

SUPPLEMENTARY TABLES

The Potential Effects of Implementing an Antibiotic Stewardship Program by Integrating It with Medication Therapy Service in a Low-Income Serving Clinic - A Single-Center Experience**Table 1: ASP Pharmacist Step to Integrate ASP with Medication Therapy Management (MTM) during Intervention Stage:**

1. Before the pharmacist calls the assigned patient, the pharmacist reviews three critical elements; 1.) past medical history; 2.) history of current infectious diseases; 3.) past medication use. An update of the medical history and medications is done afterward.
2. When antibiotics are prescribed, the pharmacist evaluates the following: medication discrepancies, adherence patterns, drug-drug interactions, drug-disease interactions, potential drug-related adverse outcomes/side-effects, and renal function (for possible renal adjustment). Additionally, as part of the ASP services, other pertinent laboratory parameters and cultures are reviewed if and when available. This helps to determine the appropriateness and optimization of therapy.
3. The pharmacist will check for concordance of prescribed antibiotics with clinical guidelines. The pharmacist will use the IDSA and CDC infectious disease guidelines to determine the appropriateness of antibiotics prescribed. Any discrepancy will be discussed with prescribing provider for consideration. As we previously implied, this will be a physician-pharmacist collaborative approach.
4. Document findings and report any discrepancy to the prescribing provider. Recommendations requiring discontinuation and modification of antibiotic therapy are documented and reported to the prescribing provider - this was done using the electronic medical record (EHR).
5. During a call, patient education is provided on all new or old medications (since it is part of the MTM services). If antibiotics are prescribed, education will be provided on that antibiotic. If antibiotics are not prescribed, pharmacists will educate patients on why an antibiotic was not recommended and how to monitor for improving or worsening symptoms.
6. Follow-up: The pharmacist attempts to reach patients telephonically for the following reasons: a.) When a change in treatment is required, b.) To determine if the patient is symptomatic, following positive or negative results.

Table 2: Antibiotic Prescriptions	Overall Prescription No (8757)	Pre Antibiotic Stewardship		Post Antibiotic Stewardship	
		N = 6912	%	N = 1845	%
Azithromycin	1176	888	12.8%	288	15.6%
Sulfamethoxazole and trimethoprim	1313	990	14.3%	323	17.5%
Metronidazole	739	605	8.8%	134	7.3%
Ciprofloxacin	695	541	7.8%	154	8.3%
Amoxicillin	626	473	6.8%	153	8.3%
Sulfamethoxazole	421	335	4.8%	86	4.7%
Cephalexin	349	272	3.9%	77	4.2%
Nitrofurantoin	335	299	4.3%	36	2.0%
Amoxicillin and clavulanate	330	271	3.9%	59	3.2%
Other	2773	2238	32.4%	535	29.0%

Table 3: Top Ten Infectious Diseases Diagnosed (ICD-10 codes)	Overall Diagnosis N = (110635)	Pre Intervention Period		Post Intervention Period	
		N = 91486	%	N = 19149	%
Candidiasis of vulva and vagina (B373)	28011	23246	25.4%	4765	24.9%
Dyspnea, shortness of breath (R060)	19147	15523	17.0%	3624	18.9%
Urinary tract infection, site not specified (N390)	12853	10447	11.4%	2406	12.6%
Acute upper respiratory infection (J069)	12950	9611	10.5%	3339	17.4%
Acute sinusitis (J019)	8997	7956	8.7%	1041	5.4%
Pneumonia, unspecified organism (J189)	6074	5681	6.2%	393	2.1%
Acute bronchitis, unspecified (J209)	5320	4748	5.2%	572	3.0%
Acute pharyngitis (J029)	3771	3581	3.9%	190	1.0%
Cutaneous abscess, furuncle, and carbuncle, unspecified (L029)	3637	3088	3.4%	549	2.9%
Cellulitis (L039)	1952	1372	1.5%	580	3.0%
Other(includes the following ICD-10 codes: J020, L089, B968, J310, K290, L031, J039, N309, N300, L024, K210, L088)	7923	6233	6.8%	1690	8.8%

Sample Characteristics and Number of Visits Within 30 Days Post-Index Clinic Visit							
Table 4: Patient Demographic Characteristics	# of visits		Antibiotic Stewardship Program (ASP)				p-values
			Pre-ASP		Post-ASP		
	N=72397	%	N=59384	%	N=13311	%	
Gender <.0001							
Female	53000	73.4	44000	73.8	9579	72.0	
Male	19000	26.0	15000	25.6	3719	27.9	
Choose not to disclose	397	0.5	384	0.7	13	0.1	
Age groups <.0001							
18 - 44	14000	18.7	10000	17.4	3226	24.2	
45 - 64	42000	58.7	35000	59.9	7086	53.2	
65 - 74	14000	19.0	11000	18.9	2600	19.5	
74 <	2673	3.7	2274	3.9	399	3.0	
Race <.0001							
American Indian or Alaska Native	17	0.0	17	0.0	0	0.0	
Asian	1402	1.9	1196	2.0	206	1.5	
Black or African American	51000	70.9	42000	71.0	9383	70.5	
White	17000	22.9	13000	22.7	3178	23.9	
Native Hawaiian or Pacific Islander	1085	1.5	942	1.6	143	1.1	
Other Race	1195	1.7	896	1.5	299	2.2	
Patient Declined	761	1.0	659	1.1	102	0.7	
Ethnicity <.0001							
Hispanic or Latino/Spanish or Latin American/Latin, Latino	4582	6.3	3836	6.5	746	5.6	
Not Hispanic or Latino	61000	84.4	49000	83.0	12000	90.3	
Patient Declined	6737	9.3	6187	10.5	550	4.1	
Education Level <.0001							
less than 8th grade	1343	1.9	955	1.6	388	2.9	
8th grade	5953	8.2	5904	10.0	49	0.4	
9th grade	1801	2.5	1729	2.9	72	0.5	
10th grade	3326	4.6	2703	4.6	623	4.7	
11th grade	4018	5.6	3436	5.8	582	4.4	
12th grade	23000	31.2	18000	30.1	4814	36.2	
2 years college	9714	13.4	8119	13.7	1595	12.0	
4 years college	1996	2.8	1612	2.7	384	2.9	
Post-graduate	386	0.5	302	0.5	84	0.6	
Others	21000	29.3	17000	28.0	4720	35.5	
Tobacco Use <.0001							
Currently Every Day	15000	21.4	13000	22.6	2126	16.0	
Currently Some Days	2904	4.0	2470	4.2	434	3.3	
Formerly	17000	22.8	13000	21.8	3641	27.4	
Never	36000	49.6	29000	49.3	6789	51.0	
Unknown	1581	2.0	1260	2.0	321	2.1	

Insurance Type							<.0001
Personal Payment (Cash – No Insurance)	25000	34.0	20000	33.4	4822	36.2	
Commercial	7742	10.7	6469	11.0	1273	9.6	
Group Policy	2217	3.1	1794	3.0	423	3.2	
Health Maintenance Organization (HMO)	76	0.1	66	0.1	10	0.1	
Medicaid	26000	35.6	21000	35.8	4604	34.6	
Medicare Part B	9382	13.0	7521	12.7	1861	14.0	
Supplemental Policy	139	0.2	98	0.2	41	0.3	
Others	2506	3.5	2229	3.8	277	2.1	
Provider Type							<.0001
Medical Doctor (MD)	13000	17.6	9522	16.1	3202	24.1	
Nurse Practitioner, Supervising (NP, S) or Advanced Practice Registered Nurse	60000	82.3	50000	83.9	10000	75.5	
Others	58	0.1	0	0.0	58	0.4	

Table 5: Outcome Variables	Antibiotic Stewardship Program (ASP)				*P-value (Based on Mean Values)
	Per-ASP (N = 1306)		Post-ASP (N = 475)		
	Median	IQR	Median	IQR	
Patient age (years)	49.0	26.0	44.0	25.0	0.8302
Antibiotic prescriptions per 1000 patients, rate	0.6	1.7	0.6	1.1	<.0001
Clinic visits within 30 days post index clinic visit, rate	20.5	48.0	9.0	18.0	<.0001