**Metaanalysis – Systematic Review**

**Potential PURL Review Form**

**PURL Jam Version**

**Version #12 Sept 21, 2010**

**A simple way to reduce catheter-associated UTIs**

***J Fam Pract*. 2014;63:E10-E12.**

**PURLs Surveillance System**

**Family Physicians Inquiries Network**

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| **SECTION 1: Identifying Information for Nominated Potential PURL** **[to be completed by PURLs Project Manager]** |
| **1.** Citation  | Antibiotic prophylaxis for urinary tract infections after removal of urinary catheter: meta-analysis.Marschall J, Carpenter CR, Fowler S, Trautner BW; CDC Prevention Epicenters Program.BMJ. 2013 Jun 11;346:f3147. doi:10.1136/bmj.f3147. Review.PMID: 23757735 |
| **2.** Hypertext link to PDF of full article  | http://www.ncbi.nlm.nih.gov/pubmed/23757735 |
| **3.** First date published study available to readers  | 6/11/13 |
| **4.** PubMed ID  | 23757735 |
| **5.** Nominated By  | Jim Stevermer Other:  |
| **6.** Institutional Affiliation of Nominator  | University of Missouri Other:  |
| **7.** Date Nominated  | 8/19/13 |
| **8.** Identified Through  | InfoPOEMs Other:  |
| **9.** PURLS Editor Reviewing Nominated Potential PURL | Kate Rowland |
| **10.** Nomination Decision Date  | 8/29/13 |
| **11.** Potential PURL Review Form (PPRF) Type  | Meta-analysis |
| **12.** Other comments, materials or discussion  |  |
| **13.** Assigned Potential PURL Reviewer  | Liz Nguyen, MD |
| **14.** Reviewer Affiliation  | University of Chicago Other:  |
| **15.** Date Review Due  | 10/10/13 |
| **16.** Abstract  | OBJECTIVE:To determine whether antibiotic prophylaxis at the time of removal of a urinary catheter reduces the risk of subsequent symptomatic urinary tract infection.DESIGN:Systematic review and meta-analysis of studies published before November 2012 identified through PubMed, Embase, Scopus, and the Cochrane Library; conference abstracts for 2006-2012 were also reviewed.INCLUSION CRITERIA:Studies were included if they examined antibiotic prophylaxis administered to prevent symptomatic urinary tract infection after removal of a short term (≤14 days) urinary catheter.RESULTS:Seven controlled studies had symptomatic urinary tract infection after catheter removal as an endpoint; six were randomized controlled trials (five published; one in abstract form) and one was a non-randomized controlled intervention study. Five of these seven studies were in surgical patients. Studies were heterogeneous in the type and duration of antimicrobial prophylaxis and the period of observation. Overall, antibiotic prophylaxis was associated with benefit to the patient, with an absolute reduction in risk of urinary tract infection of 5.8% between intervention and control groups. The risk ratio was 0.45 (95% confidence interval [CI] 0.28-0.72). The number needed to treat to prevent one urinary tract infection was 17 (12 to 30).CONCLUSIONS:Patients admitted to hospital who undergo short term urinary catheterization might benefit from antimicrobial prophylaxis when the catheter is removed as they experience fewer subsequent urinary tract infections. Potential disadvantages of more widespread antimicrobial prophylaxis (side effects and cost of antibiotics, development of antimicrobial resistance) might be mitigated by the identification of which patients are most likely to benefit from this approach. |
| **17.** Pending PURL Review Date |  |
| **sECTION 2: Critical Appraisal of Validity****[to be completed by the Potential PURL Reviewer]** |
| **1.** What types of studies are included in this review? | Other Other: 5 published RCT, 1 unpublished RCT, 1 non-randomized controlled study |
| **2.** What is the key question addressed by this review? Summarize the main conclusions and any strengths or weaknesses. | Does antibiotic prophylaxis at time of catheter removal decrease risk of symptomatic UTIResults: reduction in symptomatic UTI with antibiotic prophylaxis (risk ratio 0.45% [95% CI 0.28-0.72]). Absolute reduction of symptomatic UTI was 5.8% (31/665 [4.7%] in antibiotic prophylaxis group versus 90/855 (10.5%) in control group)NNT 17 (95% CI 12-30), with low heterogeneity (I3=16%). |
| **3.** Study addresses an appropriate and clearly focused question - ***select one*** | [x]  Well covered [ ]  Not addressed[ ]  Adequately addressed [ ]  Not reported[ ]  Poorly addressed [ ]  Not applicableComments:  |
| **4.** A description of the methodology used is included. | [x]  Well covered [ ]  Not addressed[ ]  Adequately addressed [ ]  Not reported[ ]  Poorly addressed [ ]  Not applicableComments: 2 separate queries: systematic review of randomized and nonrandomized controlled trials (Pubmed 1947-Nov 2012, conference abstracts 2006-2012, and Google), medical librarian created systematic search strategy (Embase, Scopus, Cochrane Library, clinicaltrials.gov, and Pubmed). |
| **5.** The literature search is sufficiently rigorous to identify all the relevant studies. | [x]  Well covered [ ]  Not addressed[ ]  Adequately addressed [ ]  Not reported[ ]  Poorly addressed [ ]  Not applicableComments:  |
| **6.** Study quality is assessed and taken into account. | [x]  Well covered [ ]  Not addressed[ ]  Adequately addressed [ ]  Not reported[ ]  Poorly addressed [ ]  Not applicableComments: Discussed several types of bias for the included studies (detection, performance, selection, attrition), several studies missing sample size calculations, different endpoints (bacteriuria vs symptomatic UTI). |
| **7.** There are enough similarities between selected studies to make combining them reasonable. | [x]  Well covered [ ]  Not addressed[ ]  Adequately addressed [ ]  Not reported[ ]  Poorly addressed [ ]  Not applicableComments: Variation in antibiotic type, duration of antibiotic, duration of monitoring after catheter removal although low calculated heterogeneity. |
| **8.** Are patient oriented outcomes included? If yes, what are they? | Yes- symptomatic UTI is a patient oriented outcome. |
| **9.** Are adverse effects addressed? If so, how would they affect recommendations? | Yes- discussed risk of antibiotic resistance with prophylxis antibiotic. Only 2 studies recorded adverse events (drug toxicities, allergic reaction, C. Difficile) |
| **10.** Is funding a potential source of bias? If yes, what measures (if any) were taken to insure scientific integrity?  | No- funding from1. VA career development award2. Houston VA health services research and development center of excellence3. Building Interdisciplinary Research Careers in Women's Health award (NIH)4. CDC Prevention Epicenters Program grant5. Barnes-Jewish Hospital Patient Safety and Quality Fellowship Program6. Washington University's Institute for Clinical and Translational Science |
| **11.** To which patients might the findings apply? Include patients in the meta-analysis and other patients to whom the findings may be generalized. | Postsurgical patients with short-term catheterization (<14 days.) |
| **12.** In what care settings might the findings apply, or not apply? | Hospital Setting (postsurgical). |
| **13.** To which clinicians or policy makers might the findings be relevant? | Inpatient internists, family physicians (inpatient), surgeons. |
| **SECTION 3: Review of Secondary Literature****[to be completed by the Potential PURL Reviewer]** |
| **Citation Instructions** | For UpTo Date citations, use style modified from <http://www.uptodate.com/home/help/faq/using_UTD/index.html#cite> & AMA style. Always use Basow DS as editor & current year as publication year.EXAMPLE: Auth I. Title of article. {insert author name if given, & search terms or title.} In: Basow DS, ed. UpToDate [database online]. Waltham, Mass: UpToDate; 2009. Available at: <http://www.uptodate.com>.  {Insert dated modified if given.} Accessed February 12, 2009. {whatever date PPRF reviewer did their search.}For DynaMed, use the following style:Depression: treatment {insert search terms or title}. In: DynaMed [database online]. Available at: <http://www.DynamicMedical.com>. Last updated February 4, 2009. {Insert dated modified if given.}  Accessed June 5, 2009.{search date} |
| **1.** DynaMed excerpts |  |
| **2.** DynaMed citation/access date | Title. Catheter associated UTI Author. In: DynaMed [database online]. Available at: [www.DynamicMedical.com](http://www.DynamicMedical.com) Last updated:9/23/13. Accessed 10/1/2013 |
| **3.**  Bottom line recommendation or summary of evidence from DynaMed (1-2 sentences) | Antibiotic prophylaxis is not recommended to prevent CAUTI. |
| **4.** UpToDate excerpts |  |
| **5.** UpToDate citation/access date | Always use Basow DS as editor & current year as publication year.Title. Urinary tract infection associated with urethral catheters Author. Thomas Fekete, MD In: UpToDate [database online]. Available at: <http://www.uptodate.com>. Last updated:7/22/2013. Accessed 10/1/2013 |
| **6.**  Bottom line recommendation or summary of evidence from UpToDate (1-2 sentences) | Antibiotic prophylaxis not routinely recommended for CAUTI. |
| **7.** PEPID PCP excerpts[www.pepidonline.com](http://www.pepidonline.com)username: fpinauthorpw: pepidpcp | Not searched |
| **8.** PEPID citation/access data | Author. Title. In: PEPID [database online]. Available at: <http://www.pepidonline.com>. Last updated:. Accessed |
| **9.** PEPID content updating | 1. Do you recommend that PEPID get updated on this topic?[ ]  Yes, there is important evidence or recommendations that are missing[ ]  No, this topic is current, accurate and up to date.If yes, which PEPID Topic, Title(s):2. Is there an EBM Inquiry (HelpDesk Answers and Clinical Inquiries) as indicated by the EB icon () that should be updated on the basis of the review?[ ]  Yes, there is important evidence or recommendations that are missing[ ]  No, this topic is current, accurate and up to date.If yes, which Evidence Based Inquiry(HelpDesk Answer or Clinical Inquiry), Title(s):  |
| **10.** Other excerpts (USPSTF; other guidelines; etc.) |  |
| **11.** Citations for other excerpts |  |
| **12.**  Bottom line recommendation or summary of evidence from Other Sources (1-2 sentences) |  |
| **SECTION 4: Conclusions** **[to be completed by the Potential PURL Reviewer]** **[to be revised by the Pending PURL Reviewer as needed]** |
| **1.** **Validity:** How well does the study minimize sources of internal bias and maximize internal validity? | Give one number on a scale of 1 to 7(1=extremely well; 4=neutral; 7=extremely poorly)[ ] 1 [ ] 2 [x] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7  |
| **2.** If 4.1 was coded as 4, 5, 6, or 7, please describe the potential bias and how it could affect the study results. Specifically, what is the likely direction in which potential sources of internal bias might affect the results? | Low heterogeneity, some publication bias, concerns about allocation and randomization |
| **3. Relevance:** Are the results of this study generalizable to and relevant to the health care needs of patients cared for by “full scope” family physicians?  | Give one number on a scale of 1 to 7(1=extremely well; 4=neutral; 7=extremely poorly)[ ] 1 [x] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7  |
| **4.** If 4.3 was coded as 4, 5, 6, or 7,lease provide an explanation. | Only 2 of the studies included medical patients (vs surgical patients in the remaining studies) |
| **5. Practice changing potential:** If the findings of the study are both valid and relevant, does the practice that would be based on these findings represent a change from current practice? | Give one number on a scale of 1 to 7(1=definitely a change from current practice; 4=uncertain; 7=definitely not a change from current practice)[ ] 1 [x] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7  |
| **6.** If 4.5 was coded as 1, 2, 3, or 4, please describe the potential new practice recommendation. Please be specific about what should be done, the target patient population and the expected benefit. | Cipro, Bactrim, or Macrobid for 1 to 3 doses prior to catheter removal |
| 1. **Applicability to a Family Medical Care Setting:**

Is the change in practice recommendation something that could be done in a medical care setting by a family physician (office, hospital, nursing home, etc), such as a prescribing a medication, vitamin or herbal remedy; performing or ordering a diagnostic test; performing or referring for a procedure; advising, educating or counseling a patient; or creating a system for implementing an intervention? | Give one number on a scale of 1 to 7(1=definitely could be done in a medical care setting; 4=uncertain; 7=definitely could not be done in a medical care setting) [x] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7  |
| **8.** If you coded 4.7 as a 4, 5, 6 or 7, please explain.  | Easy to give antibiotics in hospital setting |
| **9. Immediacy of Implementation:**  Are there major barriers to immediate implementation? Would the cost or the potential for reimbursement prohibit implementation in most family medicine practices? Are there regulatory issues that prohibit implementation? Is the service, device, drug or other essentials available on the market? | Give one number on a scale of 1 to 7(1=definitely could be immediately applied; 4=uncertain; 7=definitely could not be immediately applied) [x] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7  |
| **10.** If you coded 4.9 as 4, 5, 6, or 7, please explain why. | Antibiotics easily accessible |
| **11. Clinical meaningful outcomes or patient oriented outcomes:**  Are the outcomes measured in the study clinically meaningful or patient oriented?  | Give one number on a scale of 1 to 7(1=definitely clinically meaningful or patient oriented; 4=uncertain; 7=definitely not clinically meaningful or patient oriented) [x] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7  |
| **12.** If you coded 4.11 as a 4, 5, 6, or 7, please explain why. | Preventing UTI is patient-oriented |
| **13.** In your opinion, is this a Pending PURL? Criteria for a Pending PURL:* Valid: Strong internal scientific validity; the findings appears to be true.
* Relevant: Relevant to the practice of family medicine
* Practice changing: There is a specific identifiable new practice recommendation that is applicable to what family physicians do in medical care settings and seems different than current practice.
* Applicability in medical setting:
* Immediacy of implementation
 | Give one number on a scale of 1 to 7(1=definitely a Pending PURL; 4=uncertain; 7=definitely not a Pending PURL) [ ] 1 [x] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7  |
| **14.** Comments on your response in 4.13 | Not sure which antibiotic to recommend and for how long |
| **SECTION 4.1: Diving for PURLs** **[optional for the potential PURL reviewer -if you wish to be the author on the summary]** |
| **1.** Study Summary- Please summarize the study in 5-7 sentences |  |
| 1. Criteria- note yes or no for those which this study meets

 | RELEVENT - VALID - CHANGE IN PRACTICE- MEDICAL CARE SETTING - IMMEDIATELY APPLICABLE - CLINICALLY MEANINGFUL -  |
| **3.** Bottom Line- one –two sentences noting the bottom line recommendation  |  |
| **4.** Title Proposal |  |
| **SECTION 5: Editorial Decisions** **[to be completed by the FPIN PURLs Editor or Deputy Editor]** |
| **1.** FPIN PURLs editorial decision(select one) | [ ]  1 Pending PURL Review—Schedule for Review [ ]  2 Drop [ ]  3 Pending PURL |
| **2.** Follow up issues for pending PURL Reviewer |  |
| **3.** FPIN PURLS Editor making decision  | [ ] 1 Bernard Ewigman[ ] 2 Sarah-Anne Schumann[ ] 3 John Hickner[ ] 4 Kate Rowland |
| **4.** Date of decision |  |
| **5.** Brief summary of decision |  |
| **SECTION 6: Survey Questions for SERMO, PURLs Instant Polls and Other Surveys****[To be completed by the PURLs Survey Coordinator and PURLs Editor]** |
| **1.** Current Practice Question for Surveys |  |
| **2.** Barriers to Implementation Question for Surveys |  |
| **3.** Likelihood of Change Question for Surveys |  |
| **4.** Other Questions for Surveys |  |
| **SECTION 7: Variables for Secondary Database Analyses**  |
| **1.** Population: Age, gender, race, ethnicity |  |
| **2.** Diagnoses |  |
| **3.** Drugs or procedures |  |
| **SECTION 8: Pending PURL Review Assignment****[to be completed by PURLs Project Manager]** |
| **1.** Person Assigned for  Pending PURL Review |  |
| **2.** Date Pending PURL Review is due |  |
| **SECTION 9: Pending PURL Review** **[to be completed by PURLs Pending PURL Reviewer]** |
| **1.** Did you address the follow up issues identified at the PURL Jam (Section 5.2). Add comments as needed. | [ ]  Yes[ ]  No[ ]  Not applicable Comments:  |
| **2.** Did you review the Sermo poll & Instant Poll results (if available)? Add comments as needed. | [ ]  Yes[ ]  No[ ]  Not applicable Comments:  |
| **3.** Did you modify Sections 2, 3, or 4? Add comments as needed. | [ ]  Yes[ ]  No[ ]  Not applicable Comments:   |

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| **SECTION 10: PURL Authoring Template** **[to be completed by the assigned PURL Author]** |
| **Author Citation Information** (Name, Degrees, Affiliation) |  |
| **1.** Practice Changer |  |
| **2.** Illustrative Case |  |
| **3.** Clinical Context |  |
| **4.** Study Summary |  |
| **5.** What’s New |  |
| **6.** Caveats |  |
| **7.** Challenges to Implementation |  |
| **8.**  Acknowledgment Sentence | The PURLs Surveillance System is supported in part by Grant Number UL1RR024999 from the National Center For Research Resources, a Clinical Translational Science Award to the University of Chicago. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Center For Research Resources or the National Institutes of Health.**If using UHC data:**We acknowledge Sofia Medvedev of University HealthSystem Consortium (UHC) in Oak Brook, IL for analysis of the National Ambulatory Medical Care Survey data. |
| **9.** References |  |