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Agenda

- Didactic: Journal Review!
- Case Discussion
- Pure-Wick
- Open Discussion

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Journal Review and Round-up

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Eight Habits of Highly Effective Antimicrobial Stewardship Programs to Meet the Joint Commission Standards for Hospitals

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In an effort to decrease antimicrobial resistance and inappropriate antibiotic use, The Joint Commission (TJC) recently issued new antimicrobial stewardship standards, consisting of 8 elements of performance, applicable to hospitals effective January 1, 2017. These standards coincide with those recommended by the Infectious Diseases Society of America (IDSA) and the Society of Healthcare Epidemiology (SHEA) guidelines. Little guidance exists on the “how” from these guidance documents. We review the 8 standards and provide real-world experience from established antimicrobial stewardship programs (ASPs) on how institutions can comply with these guidelines to reduce inappropriate antibiotic usage, decrease antimicrobial resistance, and optimize patient outcomes. TJC antimicrobial stewardship standards demonstrate actions being taken at the national level to make quality and patient safety a priority.

Keywords. antimicrobial stewardship; joint commission standards; antimicrobial resistance.

Eight Habits of Highly Effective ASPs

- Leaders recognize ASPs as an organizational priority
- Educate staff and independent practitioners
 - Annual competencies
 - F2F by ASP with HCPs
- Education patients and families
- ASP is a multidisciplinary team
- ASP includes 7 core elements
- ASP uses multidisciplinary protocols
- Hospital collects, analyzes and reports ASP data
- Hospitals take action on improvement opportunities

Table 1. Antimicrobial Stewardship Training Programs in the United States

Organization	Fee	Program type	Target audience	Location	Website
Infectious Diseases Society of America	Yes	Workshop	Physicians Pharmacists	IDWeek annual meeting	http://www.idweek.org/premeeting-workshop/#stewardship
Infectious Diseases Association of California	Yes	Workshop	Physicians, Pharmacists, Infection Preventionists	California	http://idac.org
Making a Difference in Infectious Disease	Yes	Certification	Physicians, Pharmacists	Online and Annual meeting	http://mad-id.org
Society of Infectious Diseases Pharmacists	Yes	Certification	Pharmacists	Online	http://sidp.org/Stewardship-Certificate
Society for Healthcare Epidemiology of America	Yes	2 Workshops: 1) Research Methods Workshop 2) Antibiotic Stewardship Training Course	Physicians, Pharmacists, Epidemiologists, Infection Preventionists, Public health	California	http://www.asresearchworkshop.org/ http://sheaspring.org/program/agenda/
Stanford University	No	Workshop	Physicians, Pharmacists	Online	http://med.stanford.edu/cme/courses/online/antimicrobial.html

Antimicrobial stewardship program	Content	Website
Cleveland Clinic	Disease state treatment guidelines Drug specific (including dosing) guidelines Microbiology guidelines	http://www.clevelandclinic-meded.com/medicalpubs/antimicrobial-guidelines/
Johns Hopkins Medicine	Disease state treatment guidelines Drug specific (including dosing) guidelines Microbiology guidelines	http://www.hopkinsmedicine.org/amp/guidelines/Antibiotic_guidelines.pdf
Nebraska Medicine	Disease state treatment guidelines Drug specific (including dosing) guidelines Microbiology guidelines Visiting scholar preceptorship	http://www.nebraskamed.com/careers/education-programs/asp
Sinai Health System	Disease state treatment guidelines Antimicrobial stewardship fellowship General antimicrobial stewardship	http://www.antimicrobialstewardship.com/
Stanford Medicine	Disease state treatment guidelines Drug specific (including dosing) guidelines Microbiology guidelines	http://med.stanford.edu/bugsanddrugs/guide-book.html
The Ohio State University	Disease state treatment guidelines Microbiology guidelines	http://rx.osumc.edu/asp2/index.html

University of California Los Angeles	Disease state treatment guidelines Drug specific (including dosing) guidelines Microbiology guidelines	http://www.asp.mednet.ucla.edu
University of California San Francisco	Disease state treatment guidelines Drug specific guidelines	http://idmp.ucsf.edu/ucsf-medical-center-guidelines
University of Miami Health System	Disease state treatment guidelines Antimicrobial dosing guidelines	http://www.ugotabug.med.miami.edu
University of Pennsylvania Medical Center	Disease state treatment guidelines Drug specific (including dosing) guidelines Microbiology guidelines	http://www.uphs.upenn.edu/bugdrug/antibiotic_manual/table%20of%20contents.htm
University of Wisconsin	Disease state treatment guidelines Drug specific guidelines (including dosing)	http://www.uwhealth.org/antimicrobial-stewardship/main/36408
Wake Forest	Disease state treatment guidelines Drug specific guidelines (including dosing) Antibiotic stewardship curriculum	http://www.wakehealth.edu/School/CAUSE



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Major Article

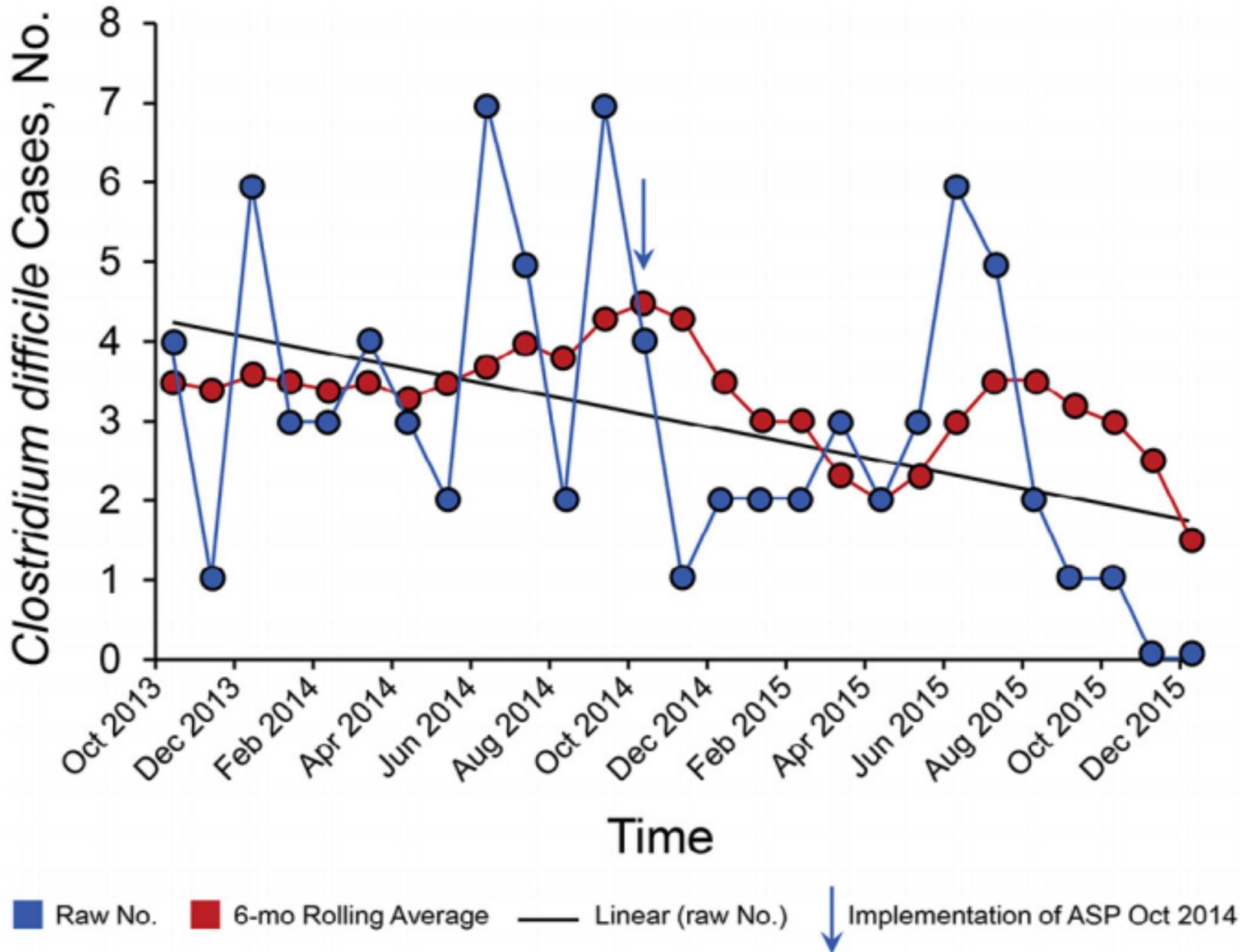
Dramatic effects of a new antimicrobial stewardship program in a rural community hospital

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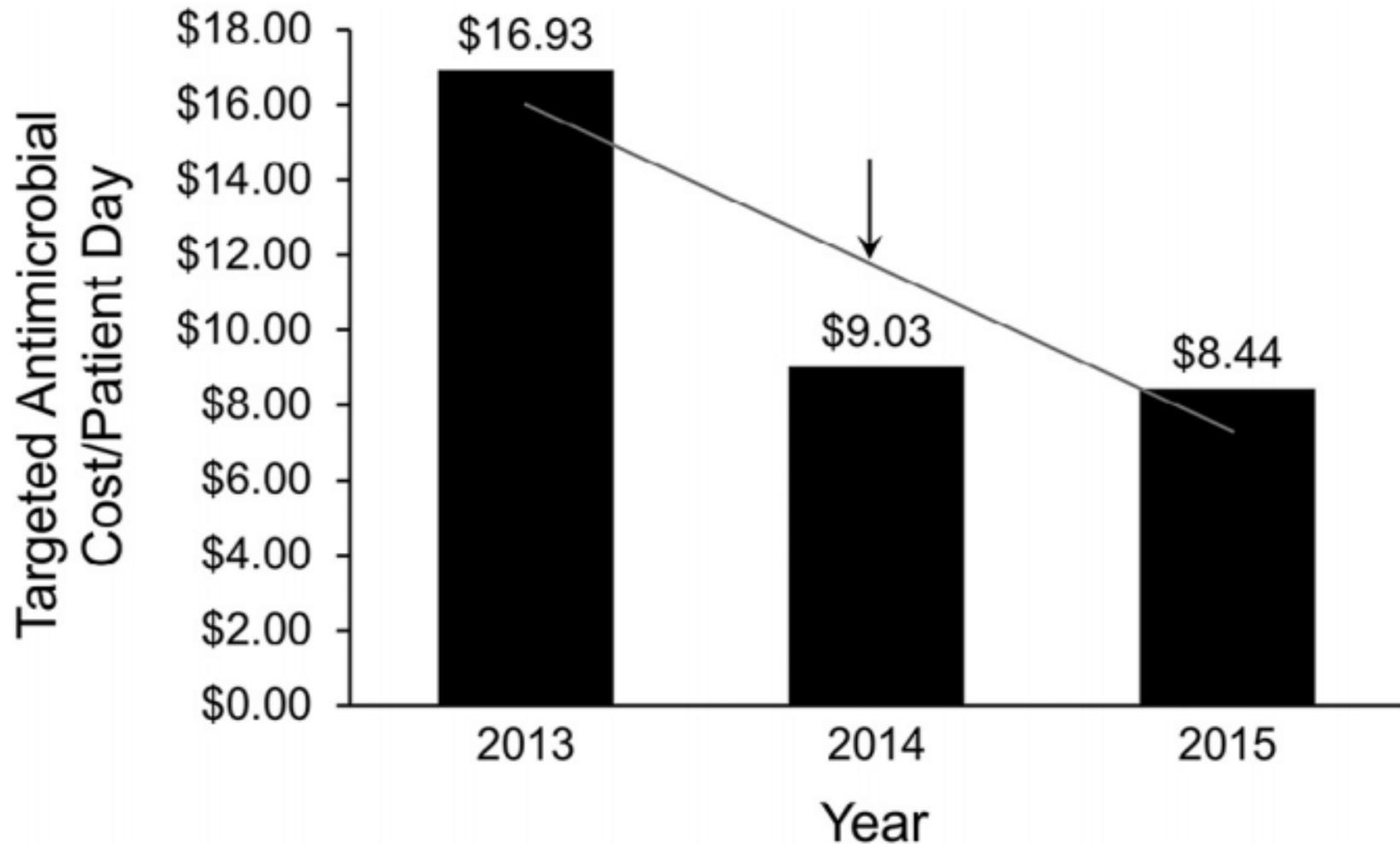


Fig 2. Fourth quarter targeted antimicrobial cost per patient day before (2013) vs after antimicrobial stewardship program implementation (2014-2015). The arrow indicates implementation of the program in October 2014.

BRIEF REPORT

Internal Medicine Resident Perspectives Regarding Broad-Spectrum Antibiotic Usage

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Focus groups held with internal medicine residents discussed their perspectives regarding broad-spectrum antibiotic (BSA) usage. Residents knew of BSA-associated adverse events, but they did not associate such events with increased patient morbidity and mortality, and they were more likely to use BSA in situations with diagnostic uncertainty and sick patients.

Keywords. antimicrobial stewardship; broad-spectrum antibiotic usage; qualitative research; resident education.

Theme	Frequency of Responses	Representative Quotes
Factors that increase broad-spectrum antibiotic (BSA) usage by internal medicine residents (IMRs)	<p>Frequently in responses: Diagnostic uncertainty; patients perceived to be clinically "sick."</p> <p>Infrequently in responses: Epidemiological risk factors; appeasement of attending physician or family members; liability concerns; convenience.</p>	<p>"The less you know about the patient, [the] more inclined you are to want to cover broadly; so, night-float would [cover] if someone became febrile overnight, or becomes toxic, or [if] for whatever reason they are more inclined to start something broader." – Postgraduate Year (PGY)-1</p> <p>"I mean, I don't consider that guidelines always apply if you don't have a good source." – PGY-2</p> <p>"So to be honest, I would probably just start [vancomycin] and [piperacillin-tazobactam] because he is, you know, he meets a few [systemic inflammatory response syndrome] criteria, and I don't think there is any reason [to prescribe] too narrowly when they look like they are that sick." – PGY-1</p> <p>"I mean, one of the reasons we might escalate when we don't need to is, like, the clinical context, like maybe this patient looks sick or something, like, by the book, and the pharmacists I am sure know the guidelines better than we do, [but] it's the clinical context that alters our clinical judgement." – PGY-1</p>
Consequences of antibiotic spectrum choice	<p>Frequently in responses: Consequences for overly narrow coverage frequently included patient morbidity and mortality.</p> <p>Infrequently in responses: Antibiotic resistance as a consequence for both overly broad and overly narrow antibiotic spectrums. <i>Clostridium difficile</i> as a consequence of overly broad-spectrum antibiotic use.</p> <p>Never in responses: Patient morbidity and mortality mentioned as a consequence of broad-spectrum antibiotic use.</p>	<p>"Bacteremia, death, it depends... your patient has florid [pyelonephritis], and you are worried they are bacteremic, and you give them [ciprofloxacin], then you may have just killed the person." – PGY-2</p> <p>"Aside from treatment failure, [the infection] can progress; the patient can become septic and have treatment complications from sepsis..." – PGY-1</p> <p>"I guess, in theory, it could increase resistance later, and broad spectrums cause more [<i>Clostridium difficile</i>] and things like that." – PGY-2</p>

The IMR role in antibiotic prescription

Frequently in responses:

IMR writes the initial antibiotic prescription, with little subsequent attending physician intervention.

Infrequently in responses:

Occasional subsequent attending physician intervention in antibiotic prescription after IMR has written the initial prescription.

Never in responses:

Attending physician writes initial antibiotic order.

"That would be me as a resident... I am usually doing more of the admitting because I am overnight, and I usually choose the empiric antibiotic coverage, and my attending [physician], I am usually able to justify my choice to my attending [physician], most of the time my attending [physician] does not switch it." – PGY-2

"I think it always gets run by the resident before it gets written; it doesn't always get run by the attending [physician] before it gets written." – PGY-2

RESEARCH ARTICLE

Every antibiotic, every day: Maximizing the impact of prospective audit and feedback on total antibiotic use

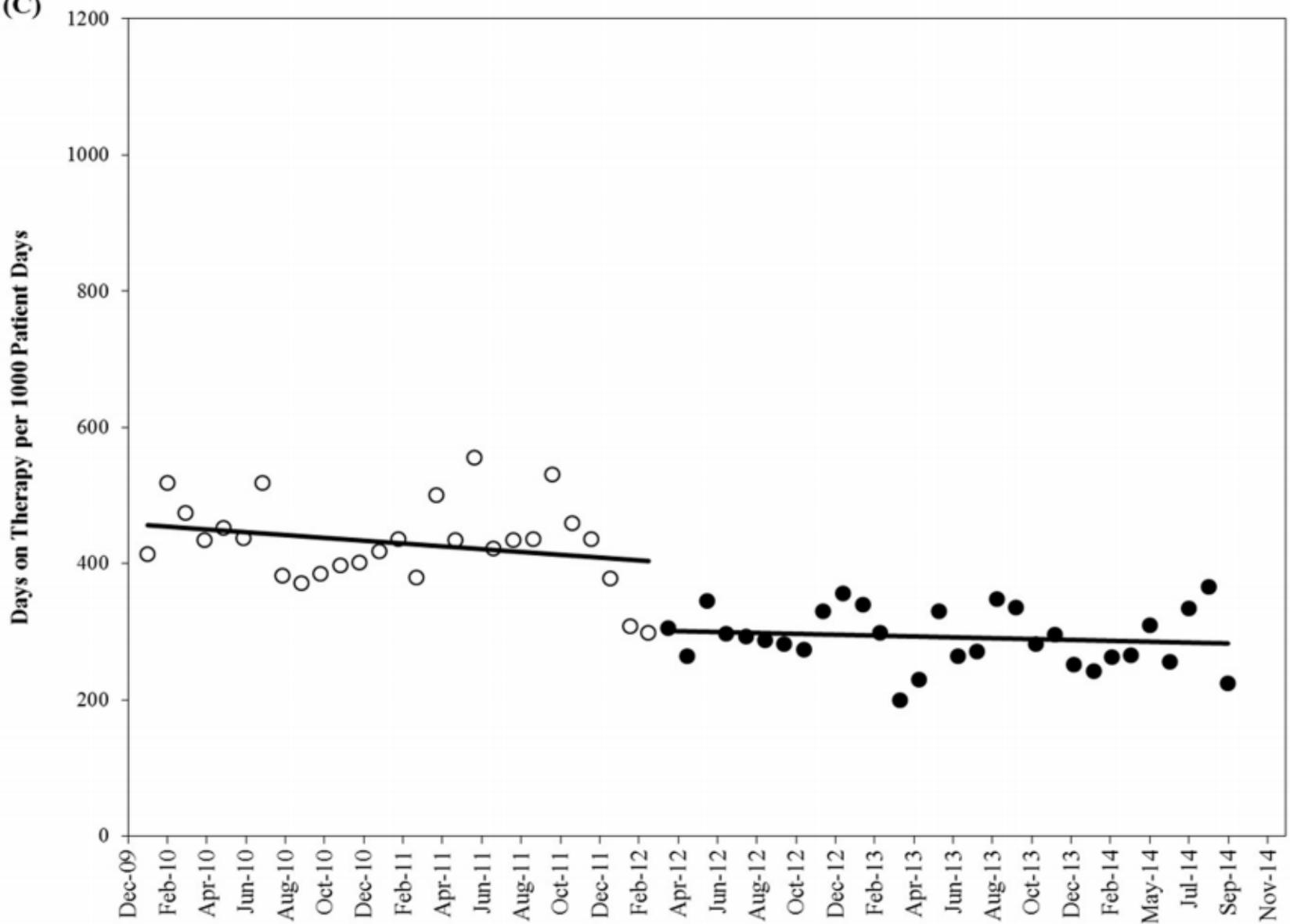
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Methods

Prospective audit and feedback (PAAF) was initiated on the surgical, respiratory, and medical wards of a community hospital on July 1, 2010, October 1, 2010, and April 1, 2012, respectively. We evaluated rates of total antibiotic use, measured in days on therapy (DOTs), among all patients admitted to the wards before and after PAAF initiation using an interrupted time series analysis. Changes in antibiotic costs, rates of *C. difficile* infection (CDI), mortality, readmission, and length of stay were evaluated using univariate analyses.

(C)



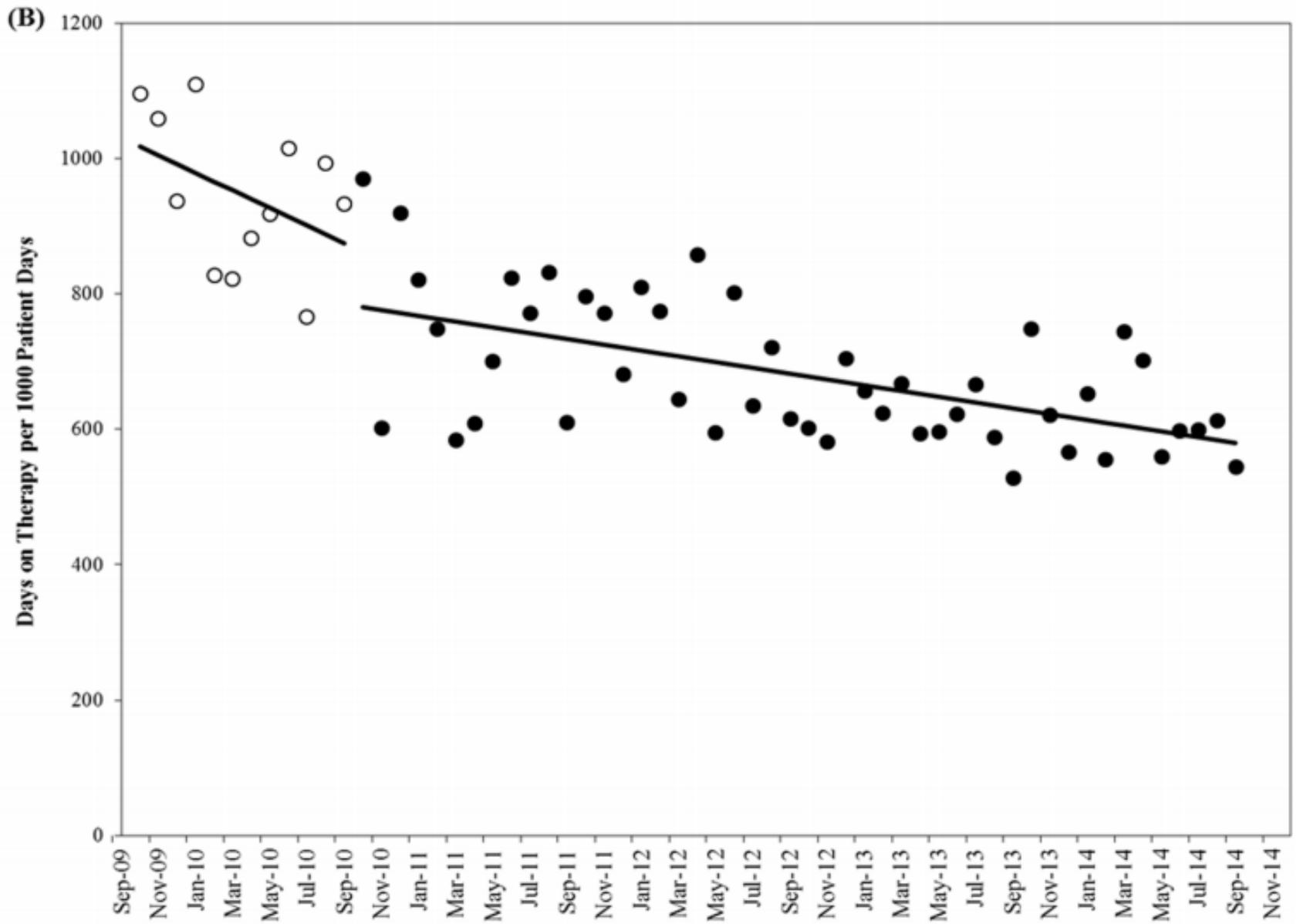


Table 4. Patient outcomes before and after prospective audit and feedback in the surgical, respiratory, and medical wards.

Patient Outcomes	Surgery			Respiratory			Medicine		
	Baseline	Intervention	<i>p</i>	Baseline	Intervention	<i>p</i>	Baseline	Intervention	<i>p</i>
Mortality	0.99	0.97	0.763	11.45	12.22	0.437	7.40	5.01	0.001
Readmission	5.38	6.93	0.073	6.70	5.60	0.617	4.62	5.63	0.043
Mean length of stay	4.73	4.25	0.052	9.60	8.46	0.156	10.23	10.30	0.512

Unless otherwise specified, data are no. per 1,000 patient days

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Mean length of stay	4.73	4.25	0.052	9.60	8.46	0.156	10.23	10.30	0.512

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JUMP START STEWARDSHIP

*Implementing Antimicrobial Stewardship
in a Small, Rural Hospital*

Roadmap for Action

