

EXECUTIVE SUMMARY
REPORT TO THE BOARD OF DIRECTORS MEETING

WEDNESDAY 19 FEBRUARY 2014

Subject	Theatres 3 & 4, Royal Hallamshire Hospital: Report on increased incidence of wound infections following arthroplasty
Supporting TEG Members	David Throssell (Medical Director) and Kirsten Major (Director of Strategy & Operations)
Authors	David Throssell, Nick Massey, Michael Harper, Kirsten Major
Status[†]	A

PURPOSE OF THE REPORT

To describe a recent increase in the incidence of wound infections following arthroplasty conducted at the Royal Hallamshire Hospital and the actions taken to:

- manage and communicate with patients with infection;
- ensure no further infections occur as a consequence of the possible causes identified;
- maintain the level of hip and knee replacements undertaken by STH for patients referred, and;
- undertake improvement works at the Royal Hallamshire Hospital to remedy the issues thought to be responsible for the increased infection rate, and allow arthroplasty surgery to re-commence.

KEY POINTS

1. In November 2011 part of the hip and knee arthroplasty service that was provided at the Northern General Hospital was relocated to the Royal Hallamshire Hospital to reduce the number of patients whose operation was cancelled as a consequence of the higher priority emergency activity at NGH, especially during winter.
2. In November 2013 an increase in the number of deep wound infections was identified in patients who had undergone hip or knee replacement surgery in Theatres 3 and 4 at RHH. Twenty-two confirmed and two possible deep tissue infections have been identified in the cohort of approximately 1400 patients who underwent primary hip or knee replacements during the period concerned. This equates to an incidence of around 1.7%, compared with expected rates of approximately 0.5%.
3. In an external review by the Health Protection Agency, no specific problems with working practices were identified. It was concluded that the design and use of a central ante-room might be contributing to the increased infection risk, and it was recommended that this should be modified before orthopaedic surgery resumed. In November a decision was taken to follow this recommendation and improvement plans were developed.
4. A significant number of actions have been taken to ensure appropriate communication with and care for patients who have been affected.
5. New pathways of care have been put in place for patients since Theatres 3 and 4 were taken out of use to ensure that patients who need hip and knee arthroplasty receive appropriate, high quality services.
6. Plans have been developed to modify theatres at RHH and for the orthopaedics service to return to operating there later this year.

IMPLICATIONS²

AIM OF THE STHFT CORPORATE STRATEGY 2012-2017		TICK AS APPROPRIATE
1	Deliver the Best Clinical Outcomes	✓
2	Provide Patient Centred Services	✓
3	Employ Caring and Cared for Staff	
4	Spend Public Money Wisely	
5	Deliver Excellent Research, Education & Innovation	

RECOMMENDATIONS

- To receive a description of the issues that have arisen to date with regard to post-surgical infections in a specific group of patients at the Royal Hallamshire Hospital.
- To review and approve the actions taken to date.
- To approve the plan for a further Board update in August to review progress.

APPROVAL PROCESS

Meeting	Presented	Approved	Date
BoD	DoS&O, Medical Director		19/2/2014

THEATRES 3 & 4, ROYAL HALLAMSHIRE HOSPITAL: REPORT ON INCREASED INCIDENCE OF WOUND INFECTIONS FOLLOWING ARTHROPLASTY

1. Background

- 1.1 In late 2011, a decision was taken to re-locate some of the lower limb arthroplasty service provided at the Northern General Hospital (NGH) to the Royal Hallamshire Hospital (RHH). The purpose of this change was to reduce the vulnerability of the orthopaedics service to having non-urgent, planned operations cancelled at short notice due to the priority placed on emergency and urgent cases at NGH, especially during winter. At RHH there is less emergency activity and therefore it is considerably less likely that operations are cancelled for this reason. A set of twin theatres at RHH (Theatres 3 and 4) were converted for orthopaedic use and hip and knee joint replacement surgery commenced in these theatres in January 2012.
- 1.2 This Report describes the recent emergence of a higher than expected rate of wound infections in patients undergoing arthroplasty at RHH and the actions the Executive Team has taken as a consequence.

2. Identification of a rise in infection rate

- 2.1 Deep wound infections are a recognised complication of joint replacement surgery, and of any surgical procedure which involves the implantation of artificial material such as joint prostheses. Some level of deep wound infection occurs in every hospital that carries out this type of surgery. These infections may present as an inflamed wound within a few weeks of surgery and / or as joint failure at a later stage.
- 2.2 In November 2013 an increase in the number of deep wound infections was identified in patients who had undergone hip or knee replacement surgery in Theatres 3 and 4 at RHH. The organisms responsible for these infections had no unusual features, and did not include MRSA. Twenty two confirmed and two possible deep tissue infections have been identified in the cohort of approximately 1400 patients who underwent primary hip or knee replacements during the period concerned. This equates to an incidence of around 1.7%, compared with expected rates of approximately 0.5%. There was no corresponding rise in infection rates at NGH and hence there was concern that the increase may be associated with the location of surgery.
- 2.3 Whilst some patients would have contracted a deep wound infection regardless of the location of their operation, the potential for the issue to be related to the two theatres at RHH necessitated further immediate investigation. Pending this, all surgery was suspended in both theatres at RHH.

3. Potential contributory factors.

- 3.1 The Trust's infection prevention and control team reviewed the two theatres and an independent opinion was also sought from an external expert from the Health Protection Agency (part of Public Health England). The ventilation systems in the operating areas, which are an important safeguard against the development of surgical infection, were found to be performing correctly, and no specific problems with working practices were identified by the external reviewer. It was his view, however, that the design and ventilation within a central ante-room, which is shared by the two theatres, might be contributing to the increased infection risk, and it was recommended that this should be modified before surgery resumed.

4. Actions taken to date

- 4.1 A significant range of activities and actions were then commenced under the leadership of the Medical Director and the Director of Strategy and Operations. These are outlined below.
- 4.2 An Incident Group was established. It was chaired by the Deputy Medical Director to manage the response to the incident including communication with affected patients, GPs and other relevant organisations. An Operational Delivery Group was established in parallel and chaired by the Director of Strategy and Operations to address operational capacity issues and continuity of services.
- 4.3 As three months has elapsed since surgery was suspended in theatres 3 and 4, the great majority of patients within the cohort concerned have already had a post-operative follow-up review by their surgeon. The small number of patients (24) who have exhibited symptoms of a deep wound infection are receiving appropriate treatment and have been fully informed about the issue either at a routine clinic attendance or through personal contact by their surgeon.
- 4.4 It is normal practice to review every patient again at a one year follow-up appointment and all patients with a suspicion of a problem at one year will be kept under continuing review. All GP practices that refer patients to STHFT for joint replacement surgery have been advised to increase their vigilance for infection in post-arthroplasty patients, and to contact the appropriate orthopaedic surgeon if they have any concerns.
- 4.5 To ensure that orthopaedic clinicians who may review patients within the affected cohort in the future are aware of their increased infection risk, a copy of the letter sent to GP practices is being placed in the notes of all patients who underwent hip or knee arthroplasty at RHH. In addition, a flag has been inserted on PatientCentre, the Trust's electronic patient database, to highlight this patient group to clinicians and administrative staff.
- 4.6 Patients scheduled for hip or knee surgery subsequent to the closure of the theatres at RHH have been contacted and their surgery rescheduled to take place at one of the Trust's other locations for surgery. To date, surgical throughput has not been significantly affected as a result of this rescheduling.
- 4.7 Where patients' surgery is planned to take place at NGH, the current approach is for patients to be admitted to and operated on at NGH. At the appropriate time following surgery patients are either discharged home or transferred to a specialised orthopaedics ward at RHH. Dedicated ambulances are being utilised for patients requiring transfer. Informal feedback from patients is thus far very positive, and a more formal evaluation of the pathway is being planned.
- 4.8 Appropriate patients are also being offered surgery through our existing contracts with Care UK and Thornbury Hospitals.
- 4.9 Plans have been approved to carry out improvement works to Theatres 3 and 4 as well as some wider environmental enhancements to the theatre suite at RHH, including a central sterile stores area, which will bring benefits to the full range of specialties operating at RHH. These are being developed within a context of longer term plans for theatres at RHH.
- 4.10 Sheffield Clinical Commissioning Group has been apprised of this problem from the outset, both verbally and in writing.

5. Outstanding actions

- 5.1 It is anticipated that the work required on the two theatres will be complete by September 2014, when arthroplasty surgery will relocate back to RHH. The Incident Group and Operational Management Group will continue in their respective roles until all outstanding actions relating to address these issues have been completed. A further detailed update will be provided to the Board of Directors in August 2014.