## WASHH - Wireless Assessment of Systematic Hand Hygiene: A Pilot Study

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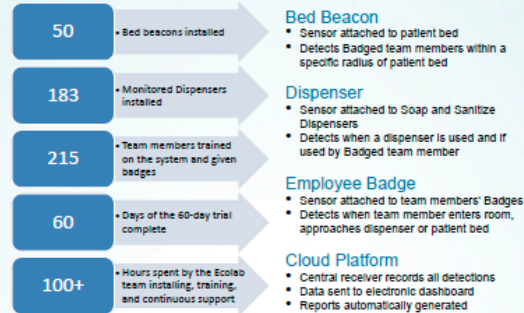
### Goal
- Evaluate Hand Washing Compliance System
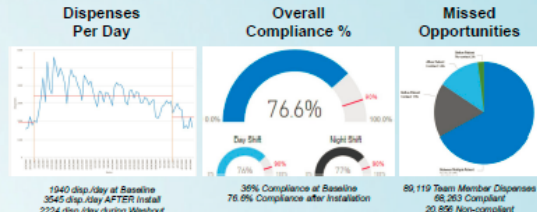- Target of 90% Average Team Member Compliance in System

*Hand hygiene is the simplest, most effective measure for preventing healthcare-associated infections and mitigating risk of transmission of harmful germs. (Centers for Disease Control and Prevention, W.H.O)*

### Implementation
Bethesda North Hospital, MSICU CVICU PCU Units

| | |
|---|---|
| 50 | • Bed beacons installed |
| 183 | • Monitored Dispensers installed |
| 215 | • Team members trained on the system and given badges |
| 60 | • Days of the 60-day trial complete |
| 100+ | • Hours spent by the Ecolab team installing, training, and continuous support |

**Bed Beacon**
- Sensor attached to patient bed
- Detects Badged team members within a specific radius of patient bed

**Dispenser**
- Sensor attached to Soap and Sanitize Dispensers
- Detects when a dispenser is used and if used by Badged team member

**Employee Badge**
- Sensor attached to team members' Badges
- Detects when team member enters room, approaches dispenser or patient bed

**Cloud Platform**
- Central receiver records all detections
- Data sent to electronic dashboard
- Reports automatically generated

### Results

**Dispenses Per Day**
*1940 disp./day at Baseline*
*3545 disp./day AFTER install*
*2224 disp./day during Washout*

**Overall Compliance %**
76.6%
Day Shift 76% / Night Shift 77%
*36% Compliance at Baseline*
*76.6% Compliance after Installation*

**Missed Opportunities**
*89,119 Team Member Dispenses*
*68,263 Compliant*
*20,856 Non-compliant*

**By Unit**
- MSICU performed 65% of all hand hygiene events (58,003) with 74% compliance

**By Position**
- Nurses performed 72% of all hand hygiene events (63,849), with 82% compliance

**After System Installation**
- Doubled hand hygiene compliance % after system installation
- 80% increase in soap and sanitize dispenser usage

### Feedback

**Positive**
- Reports for individual, unit, and role
- Increased awareness of hand-washing importance and compliance
- Customizable reporting

**Room For Improvement**
- Staff perception "Big Brother," offensive, intrusive
- Bulky / heavy / disruptive badge to wear
- Confusion of badge light colors
- Inflexible system parameters

### Recommendation
A different Hand Hygiene System will soon begin a pilot program for comparison to these results and feedback!

**TriHealth**

**Bethesda Foundation**
*Bethesda Hospitals | Fernside | Hospice of Cincinnati*

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## Intensive Tobacco Cessation Counseling at the Point of Care

Stephen Zitelli MD, Elizabeth Browning DO, Michael Bruner MA, Angela N Fellner PhD CCRP, June Phelps

### Background
- Patient Centered Medical Home (PCMH) requires practices to provide patients with self-management support and assistance with health behavior change
- Tobacco abuse remains disproportionately prevalent among patients of low socioeconomic status served by our office (1)
- Previous efforts at Bethesda Family Practice (BFP) directed at smoking cessation were held in group sessions outside of regular office hours, and were poorly attended
- Poor attendance led to inefficient staff and physician utilization rates
- Residents had reviewed educational sessions in motivational interviewing poorly
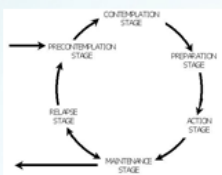
### Plan
- Increase patient access to intensive tobacco cessation counseling
- Assess feasibility of point-of-care counseling interventions during office visits
- Educate residents in patient-centered interviewing techniques and motivational interviewing

### Do
- Curriculum and educational resources created with help of behavioral health consultants (2)
- Patients being seen for medical appointments were offered a dedicated tobacco cessation intervention by another resident participating in the project
- A patient-centered interview was preformed free from other responsibilities beyond those related to tobacco cessation

### Study
- 28 patients reached during study period
- Variables including desire to smoke, barriers to quitting, benefits to quitting, and other factors were tracked in a spreadsheet

**Patient Stage of Change at Start of Intervention**
15% / 41% / 33% / 11%
■ Precontemplation ■ Contemplation ■ Preparation ■ Action
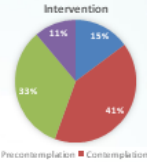
- Average packs per day smoked were 0.72
- Average time of intervention was 17 minutes
- Age range of participants was 15-66 years old
- Almost ¾ of patients were in Contemplation or Action stages at start of intervention

### Findings
- Phone call follow up at 3 months reached 23/28 (82%) patients who had initial intervention

*Progress Through Stages of Change at Follow Up*
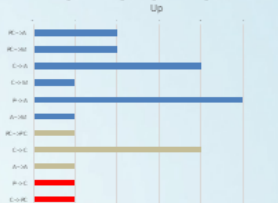
- 65% demonstrated positive change:
  - 17% quit smoking (4/23) and
  - 48% reduced smoking by an average of 5 cigarettes per day
  - Successful patients noted environmental changes, replacement of nicotine with alternatives, and avoidance
- 26% experienced no change
  - Barriers to change included stress, habit/addiction, and enjoyment of smoking
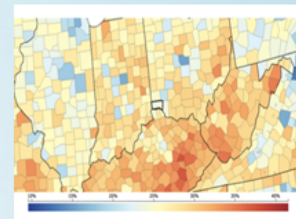- 9% regressed to an earlier Stage of Change

### Office and Education
- 9x more patients reached in this format than prior intervention (28 vs 3)
- Scheduled clinician time per patient reached improved substantially (4 → 1.2 hours/patient)
- Well received by patients; even those who did not stop smoking felt it was valuable
- Resident feedback was uniformly positive

### Act
- Refine process to address pain points
  - Improve resident educational material presentation
  - Consider how to schedule formal patient follow-up sessions
  - Pre-visit plan to identify smokers before office visit
- Continue what works
  - Introduce and extend intervention to IM residency
  - Find other opportunities for in situ learning and application
  - Keep moving patients towards a tobacco-free lifestyle

*Male Smoking Prevalence By County 2012 (3)*

### References
1. Data USA Hamilton County. https://datausa.io/profile/geo/hamilton-county-oh/#health
2. VA Smoking Cessation Handbook. http://www.publichealth.va.gov/smoking/professionals/tools-publications.asp
3. Hamilton County Statistics. http://www.healthdata.org

## CENS II – CORTAK® for Early Nutrition and Cost Savings in the ICU: A Quality Improvement Project

Scott T McCardle MD, Denise Krabbe MSN RN CNL CCRN, Jocelyn LaMar BS MBA, William Judd MBA | Cincinnati, OH

### Introduction

**Background**
* Providers in the ICU have noticed a long waiting period between feeding tube insertion and confirmation via x-ray.
* The blind placement of NG tubes is procedurally inefficient and presents a certain level of risk.
* We have a need to efficient administration of medication and nutrition. This extremely significant in critically ill patients.
* Sufficient nutrition lowers mortality rates, decreases length of stay, and improves overall clinical outcomes as noted by multiple research studies.

### Study Description

**Primary Objective**
* Decrease overall time needed to order, place, confirm, and use NG tubes

**Second Objective**
* Evaluate clinician satisfaction rates related to training, ease of use, process efficiency, and confidence of placement.

**Tertiary Objective**
* Decrease cost to the hospital

**Patient Population**
* Male and Female Patients >18 years old in the Bethesda North ICU.
* Order to place NG Tube placed.

**What is CORTRAK®?**
* A medical device that provides real-time and anatomically accurate imaging as an NG tube is placed.
* Provides instant confirmation on NG tube placement and proper positioning.

### Results

**Reduced Timeframes**
* On average, two X-Rays are needed to ensure proper placement NG Tubes
* CORTRAK® eliminates the time interval needed for X-ray confirmation ensuring the tube can be used instantly if needed due to real-time confirmation.

**Reduced Adverse Events**
* 21 total AEs were noted as part of the quality improvement project, however; none were directly associated with the CORTRAK® device or, required additional monitoring/intervention.

**Reduced Cost**
* Tubes pulled out by patients can be replaced using the device instead of a new tube being inserted.

**Other Benefits**
* Reduced logistical burden for imaging team members,
* Reduced radiation exposure,
* Increased comfort for patients,
* Increased confidence for providers.

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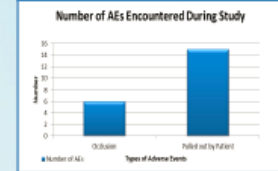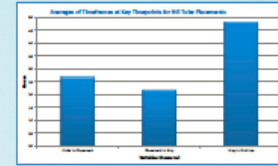
## String Music as an Adjunct for Pain Control and Patient Experience: A Pilot Study

Jonathan Borden MD, Jocelyn LaMar BS, MBA| Cincinnati, OH

### Study Description

**Primary Objective**
* To study the impact of live and recorded string music on post-operative patients from orthopedic or neurosurgery
* We hypothesized that live string music would have a greater impact than recorded music on the following during their hospital stay at Bethesda North Hospital
   * Patient perception of pain
   * Patient anxiety level

**Patient Population**
* All orthopedic surgery and neurosurgery patients of TriHealth physicians admitted to 6300T
* Block randomization based on day of surgery
   * 60 patients total
     * Live music (20)
     * Recorded music (20)
     * Control group (no music) (20)

**Important Distinctions**
* Music sessions lasted approximately 20 minutes
* Patients randomized to live music were transported from their hospital rooms to the physical therapy room on 6300
* Live music was performed by students from the College-Conservatory of Music (UC-CCM) at the University of Cincinnati (UC)
* Recorded music consisted of the same selections performed by the same musicians at the live music sessions
* Recorded music sessions took place in patient rooms

### Data Collection

**Surveys Used**
* Anxiety
   * Modified GAD-7 Survey (Generalized Anxiety Disorder)
* Perceived Pain
   * Visual Analogue Scores
* Administered to Live & Recorded Music Groups:
   * Pre-operatively, 10-30 minutes before music intervention
   * Post-operatively #1, 10-30 minutes after music intervention
   * Post-operatively #2, approximately 30 minutes after the post-op #1
* Administered to Control Group
   * Pre-operatively, 10-30 minutes before music intervention
   * Post-operatively #1, around 2:00 p.m. day of surgery
   * Post-operatively #2, around 3:00 p.m. day of surgery

### Demographics

| Measure | Live Music Group | Recorded Music Group | Control Group |
|---|---|---|---|
| Age, years (mean) | 65.5 | 65.8 | 67.7 |
| Gender (N, ratio) | 10 male 10 female 1:1 | 9 male 11 female 1:0.8 | 5 male 15 female 1:3 |
| Type of Surgery (N, %) | | | |
| • Neurosurgery (neck, spine) | 4 (20) | 6 (30) | 6 (30) |
| • Knee replacement | 11 (55) | 7 (35) | 7 (35) |
| • Hip replacement | 5 (25) | 6 (30) | 6 (30) |
| • Shoulder replacement | 0 (0) | 1 (5) | 0 (0) |
| Surgeon (N, %) | | | |
| • Borden | 4 (20) | 6 (30) | 5 (25) |
| • Thomas | 9 (45) | 10 (50) | 12 (60) |
| • Mirkopoulos | 7 (35) | 4 (20) | 3 (15) |
| Time from last pain medication to music therapy session, hours (mean) | 2.9 | 1.78 | 1.45 |
| Baseline pain score, 0-10 scale (mean) | 3.15 | 2.89 | 6.80 |
| Baseline anxiety score, 0-21 scale (mean) | 6.80 | 7.43 | 6.45 |

### Study Results

| Measure | Live Music Group | Recorded Music Group | Control Group |
|---|---|---|---|
| Anxiety level, 0-21 scale (mean) | | | |
| • Pre-intervention | 6.70 | 5.15 | 5.8 |
| • Post-intervention | 1.75 | 2.55 | 5.25 |
| • Change | 63% reduction | 50% reduction | 9% reduction |
| Pain level, 0-10 scale (mean) | | | |
| • Pre-intervention | 3.5 | 3.33 | 6.85 |
| • Post-intervention | 2.05 | 2.83 | 6.78 |
| • Change | 41% reduction | 15% reduction | 1% reduction |
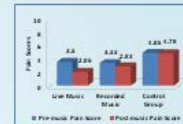
### Subjective Feedback
* "I feel relaxed, warm and much happier. It distracted me from feeling anxious about the hospital. It was a very pleasant feeling."
* "I got to see young musicians, they're fantastic, it was well worth it! I like it, keep on doing it! Thank you for bringing this to the hospital!"
* "Gets me out of room for a while; different than the normal hospital experience; you can forget what has happened for a while; they were fantastic!
* "What the music does, in my opinion, it puts you in a great state of mind. I was able to relax and free my mind."
* "I felt very relaxed, calm and really reduced my pain level. I think this is a fantastic program and should be offered every day.
* "I'm less anxious and more comfortable. I have no worries. That was a very pleasant experience. Thank you for letting me participate!"

### Conclusion
* Overall, our results showed a decrease in both pain and anxiety in the live and recorded music groups
* Live music had more of an impact when compared to recorded music, or no music at all