Reattendance rates in men presenting with symptoms of urethritis – Can point of care testing for chlamydia and gonorrhoea improve outcomes?

Carter N[1,2], Crofts M[1], Garrett F[2], Clarke M[2], Nicholls J[2], Wheeler H, Horner P[1,2]

[1] School of Social and Community Medicine, University of Bristol, United Kingdom. [2] Bristol Sexual Health Centre, University Hospitals Bristol NHS Trust, United Kingdom

Background:

Chlamydia (CT) and gonorrhoea (GC) are common causes of urethritis. Management of urethritis is essentially syndromic which necessitates prescribing to cover a range of potential pathogens, including *Mycoplasma genitalium* (MG) which causes 10-25% of cases. Point of care (POC) testing for CT and GC in men with symptoms of urethritis could enable results to be available to inform initial management decisions, which in turn may allow for altered care pathways and reduced reattendance.

All symptomatic men (dysuria, urethral discomfort, urethral discharge and testicular pain) attending the Bristol Sexual Health Centre (BSHC) have a urethral smear undertaken and if gonococcal urethritis (defined as ≥ 5 pmnls/hpf on a Gram stained urethral smear) is present treated with Ceftriaxone 500mgs plus azithromycin 1g or doxycycline 100mgs bd for 7 days if non-gonococcal urethritis (NGU) is diagnosed (14 days if epididymo-orchitis is diagnosed). If urethritis persists men are re-treated with azithromycin 1 g then 500mgs od for 4 days (extended regimen) plus metronidazole 400mgs bd 5 days. All men with gonorrhoea are asked to re-attend for a test of cure.

Doxycycline is >95% effective in treating CT but only 40% effective in treating MG whereas an extended azithromycin regimen is >95% effective in treating both CT and MG, if MG macrolide antimicrobial resistance is not present. MG is more common in CT-negative NGU. We hypothesised that knowing whether a person with NGU had CT would enable better targeted treatment with the use of doxycycline for CT-positive and extended azithromycin for CT-negative NGU, which would result in fewer follow-up attendances.

Aim: To estimate reattendance rates in men with symptoms of urethritis if POC testing for CT and GC is introduced, using a decision tree care pathway model

Methods:

All men with urethritis symptoms presenting to BSHC over a three month period were identified using electronic patient records (EPR). Reattendances within 30 days of initial clinic visit and reasons for reattendance were recorded via interrogation of the EPR and a decision tree care pathway model constructed (left side of figure). This pathway was then modified assuming all men have a CT/GC POC test >1.5 hours prior to being seen by the clinician and the result was available prior to clinical examination (right side of figure). GC-positive urethritis is treated as before and assumed to 100% effective. A test of cure is undertaken by asking the patient to drop off a specimen for POC testing which does not require clinic re-registration. CT-positive NGU is treated with doxycycline 100mgs bd 7/7 and assumed to be 95% effective and CT-negative urethritis with the extended azithromycin regimen which is assumed to be 90% effective. If men with NGU re-attend and are diagnosed with persistent urethritis an extended azithromycin regimen is then used if they had been treated with doxycycline, and Moxifloxacin 400mgs od 14 days is used if they had been treated initially with the extended azithromycin regimen. In both situations metronidazole 400mgs bd 5 days is also administered. The cure rate is assumed to be 95%. MG prevalence is assumed to be 20% with <5% macrolide anti-microbial resistance.

The model was then propagated with a hypothetical population of 400 men using the EPR prevalence and probability estimates and the assumptions detailed above.

Results

431 men with urethritis symptoms were identified in a 3 month period. Of these 385 had a urethral smear and 192 (50% [95% CI, 45-55%]) had confirmed urethritis on initial microscopy. 9 (19% [95% CI, 10-32%]) of 48 men with chlamydia urethritis re-attended of whom 3 did so because of unprotected sexual intercourse with an untreated partner and 31(29% [95% CI, 21-38%]) of 106 men with chlamydia-negative NGU re-attended at least once within 30 days of initial visit. 46(12% [95% CI, 9.1-16%]) men with a negative urethral smear re-attended with persistent symptoms and 17(4.4% [95% CI, 4.4-7%]) had urethritis on repeat microscopy. In addition of these men 5(1%) were GC-positive and 8(2%) CT-positive.

It was estimated by comparing care pathways that POC testing could reduce microscopy by 25% and repeat reattendance following treatment by 75% through improved pathogen-directed treatment and the introduction of GC POC testing sample drop-off as a test of cure.

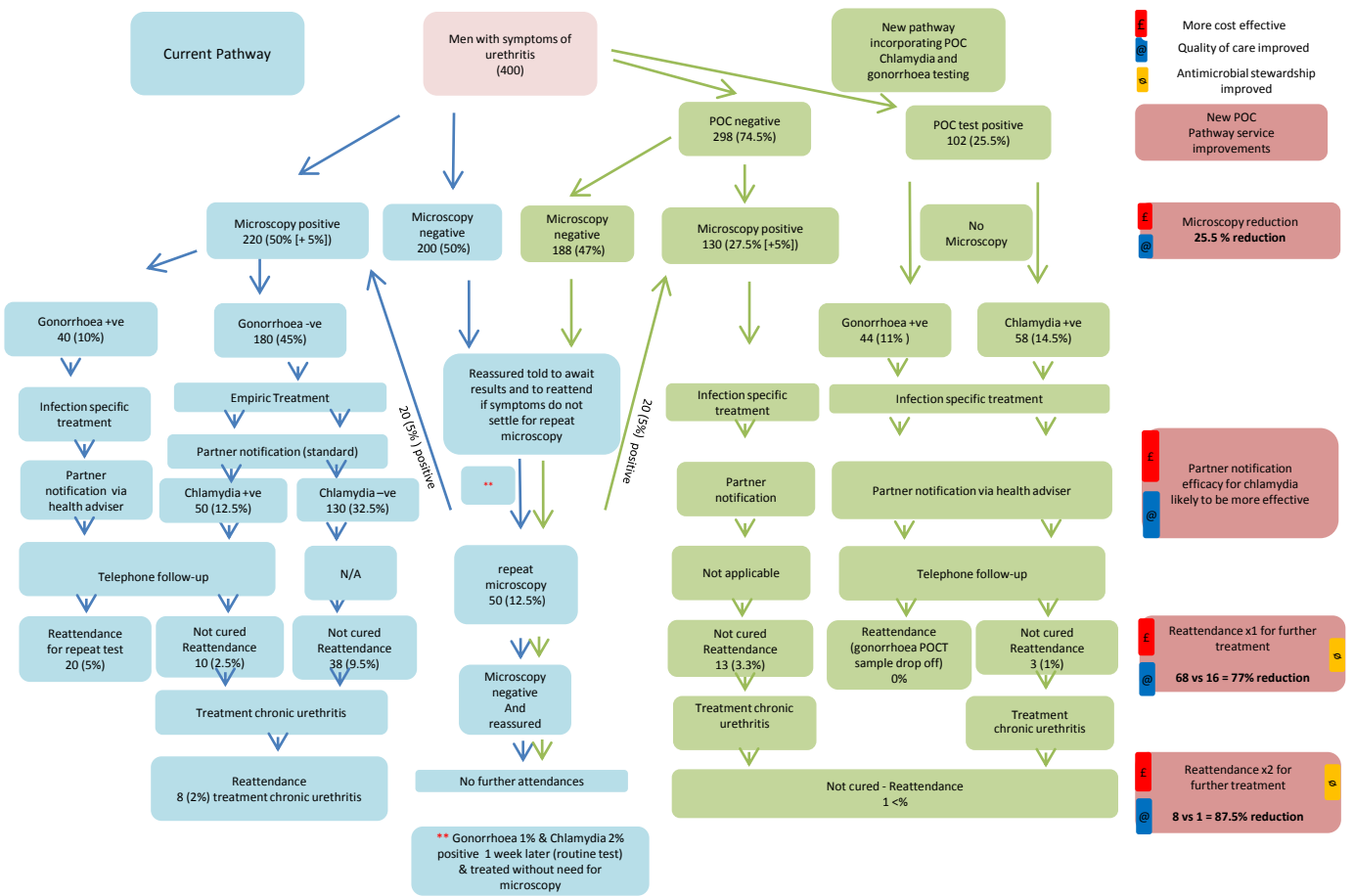

Figure: Care pathway maps comparing current management with hypothetical care pathway if POC testing was introduced

Conclusions:

- This service evaluation identified high reattendance rates in men with symptoms of urethritis
- CT/NG POC testing has the potential to substantially reduce reattendance rates.
- This would require the CT/GC POC test result to be available prior to the clinical examination.