

Supplemental files for “Evaluating the Effect of an Urgent Care Antibiotic Stewardship Intervention: A Multi-Network Collaborative Effort“

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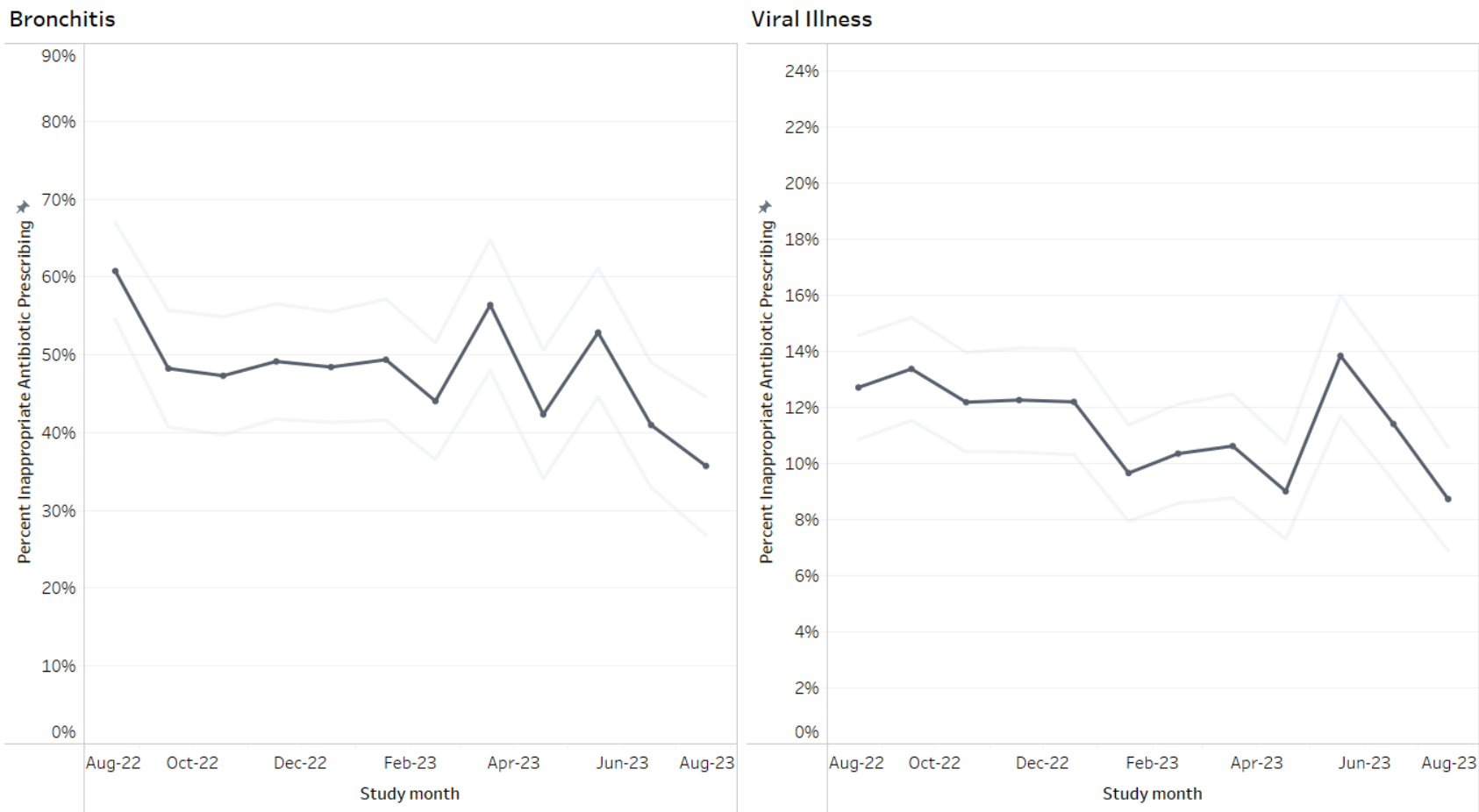
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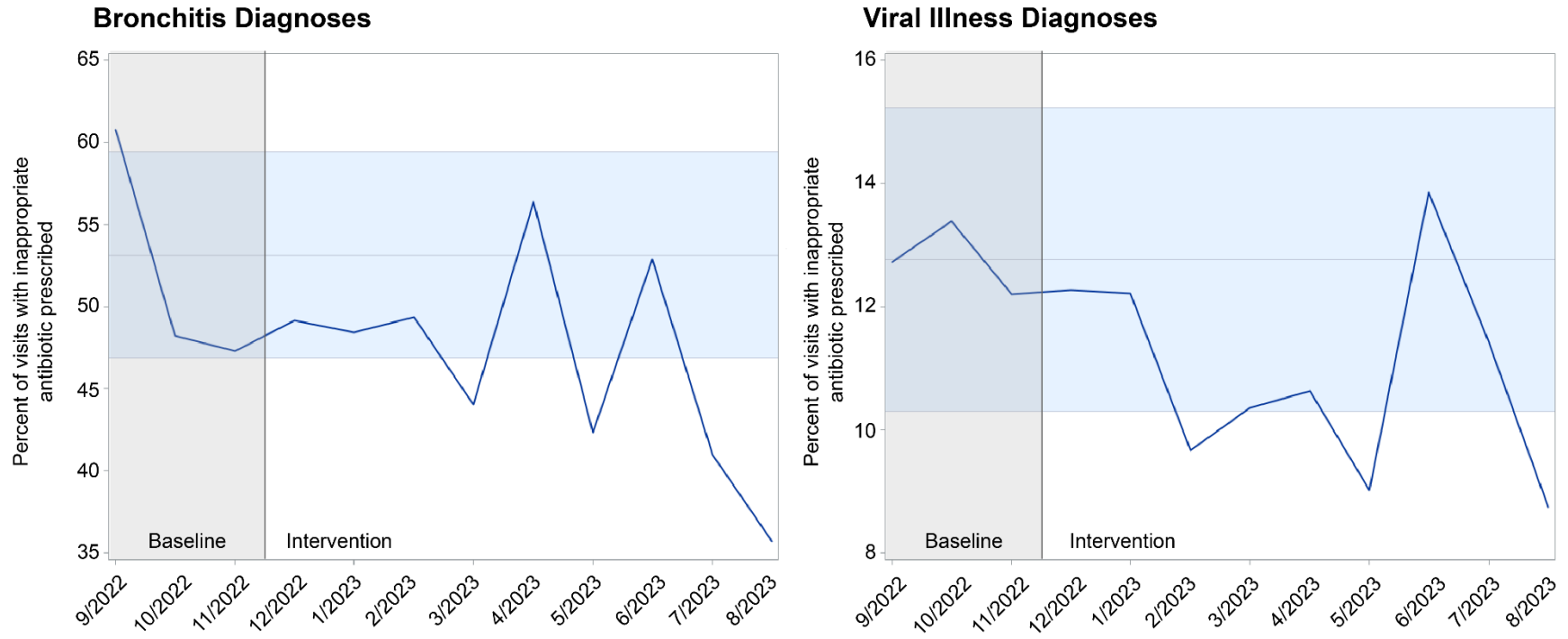
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Supplemental Figure 1. Inappropriate antibiotic prescribing by diagnosis



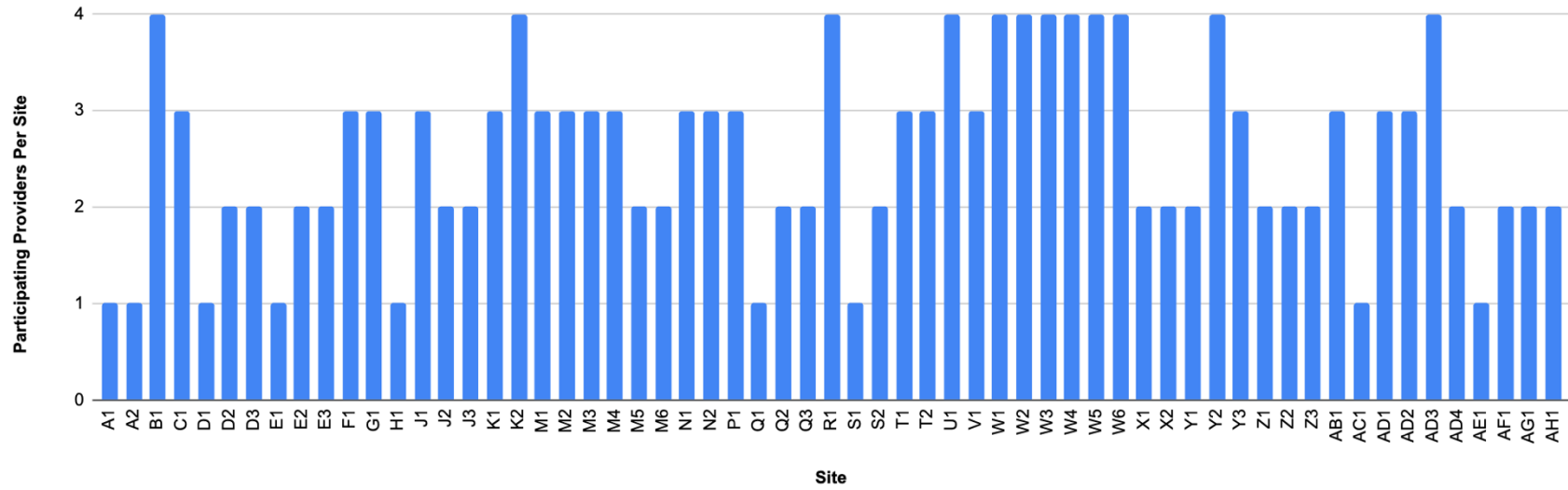
Percent of urgent care encounters with an inappropriate antibiotic prescription by month, diagnosis. Faded lines represent the 95% confidence intervals for the inappropriate antibiotic prescribing rate.

Supplemental Figure 2. Statistical Process Control (SPC) charts for inappropriate antibiotic prescribing among bronchitis and viral illness diagnoses



SPC chart upper and lower control limits derived using 2 standard deviations from the mean baseline (Sep to Nov 2022) inappropriate prescribing rates, and displayed as shaded regions in the figure. For bronchitis, the lower control limit is 46.9% and the upper control limit is 59.4%. For viral illness, the lower control limit is 10.3% and the upper control limit is 15.2%.

Supplemental Figure 3. Number of Participating Providers Per Site.



Supplemental Table 1. Concurrent diagnoses leading to chart exclusion from inappropriate antibiotic prescribing.

Conditions	ICD-10 Codes
<p>Acute maxillary sinusitis, frontal sinusitis, ethmoidal sinusitis, sphenoidal sinusitis, and pansinusitis, suppurative acute otitis media, strep pharyngitis, central venous catheter infections, infection after immunization, bites and scratches, infections due to specific pathogens (e.g., Salmonella), sexually transmitted diseases, neutropenia, cellulitis, abscess, otitis externa, chronic otitis media, pneumonia, chronic sinusitis, impetigo, lymphangitis, lymphadenitis, acne and other skin conditions, septic arthritis, osteomyelitis and discitis, myositis, pyelonephritis, cystitis, urinary tract infection, salpingitis, peritonitis, pelvic infections, sepsis, and bacteremia</p>	<p>J01.0n, J01.1n, J01.2n, J01.3n, J01.4n, J01.8n, J01.9n, H66.4, H66.4n, H66.00, H66.00n, J02.0, J03.0, T80.2n, T88.0n, W50.3n, W53.n1Xn, W54.0XXn, W55.n1Xn, W56.n1Xn, W58.n1Xn, W59.n1Xn, W61.n1xn, Y04.1xxn, A01.0n, A01.n, A02.n, A03.n, A04.n, A18.0n, A22.7, A23.n, A26-27.n, A28.0, A28.2-9, A32.n, A33, A37.n, A38.1-9, A40-41.n, A42.7, A48-59.n, A63.8, A64, A69.2n, A74.8-9n, B37.7, B78.1, B95.n, B96.n, D70.n, H00.036, H05.01n, H60.0-3n, H62.4n, H66.1-3n, I00, I01.n, J13-8.n, J20.0-2, J32.n, J36, J39.0-1, K04.0, K04.4, K04.6-7, K12.2, K61.n, L01-8.n except L03.213 and L08.1, L70.n, L73.0, L88, L92.8, L98.0, L98.3, M00-1.n, M46.2-3n, M60.0n, M86.n, N11.0-1, 13N.6, N15.1, N15.9, N16, N30.n, N34.0-2, N39.0, N70.n, N71-7.n, N98.0, P36-9.n, R65.n, and/ or R78.81</p>
<p>1. An “n” within or at the end of a code (eg, K61.n) means that any ICD-10 code with any number or letter in that position is included.</p>	

Supplemental Table 2. Intervention Choices to Implement During the Second and Third PDSA Cycles of the Study.

Intervention Category	Specific Intervention¹
Patient Education	<p>ABS Trifold Handout*</p> <p>ABS Two Page Handout</p> <p>Bronchitis Two Page Handout</p> <p>Improving Antibiotics Two Page Handout*</p> <p>Runny Nose One Page Handout</p> <p>Virus or Bacteria One Page Poster*</p>
Patient Engagement	<p>Consumer Report When to Say No to Antibiotics for Infections</p> <p>How to Say no To Antibiotics</p> <p>CDC Letter Daycare</p> <p>CDC Patient Experience (Video)</p> <p>New York State Department of Health: Educating Patients About Antibiotic Usage (Video)</p> <p>RX for Viral Illness*</p> <p>CDC Rx Relief for Viral Illness*</p>
Clinician Education	<p>Dialogue Around Respiratory Illness Treatment (DART) Program</p> <p>Antibiotic Resistance Report 2019</p> <p>When Antibiotic Experts Say No to Antibiotics</p> <p>CDC Core Elements of Outpatient Antibiotic Stewardship Checklist</p> <p>CDC Core Elements of Antibiotic Stewardship Report</p> <p>How to Prescribe Fewer Unnecessary Antibiotics: Patient Talking Points</p> <p>CDC Antibiotic Stewardship Training Series</p>
Treatment Guidelines	<p>Adult Outpatient Recommendations</p> <p>Pediatric Outpatient Recommendations</p>
Signage	<p>CDC 8 Ways to Be Antibiotics Aware Poster</p> <p>“Do Antibiotics Have Side Effects?” Infographic*</p> <p>“Do I need Antibiotics?” Infographic*</p> <p>Improve Outpatient Antibiotic Use Sign</p> <p>PSA Right Tool*</p>
Social	<p>Antibiotics Resistance by the Numbers</p> <p>Do I Really Need Antibiotics?</p> <p>What’s the Best Treatment Plan for Me Today?</p> <p>Virus or Bacteria?</p>

¹From <https://urgentcareassociation.org/about/strategic-initiatives/abs-change-packet/>

*Material offered in both English and Spanish

Supplemental Table 3. Revised Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0) Checklist

	Reporting Item	Page Number
Title		
	#1 Indicate that the manuscript concerns an initiative to improve healthcare (broadly defined to include the quality, safety, effectiveness, patientcenteredness, timeliness, cost, efficiency, and equity of healthcare)	1
Abstract		
	#02a Provide adequate information to aid in searching and indexing	2-3
	#02b Summarize all key information from various sections of the text using the abstract format of the intended publication or a structured summary such as: background, local problem, methods, interventions, results, conclusions	2-3
Introduction		
Problem description	#3 Nature and significance of the local problem	4
Available knowledge	#4 Summary of what is currently known about the problem, including relevant previous studies	4
Rationale	#5 Informal or formal frameworks, models, concepts, and / or theories used to explain the problem, any reasons or assumptions that were used to develop the intervention(s), and reasons why the intervention(s) was expected to work	4
Specific aims	#6 Purpose of the project and of this report	4
Methods		
Context	#7 Contextual elements considered important at the outset of introducing the intervention(s)	5-8
Intervention(s)	#08a Description of the intervention(s) in sufficient detail that others could reproduce it	5-8
Intervention(s)	#08b Specifics of the team involved in the work	5-8

Study of the Intervention(s)	#09a	Approach chosen for assessing the impact of the intervention(s)	5-8
Study of the Intervention(s)	#09b	Approach used to establish whether the observed outcomes were due to the intervention(s)	5-8
Measures	#10a	Measures chosen for studying processes and outcomes of the intervention(s), including rationale for choosing them, their operational definitions, and their validity and reliability	5-8
Measures	#10b	Description of the approach to the ongoing assessment of contextual elements that contributed to the success, failure, efficiency, and cost	5-8
Measures	#10c	Methods employed for assessing completeness and accuracy of data	5-8
Analysis	#11a	Qualitative and quantitative methods used to draw inferences from the data	7-8
Analysis	#11b	Methods for understanding variation within the data, including the effects of time as a variable	7-8
Ethical considerations	#12	Ethical aspects of implementing and studying the intervention(s) and how they were addressed, including, but not limited to, formal ethics review and potential conflict(s) of interest	5
Results			
	#13a	Initial steps of the intervention(s) and their evolution over time (e.g., time-line diagram, flow chart, or table), including modifications made to the intervention during the project	8-9
	#13b	Details of the process measures and outcome	8-10
	#13c	Contextual elements that interacted with the intervention(s)	8-9
	#13d	Observed associations between outcomes, interventions, and relevant contextual elements	8-10
	#13e	Unintended consequences such as unexpected benefits, problems, failures, or costs associated with the intervention(s).	8-10
	#13f	Details about missing data	8-10

Discussion

Summary	#14a	Key findings, including relevance to the rationale and specific aims	10-11
Summary	#14b	Particular strengths of the project	10-11
Interpretation	#15a	Nature of the association between the intervention(s) and the outcomes	10-11
Interpretation	#15b	Comparison of results with findings from other publications	10-11
Interpretation	#15c	Impact of the project on people and systems	10-11
Interpretation	#15d	Reasons for any differences between observed and anticipated outcomes, including the influence of context	10-11
Interpretation	#15e	Costs and strategic trade-offs, including opportunity costs	10-11
Limitations	#16a	Limits to the generalizability of the work	12
Limitations	#16b	Factors that might have limited internal validity such as confounding, bias, or imprecision in the design, methods, measurement, or analysis	12
Limitations	#16c	Efforts made to minimize and adjust for limitations	12
Conclusion	#17a	Usefulness of the work	12-13
Conclusion	#17b	Sustainability	12-13
Conclusion	#17c	Potential for spread to other contexts	12-13
Conclusion	#17d	Implications for practice and for further study in the field	12-13
Conclusion	#17e	Suggested next steps	12-13

Other information

Funding	#18	Sources of funding that supported this work. Role, if any, of the funding organization in the design, implementation, interpretation, and reporting	13
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The SQUIRE 2.0 checklist is distributed under the terms of the Creative Commons Attribution License CC BY-NC 4.0. This checklist was completed on 12. April 2024 using <https://www.goodreports.org/>, a tool made by the [EQUATOR Network](#) in collaboration with [Penelope.ai](#)