Title

Project CLEAR (Changing Lives by Eradicating Antibiotic Resistance) Randomized Controlled Trial (RCT): Serial Decolonization of Recently Hospitalized Methicillin-Resistant Staphylococcus aureus (MRSA) Carriers Reduces Risks of MRSA Infections and All...

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ORAL ABSTRACTS

1745. Project CLEAR (Changing Lives by Eradicating Antibiotic Resistance) Randomized Controlled Trial (RCT): Serial Decolonization of Recently Hospitalized Methicillin-Resistant *Staphylococcus aureus* (MRSA) Carriers Reduces Risks of MRSA Infections and All-Cause Infections in the 1-Year Post-Hospitalization

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Background. Hospitalized MRSA carriers have an increased risk of infection that continues beyond hospital discharge. 60% of invasive MRSA disease occurs during this period. Serial decolonization following hospital discharge may provide protection.

Methods. We conducted a RCT of hygienic education (E) versus education plus serial topical decolonization (D) for recently discharged patients with a confirmed MRSA culture. Decolonization consisted of oral chlorhexidine (CHG) mouth wash, CHG bath/shower, and nasal mupirocin for 5 days twice a month for 6 months. Subjects were enrolled between January 2011 and June 2014 and followed for one year. Primary outcome was time to MRSA infection defined by Centers for Disease Control and Prevention (CDC) criteria. Secondary outcomes included MRSA infection by clinical judgment, all infections by CDC criteria, and all infections by clinical judgment. Infection outcomes were based on blinded chart review of outpatient and inpatient visits by 2 infectious diseases physicians. We evaluated intention-to-treat and as-treated groups using proportional hazards models.

Results. A total of 2137 patients were enrolled (E = 1069; D = 1068). Total days in trial were D: 260,058 days (median 360.0) and E: 274,483 days (median 350.5). A total of 6033 unique medical records were reviewed. A significant reduction in MRSA infections and all-cause infections was seen (Table 1, Figure 1), with higher benefit seen in the D subset with full protocol adherence (51% of total D time) (Table 2). Twenty-eight percent of all MRSA infections involved bacteremia. Infections accrued at a stable rate across the one-year follow-up period. Forty adverse events deemed potentially related to study products were reported [CHG mouth wash (11), CHG soap (21), mupirocin (8)].

Table 1 Proportional Hazards Models (Intention-to-Treat, Unadjusted)

	HR (95% CI) of Decolonization vs Education	P-value
Primary Outcome		
MRSA Infection (CDC Criteria)	0.70 (0.52-0.96)	0.026
Secondary Outcomes		
MRSA Infection (Clinical Criteria)	0.71 (0.52-0.97)	0.032
All Infections (CDC Criteria)	0.84 (0.70-1.00)	0.056
All Infections (Clinical Criteria)	0.83 (0.70-0.99)	0.036

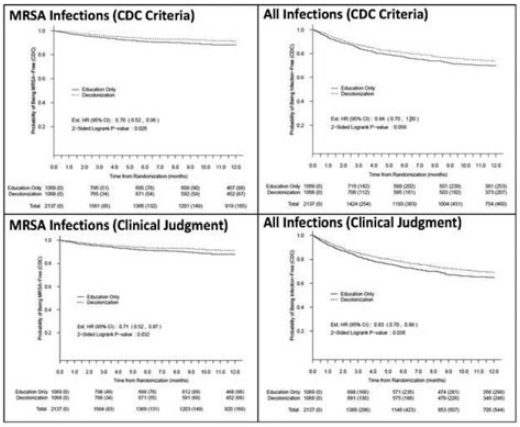

Table 2. Relative risk of infection (CDC criteria) by adherence[1] to decolonization regimen. Adherence was treated as a time-dependent covariate and the hazard for infection was modeled via a Cox proportional hazards model.

Adherence Relative to Education	*MRSA Infection* *Est. HR (95% CI)*	*P-value*	*All-Cause Infection* *Est. HR (95% CI)*	*P-value*
- Education	1.0		1.0	
- None	1.31 (0.72,2.39)	0.380	1.63 (1.15,2.30)	0.006
- Partial	0.64 (0.40,1.00)	0.051	0.86 (0.67,1.10)	0.224
- Full	0.56 (0.36,0.86)	0.009	0.60 (0.46,0.78)	<.001

1: Patient adherence was ascertained periodically over the course of follow-up. No adherence implies patient reported being not adherent (zero use) on all three forms of decolonization. Partial adherence implies patient reported being less than fully adherent (less than 10 uses) on at least one of the three forms of decolonization. Fully adherent implies that patient reported being fully adherent (10 or more uses) on all forms of decolonization.

Conclusion. In a RCT of over 2000 patients, topical decolonization with mupirocin and CHG resulted in a 30% reduction in MRSA infection and a 16% reduction in all-cause infection in the one-year post-discharge period. For those (half) who were fully adherent to the 6-month protocol, reductions of 44% in MRSA infection and 40% in all-cause infection were seen.

Disclosures. **S. S. Huang**, Sage Products: Conducting studies in which participating healthcare facilities are receiving contributed product (no contribution in submitted abstract), Participating healthcare facilities in my studies received contributed product. Molnlycke: Conducting studies in which participating healthcare facilities are receiving contributed product (no contribution in submitted abstract), Participating healthcare facilities in my studies received contributed product. 3M: Conducting studies in which participating healthcare facilities are receiving contributed product (no contribution in submitted abstract), Participating healthcare facilities in my studies received contributed product. Clorox: Conducting studies in which participating healthcare facilities are receiving contributed product (no contribution in submitted abstract), Participating healthcare facilities in my studies received contributed product; **R. Singh**, Sage Products: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product. 3M: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product. Clorox: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product; **A. Gombosev**, Sage Products: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product. Molnlycke: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product. 3M: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product. Clorox: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product; **J. A. McKinnell**, Sage Products: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product. 3M: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product. Clorox: Conducting studies in healthcare facilities that are receiving contributed product, Conducting studies in healthcare facilities that are receiving contributed product; **D. Kim**, Sage

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