# Screening for Asymptomatic Bacteriuria & Diagnosis and Treatment of symptomatic Urinary Tract Infection in Pregnancy- Full Clinical Guideline

Reference no.: UHDB/CG/06:22/U1

**Contents**



## 1. Introduction

Bacteriuria is linked to pre-labour premature rupture of membranes (PPROM), pre-term labour and fetal growth restriction. Untreated upper urinary tract infection in pregnancy also carries risks of morbidity and rarely mortality to the pregnant woman. The importance of appropriate diagnosis and treatment of this common pregnancy disorder cannot be over-emphasized.

Ten to thirty percent of women with confirmed bacteriuria in the first trimester develop upper urinary tract infection in the second or third trimester.

## 2. Aim and Purpose

- To assure negative status of bacteriuria prior to 20 weeks gestation or treat prophylactically if negative status cannot be confirmed to reduce risk of developing UTI in pregnancy

- To appropriately diagnose and treat urinary tract infections in pregnant women to reduce the risks of morbidity and mortality

- To reduce the use of antibiotics in women that do not need it.

## 3. Abbreviations

| | | |
|---|---|---|
| MSU | - | Midstream Urine |
| PPROM | - | Premature, pre-labour rupture of membranes |
| tds | - | three times a day |
| UTI | - | Urinary tract infection |

## 4. Antenatal Screening for Asymptomatic bacteriuria (Appendix A)

Culture of urine by sending off a Mid-stream Urine (MSU) sample is recommend rather than a dipstick (reagent strip) test because there is good evidence that dipstick tests are insufficiently sensitive (in whatever combination) to be used for screening for asymptomatic bacteriuria. See 6.1 with guidance on how to limit the risk of contamination of samples.

- Standard MSU culture testing should be performed routinely at the first antenatal visit (at booking; send a fresh clean sample only)
- Do not use dipstick testing to screen for asymptomatic bacteriuria (dipstick routinely for other as per AN care guidelines: do not put dipstick in sample that is meant to be sent as MSU to avoid contamination)

### 4.1 Management of results from screening for asymptomatic bacteriuria (Appendix A)

Follow flowchart within Appendix A, unless the woman is symptomatic in which case refer to Appendix B for guidance.

If prophylactic treatment of asymptomatic bacteriuria is advised:

- Advice Antibiotics for 7 days click here for Obstetric Infections Guideline
- Choice of antibiotic to which the organism is sensitive in order of preference as for lower UTI
- In community antibiotics are to be prescribed by the GP or out of hours service
- If prophylactic course of antibiotics advised based on two consecutive sample results stating contaminated/mixed growth a standard letter to the GP can be used (Appendix D)
- If a group B streptococcus is isolated (caused by the bacterium **'Streptococcus Agalactiae')**, inform the woman and follow the GBS guideline click here for full guidelines

No more MSU samples in pregnancy should be sent for screening for asymptomatic bacteriuria unless the patient scores on the pre term birth scoring at booking.

Women who score on the pre term birth scoring at booking will require a repeat MSU to be sent 7 days after completion of treatment. Please see appendix A.

If suspected symptoms are reported during any stage of pregnancy, refer to Appendix B for guidance. Do not send MSU samples for incidental findings of leucocytes on dipstick urinalysis.

## 5. Diagnosis and treatment of (suspected) symptomatic urinary tract infection in pregnancy) (Appendix B)

Features of UTI include:

- Dysuria (possibly in combination with urinary frequency and/or urge incontinence: note that isolated urgency may be a normal feature in pregnancy)
- Urine that is offensive smelling, cloudy or contains blood (when pregnant less likely to contain blood)
- Non-specific malaise such as aching all over, tiredness and cold sweats

If a woman presents with mild symptoms of possible UTI, a urine dipstick test for nitrate can be done to look for further evidence of a UTI.

- If nitrate test is negative, a UTI is unlikely, and alternative cause should be considered for mild symptoms
- If the nitrite test is positive, with or without a positive leucocyte esterase test, a UTI is highly likely. Antibiotics should be offered and an MSU sample needs to be sent off. click here for Obstetric Infections Guideline

If a woman presents with severe symptoms of UTI, treatment with antibiotics is recommended. Antibiotics treatment should be offered and an MSU sample needs to be sent off. click here for Obstetric Infections Guideline

Instructions for sending off urine for culture and sensitivity from all women with a suspected urinary tract infection during pregnancy:

- Before empirical antibiotic treatment is started
- Seven days after antibiotic treatment had been completed as a test of cure in case pre-treatment MSU was positive

In case pre-treatment MSU was mixed/contaminated and symptoms remain after seven days antibiotic treatment has been completed, reassess based on level of symptoms as per flowchart.

Offer appropriate symptomatic pain relief with paracetamol.

Advise women to seek medical attention if they develop fever, loin pain or do not respond to treatment.

- If a group B streptococcus is isolated, inform the woman and follow the GBS guideline. click here for full guidelines

## 6. Recurrent and Non-Clearing (a)symptomatic UTI's in Pregnancy

When MSU samples show signs of infection 7 days after completion of an antibiotics course prescribed for UTI, the UTI should be treated with a second course of antibiotics click here for Obstetric Infections Guideline. An MSU sample needs to be sent off seven days after completion of the second course of antibiotic treatment as a test of cure.

Referral to a consultant needs to be organised for UTI's in pregnancy when:

- A third UTI in pregnancy is diagnosed
- An MSU sample still shows signs of infection after completion of 2 consecutive courses of antibiotics

### 6.1 Minimise the risk of Mixed culture – contamination

To minimise the risk of contaminating a sample aim to:

- Follow Trust instructions for collecting an aseptic MSU sample. Women need to be made aware and the infographic may be used to support this (Appendix C).
- Use a fresh sample
- Do not use the first urine of the day for MSU
- Minimise time between collection and analysis (consider collection times for example)
- Store the sample in a fridge

## 7. Uncomplicated Lower UTI

Prescribe an antibiotic to all women with a suspected urinary tract infection during pregnancy**.** If there are not yet any culture and sensitivity results, prescribe empirical antibiotics (in order of preference).

See Obstetric Infections / ABX / Microbiology guideline for specific Antibiotics click here for Obstetric Infections Guideline

Do not recommend cranberry products or urine alkalinizing agents to treat a UTI.

### 7.1 Follow up

- Advise women to seek medical attention if they develop fever, loin pain, or do not respond to treatment.
- If symptoms of UTI persist when sensitivities are known, see Obstetric infections guideline for ABX treatment
- Repeat the urine culture seven days after finishing antibiotic treatment to ensure Clearance if indicated as per flowchart
- If a group B streptococcus is isolated**,** inform the antenatal care service, as prophylactic antibiotics will be offered during labour and delivery.

## 8. Pyelonephritis

Send a urine sample and blood for culture and sensitivity testing. Check for previous urine results – this may affect the choice of empirical treatment.

**Empirical treatment whilst awaiting results as per Obstetric Infections guidelines** click here for Obstetric Infections Guideline

Review treatment after 48-72 hrs once culture and sensitivity results are available

Repeat the urine culture seven days after finishing antibiotic treatment to ensure clearance.

### 8.1 Oral switch

Change to oral treatment according to results when the patient is clinically stable and has been apyrexial for at least 24 hours.

See Obstetric infections guidelines for antibiotics regimes. click here for Obstetric Infections Guideline

## 9. Monitoring Compliance and Effectiveness

Audit compliance through Business Unit audit forward programme processes

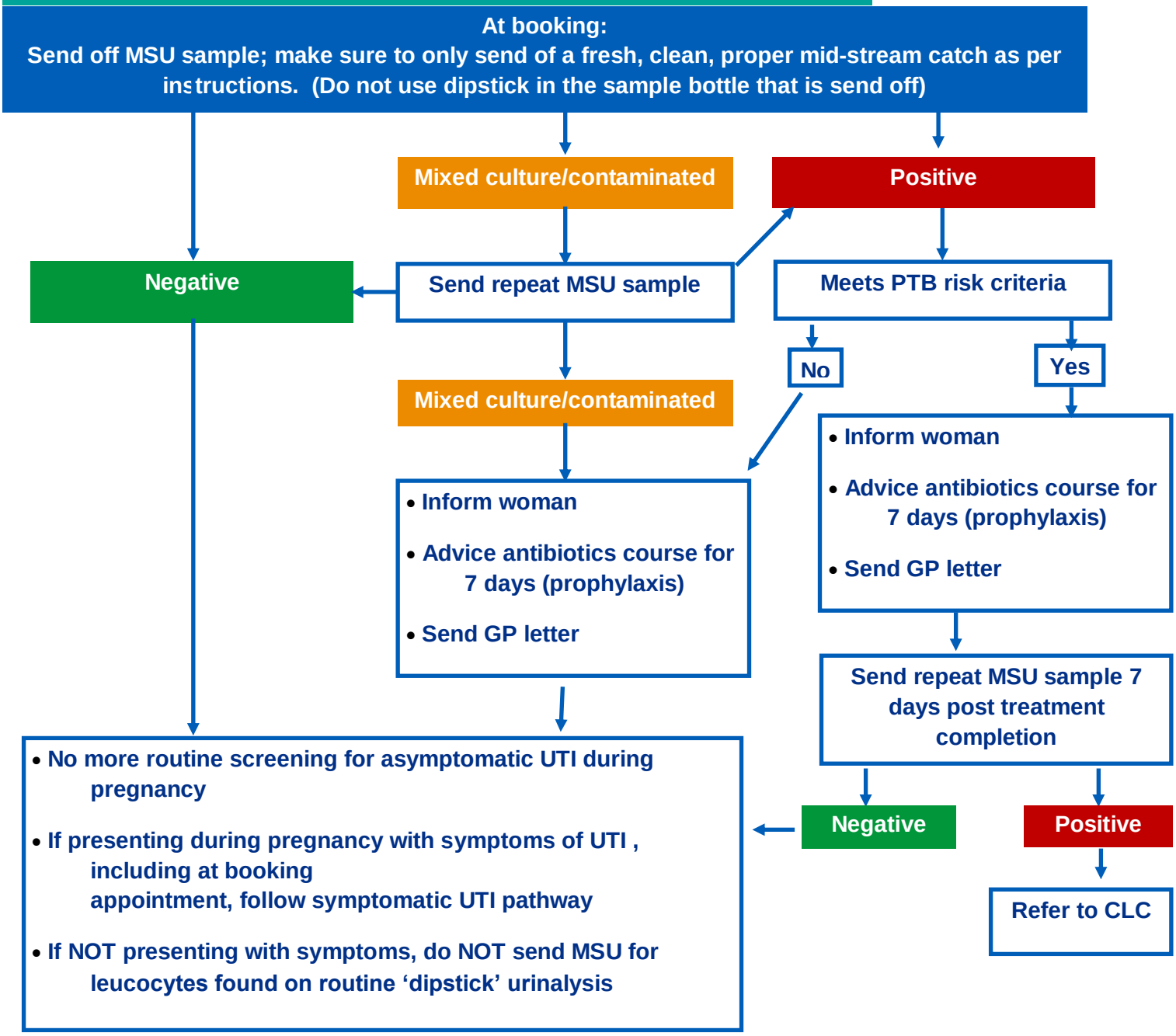
## 10. References

NICE guideline NG109; Urinary tract infection (lower): antimicrobial prescribing, Oct 2018

# ASYMPTOMATIC BACTERIURIA

## Routine screening for all women in early pregnancy

Appendix A




The aim of asymptomatic screening of bacteriuria is to reduce the risk of developing UTI later on in pregnancy which is related to preterm birth.

This can be by either:

- confirmation of a negative status prior to 20 weeks or
- providing prophylactic antibiotics in case of asymptomatic bacteriuria

This is only for women who are ASYMPTOMATIC of UTI at booking.
If a woman is SYMPTOMATIC for UTI, including at booking, follow symptomatic pathway to diagnose and treat UTI

Appendix B

# SYMPTOMATIC URINARY TRACT INFECTION

**For all women presenting with symptoms of UTI in pregnancy, including at booking**

## STEP 1: ask level of symptoms

***Mild*** **and/or** ***non-specific*** **symptoms (dysuria) of possible UTI**

**Presenting with** ***severe symptoms*** **of UTI**

## STEP 2: dipstick for nitrates

**Consider other cause if negative**

**Nitrates positive**

## STEP 3: send MSU sample and treat for UTI

- Make sure to send a fresh, clean, proper mid-stream catch (see instructions)
- Antibiotics for 7 days indicated, prescription to be arranged
- Offer appropriate symptomatic pain relief with paracetamol if indicated
- Advise to see medical attention if:
  - ⇒ Fever develops
  - ⇒ Loin pain develops
  - ⇒ Not responding to treatment

## STEP 4: chase up pre-treatment MSU results (by day 7) and contact woman to enquire after symptoms following treatment

**MSU negative**

**MSU mixed culture**

**MSU positive**

**No symptoms**

**Symptoms**

**Go to step 1**

**Explain the importance of checking clean urine sample as a test of cure**
**Send clean MSU**

**No further follow up required. Advise to escalate if symptoms reoccur**

**No symptoms**

**Go to step 4**

**Symptoms**

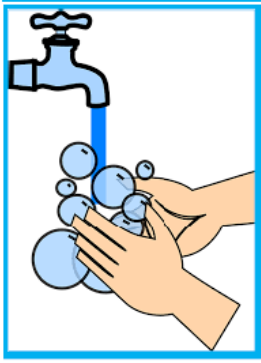
**Go to step 1**

**CLC indicated in case of third confirmed UTI episodes in pregnancy (clear in between episodes) or UTI not cleared after 2 consecutive courses of antibiotics**

**Information for Women**

## COLLECTING A CLEAN MID-STREAM URINE SAMPLE

**A mid-stream sample means you don't collect the first or last part of urine that comes out. This reduces the risk of a sample being contaminated with bacteria from your hands or the skin around the urethra (the tube that carries urine out of the body).**



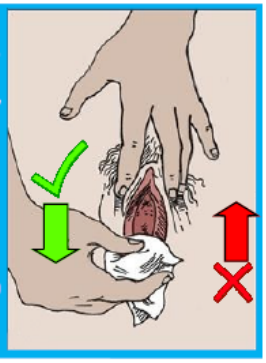
**STEP 1**

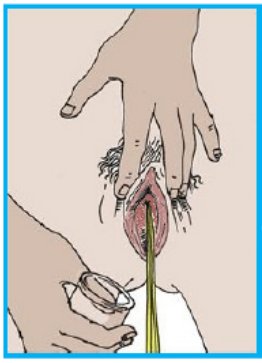
**Wash your hands**

**STEP 2**

**Spread labia/ lips and wipe clean**

(front to back)



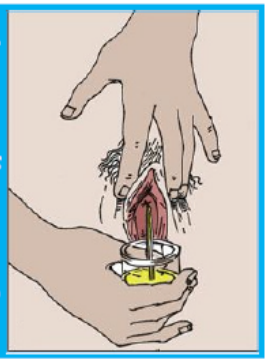


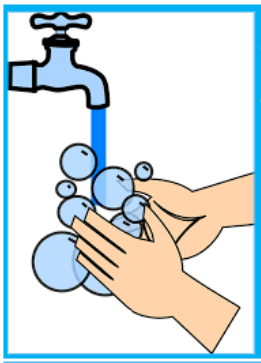
**STEP 3**

**Start to urinate in the toilet**

**STEP 4**

**Collect a sample of 'mid-stream' urine**





**STEP 5**

**Wash your hands**

**CONTAMINATED URINE SAMPLES CAN DELAY DIAGNOSIS AND CORRECT TREATMENT**

Developed by C.Meijer-MGG BU

**Appendix D**

**Letter to the GP in case of 2 consecutive mixed culture results prior to 20 weeks**

NHS
University Hospitals of Derby and Burton
NHS Foundation Trust

GP name:
GP Address:
Patient name:
Patient DOM:
Patient NHS number:

Date:

Dear Dr ……..,

This woman is under our care during her pregnancy and her asymptomatic MSU sample showed a mixed culture / contaminated sample result on 2 consecutive occasions.

Therefore, a negative status of asymptomatic bacteriuria cannot not be confirmed prior to 20 weeks which is the purpose of sampling in early gestation.

Please may we ask you to prescribe prophylactic Antibiotics for this woman with the aim to reduce the risk of developing UTI in pregnancy.

Full up to date guidance (UHDB Microbiology Guidance) can be found on the Trust Guidelines website https:derby.koha-ptfs.co.uk

Alternatively use the QR code to be directed to the most up to date

Obstetric Infections Guidelines:

Thank you,

Kind regards,

UHDB Maternity Services

| | | | | |
|---|---|---|---|---|
| **Reference Number:**<br><br>UHDB/CG/06:22/U1 | **Version:**<br>**UHDB Version 2** | | **Status: FINAL** | |
| | **Royal Derby prior to merged document:** | | | |
| Version / Amendment | Version | Date | Author | Reason |
| | 1 | June 2017 | C. Meijer – Risk Midwife, Miss S Tahseen – Consultant Gynaecologist, Dr Gnanarajah – Consultant Microbiologist | New |
| **WC/OG/** | **Burton Trust prior to merged document:** | | | |
| | | | | |
| **Version control for UHDB merged document:** | | | | |
| | 1 | June 2020 | C Meijer – Risk support midwife<br>In consultation with Microbiology and the guidelines group | Review |
| Clear differentiation of asymptomatic bacteriuria screening and symptomatic UTI diagnosis and treatment. | 2 | June 2022 | Miss Rajendran – Consultant Obestetrician<br>C Meijer – Lead midwife guidelines and audit | Clarification of guidance following repeat feedback and risk |
| | 2.1 | May 2023 | Jo Harrison-Engwell Lead Midwife for Guidelines, Audit and QI | Amendment to section 4.1 to ensure consistency throughout document. |
| | 2.2 | Sept 2023 | Jo Harrison-Engwell Lead Midwife for Guidelines, Audit and QI | Amendment to flowchart to bring in line with SBL |
| **Intended Recipients:** Staff providing antenatal care | | | | |
| **Training and Dissemination:**<br>Cascaded electronically through lead sisters/midwives/doctors via NHS.net, Published on Intranet, Article in Business unit newsletter; | | | | |
| **To be read in conjunction with:** AN care guideline, Antibiotics in Obstetrics guideline | | | | |
| **Keywords:** | | | | |
| Consultation with: | O&G Midwifery Staff | | | |
| Business Unit sign off: | 23/05/2022: Maternity Guidelines Group: Miss S Rajendran – Chair<br>03/10/2023: V2.2 Maternity Guidelines Group: Miss A Joshi - Chair<br><br>26/05/2022: Maternity Development & Governance Committee/ACD – Miss S Raouf<br><br>06/10/2023: V2.2 Maternity Governance Committee - Mr R Deveraj | | | |
| Divisional notification | 31/05/2022 V2.2 17/10/2023 | | | |
| Implementation date: | 06/06/2022 V2.1 23/05/2023 V2.2 01/11/2023 | | | |
| Review Date: | June 2025 | | | |
| Key Contact: Joanna Harrison-Engwell | | | | |