Implementation of the Central Line Checklist in the Operating Rooms at Johns Hopkins Hospital

1 Background

The Central Line Checklist, originally developed by Dr. Peter Pronovost to decrease the number of central line associated bloodstream infections (CLABSI), experienced great success in the Intensive Care Unit settings (ICUs) (Berenholtz et al., 2004). The Joint Commission requires that use of evidence-based practice to prevent central line-associated bloodstream infection (CLABSI) (TJC, 2010). After reviewing the workflow processes in the operating room (OR), a human factors study concluded that circulating nurses would be the best personnel to act as independent observer because they cover a wider area in the operating theatre.

Before proceeding with the project, multiple frameworks were considered on how to introduce the Central Line Checklist in the operating room. The Systems Engineering Initiative for Patient Safety (SEIPS) model incorporated not only the workflow processes but took into account the interactions amongst all the system components that would integrate steps to make the implementation of the checklist in the operating room a success: as technologies/tools (checklist in paper and electronic form), the organization (leadership support), tasks (communicating planned central line insertions among anesthesia, nursing and surgery), environment (operating room setting), and the person (patient) (Carayon et al., 2013).

2 Phase 1 – The Checklist in Cardiac/Vascular/Transplant Surgery OR: a pilot

- Trials were established on both the cardiac and vascular/transplant services. The cardiac service used an electronic form (anesthesia providers performed the checklist) and the vascular/transplant service used the paper version.
- The pilot was done for three months. Performing the checklist in electronic format had better compliance (90%): documentation was done in Metavision’s (anesthesia’s electronic record) which was added as a prompt on the screen; an extra member of the anesthesia team performed the checklist. Compliance for the paper form was 70%: forms were located on a binder and had to be pulled out when needed. However, as as long as communication and cooperation amongst surgical team members occurred, no delays in surgical start time occurred.

3 Phase 2: Preparation for GO LIVE!

- Collaborated with Supply Chain to determine the contents of central line bundle kit (review cost, availability of supplies, forms)
- Personal discussions with Adult and Pediatric Neurosurgery and Orthopedic Physician champions to present the implementation of the Central Line Checklist for all operating rooms throughout Johns Hopkins Hospital
- Standardizing the operating room checklist by combining the adult and pediatric checklist.
- Approximately two weeks prior to going live the following were done: educational in-service, completing the online “My Learning” tool: “Preventing CLABSI”, one-on-one review of the paper form with surgical nursing
- Binders were placed in all the operating rooms with the contents:
  - Central Line Checklist (adult and pediatric)
  - Chain-of-command
  - The Joint Commission Goals
  - Learning Resources
- The paper version was used initially for about a month and half while the electronic version in Operating Room Management Information Software (ORMIS) and Metavision version was being developed. The electronic version Central Line Check was made available in ORMIS on May 19, 2013.
- The Central Line Checklist in ORMIS allowed for an electronic record to become part of the permanent record. It became user friendly based on the following:
  - Color coded check boxes for each step of the central line checklist (Green - “yes”, Yellow - “Yes, reminder”, Red - “Corrected”)
  - No free text was necessary except in the “corrected” boxes.
  - It was created as forced function so staff had to complete it in its entirety before moving on in their clinical documentation.

4 Phase 3: GO LIVE!

- Chart audits were done for the paper form.
- Electronic reports will be generated through the ORMIS version.
- Surgical staff was visited by a safety officer in the operating room to verify compliance with the central line checklist and address any questions regarding the implementation.

5 Phase 4 Sustaining the Effort

6 References
