Figure 1. Prevalence of Comorbidities in Hospitalized Patients with and without Community–Onset Sepsis

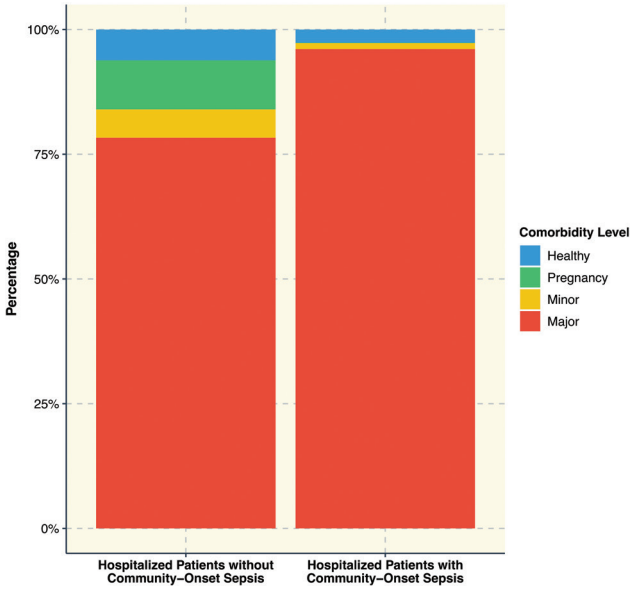
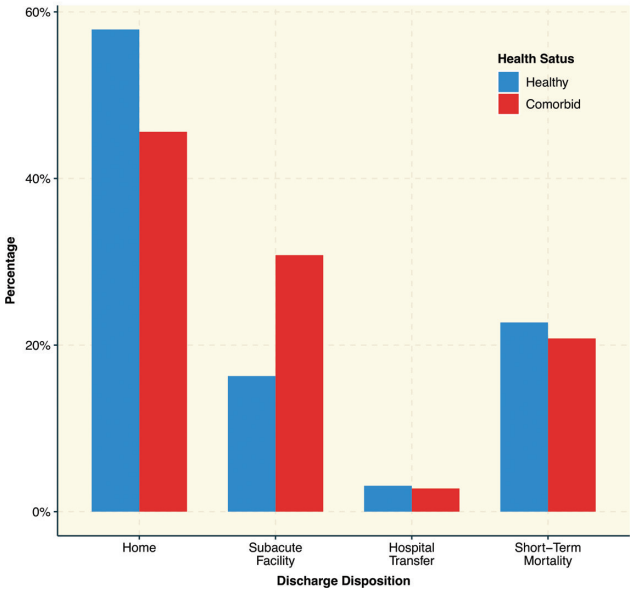


Figure 2. Discharge Disposition by Health Status for Patients with Community–Onset Sepsis (n=337,983)



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

892. Risk Factors for Adverse Events in Children Receiving Outpatient Antibiotic Therapy

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Background. Outpatient parenteral antibiotic therapy (OPAT) can decrease the length of hospital stay but is associated with adverse events (AEs). The purpose of this study was to quantify and identify risk factors for OPAT-associated AEs in children.

Methods. This is a retrospective, single-center study of patients aged ≤21 years discharged on OPAT from January 2016 to April 2019. Only patients with OPAT overseen by the infectious disease service were included. Medication AE's included: rash, neutropenia, hepatitis, diarrhea, *C. difficile* infection, increased serum creatinine, or others. Central line AEs included: central line dysfunction, infection, rash around line site, or other. Wilcoxon rank-sum test, Pearson's χ^2 test, Fisher's exact test, and multivariable logistic regression models were used for analyses.

Results. Demographic information can be found in Table 1. Among 176 patients included in the study, an AE occurred in 69 (39%). In a multivariable logistic regression model adjusting for age, county of residence, duration of OPAT, and duration line was in place, each additional day of antibiotics increased the odds of having a medication or line-related AE by 3% (OR 1.03; 95% CI 1.01–1.06; P = 0.005; Table 2). Medication AEs occurred in 30 patients (17%). The most frequent medication AEs were neutropenia (24%), rash (15%), and increased liver function tests (15%). Patients residing in a Large Fringe Metro area (suburb) had 33% lower odds of having a drug-related AE compared with those in a Large Central Metro area (OR 0.67; 95% CI 0.50 to 0.90; P = 0.008). Line AEs occurred in 46 patients (26%), with 10 patients (21%) experiencing >1 line AE. The most common line AEs were line malfunction (56.5%) and line infection (13%). Seven patients experienced both a medication AE and a central line AE. Of the 176 patients, 20 (11%) were readmitted to the hospital due to medication or line AE and an additional 25 (14%) had a healthcare visit for an AE although did not require admission.

Conclusion. In our region, nearly 40% of children experienced an OPAT-associated AE and line AEs were more common than medication AEs. Longer durations of IV therapy was an independent risk factor for AEs. Converting to oral antibiotic therapy as soon as feasible may reduce OPAT-associated AEs.

Table 1. Demographic and clinical characteristics of children receiving OPAT

Variable	Total N (%) (N=176)	Any AE N (%) (N=69)[a]	No AE N (%) (N=106)[a]	p-value
Age [median (IQR)]	6.7 (1.7-13.5)	8.6 (0.9-14.8)	5.4 (2.4-12.9)	0.333[b]
Sex, Female	78 (44.3)	31 (44.9)	47 (44.3)	0.939[c]
County Code				0.718[c]
Urban (≥1,000,000 population)	31 (17.6)	15 (21.7)	16 (15.1)	
Suburban (≥1,000,000 population)	53 (30.1)	20 (29.0)	33 (31.1)	
Medium Metro (250,000-999,999 population)	21 (11.9)	9 (13.0)	11 (10.4)	
Small Metro (<250,000 population)	13 (7.4)	3 (4.3)	10 (9.4)	
Micropolitan (10,000-49,000 population)	32 (18.2)	12 (17.4)	20 (18.9)	
Rural	26 (14.8)	10 (14.5)	16 (15.1)	
English speaking[d]	167 (96.5)	65 (97.0)	101 (96.2)	0.774[c]
Antibiotic Allergy	32 (18.2)	14 (20.3)	18 (17.0)	0.580[c]
Antibiotic used				
Penicillin (includes penicillin, ampicillin, nafcillin, meropenem)	34 (19.3)	11 (15.9)	23 (21.7)	0.347[c]
Cephalosporin (includes ceftriaxone, cefepime, cefazolin)	84 (47.7)	29 (42.0)	54 (50.9)	0.248[c]
Aminoglycoside (includes amikacin, tobramycin, gentamicin	4 (2.3)	2 (2.9)	2 (1.9)	0.647[d]
Vancomycin	29 (16.5)	12 (17.4)	17 (16.0)	0.814[c]
Piperacillin/tazobactam	13 (7.4)	5 (7.2)	8 (7.6)	1.000[d]
Fluoroquinolones (includes ciprofloxacin, levofloxacin and moxifloxacin)	1 (0.6)	1 (1.4)	0 (0.0)	0.394[d]
Clindamycin	1 (0.6)	1 (1.4)	0 (0.0)	0.394[d]
Other (includes metronidazole, micafungin)	11 (6.2)	8 (11.6)	3 (2.8)	0.026[d]
Type of Line				0.959[d]
PICC	159 (90.3)	63 (91.3)	95 (89.6)	
Broviac	8 (4.5)	3 (4.3)	5 (4.7)	
Hickman	2 (1.1)	1 (1.5)	1 (0.9)	
Port	7 (4.0)	2 (2.9)	5 (4.7)	
Diagnosis[e]				
Bone and Joint Infection	41 (23.3)	22 (31.9)	19 (17.9)	0.033[c]
Skin and Soft tissue infection	30 (17.0)	15 (21.7)	14 (13.2)	0.138[c]
Central nervous system infection	44 (25.0)	19 (27.5)	25 (23.6)	0.556[c]
Blood stream infection	70 (39.8)	30 (43.5)	39 (36.8)	0.376[c]
Intra-abdominal infection	4 (2.3)	1 (1.5)	3 (2.8)	1.000[d]
Urinary tract Infection	20 (11.4)	6 (8.7)	14 (13.2)	0.468[d]
Pulmonary infection	18 (10.2)	5 (7.2)	12 (11.3)	0.442[d]
Endovascular infection	6 (3.4)	3 (4.3)	3 (2.8)	0.681[d]
Other	8 (4.5)	3 (4.4)	5 (4.7)	1.000[d]
Days Line in place [median (IQR)]	19 (11, 36)	24 (15, 40)	15 (10, 29)	0.001[b]
Days of IV antibiotic therapy [median (IQR)]	17 (12, 35)	27 (16, 39)	14.5 (12, 26)	<0.001[b]
Therapy with >1 antibiotic	25 (14.2)	8 (11.6)	17 (16.0)	0.412[c]
Type of Adverse Event				N/A
Medication-related only	23 (13.7)	23 (33.3)	N/A	
Line-related only	39 (22.2)	39 (56.5)	N/A	
Both	7 (4.0)	7 (10.1)	N/A	
# (%) with >1 adverse event	14 (7.9)	14 (20.3)	N/A	N/A
Completion of OPAT				0.000[d]
Successfully completed original IV course WITHOUT adverse event	114 (65.1)	9 (13.0)	105 (99.1)	
Completed original IV course but with ADVERSE EVENT	33 (18.9)	33 (47.8)	0 (0.0)	
Did not complete original IV course due to ADVERSE EVENT	28 (16.0)	27 (39.1)	1 (0.9)	
Final disposition				0.000[d]
No ED/Clinic/Hospital visits for adverse event	115 (66.1)	19 (27.5)	96 (91.4)	
Readmitted prior to completion of OPAT related to adverse event	20 (11.5)	20 (29.0)	0 (0.0)	
Readmitted prior to completion of OPAT UNRELATED to adverse event	14 (8.0)	5 (7.2)	9 (8.6)	
ED/Clinic visit for adverse event but not requiring admission	25 (14.4)	25 (36.2)	0 (0.0)	

[a] 1 subject with AE information missing
[b] Wilcoxon rank-sum test
[c] Pearson's Chi-squared test
[d] Fisher's exact test
[e] Some subjects had more than one diagnosis

Table 2. Multivariable Analysis for Total Adverse Events

	Odds Ratio	95% CI	p value
Age	1.00	0.95 -1.06	0.958
County code	0.91	0.755-1.11	0.352
Duration of antibiotics	**1.03**	**1.01-1.06**	**0.005**
Duration of line	1.00	0.99-1.01	0.302

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893. The SHIELD Orange County Project: A Decolonization Strategy in 35 Hospitals and Nursing Homes Reduces Multi-Drug-Resistant Organism (MDRO) Prevalence in a Southern California Region

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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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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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