

Results: We observed clear differences between the machines in terms of biological contamination, with frequent detection of NTM and presumed *Candida*. Thus, NTM were detected in the 36 samples of ice and water with concentrations from 0.5 to 2×104 gene copies/mL. Among the several species of fungi detected in the ice machines, some were identified as *C. parapsilosis* and *C. guilliermondii*, which are organisms of concern in healthcare facilities. Factors affecting the level of contamination in ice machines include the location of the machines and water quality (ie, temperature and chlorine residual concentration). Depending on the location in the building and the model of ice machine sampled, the biological indicators measurements indicated more or less significant contamination. No link was established between environmental strains recovered from the machines and clinical infections. **Conclusions:** Monitoring results showed that ice machines, while subject to few regulations and controls, can be reservoirs of unsuspected opportunistic pathogens that could lead to nosocomial infections of vulnerable patients. Cleaning procedures should be based on the disinfection of resistant opportunistic pathogens, such as *Candida* and NTM, and the use of general indicators, such as HPCs, should be questioned.

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Presentation Type:

Poster Presentation - Top Poster Award

Subject Category: Implementation Science

The Strike Team as an implementation strategy for surgical infection prevention

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Background: Surgical site infections (SSIs) incur up to \$10 billion annually due to their excessive morbidity. SSI prevention bundles have had variable success in colorectal surgery. For example, at the University of Wisconsin Hospital, a 505-bed regional referral center, SSI rates have remained high despite the introduction of a 14-element SSI prevention bundle in 2016. To aid in the implementation of this complex bundle, the hospital started Strike Teams in 2019. We have described the impact of Strike Teams on colorectal SSI rates in our tertiary-care hospital. **Methods:** A Strike Team with key stakeholders from colorectal surgery (ie, surgeon, OR director, nurses, surgical technicians), anesthesia, pharmacy, infection prevention, and infectious disease was formed, supported by the hospital's executive leadership. The Strike Team met monthly throughout 2019 to review each

Table 1. SSI Prevention Bundle at University of Wisconsin Hospital

Bundle Element	Strike Team Target for Adherence
PRE-OP	
Smoking cessation	No
Glucose control for diabetics	No
Chlorhexidine bathing	Yes
Mechanical bowel prep and oral antibiotics	Yes
INTRA-OP	
Appropriate hair removal	No
Standardized skin prep with Chloraprep	Yes
Preferred antibiotic prophylaxis*	Yes
Normothermia	Yes
Normoglycemia	No
Wound protectors	No
Glove change prior to skin closure	No
Separate instrument tray for closure	No
Antimicrobial sutures	No
POST-OP	
Standardized dressing change at 48 h	No

*Cefazolin + Metronidazole, or Levofloxacin + Metronidazole in penicillin-allergic patients; within 60 minutes of incision; weight-based dosing and redosing for cefazolin.

Figure 1. Quarterly colorectal SSI rates over time (values shown in green correspond to quarters when Strike Team was active).

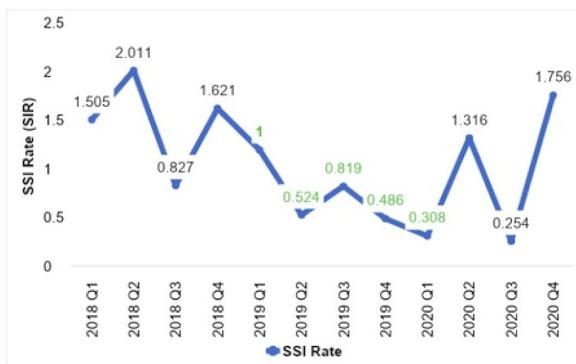
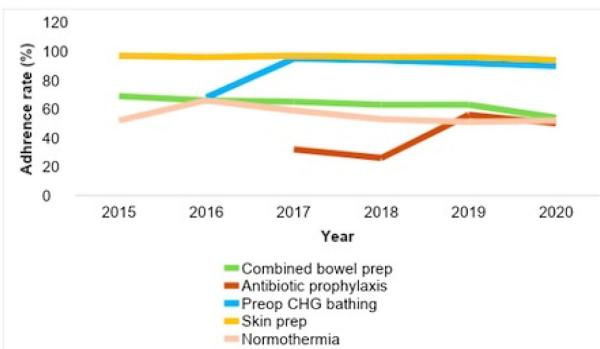


Figure 2. Adherence rates* to selected SSI prevention bundle elements over time



*Calculated as % of patients who received bundle elements out of all patients with colorectal surgery that year.

SSI case, discussed barriers to adherence for the SSI prevention bundle elements with implementation difficulties (Table 1), and proposed actionable feedback to increase adherence. The latter was disseminated to frontline clinicians by the teams' surgical leaders during everyday clinical practice. The Strike Team was paused in 2020 due to resource reallocation in response to the COVID-19 pandemic. Monthly and quarterly SSI surveillance was conducted according to CDC guidance. **Results:** Colorectal SSI rates before, after, and during Strike Team activity are shown in Fig. 1. Adherence rates to the bundle elements targeted by the Strike Team are shown in Fig. 2. **Conclusions:** Adherence to the preferred antibiotic prophylaxis increased, although adherence to other bundle elements of focus did not change significantly. SSI rates decreased below our expectation while the Strike Team was active in our hospital, although SSI reduction was not sustained. Further research should study the effectiveness of Strike Teams as a long-term implementation strategy for SSI prevention in colorectal surgery.

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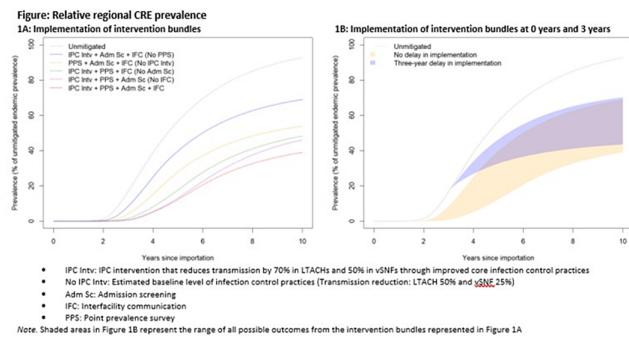
Poster Presentation - Top Poster Award

Subject Category: MDR GNR

Predicting the regional impact of interventions to prevent and contain multidrug-resistant organisms

Samuel Cincotta; Elizabeth Soda; Rachel Slayton; David Ham; Maroya Walters and Prabasaj Paul

Background: Multidrug-resistant organisms (MDROs), such as carbapenem-resistant Enterobacteriales (CRE), can spread rapidly in a region.



Facilities that care for high-acuity patients with long average lengths of stay (eg, long-term acute-care hospitals or LTACHs and ventilator-capable skilled nursing facilities or vSNFs) may amplify this spread. We assessed the impact of interventions on CRE spread within a region individually, bundled, and implemented at different facility types. **Methods:** We developed a deterministic compartmental model, parametrized using CRE data reported to the NHSN and patient transfer data from the CMS specific to a US state. The model includes the community and the healthcare facilities within the state. Individuals may be either susceptible or infected and infectious. Infected patients determined to have CRE through admission screening or point-prevalence surveys at a facility are placed in a state of lower transmissibility if enhanced infection prevention and control (IPC) practices are in place. **Results:** Intervention bundles that included periodic point-prevalence surveys and enhanced IPC at high-acuity postacute-care facilities had the greatest impact on regional prevalence 10 years into an outbreak; the benefits of including admission screening and improved interfacility communication were more modest (Fig. 1A). Delaying interventions by 3 years is predicted to result in smaller reductions in prevalence (Fig. 1B). Increasing the frequency of point-prevalence surveys from biannually to quarterly resulted in a substantial relative reduction in prevalence (from 25% to 44%) if conducted from the start of an outbreak. IPC improvements in vSNFs resulted in greater relative reductions than in LTACHs. Admission screening at LTACHs and vSNFs was predicted to have a greater impact on prevalence if in place prior to CRE introduction (~20% reduction), and the impact decreased by approximately half if implementation was delayed until 3 years after CRE introduction. In contrast, the effect of admission screening in ACH was less (~10% reduction in prevalence) and did not change with implementation delays. **Conclusions:** Our model suggests that interventions that limit unrecognized MDRO introduction to, or dispersal from, LTACHs and vSNFs through screening are predicted to slow distribution regionally. Interventions to detect colonization and improve IPC practices within LTACHs and vSNFs may substantially reduce the regional burden. Prevention strategies are predicted to have the greatest impact when interventions are bundled and implemented before an MDRO is identified in a region, but reduction in overall prevalence is still possible if implemented after initial MDRO spread.

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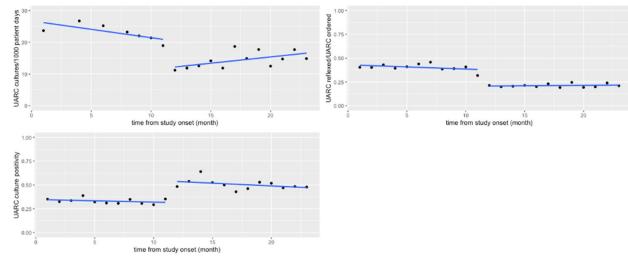
Poster Presentation - Top Poster Award

Subject Category: Other

Effecting the culture: Impact of changing urinalysis with reflex culture criteria on culture rates and outcomes

Jessica Penney; Angie Rodday; Paola Sebastiani; David Snydman and Shira Doron

Background: Urinalysis and urine culture are frequently ordered diagnostic tests among hospitalized patients, often for nonspecific symptoms.



Diagnostic testing stewardship with urinalysis with reflex culture (UARC) is a practice shown to reduce institutional culture rates by selecting patients who are more likely to have a true infection. Optimal reflex criteria are not well established, and downstream effects, such as antibiotic use, have not been well studied. **Methods:** We compared outcomes in the preimplementation period (December 2018 – October 2019) and postintervention period (November 2019–October 2020) at an academic medical center. The intervention was changing the UARC reflex criteria. The primary outcomes were urine-culture rate per 1,000 patient days, urine-culture positivity, antibiotic prescription for suspected urinary tract infection (UTI) and catheter-associated urinary tract infection (CAUTI) rate per 1,000 Foley catheter days. Analysis was performed using interrupted time-series negative binomial regression or Poisson regression where appropriate. **Results:** We detected a significant decrease in the rate of cultures performed (32.5 cultures per 1,000 patient days before the intervention vs 8.6 cultures per 1,000 patient days after the intervention; $P = 0.10$). Fig. 1 summarizes these results graphically. In an adverse events analysis, of 646 patients in the postintervention period, 130 patients were reviewed for the outcome of sepsis secondary to a urinary tract infection, with only 1 patient meeting criteria for this diagnosis. **Conclusions:** Changing the UARC reflex criteria resulted in the expected decrease in rate of cultures performed with increase in culture positivity, and the stricter criteria appeared to more effectively identify true UTIs. Minimal adverse events were associated with the UARC criteria change, demonstrating that these criteria are also safe. We detected a significant change in antibiotic prescriptions, but much of the decrease occurred during the preintervention period, which likely reflected educational and stewardship interventions performed at that time. Although the intervention affected culture performance, which does decrease institutional costs, continued provider education is needed to influence clinical outcomes.

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Subject Category: Patient Safety

Is patient discharge after blood culture collection in the emergency department safe? A retrospective study in Japan

Toshiki Miwa; Akane Takamatsu and Hitoshi Honda

Background: Drawing blood cultures in the emergency room (ER) is essential for detecting bloodstream infections (BSIs). Although a practice of drawing blood culture usually indicates a presence of severe infection requiring hospitalization, some patients may nonetheless be safely discharged from the ER. Previous studies demonstrated that patients with a positive blood culture after ER discharge had favorable clinical outcomes. Moreover, given the increasing incidence of febrile illnesses, especially in the era of COVID-19, the shortage of inpatient hospital beds may lend further justification to this practice. We investigated the prevalence, outcomes, and factors associated with patient discharge from the ER after blood collection. **Method:** The present, nested, case-control study comparing patients initially discharged from the ER with those directly admitted to