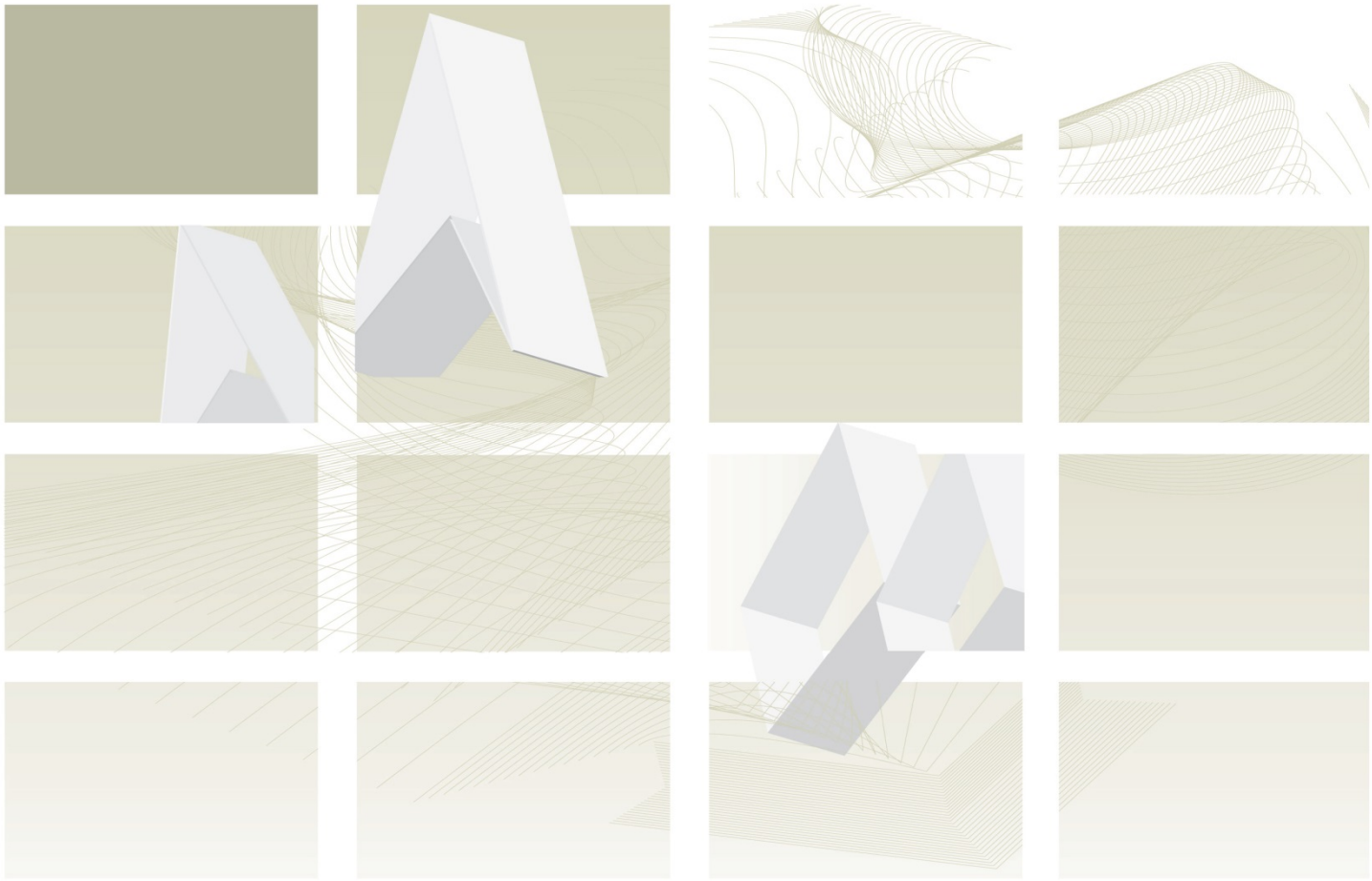
Public Health England

NHS

UK Standards for Microbiology Investigations

Review of users' comments received by
Working group for microbiology standards in clinical bacteriology

B 41 Investigation of urine



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Recommendations are listed as ACCEPT/ PARTIAL ACCEPT/DEFER/ NONE or PENDING

Consultation: 07/09/2015 – 05/10/2015

Version of document consulted on: B 41dj+ 07/09/2015 – 24/09/2015

B 41dl+ 25/09/2015 – 05/10/2015

Proposal for changes

Comment number	1		
Date received	08/09/2015	**Lab name**	University Hospitals of Leicester NHS Trust
Section	Page 10 of 46		
Comment			
Pyonephrosis should be Pyelonephritis.			
Evidence			
Pyonephrosis is disease of the kidney and Pyelonephritis is the inflammation (infection) of the kidney. Source: medical books, dictionaries of Medical Terminology, etymology of Greek words.			
Recommended action	**ACCEPT** The SMI has been updated.		

Comment number	2		
Date received	11/09/2015	**Lab name**	Salford Royal NHS Foundation Trust
Section	4.7.1 Antimicrobial Susceptibility Testing and Reporting Table		
Comment			
a. *S. saprophyticus* row - Trimethoprim: Add penicillin? b. *S. aureus* and other Coagulase Negative Staphylococci row - Erythromycin: Not useful for urine. Replace with trimethoprim? c. *S. aureus* and other Coagulase Negative Staphylococci row - Penicillin: Unlikely to be useful? d. Group B Beta-Haemolytic Streptococci row - Clindamycin and Erythromycin: Not useful for urine.			
Recommended action	a. **ACCEPT** The SMI has been updated. b. **ACCEPT** The SMI has been updated.		

	c. **NONE** The antibiotic is there just for consideration. d. **PARTIAL ACCEPT** Clindamycin is now included which removes the need for Erythomycin.

Comment number	3		
Date received	23/09/2015	**Lab name**	Eumedica
Section	4.7 Antimicrobial susceptibility testing		
Comment			
I would like to comment on chapter 4.7. antimicrobial susceptibility testing and more particularly on table 4.7.1. I have acknowledged that due to a clerical error the version of the table presented in this document is incorrect but, while awaiting for the final version, I would like to emphasize the absolute need to add temocillin in this table for testing against Enterobacteriaceae. There are different reasons for such a request. First of all, temocillin is a narrow spectrum antibiotic with directed activity against the Enterobacteriaceae, the main organisms found in urinary tract infections. Secondly, temocillin is stable to most beta-lactamases including ESBL and AmpC enzymes which are frequently found in Enterobacteriaceae and against which very few antibiotics remain active. In this context, temocillin is now considered as carbapenem-sparing agent which is supported by in vitro, in vivo and clinical data. Finally, temocillin is mainly excreted by the urines with around 80% of the dose found in the urines in 24h. This pharmacokinetic parameter also support the use of temocillin for treating such infection. The United Kingdom is one of the few countries which has the opportunity to use this drug and it is unfortunate that it is not use more in clinical practice. All guidelines, including ESPAUR document, start smart then focus, etc... support the use of narrow spectrum antibiotics such as temocillin. To implement such guidelines, it is important that those antibiotics are tested at the same time as broad spectrum agent (carbapenem). Without this, how people will be able to spare the use of carbapenems?		
Recommended action	**ACCEPT** The SMI has been updated to include Temocillin.		

Comment number	4		
Date received	25/09/2015	**Lab name**	Royal Free London NHS Foundation Trust
Section	4.7		
Comment			
Enterobacteriaceae should be tested against Temocillin and Aztreonam. These drugs			

offer invaluable therapeutic options given that:

a. PHE advise against use of ciprofloxacin and cephalosporins because of their association with *C. difficile*.
b. Aminoglycosides are often unsuitable, particularly in renal impairment (AKI).
c. Piperacillin/tazobactam is best reserved for infections where anti-pseudomonal activity is required.
d. Carbapenems are best spared wherever possible given rising resistance rates.
e. When an IV option is required, fosfomycin is not ideal.
f. Co-amoxiclav resistance rates are around 30%.

Evidence

Balakrishnan I, Awad-El-Kariem FM, Aali A, Kumari P, Mulla R, Tan B, Brudney D, Ladenheim D, Ghazy A, Khan I, Virgincar N, Iyer S, Carryn S and Van De Velde S. Temocillin use in England: clinical and microbiological efficacies in infections caused by extended-spectrum and/or derepressed AmpC β-lactamase producing Enterobacteriaceae. J Antimicrob Chemother 2011;66:2628-2631.

Livermore DM, Tulkens PM. Temocillin revived. J Antimicrob Chemother 2009; 63: 243-5.

Kennedy H et al. Reduction in broad-spectrum Gram-negative agents by diverse prescribing of aztreonam within NHS Tayside J. Antimicrob. Chemother. (2015) 70 (8): 2421-2423.

Financial barriers

No.

Health benefits

No.

Recommended action	**ACCEPT** The SMI has been updated to include Temocillin and Aztreonam.

Comment number	5		
Date received	26/09/2015	**Lab name**	AMRHAI Ref Unit
Section	4.7.1		

Comment

a. Given that many labs use disc testing, why are fewer than 6 antibiotics listed in the primary panels? Surely it makes sense to recommend full sets of 6 drugs even if reporting should then be limited to a subset of them.
b. Why is amp / amox recommended in primary set but not co-amoxiclav? Many Enterobacteriaceae have acquired or intrinsic R to the unprotected agents. Consider need to test +/- clav in primary set.

c. Suggest the document recommends that a carbapenem (MEM) should be included on primary panel so that we are consistent with the developing carbapenemase SMI (B 60?); all Gnegs to be tested for reduced carbapenem susceptibility / or resistance. d. Temocillin may be considered, has urinary breakpoint, and yet does not feature even as an unreported agent in the recommended testing panel. Consider adding to secondary panel.	
Evidence	
See UK NEQAS returns - top methods used by participants. See SMI B 60 (in development). See BSAC susceptibility testing website.	
Recommended action	a. **NONE** The aim of the table is not to recommend specific testing panels but to suggest which antibiotics should be considered in testing. b. **ACCEPT** A cross reference to B 60 – Screening and Detection of Bacteria with Carbapenem-Hydrolysing β-lactamases (Carbapenemases) has been added. c. **ACCEPT** A cross reference to B 60 – Screening and Detection of Bacteria with Carbapenem-Hydrolysing β-lactamases (Carbapenemases) has been added. d. **ACCEPT** The SMI has been updated to include Temocillin.

Comment number	6		
Date received	28/09/2015	**Lab name**	Imperial College Healthcare NHS Trust
Section	4.7.1 - Page 31		
Comment			
I am surprised there is no mention of Temocillin. As you are aware, Temocillin does provide a very good Gram negative cover against ESBL and AmpC producing organisms, sparing carbapenems. I would definitely add Temocillin to the list of supplementary testing. Please do not hesitate to contact me should you require any further information.			
Evidence			
J. Antimicrob. Chemother. (2010) 65 (suppl 3): iii25-iii33. doi: 10.1093/jac/dkq298.			
Financial barriers			

Not aware of any.	
Health benefits	
Not aware of any.	
Recommended action	**ACCEPT** The SMI has been updated to include Temocillin.

Comment number	7		
Date received	30/09/2015	**Lab name**	Lewisham and Greenwich
Section	4.7		
Comment			
a. Agents to be included within primary test panel: Should include Pivmecillinam. b. Agents to be considered for supplementary testing: Should include Temocillin and Aztreonam.			
Evidence			
a. Emerging clinical role of pivmecillinam in the treatment of urinary tract infection in the context of multidrug-resistant bacteria JAC 2013. b. Clostridium difficile infection: risk with broad-spectrum antibiotics NICE 2015.			
Financial barriers			
No.			
Health benefits			
No.			
Recommended action	a. **NONE** The document contains Mecillinam. b. **ACCEPT** The SMI has been updated to include Temocillin and Aztreonam.		

Comment number	8		
Date received	01/10/2015	**Lab name**	PHE
Section	Antibiotic		
Comment			
Temocillin missing.			

Evidence	
Key antimicrobial agent for UTI.	
Health benefits	
I'm not sure I understand this question in the context of urine infection.	
Recommended action	**ACCEPT** The SMI has been updated to include Temocillin and Aztreonam.

Comment number	9		
Date received	01/10/2015	**Lab name**	Not stated
Section	4.7.1 Antimicrobial Susceptibility Testing and Reporting Table		
Comment			
Although there are many useful antibiotics listed as agents to be tested, Temocillin and Aztreonam are missing from this list. As a Trust, we use Temocillin as a Carbapenem-sparing agent and also in place of Tazocin (as Temocillin is less C.diffogenic) whenever possible. It is also part of our empirical antibiotic regimen for urosepsis. Because we use Temocillin very regularly, it is included in the 2nd line antibiotic susceptibility testing panel. Adding Temocillin and Aztreonam to the list of antibiotics to be considered may help promoting antimicrobial stewardship.			
Evidence			
Livermore DM1, Tulkens PM. Temocillin revived. J Antimicrob Chemother. 2009 Feb;63(2):243-5. doi: 10.1093/jac/dkn511. Epub 2008 Dec 18.			
Recommended action	**ACCEPT** The SMI has been updated to include Temocillin and Aztreonam.		

Comment number	10		
Date received	05/10/2015	**Lab name**	Ashford and St Peter's NHS foundation Trust
Section	Antimicrobial susceptibility testing page 31-32		
Comment			
a. Under Enterobacteriaceae: I am surprised that Temocillin is not considered for supplementary testing as its very stable against ESBLs and AMPC and testing is happening in many UK centres already where it's used for that purpose and other indications in order to preserve Carbapenems and Piperacillin/tazobacatm and reduce Antimicrobial resistance.			

b. Also I am surprised that Aztreonam is not there also. c. Mecillinam should perhaps be there as it is an oral option. d. Co-amoxiclav too as amoxicillin and ampicillin have higher level of resistance. e. Nothing is under CPE which is a new emerging Global threat.	
Evidence	
Many UK labs including our centre test for Temocillin, Aztreonam and Mecillinam. The evidence is in the following published references: Livermore et.al; Temocillin revived : Journal of Antimicrobial Chemotherapy (2009) 63, 243-245 Balakrishnan et.al; Temocillin use in England: clinical and microbiological efficacies in infections caused by extended-spectrum and/or derepressed AmpCb-lactamase-producing Enterobacteriaceae :J Antimicrob Chemother 2011; 66: 2628-2631 Habayeb et.al; Amoxicillin plus temocillin as an alternative empiric therapy for the treatment of severe hospital-acquired pneumonia: results from a retrospective audit: Eur J Clin Microbiol Infect Dis. 2015 Aug;34(8):1693-9.	
Financial barriers	
No.	
Health benefits	
No.	
Recommended action	a. **ACCEPT** The SMI has been updated to include Temocillin. b. **ACCEPT** The SMI has been updated to include Aztreonam. c. **NONE** Mecillinam is present. d. **ACCEPT** A cross reference to B 60 – Screening and Detection of Bacteria with Carbapenem-Hydrolysing β-lactamases (Carbapenemases) has been added. e. **ACCEPT** A cross reference to B 60 – Screening and Detection of Bacteria with Carbapenem-Hydrolysing β-lactamases (Carbapenemases) has been added.

Comment number	11		
Date received	05/10/2015	**Lab name**	GHNHSFT/RCPATH
Section	4.7		

Comment	
In the era of carbapenem sparing and CDI target driven healthcare it amazes that Temocillin has not been included in the panel of agents to be considered for supplementary testing for urine.	
Evidence	
CMO Report Balakrishnan et al. Temocillin use in England: clinical and microbiological efficacies in infections caused by extended-spectrum and/or derepressed AmpC β-lactamase-producing Enterobacteriaceae. JAC 2011 Nov;66(11):2628-31 Woodford N et al. In vitro activity of temocillin against multidrug-resistant clinical isolates of Escherichia coli, Klebsiella spp. and Enterobacter spp., and evaluation of high-level temocillin resistance as a diagnostic marker for OXA-48 carbapenemase. JAC Sept 29 Paterson DL and Doi Y. Activity of Temocillin against KPC-Producing Klebsiella pneumoniae and Escherichia coli AAC 2009 53(6) Habayeb H et al. Amoxicillin plus temocillin as an alternative empiric therapy for the treatment of severe hospital-acquired pneumonia: results from a retrospective audit. Eur J Clin Microbiol Infect Dis 2015 Aug 34(8) - evidence of less all cause diarrhoea and less CDI Guidance for Carbapenem-resistant enteriobacteriaceae (CRE) 2012. CDC guidance to reduce multi-drug resistant gram negative bacteria (mdrgnb) infections - Scottish Antimicrobial Prescribing Group and SMC guidance October 2013 Pallett A & Hand K. Complicated urinary tract infections: practical solutions for the treatment of multiresistant Gram-negative bacteria JAC 2010 65 Suppl3	
Financial barriers	
Yes related to carbapenem prescribing restrictions and targets.	
Health benefits	
No.	
Recommended action	**ACCEPT** The SMI has been updated to include Temocillin and Aztreonam.

Targeted questions

Do you agree with the concept of including antimicrobial susceptibility testing and reporting tables in SMIs?		
Date received	**Lab name**	**Comment**
23/09/2015	Eumedica	Yes.
25/09/2015	Royal Free London NHS Foundation Trust	Yes - useful guide for prioritisation.
26/09/2015	AMRHAI Ref Unit	Yes - one of the objectives for PHE towards affecting the UK AMR Strategy is to achieve better standardisation of

		antibiotic panels tested. Strong recommendations made through the SMI documents will help this.
28/09/2015	Imperial College Healthcare NHS Trust	Yes - yes, it will help to standardize testing across the country.
30/09/2015	Lewisham and Greenwich	Yes - agree in principle but needs to allow room for changes based on local sensitivity pattern and prescribing guidelines.
01/10/2015	PHE	No - I feel they should default to the expert guidance already provided by EUCAST and BSAC as they are updated more frequently than SMI documents. National and European guidance is responsive to change and encourages surveillance; this guidance is limited and almost discourages the testing of a wider range of agents.
01/10/2015	Not stated	Yes.
05/10/2015	Ashford and St Peter's NHS foundation Trust	Yes - I think it's highly important document to produce and terrific piece of work but it will be great if you incorporate our comments please.
05/10/2015	GHNHSFT/RCPATH	Yes - easy to find and access.

Do you agree with the content of the antimicrobial susceptibility testing and reporting table in this SMI?		
Date received	**Lab name**	**Comment**
23/09/2015	Eumedica	No.
25/09/2015	Royal Free London NHS Foundation Trust	No - see comment 4.
26/09/2015	AMRHAI Ref Unit	No - see comment 5.
28/09/2015	Imperial College Healthcare NHS Trust	No – see comment 6.
30/09/2015	Lewisham and Greenwich	Yes - also standard reporting comments.

01/10/2015	PHE	No - as described above I don't feel that antimicrobial testing guidance should be included. Were the tables of agents to be tested and reported based on national surveillance information? HPA gathered UTI data from all the Vitek machines at regional labs for 2 years, did this show any evidence to justify the range of agents tested. Augmentin R is not a specific enough marker for CPE and would result in far too much supplementary testing. Where is the evidence for this comment? All national and internal guidance suggests screening for CPE using Mer or Ert; indicating that this guidance is already out of step with current practice.
05/10/2015	Ashford and St Peter's NHS foundation Trust	Yes - in general yes with the exception of NOT including temocillin susceptibility testing and CPE.
05/10/2015	GHNHSFT/RCPATH	No – comment 11.

Respondents indicating they were happy with the contents of the document

Overall number of comments: 1			
Date received	02/09/2015	**Lab name**	Microbiology at Hairmyres Hospital