Public Health England

Protecting and improving the nation's health

Diagnosis of urinary tract infections

Quick reference tool for primary care: for consultation and local adaptation

Review of users' comments received by steering group for the review and development of diagnosis of urinary tract infections quick reference tool for primary care

About Public Health England

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These tables include the responses received over the consultation period. Actions are based on individual comments sent by the reviewers. In addition, we appreciate the positive feedback from those who commented that they liked the resource and/or felt it would be a useful tool within their feedback. We would like to thank everyone who provided input into the consultation and invite further input as the resource is used locally.

Respondent 1	Professional Lead Infection Prevention and Control, Royal College Nursing		
Comment number	1 **Date** 16/05/2018	**Section**	Urine culture / interpretation
Comment		**Action**	
I was looking through the SMI on urine (B41) and on page 16 it states the cleaning of the area makes no difference to contamination rates for MSU's and clean catch specimens. However on page 25 it recommends cleaning of the peri-urethral area. From a nursing perspective if contamination is not shown to be an issue this could be quite a significant burden and I doubt would be done in practice in settings such as care homes. This would have implications for teaching and auditing of practice. Is it possible to have a PHE position on this – I note the term 'recommended' but am just wondering about the reality and of this and where the focus of nursing time should be?		Accept - We discussed with the SMI team and they responded to say that they will issue a point change to remove the recommendation of the peri-urethral cleaning as there is no evidence to support such recommendation.	

Respondent 2	General Practitioner		
Comment number	1 **Date** 16/05/2018	**Section**	Flowchart women <65 yr
Comment		**Action**	
In the first flowchart 'Woman (under 65 years) with suspected UTI' the very first step makes no sense, because the first box states 'URINARY SYMPTOMS (e.g. dysuria, frequency, urgency) IN ADULT WOMEN under 65 This guide excludes patients with recurrent UTI (2 episodes in last 6 months, or 3 episodes in last 12 months)'but the only option to proceed is 'NO' - 'No' to what? If they do not have these symptoms, why are we proceeding?		Accept - This has been corrected.	

The leaflet is too cramped and contains too much information to be useful. It needs to be simplified.	
Comment number 2 **Date** 16/05/2018	**Section** Flowchart older adults
Comment	**Action**
2. In both adult flowcharts it is suggested that the TARGET UTI leaflet is given to patients. The problem here is that the version of the leaflet I have read (as per link) is headed up as 'For women outside care homes' yet your 2nd flowchart (which also recommends the leaflet) is for all patients >65 i.e. not exclusively women, so the men given this leaflet would assume they have been given the wrong leaflet.	NONE - There is now a new UTI leaflet available for both men and women over the age of 65 years to download from the TARGET website.

Respondent 3 Consultant Microbiologist & Antimicrobial Stewardship Lead	
Comment number 1 **Date** 16/05/2018	**Section** Flowchart older adults
Comment	**Action**
Would it help to have a clearer guidance, or links to other guidance, on how to manage the confused elderly? I can see this ending up justifying a lot of UTI treatment in patients who just need better assessment. There are some good documents out there – I think one from RCP which I could try to find if helpful. I have briefly looked at this guidance. I find it easy to follow.	Accept - We have linked the statement on delirium to the RCP resources and will include this in the rationale.
Comment number 2 **Date** 16/05/2018	**Section** Urine culture / interpretation
Comment	**Action**
I have been starting some discussions about the need to align laboratory processes with guidance such as this. At the moment there is too much variation in laboratory support. It may not be the place of this document to start informing that. But when it states to send a urine sample, what is the acceptable transport, processing, turnaround time? I think we could be much clearer on this, but that possibly sits in a review of the way we produce the SMIs. I'd be happy to discuss this, particularly as this area is likely to be a focus of the GIRFT programme.	Defer - Important point. Suggest feeding this into the next review of the SMI's for urine culture as this is their remit to define.

Respondent 4 General Practitioner and Professor of Primary Care	
Comment number 1 **Date** 16/05/2018	**Section** Other / general
Comment	**Action**
The DUTY algorithm for diagnosis in primary care – while	Partially Accept – For this flowchart, we

not externally validated, there is evidence it may improve management compared with usual care (see attached Annals of Fam Med paper)	need to follow the NICE UTI guidance for children outlined in CG54.

Evidence

1. Butler CC, Sterne JA, Lawton M, et al. Nappy pad urine samples for investigation and treatment of UTI in young children: the 'DUTY' prospective diagnostic cohort study. *The British journal of general practice: the journal of the Royal College of General Practitioners.* 2016;66(648):e516-524.
2. Hay AD, Sterne JA, Hood K, et al. Improving the Diagnosis and Treatment of Urinary Tract Infection in Young Children in Primary Care: Results from the DUTY Prospective Diagnostic Cohort Study. *Ann Fam Med.* 2016;14(4):325-336.
3. Birnie K, Hay AD, Wootton M, et al. Comparison of microbiological diagnosis of urinary tract infection in young children by routine health service laboratories and a research laboratory: Diagnostic cohort study. *PLoS One.* 2017;12(2):e0171113.

Comment number	2	**Date**	16/05/2018	**Section**	Flowchart children

Comment	**Action**
Nappy pad samples performs less well than clean catch, with higher contamination rates (personally, I would not recommend its use) – see attached BJGP and PLOS One papers	Agree - We have changed recommendation around nappy pad use

Respondent 5	Consultant Microbiologist/Community Infection Control Doctor				
Comment number	1	**Date**	18/05/2018	**Section**	Other / affiliation

Comment	**Action**
Just spotted that plus page 4 refers to Association of Medical Microbiologists i.e. AMM, which hasn't existed became BIA a few years ago. Note Association of Medical Microbiologists referenced in the foreword now British Infection Association (BIA) have they been consulted?	Accept - This section has been removed – endorsement will be sought from BIA.

Comment number	2	**Date**	21/05/2018	**Section**	Other / general

Comment	**Action**
Will there be an electronic version of this made available to make it easier to follow the algorithm?	None - Currently there are no plans to, but we can follow up to check about this as a possibility.

Comment number	3	**Date**	21/05/2018	**Section**	Sepsis boxes

Comment	**Action**
I am concerned that this is separate to the NICE treatment guidance and may result in agents not suitable for patients with pyelonephritis or sepsis being used.	Partially accept – The flowcharts don't cover treatment in detail and NICE doesn't cover diagnostics, so there shouldn't be considerable overlap in this area. We will seek NICE endorsement to ensure consistency across the two documents and link to NICE treatment

	guidance for lower UTI and pyelonephritis. We have removed any specific criteria for sepsis and are now recommending that locally approved guidance be used.
Comment number 4 **Date** 21/05/2018 **Section**	Urine culture / interpretation
Comment	**Action**
On page 7, 2nd box on right there is a random note- 'ESBLs are multi-resistant , but often sensitive to nitrofurantoin or fosfomycin' – suggest remove or expand	Accept – statement removed

Respondent 6	General Practitioner
Comment number 1 **Date** 18/05/2017 **Section**	Both adult flowcharts
Comment	**Action**
Comments - What about men under 65 and men over 65, what about further investigation thresholds?	Partially Accept - Have included a section on diagnostic points for men under 65 years in the tables and some considerations specific to men in the older adult's flowchart .

Respondent 7	Consultant Microbiologist & Infection Prevention Doctor
Comment number 1 **Date** 17/05/2018 **Section**	Flowchart older adults
Comment	**Action**
Ideally, it would be good if the information could be all on one page for adults without catheters.	Partial Accept - Flowchart is all on one page. We have tried to simplify the catheter pathway as much as possible.
Comment number 2 **Date** 17/05/2018 **Section**	Other / general
Comment	**Action**
The questions boxes need to have a binary response i.e. yes/no and follow the appropriate pathway with a terminator at the end of each pathway (see the attached document)	Accept partially - We have had to modify from a traditional flowchart in order to include the information necessary on one page while including arrows for each box.

Respondent 8 Nurse Practitioner	
Comment number 1 **Date** 21/05/2018 **Section** Flowchart older adults	
Comment	**Action**
My main concern is that residential and nursing homes will report that a client has loss of appetite, not themselves and dementia or behaviour has deteriorated, and automatically assume that they have a UTI, as 'this is what they are like when they have one'.	Accept – It is now necessary for a patient to have other urinary symptoms or temperature plus new delirium before being treated. We have included the statement to check for other cause of delirium and fever before treating for UTI if they present with that alone. We have also moved the delirium assessment box up in the flowchart so it is more prominent.
Comment number 2 **Date** 21/05/2018 **Section** Urine culture / interpretation	
Comment	**Action**
Most of these clients are either incontinent or double incontinent! So the possibility of getting a sterile urine sample is zero.	Partially Accept - We found little evidence on alternative sample collection methods in adults. We did include a review that indicates alternative clean catch methods are relatively reliable (using a disinfected bedpan or hat/bowel). Condom catheters for men may be an option. There was less evidence related to urine collection pads.
Comment number 3 **Date** 21/05/2018 **Section** Sepsis boxes	
Comment	**Action**
We don't have the man power to see each individual for cardiovascular observation's and most homes don't have the equipment to do these to report back to the clinician. If I was to follow this draft each client would have to be seen or treated blindly! I would appreciate any feedback on this please.	Partially Accept - Sepsis section was modified to direct clinicians to locally agreed tools, for assessment with national criteria included in the reference (NEWS2, NICE, RCGP).

Respondent 9 National Clinical Advisor at CQC (not responding on behalf of the whole of CQC)	
Comment number 1 **Date** 21/05/2018 **Section** Other / general	
Comment	**Action**
There will of course need to be a link to current antibiotic guidance. Many providers with a discrete geographic footprint will use local guidance appropriately. There are however online services now that will be treating uti, with a National footprint so national guidance on antibiotic choice is still required.	Accept –Treatment isn't within the remit of this document. However, we will work to ensure we align and reference appropriate national guidelines for sepsis and UTI treatment. We are seeking NICE endorsement in order to link to UTI treatment guidance.

Comment number 2	**Date** 21/05/2018	**Section** Other / general
Comment		**Action**
The guidance frequently refers to Nitrates. This is not correct as they are nitrites rather than nitrates.		Accept – Error corrected

Respondent 10 Medicines Optimisation Pharmacist		
Comment number 1	**Date** 18/05/2018	**Section** Both adult flowcharts
Comment		**Action**
Probably more to follow, but first thought = men <65 years?? Clearly uncommon/ rare, but complete absence of advice????		Partially Accept - We have added a section with some advice specific to men less than 65 years under the key points table for women under 65 years. The > 65 flowchart is inclusive of men and women already.

Respondent 11 Consultant Microbiologist & Antimicrobial Stewardship Lead		
Comment number 1	**Date** 21/05/2018	**Section** Sepsis boxes
Comment		**Action**
Should state that this is NEWS2 (to differentiate from NEWS which has been superseded). It is using NEWS2 but just refers to it as NEWS.		Accept - Changed to NEWS2
Comment number 2	**Date** 21/05/2018	**Section** Flowchart women <65yr
Comment		**Action**
Unclear why (in uti likely box it says) "send urine for culture" here, but in box to left it is only "consider need for urine culture" when both groups of patients may have been given immediate antibiotic or back-up antibiotic.		Partially Accept – In the box to the left only 50% will have a UTI. The UTI likely box includes those who have a higher predicative value of definite diagnosis so culture is only needed if there is a risk for resistance. "Send urine for culture", in first box changed to "send urine for culture if risk of antibiotic resistance" to clarify.
Comment number 3	**Date** 21/05/2018	**Section** Flowchart women <65yr
Comment		**Action**
Offer immediate or Consider self-care (in UTI likely action box). Not immediately obvious that there is this choice. Could simply have the same as lower half of the box to the right: "Use immediate or back-up antibiotic depending on symptom severity"		Accept - Changed
Comment number 4	**Date** 21/05/2018	**Section** Table, sepsis
Comment		**Action**
Should say News 2		Accept - Changed to NEWS2

Comment number 5	**Date** 21/05/2018	**Section** Urine culture / interpretation
Comment		**Action**
And pivmecillinam (next to nitrofur. and fosfo.) Unclear why ESBLs are specifically mentioned here. Is this to suggest that those with previous ESBL in urine should have urine culture sent, or that they should not? If it does not influence that, then it is extraneous information in this box and just overcrowds an already busy page		Accept - Statement on ESBLs removed.
Comment number 6	**Date** 21/05/2018	**Section** Urine culture / interpretation
Comment		**Action**
Previous version of guidance used cfu/ml. The change to cfu/l (with subsequent higher numbers due to different units) is likely to be confusing to users, when in fact it is the same cut off values. Is there a good reason for the change in units? If not, suggest sticking to cfu/ml that users are familiar with.		None - We discussed with the steering group and the decision was to keep cfu/L as this aligns with the new European standard, and we will translate into cfu/mL when there is space.
Comment number 7	**Date** 21/05/2018	**Section** Urine culture / interpretation
Comment		**Action**
Please make it clearer that follow up cultures are not routine simply because an isolate is multi-resistant. Perhaps enclose the clause after "pregnant" in parenthesis, or remove altogether for simplicity (if the laboratory has advised it, then there is no need for user to refer back to this document) (specific to statement about multi-resistant organism on advice from laboratory)		Accept - Added a statement or if "advised by laboratory" after follow up
Comment number 8	**Date** 21/05/2018	**Section** Children
Comment		**Action**
Inconsistent formatting: no "sepsis alert" colour used here. Also no colour legend on this page.		Agree - Will look at the colours for consistency in the editing phase
Comment number 9	**Date** 21/05/2018	**Section** Children
Comment		**Action**
(UTI likely box) What should users do if it is not a fresh sample? Need to advise an action, e.g. "if not a fresh sample, collect one and repeat"? (specific to fresh urine sample statement)		Accept - Added to box and rationale repeat urine if not fresh and why
Comment number 10	**Date** 21/05/2018	**Section** Children
Comment		**Action**
(UTI less likely action box) Remove "under 3 months" as this is in the "Infant or child over 3 months" section of the flowchart		None - Discussed with the steering group and all felt that we should keep it in the flowchart as an additional check to make sure it is not

	missed.
Comment number 11 **Date** 21/05/2018	**Section** Children
Comment	**Action**
(Points on urine sampling) Cannot advise washing potties in water at 60 degrees. This temperature leads to severe scalds. The reference is a letter to the Lancet editor in 1996. They compared washing with 60 degree tap water plus washing up liquid, with rinsing with (a) water & Dettol (b) water & bleach or (c) swirling with boiling water. The washing up liquid performed the best, so the temperature was irrelevant (the boiling water performed worse and prior to the comparator interventions all potties were rinsed with 60 degree water. So, it is the detergent that is the variable. Suggest recommending washing with washing up liquid and hot water.	Accept - Changed wording to hot water with washing up liquid
Comment number 12 **Date** 21/05/2018	**Section** Children
Comment	**Action**
typo in statement: ultrasound all children in acute phase and undertake renal imaging in 4-6 months: If proven UTI is atypical (seriously ill, poor urine flow, abdominal or bladder mass, raised creatinine, septicaemia, failure to respond to antibiotic within 48 hours, non-E. coli infection) - the colon should be after the "if" and we should have E.coli in italics	Accept - Changed statement

Respondent 12 Head of Infection Prevention and Control at Local Partnership	
Comment number 1 **Date** 22/05/2018 **Section** Both adult flowcharts	
Comment	**Action**
Make it explicit to follow local guidance in terms of antibiotic prescribing which has been put in every flow diagram but not necessarily in a consistent way. Over 65s guidance states antibiotics and then a separate bullet which states follow local guidance. Whereas the first flow chart states start antibiotics immediately in line with local guidance.	Accept - Changed, changes >65 box and table to upper UTI/ sepsis using local guidance
Comment number 2 **Date** 22/05/2018 **Section** Urine culture / interpretation	
Comment	**Action**
The specimen collection bit states in frail elderly only get a sample if possible to get a good one. It doesn't mention pad collection devices for the elderly, which can be used,	Partially Accept - We found little evidence on alternative sample collection methods in adults. We did include a review that

but it does mention this on the children's section.	indicates alternative clean catch methods are relatively reliable (using a disinfected bedpan or hat/bowel). Condom catheters for men may be an option. There was less evidence related to urine collection pads.

Respondent 13 GP & RCGP AMR Representative	
Comment number 1 **Date** 22/05/2018 **Section** Sepsis boxes	
Comment	**Action**
I would however, like to draw your attention to the comments regarding the early recognition of sepsis made in the document. The NEWS2 score is as you are aware the one endorsed by NHSE and NHSI and is only supported in the use in hospital monitoring. The revised National Early Warning Scores (NEWS2) has been shown to have high levels of sensitivity and specificity for the identification of sepsis in those environments and as a result hospital and ambulance recognition of sepsis has become increasingly standardised around the use of this scoring system. Although using the physiological parameters is useful in communication between primary and secondary care, currently there is no evidence for the predictive value of early warning scores in primary care, which impacts the document you have produced as this is aimed at those working within primary care. The College Council is currently in consultation with regards to its position statement on Sepsis but I believe that the evidence I have cited will be those that will be used, (among others) to form this statement. I am aware that the NICE guideline for UTI is now out for consultation, I am however, not aware of any other evidence that needs to be included or would result in any changes to this draft guidance.	Response - Feedback from the consultation indicated that though many groups are adapting and starting to use NEWs2 in primary care, there are others that are concerned that it has not yet been evaluated and endorsed for use in primary care. It was decided by the steering group to signpost the need to assess for possible sepsis. Then direct clinicians to the tool that is endorsed locally (suggesting NICE, NEWs 2 or the RCGP tools). These will then be referenced in the rationale. An update to the flowcharts can be included once a single tool for primary care is endorsed nationally.
Evidence	
1. Royal College of Physicians. National Early Warning Score (NEWS) 2: Standardising the assessment of acute-illness severity in the NHS. In: RCP, editor. London: RCP; 2017. 2. Shaw J, Fothergill RT, Clark S, Moore F. Can the prehospital National Early Warning Score identify patients most at risk from subsequent deterioration? Emergency medicine journal : EMJ2017.	

Respondent 14	Representatives from NMIC National Minor Illness Centre				
Comment number	1	**Date**	22/05/2018	**Section**	Sepsis boxes
Comment					**Action**
It's inappropriate to use NEWS, as not validated or widely used in primary care.					Accept – We now signpost the need to assess for possible sepsis but then direct clinicians to the tool that is endorsed locally (suggesting NICE, NEWs 2 or the RCGP tools). These will then be referenced in the rationale.
Comment number	2	**Date**	22/05/2018	**Section**	Flowchart women <65yr
Comment					**Action**
Offer ALL self-care advice', yes, but hydration being the first example is without evidence or rationale. The problem being that extra fluid intake can exacerbate the frequency and associated dysuria. There could be issues with dilution of immunoglobulin / WBC in the urine. Without fever (the last green box on this page refers to cystitis) then there is no reason to suppose that there will be excess fluid loss that needs extra hydration to replace it.					Defer - We have taken out the statement specific to self-care and referred to the UTI leaflet on the TARGET website
Comment number	3	**Date**	22/05/2018	**Section**	Sepsis boxes
Comment					**Action**
What is "dysthymia" doing in the pink box for signs of sepsis?? Ah - I see in the "over 65's" pink box that it should have been "dysrhythmia!!"					Accept - We have taken the clinical criteria for sepsis out of the flowchart included more information in the rationale
Comment number	4	**Date**	22/05/2018	**Section**	Sepsis boxes
Comment					**Action**
Better to be consistent – on this page 'flu-like symptoms', but on the previous 'flu like illness'. And why not include nausea/vomiting here too?					Accept – we have worded the same and included nausea/vomiting
Comment number	5	**Date**	22/05/2018	**Section**	Flowchart older adults
Comment					**Action**
Is 'frequency' intended to cover nocturia (which is considered separately on page 5)?					None – new frequency or urgency can cover nocturia.
Comment number	6	**Date**	22/05/2018	**Section**	Flowchart older adults
Comment					**Action**
always send urine culture' in 'UTI LIKELY' box – so this would also be recommended for catheter samples as patients with catheters are included in the yellow box that leads to this green box, but we know that such samples are invariably contaminated.					Partially Accept - We have added a statement to clarify that this is because of resistance and provided information on collecting samples from a urinary catheter

Comment number 7	**Date** 22/05/2018	**Section**	Flowchart older adults
Comment			**Action**
(UTI likely box) Review, antibiotic choice with culture results – but it would be best not to change the antibiotic if the patient has improved and is symptom-free with the first antibiotic. This is because the in vivo action of the one prescribed empirically may be greater than the in vitro sensitivity result.			Accept - This is why this has been included. We will refer to NICE UTI guidance once published and put in rationale as described above.
Comment number 8	**Date** 22/05/2018	**Section**	Flowchart older adults
Comment			**Action**
(UTI likely box) Consider non-steroidal anti-inflammatory: if no contraindications20A-'Really? What would one need to know before prescribing a NSAID? Quite a lot actually, but most of all the current RFT. An older person may have had this done recently, they may be seeing the GP or nurse in the practice where they are registered and so they may be access to past results, but even in this ideal situation, how would the prescriber know that the renal function has not been reduced by the current acute infection? And of course, many patients present out-of-hours, where prescribing with no knowledge of the RFT would be potentially very harmful. I would strongly advise removing this option.			Accept - Removed NSAIDs from the flowchart.
Comment number 9	**Date** 22/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
Top box under "using dipsticks": nitrite not nitrate			Accept – changed
Comment number 10	**Date** 22/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
Including '• suspected UTI in men' and 'Men: advise on how to take a midstream specimen (NHS choices)' is outside the scope of the guideline.			None - Some information on the diagnosis of Men with a UTI is included in reference tables.
Comment number 11	**Date** 22/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
Previous UTI resistant to trimethoprim, cephalosporins, quinolones, or broad spectrum antibiotic'. To be practical about this, wouldn't it be simpler to say '• previous UTI resistant'?			Accept - changed to "previous resistant UTI"
Comment number 12	**Date** 22/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
There is no mention of the problem with boric acid and dipsticks.			Accept - Added the statement in sample collection component of the table.

Comment number 13	**Date** 22/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
There is no mention of the problem of contamination of MSU samples from non-sterile dipstick. The first one out the container may have low risk, but the condition of last few will depend on all the clinicians who used the batch. Better to test an aliquot and send the original sample for culture.			Partially accept - This is very small compared to other forms of contamination. We have included the statement in the rationale for the PHE SMIs.
Comment number 14	**Date** 22/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
Suggest omitting 'as false negatives can occur' – because so can false positives from contamination – and by omitting the explanation the first line will fit better with the next line about asymptomatic bacteria.			Accept - changed to be clearer
Comment number 15	**Date** 22/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
The change to the unit for MSUs to CFU/L will cause confusion. Clinicians are use to mL. Note that even the guideline has succumbed to this problem and includes both CFU/L and CFU/mL.			None - We discussed with the steering group and the decision was to keep cfu/L as this aligns with the new European standard. We will provide both units when there is space.
Comment number 16	**Date** 22/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
'no white cells present' indicates no inflammation and reduces culture significance' – not true if the patient is immunocompromised.			Agree - Taken out the statement
Comment number 17	**Date** 22/05/2018	**Section**	Children
Comment			**Action**
If a child had 'loin pain/ tenderness suggesting pyelonephritis' I would not 'Test urine within 24 hours'. It would require more urgent treatment.			None - Consistent with wording from CG 54 1.1.1.1
Comment number 18	**Date** 22/05/2018	**Section**	Children
Comment			**Action**
No mention of diarrhoea as a symptom of UTI in children.			None – We are aligning with the NICE guidance for children *Urinary tract infection in under 16s: diagnosis and management CG54* and diarrhoea is not listed as a symptom.

Comment number 19	**Date** 22/05/2018	**Section** Children
Comment		**Action**
UTI in children is not that common in primary care. Every GP sees cases occasionally, but nothing like the incidence of UTI in adults. Please review the criteria for sending an MSU. Note that any child with even a single recurrence needs one – so wouldn't it be helpful to know what the infective organism was in the first episode too? And supposing it grows a less than common organism (e.g. Klebsiella) – I'd be thinking that child needs imaging for reflux / referral to paeds. "Organism other than E. coli" is an indication for imaging in the NICE guidance. My view is that the left two green boxes here should be one: Treat and send urine for culture		None - Statement on non-E.coli UTI imaging in the table. Flowcharts specify that past or recurrent UTI indicates need for culture.
Comment number 20	**Date** 22/05/2018	**Section** Children
Comment		**Action**
"Sampling in children" recommends washed-up potties in hot water and doesn't mention the Quick Wee method (www.bmj.com/content/357/bmj.j1341 https://www.youtube.com/watch?v=aEKMNT_SpM8) or lining a smaller, clean container with cling film without touching the surface that will come into contact with the urine. Either are better than a nappy pad or a washed potty.		Partially accept - Included statement about suprapubic cutaneous stimulation. Could not find any reference or recommendation for use of cling film in urine collection so not included.
Comment number 21	**Date** 22/05/2018	**Section** Children
Comment		**Action**
Because samples from young children may not be 20mL, our microbiology laboratory does not recommend using boric acid containers for children. Parents may be given the sample container to use at home and will not necessarily be able or accustomed to checking the sample size before putting it in the container. If it is less than 20mL they would need a plain container as well. It all gets complicated and the practical solution is to use plain containers for children.		Partially Accept - Included statement about needing to fill the boric acid tube to the correct mark or to culture within 4 hours
Comment number 22	**Date** 22/05/2018	**Section** Children
Comment		**Action**
"Ultrasound all children in acute phase" – I know – you mean only if the following criteria are met, but someone reading the guideline quickly might see the bold stem and get the wrong message. Can you put the criteria first – it would be more logical.		Accept - Changed order of words and if room will put an ultrasound heading. Also first bullet "if child has alternative site of infection is in the wrong place move up to under sampling in children.

Comment number 23	**Date** 22/05/2018	**Section**	Children
Comment			**Action**
The mention here of atypical infections makes my point above about the need for a urine culture in all children with UTI.			None - This is taken from page 8/9 of 24 from the NICE guidance for children *Urinary tract infection in under 16s: diagnosis and management CG54* which we need to follow

Respondent 15 Clinical Lead Proactive Care and Clinical Associate Frail Elderly - Complex Care			
Comment number 1	**Date** 22/05/2018	**Section**	Flowchart older adults
Comment			**Action**
Commenting on the over 65 section (see pdf as well) A lot of people living with frailty have long term continence problems. Please refer to new or worsening incontinence to distinguish from the base line			Accept - Have added in "new" as the criteria for most of the signs/ symptoms of a UTI
Comment number 2	**Date** 22/05/2018	**Section**	Flowchart older adults
Comment			**Action**
There is an arrow leading from the green box – 'follow local diagnostic and treatment guidance' and then another 'yes' but this doesn't make sense to me – yes what?			Accept – Taken out
Comment number 3	**Date** 22/05/2018	**Section**	Flowchart older adults
Comment			**Action**
And finally proposing a strategy of watchful waiting if no obvious cause of deterioration found so that doing nothing is an acceptable thing to do. *EC: in her PDF comments she suggests another box under the PINCH ME section that states: If no cause found for new confusion and no features of sepsis – advise a period of watchful waiting* and consider investigations: **FBC UnE LFT CRP Calcium level etc. To justify this she says: *One of the hardest things for health and care staff to do is to do nothing – using the term 'watchful waiting' will allow time for the resolution of symptoms without intervention which often happens and using that term will deflect criticism that 'they didn't bother to do anything'* ***A raised WCC or CRP will support subclinical infection – warranting further assessment – hyponatraemia is common and may cause confusion as may hypercalcaemia -* *I realise you are not creating a flow chart for the management of acute confusion – but if you don't suggest alternative strategies – people will still default to dip and treat to be seen to be doing something - if the patient recovers*			Accept - Steering group discussed and agreed to include watchful waiting at the bottom of the flowchart. We have also linked to resources to assess and manage delirium in the boxes at the bottom of the table

after 24-48hrs – as they may have done without treatment – that reinforces the belief that antibiotics have made them better

Respondent 16	Medical advisor health board /general practitioner				
Comment number	1	**Date**	23/05/2018	**Section**	Aims/objectives/preface
Comment					**Action**
We send 4000 mssu per 9000 patients –approximately 450 per 1000patients. Is there somewhere in document that highlights workload savings, in treatment room time and doctor time if fewer samples sent.					Partially Accept - This added to implications on page 4 which has been updated to say "decrease inappropriate use of urine dipstick and culture test which may have financial and time implications
Comment number	2	**Date**	23/05/2018	**Section**	Other / general
Comment					**Action**
Is there an opportunity being missed by not including an action on how IT systems in practice can be used to facilitate implementation. This may be included in separate implementation document but fewer GPs will read and use. At its simplest use of drug defaults toward s 3 day scripts with appropriate caveats?					Defer - Currently there are no plans to but we can follow up to check about this as a possibility.
Comment number	3	**Date**	23/05/2018	**Section**	Other / general
Comment					**Action**
Templates to record symptoms to facilitate good practice and at its simplest use of drug defaults, towards 3 day with appropriate caveats UTI.					Partially Accept - We are working with computer suppliers to add to go GP clinical systems
Comment number	4	**Date**	23/05/2018	**Section**	Flowchart women <65yr
Comment					**Action**
Quote “(2 episodes in last 6 months or 3 episodes in last 12 months” Any advice on how in GP practice we code these as prompt, If not sending off MSSU samples as often? Poor coding in practices will lead to inappropriate use of guidance in practices.					None – Suggest code as recurrent UTI
Comment number	5	**Date**	23/05/2018	**Section**	Urine culture / interpretation
Comment					**Action**
Reporting different numbers used locally, Northern Ireland single organism >10 to the power of 6 CFU/L lab locally reports 10 to The power of 5 /ml					None - We discussed with the steering group and the decision was to keep cfu/L as this aligns with the new European standard. We do provide both when there is space

Comment number 6 **Date** 23/05/2018 **Section**	Sepsis boxes
Comment	**Action**
Put reference 6 all on one page as useful may want to copy alone /same goes for news score reference 11	Accept - We believe that you mean the NEWs2 and NICE sepsis information in the rationale and we will provide a modifiable document so the users can transfer to one page.

Respondent 17 Specialist Medicines Safety & Quality Pharmacist Medicines Management	
Comment number 1 **Date** 24/05/2018 **Section**	Flowchart older adults
Comment	**Action**
Regarding the information in the section below (top of page 6) – great to see that there is more firm advice about not dipstick testing in patients>65 years of age (now in line with national SIGN guidelines). Where it mentions that 'up to half older adults will have bacteria present in the bladder/urine' this is in non-catheterised patients & in catheterised patients the number is even bigger, with it being closer to 100% of patients. I think this also needs to be mentioned here, as locally we are seeing care homes dipstick urine samples taken from catheter bags (that in most cases have not been changed within the past week or when a UTI is even suspected….). This will really help everyone to promote the 'To Dip or Not to Dip' project work in Care Homes that Elizabeth Beech has been promoting nationally and we are working on locally too.	Accept - Added that most older adults with a urinary catheter will have ASB
Comment number 2 **Date** 24/05/2018 **Section**	Flowchart older adults
Comment	**Action**
With regards to the indwelling urinary catheter use, urine samples should be taken by an appropriately trained nurse from a catheter that has been changed within the last 7 days only	Accept partially - Added statement to send "urine from new catheter" if possible
Comment number 3 **Date** 24/05/2018 **Section**	Flowchart older adults
Comment	**Action**
Under the following part of the flowchart section (page 6), I don't think it is appropriate to be recommending use of NSAIDs in older adults – whether or not they have any specific contraindications, they are generally at increased risk of GI bleed and impaired renal function. Rather than mentioning use of specific painkillers (Paracetamol or NSAIDs), may be better to state 'Consider use of an appropriate analgesic to relieve symptoms e.g.	Accept – Taken out

Paracetamol'.	
Comment number 4 **Date** 24/05/2018 **Section** Flowchart older adults	
Comment	**Action**
I could not see the 'Target UTI Leaflet for Older Adults' on the website, so cannot comment on this. Getting the message across about Hydration is really important! – especially in Care Homes & Domiciliary care, as many times we see patients being treated with antibiotics simply because they have dark/smelly urine + confusion with no other clear signs/symptoms of a UTI.	Accept - The UTI leaflet is now online and outlines hydration and other preventative measures that should be taken.

Respondent 18 General Practitioner	
Comment number 1 **Date** 24/05/2018 **Section** Flowchart women <65yr	
Comment	**Action**
Firstly, the xxx protocol suggest that upper tract symptoms in women >16yrs and <65yrs, including suspected pyelonephritis, should be treated with empirical antibiotics without sending an MSU. An MSU sent only if the patient fails to respond to treatment. This would appear to deviate from Sign 88 which advises "take a midstream urine sample for culture and begin a course of antibiotics", and also seems to be different to the PHE guidance. We cannot find any evidence base for not sending an MSU prior to empirical treatment, and my colleagues and I have concerns about delayed management should the patient become more unwell.	Partially accept - Pyelonephritis is a more severe infection and resistance is increasing (co-amoxiclav 20%, ciprofloxacin 10%). We state that you should start antibiotic immediately. However, you should also send the urine for culture to check for resistance in the event that treatment is unsuccessful
Comment number 2 **Date** 24/05/2018 **Section** Flowchart women <65yr	
Comment	**Action**
The lab are planning to adopt a strict 'rejection' policy and any MSUs out with the protocol will not be processed. We discussed this at a Practice meeting and we have some concerns, and I wonder if you feel able to comment on two issues? …. the protocol states that 'urine in men should never be dipstick tested', and 'where urine has been dipstick tested in a male patient, it will automatically be discarded'. There doesn't appear to be any reference to this in the PHE guideline and would you be able to offer your thoughts on this?	Partially accept - There is limited evidence as to dipstick use in men. We have included some points but are unable to give conclusive recommendations on this at this time. We have included one point in the section for men under 65 years

Respondent 19 Medicines Optimisation Pharmacist	
Comment number 1 **Date** 25/05/2018 **Section** Flowchart older adults	
Comment	**Action**
In the section for older person with suspected UTI… If indwelling urinary catheter for over 7 days: • change catheter as soon as possible after starting antibiotic treatment. The references used to support this statement recommend that catheter should be changed before antibiotics are started rather than after. What is the rational for saying after? I raise this because we have developed local guidance for managing UTIs in care home patients and there has been a lot of discussion over this point. SIGN and the draft NICE guidance both recommend before. • assess catheter need, and remove if possible	Accept - Changed to before

Respondent 20 Clinical Effectiveness and Medicines Optimisation	
Comment number 1 **Date** 25/05/2018 **Section** Flowchart women <65yr	
Comment	**Action**
There are comments on the attached document of the email. Also 2 comments below: 1. Just a minor typo on p.5 green box near the bottom of page: "…taking regular paracetamol (or ibuprofen if with back-up antibiotic" I think should read: "…taking regular paracetamol (or ibuprofen if appropriate) with back-up antibiotic"	Partially accept - This was discussed with the steering group and it was decided to take out information about self-care in the flowcharts. Advice in the respective leaflets is referenced in the flowcharts and these contain more comprehensive information about prevention and self-care options.
Comment number 2 **Date** 25/05/2018 **Section** Flowchart women <65yr	
Comment	**Action**
2. The women <65yrs chart - where it says 2-3 symptoms or 1 Symptom or No Symptoms I would remove the word symptom because the stem to these choices referred to Symptoms / Signs	Accept - We have changed it.
Comment number 3 **Date** 25/05/2018 **Section** Sepsis boxes	
Comment	**Action**
Signs / symptoms of sepsis should say dysrhythmia not dysthmyia	Accept - We have taken the clinical criteria for sepsis out of the flowchart included more information in the rationale.

Comment number 4 **Date** 25/05/2018 **Section** Sepsis boxes	
Comment	**Action**
Over 65 chart - rather than saying "two or more new" much better to use "≥2 new symptoms"	None – It is better to say in words if there is space as ≥ 2 can be misunderstood and some media doesn't display the figures correctly.

Respondent 21 MRCGP affiliate RCPsych	
Comment number 1 **Date** 26/05/2018 **Section** Other	
Comment	**Action**
I appreciate the need to avoid antibiotic resistance. I have worked in old age psychiatry for three years and formerly am a GP for 18 years. However In Old Age Psychiatry, we see serious delirium lasting months often in the worst case, causing hallucinations, aggression and falls and hip fracture, often leading to hospitalisation followed by nursing home admission sometimes permanently. There is a subsequent increased risk of dementia. I appreciate the asymptomatic urinary colonisation in elderly people. We see however, patients where if a simple UTI or recurrent UTI had been treated earlier, they may have improved without developing delirium and remained at home without incident. Many relatives and nursing home staff are able to spot that the patient has a systemic UTI but cannot access a same day GP assessment. I think it is important to look at studies of hospital records with delirium diagnosis and sepsis before completing these guidelines (we had been planning to do this as a study in Stockport but had difficulties with cross trust data sharing). **It is very important to include in new over 65 Guidelines considerations to how urgent UTI diagnosis can be made in those with systemic symptoms in a nursing home or those who cannot see a GP the same day to prevent developing delirium and its long-term costs.**	Defer – The flowchart will hopefully allowed for a more streamlined approach when considering delirium in relation to UTIs. We are not currently in a position to develop tools that will allow for non-GP/nurse prescriber initiate treatment of systemic infection without a consultation. We have developed a UTI leaflet that is designed for older adults, their family and other carers. It is designed to be used with the flowchart and provides information on signs and symptoms of a UTI including confusion, unsteadiness on feet and a change in behaviour as issues to look out for. It also provides emergency and out of hours numbers to contact if there are signs of a serious infection (very confused/drowsy/slurred speech as a symptom). We are going to be evaluating this resource as part of a package with other resources that target older adults in residential care.
Comment number 2 **Date** 26/05/2018 **Section** Flowchart older adults	
Comment	**Action**
Delirium definitely needs consideration in these guidelines as well as UTI prevention.	Accept - Changed to delirium

Comment number 3	**Date** 26/05/2018	**Section** Flowchart older adults
Comment		**Action**
I believe there have been some electronic wearable devices used to help nursing home staff record fluid administration, alerting staff to those who need to increase their fluids.		Partially Accept - Because this is a quick reference diagnostic flowchart we are limited in our ability to document prevention measures. We will need to work with national hydration initiatives, to ensure that this aligns with other activities to prevent UTIs.
Comment number 4	**Date** 26/05/2018	**Section** Flowchart older adults
Comment		**Action**
The guidelines need to reference clinical signs +/- Pyrexia, appetite reduction, early confusion, abdominal pains, falls, prevention includes addressing dehydration, constipation, recurrent UTI and causes.		Partially Accept - We have based the signs/symptoms on a tested diagnostic algorithm for older adults so are limited in our ability to change. We have increased our use of temperature in the diagnostic boxes (now includes low temp for pyelonephritis and a lower grade temp for symptom/sign). Suprapubic pain is already included. We have new delirium/debility which should cover early confusion and falls. Prevention is beyond the remit of this flowchart but is included in the TARGET treating your infection UTI leaflet for older an adults that is to be used with the flowchart.
Comment number 5	**Date** 26/05/2018	**Section** Flowchart older adults
Comment		**Action**
If there are no dipsticks to be done in general practice then I think each CCG will need a delirium prevention nurse practitioner who has time to assess these patients face to face as soon as relatives have concerns and send to MSSU or perhaps perform an on the spot CRP. The health education they could provide with fluid maintenance advice would also be invaluable perhaps alongside electronic smart devices in nursing homes and hospitals		Defer - While additional clinical support would be welcome in most CCGs, it isn't within the remit of this quick reference tool to recommend how that should be provided. Suggest following up with the UK diagnostic collaborative.
Comment number 6	**Date** 26/05/2018	**Section** Other
Comment		**Action**
I urge you to consult with the Royal College of Psychiatry if you have not done so, regarding delirium prevention and appropriate timing for urinary tract infection diagnosis, to prevent delirium, before finalising these guidelines.		Partially Accept - Emailed request to discuss with representative on the 25 July 2018. We have had feedback from multiple specialists in older age medicine. Because these diagnostic flowcharts are specific to UTI, our ability to cover additional information on delirium is

	limited but we have hyperlinked to the *Guidelines for the prevention, diagnosis and management of delirium in older people (*Produced by the British Geriatrics Society and Royal College of Physicians) in the text within the flowcharts.

Respondent 22	Lead Clinical Pharmacist, Prescribing				
Comment number	2	**Date**	29/05/2018	**Section**	Flowchart women <65yr

Comment	**Action**
I have a few comments around the wording of the green boxes and concerns how this may be literally translated into practice (particularly as more less experienced practitioners start to use these algorithms): in the box below the first thing you read is to give an 'immediate antibiotic'. We have done a lot of work locally to encourage consideration of the severity and duration of the symptoms and therefore the urgency of antibiotic treatment (given that lower UT is self-limiting within around 5 days in the majority of women). You have got this as a consideration but if you are also saying to give immediately without explanation of what circumstances this applies to I think it is contradictory. So I would rather it say - If Symptoms mild promote self-care with option of back-up prescription; If symptoms severe and interfering with usual activities consider antibiotics – in that order. I also think there needs to be clarification somewhere of what you mean by back up and whether this is needed all the time as implied on box 1 and 2. To me this would be better phrased as 'safety netting' rather than back up prescription (which implies practitioners would also issue a prescription) and explanation in a separate section on what safety netting means to include back up/ delaying prescribing. I am not sure I have seen much evidence for delayed prescribing in UTI so I think we need to be careful how strongly we are encouraging this.	Partially accept – we changed the order of the statements in alignment with your suggestions. Because we are limited in regards to space, it was decided during the steering group meeting to put the information on safety-netting in a box at the bottom that all boxes refer users to the leaflets for patients and provide more detail on both back up antibiotic use and other advice. Recommendation for back-up antibiotic treatment should align with national guidelines due to be published in October 2018.

Comment number 3	**Date** 29/05/2018	**Section** Flowchart women <65yr
Comment		**Action**
(UTI likely boxes) We have done a lot of work locally to discourage unnecessary sampling and as a result are seeing a reduction in our UTI antibiotic prescribing. I would therefore have concerns about a vague statement in here 'consider need for urine culture'. We came across a lot of sending samples just because that was custom and practice and therefore I would welcome this to me removed and a generic statement somewhere about appropriate sampling. Wording suggested: *'**Offer immediate antibiotic** for lower UTI **Consider self-care with back-up antibiotic if mild symptoms** that do not interfere with quality of life **Consider need for urine culture**'*		Accept - We have changed wording to say consider immediate or back up antibiotic if there is a risk of antibiotic resistance (UTI likely box) or to confirm diagnosis (UTI equally likely box).
Comment number 4	**Date** 29/05/2018	**Section** Flowchart women <65yr
Comment		**Action**
In the box below is has a directive to 'Use immediate of back up antibiotic'. There is no mention of self-care as in the first treatment box. I would say this should read: Promote self-care and consider the need for an antibiotic depending on symptom severity. In these cases would you always need to send a urine sample? Is so is this to confirm infection rather than based on symptom assessment and dipstick? Is this it the case would there be a case to await culture results for some patients before prescribing and how can this watch and wait be encouraged with safety netting rather than reactive prescribing Suggested wording: ***Review time of specimen*** *(morning is most reliable) Send urine for culture.* ***Use Immediate or back-up antibiotic*** *depending on symptom severity*		Accept – We have moved self-care and safety-netting to its own box that refers users to the leaflets with more detailed information.
Comment number 5	**Date** 29/05/2018	**Section** Flowchart women <65yr
Comment		**Action**
One of your diagnostic criteria is cloudy urine. This can be quite subjective and may depend on how good the patient has been at taking the sample and how long it has been lying in the GP practice before someone looks at it. We found a lot of unnecessary handing in of samples in the work we have been doing and when tested, creating the wrong starting point for the assessment process. I am not sure if this		Partially Accept - Each of the three signs/symptoms were given equal weight in the study where they were validated. The urine was cloudy on examination. Decided to leave, as you could still treat if dysuria and nocturia without urine sample and Little et all did not find other symptoms that were as predictive.

is implying in the algorithm this is cloudiness self-reported by the patient – which again seems could be pretty subjective when it could make the difference between using an antibiotic and not. Also we don't take urine samples in our community pharmacy UTI service and instead only treat people who are strongly symptomatic (using the previous version of the algorithm). Whilst this might have in the literature, been found to have a strong association. I wonder if it is enough to put a third of the symptomatic weighting equally, on this when it translated into practice i.e. are all these 3 symptoms equally associated with UTI probability?	
Comment number 6 **Date** 29/05/2018 **Section** Flowchart women <65yr	
Comment	**Action**
The % for vaginal discharge having UTI are different in the algorithm and the text on p.6 (15-20% will have UTI in algorithm, 75-80% will not in text) not sure if this means 10% are unknown whether they do or not.	Accept - This was clarified.
Comment number 7 **Date** 29/05/2018 **Section** Both adult flowcharts	
Comment	**Action**
Should there be something in the genitourinary section about taking an appropriate sexual history in relation to the presentation so that people can translate this into an assessment rather than just a list of potential STIs?	Accept - We added a statement to "check sexual history" in the section for excluding other GU illnesses.
Comment number 8 **Date** 29/05/2018 **Section** Urine culture / interpretation	
Comment	**Action**
Typo nitrite (nitrate) p6 narrative	Accept – Error corrected.
Comment number 9 **Date** 29/05/2018 **Section** Urine culture / interpretation	
Comment	**Action**
In the practice points I wonder if we should mention anything about antibiotic choice at all. Not specific drugs, but principles around considering avoiding same antibiotic again if they have had within the previous months (some literature suggests up to 12mths). We have come across examples in practice of repeated courses of the same antibiotic without consideration of previous use in relation to likely sensitivities. Appreciate the algorithm isn't for recurrent UTI but suspect in practice is will be used in acute presentations without full consideration of the history which I guess is what we want to avoid.	Accept - We added a point about considering antibiotic resistance risk using patient history in both adult flowchart tables.

Comment number 10 **Date** 29/05/2018 **Section** Flowchart older adults	
Comment	**Action**
Older people UTI - Same point as bullet 1 around the order that immediate antibiotics and self-care are in and what we want people to consider before they give an antibiotic (particularly if this is being based on dysuria alone).	Accept - Order changed to consider mild symptoms and back up antibiotic first.
Comment number 11 **Date** 29/05/2018 **Section** Flowchart older adults	
Comment	**Action**
Should the sending of urine culture be an absolute or just consideration? Given the risk of resistance to guide treatment choice e.g. not all 65/66 year olds will need a urine culture.	None – Discussed in steering group meeting. The group felt that it was important because of the high risk of resistance in this age group.
Respondent 23 Patient representative and affiliated with Bladder Action UK	
Comment number 1 **Date** 29/05/2018 **Section** Other / general	
Comment	**Action**
A consultation that fails to take all available evidence into account carries proportionately less weight. When the available evidence in question refers to a key element of this guidance, diagnostics, the failure is all the more glaring. This document purports to give authoritative up-to-date guidance on UTI diagnosis to some 35,000 GPs as they handle more than 3 million annual appointments with patients suffering urinary symptoms. Although the guidance to physicians includes caveats about the reliability of standard tests, it gives no hint whatever of the extent of the problems surrounding testing. An abstract of the available evidence, had it been made available, would have made this clear.	Partially Accept - We have added that no test absolutely reliable and rationale to clarify this. We clarified the accuracy of the diagnostic tool in the table by providing information as to what % of women will have a positive culture and prioritizing symptoms/ signs in the diagnostic pathway. We don't recommend dipstick use in older adults within the flowchart or tables.
Comment number 2 **Date** 29/05/2018 **Section** Other / general	
Comment	**Action**
PHE was sent a list of over 50 peer-reviewed research papers, which establish beyond doubt the fundamental inadequacies in dipstick and culture tests and the imperative for change. As well as highlighting inadequacies, they have debunked misconceptions that have underpinned UTI treatment for decades.	Response - We provided an additional statement in the table for women under 65 years. *"**Using symptoms and dipsticks to help diagnose UTI**: no individual or combination are completely reliable in diagnosing UTI, thus severity of symptoms and safety-netting are important in all"* We have worked with multiple stakeholders to make the limitations to these tests as clear as possible within the remits of these

	quick reference tools.
Comment number 3 **Date** 29/05/2018 **Section** Other / general	
Comment	**Action**
Two thirds of the studies have been published since 2010, yet PHE insists that its evidence base is up-to-date, as it did for its 2017 update on Urine Microscopy Guidance, SMI B 41.	Response - We have updated references based on review of the evidence and will refer to the UTI NICE guidance once published (expected October 2018).
Comment number 4 **Date** 29/05/2018 **Section** Other / general	
Comment	**Action**
In March 2018, PHE asked the members of the UTI steering groups tasked with helping to develop this guidance for written comments on the draft version of the document. It could have been expected that written responses, made after careful consideration of the draft leaflet, would be the most thoughtful, and therefore of most interest to the rest of the group in producing guidance, that was as robust and comprehensive as possible. I was concerned therefore that the responses were not made available to all members of the group, and that, at perhaps the most important phase of drafting, PHE failed to live up to its own commitment to transparency. A PHE officer explained to me that 'PHE does not have the ability to do this' (ie circulate responses). The idea that a huge public authority could not collate a list of comments and send them to a couple of dozen people is absurd. The second Gunning Principle of consultation – the Gunning Principles inform all public consultations whether statutory or not - states that '…sufficient reasons must be put forward '….to allow for intelligent consideration and response'. Since, as stated above, the evidence related to a central issue of the guidance, diagnostics, a truly 'intelligent consideration and response' would have required PHE to make respondents properly aware of this major body of research.	Response - In March 2018 we had a larger review by experts/stakeholders but this was not a public consultation (which occurred in May 2018). We sent feedback to those who provided input letting them know what changes were made and requesting that they contribute during the public consultation if they would like further action or response. We also sent the comments and feedback to the group producing the guidance (steering group) and invited further comments/discussion.
Comment number 5 **Date** 29/05/2018 **Section** Other	
Comment	**Action**
PHE has failed to keep up with the science. For example there is a wide range of UTI point of care	Response – When this point was discussed with the steering group it was agreed that

(POC) devices which have been developed in the last ten years. They are designed for rapid diagnostics in GP surgeries, hospital bedside settings etc. These innovations have the potential to play an important part in the fight against antibiotic resistance, as some have the ability to deliver highly sensitive molecular diagnoses within hours, thus reducing the need for blind antibiotic prescribing. They seem one obvious way forward to improve health of countless thousands of patients, which has been so damaged by the long-lasting mess surrounding testing. It is my understanding that PHE has been charged with reducing antibiotic usage so as to reduce antibiotic resistance. It is obvious that accurate testing would obviate the need for empirical prescribing and guesswork.	currently there is no RCT evidence for a PoC test that could be rolled out nationally in primary care. There is a UK diagnostic stewardship group that is looking into options for Point of Care tests being rolled out nationally. Members have been included in the flowchart development and we will include input from the group in future versions of this flowchart if PoC test is validated for national use in primary care.

Respondent 24.	Lead Clinical Nurse Specialist - Continence		
Comment number	1 **Date** 29/05/2018	**Section**	Flowchart women <65yr
Comment		**Action**	
Page 5 add below : Women (under 65 years) with suspected UTI "This guide excludes patients with recurrent UTI (2 episodes in last 6 month or 3 episodes in last 12 months)"		Accept – This has been added.	
Comment number	2 **Date** 29/05/2018	**Section**	Flowchart women <65yr
Comment		**Action**	
URINARY SYMPTOMS - list possible symptoms as in previous guidance as all symptoms if evident lead to doing a urine dipstick test : Severe or > 3 symptoms- Dysuria, Urinary frequency, Urinary urgency, Supra pubic tenderness, Visible haematuria, new nocturia, Cloudy urine.		None – To cut down on text we have removed this section as it is repeated further down.	
Comment number	3 **Date** 29/05/2018	**Section**	Flowchart women <65yr
Comment		**Action**	
Remove 'IN ADULT WOMEN' under 65 as already stipulated in the title.		Accept – We have removed	
Comment number	4 **Date** 29/05/2018	**Section**	Flowchart women <65yr
Comment		**Action**	
Consider other causes of urinary symptoms - is this not the same as Consider Other Diagnosis which is further down and could this be added here?		None - This was discussed during focus groups and steering group meetings and it was decided that to reduce over diagnosis it would be better to exclude other genitourinary causes early on.	

Comment number 5	**Date** 29/05/2018	**Section** Sepsis boxes
Comment		**Action**
Consider upper UTI / Pyelonephritis or possible sepsis. Signs and symptoms of pyelonephritis or systemic infection at bottom of page could go after 'URINARY SYMPTOMS' along with Signs and symptoms of sepsis. If YES then Action Advised - Consider admission if required, send urine for culture, immediately start antibiotic for upper UTI / sepsis using local guidelines If NO. Perform urine dipstick followed by the algorithm – does this make sense?		Partially accept - We have discussed the order of the boxes with GPs and expert working groups. It was decided that we can keep the order the way it is and that we should first exclude other causes of urinary symptoms. However, we will provide the document in a version that can be edited so that they can be modified locally if desired.
Comment number 6	**Date** 29/05/2018	**Section** Flowchart older adults
Comment		**Action**
Page 6 Older Person (over 65 years) with suspected UTI. Consider changing wording below the title - Do not perform urine dipstick in over 65 years as up to half of the older population will have asymptomatic bacteriuria (bacteria in the urine) and will have a positive dipstick without an infection. Only consider treatment if symptoms of UTI are present.		Accept - This wording has been changed.
Comment number 7	**Date** 29/05/2018	**Section** Flowchart older adults
Comment		**Action**
Upper UTI / Pyelonephritis or possible sepsis Add signs and symptoms for pyelonephritis and signs and symptoms for sepsis as these include temperature below 36 or 38 and above and if 'YES' actions i.e. consider admission etc. If 'No' go to Symptoms and signs of UTI Localised symptoms- New onset Dysuria, new urinary urgency or urinary frequency, new episode of incontinence, visible haematuria , supra pubic pain.- Remove temperature statement as included in pyelonephritis and sepsis risk - If Yes – link to UTI likely.		Partially Accept - Changed UTI signs/ symptoms to include "new" before each. Temperature included but statement is specific to 1.2C above baseline instead of the higher/low temp indicated for pyelonephritis.
Comment number 8	**Date** 29/05/2018	**Section** uti likely action
Comment		**Action**
The evidence below suggests changing the catheter before commencing therapy/ antibiotics- Page 6 states 'as soon as possible after starting antibiotics'.		Accept – This was changed.

Evidence

21. Scottish Intercollegiate Guidelines Network (SIGN). Management of suspected bacterial urinary tract infection in adults. 2012 Jul.

22.Tenke P, Kovacs B, Bjerklund Johansen TE, Matsumoto T, Tambyah PA, Naber KG. European and Asian guidelines on management and prevention of catheter-associated urinary tract infections. Int J Antimicrobial Agents. 2008 Feb; 31(1):68-78.

Respondent 25 Researchers and Clinicians from University College London

Comment number 1 **Date** 30/05/2018 **Section** Urine culture / interpretation

Comment	**Action**
Page 7: How do I interpret a culture result in UTI The original Kass's Paper can be cited here? The diagnostic threshold he suggested for diagnosis of Acute UTI was 105 cfu/ml and this by no means is a low count at all. We suggest changing the wording in the box to: Urine culture results in patients with urinary symptoms that usually indicate UTI • Counts of ≥10^4 colony forming units (CFU)/L of single species of a known urinary pathogen • higher counts ≥10^8 CFU/mL have even higher positive predictive value • ≥10^5/L mixed growth with one predominant organism Note: Most Microbiology laboratories in the NHS are using this criteria and the threshold from Kass's is out dated and also misquoted in the references used. The standard laboratory will perform cultures in a symptomatic patient if they have ≥10^4 colony forming units (CFU)/L of single species of a known urinary pathogen.	Partially Accept - We have not cited Kass's paper as it is part of the PHE SMI review/rationale that is cited, but we did try to clarify this in the text of the rationale. We have softened the wording to say that it is a reference that many labs use. The microbiologists on the steering group who have reviewed feel that many labs cannot feasibly go down to a measure of 10^4 cfu/L or (10^1 cfu/ml). We have included a statement that lower counts can also indicate UTI if patient symptomatic: • single isolate $\geq 10^5$ cfu/L ($\geq 10^2$ cfu/mL) in voided urine • in men counts as low as 10^6 cfu/L (10^3 cfu/mL) of a pure or predominant organism • any single organism $\geq 10^7$ cfu/L ($\geq 10^4$ cfu/mL) • *Escherichia coli* or *Staphylococcus saprophyticus* $\geq 10^6$ cfu/L ($\geq 10^3$ cfu/mL) • $\geq 10^8$ cfu/L ($\geq 10^5$ cfu/mL) mixed growth with one predominant organism

Evidence

Ref: Kass EH. Bacteriuria and the diagnosis of infection in the urinary tract. Arch Intern Med. 1957;100:709-714.

Comment number 2 **Date** 30/05/2018 **Section** Urine culture / interpretation

Comment	**Action**
Epithelial cells/mixed growth: • presence indicates perineal contamination, reducing significance of positive culture4B+ Note: This statement is misleading. There are many	Accept - We have changed the wording here to state: • The presence of epithelial cells is not necessarily an indicator of perineal contamination, culture result

types of epithelial cell in the urinary tract. White cell and Epithelial cell shedding is a part of the immune defence of the bladder in response to a UTI and does not mean that there is contamination. In a clean catch specimen, 80-90% of the intact epithelial cells will be uroplakin positive in emerging studies hence this statement should be removed or altered. VAGINAL CELLS DO NOT TAKE UP UROPLAKIN. In addition, epithelial cells in the urine should prompt cytology to avoid missing malignancy or other renal pathology and should not just be seen as an insignificant contamination. (Comment JM2 here: There is NO evidence or reason for this statement. We never do cytology)	should be interpreted with symptoms and repeated if significance is uncertain. • Mixed growth may indicate perineal contamination; however a small proportion of UTIs may be due to genuine mixed infection.
Evidence: Gill K, Kang R, Sathiananthamoorthy S, Khasriya R, Malone-Lee J. A blinded observational cohort study of the microbiological ecology associated with pyuria and overactive bladder symptoms. Int Urogynecol J. 2018 Harland K, Crabb V, Mutnick R, Baumgartner D. Urinary Squamous Epithelial Cells Do Not Accurately Predict Urine Culture Contamination, but May Predict Urinalysis Performance in Predicting Bacteriuria. Academic Emergency Medicine 2016;23:323–330	
Comment number 3 **Date** 30/05/2018 **Section**	Urine culture / interpretation
Comment Red cells: may be present in UTI • ~~lab red cell microscopy is less accurate than dipstick~~ • refer patients with persistent haematuria post-UTI for investigation of bladder cancer Please remove the line that has been crossed off. Red cells are significant in any patient and treatment of a UTI and exclusion of malignancy should be a priority. This should prompt a repeat specimen and urine cytology. The above sentence can be falsely reassuring	**Action** Accept - We have changed the statement about red blood cells to: • chemical tests may be more sensitive than microscopy as a result of the detection of haemoglobin released by haemolysis • refer patients with persistent haematuria post-UTI for investigation of bladder cancer
Comment number 4 **Date** 30/05/2018 **Section**	Urine culture / interpretation
Comment White Cells and Leucocytes: The WCC quantification should be removed. Most labs report this as small, moderate or large. Pyuria expression depends upon many factors and the second line almost suggests that if dipstick is negative for pyuria >107 /L, this patient does not have an infection	**Action** Partially Accept - We took out the statement regarding no white cells present but have kept the statement regarding – "white cells $\geq 10^7$ WBC/L ($\geq 10^4$ WBC/mL) are considered to represent inflammation in urinary tract, this includes the urethra" in order to align with the current lab guidance (SMI B41).

Comment number 5 **Date** 30/05/2018 **Section** Urine culture / interpretation	
Comment	**Action**
Additional references (see below)	Partially accept - We have reviewed the references and have included some additional ones. Some were already included in the reviews/guidance reference the statements (PHE SMIs). Some we have not included because there were questions as to how well the study represents the groups targeted in the individual flowcharts or other points related to the methodology. For some they were guidance which had been more recently updated.

Evidence

1. Hilt EE, McKinley K, Pearce MM, et al. Urine is not sterile: use of enhanced urine culture techniques to detect resident bacterial flora in the adult female bladder. J Clin Microbial. 2014;52(3):871-876,

2. Gill K, Kang R, Sathiananthamoorthy S, Khasriya R, Malone-Lee J. A blinded observational cohort study of the microbiological ecology associated with pyuria and overactive bladder symptoms. Int Urogynecol J. 2018.

3. Stamm WE, Counts GW, Running KR, Fihn S, Turck M, Holmes KK. Diagnosis of coliform infection in acutely dysuric women. NEnglJMed. 1982;307(8):463-468.

4. Hurlbut TA, 3rd, Littenberg B. The diagnostic accuracy of rapid dipstick tests to predict urinary tract infection. American journal of clinical pathology. 1991;96(5):582-588.

5. Kunin CM, White LV, Hua TH. A reassessment of the importance of "low-count" bacteriuria in young women with acute urinary symptoms. Ann Intern Med. 1993;119(6):454-460.

6. Gorelick MH, Shaw KN. Screening tests for urinary tract infection in children: A meta-analysis. Paediatrics. 1999;104(5):e54.

7. Deville WL, Yzermans JC, van Duijn NP, Bezemer PD, van der Windt DA, Bouter LM. The urine dipstick test useful to rule out infections. A meta-analysis of the accuracy. BMCUrol. 2004;4:4.

8. Khasriya R, Khan S, Lunawat R, et al. The Inadequacy of Urinary Dipstick and Microscopy as Surrogate Markers of Urinary Tract Infection in Urological Outpatients With Lower Urinary Tract Symptoms Without Acute Frequency and Dysuria. JUrol. 2010;183(5):1843-1847.

9. Walsh CA, Siddins A, Parkin K, Mukerjee C, Moore KH. Prevalence of "low-count" bacteriuria in female urinary incontinence versus continent female controls: a cross-sectional study. Int Urogynecol J. 2011;22(10):1267-1272.

10. Wolfe AJ, Toh E, Shibata N, et al. Evidence of uncultivated bacteria in the adult female bladder. J Clin Microbiol. 2012;50(4):1376-1383.

11. Khasriya R, Sathiananthamoorthy S, Ismail S, et al. Spectrum of bacterial colonization associated with urothelial cells from patients with chronic lower urinary tract symptoms. J Clin Microbiol. 2013;51(7):2054-2062.

12. Kupelian AS, Horsley H, Khasriya R, et al. Discrediting microscopic pyuria and leucocyte esterase as diagnostic surrogates for infection in patients with lower urinary tract symptoms: results from a clinical and laboratory evaluation. Bju Int. 2013;112(2):231-238.

13.Kass EH. Bacteriuria and the diagnosis of infection in the urinary tract. ArchInternMed. 1957;100:709-714.

14. Gill K, Kang R, Sathiananthamoorthy S, Khasriya R, Malone-Lee J. A blinded observational cohort study of the microbiological ecology associated with pyuria and overactive bladder symptoms. Int Urogynecol J. 2018.

16. Bartlett RC, Treiber N. Clinical significance of mixed bacterial cultures of urine. American journal of clinical pathology. 1984;82(3):319-322.

17. Latham RH, Wong ES, Larson A, Coyle M, Stamm WE. Laboratory diagnosis of urinary tract infection in ambulatory women. Jama. 1985;254(23):3333-3336.

18. Hooton TM. Practice guidelines for urinary tract infection in the era of managed care. IntJAntimicrobAgents. 1999;11(3-4):241-245.

19. Naber KG, Bergman B, Bishop MC, et al. EAU guidelines for the management of urinary and male genital tract infections. Urinary Tract Infection (UTI) Working Group of the Health Care Office (HCO) of the European Association of Urology (EAU). Eur Urol. 2001;40(5):576-588.

20. Epp A, Larochelle A, Lovatsis D, et al. Recurrent urinary tract infection. JObstetGynaecolCan. 2010;32(11):1082-1101.

21. Gupta K, Hooton TM, Naber KG, et al. International clinical practice guidelines for the treatment of acute uncomplicated cystitis and pyelonephritis in women: A 2010 update by the Infectious Diseases Society of America and the European Society for Microbiology and Infectious Diseases. Clin Infect Dis. 2011;52(5):e103-120.

Respondent 26 "Health Need Neighbourhoods" Pharmacist	
Comment number 1 **Date** 30/05/2018 **Section**	Other / general
Comment We have just seen the NICE UTI draft for consultation as well which has emphasis on treatment rather than diagnosis and was wondering if this is because the two agencies will then discuss the 2 aspects and come up with a consensus guidance in which the advice is similar	Action Accept - We are working with NICE to endorse the resources in alignment with the new UTI guidelines.
Comment number 2 **Date** 30/05/2018 **Section**	Flowchart women <65yr
Comment (specific to the statement on vaginal symptoms) This would be more effective message if the wording is replaced with message as in key points (page 7) under the same point "75-80% with discharge will not have UTI "	**Action** Accept - This was clarified.
Comment number 3 **Date** 30/05/2018 **Section**	Sepsis boxes
Comment Rather than direct to another box at the bottom of the page, can that information be accommodated here similar to the older person over 65 years with suspected UTI flow chart (page 6) box 2 checking for sepsis and pyelonephritis. It would still fit into the page and it would be convenient for the user and consistency in the various flow charts	Action None - Because of concerns that the flowchart had too much information, it was decided to take out the clinical criteria for sepsis and included more information in the rationale. This section can be adapted locally.

Comment number 4	**Date** 30/05/2018	**Section**	Both adult flowcharts
Comment			**Action**
From GP feedback and what we have observed in audits locally “back-up “ is as good as a prescription being issued as patients go and get the antibiotic. Hence our GP’s don’t like to do this or use patient leaflets with “back-up” as an option. Instead we use the word “delay prescribing antibiotics” and leave it for the GP to decide if they would rather get patient back if symptoms worsen, or the patient calls if symptoms worsen to have a telephone conversation and the GP can then decide at that point if antibiotic required, or if they contact patient based on culture results when it comes back depending on symptoms and severity			None – In order to align with NICE we are using the same wording they use in their treatment guidance (“back-up” antibiotic). However, we are providing the flowcharts in a modifiable format so they can be adapted locally if necessary.
Comment number 5	**Date** 30/05/2018	**Section**	Flowchart older adults
Comment			**Action**
(Specific to the UTI symptoms and the other causes of illness box) Can these 2 boxes be swapped over as this is exactly opposite to what the SIGN 88 diagnosis algorithm says (rule out other infections before considering UTI) We have been using this SIGN algorithm and template in our guidance and audit this year and would have to tell GP’s the opposite as per this PHE draft. Moreover it seems more logical to check the confusion pneumonic (PINCH ME) first as it is one of the symptoms for other infections and UTI symptom base to.			None - There has been much discussion about this as some prefer this box above and some below. It was decided at the last steering group meeting to keep it below, but when published this flowchart will be provided in a modifiable format, which will allow local providers to change the layout if needed.
Comment number 6	**Date** 30/05/2018	**Section**	Flowchart older adults
Comment			**Action**
(specific to the catheter stamen on the signs/sx box) The SIGN 88 diagnosis algorithm is much easier to follow, it separates people with catheter and without catheter and the focus is on symptoms related to those specific groups to diagnose .We would strongly prefer if PHE builds on the extra information based on SIGN algorithm format as SIGN 88 is already in use and is familiar to GP’s as well.			Partially Accept - Rigors and flank pain will be treated as pyelonephritis so need a different pathway. The only other symptom for someone with a urinary catheter in Sign 88 is new delirium. It was decided not to do a separate pathway for those with a catheter as they can be assessed in the same as those without.
Comment number 7	**Date** 30/05/2018	**Section**	Other / general
Comment			**Action**
We are very happy that Gujarati has been included in the list of languages that the leaflets are available in, as Leicester has a significant Guajarati speaking population and we missed not having leaflets in this language Please could we have these leaflets in other languages in word			Partially Accept - We do our best to see patient facing resources translated into the most common languages. The flowcharts are not patient facing so we have no plans to translate.

format as well like it is available in English so that we can use the template to add it to the GP electronic system where they can tick the relevant box electronically and this be added to the patient record	
Comment number 8 **Date** 30/05/2018 **Section** Children	
Comment	**Action**
NICE draft UTI (pyelonephritis) treatment guidance says 7 days for adults and 7-10 days for children. Locally we do not use range for duration, as after diagnosis the prescribers would like a specific course length. It would be helpful if PHE help with this in suggesting either 7 or 10 days and if range is suggested then in what circumstances would the decision be to prescribe 10 days rather than 7	None - We will defer to national UTI treatment guidance for children as it is outside the remits of this implementation tool.
Comment number 9 **Date** 30/05/2018 **Section** Children	
Comment	**Action**
(specific to UTI unlikely box point - "send urine for culture if") Advice in this box is not consistent with NICE CG54 – Table 2 under 1.1.5.5 that is worded as follows: Do not start antibiotic, and do not send urine sample for culture. Other causes of illness should be explored. The child should not be regarded as having UTI https://www.nice.org.uk/guidance/cg54/chapter/Recommendations#diagnosis	None - These risk factors override the negative test and should mean that the urine is cultured. They are taken from section 1.1.6.1 of the CG54 guidance from NICE.
Comment number 10 **Date** 30/05/2018 **Section** Children	
Comment	**Action**
(specific to the UTI unlikely box point - "no response to treatment") It will be preferable if time is specified as in NICE CG54 – 1.1.6.1, " within 24-48 hours " https://www.nice.org.uk/guidance/cg54/chapter/Recommendations#diagnosis	Accept - Changed by adding 24-48 hours.

Respondent 27 Locality Lead Pharmacist	
Comment number 1 **Date** 30/05/2018 **Section** Sepsis boxes	
Comment	**Action**
While the inclusion of sepsis signs/symptoms is a must, this needs to be set against the usability of the diagnostic guideline in quick primary care consultations by GPs and advanced practitioners, and increasingly in a "triage" type consultation.	Partially Accept - We have worked to simplify some of the content. We have moved the sepsis signs and symptoms to the rationale to aid local adaptation of the flowcharts depending on approved sepsis guidelines.

Comment number 2	**Date** 30/05/2018	**Section**	Flowchart older adults
Comment			**Action**
Catheter related UTI and actions when patients have a catheter could be clearer to ensure treatment is not given prematurely.			Accept - Added phrase on catheters into asymptomatic bacteraemia in to box on urine dip sticking.
Comment number 3	**Date** 30/05/2018	**Section**	Other
Comment			**Action**
CCG prescribing lead GP comment: it is just not workable, implies seeing lots of patients who don't need seeing (e.g. to exclude SIGNS of upper UTI), focuses far too much on complicated UTI when in reality the vast majority can be managed over the phone.			None - It is up to GP staff teams as to how they implement this tool, but the steering group feels that physical examination is important to exclude pyelonephritis and sepsis if UTI is expected.

Respondent 28	Locality Lead Pharmacist – Medicines Optimisation Provider Team		
Comment number 1	**Date** 30/05/2018	**Section**	Both adult flowcharts
Comment			**Action**
"For me there is still the huge gap of how clinicians should treat (or not!) men under 65 presenting with symptoms of UTI. I can't see where this has been addressed. I'm thinking particularly of walk in centres and urgent care centres where it is not possible to send off MSUs prior to treatment. This is something that hasn't been addressed for some time, making it extremely difficult to write PGDs and protocols for men<65			Partially accept - We feel that this group always need to have a culture sent and have included statement to refrigerate sample or use boric acid which we have tried to clarify treatment for men in tables.

Respondent 29	Prescribing Support Pharmacist/Lead Pharmacist for Antibiotics/Medication Safety Officer		
Comment number 1	**Date** 30/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
However we have the following comments about page 7: There is too much information on this page which makes it unclear and difficult to read			Accept - We have taken out a section on page 7 which will allow us more space between the lines and have produced summary pages for each flowchart.
Comment number 2	**Date** 30/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
The layout is potentially confusing - the information in the first box refers to women <65 yet follows directly on from the chart for women>65 so people might assume this relates to women > 65.			Accept - We have taken this section out of the table and will put a summary table on the back of each flowchart that covers the information in text.

Comment number 3	**Date** 30/05/2018	**Section**	Both adult flowcharts
Comment			**Action**
It might be clearer for the key points for women <65 to be immediately after the chart for women <65			Accept - Discussed with steering group and separate tables have been included on the back of each adult flowchart.
Comment number 4	**Date** 30/05/2018	**Section**	Flowchart older adults
Comment			**Action**
Are there any 'key points' from the chart for women >65?			Accept - We have added a text summary on the back of the flowchart for those over 65 years.
Comment number 5	**Date** 30/05/2018	**Section**	Urine culture / interpretation
Comment			**Action**
The 'how do I interpret a culture result' box contains a lot of detail – primary care prescribers need clear concise advice on whether they need to treat, or not treat based on the culture results.			Partially Accept - We have tried to clarify while keeping in the remit of a quick reference and using available guidelines.

Respondent 30	Chief Pharmaceutical Officer's Clinical Fellow on behalf of the Care Quality Commission		
Comment number 1	**Date** 30/05/2018	**Section**	Sepsis boxes
Comment			**Action**
The addition of the sepsis alerts is very helpful.			Accept - We need to keep it as simple as possible and have moved the details to the rationale section.
Comment number 2	**Date** 30/05/2018	**Section**	Other / general
Comment			**Action**
There is value in considering modality of consultation, face-to-face vs. remote (telephone, online video, online text-based consultation) and access to testing when implementing this guidance.			Partially accept – These flowcharts have been primarily developed for face to face consultations but can be adapted locally if desired.
Comment number 3	**Date** 30/05/2018	**Section**	Children
Comment			**Action**
In the table for infants or children under 16 years with suspected UTI (page 8), consider making reference to safeguarding guidance such as NICE CG86 Child maltreatment: when to suspect maltreatment in under 18s.			Partially Accept – We considered but space in flowchart and table did not allow for additions.
Comment number 4	**Date** 30/05/2018	**Section**	Other / general
Comment			**Action**
After UTI diagnosed (pages 5 and 8 - U65 and children) should then refer to treatment in line with local antimicrobial guidance.			Partially Accept – We have had to change treatment options to refer to the newly published NICE/PHE UTI

	guidelines.
Comment number 5 **Date** 30/05/2018 **Section**	Urine culture / interpretation
Comment	**Action**
Page 7 refers to nitrates rather than nitrites.	Accept – Error corrected.
Comment number 6 **Date** 30/05/2018 **Section**	Children
Comment	**Action**
The statements regarding the storage of specimens on pages 7 and 8 (tables and children) differ. page 7 - Refrigerate specimens to prevent bacterial overgrowth, or use specimen pots with boric acid (fill to the line) page 8 - culture urine within 4 hours, refrigerate, or use boric acid preservative (boric acid can cause false negative culture if urine not filled to correct mark on specimen bottle) Suggest rewording to culture urine within 4 hours of collection, alternatively to prevent bacterial overgrowth refrigerate or use boric acid universal container (red cap), boric acid can cause false negative culture if urine not filled to correct mark on specimen bottle.	Accept - Have changed wording and made consistent for children and adults.

Respondent 31	National Project Lead - Healthcare Acquired Infection and Antimicrobial Resistance
Comment number 1 **Date** 30/05/2018 **Section**	Other
Comment	**Action**
I hate the coloured infill as I find it hard to read visually. I would use the box outline in colour to communicate the colour coding concept - which is a good idea.	Partially Accept - No consensus reached when showed an example to the steering group. When tested it seemed to create more lines in the document which was visually challenging. We can consider when doing larger summaries of the flowchart.
Comment number 2 **Date** 30/05/2018 **Section**	Other
Comment	**Action**
I would like a final version to be also available as an editable version as with the management guidance; this way local health economies can align to their priorities, and if necessary amend for target audience and remove the NEWS2 sepsis content if that is the local preference, or add in local diagnostic pathways and detail such as boric acid red top tube messaging (this is still an issue in	Accept - Document will be available in editable word format or open text document.

primary care)

Respondent 32	Consultation Geriatrician				
Comment number	1	**Date**	30/05/2018	**Section**	Flowchart older adults
Comment					**Action**
Some feedback regarding the draft UTI flowcharts for suspected UTI in over-65's: 1 – If patient does not have symptoms or signs, there is no need for the 'No' arrow taking them to the self-care Target leaflet. 'They don't have a UTI'					Accept - The arrow for those with other localised signs/symptoms now goes to follow local diagnostic and treatment guidance and we added in a statement about watchful waiting
Comment number	2	**Date**	30/05/2018	**Section**	Flowchart older adults
Comment					**Action**
'Increased confusion' is vague. It would be more correct to use 'delirium' which is an indicator that the person may be unwell but is otherwise so non-specific as to be unhelpful as an indicator of infection. Either way, UTI is rarely the sole cause of delirium in the absence of other symptoms so this advice should be marked with caution, or removed.					Accept - Changed to delirium.
Comment number	3	**Date**	30/05/2018	**Section**	Flowchart older adults
Comment					**Action**
The yellow box implies that urinary catheter plus delirium predicts UTI. It is much more likely that there is another cause for delirium. This flowsheet would result in the patient getting immediate antibiotics, which it is unlikely to be the correct treatment. In the reference, antibiotics were only given if there was also a positive urine culture in such patients.					Partially Accept - This is likely - discussed with SG and added lower grade fever as one of the diagnostic criteria for LUTI. We have taken out delirium alone if someone has a catheter.
Comment number	4	**Date**	30/05/2018	**Section**	Flowchart older adults
Comment					**Action**
In all cases of delirium, the low threshold that it is caused by a UTI increases the risk of missing other causes of delirium.					Accept – We have made the box for other causes of delirium higher in the flowchart and have referenced delirium management resources
Comment number	5	**Date**	30/05/2018	**Section**	Flowchart older adults
Comment					**Action**
5 – I would be uncomfortable at recommending NSAIDs to older patients (this also appears in the TARGET leaflet) due to the increased risks of adverse effects, even if the patient has no apparent contraindications or previous					Accept - We have removed from the flowchart for older adults

adverse reactions.	

Comment number 6	**Date** 30/05/2018	**Section**	Flowchart older adults
Comment			**Action**
6 – The inclusion of PINCHME is very much welcomed. I would suggest that it would be better to have a Delirium algorithm which this flowsheet points to, rather than encouraging the use of antibiotics in patients with delirium without further assessment. In other words, the presence of delirium should take the GP away from this flowsheet entirely.			Partially Accept - We have added a link to the RCP delirium resources and suggested referring to other resources as an action, when other causes of delirium are suspected. We aren't currently working on another algorithm.

Respondent 33 Medical Advisor – Urgent Care Services			
Comment number 1	**Date** 31/05/2018	**Section**	Symptoms / signs
Comment			**Action**
I would be grateful if you could consider softening your guidance on a Face to Face Assessment for all >65 year female patients with a simple UTI. Our service assesses the level of risk and frequently treats women aged 65 to 74 over the phone without a full set of observations if they are otherwise well. It is difficult to be certain what added value a well patient will receive by having observations carried out in the absence of any suggestion that they are unwell systemically. There is a cost element to seeing these patients in the out of hour's service where a telephone call will become a base visit which takes up time and costs the CCG in our area. In addition there will presumably be a similar increase in time and cost to in hours to patients. I wonder if 75 might be a more sensible age limit.			Partially Accept - added statement that "Dipsticks become more unreliable with increasing age over 65 years" and we have also included the statement: the flow chart for older patients may be suitable for some younger frail patients with or without a urinary catheter, especially those with high incidence of asymptomatic bacteriuria. In contrast some older healthy patients will fit the younger flow chart. These flowcharts have been primarily developed for face to face consultations but can be adapted by CCGs if desired.

Respondent 34	General Practitioner				
Comment number	1	**Date**	30/05/2018	**Section**	Flowchart women <65yr
Comment					**Action**
The vast majority of UTIs in patients of all ages are dealt with in general practice by telephone consultation. The guidance requires exclusion of 'any moderate risk of sepsis' even in women under 65 years and the sepsis alert in the flowchart requires measurement of heart rate, respiratory rate, blood pressure and temperature. This is not realistic or practical for implementation in the community and arguably not necessary in the young fit patient presenting with simple UTI symptoms?					Partially Accept - Because of space issues, we have taken the clinical criteria for Sepsis out of the flowchart and simply flagged the need to “Think sepsis” (with reference to more details in the rationale section). However, we do feel that this warrants clinical evaluation especially in those more vulnerable to sepsis.
Comment number	2	**Date**	30/05/2018	**Section**	Flowchart women <65yr
Comment					**Action**
The flowchart also recommends giving all patients a 'TARGET UTI leaflet' - this means they would need to attend the GP surgery to collect this; most patients prefer to simply collect a prescription for antibiotics from the pharmacy.					None - Many women say that they often don’t get enough information about their UTI when consulting. The leaflet can be downloaded and emailed, left at the pharmacy, or be placed on the surgery website. We will include information in the rational specific to the leaflet and how it can be shared with patients
Comment number	3	**Date**	30/05/2018	**Section**	Flowchart women <65yr
Comment					**Action**
The flowchart describes 'other severe urinary symptoms: urgency, visible haematuria, frequency,....'; in my clinical experience the first symptom that patients often complain about is either frequency or urgency, I would not necessarily describe this as a severe symptom and would not feel that it should necessarily prompt urine dipstick testing - they should be categorised as mild symptoms and should not warrant dip testing.					Partially Accept - We re-stated so that it clearer that we are asking about the severity of the other symptoms - not meaning that they all are severe in and of themselves.
Comment number	4	**Date**	30/05/2018	**Section**	Flowchart older adults
Comment					**Action**
The second flowchart for persons over 65y with suspected UTI requires the temperature to be checked: this is often not practical as again many UTIs are treated by phone consultation and the requirement to check the temperature may necessitate a home visit in housebound frail patients and in many cases I would argue it is better to treat early with antibiotics via phone consultation with careful safety netting rather than wait until a clinician is					Partially Accept - Temperature is one of the criteria and should be assessed if possible. Clinicians can use other signs/symptoms to diagnose i.e. dysuria, haematuria etc. These flowcharts have been primarily developed for face to face consultations and we would recommend using these

available to visit and assess. It seems that the draft guidance may be an 'ideal' process but does not take account of current resource limitations in primary care or of patient preference which is that often they prefer to be treated without necessarily being seen face to face by a clinician.	clinical assessments for patients with a suspected UTI. The format allows minor changes to suit local service delivery and sampling protocols but this should be agreed on by local medical authorities.

Respondent 35	British Geriatrics Society				
Comment number	1	**Date**	05/06/2018	**Section**	Flowchart older adults
Comment					**Action**
1) Concerns re the use of term confusion - should be using the term delirium as this is a recognised diagnosis (and the PINCHME acronym they use further down the guideline is an acronym used to identify causes of delirium).(Points 1+2 seemed to be the ones that bothered Geriatricians the most)					Accept - Changed to delirium
Comment number	2	**Date**	05/06/2018	**Section**	Flowchart older adults
Comment					**Action**
2) What do they mean by 'non-specific signs of infection' - this may become a 'catch-all' term and may mean that any symptom is attributed to UTI (in the same way that it is currently).(Points 1+2 seemed to be the ones that bothered Geriatricians the most)					Accept - We have kept the non-specific signs as one of the flags for systemic infection as symptoms like delirium or change in behaviour/ability were highlighted frequently by care providers/ assistants and other focused on Delirium (RCPsych). However, it is no longer a tick box and though delirium/debility is part of the diagnostic criteria - it wouldn't be independently predictive (a patient would need to have other urinary symptoms of fever).
Comment number	3	**Date**	05/06/2018	**Section**	Flowchart older adults
Comment					**Action**
3) Older people often do not mount an inflammatory/ fever response to infection.					Accept - We have a low temperature listed as a sign/ symptom of pyelonephritis and allow for diagnosis based on other multiple symptoms/ signs or dysuria alone.

Comment number 4	**Date** 05/06/2018	**Section**	Flowchart older adults
Comment			**Action**
4) The recommendation of considering NSAIDS does not seem sensible given the risk of adverse drug reactions in an older frailer cohort.			Accept - We have taken out NSAID use.
Comment number 5	**Date** 05/06/2018	**Section**	Flowchart older adults
Comment			**Action**
5) Something should be added with regards to reconsider diagnosis if frequent episodes being labelled as recurrent UTI - and if recurrent UTI thought likely then further investigations to establish an underlying cause.			Accept – added the statement "Consider non-urgent referral for bladder cancer in patients ≥ 60 years with recurrent/persistent unexplained UTIs" under the follow up section in the table on page 9
Comment number 6	**Date** 05/06/2018	**Section**	Flowchart older adults
Comment			**Action**
6) Something should be added regarding 2 week wait referrals for haematuria on urine dipstick.			None - We don't suggest dipstick in the over 65 population. We do recommend that patients with persistent haematuria post-UTI for investigation in the culture results section of the table.

Respondent 36 British Infection Association			
Comment number 1	**Date** 04/06/2018	**Section**	Both adult flowcharts
Comment			**Action**
The BIA are concerned that the flowcharts are far too complicated and therefore will not be workable in real life scenarios, when a nurse practitioner or busy GP is trying to work out who should have a urine dipstick, who should have a urine culture, and who should be treated for UTI. We are also keen that this document and the NICE documents are all consistent.			Accept - We will work to simplify some of the content and have produced summary tables for the adult flowcharts that reduce text in the last table. We have had to balance the removal of content with the feedback that the additional information is helpful to have as a reference. We are seeking NICE endorsement to ensure synergy between final documents.

Respondent 37 Cross system Sepsis Programme board			
Comment number 1	**Date** 16/05/2018	**Section**	Both adult flowcharts
Comment			**Action**
We would be very grateful if you could look at our comments regarding the sepsis definitions & wording used in the document and consider these so that we can			Accept - Feedback from the consultation indicated that though many groups are adapting and starting to use NEWs2 in

align national recommendations as much as possible. They mainly pertain to the adult pathway, and are consistent with the NHS England Sepsis implementation guidance www.england.nhs.uk/wp-content/uploads/2017/09/sepsis-guidance-implementation-advice-for-adults.pdf (the author list is at the end of the document but included representatives from NICE and the NG51 sepsis development group.) The Sepsis CQUIN (with annex) was revised to reflect this https://www.england.nhs.uk/wp-content/uploads/2018/05/cquin-indicator-specification-information-april-2018.pdf A key component of this is the mandate that acute providers will have to implement NEWS2 to receive remuneration. (Picture see email) This Patient Safety alert https://improvement.nhs.uk/documents/2508/Patient_Safety_Alert_-_adoption_of_NEWS2.pdf that was released very recently defines the role of NEWS2 and effectively mandates its use in all acute and ambulance organisations. We felt it extremely important that infection and sepsis needed to be aligned with all cause deterioration triggers. (I have enclosed the Wessex PSC interpretation of this, that is aligned with NHS England and RCP NEWS2 for sepsis and deterioration in case useful) You requested some of the evidence behind the need to develop the above documents- there was a need to develop a pragmatic and usable consensus sepsis definition due to the following: 1. There was large variability in what clinicians used to define sepsis, and the vast majority of organisations are using NEWS already. (Picture see email) 2. Single parameter physiological measurements are not strongly evidenced (Picture see email) 3. Aggregate physiological recording with NEWS is the optimal current means of defining risk in infection (Picture see email) 4. A NEWS of 5 encapsulates all patients who are qSOFA 2 or more, meaning that it is consistent with International	primary care, there are others that are concerned that it has not yet been evaluated and endorsed for use in primary care. It was decided by the steering group to signpost the need to assess for possible sepsis but then direct clinicians to the tool that is endorsed locally (suggesting NICE, NEWs 2 or the RCGP tools). We have provided detailed criteria for NICE and NEWs2 in the rationale section and links to the resources.

Consensus Sepsis definitions as well. It should also be noted that NEWS outperforms qSOFA (Picture see email)					
Comment number	2	**Date**	18/05/2018	**Section**	Both adult flowcharts
Comment					**Action**
in the section sepsis, consider if the patient is likely to have multi resistant organisms .e.g. previous history (check previous results), catheter, lives in a care home, elderly Consider also if the patient intermittently self-catheterises, has a previous history of significant UTI, obstructive nephropathy (stents), bladder pathology, stones or hydronephrosis.					Partially Accept - Added in statement to always send urine for culture to sepsis/ pyelonephritis action box. Additional considerations for complicated UTI are covered in some parts of the chart – however, we cannot cover them all in the quick reference.
Comment number	3	**Date**	18/05/2018	**Section**	Both adult flowcharts
Comment					**Action**
Is this (confusion/delirium) box making the UTI pathway into a general infection one? If no leads to “Consider other sources of infection and deterioration and treat appropriately” it might suffice and simplify the chart.					Accept - Added in statement about watchful waiting to this box based on this and other feedback from reviewers.
Comment number	4	**Date**	18/05/2018	**Section**	Sepsis
Comment					**Action**
Take out UK Sepsis trust from the rationale - I would refer to one of the other- they are near identical, and err on quoting NICE guidance out of the two.					Partially accept – we have instead cited the RCGP toolkit which provides links to multiple resources and guidelines.
Comment number	5	**Date**	18/05/2018	**Section**	Sepsis
Comment					**Action**
Suspected Sepsis alert in the key at the bottom of the page.					Accept - Added in both for Both adult flowcharts.
Comment number	6	**Date**	18/05/2018	**Section**	Interpret
Comment					**Action**
In women, consider whether the patient is actively menstruating.					None – We are unable to include this as well, because we need to simplify the charts.