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**Session:** 98. To Decolonize or Not to Decolonize: Do We Still Need to Ask the Question
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***Background.*** Patient movement between hospitals, nursing homes (NH), and long-term acute care facilities (LTACs) contributes to MDRO spread. SHIELD OC is a regional decolonization collaborative among adult facilities with high patient sharing designed to reduce countywide MDRO prevalence. We report pre- and post-intervention MDRO colonization prevalence.

***Methods.*** Decolonization included chlorhexidine bath (CHG) (4% liquid or 2% cloth) and twice-daily nasal swab 10% povidone–iodine (PI). LTAC and NH used CHG for all baths and PI 5 days on admission and Monday–Friday every other week. Patients in contact precautions (CP) at hospitals had daily CHG and 5-days PI on admission. Point-prevalence screening for MRSA, VRE, ESBL, and CRE using nares, axilla/groin, and peri-rectal swabs was conducted pre-intervention (September 2016–March 2017) and post-intervention (August 2018–April 2019); 50 random LTAC and 50 CP hospitalized patients were sampled; for NH up to 50 were sampled at baseline and all residents post-intervention. Raw impact of the intervention was assessed by the average change in colonization prevalence, with each facility carrying equal weight. Generalized linear mixed models (GLM) stratified by facility type were used to assess the impact on MDRO colonization when clustering by facility.

***Results.*** Across 35 facilities (16 hospitals, 16 NHs, 3 LTACs), the overall MDRO prevalence was reduced 22% in NHs (OR 0.58, $P < 0.001$), 34% LTACs (OR = 0.27, $P < 0.001$), and 11% CP patients (OR = 0.67, $P < 0.001$, Table 1). For MRSA, raw reductions were 31% NHs (OR = 0.58, $P < 0.001$), 39% LTACs (OR = 0.51, $P = 0.01$), and 3% CP patients (OR = 0.88, $P$ = NS). For VRE, raw reductions were 40% NHs (OR = 0.62, $P = 0.001$), 55% LTACs (OR = 0.26, $P < 0.001$), and 15% CP patients (OR = 0.67, $P = 0.004$). For ESBLs, raw reductions were 24% NHs (OR = 0.65, $P < 0.001$), 34% LTACs (OR = 0.53, $P = 0.01$), and 26% CP patients (OR = 0.64, $P < 0.001$). For CRE, raw reductions were 24% NHs (OR = 0.70, $P$ = NS), and 23% LTACs (OR = 0.75, $P$ = NS). CRE increased by 26% in CP averaged across hospitals, although patient -level CRE declined 2.4% to 1.8% (OR = 0.74, $P$ = NS).

***Conclusion.*** MDRO carriage was common in highly inter-connected NHs, LTACs and hospitals. A regional collaborative of universal decolonization in long-term care and targeted decolonization of CP patients in hospitals led to sizeable reductions in MDRO carriage.

| | Patients Swabbed | Any MDRO | MRSA | VRE | ESBL | CRE |
|---|---|---|---|---|---|---|
| **Nursing Homes: Pre-Intervention (N=16) *** | | | | | | |
| Nares | 800 | 30% | 30% | | | |
| Axilla/Groin | 800 | 46% | 31% | 9% | 21% | 2% |
| Peri-Rectal | 800 | 52% | 26% | 14% | 31% | 1% |
| **All Body Sites** | **800** | **64%** | **43%** | **16%** | **34%** | **2%** |
| **Nursing Homes: Post-Intervention (N=16) *** | | | | | | |
| Nares | 1451 | 25% | 25% | | | |
| Axilla/Groin | 1451 | 25% | 13% | 3% | 12% | 1% |
| Peri-Rectal | 1451 | 34% | 11% | 8% | 22% | 1% |
| **All Body Sites** | **1451** | **50%** | **30%** | **9%** | **25%** | **2%** |
| **Relative Reduction** | - | **-22%** | **-31%** | **-40%** | **-24%** | **-24%** |
| **Long Term Acute Care Hospitals: Pre-Intervention (N=3)** | | | | | | |
| Nares | 150 | 23% | 23% | | | |
| Axilla/Groin | 150 | 61% | 17% | 37% | 27% | 7% |
| Peri-Rectal | 150 | 73% | 19% | 52% | 35% | 7% |
| **All Body Sites** | **150** | **80%** | **33%** | **55%** | **39%** | **9%** |
| **Long Term Acute Care Hospitals: Post-Intervention (N=3)** | | | | | | |
| Nares | 150 | 17% | 17% | | | |
| Axilla/Groin | 150 | 24% | 8% | 9% | 12% | 3% |
| Peri-Rectal | 150 | 45% | 7% | 25% | 22% | 7% |
| **All Body Sites** | **150** | **53%** | **20%** | **25%** | **25%** | **7%** |
| **Relative Reduction** | - | **-34%** | **-39%** | **-55%** | **-34%** | **-23%** |
| **Hospitals (Contact Precautions Only): Pre-Intervention (N=15)** ** ‡** | | | | | | |
| Nares | 740 | 30% | 30% | | | |
| Axilla/Groin | 740 | 33% | 14% | 14% | 13% | 1% |
| Peri-Rectal | 740 | 49% | 14% | 24% | 24% | 2% |
| **All Body Sites** | **740** | **64%** | **36%** | **25%** | **27%** | **2%** |
| **Hospitals (Contact Precautions Only): Post-Intervention (N=15)** ** ‡** | | | | | | |
| Nares | 667 | 31% | 31% | | | |
| Axilla/Groin | 667 | 24% | 14% | 7% | 7% | 2% |
| Peri-Rectal | 667 | 39% | 12% | 20% | 18% | 2% |
| **All Body Sites** | **667** | **57%** | **35%** | **21%** | **20%** | **3%** |
| **Relative Reduction** | - | **-11%** | **-3%** | **-15%** | **-26%** | **26%** |

*Random sample of 50 residents per NH for pre-intervention, all residents sampled in post-intervention point prevalence
** All patients on contact precautions until 50 patients sampled
‡Post-intervention hospital results are interim (4 hospitals with partial data)

***Disclosures.*** **All Authors:** No reported Disclosures.

## 894. Universal Decolonization in Nursing Homes: Effect of Chlorhexidine and Nasal Povidone–Iodine on Prevalence of Multi-Drug-Resistant Organisms (MDROs) in the PROTECT Trial

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**Session:** 98. To Decolonize or Not to Decolonize: Do We Still Need to Ask the Question
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***Background.*** The prevalence of MDROs in nursing homes (NH) is much higher than that of hospitals. Decolonization to reduce the reservoir of MDRO carriage in NH residents may be a strategy to address MDRO spread within and among healthcare facilities.

***Methods.*** PROTECT is an 18-month cluster randomized trial of 1:1 universal decolonization vs. routine care in 28 NHs in California. Decolonization consists of chlorhexidine (CHG) bathing plus twice daily nasal iodophor on admission and Monday–Friday biweekly. We assessed pre- vs. post-intervention MDRO prevalence by sampling 50 randomly selected residents at each NH as an outcome unrelated to the trial's primary intent (infection, hospitalization reduction). NH residents had nasal swabs cultured for methicillin-resistant *S. aureus* (MRSA), and skin (axilla/groin) swabs taken for MRSA, vancomycin-resistant *Enterococcus* (VRE), extended-spectrum β-lactamase producers (ESBL), and carbapenem-resistant Enterobacteriaceae (CRE). Generalized linear mixed models (GLM) assessed the difference in differences of MDRO prevalence using an arm by period interaction term, clustering by NH.

***Results.*** Four NHs dropped from the trial. Among the 24 NHs that remained, MDRO colonization at baseline was 49.4% and 47.5% of residents in control ($N$ = 650) vs. decolonization ($N$ = 550) NHs, with no difference in MRSA, VRE, ESBL, and CRE (Table 1). Among remaining NHs, decolonization was associated with 28.8% raw decrease in MDRO prevalence in decolonization sites (GLM OR = 0.51, $P < 0.001$), 24.3% raw decrease in MRSA (OR = 0.66, $P = 0.03$), 61.0% raw decrease in VRE (OR = 0.17, $P < 0.001$), and 51.9% raw decrease in ESBL (OR = 0.40, $P < 0.001$). CRE increased, but numbers were small (Control arm: 10 in baseline, 4 in intervention; intervention arm: 1 in baseline, 2 in intervention, $P$ = NS).

***Conclusion.*** Universal NH decolonization with CHG bathing and nasal iodophor resulted in a marked decrease in Gram-positive and Gram-negative MDRO prevalence. This decrease may lower MDRO acquisition, infection, and antibiotic use within NHs, as well as regional MDRO spread to other healthcare facilities.

**Table 1**

| | Any MDRO | Any MRSA | Nasal MRSA | Skin MRSA | Any VRE | Any ESBL | Any CRE |
|---|---|---|---|---|---|---|---|
| | **Baseline Point Prevalence** | | | | | | |
| Routine Care NHs | 47.5% | 35.5% | 28.7% | 22.4% | 8.5% | 15.8% | 0.2% |
| Decolonization NHs | 49.4% | 38.9% | 30.3% | 27.2% | 5.7% | 16.2% | 1.5% |
| | **End Intervention Point Prevalence** | | | | | | |
| Routine Care NHs | 31.3% | 24.2% | 21.3% | 11.1% | 2.2% | 9.3% | 0.4% |
| Decolonization NHs | 46.8% | 36.0% | 26.8% | 24.3% | 4.9% | 17.8% | 0.6% |
| | **Relative Change** | | | | | | |
| Routine Care NHs | -5.3% | -7.5% | -11.6% | -10.7% | -13.5% | 10.5% | -60.0% |
| Decolonization NHs | -34.1% | -31.8% | -25.9% | -50.4% | -74.5% | -41.4% | 100.0% |

***Disclosures.*** **All Authors:** No reported Disclosures.

## 895. Impact of Measurement and Results Feedback of Chlorhexidine Gluconate (CHG) Skin Concentrations in Medical Intensive Care Unit (MICU) Patients Receiving CHG Bathing

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