter ends.

**Figure 8.5. Monthly spend on bank & agency nursing and midwifery staff. Data for NHS Grampian. Presented for (a) April 2011 to March 2013 and (b) April 2013 to March 2014**
Data source: NHS Grampian

- The highest users of bank staff in Aberdeen Royal Infirmary in 2012-13, measured as shifts requested per funded WTE, were Ward 103 - short stay medical unit (52), Ward Roxburgh - palliative care unit (41) and Ward 11/12 (care of the elderly) – followed by Ward 110 – medical specialties, Ward 111 – Infection Unit and Ward 11/12 – care of the elderly. (Source: SLWG Nursing Workforce Resource Allocation, NHS Grampian).

- An analysis of nursing in June 2014 reported Acute Geriatric Medical Wards to have bank to permanent staff ratio of 16.7%, Unscheduled care wards 13.6% and General Surgery 10.7%.

**Medical**

- The numbers of consultant vacancies were provided for three specialties within NHS Grampian. As at 30 June 2014 there were four consultant vacancies in General Surgery, two in Geriatric Medicine and three in Emergency Medicine.
Chapter 9. Medical Staff Management

Key points:

- Data for consultant job planning shows that many consultants (30-40%) do not have job plans and that this is longstanding.

- Data for consultant and SAS grade appraisal is more encouraging but also shows gaps (15% for consultants, 25% for SAS). 10% of doctors due for revalidation in 2014 did not have an appraisal in 2013-14.

- Information on trainee hours monitoring awaited.

- Trainee feedback from acute geriatrics is very good

- Trainee feedback from both Emergency Medicine and from General Surgery is very poor. This has been persistent over at least 3 years

Additional information:

Consultant Job Planning

2014: NHSG figures supplied 15 July 2014

<table>
<thead>
<tr>
<th>Consultants with Job Plans</th>
<th>Total Consultants</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Services</td>
<td>294</td>
<td>489</td>
</tr>
<tr>
<td>General Surgery</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>Geriatric Medicine</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Emergency Department</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

Figures for other specialities requested. Note that job planning is a contractual requirement with mediation and appeals processes set out in the consultant contract.

2013: The NHS Grampian Workforce Plan 2013 has the following information related to the Job Planning position as at June 2013.

<table>
<thead>
<tr>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS Consultants</td>
</tr>
<tr>
<td>Hon. Consultants</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>In process</th>
<th>Overall % for 2012/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total job plans completed in 2012/2013</td>
<td>324</td>
<td>372</td>
</tr>
<tr>
<td>Total Honorary Job plans in</td>
<td>43</td>
<td>72.14% (sic)</td>
</tr>
<tr>
<td>Total job plans not completed</td>
<td>141</td>
<td>28.63%</td>
</tr>
<tr>
<td>Total honorary job plans in</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Note:

1. These figures are not directly comparable between years. It may be that the figures for 2014 do not include honorary contact holders.
2. The figures and percentages have been taken direct from the report and do not completely align. If considering 462 NHS consultants and 324 have job plans then percentage would be 70%, if all those ‘in process’ were completed it would have been 80%.
Appraisal and revalidation (NHSG figures)

Medical staff appraisal 2013-14 (source NHSG return)

In 2013-14 1161 doctors in NHS Grampian were eligible for appraisal and 1042 were completed. The shortfall is predominantly in consultants (68) and SAS grades (21).

<table>
<thead>
<tr>
<th>Eligible</th>
<th>Completed</th>
<th>% completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP</td>
<td>539</td>
<td>529</td>
</tr>
<tr>
<td>Consultant</td>
<td>491</td>
<td>423</td>
</tr>
<tr>
<td>Staff/Assoc. Spec./Speciality Doctors</td>
<td>86</td>
<td>65</td>
</tr>
<tr>
<td>University without prescribed connection to NES</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Secondary care locums employed &gt;2 months</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1161</td>
<td>1042</td>
</tr>
</tbody>
</table>

Note: 43 honorary consultant job plans, 15 University appraisals, reason not yet known

Revalidation

2013-14: 230 doctors were due for revalidation, 221 had a positive recommendation and 9 were deferred.

2014-15: 439 doctors are due for revalidation. Of these:

There are 45 doctors with no appraisal in 2013-14 who are due for revalidation in 2014-15. The reasons give are: 16 are 'new starts not likely to have required one' and 29 'have not'
**Trainee Staffing**

NHSG have supplied rota templates. These do not include data from monitoring of actual hours worked. This has been requested. A meeting note from the Acute management Team (November 2013) cites financial pressure from re-banding so it is possible that there may be compliance issues.

Trainee medical staff provide a great deal of care for patients, particularly out of hours. They are entitled to support, supervision and training. Feedback from trainees not only tells us how this has been provided, it also gives an insight into the overall performance of a department. There is an association between departments that provide high quality training and those which provide high quality care.

**NES data (identifying comments removed)**

NES has three primary sources of information:

1. The NES Scottish Trainee Survey (STS). This should be completed by trainees at the end of every attachment. The response rate is generally over 60%. The data are NOT in the public domain. A ‘red flag’ means that the programme is in the bottom 10% for Scotland.
2. The GMC National Training Survey (NTS) has a response rate around 98%. The data are publicly available on the GMC website. A ‘red flag’ indicates that the score is a statistical outlier, ‘pink’ that it is in the lowest quartile. ‘Triple red/pink’ indicates that this is an outlier in 2012, 2013, 2014. Triple reds are of real concern to GMC and NES.
3. Data from NES Quality Management including visit reports.

There were four Patient Safety Issues raised in relation to Aberdeen Royal Infirmary in the 2014 NTS survey. Three relate to Emergency Medicine, one to Geriatric Medicine. The latter is related to care of medical patients ‘boarding’ in surgical wards.

Whilst the Northern Deanery includes NHS Highland, NHS Shetland, NHS Orkney and NHS Western Isles as well as other hospitals in Grampian, the information supplied here relates specifically to Aberdeen Royal Infirmary as it relates to the three specialities to be reviewed in detail by the HIS led review: Emergency Medicine, General Surgery and Geriatric Medicine.

There is a great deal more information to support the summary presented here and also information on other specialities.

**Key points:**

- The picture for Geriatrics is a very positive one. A Patient Safety Issue was raised in relation to care of ‘boarding’ patients.
- The overall picture for both Emergency Medicine and General Surgery is of serious concern. They score badly for overall satisfaction and across multiple domains including team culture, undermining, teaching, educational environment and clinical supervision. These problems are persistent.
Emergency medicine

1. Ranked **bottom** (20th of 20 UK Deaneries/LETBs) for ‘overall satisfaction’ in the GMC NTS (data from 2014 NTS – not included in associated documentation).
2. Of the 12 GMC NTS indicators – scores 9 red/pink flags including: overall satisfaction, clinical supervision, adequacy of experience, workload, and educational supervision, access to educational resources, feedback, local teaching & study leave.
3. 4 of these 9 indicators are ‘triple red/pinks’ including: overall satisfaction, clinical supervision, workload & study leave.
4. The STS also provides evidence suggesting major concerns with this training environment with red flags in 5 of its main indicators: educational environment (core & specialty trainees), clinical supervision (specialty trainees), team culture (core & specialty trainees), teaching (core & specialty trainees) & for workload (core & specialty trainees).
5. It should be noted that these red flags place training experience in EM in this site on the bottom centile to the 8th centile for these flagged domains, among specialty training sites in Scotland.
6. The funnel plot suggests this is an outlier for team culture, and the indicator question ‘I work in an environment where there is a culture of undermining of staff confidence’ suggests that to be so for 39% of specialty trainees. Team culture includes themes such as undermining and supportive environment – and although undermining is not flagged in the GMC NTS, 23% of specialty trainees flag concern in the STS about lack of support, and the GMC NTS has a red flag for this aspect too.
7. It is clear from the responses from all trainee cohorts in EM in ARI that there is a prevailing view (25% to 100% of trainees in each cohort) that teaching of trainees and their learning are not perceived to be a key priority of this unit.
## Emergency medicine

<table>
<thead>
<tr>
<th>NTS indicators</th>
<th>2014 GMC NTS data: red / pink flags in FY &amp;/or Core &amp;/or ST</th>
<th>Triple red / pink in 2012 + 2013 + 2014 GMC NTS data in FY &amp;/or Core &amp;/or ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Satisfaction</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Clinical Supervision</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Handover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Induction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate Experience</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Work Load</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Educational Supervision</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Access to Educational Resources</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Feedback</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Local Teaching</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Regional Teaching</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Study Leave</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

### Undermining - NTS

<table>
<thead>
<tr>
<th>STS indicators</th>
<th>2014 STS data: red flags in FY &amp;/or Core &amp;/or ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational environment (overall satisfaction &amp; developing as a doctor)</td>
<td>X</td>
</tr>
<tr>
<td>Clinical supervision (clinical supervision)</td>
<td>X</td>
</tr>
<tr>
<td>Team culture (undermining &amp; supportive environment)</td>
<td>X</td>
</tr>
<tr>
<td>Teaching (learning environment)</td>
<td>X</td>
</tr>
<tr>
<td>Handover (handover)</td>
<td>X</td>
</tr>
<tr>
<td>Induction (induction)</td>
<td>X</td>
</tr>
<tr>
<td>Workload (sample question not included)</td>
<td>X</td>
</tr>
</tbody>
</table>

### Undermining STS

- 39% STs culture of undermining staff confidence
General Surgery

1. Ranked 16th of 19 UK Deaneries / LETBs for 'overall satisfaction' in the GMC NTS (data from 2014 NTS).
2. Of the 12 GMC NTS indicators – scores 8 red/pink flags including: overall satisfaction, clinical supervision, induction, adequacy of experience, workload, access to educational resources, feedback & local teaching.
3. 2 of these 9 indicators are ‘triple red/pinks’ including: clinical supervision & adequacy of experience.
4. The STS also provides evidence suggesting concerns with this training environment with red flags in 5 of its main indicators: educational environment (core trainees), clinical supervision (specialty trainees), team culture (specialty trainees), teaching (core trainees) & for handover (specialty trainees).
5. These red flags place training experience in General Surgery in this site on the 5th to the 8th centiles for these flagged domains, among specialty training sites in Scotland
6. The funnel plot suggests this is an outlier for team culture, and the indicator question ‘I work in an environment where there is a culture of undermining of staff confidence’ suggests that to be so for 32% of Foundation trainees, 22% of Core trainees & 40% of specialty trainees. Team culture includes themes such as undermining and supportive environment – undermining is red flagged in the GMC NTS (with bullying specifically cited) and ‘supportive environment is also red flagged by Foundation & Specialty trainees.
7. Concerns that this training environment is ‘not supportive’ have been raised by 22% - 30% of trainees in each cohort.
8. It is clear from the responses from all trainee cohorts in General surgery in ARI that there is a prevailing view (56% to 60% of trainees in each cohort) that teaching of trainees and their learning are not perceived to be a key priority of this unit.
### General surgery

<table>
<thead>
<tr>
<th>NTS indicators</th>
<th>2014 GMC NTS data: red / pink flags in FY &amp;/or Core &amp;/or ST</th>
<th>Triple red / pink in 2012 + 2013 + 2014 GMC NTS data in FY &amp;/or Core &amp;/or ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Satisfaction</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Clinical Supervision</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Handover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Induction</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Adequate Experience</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Work Load</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Educational Supervision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to Educational Resources</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Feedback</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Local Teaching</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Regional Teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study Leave</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undermining - NTS</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STS indicators</th>
<th>2014 STS data: red flags in FY &amp;/or Core &amp;/or ST</th>
<th>22-40% trainees culture of undermining staff confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational environment (overall satisfaction &amp; developing as a doctor)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Clinical supervision (clinical supervision)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Team culture (undermining &amp; supportive environment)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Teaching (learning environment)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Handover (handover)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Induction (induction)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Workload (sample question not included)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undermining STS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Ranked 2nd top of 19 (UK Deaneries/LETBs) for ‘overall satisfaction’ in the GMC NTS (data from 2014 NTS – not included in associated documentation)
2. Of the 12 GMC NTS indicators – scores 1 red/pink flag for local teaching.
3. No ‘triple red/pinks’
4. The STS also provides no evidence suggesting major flagged concerns with this training environment
5. There needs to be caution in flagging individual free text comments (cf survey flags require at least 3 responses for data to be included) most free text comments reflect positively on the supportive nature of consultants.
Chapter 10. Bed Occupancy & Boarding

Key points:

- Data on bed occupancy are available from Public Health & Intelligence. NHS Grampian submits data based on estimated available beds from the TrakCare patient management system.

- Annual figures show that, between 2004 and 2013, bed occupancy for NHS Grampian is not consistently lower or higher than the Scottish average, around 80%.

- Quarterly figures since the beginning of 2012 show that, for General Surgery, bed occupancy for NHS Grampian (around 75%) has been consistently lower than the Scottish average (around 80%). For geriatric medicine, bed occupancy for NHS Grampian has been higher than the national average – and for emergency medicine, bed occupancy for NHS Grampian has typically been close to or lower than the Scottish average.

- From the data provided by NHS Grampian for November 2013-April 2014, the number of boarding bed days at Aberdeen Royal Infirmary ranged from about 150 to 420 per week. There are currently no data available that enable robust comparisons to be made between hospitals about boarding levels.

Additional information:

- The bed occupancy figures that NHS Grampian submits to Public Health & Intelligence are based on estimates, as explained in the following statement from NHS Grampian:

  Since the implementation of PMS in February 2011 we have provided estimated bed complement data to ISD. The recent bed audit allowed us to submit accurate high-level bed complement data in July 2014. Validation work has shown that the estimated bed complement for ARI was accurate to within 2% of the actual bed complement.

- Annual figures show that, between 2004 and 2013, bed occupancy for NHS Grampian is not consistently lower or higher than the Scottish average, around 80% (Figure 10.1).

- Quarterly figures since the beginning of 2012 show that, for General Surgery, bed occupancy for NHS Grampian (around 75%) has been consistently lower than the Scottish average (around 80%) (Figure 10.2). For geriatric medicine, bed occupancy for NHS Grampian has been higher than the national average (Figure 10.3) – and for emergency medicine, bed occupancy for NHS Grampian has typically been close to or lower than the Scottish average (Figure 10.4).

- From the data provided by NHS Grampian for November 2013-April 2014, the number of boarding bed days at Aberdeen Royal Infirmary ranged from about 150 to 420 per week (Figure 10.5). There are currently no data available that enable robust comparisons to be made between hospitals about boarding levels.
Figure 10.1. Annual percentage bed occupancy by NHS board, 2004-2013.

Source: Public Health & Intelligence: Hospital Care – Beds

Figure 10.2. Quarterly percentage bed occupancy for general surgery by NHS board, January-March 2012 to January-March 2014.

Source: Public Health & Intelligence: Hospital Care – Beds
Figure 10.3. Quarterly percentage bed occupancy for geriatric medicine by NHS board, January-March 2012 to January-March 2014.

Source: Public Health & Intelligence: Hospital Care – Beds

Figure 10.4. Quarterly percentage bed occupancy for emergency medicine by NHS board, January-March 2012 to January-March 2014.

Source: Public Health & Intelligence: Hospital Care – Beds
Figure 10.5. Weekly number of boarding bed days. Aberdeen Royal Infirmary. November 2013-March 2014.

Data Source: NHS Grampian
Key points:

- NHS Grampian provided monthly data on delayed discharges at Aberdeen Royal Infirmary, for patients aged 65 years and over, from July 2012 to June 2014.
- Between July 2013 and June 2014, there have been 970 delayed discharges resulting in 16,702 lost bed days.
- The number of beds lost to delayed discharge patients aged 65 and over at Aberdeen Royal Infirmary increased over the period July 2012 to June 2014.
- Public Health & Intelligence publish data about delayed discharges for all Health Boards and Local Authorities in Scotland.
- The number of beds used by delayed discharge patients aged 75 year and over for residents of Aberdeen City Local Authority increased from May 2013. A similar increase is observed for number of beds used by delayed discharge patients across Scotland.
- The rate of bed use for delayed discharges in the 75 and over population was highest for residents of Aberdeen City Local Authority for the year April 2013 to March 2014. This rate of delayed discharge bed use is high but within an expected range.

Additional information:

- NHS Grampian provided data on delayed discharges at Aberdeen Royal Infirmary for patients aged 65 years and over, and patients aged 75 years and over. Data are provided on the numbers of delayed discharges, and the impact in terms of number of bed days lost. The patterns observed in the two age classifications were very similar and so only data for the population 65 and over have been reported.
- Note that delayed discharges are counted only upon the patient being discharged from secondary care. Once a patient is discharged, it appears that their delay in bed days is calculated and attributed to the month that discharge took place. This means that there could be (in all probability are) patients within the system currently experiencing delayed discharge with a resultant effect on bed days, without this being acknowledged within the data available.
- Between July 2012 and June 2014, the number of monthly delayed discharges for patients aged 65 years and over ranges from less than 10 to greater than 60 (Figure 11.1). Delayed discharges appear to peak during the winter period.
- A run chart of beds lost to delayed discharges at Aberdeen Royal Infirmary between July 2012 and June 2014 provides evidence that beds lost to non-complex delayed discharges have increased over this period. This is indicated by a 6 month shift above the median from July 2013. The number of beds lost to complex cases appears also to have increased although this is mainly the result of a small number of patients with
complex needs staying for an extended length of time. Complex cases (also called Code 9 cases) are those where it is not reasonable to expect discharge within standard time frames. These would include patients delayed due to awaiting place availability in a high level needs’ specialist facility where no facilities exist and where an interim option is not appropriate, patients for whom an interim move is deemed unreasonable or where an adult may lack capacity under adults with incapacity legislation.

- Over 16,000 bed days have been lost due to delayed discharges over the year July 2013 to June 2014 (over 10,000 in the past 6 months reported). The number of bed days lost due to delayed discharge appears to have increased, peaking in January 2014.

**Figure 11.1. Number of delayed discharges, for patients aged 65 years and over. Data presented for Aberdeen Royal Infirmary. Data for July 2012-June 2014.**

Data Source: NHS Grampian
Figure 11.2. Number of bed days lost due to delayed discharge, for patients aged 65 years and over. Data presented for Aberdeen Royal Infirmary. Data for July 2012-June 2014.

Data source: NHS Grampian

- Data published by Public Health & Intelligence indicate that bed use by delayed discharge patients in the 75 and over population of Aberdeen City Local Authority increased from May 2013 (shift above median) (Figure 11.3). Note that this is similar to increasing delayed discharge figures for Scotland where a shift is evident from August 13.

- The rate of bed use for delayed discharges in the 75 and over population was highest for residents of Aberdeen City Local Authority for the year April 2013 to March 2014 (Figure 11.4). This rate of delayed discharge bed use is high but within an expected range (that’s is three standard deviations).

Figure 11.3. Run chart of bed days occupied by delayed discharge patients aged 75+. Data for residents of Aberdeen City Council. April 2012-March 2014.
Figure 11.4. Funnel plot of bed days occupied by delayed discharge patients aged 75+ per 1000 population. Data for residents of all Scottish local authorities. April 2013-March 2014.
Chapter 12. Adverse Events (Acute)

Key points:

- NHS Grampian provided data on adverse events for acute areas.
- Between January and June 2014, there were 849 adverse events recorded, and 90% of those events were recorded as being minor.
- Within surgical wards, the adverse event type most frequently recorded is a lack of suitably trained/skilled staff, followed by falls from height.
- Within acute geriatric wards, the adverse event type most frequently recorded is a fall on level ground, followed by falls from height.

Additional information:

- NHS Grampian has provided adverse events data for 16 acute wards/areas. This consisted of data for the type, severity and area the event took place, and covering the period January to June 2014.

Figure 12.1. Adverse events recorded. Data for 16 acute wards/areas in NHS Grampian. Data for January - June 2014.

Figure 12.1 has been removed from the data pack prior to this being published due to the small number of observations in some of the cells of the table.

Data Source: NHS Grampian
Figure 12.2. Type of adverse event recorded. Surgical wards in NHS Grampian. Data for January - June 2014.

Data Source: NHS Grampian

Figure 12.3. Type of adverse event recorded. Acute geriatric wards in NHS Grampian. Data for January - June 2014.

Data Source: NHS Grampian
Chapter 13. Patient and staff experience

**Key points:**

- Nationwide data on the experience of inpatients are collected for the Scottish Inpatient Experience Survey. The most recent figures available indicate that patients at Aberdeen Royal Infirmary had a similar level of satisfaction with the care they received compared with patients from across Scotland as a whole. However, these data are now considerably out of date, and the results of the latest survey will be published on 26 August 2014.

- Some additional data on patient and staff experience were considered which relates to secondary care services across NHS Grampian.

- Patient Opinion website lets patient submit stories (good or bad) about their care, and allows services to respond. A higher proportion of stories about NHS Grampian were deemed to be critical by independent moderators compared to Scotland. A lower proportion of people submitting stories to Patient Opinion would recommend the services in NHS Grampian (52%) compared to Scotland (70%).

**Additional information:**

- The fourth Scottish Inpatient Experience Survey was sent, in January 2014, to a random sample of people aged 16 years or older who had an overnight hospital stay between April and September 2013. The national and local results will be published on 26 August 2014.

- The data from the previous Scottish Inpatient Experience Survey indicate that patients at Aberdeen Royal Infirmary had a similar level of satisfaction with the care they received compared with patients from across Scotland as a whole. However, these data are in relation to patients admitted between October 2010 and September 2011, and so are now considerably out of date.

- NHS Grampian provided data on both patient and staff experience, collected for the National Person Centred Health & Care Collaborative. NHS Grampian reports that it has collected real-time data on patient and staff experience since July 2013, and this has involved more than 50 clinical areas to date, primarily from secondary care. It should be recognised however that experience reported by patients at point of care is often more positive than that reported after a period of reflection.

- 96% of patients that took part in this exercise rated the service they received as being good, very good, or excellent (Figure 13.1).

- Staff were asked to rate their shift on duty on the day that they were asked, and 70% rated their shift as being good, very good, or excellent (Figure 13.2).
• The results of the 2013 NHSScotland Staff Survey indicate that staff at NHS Grampian have a similar level of satisfaction compared with Scotland as a whole, based on 11 questions relating to motivation, advocacy and involvement.

• While the 2014 Scottish Inpatient Experience Survey will provide data specifically about Aberdeen Royal Infirmary, the other patient and staff experience data referred to above relates to secondary care services across NHS Grampian.

• Patient Opinion is an independent website where patients can report on the care they have received and staff can listen and respond to these stories. NHS Grampian provided a chart on how moderators rated their stories (Figure 13.3). A comparative chart for how moderators rated stories across Scotland show that a higher proportion of stories about NHS Grampian are rated as critical.

• NHS Grampian do not use Patient Opinion as a feedback tool as much as some other NHS boards. They have 2 staff ‘listening’ to stories compared with NHS Tayside who have 9 staff ‘listening’ and NHS Lanarkshire who have 51 staff since all senior charge nurses are now registered.

• For NHS Scotland, 70% of people submitting stories to Patient Opinion would recommend the service. For NHS Grampian, 52% would recommend the service, based on all submissions since for that area. This is the lowest proportion from the five largest NHS boards; NHS Lothian, NHS Grampian, NHS Tayside, NHS Greater Glasgow & Clyde and NHS Lanarkshire.

**Figure 13.1. Patient Service Score. Data presented for NHS Grampian. Data collected since July 2013.**

[Bar chart showing Patient Service Score (N=865)]

Data Source: NHS Grampian
Figure 13.2. Staff Service Score. Data presented for NHS Grampian. Data collected since July 2013.

Data Source: NHS Grampian

Figure 13.3 Criticality scores assigned by moderators to stories on the Patient Opinion website. Presented for (a) NHS Grampian for stories submitted between April 2013 and March 2014; and (b) NHS Scotland for stories submitted in July 2014.

(a)
How moderators have rated the criticality of these stories

- Moderately critical: 7 (7%)
- Mildly critical: 20 (20%)
- Minimally critical: 19 (19%)
- Not critical: 56 (35%)

*NB: Criticality scores are assigned by moderators (not the public) to stories to support our alerting service. They are assigned per story not per service, so may reflect criticism of services other than your own. We provide them here purely for information, with these caveats in mind.*
Chapter 14. Complaints

Key points:

- Public Health & Intelligence (formerly Information Services Division) routinely publishes data on complaints for all NHS boards.

- In 2012/13, NHS Grampian has the lowest performance in acknowledging complaints within 3 days, and also in responding to complaints within 20 days.

- The number of complaints received by the Scottish Public Services Ombudsman is not markedly high for NHS Grampian, and the profile of complaints to the Ombudsman about NHS Grampian was similar to that for the sector (health) as a whole.

- All decision and investigation reports for NHS Grampian published in 2014 by the Ombudsman were considered, and five complaints that are relevant to the review of clinical services at Aberdeen Royal Infirmary and that were upheld by the Ombudsman were identified.

Additional information:

- The number of complaints received by NHS Grampian has increased in each of the last two reporting periods (2011/12 and 2012/13) (Figure 14.1). Most other NHS boards also had an increase in the number of complaints received for the most recent period, and the increase observed for NHS Grampian was not one of the largest. There does not appear to be an abnormal number of complaints for NHS Grampian in respect of its size – however no statistical tests have been carried out on these data.

- In 2012/13, NHS Grampian had the lowest performance in acknowledging complaints within 3 days, at 67% compared to a national average of 90% (Figure 14.2).

- In 2012/13, NHS Grampian had the joint lowest performance in responding to complaints within 20 days, at 36% compared to a national average of 61% (Figure 14.3). NHS Grampian had a median response time of 27 days compared to the national figure of 19 days. This was the first year where Grampian was out of line with the Scottish average.

- In September 2013, the Scottish Public Services Ombudsman wrote to NHS Grampian providing statistics about complaints to the Ombudsman in 2012/13. The number of complaints received by the Ombudsman does not appear to be markedly high for NHS Grampian. Specifically, 7.4% of all sector (health) complaints were about NHS Grampian – and 10.8% of the Scottish population is resident in this region.

- The profile of complaints to the Scottish Public Services Ombudsman about NHS Grampian was similar to that for the sector (health) as a whole. Specifically, about 50% of complaints were about clinical treatment/diagnosis – and the following three most frequent categories were: communication/staff attitude/dignity/confidentiality; complaints handling, and: policy/administration.
All decision and investigation reports for NHS Grampian published in 2014 by the Ombudsman were considered, and five complaints that are relevant to the review of clinical services at Aberdeen Royal Infirmary and that were upheld by the Ombudsman were identified:

1. Complaint about care and treatment following admission to stroke unit at Aberdeen Royal Infirmary (medical and nursing care falling below a reasonable standard): www.spso.org.uk/investigation-reports/2014/january/grampian-nhs-board-0

2. Complaint about care and treatment following admission to Emergency Department at Aberdeen Royal Infirmary, and arrangements following the patient’s death: www.spso.org.uk/investigation-reports/2014/february/grampian-nhs-board

3. Complaint about the level of pre-operative care: www.spso.org.uk/decision-reports/2014/february/decision-report-201302973-201302973


5. Complaint about clinical treatment and diagnosis, and lack of ongoing assistance of specialist epilepsy nurse identified: www.spso.org.uk/decision-reports/2014/february/decision-report-201301604-201301604
Figure 14.1 Number of complaints received. Data for NHS Grampian. Data for 2003/04 to 2012/13.

Data Source: Public Health & Intelligence. NHS Complaints Statistics Scotland 2012/13

Figure 14.2 Percentage of complaints acknowledged within 3 working days. Data for NHS Grampian and Scotland. Data for 2007/08 to 2012/13.

Data Source: Public Health & Intelligence. NHS Complaints Statistics Scotland 2012/13
Figure 14.3 Percentage of complaints dealt with within 20 working days. Data for NHS Grampian and Scotland. 2007/08 to 2012/13.

Data Source: Public Health & Intelligence. NHS Complaints Statistics Scotland 2012/13
Chapter 15. Emergency Department

Key points:

- Public Health & Intelligence provides NHS boards with regular monitoring reports presenting data from the A&E DataMart.

- Rates of attendance at the Emergency Departments for NHS Grampian are not markedly different to other NHS boards. The number of attendances at Aberdeen Royal Infirmary's Emergency Department has remained fairly constant in recent years.

- NHS Grampian's performance in relation to the 4 Hour Emergency Care Standard is higher than the Scotland level, although still below the target of 98% of patients being treated within 4 hours. Performance at Aberdeen Royal Infirmary has been below the 98% target, dropping further since December 2013.

Additional information:

- Between March and June 2014, the rates of attendance at the Emergency Departments for NHS Grampian are not markedly different from other NHS boards (Figure 15.1).

- Between July 2007 and June 2014, the number of attendances at Aberdeen Royal Infirmary’s Emergency Department has remained fairly constant, at around 5,000 per month (Figure 15.3).

- Between March and June 2014, NHS Grampian’s performance in relation to the 4 Hour Emergency Care Standard is higher than the Scotland level, although still below the target of 98% of patients being treated within 4 hours (figure 15.2). Performance at Aberdeen Royal Infirmary has been below the 98% target, dropping further since December 2013 (Figure 15.3).

- Aberdeen Royal Infirmary’s profile of time in the Emergency Department has a somewhat different pattern to that observed at NHS Scotland level. At Scotland level, there is a peak in the number of patients seen in the first two hours but this is not evident at Aberdeen Royal Infirmary (figure 15.4).
Figure 15.1. Rate of attendance at Emergency Department. Data presented for NHS boards. Data for March 2014-June 2014.

Rates of Attendance Comparison

Please select attendance type:

- All Attendances

Data presented for March 2014-June 2014.


Figure 15.2. Percentage of patients treated within 4 Hour Emergency Care Standard. Data presented for NHS boards. Data for March 2014-June 2014.

4 Hour Compliance

Figure 15.3. Number of attendances at Emergency Department, and also percentage of patients treated within 4 Hour Emergency Care Standard. Data presented for Aberdeen Royal Infirmary. Data for July 2007-June 2014.

Figure 15.4. Time spent in the Emergency Department. Data for Aberdeen Royal Infirmary (a) and Scotland (b). Data for June 2014.

a)


b)
Chapter 16. Scottish Arthroplasty Project

Key points:

- The Scottish Arthroplasty Project is one of a number of national clinical audits managed by Public Health & Intelligence (formerly Information Services Division). The latest national report from the Scottish Arthroplasty Project was published on 12 August 2014. This presents data for a range of measures, about procedures and outcomes for patients undergoing joint replacement surgery (arthroplasty) operations during 2012-2013.

- When considering the various measures presented in this report collectively, the data for NHS Grampian do not appear to be strikingly different compared with the rest of Scotland as a whole.

- Specifically, NHS Grampian is not significantly different from the Scottish average when considering standardised data about complications following elective primary hip or knee arthroplasty (dislocation, infection of the operated joint, deep vein thrombosis/pulmonary embolism, mortality, acute myocardial infarction within 30 days, acute renal failure within 30 days, cerebrovascular accident or stroke within 30 days, revisions).

Additional information:

- In addition to the key points above, NHS Grampian has a relatively high average length of stay following hip and knee arthroplasty (note: in the report, these data are presented as bar charts without confidence limits, and the Scottish Arthroplasty Project has not carried out any tests to ascertain whether this numerical difference is statistically significant).

- While NHS Grampian is not significantly different from the Scottish average when considering standardised data about a number of complications following elective primary hip or knee arthroplasty, the percentage of patients who had a stroke within 30 days of knee arthroplasty was very close to the control limit set at 3 standard deviations above the national average (Figure 16.1b).

- In addition, the percentage of knee arthroplasty patients who died within 90 days is relatively high, although within control limits (Figure 16.2b).
Figure 16.1. Percentage of hip (a) and knee (b) arthroplasty patients who had a stroke within 30 days. Data presented by NHS board of treatment. Data for procedures carried out in 2013.

Data source: Public Health & Intelligence, Scottish Arthroplasty Project
Figure 16.2. Percentage of hip (a) and knee (b) arthroplasty patients who died within 90 days. Data presented by NHS board of treatment. Data for procedures carried out in 2013.

Data source: Public Health & Intelligence, Scottish Arthroplasty Project.
Chapter 17: Theatre utilisation

Key points:

- NHS Grampian provided data on theatre utilisation at Aberdeen Royal Infirmary for general surgery for the period July 2012 to June 2014.

- During this period, theatre utilisation was fairly constant, at around 80%.

- For the period July 2013-June 2014, 17% of elective sessions were cancelled, as were 2% of non-elective sessions.

- 69% of theatre sessions are subject to a late start. 44% and 33% of theatre sessions are subject to an early finish and late finish, respectively (the definition of ‘early’ and ‘late’ is to be confirmed with NHS Grampian).

- No data have been reviewed that enable comparisons to be made between hospitals about the level of theatre utilisation.

Additional information:

- The main measure of theatre utilisation is calculated by dividing the ‘total planned hours’ by the ‘total actual hours’. The data are split between elective and non-elective theatre sessions.

- Additionally, there are data on early/late starts and early/late finishes (the definition of these is to be confirmed with NHS Grampian).
Figure 17.1. Percentage theatre utilisation for general surgery. Data for Aberdeen Royal Infirmary. Data for July 2012 to June 2014.

Data Source: NHS Grampian

Figure 17.2. Data on theatre utilisation for general surgery. Data for Aberdeen Royal Infirmary. Data for July 2013 to June 2014.

Data Source: NHS Grampian
Key points:

- The Scottish Stroke Care Audit is one of a number of national clinical audits managed by Public Health & Intelligence (formerly Information Services Division). The latest national report from the Scottish Stroke Care Audit was published in July 2014. This presents data for a range of measures, covering the period up until and including 2013.

- The percentage of stroke patients receiving an ‘appropriate’ Stroke Care Bundle (ie Stroke Unit admission, swallow screen, brain scan and aspirin) is numerically higher at Aberdeen Royal Infirmary compared with the national average (68% v 58%, respectively).

- When considering the various measures presented in this report collectively, the data for Aberdeen Royal Infirmary do not appear to be strikingly different compared with the rest of Scotland as a whole.

- There are a number of instances where the Scottish Stroke Care Standards are not being met at Aberdeen Royal Infirmary or at Scotland level (admission to a stroke unit, swallow screen, aspirin administration, thrombolysis door-to-needle time).

Additional information:

- At Aberdeen Royal Infirmary, there has been a statistically significant increase between 2012 and 2013 in i) the percentage of stroke patients with a brain scan within 24 hours of admission, and ii) the percentage of acute ischaemic stroke patients given aspirin in hospital within 1 day of admission.

- The following are comments and actions from the annual NHS Grampian NHS board review meeting in April 2014:

  Key achievements
  
  o CT scanning – good performance at Aberdeen Royal Infirmary – good improvement and consistently achieving the required standard.
  o Stroke Care Bundle – NHS Grampian are performing as well as top performing NHS boards in relation to the stroke care bundle and are only 6% short of achieving the NHS Grampian trajectory of 70%.

  Key issues/ areas of concern:
  
  o Stroke Unit admission – Aberdeen Royal Infirmary – though performance has improved slightly, still not meeting the standard and patients are being moved inappropriately out of the stroke unit to assist with patient flow. Flow through the stroke unit at Aberdeen Royal Infirmary to be reviewed.
  o Swallow screening – Aberdeen Royal Infirmary – though performance has improved slightly still not meeting the standard and needs to be reviewed through exception reporting.
o Aspirin administration – Aberdeen Royal Infirmary - though some improvement, still not meeting standard and data do not correlate with timely CT scanning performance.

o Thrombolysis door to needle time – though some improvement at Aberdeen Royal Infirmary it still falls significantly short of the required standard therefore door to needle time needs to be reviewed.

o Attendance at neurovascular clinic – Aberdeen Royal Infirmary – performance declined in 2013 and though has risen again slightly is still not meeting the standard.

o Carotid intervention – though there has been some progress with carotid intervention this falls well short of the standard. A review of the pathway is needed, in particular the referral pathway from Dr Gray’s Hospital.

• During the preparation of the Scottish Stroke Care Audit national report, the Chief Executive of each NHS board was asked to provide an example of a change that they have put in place to improve the delivery of stroke care within their local area. The following statement was provided by NHS Grampian:

**Stroke flow:** It is acknowledged that the current configuration of stroke services will not allow us to meet the 90% target. There are challenges due to the difficulties with accessing care in the community, which impacts on flow throughout the system. We have employed a stroke flow co-ordinator to support stroke flow through acute and rehabilitation services. We are now using exception reporting to identify specific reasons why patients do not access the Acute Stroke Unit, along with why patients do not achieve the other standards.

**CT scanning:** Performance in NHS Grampian against brain imaging standards has improved, consistently achieving the standard. Installing a CT scanner in A&E, within the new Emergency Care Centre has had a positive effect on early access to scans.

**Thrombolysis:** Performance is satisfactory, and we are treating 20 per 100,000 population. This is due to a well coordinated team effort involving Scottish Ambulance Service, A&E and the acute stroke team. Door-to-needle time remains below target: we know that pre-alert results in a significantly lower door-to-needle time and are focussing on working with the Scottish Ambulance Service to improve the proportion of patients with pre-alert.

**Swallow screen and aspirin:** Although these are improving, ongoing exception reporting will help identify the issues which are preventing achievement of the standards.

**Outpatients – stroke clinics:** Early identification of patients for daily medical clinics has resulted in a significant improvement at Dr Gray’s Hospital. At Aberdeen Royal Infirmary, although there is daily clinic provision, referrals continue to increase. Increased consultant input to cover colleagues’ annual leave is being considered by management.
Figure 18.1. Percentage of stroke patients receiving an ‘appropriate’ Stroke Care Bundle (ie Stroke Unit admission, swallow screen, brain scan and aspirin). Data presented by hospital. 2013 data.

Data source: Public Health & Intelligence, Scottish Stroke Care Audit