Reviewer's report

Title: Appropriate Antibiotic Use for Patients with Complicated Urinary Tract Infections in 38 Dutch Hospital Departments: a Retrospective Study of Variation and Determinants

Version: 2

Date: 21 July 2015

Reviewer: Cecilia Stålsby Lundborg

Reviewer's report:

This is a well written manuscript reporting an interesting study. Some comments noted below

Major Compulsory Revisions

The abstract is not giving full justification to the paper. Please make it more clear. Examples are that sex of included patients may be mentioned and the sentence 'In particular patient characteristics were associated with less appropriate antibiotic treatment.' What is meant? These two are examples, please revise the abstract in detail.

Please be consistent throughout the manuscript with the terminology. In the beginning 'Antimicrobial' (Always this confusion antibiotic/antimicrobial, better to be specific if not antivirals, antifungals and antiprotozoal drugs are included) is often used while I think what is refereed to is 'antibiotic'. Also towards the end the term used is 'antibiotic'

In the definition it is said 'We defined a complicated UTI as a UTI with one of the following characteristics: male gender, pregnancy, any functional or anatomical abnormality of the urinary tract, immunocompromising disease or medication, or a UTI with symptoms of tissue invasion or systemic infection'. Should it be 'one or more' or was it always only one?

The data from records were collected in 2009 (for the year before), the questionnaire done in 2010 and now it is 2015, please explain the delay. Also please explain what was asked in 2010, the present situation at that point or the situation during the study period.

Line 251-254 it is said 'Tailor antibiotic treatment on the basis of culture results At departments where internal medicine physicians or urologists received feedback about pathogen-directed therapy after determination of the blood or urine culture results, patients received less culture-guided, tailored therapy.' This is quite difficult to understand. It is slightly addressed in the discussion but a more indepth discussion about this would be warranted.
Further in line 257 'Treatment duration was less appropriate in female patients: in general their treatment durations were shorter than recommended in the national and local hospital guidelines.' It would be good if the content of the national and some local guidelines would be mentioned somewhere. As stated in discussion the movement is now towards shorter treatment duration.

Line 264 'However, quality improvement projects in the past three years concerning antibiotic prescribing were inversely associated with this QI. This negative association was also shown for the QI 'Treat every man in accordance with the local guideline'. Also this would need some interpretation.

Line 313, difficult to understand, isn't it so that males more or less by definition is considered complicated when it comes to UTI?

So discussion including also methodological considerations need to be modified.

Minor Essential Revisions
Please read carefully and correct any small mistake found.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests.