Evidence for Care bundles and other Quality Improvement Tools

Potential areas where further research could be undertaken

Part of HAI Delivery Plan 2011-12:

Task 6.1: Review of existing infection prevention and control care bundles to ensure ongoing need and fitness for purpose

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Introduction

HPS has published a number of evidence based literature reviews and key recommendations which when used can optimise practice and help prevent prevalent HAI. These are intended to inform care bundles and other quality improvement tools used in NHSScotland.

This work resulted from an HAI Delivery Plan Task given to HPS to assist NHS Boards meet their HEAT targets for reducing *Staphylococcus aureus* bacteraemias and *Clostridium difficile* infection cross transmission.

During the process of preparing the literature reviews, a number of gaps in the evidence were identified and subsequently used as a basis for potential areas for future research projects.

For further details on these topics please see the full literature reviews and key recommendations at http://www.hps.scot.nhs.uk/haiic/ic/evidenceforcarebundles.aspx

Preventing contamination when taking a sample for blood culture

Areas identified where further research could be undertaken are:

- Further data to identify what the rates of blood culture contamination in NHSScotland are and to inform an improvement programme.
- Data to support the importance of inoculation of the blood culture sample bottle first to identify potential impact on blood culture contamination.
- To determine the most effective antiseptic for skin decontamination prior to taking a sample for blood culture e.g alcohol versus chlorhexidine.
- To determine optimum order for the procedure/aseptic technique to prevent blood culture contamination.
- Microbiological studies to evaluate the exact method and time for rubbing the rubber blood culture bottle tops to ensure effective decontamination.

Preventing infection when inserting and maintaining a central vascular catheter

Areas identified where further research could be undertaken are:

- To further examine the requirement for surgical scrub prior to insertion of a CVC.
- An economic evaluation to assess the cost effectiveness of implementing the use of chlorhexidine impregnated dressings to prevent CRBSIs across NHSScotland.
- Further microbiological studies evaluating decontamination of the hub prior to access to determine whether increasing scrub duration would reduce bacterial colonisation.
- Evaluation of outcome data following the introduction of the ‘scrub the hub’ intervention for CVCs to provide additional evidence to support this key recommendation with respect to CRBSI outcomes.

Preventing infections when inserting and maintaining a peripheral vascular catheter

Areas identified where further research could be undertaken are:

- The most effective antiseptic for skin decontamination prior to insertion of a PVC e.g alcohol, chlorhexidine.
- The optimum aseptic technique to minimise the chance of CRBSIs occurring resulting from PVC insertion.
- Analysis of CRBSIs data with respect to removal of PVCs after 72 hours versus on clinical indication.
- Analysis of decontamination of PVC hubs/connectors with respect to outcome on CRBSIs data.

Preventing surgical site infections (SSI)

Areas identified where further research could be undertaken are:

- Evaluating further the role of meticillin sensitive Staphylococcus aureus (MSSA) screening in the reduction of SSI.
- Analysis of antiseptics used for surgical scrub to identify optimal preoperative skin antisepsis and impact on outcome.
- The potential role of incise drapes in reduction of SSI to inform practice.

Preventing catheter associated urinary tract infections

Areas identified where further research could be undertaken are:

- Evaluation of new technologies such as antimicrobial/antiseptic impregnated indwelling urinary catheters and pre-connected catheters.
- Fully identifying ‘at risk’ patient groups for development of CAUTI to enable this information to be targeted to interventions.

- Strengthening of the evidence with respect to risks versus benefits to inform clinical decisions on when urethral catheterisation is necessary for patient/setting specific considerations.
- The indications for removal of indwelling urethral catheters.
- The clinical indications for when a drainage bag should be emptied.
- Microbiological studies looking at levels of contamination on the access ports and drainage taps to inform interventions.

Preventing cross transmission of *Clostridium difficile* infection

Areas identified where further research could be undertaken are:

- Defining the "patient's immediate environment" and the role of frequently touched surfaces to define areas at risk of *Clostridium difficile* contamination.
- Comparing the effectiveness of non-microbial and antimicrobial soap.