



Service Priorities and Programmes Electronic Presentations

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Submitting author: Mr W T WONG

Post title: Registered Nurse, United Christian Hospital

The Cross-disciplinary Intervention of Total Joint Replacement Surgeries to Reduce the Surgical Infection

WT Wong(1), CK Law(1), LC Fong(1), TF Leung(1), HC Cheng(1), MN Wong(1), YT Chan(1), YH Wong(1)

(1)Operating Theatre, United Christian Hospital

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Introduction

A total joint may become infected during or after the surgery. Patients with infected joint replacements may suffer from pain, stress, long-term hospitalization. They may require revision surgery eventually.

In the first half of 2016, there were five cases which were required to have revision surgery. It must be considered as a serious issue and affected the patient safety.

Despite of no evidence support the intraoperative contamination according to the laboratory test result from infection control perspective.

Therefore, the implementation of any prevention of surgery infection in operation theatre is very important.

Objectives

1. Establish a cross-disciplinary collaboration to prevent surgical infection
2. Reduce the surgical infection rate related to Total Joint Replacement by 50-100%

Methodology

Plan-Do-Check-Act Cycle was used for the improvement interventions:

PLAN

Identify the critical factors related to surgical infection, including sterile control, OT room workflow and medication control.

DO

1. Form a cross-disciplinary team including O&T surgeons, Perioperative Nurses, Central Sterile Supply nurses, Infection Control Team and Pharmacists to discuss the critical factors and control measures.
2. Implementation of the control measures :
 - A. Sterile Control
 1. To reduce the risk of instrument contamination by using metal instrument

container instead of fabric wrapper

2. To reduce the risk of contamination from circulating personnel by increasing the working space in the Operating Theatre
 - i. rearranging the commonly used instrument
 - ii. minimizing the number of instrument tray
3. To reduce the risk of contamination of surgical sterile gown by using higher fluid resistant reinforced gown which block microorganism pathway from non-sterile field to sterile field
4. To seal the interstice between the glove and gown by using water-barrier Op-tape surrounded on the wrist of sterile gown.

B. OT room workflow

1. To restrict uninvolved personnel enter the theater by hanging sign cards with wording "Joint Arthroplasty Operation Behind The Door"

C. Medication control

1. To use better antibiotics which have good bone penetration and prophylactic tolerance.

CHECK

Make consensus with stakeholders and evaluate the outcomes.

ACT

The control measures were implemented since Aug 2016. There was no surgical infection case related to Total joint replacement since then.

The improvement interventions became the new standard for the Operation room.

Result

A. Sterile Control

1. 100% of intact of instrument packing
2. 30% of the working spacing is increased
3. 0% of instrument contamination from circulating people
4. 0% of fluid transmission in sterile gown

B. OT room workflow

1. 80% of the disturbance of uninvolved people is reduced

Overall, the result is encouraging. The surgical infection rate related to Total Joint Replacement is reduced by 80%