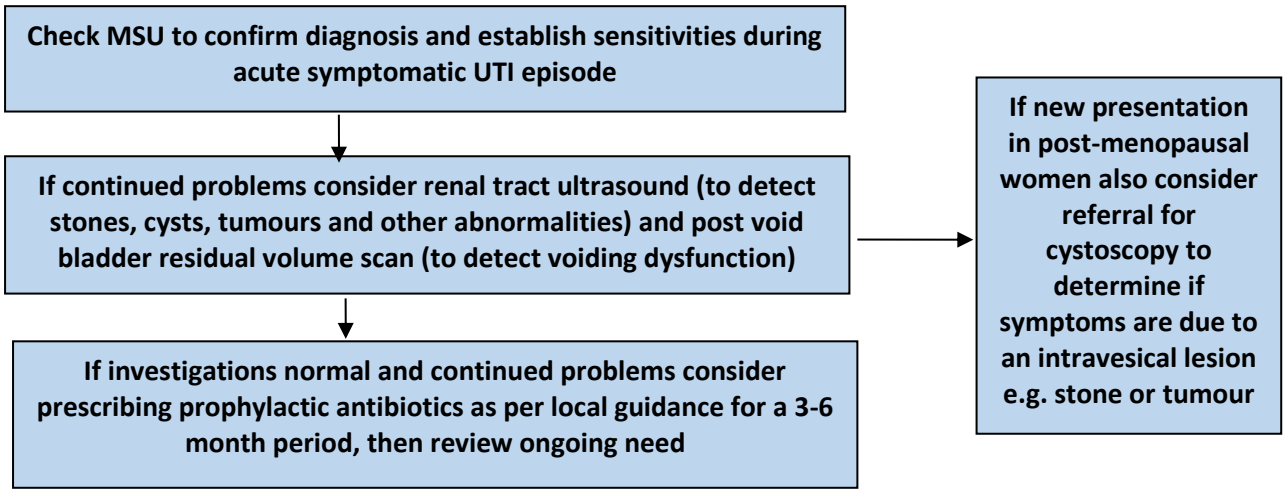
Management of recurrent urinary tract infection (UTI) in non-pregnant women

1. Initial presentation of recurrent UTI

The widely accepted definition of 'recurrent UTI' in women are three or more episodes of microbiologically proven UTI in 12 months **or** two or more episodes of lower UTI in 6 months. This does not include episodes of bacteriuria without UTI symptoms (asymptomatic bacteriuria). The following measures to reduce recurrence of UTI should be considered prior to commencement of antibiotic prophylaxis:

- **Encourage better hydration (2.5L/day recommended – 1.5l should be water) to ensure more frequent urination as this can reduce recurrence https://www.hps.scot.nhs.uk/web-resources-container/national-hydration-campaign-materials/**
- **Encourage urge initiated voiding and post-coital voiding. Advise sexually active women that diaphragm and spermicide use are risk factors for cystitis and discuss alternative contraception**
- **Advise the patient they may wish to try cranberry products (avoid if on warfarin) or d-mannose to reduce recurrence**
- **Consider use of a non-steroidal anti-inflammatory drug in women under 65 years with mild symptoms after discussion of risks and benefits**
- **Consider offering a 'stand-by' antibiotic prescription to be taken at the first symptoms of UTI**
- **For recurrent cystitis associated with sexual intercourse: offer trimethoprim 200mg to be taken within 2 hours of intercourse (off-label use)**
- **For post-menopausal women with risk factors such as atrophic vaginitis consider prescribing intra-vaginal oestrogen (unlicensed indication). Review within 12 months**
- **For post-menopausal women with no obvious risk factors, consider referral to urology for further investigations, particularly if recurrent UTI is a recent problem**

If these simple measures fail to improve frequency of UTI then follow the flow chart below:



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Based on original guidance produced by NHS Tayside

Counselling prior to initiation of prophylaxis

The patient should be counselled at an early stage that antibiotic prophylaxis is prescribed for a fixed period of time not usually a life-long treatment. Antibiotic prophylaxis should not be considered in patients with indwelling catheters. Antibiotics are given in this way to allow a period of bladder healing which makes UTI much less likely. There is no evidence they have any additional benefit beyond 3-6 months treatment therefore the treatment should ideally be discontinued after 6 months. Rotation of prophylactic antibiotics to address issues of resistance is not encouraged. This patient information leaflet on recurrent UTI may be helpful http://patient.info/pdf/4437.pdf

2. Stopping a prolonged course of prophylactic antibiotics

Identifying patients for review

Patients should be reviewed after 3-6 months of prophylactic antibiotics with a view to stopping them. A review date should be documented in the medical notes and also on the prescription. For audit purposes and retrospective review 6 months is suggested as a suitable trigger for prolonged duration.

Discussing patient concerns

Patients may feel anxious about returning to suffering recurrent UTIs. However after a prolonged period of antibiotic treatment in most cases this has allowed the bladder wall to 'heal' making UTIs less likely.
They should be given appropriate advice regarding continuation of simple measures to prevent UTI.
The risks of long term antibiotics in terms of vulvovaginal candidiasis and other local side-effects, *Clostridioides difficile* and increased likelihood of infection with resistant organisms are important considerations for the doctor and patient and should be fully discussed. The importance of adequate hydration and its potential role in preventing UTI should be discussed.

Recurrence of UTI after stopping antibiotic prophylaxis

It is important to ensure the patient is complying as far as possible with simple measures outlined previously. If they have not already had a renal tract ultrasound and post void bladder residual volume scan now is a good time to consider doing this in consultation with local specialists.
In post-menopausal women consider the possibility of atrophic vaginitis as a risk factor for UTI and manage appropriately. If recurrent UTI is a relatively 'new' problem in a post-menopausal woman consideration should also be given to referral for cystoscopy.
However, if appropriate investigations have already been done and shown no abnormality and there are no other concerning 'red flag' symptoms and cranberry extract has already been tried (or is inappropriate e.g. if the patient is on warfarin) then continuation of prophylaxis may be considered. The ongoing need for antibiotic prophylaxis should be reviewed again after 3 months.

Non-antibiotic therapies

SIGN 160 and NICE Antimicrobial Prescribing guidance reviewed the evidence for non-antibiotic therapies.

Cranberry products: These are used widely and very low quality evidence shows some benefit for reducing the risk of UTIs in non-pregnant women. No evidence to suggest benefit in older women.
Probiotics: There is inconclusive evidence to recommend the use of lactobacillus to prevent recurrent UTIs.
D-mannose: Evidence from one small RCT suggests D-mannose may be effective in reducing the risk of recurrent UTI in non-pregnant women.
Methenamine: May be effective for short term prophylaxis in patients without renal tract abnormalities. For longer term prophylaxis the evidence is poor.
Immunoactive prophylaxis: Uro-Vaxom® is more effective than placebo in female patients with recurrent uncomplicated UTI and has a good safety profile. It is unlicensed in the UK. There is insufficient evidence about other vaccines.
Acupuncture: Based on two small RCTs, a Canadian guideline recommended acupuncture may be considered as an alternative to antibiotics.