Getting It Right First Time (GIRFT) Surgical Site Infection National Survey

A review of Surgical Site Infection rates in England in 2019

What is Getting It Right First Time (GIRFT)?

- Getting It Right First Time (GIRFT) is an NHS improvement programme[1]
- GIRFT is led by front-line physicians who are experts in the areas under review
- GIRFT is designed to improve the quality of care within the NHS by reducing unwarranted variations in care
  - Variations in care can affect patient outcomes, service costs and overall productivity
- GIRFT aims to address variations in service delivery and share best practice between trusts
  - To improve patient care
  - To deliver efficiencies and costs savings – such as by reduction in unnecessary procedures

What is the GIRFT surgical site infection national survey?

- The GIRFT surgical site infection (SSI) survey was launched in 2017 in order to help surgical units to monitor SSI rates and current practice
- Objectives were to
  - Collect data and review the rates of SSI within surgical units
  - Examine the likelihood of significant complications developing following SSIs
  - Review current practice in the prevention of SSIs
- The survey was designed to record SSIs relating to 65 different surgical procedures
- It was sent to 13 surgical specialities across 95 participating trusts
- 861 healthcare professionals registered and data were received from 198 surgical units

What is a surgical site infection?

- An infection that occurs after invasive surgery in the location where the surgery took place
- According to the National Institute for Health and Care Excellence (NICE) SSIs represent up to 20% of all healthcare-associated infections and at least 5% of patients undergoing invasive surgery develop a SSI[1]
- Most SSIs are caused by contamination of a surgical wound with the patient's own microorganisms
- NICE have highlighted that two factors have led to an increased risk of SSIs
  - Advances in surgery and anaesthesia have
  - led to patients who are at greater risk of SSIs being considered for surgery
  - Patients are allowed home earlier following day case and fast-track surgery leading to more SSIs being observed in primary care

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Why are surgical site infections important?

- SSIs can lead to increase patient morbidity and mortality and reduce patient quality of life
- SSIs can significantly increase hospital and treatment costs due to
  - Delays in patient discharge
  - Longer hospital stays
  - Increased re-admissions and re-operations

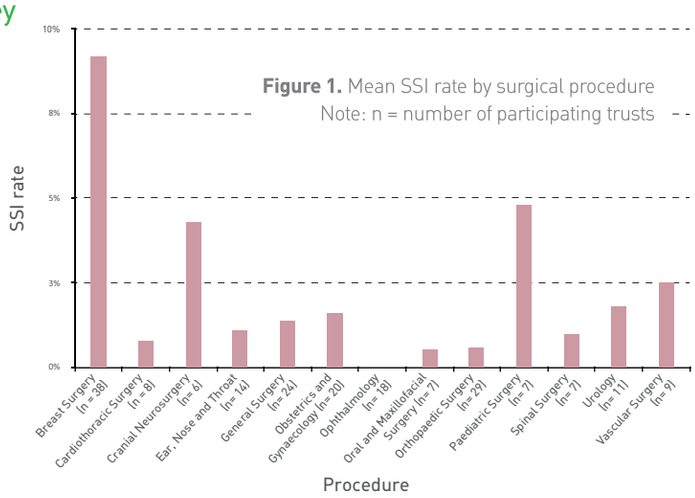
Can surgical site infections be prevented?

- The first step in reducing SSI rates is developing an awareness of hospital, unit and procedural SSI rates
- Most SSIs are preventable given appropriate precautions and protocols
- It is strongly recommended that surgical units monitor their own SSI rates and contribute to national surveillance of SSIs in order to inform and improve clinical practice

Surgical site infection rates identified by the GIRFT survey

- The GIRFT SSI survey identified significant variation in SSI rates between surgical units, both at speciality and procedural level
  - Some of this variation may be due to differences in SSI surveillance levels
- Overall, trusts reporting lower volumes of procedures also reported higher SSI rates
- Although mean SSI rates were often low there was considerable variation in reported numbers with maximum values often much higher than the mean

Figure 1. Mean SSI rate by surgical procedure
Note: n = number of participating trusts



Impact of surgical site infections on patient outcomes

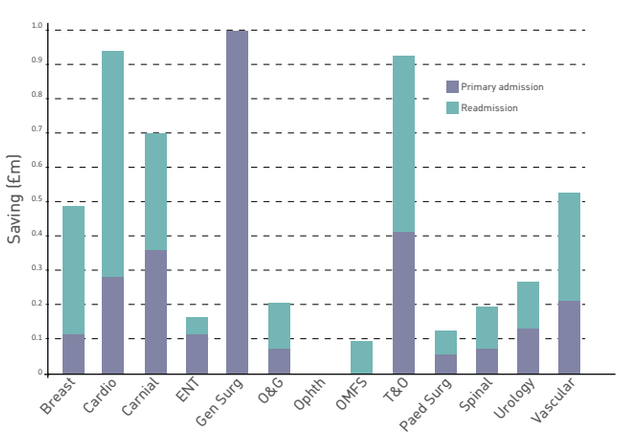
SSIs are associated with a significant negative impact on patient outcomes

- SSIs led to re-operations in a mean of 36.2% of cases
  - Rates were particularly high in spinal (84.6%) and orthopaedic (82.6%) surgery
- SSIs led to sepsis in 12.0 – 47.2% of cases, with highest rates observed in
  - Urology (47.2%)
  - Cardiothoracic surgery (41.4%)
  - General surgery (37.8%)
- Mean all-cause mortality associated with SSI also varied across specialisms but was highest following vascular surgery at 11.3%

The cost of surgical site infections

- SSIs were found to significantly increase the cost of patient care due to
  - Delays in patient discharge in 34.1% cases, with a mean length of stay of 12.1 days
  - Hospital re-admissions, which were observed in almost half of admissions with a mean length of stay of 9.8 days
  - Overall this meant that the mean length of hospital stay for patients with an SSI who were subsequently readmitted was 21.9 days
- This resulted in significantly increased hospital costs hospital costs. Figure 2 highlights the potential financial opportunity using the current data that could be achieved if all SSIs were avoided.[1]

Figure 2. Estimated potential savings for participating trusts by surgical specialism based on avoiding delays to discharge and readmission for SSIs



The role of pre-operative antibiotic prophylaxis

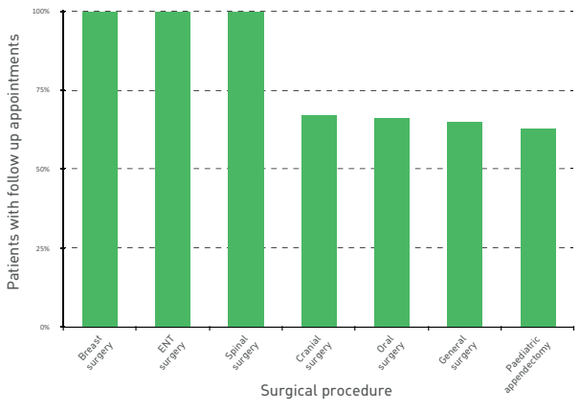
- Pre-operative antibiotic prophylaxis has been shown to be effective when used appropriately – NICE recommend that it is used in the following contexts:
  - clean surgery involving the placement of a prosthesis or implant
  - clean-contaminated surgery
  - contaminated surgery
  - However, this survey identified variability in the use of antibiotic prophylaxis
  - While 82.7% of surgical units had developed local antibiotic prophylaxis guidelines
  - Only 34.0% of units assessed compliance against such guidelines

Why is post-operative follow up important?

- Good post-operative follow up and care supports prevention and early detection of SSIs, which can prevent severe infection that may require rehospitalisation and re-operation
- The GIRFT survey revealed that the proportion of patients with arranged follow-up appointments was very variable across procedures (Figure 3)

- Urgent action is required by surgical units to reduce the incidence of SSIs
- It is unacceptable for a surgical unit or trust to be unaware of its infection rates as this presents an opportunity to significantly improve patient outcome

Figure 3. Variation in post-surgery follow-up appointments



Recommendations to reduce incidence and impact of SSIs

- The Association of Surgeons of Great Britain and Ireland recommend that surgical units adopt a multidisciplinary approach to reporting, monitoring and actively managing their SSI rates to minimise occurrence
- NICE have issued guidelines on the prevention and treatment of SSIs in the pre-, peri- and post-operative environments[2]
- There is a need for specialty-specific (and possibly procedure-specific) guidelines on the use of antibiotic prophylaxis that are supported by best available evidence and expert consensus
- To maximise prevention and detection of post-operative SSI, surgical units should work closely with community teams to support delivery of post-operative wound care and to aid patients' post-operative recovery

Recommendation	Actions	Timeline
1. Trusts to prospectively monitor own surgical units' deep incisional and organ/space SSI rates	1A: GIRFT to organise a second national survey to collect data on SSI rates for selected surgical procedures 1B: Trusts to participate in both PHE Surveillance (mandatory and non-mandatory categories) and prospective second GIRFT SSI Survey, ensuring reliable and timely data submission in both surveys 1C: For future surveys, GIRFT and PHE to consider options to reduce duplication, improve participation and methodology 1D: GIRFT to collect and share good practice to reduce SSI via deep dives, GIRFT Hubs and the SSI workstream	Second survey to be launched in May 2019
2. National SSI data to be shared with trusts to help surgical units benchmark their own performance	2A: Results from the GIRFT survey made available to participating trusts	Upon completion of 1A and 1B
3. Trusts to reduce SSI rates to improve patient care and reduce related costs	3A: GIRFT clinical leads and regional hub teams to support trusts in reviewing data and recommending changes 3B: Trusts to review own surgical units' deep SSI rates and introduce positive changes, through a multi -disciplinary approach, to reduce infection risk pre-, peri- and post-operatively 3C: Trusts to ensure appropriate post-operative follow up appointments are made at point of discharge	For continual action by trusts throughout the GIRFT

GIRFT/Public Health England case study

A multidisciplinary approach to reducing SSI rates in hip fracture patients

Case study – background and approach

- Public Health England's SSI surveillance programme identified high outlier hospital notifications at Ashford and St Peter's Hospitals NHS Foundation Trust compared with national benchmark
  - Suggested a 5% infection rate
- A multidisciplinary approach was taken
  - Patient journey was examined
  - Evidence-based modifiable risk factors for infection were identified
  - Changes to patient care made to aggregate marginal gains and lower infection rates

Case study - interventions

Interventions made to improve SSI rates were as follows:

Pre-operative
- Nutrition drinks for all patients
- Pre-operative chlorhexidine wash (e.g. Hibiscrub®)
- Pre-operative warming (e.g. Easywarm®)

Intra-operative
- Change of air filters in theatre
- Tighter patient temperature control in theatre
- Use of Iodine-impregnated incise drapes
- Pre-operative tranexamic acid 1g i.v. for all patients
- Cemented implants as standard
- Glycaemic control

Post-operative
- Restrictive transfusion protocol with single unit transfusions (e.g. Mepilex® Border Comfort, Mepilex® Border Post Op and Mepilex® Surgical)
- Oozing wound protocol

Case study - results

Comparison of before and after interventions in 422 patients demonstrated a major improvement in outcomes and reduction in costs

- Peri-operative hypothermia rates dropped from 44% to 3%
- Transfusion rates fell from 28% to 18%; mean number of units used dropped from 1.8 to 1.1 units
- Tranexamic acid usage improved from 35% to 75%
- Cemented implant usage increased to 83.2%
- Mortality rates dropped to 4%
- Mean length of stay dropped from 15.7 to 13.8 days
- Early infection rates dropped to 0.24% and up to 20 infections were potentially prevented, potentially saving up to £2 million[1]

Based on the Getting It Right First Time (GIRFT) Surgical Site Infection National Survey, April 2019

For more information and the report on which this summary is based, go to https://gettingitrightfirsttime.co.uk/cross-cutting-stream/surgical-site-infection-audit/

References
1.https://www.nice.org.uk/guidance/ng125/chapter/Context
2.https://www.nice.org.uk/guidance/ng125/chapter/Recommendations

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