

Antimicrobial Stewardship Strategy: Improved antimicrobial documentation

Adequate documentation of important aspects of antimicrobial prescribing to facilitate communication and decision-making within the health care team.



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Priority Level: **B** Difficulty Level: **2**

Program Stage:

- Early
- ✓ Intermediate
- Advanced

For more information on these criteria and how they were developed, please see the <u>Antimicrobial Stewardship Strategy</u> <u>Criteria Reference Guide</u>.

Description

This is an overview and not intended to be an all-inclusive summary. As a general principle, patients must be monitored by the health care team after changes to therapy resulting from recommendations made by the antimicrobial stewardship team.

Adequate documentation of pertinent information related to the prescribing of antimicrobials is an important but often overlooked component of antimicrobial stewardship and should be a priority.

Adequate documentation should communicate the rationale (indication) for initiation of therapy, the intended duration of therapy, culture results and reasons for treatment modification. Sufficient details in the patient's medical record facilitate informed assessment/reassessment of therapy; support seamless transfer of care between medical teams; enable institutional antimicrobial audits; and promote accountability.

Approaches for promoting or encouraging adequate documentation include introducing a policy and undertaking educational efforts. Chart stickers, specific antimicrobial charting forms, and a place of prominence in the chart or medication administration record for recording details of antimicrobial therapy are all ways of improving antimicrobial documentation.

Antimicrobial documentation can also be facilitated by using computerized physician order entry systems; by requiring physicians to document certain information before finalizing an order; and/or by specifying a rationale for opting out of a protocol (e.g., ordering antimicrobials for a longer duration than recommended).

Promoting the documentation of indication, intended duration and re-evaluation can sensitize practitioners to these important aspects of judicious antimicrobial use.

The "bundle" concept (grouping evidence-based practices that have a greater clinical impact when performed as a unit) has been applied to antimicrobial documentation to ensure that key processes of antimicrobial prescribing have been considered.¹

Advantages

- Encourages prescribing best practice.
- Documentation as a stewardship strategy is supported by the Centers for Disease Control, which recommends policy development to promote antimicrobial documentation (e.g., indication, duration) and encourage timely reassessment and discontinuation.
- Documenting the indication for an antimicrobial is one of two national prescribing indicators monitored by the Scottish Antimicrobial Prescribing Group; it is felt to have a positive impact on appropriate antimicrobial prescribing.

Disadvantages

- Difficult to enforce.
- Minimal data to indicate that improvements in documentation have resulted in improved use of antimicrobials and/or patient outcomes.

Requirements

• Resources (personnel, reminders such as posters) for education and promotion of the strategy.

Associated Metrics

• Audits to review the adequacy of documentation.

References

1. Cooke FJ, Holmes AH. The missing care bundle: antibiotic prescribing in hospitals. Int J Antimicrob Agents. 2007;30:25–9.

Additional Useful References

Select articles to provide supplemental information and insight into the strategy described and/or examples of how the strategy was applied; not a comprehensive reference list. URLs are provided when materials are freely available on the Internet.

- Centers for Disease Control. Core elements of hospital antibiotic stewardship programs. Atlanta, GA: US Department of Health and Human Services, CDC; 2014. Available from: <u>http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html</u>
- Institute for Healthcare Improvement. Antibiotic stewardship driver diagram and change package [Internet]. Cambridge, MA: IHI; July 2012 [cited 2015 Oct 16]. Available from: <u>http://www.cdc.gov/getsmart/healthcare/pdfs/Antibiotic_Stewardship_Change_Package_10_30_12.pdf</u>
- Malcolm W, Nathwani D, Davey P, Cromwell T, Patton A, Reilly J, et al. From intermittent antibiotic point prevalence surveys to quality improvement: experience in Scottish hospitals. Antimicrob Resist Infect Control. 2013;2(1):3. Available from: <u>http://www.aricjournal.com/content/2/1/3</u>

Tools and Resources

 Srinivasan A. CDC expert commentary. Three steps to antibiotic stewardship [video recording]. New York, NY: Medscape; Nov 15, 2010. Online video: 4 min 56 sec. Available from: <u>http://www.medscape.com/viewarticle/731784</u>

Centers for Disease Control video emphasizes need for adequate documentation.

• DeVreese L, Zvonar R, Garber G. <u>Assessing the adequacy of documentation in patients receiving</u> <u>antibiotic therapy</u>. Abstract 743. Poster presented at: ID Week 2012. 2012 Oct 17–21; San Diego, CA.

An example of an audit of antimicrobial documentation in the patient's chart.

Samples/Examples

- Example 1: The Ottawa Hospital Audit Form to Assess the Adequacy of Antimicrobial Documentation in Medical Charts
- Example 2: St. Joseph's Healthcare Hamilton Antimicrobial Order Form

These documents have been generously shared by various health care institutions to help others develop and build their antimicrobial stewardship programs. We recommend crediting an institution when adopting a specific tool/form/pathway in its original form.

Examples that contain clinical or therapeutic recommendations may not necessarily be consistent with published guidelines, or be appropriate or directly applicable to other institutions. All examples should be considered in the context of the institution's population, setting and local antibiogram.

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Links with Other Strategies

- <u>Clinical decision support systems/computerized physician order entry</u>
- Prescriber education
- <u>Scheduled antimicrobial reassessments ("antibiotic time outs")</u>

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For further information

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Example 1: The Ottawa Hospital - Audit Form to Assess the Adequacy of Antimicrobial Documentation in Medical Charts

Antimicrobial Documentation Audit Form	The Ottawa L'Hôpita Hospital d'Ottaw
Patient Demographics:	
Study #:	
Service: Age:	
Gender: 🗆 Male 🗆 Female	
Date of Admission: / /	
Drug Allergies:	
5 5	
Infection Details	
Antibiotic Indication:	Site of Infection:
□ Stated within 1 DAY of initiating therapy	×
□ Stated within 3 DAYS of initiating therapy	Drainage/Surgical Intervention
□Not Stated	needed? _Yes_No
Not Stated but described signs and symptoms of infxn	List Procedure:
increased WBC count	
Fever	INVOLVEMENT OF INFECTIOUS DISEASE SERVICE: Yes No
Iocalized signs: redness, warmth, swelling, sputum,	Day #
discharge	
Abnormal Chest X-ray	
Other	
Antibiotic Details	
Name, dose, route, frequency	Actual Duration
Antibiotic Plan/Duration of Therapy	
Is there an antibiotic plan for duration of therapy docume Discontinuation of therapy Discharge from hospital Plan documented within 3 days of starting therapy: DYES	
Reassessment of Antibiotic Therapy (based on new clinic	
Is patient a candidate for de-escalation/streamlining antil	piotic therapy? 🗆 YES 🛛 NO
Was antimicrobial therapy <i>modified</i> after final report from Whether yes or no, was there a reason documented?	n microbiology? 🗆 YES 🛛 NO

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Example 1: The Ottawa Hospital - Audit Form to Assess the Adequacy of Antimicrobial Documentation in Medical Charts (continued)

Microbiology	
Date: Cultures sent:	
□ blood □ urine □ sputum	🗆 other
Significant microbiological results:	Changes made by:
Recorded in Chart? YES NO	
Were changes made according to microbiology results?	
□Yes □ No	
If yes, Day <u># after final C&S results available</u>	
Step-down (IV to po switch)	
Step-down Oral route compromised? ↓ swallow, ↓ absorption Vomiting, unconscious, NPO, deteriorating clinically	If not compromised, was possibility of IV → po switch documented in chart when possible? Was IV→PO completed? ☐ Yes ☐ No
Description of Pharmacy Involvement	
Did pharmacist document? Indication Plan for Duration of Therapy Comment on streamlining/de-escalation of therapy Comment on IV to PO Step-down?	

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Example 2: St. Joseph's Healthcare Hamilton - Antimicrobial Order Form

St. Joseph's Healthcare & Hamilton

PATIENT INFORMATION

	Antimicr	obial Oral	/ Parente	eral Order	Set		
Orders Transcribed		***Use the Rest					
Date:	amił	acin, colistin, da	aptomycin, erta	apenem, linezo	lid, merope	nem***	
(yyyy/mm/dd)	Consults						
Timo	penicillin allergy test: MI) to contact Dr.					
Time:	A						
	Antimicrobial(s)						
PRINT NAME		wo agents for th	e same indicat	ion can be writ	ten on one	form***	
	Drug #1	Deser		Deute		Frequency:	
-	Name: Duration:	Dose:	-	Route	·	Frequency:	
Signature/Discipline		14 days		sify:			
Orders Scanned				лу			
Orders Scanned	Drug #2	Dose:		Route		_ Frequency:	
Date: (yyyy/mm/dd)	Duration:	Dose.	}		•	_ rrequency	
(yyyyminidd)	☐ 3 days ☐ 7 days	☐ 14 days	Other spec	ify.			
Time:							
(hh:mm)	Antimicrobial(s) to Dis						
	□	□.					
PRINT NAME	Clinical Indication						
	Treatment (select mos	t applicable)					
Signature/Discipline	Bloodstream Infection	(applicable)					
Transcription	Catheter-related	Endoc	arditis	Other sou	rce.		
Checked By	Bone Infection						
Date:	Central Nervous Syster	n (CNS) Infectio	n				
(yyyy/mm/dd)	C. difficile Infection (refe			on (CDI) Order	Set)		
Time:	Gynaecologic / Obstetri	с					
(hh:mm)	Intra-abdominal Infectio	n					
	Joint Infection						
PRINT NAME	Native joint	Prosth	etic related				
	Respiratory Tract Infect						
	Community Acquired			Bronchitis		Pharyngitis	
Signature/Discipline	Hospital Acquired P	anna an an san an San San San		Empyema		Uiral	
	Ventilator Associate	d Pneumonia (V	AP)	Fungal			
Order Written	Date:	(yyyy/mm/dd	Time:		(hh:mn	n)	
Ordered By:			Check if cour	nter signature red	quired		
Print Name	Signature		Counter Signat	ture Print Name	Pager #	Counter Signature/Discipline	
2015/04/V1						Page 1 c	
						V PatientOrderSe	

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Example 2: St. Joseph's Healthcare Hamilton - Antimicrobial Order Form (continued)

St. Jose Healthcare §	eph's Hamilton		PATIENT INF	ORMATION
Allergies:				
	Antimicrobia	al Oral / Paren	teral Order Set	
Orders Transcribed	Clinical Indication Continue	d		
Date:(yyyy/mm/dd)	Treatment (select most app			
Time: (hh:mm)		Diabetic foot infect Surgical site infection		cted ulcer
PRINT NAME	Cystitis Other, specify:	Pyelonephritis		
Signature/Discipline	Prophylaxis Pre-operative prophylaxis Gynae /OBS – Group B Strep		Post-operative prophylaxis Other, specify:	
Orders Scanned				
Date:(yyyy/mm/dd)	Microbiology Results	Previous pending o	ultures reviewed	
Time: (hh:mm) PRINT NAME Signature/Discipline Transcription Checked By Date: (yyyy/mm/dd) Time: (hh:mm) PRINT NAME Signature/Discipline	Patient Education Discuss potential for developmer Associated Diarrhea fact sheet (f		n (CDI) with patient and pro	ovide a copy of the Antibiotic-
Order Written	Date: (y	yyy/mm/dd) Time	(hh:mr	m)
Ordered By:		□ Check if c	ounter signature required	
Print Name	Signature	Counter Sig	nature Print Name Pager #	Counter Signature/Discipline
2015/04/V1		HINFABX01027		Page 2 of 2

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Poster: Assessing the Adequacy of Documentation in Patients Receiving Antibiotic Therapy

#743 Assessing the Adequacy of Documentation in Patients Receiving Antibiotic Therapy L. DeVreese, B.S.P. ¹ ; R. Zvonar, BScPhm, FCSHP ¹ ; G. Garber, MD, FRCP, FACP, FIDSA ² Harmacy Department, The Ottawa Hospital, ² Division of Infectious Diseases, Department of Medicine, The Ottawa Hospital				
Abstract	Methods	Results		
Background: Appropriate documentation related to antibiotic use has been advocated in the medical iterature and by various organizations. This retropsective chart review assessed documentation practices at The Ottawe Noisphal prior to the implementation of an antimicrobial iteratewhalp surgents. McRhodts: Three key assesses of antibiotic use were retropsectively variated to assess documentation practices for the therapy and the structure of the structure of the structure of the structure of the burger. Structure of the structure of the structure of the structure of the structure of the burger and the interded document of therapy. Each component was assessed individually and then collectively as a burdle (i.e., documentation of all three components in each chart). The secondary objectives assessed whether the three burger and the 37 medical chart weekeed. Results: Or the 37 medical chart weekeed. Results: Or the 37 medical chart weekeed. The 37 medical chart weekeed. Burger and 31 km and therapic structure of the antibiotistic was also and there of the duration of therapy chart and any structure of the 37 km and therapy documentation assessment and a pairs for the duration of therapy chart were dress precisive. Results: Or the duration of therapy chart was considered. Conductations: For specification with an antimicrobial structure therapy them of the 75 (135) charts reviewed had evidence that intravenous to red transitionity are antimicrobial stream charts the structure at our burger burger charts and charts and the theory theory theory of the 75 (135) charts reviewed had evidence that intravenous to red transitionity are antimicrobial stream and the pairs that our burger documentation metals. Burger and the antimicrobial theory are intravely theory of the 75 (135) charts are weeken had evidence that intravenous to an attaching the antimicrobial stream and the pairs that our institution. Burger and the antimicrobial theory are intravely theory of the 75 (135) charts areviewed had evidenc	 The presence or exact lay component within the medical charts was examined individually and then collectively as a bundle. Figure 1: Description of Antibiotic Care Bundle & Definitions of Appropriate Documentation Reationale Defined or suspected digmosis Photometical within 34 hours of intercibus Recorded within 34 hours of starting antibiotic therapy 	Of 47 Pharmacy Documentation Forms available for review, the rationale for antibiotic initiation was documented in 69%, S1% included evidence of reassessment, and 20% documented a plan for the duration of therapy. Twenty-three of the 75 (31%) charts reviewed had evidence that intravenous to oral transitioning was considered. Table 1: Distribution of Included Patients by Service Service n* Service 3 Rediation Oncology 3 Critical Care 3 Rediation Oncology 3		
Introduction	• Of the 289 patients identified on April 4, 2011, the first 75 meeting inclusion criteria were reviewed (Figure 2). Administing services of the patients reviewed are listed in Table 1. Figure 2: Chart Selection Process 289 (charts	***Number of patients Discussion		
Promote accountability Add sessment by antimicrobial stewardship programs Antimicrobial 'care bundles' [evidence based actions that, when collectively performed, ensure consistent delivery of best possible care] have been proposed in the literature. ¹³ The care bundle concept may be useful to assess key elements of antibiotic documentation in medical charts. Dbjectives Primary :	Zoby Charts identified and randomized business and backades "(int 23) testates dank dank dank dank dank dank dank dank	• Important details resting to antibiotic use are absent in many medical charts and inconsistencies exist in documentation practices. • Promoting consistent antibiotic documentation through an antibiotic care bundle approach may: • Import entimicroalist prescribing • Import entimicroalist prescribing • Recognising that there is an opportunity for improvement, it is hopeful that these results will generate awareness and inspire changes in documentation practices.		
 To describe the extent in which key processes of antibiotic use are documented in medical charts at The Ottawa Hospial (TOH). Secondary: To assess whether the primary bundle components are recorded on the Pharmacy Clinical Documentation Form. 	 Figure 3 describes the percentage of charts with adequate documentation of each bundle component. Documentation of all three bundle components was observed in 16 of 75 charts (21%). 	Conclusion		
To determine the proportion of patients in whom consideration of intravenous (IV) to oral transitioning was documented. Methods	Figure 3: Proportion of Charts with Adequate Documentation (n=75) 100 90 76 70	Key aspects of antimicrobial use are inconsistently documented in medical charts at our institution, particularly relating to anticipated duration of therapy. Educational efforts are required to increase awareness and ensure systematic antibiotic documentation practices.		
• Using the Care Bundle concept, we developed a simplified antibiotic care bundle consisting of 3 components: 1) Rationale for antibiotics 2(Evidence of antimicrobial reasessment 3) Plan for duration of therapy • Each component of the bundle was associated with a specific time frame which facilitated assessment of antibiotic commention (Figure 1). 10 Using a convenience sample, a single investigator (LD) applies the care bundle in an observational, retrospecific relay care and or 1 = 1000-bet terity care assassment teaching bogital. • Patients were eligible for inclusion if they had received IV antibiotic therapy for at least 72 hours. • Patients were eligible for inclusion if they had received IV antibiotic therapy for at least 72 hours.	60 Percent 50 40 30 20 10 Rationale Reassessment Duration Bundle	References 1) Coole FJ, Holmes AH. The missing care bundle: antibiotic prescribing in hospitals. Int J Antimicrob Agents 2007;30:25-29. 2) Pucini C, Detres S, Aggarwali I, Nathwani D, Davey P. Design of a Yary 3 bundle' to improve the reassessment of inpatient empirical antibiotic prescriptions. J Antimicrob Chemother 2008; 81:1384-88.		

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