QUALITY IMPROVEMENT REPORT
(formerly HEALTHCARE GOVERNANCE AND RISK MANAGEMENT)

1 Purpose of the Report

The purpose of this report is to inform the Board of current progress with clinical quality improvement.

2 Recommendations

The Board is recommended to:

2.1 Review and comment on Quality Improvement matters.

3 Summary of the Issues

3.1 Staff Governance

3.1.1 Dr Nikki Maran
Dr Nikki Maran, Consultant Anaesthetist at the Royal Infirmary of Edinburgh, has been made an honorary Fellow of the Royal College of Surgeons. This is because of her work, based on her own research, in identifying the human common non technical factors associated with errors in surgery and anaesthetics. Dr Maran has made a very considerable contribution to the UK knowledge base and intelligence in this area and this honour marks the surgical community’s appreciation of her efforts.

3.1.2 University of Edinburgh
Dr Richard Simpson, a consultant in respiratory medicine at the Royal Infirmary of Edinburgh, was the winner of the University of Edinburgh Student’s Association teaching award category for providing best feedback.

3.1.3 Do Not Attempt Resuscitation Policy
NHS Lothian has been recognized for its pioneering work with a DNAR policy and implementation particularly in primary care. The Public Audit Committee has supported the Audit Scotland proposal that a national policy should be developed, and supported by the Scottish Government Health Directorate. At a
national working group, all other NHS boards have agreed to develop a single NHS Scotland DNAR policy and associated procedures which is to be based on the Lothian documentation and led by Lothian practitioners, Dr Juliet Spiller (consultant in palliative medicine) and Colin Murray, Steven Short and Colin Halliday (resuscitation officers).

3.2 **Quality Assurance**

3.2.1 **Scottish Intensive Care Society Audit Group Annual Report for 2008**

The Scottish Intensive Care Society has an Audit Group which publishes an annual report on the activity and outcomes of intensive care and high dependency units (HDU) in Scotland. This is a national audit funded through the Information Services Division, National Services Scotland, and is aimed at driving up standards of quality of care through engagement with clinical staff and the use of high quality information.

In the past year the commonly used clinical IT system “WardWatcher” has been upgraded in all units to enable real time reporting to the audit database. Links have been established with Health Protection Scotland and the Scottish Patient Safety Programme to ensure that the work on reducing HAI and improving complications in intensive care is integrated.

The total number of patients treated in intensive care units is stable at just over 10,000 per year. The HDU numbers are steadily increasing to 20,000 per year. Bed occupancy is variable, averages 75%, and is influenced by varying lengths of stay. There has been a marked increase in delayed discharges, most related to a lack of ward beds, which illustrates a capacity problem within acute hospitals. It may be multi-factorial but it coincides with the introduction and improved performance of the 4-hour emergency department target which has prioritised patient admission from the front door of hospitals over critical care discharges. The majority of patients are admitted to critical care during daylight hours, underpinning major emergency and elective surgical and medical care in Scottish hospitals. A significant number of admissions go directly from Accident and Emergency departments.

Outcomes across Scotland are very good with a standardised mortality ratio. There are no outlying units in Scotland in 2008. This shows a steady improvement which stands well with international comparisons. Data for NHS Lothian within the report show no important variations and are well within control limits. The full report is available from the Medical Director and provides a wealth of individual hospital data, interventions, patient types, and outcomes.

3.2.2 **Scottish Cancer Network (SCAN) – Comparative Audits 2006: Colorectal, Lung, Head & Neck Cancers**

SCAN has published audit data from 2006 for the above cancers. The data for lung cancer continued to show a dismal picture with cancer being diagnosed in an older population, compared with OECD countries, in the later stages and with poorer outcomes. Case ascertainment is very high, treatment times are short,
and access to surgery and modern drugs satisfactory, but mortality remains in the highest quartile of OECD countries at approximately 49/100,000 population.

Research from the Edinburgh Cancer Centre has demonstrated improvements since the mid 1990’s. These are improvements in access, service organisation and increased use of treatments likely to increase survival. International comparison is difficult because of major differences in data collection, in particular patient characteristics such as age, sex, ethnicity and social deprivation, as well as clinical details of tumour stage. Research comparing the outcomes of survival from lung cancer in British Columbia to Scotland demonstrated that patients from Scotland were at least 10 years older with lower rates of pathological confirmation (74% -v- 89%), and more lethal squamous cell or small cell lung cancers. Fewer patients in Scotland received effective treatment (57% -v- 67%) largely because of the very poor prognosis and the advanced stage of the disease. Relative survival was higher in British Columbia and life expectancy differences did not explain this. Use of treatments explained only half the difference and other unknown factors such as lifestyle, co-morbid diseases, population genetics or local genetics/biology may be important and require further exploration.

3.2.3 The Society for Cardiothoracic Surgery in Great Britain and Ireland. 6th National Adult Cardiac Surgical Database Report 2008

This report documents the outcomes and key processes within adult cardiac surgical practice in the United Kingdom and Ireland. It gives complete coverage of all NHS Hospitals undertaking adult cardiac surgery based on 400,000 operation records.

The operative mortality rates for all major cardiac operations continue to fall despite the patients being older and sicker which indicates the improved quality of hospital care. Mortality rates for coronary artery bypass grafting have fallen to 1.5% and for valve operations to 3.5%. Patients over the age of 75 now make up more than 20% of all cardiac surgery. The data provided supports informed consent for patients. Annual volumes of valve surgery continue to rise but coronary artery bypass surgical activity appears to have stabilised across the UK.

In NHS Lothian considerable improvements can be made to the scoring for patients at risk (EuroSCORE). The majority of units across the UK are managing to complete over 80% of the clinical items that derive a proper score. In NHS Lothian the overall complete score was only 20% with over 2400 single item omissions, and 31 cases where more than 2 items were missing. 107 cases had complete data. The outcomes for NHS Lothian are comparable with the rest of the United Kingdom with no outliers. The case mix etc is close to average. Data for individual surgeons are available hosted on a database by the Care Commission. Scrutiny of individual clinician data discloses no major variation from their peers for NHS Lothian surgeons.

The full report is available from the Medical Director.
3.2.4 Scottish Audit of Surgical Mortality 2008 Report

The Scottish Audit of Surgical Mortality (SASM) reviews the deaths in hospital of patients who were under the care of a surgeon, whether or not an operation took place. It is voluntary and confidential and covers all surgeons and anaesthetists in Scotland except for cardiac surgery and obstetrics where deaths are reported at a UK level and there is a national clinical governance scheme. Surgeons in NHS Lothian are required to take part. Participation in this audit is part of the discussion during annual appraisal. The overall return rate for completed data is 85% which is also the NHS Lothian figure.

Consultant involvement in decision making remains very high at 99% and with 83% of consultants present in theatre. This varies by speciality ranging from 100% in gynaecology, maxillofacial surgery, paediatrics and plastic surgery to around 55% in neurosurgery and 70% in orthopaedics. In orthopaedics this can be attributed in a large part to a high incidence of patients with a fractured neck of femur where the operation itself is well within the competence of a trainee surgeon. The audit has looked carefully at the analysis of these deaths and in only 1 case was the trainee surgeon considered too junior. The number of cases where the audit has identified an area of concern has reduced again to 15% of deaths. In only 2 of these was this related to the cause of death, and a further 86 (3/7%) may have contributed to death. Details of these cases will be provided later. The most common areas of concern were that patients were placed on an inappropriate ward, in retrospect the operation should not have been done, or there was undue delay of transfer. Problems with fluid management of surgical patients had been identified previously as contributing to a poor outcome. For the majority of deaths the surgeons did not believe that fluid management was a contributing factor but where it was, the most common problem was fluid balance in the ward post operatively. In 50% of cases surgeons believed this could have been improved.

Acute and chronic alcohol use is implicated in the deaths of 194 patients, and a significant impact in 29% of deaths in plastic surgery and 17% of deaths in ENT. Most of these were malignancies related to chronic alcohol use. Acute alcohol intoxication was implicated in the deaths of 31 patients. SASM is going to examine problems associated with over and under transfusion in future reports. The audit examined the role of Hospital at Night and concluded that 4 deaths where the care was delivered by the Hospital at Night team had an area of concern. None of these contributed to the death. The evidence points to the overall safety of Hospital at Night schemes.

30% of patients operated on had a healthcare associated infection which was a factor in their death. This percentage has risen steadily over the past 5 years. In 14.5% of cases HAI was the factor in death but there is huge variation between Health Boards arranging from 0% in Golden Jubilee National Waiting Times Unit to 28% in Dumfries and Galloway (Lothian 18%). The MRSA rate shows no change over the years at around 7%. C difficile was recognised as a contributory factor in 3.8%.
The audit data highlighted that older patients needing orthopaedic care are less likely to be referred to or admitted to critical care facilities when compared to general surgical or vascular patients. The percentage of deaths with co-morbidities in older patients remains very high at 98% with the most common being respiratory or cardiovascular disease.

The audit has identified patient transfers between specialties and teams as a significant factor. 15% of all deaths in general surgery were patients transferred within the same hospital. Within Health Boards the mean transfer rate between hospitals was 10% which varied from 0% in Orkney and the Western Isles to 18% in Ayrshire and Arran. The highest transfer rates between Boards are for the regional specialties in neurosurgery and paediatrics. The audit again confirms that 51% of deaths require general palliative care and that these needs were met in 96% of cases. 7% of patients reported are admitted directly to surgical wards for terminal care. This has not changed in recent years.

5% of deaths were subject to post mortem which represents a considerable fall from the 17% recorded in 1996. This reflects the national trend to a reduction in post mortems. It is matched by a steep decline in a number of cases in which it is recorded that a post mortem was refused by the relatives, therefore this must reflect a considerable reduction in the post mortem requests by clinicians. In all surgical specialties the percentage of cases discussed at morbidity and mortality meetings has risen from 49% to 63% and is 100% in neurosurgery, spinal surgery and thoracic surgery, and only 20% in gynaecology. By Health Board the figure varies from 25% in Orkney to 87% in Borders (Lothian 68%). In 2006 the audit proposed a clinical governance protocol in which the initial data appears to have been very successful.

3.2.5 Health Protection Scotland: Surveillance of Surgical Site Infection 2009

This report is of data collected between January 2003 and December 2008. All NHS Boards in NHS Scotland participate in the surgical site infection programme. The datasets include some 1460 in-patient infections from 126,290 procedures in 10 categories of surgery.

The incidence varies by surgical category from 0.2% following knee replacement to 1.1% for abdominal hysterectomy. The majority affect the skin, 15% accounted for deep infections.

The rates in Scotland have been relatively stable but they have shown a downward trend in the last year, and particularly for caesarean section. Incidence is related to the number of risk factors, e.g. age, diabetes, poor nutrition. The incidence varies also with the length of stay. Some infections may only become evident after the patient has been discharged and may be missed in this surveillance. Day 30 post operative surveillance was introduced following hip replacement and 39% of cases were identified following readmission to hospital. Outpatient surveillance has been extended recently to caesarean sections.
When making comparisons between NHS Boards it is important to take into account the number of procedures on which the rate is based and hence precision of the estimated rate of infection. The case mix of patients undergoing surgery varies, so do the risk factors. There are outliers from the 99% control limits notified (none in NHS Lothian). However, within NHS Lothian the RIE has significantly more infections following abdominal hysterectomy and caesarean section; the major reason identified is a higher proportion of patients suffering from cancer, diabetes and with obesity which are all known risk factors. Theatres have introduced clippers, the dressings used are being reviewed by tissue viability nurses, and antibiotic prophylaxis is tracked to raise compliance.

The surveillance data is used for reviewing practice and assessing compliance with good practice, e.g. SIGN Guideline 104 – antibiotic prophylaxis in surgery. The timing of antibiotic prophylaxis is variable with about 65% of procedures compliant with the guideline (within 30 min of surgery). The use of antibiotic impregnated cement in orthopaedic surgery is recommended and 76% of procedures are compliant. Prophylaxis against deep venous thrombosis is archived in 85% of orthopaedic procedures and 97% of those procedures where the information is being recorded properly. Infection is more common when there is no consultant present while operating; compliance with this standard was 94%.

3.2.6 The Scottish Antimicrobial Prescribing Group has published the first report into primary care prescribing indicators. NHS Lothian is well below the average for Scotland for all antibiotics although there has been a trend towards increased prescribing in all Boards over the past five years. NHS Lothian prescribes the second lowest number of items per patient (behind Orkney) but tends to prescribe a high number of doses per patient. However NHS Lothian demonstrates excessive seasonal variation with a greater than expected (> 5%) prescribing of quinolones (particularly important in C. difficile) in summer compared to winter. NHS Lothian has the lowest prescribing of all antibiotics associated with a high risk of C. difficile but further improvements could be made in the prescribing of co-amoxiclav which is lower in NHS Borders and Forth Valley. Clindamycin prescribing, which should be tightly controlled, is the second highest in Scotland and needs to be further investigated. Consumption of penicillins is the third lowest in Scotland and prescribing of cephalosporins low also compared to the majority of other Boards. Macrolides prescribing, commonly used for patients allergic to penicillin, is 4th highest.

3.2.7 NHS Education Scotland – GP Appraisal Annual Report 2009
NHS Education Scotland has published its 2009 report on GP appraisal in Scotland. Appraisal helps the individual doctor critically review their practice and identify and act upon their educational and developmental needs. It is designed to support continuous quality improvement in patient care. Appraisers for GPs have been selected and trained to appraise other GPs. The discussion focuses on past and current work, consolidates on good practice and makes plans to improve on clinical performance where gaps in knowledge and skills are identified.
Appraisal discussion addresses complaints, significant events and the doctors' relationships with patients and colleagues. Future ambitions and career development are discussed and formulate a personal development plan. Health and probity are also discussed and their impact on the delivery of patient care. Like hospital doctors, GP appraisal will need to support revalidation for doctors from November 2009.

The scheme is designed around delivering of essential evidence by each GP each year, and which map onto the 7 headings of *Good Medical Practice*.

- Good Clinical Care
- Maintaining Good Medical Practice
- Relationships with Patients
- Working with Colleagues
- Teaching and Training
- Probity
- Health

Appraisal does not address issues relating to performance which should be dealt with through local clinical governance procedures. However, appraisal may recognise at an early stage, developing performance problems or ill health which would affect clinical practice. The programme should assist GPs to recognise these problems and seek appropriate help before they impact in the delivery of patient care.

NHS Education Scotland has developed and provides internal quality assurance for the GP appraisal scheme in Scotland. These are recruited and trained with refresher training as required every two years. Appraisers in each Health Board are managed by a local Appraisal Adviser (NHS Lothian: Dr Peter Berrey) who co-ordinates the development and monitoring of the scheme locally. Local appraisal adviser and GP appraisers are contracted to, and paid through, NES and are accountable to the Chief Executive. In January 2009 NHS Quality Improvement Scotland published *Time to Reflect: GP Appraisal in Scotland – External Quality Assurance National Report*. The report highlighted that:

- The majority of GPs in practices in Scotland had been appraised (NHS Lothian 100%).
- Lower percentage of sessional GPs had been appraised which is 22% of the GP workforce in Scotland. (NHS Lothian numbers are unknown but at least 400.)
- Need for a consistent approach for identification of those doctors eligible for appraisal and an annual check on the process, including doctors who work in the Out of Hours service.

GPs have access to the Scottish Online Appraisal Resource website which offers information and tools required for the appraisal process. It also maintains a local online database used by local appraisal advisers, appraisers and appraisees who complete the process. Appraisal documents can be uploaded
by GPs and shared with their appraiser which saves having to e-mail documents over on secured e-mail accounts. The GP Form 4 is on paper format locally as well as electronically. GPs can store their own version of the form on a personal computer, and the appraisers can assess Form 4’s on their local computer. This will be used for the storage of all Form 4’s later this year. It is intended that the online resource will support multi-source feedback from colleagues and patient surveys as these are developed to support revalidation of doctors over the next 2-3 years.

3.3 Clinical Effectiveness

3.3.1 NHS Blood and Transplant: National Comparative Audit of Blood Transfusion: 2008 Bedside Transfusion audit

The NHS Blood and Transplant Authority has UK wide accountability for blood transfusion and organ transplantation. An audit of compliance with blood transfusion documentation at the bedside across a large number of UK hospitals including those in NHS Lothian has been published. 8965 patients were audited with 50-60 in each participating hospital. Areas for improvement in NHS Lothian, compared to the national data, were:

- Improving wrist band identification (93% versus 97%) and use of CHI number on the wrist band (95% versus 98%)
- The proper recording of pre-transfusion observations (72% versus 90%), and recording after transfusion has started and after it has been completed (60% versus 62%).

Areas where NHS Lothian achieved 100% compliance were matching the patient details on wrist band with patient documentation and matching patient details with the unit of blood to be transfused.

Transfusion practitioners, with the Hospital Transfusion Committee, will work through the Quality Improvement Teams to ensure that compliance is improved in future. Improving the reliability of blood transfusion is an essential component of patient safety and will be integrated with the spread of the Patient Safety Programme through education and support to front line teams.


The key objectives for the Better Blood Transfusion Programme are to reduce red blood cell usage to 38 units/1000 population by delivering practical training and blood use reports to NHS Boards and front line teams. NHS Lothian employs 2 Blood Transfusion Practitioners who have undertaken a training needs analysis of staff, and have been delivering training for the past 5 years. 41% of nurses have been trained, 32% of all doctors, 100% of Foundation Year doctors, and 44% of support services staff, i.e. 45% in total compared to 43% nationally. In 2008 consultants were required to undertake online transfusion education as an objective within their job plan, except for any consultants who are never involved in any stage of blood transfusion. The use of eLearning has increased considerably during the past year and this has become available on the internet from November 2008. All staff at induction receive basic instruction
on transfusion practice, including Clinical Support Workers. A training programme for phlebotomists has been agreed.

The Major Haemorrhage Protocol for adult hospitals has been reviewed, including the use of the CHI as a single identification for patients requiring transfusion. A new paediatric maximum surgical blood ordering schedule has been agreed to bring this into line with the adult ordering schedules. Traceability of blood (from donor to patient) ranges from 95.5% to 100% in NHS Lothian and needs to improve further. Wastage of blood and blood components has reduced steadily but still averages 38 units/month. Over the past year NHS Lothian has reported 4 serious adverse reactions, 5 adverse events, and 15 hazardous reports to the national database, and identified 82 near miss events. This work is supported also by the Hospital Transfusion Committee, and features in the work of Quality Improvement Teams of those areas using significant amounts of blood.


1518 patients from 215 hospitals in England and Wales were identified as meeting the criteria for review. 473 cases were excluded because they did not have acute injury, 69 were excluded because of insufficient information, leaving 976 cases to be analysed. The method of patient identification, through clinical coding, did not capture many post surgical patients. This was surprising as the review team expected many more surgical patients. The conclusion reached was that these patients were coded for a condition relating to surgical procedure and acute kidney injury would not be recorded as a complication, at least not consistently. Further the study excluded patients who had had a inter-hospital transfer.

There was an even split between males and females and the median age was 83 confirming that this is a complication of older people with acute illnesses in hospital. The majority of patients are admitted as emergencies, the vast majority were identified through Care of the Elderly, or medical units. 58% of these patients had evidence of kidney disease on admission to hospital, and nearly half had chronic kidney disease already present. The commonest factor identified contributing to acute kidney injury was volume depletion, often coupled with another diagnosis such as infection.

Around 50% of patients were considered to have received an overall good standard of care. The majority of patients who had less than good care were judged to have room for improvement in clinical care rather than organisational factors. Issues of care are primarily related to the clinical staff looking after these patients. This may indicate both lack of awareness or poor understanding of this condition, and inadequate knowledge of its management amongst medical staff. The quality of clinical care was worse in those patients who developed acute kidney injury after admission to hospital with only a third receiving what was judged to be good clinical care.
The report goes on to make a number of recommendations:

1. All patients admitted as an emergency should have their electrolytes and kidney function checked routinely on admission and at intervals after than depending on the severity of their illness.
2. For patients who develop acute kidney injury there should be a robust assessment of contributory risk factors and an awareness of the possible complications that may arise.
3. All acute admissions should receive a proper senior clinical review by a consultant within 12 hours of admission.
4. Guidance for recognising an acutely ill patient (NICE Clinical Guidance 50) should be widely disseminated and implemented in acute hospitals. In particular all acute patients should have admission physiological observations performed and a physiological monitoring plan implemented, taking into account the degree of illness and risk of deterioration.
5. There should be sufficient critical care and renal beds to allow rapid step up in care if required.
6. All level 3 intensive care units should have the ability to deliver renal support treatment and these patients should have clinical input from a renal specialist.
7. All acute admitting hospitals should have access to either on site renal specialists or a dedicated renal service within reasonable distance of the admitting hospital.
8. All acute admitting hospitals should have access to a renal ultrasound service 24 hours a day, including weekends, and the ability to provide the emergency relief renal obstruction.

Recommendations 1-3 and 5-8 are already implemented across NHS Lothian. LUHD are asked to implement the remaining recommendations. The Scottish Patient Safety Programme has a work stream on identifying and supporting critically ill patients with the aim of reducing the emergency transfers to critical care and recommendation 4 will be picked up in that work stream.

3.3.4 Scottish Government Health Directorate – NHS Quality Improvement Scotland: Getting to GRIPS with Chronic Pain in Scotland

Dr Pete MacKenzie was appointed the Scottish Government Lead Clinician for chronic pain in May 2009. The post was intended to facilitate implementation as a priority action to the NHS QIS report on chronic pain originally published in July 2008 and re-distributed in July 2009. The newly distributed report includes a foreword by the Cabinet Secretary for Health emphasising the importance of chronic pain (an estimated 18% of Scottish adults live with some chronic pain) and endorsing the development of Managed Clinical networks for chronic pain, in line with the one established in NHS Greater Glasgow and Clyde. The long terms conditions action plan, published in June 2009, recognised chronic pain as a condition of its own right and also supported the recommendation that NHS Boards should establish regional managed clinical networks. Dr MacKenzie now chairs a Scottish Chronic Pain Steering Group to further develop the action plan for chronic pain.
NHS Lothian fared reasonably well within both the GRIPS reports and its predecessor, the McEwan report, although gaps in pain service provision were still evident. In May 2009 a briefing from the Cross Party Group on Chronic Pain in the Scottish Parliament, showed how Lothian compared in the GRIPS assessment exercise at November 2007. At this time, Lothian offered 20 of the 24 service elements, the highest of all Boards.

NHS Lothian embarked on a review of chronic pain services in June 2009. The review is being chaired by Dr Gordon Cameron, a GP with a special interest in musculo-skeletal problems and pain.

The review includes clinicians from the Astley Ainslie (psychology) and Western General (anaesthetics) based parts of the Lothian service along with other key partners to explore and agree options to improve the Lothian pain service and the patient journey. This will include consideration of a single point of entry into the pain service with common assessment and treatment approaches across all parts of the service; the development of Primary Care links to improve early detection of chronic pain; and support to those with long-standing pain through delivery in local settings in partnership with voluntary agencies. The review is considering options for delivery of the Board-related recommendations from the GRIPS report.

3.3.5 Organ Donation
Dr Joyce Stewart, Consultant Anaesthetist, has been appointed as Organ Donation Champion for the Western General and St John's Hospitals, and Dr Rory Mayes, has been appointed to be the Organ Donation Champion for the Royal Infirmary and Royal Hospital for Sick Children. These posts have been agreed with their respective Clinical Directors, and the doctors assigned the time to undertake this work within their job plan. The time and responsibility is being reimbursed by recurrent funding from the UK Transplant and Blood Authority.

The role of the Organ Donor Champions is to demonstrate a positive commitment to organ donation within their respective hospitals and to encourage clinicians to think and act in support of increasing organ donation rates from suitable donors. The national UK audit of “missed” suitable donors will be published every year and the data made available to local NHS Boards in Scotland. HG&RM committee have established already the Organ Donation Committee, chaired by Dr Alison Tierney, and this work will be regularly reported through the committee to the Board.

3.3.6 National Services Division: Scottish Genital Anomaly Network Annual Report 2009
The Scottish Genital Anomaly Network (SGAN) is a national managed clinical network hosted by NHS Greater Glasgow and Clyde, and working across the 4 paediatric tertiary centres in Scotland, Aberdeen, Dundee, Glasgow and Edinburgh. The Centre has a recognised clinician who is responsible for the local clinic and network business. The role of the network is to improve long term clinical outcomes by providing appropriate support, investigation and
management of the patient and their families. The full report is available from the Medical Director.

4 Resource Implications

4.1 There are no resource implications.

Dr C P Swainson
Medical Director
4 September 2009

List of Appendices

Appendix 1: Quality indicators
### Quality Measures Available

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- Scottish Intensive Care Society annual audit
- Orthopaedics: Arthroplasty register annual report (mortality, DVT/PE incidence, re-operation rate)
- Scottish Hip Fracture Audit quarterly data (mortality, % treated within 24 safe hours, los and discharges)

- Surgical specialties
  - Scottish Audit of Surgical Mortality annual report
  - Surveillance of Surgical site Infection (HPS, occasional)
  - National Inquiry into Perioperative Deaths
    - Cancer
  - Southeast Scotland Regional Cancer Network (SCAN) audits

- Cardiac
  - Scottish Coronary Interventions Register Annual Report (mortality, % single intervention)
  - Annual Report from The Society of Cardiothoracic Surgery of GB and Ireland (mortality, risk adjustment, procedures and complications)

- Renal
  - Scottish Renal Association Annual Quality Report (mortality, survival and number of process indicators)
  - UK Renal Association report
  - UK Transplant Centre Outcome monitoring (quarterly)
  - Organ Donation Committee report

- Reproductive Medicine
  - Scottish Programme for Effectiveness in Reproductive Health – Measures and Outcomes
    - IVF programme (success rates)
    - Confidential Inquiry reports

- Mental Health
  - Percentage of Suicides in Young People
  - Percentage of Suicides in Older People

- General Surgery
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