**Supplemental Table:**

**12-ITEM INTERVENTION DESCRIPTION AND REPLICATION CHECKLIST**

**BRIEF NAME**

1. DeCATHlons, Device Alternatives, and Decision Support: A Multifaceted approach to reducing catheter-associated urinary tract infections (CAUTI)

**WHY**

2. Healthcare-associated infections (HAI) are the most common adverse medical event; reduction and HAI prevention is a national priority. CAUTIs are a quintessential HAI through which a reduction in infection rates may reflect the efficacy of a concerted multidisciplinary effort.

**WHAT**

3. **Materials:**

A. Category 1: Laminated handouts of appropriate culturing guidelines; prizes and unit recognition awards in the form of snacks, candy, gift certificates, movie tickets, and various unit recognition awards and trophies for the best performers; power point slide presentations about asymptomatic bacteriuria, appropriate culturing, and indications for invasive catheters.

B. Category 2: Device alternatives in the form of Clear Advantage Spirit® Penile Sheath, Bard Care, UK; and Purewick® female external catheters, Bard Care, UK.

C. Category 3: Modifications in the electronic medical record (EMR) (CareConnect EPIC) in the form of:

i. Device avatars for easier identification of the presence and improved accuracy of duration of invasive devices

ii. Creation and use of an order panel with imbedded decision to guide:

1. Choosing urinary collection device based on indication
2. Ordering of urine analysis and cultures according to national and professional society guidelines and internal policy

iii. Nurse-driven discontinuation of invasive catheters, based on orders from the providers

iv. Increasing the urinalysis to culture reflex trigger from 5 white blood cells (WBC) per high power field (HPF) to 10 WBC/HPF

4. **Procedures**:

A. Category 1: Engage, educate, and enlist frontline providers and all stakeholders as HAI and CAUTI reduction champions. This was done though several engagement sessions and decathlon-style competitions, such as the “hand hygiene hurdles” (measurement was hand hygiene compliance), the “device utilization dash” (measurement was invasive and alternative device utilization), the “CAUTI reduction sprint” (measurement was incident CAUTIs), the “appropriate culturing long jump” (measurement was percentage of cultures that were guideline based); and the “bundle compliance relay” (measurement was the number of submitted bundle compliance assessment forms). Collectively, the above was referred to as the ‘DeCATHlon’. The DeCATHlon began with educational and orientation sessions emphasizing appropriate, guideline-based culturing, followed by the “DeCATHlon try outs”. The tryouts consisted of meeting with providers and stakeholders looking at problem events or units, brainstorming sessions on how to best involve and excite staff; developing measurable outcomes, system wide applications and sustainability, and setting performance targets.

Culturing-guideline placards were placed in common areas such as break rooms, nursing stations, and physician workstations. The same guidelines were made available on the opening screens / splash pages websites of infection prevention and antibiotic stewardship websites.

B. Category 2: Obtain approval from financial officers to purchase and stock device alternatives; educate providers on the appropriate use of invasive catheters and the capabilities of device alternatives; encourage providers to use alternatives instead of invasive catheters and traditional condom catheters

C. Category 3: In the EMR, a device avatar was added, and non-interruptive clinical decision support (CDS) questions, reminders, and hardstops were developed and added to ordering workflows, and the percent of orders that were CDS-driven were subsequently monitored. Ongoing analysis of ordering trends for indwelling and external catheters and with multiple dimensions that allowed granular focusing, for example: unit, provider, department, hospital, etc.

**WHO PROVIDED**

5. **Who Provided:**

A. Category 1: Infection preventionists, infection prevention nurse liaisons, hospital epidemiologist, system director of infection prevention, nursing education and leadership

B. Category 2: Finance officers provided funding, and all physicians and mid-level practitioners and residents who were able to order the device alternatives

C. Category 3: Health Informaticists, physician builders, laboratory director approved the new reflex threshold and any other laboratory-related decision support; urology, infection preventionists, hospitalists and hospital epidemiologist also provided input

D. Administrators and executives, including the chief and associate chief medical officers provided feedback including to performance outliers.

**HOW**

6. Modes of delivery included individual face-to-face meetings, team huddles, committee meetings, group lectures, grand rounds, personalized and group emails, and by placing relevant guidelines on hospital websites and intranet

**WHERE**

7. On wards and intensive care units, conference rooms, through email, and via the EMR

**WHEN and HOW MUCH**

8. The DeCATHlon events/competitions and drawings occurred weekly for 1 month, team huddles occurred daily, meeting and lectures occurred once or monthly depending on type, and feedback to unit managers regarding device utilization occurred weekly for a total of 12 weeks; throughout the post intervention, weekly reports and daily IP rounding on units, and daily safety reports

**TAILORING**

9. Feedback and lectures were tailored to the respective audience, i.e. nurse vs. physician, resident vs. attending, surgeon vs. medical specialty. Unit-specific data on hand hygiene, device utilization and incident CAUTI were included when able. Individual provider feedback via email from executives was given as needed.

**MODIFICATIONS**

10. EMR prompts and hard stops were modified to mitigate premature or inappropriate dismissals or work-arounds.

**HOW WELL**

11. **Planned:** The intrinsic characteristics of the intervention fostered a high degree of fidelity because it involved ongoing, continuous assessment by the same group of people and our automated electronic actions.

12. **Actual:** Same as 11.