Clinical Assessment/ Management tool for Children





Management - Acute Setting Do the symptoms and/or signs suggest an Contact Lead ED / Paediatric doctor **Suspected UTI?** Yes immediately life threatening illness? Consider moving to resuscitation area **Patient presents** Fever with no clear Irritability Consider differential diagnoses: sepsis, meningitis, focus Abdominal pain GI obstruction, appendicitis, gastroenteritis. Other differentials for dysuria/discomfort include Vomiting Dysuria/frequency If fever ≥38°C, see vulvovaginitis and threadworms. Poor feeding Loin pain fever pathway Lethargy **Urgent Action** Red - high risk Green – Low risk Amber – Intermediate risk Urgent senior review Systemically well, temp <38°C Temp ≥38°C but haemodynamically stable Fever ≥ 38°C in a child under 3 months or Bloods including FBC. (see table 1 - normal ranges for HR and RR) features suggestive of sepsis (see sepsis (all children <3 months of age with presumed U+E, CRP, blood gas UTI need urgent 2° care review) pathway) / haemodynamic instability (see and blood culture. table 1) Fluid resuscitation as required Administer IVAbs (See Able to obtain urine sample? (see box 1) Able to obtain urine sample? (see box 1) box 2) No[°] Yes No ' **Under 3 Months** 3 months to <3 years ≥3 years If nitrites and leuk both Provide family with If features of pyelonephritis (loin collection pot (to -ve, UTI unlikely. Do not pain, abdominal pain, vomiting, If nitrites and leuk both If nitrites or leuk If nitrites and leuk

+ve. send for culture (see box 1) and treat empirically (see box 2)

GMC Best Practice recommends: Record your findings (See "Good Medical Practice" http://bit.ly/1DPXI2b)

- If nitrites and leuk both -ve. send for culture. If culture +ve. treat with oral Abs based on sensitivities and seek paediatric advice
- both -ve. UTI unlikely. Do not send for culture
- If nitrites +ve or leuk +ve. send for culture (see box 1) and treat empirically (see box 2)
- -ve, UTI unlikely. Do not send for culture.
- If nitrites +ve. treat empirically as UTI (see box 2). No need to send culture.
- If leuk +ve but nitrites -ve. consider alternative diagnosis. If good clinical evidence of UTI, send culture (see box 1) and treat empirically awaiting culture results (see box 2)
- return with sample within next 6-12 hours). If appropriate, can advise to attend own GP for dipstick +culture (see box 1) +treatment (see box 2)
- Provide fever safety netting sheet (under 5 years or 5 years and over)

In a child under 3 months, a negative urine dip does not exclude a UTI.

- send for culture.
- If nitrites and/or leuk +ve on dipstick, assume UTI. Send sample for culture (see box 1) and treat empirically as upper UTI awaiting culture results (see box 2)
- If child ≥3 years of age evidence of UTI, send culture (see box 1) and culture results(see box 2)
- high spiking fever), needs referral to paediatrics
- If otherwise well, give family a collection pot (to return with sample within next 6-12 hours). If appropriate, can advise to attend own GP for dipstick +- culture (see box 1) +- treatment (see box 2)
- Provide fever safety netting sheet (under 5 years or 5 years and over)

Provide family with UTI safety netting sheet

Arrange follow-up / imaging as required (see boxes 3&4) If recurrent UTIs (see box 3), review risk factors (see box 5)

Think safeguarding

and dipstick +ve only for leuk, consider alternative diagnosis. If good clinical treat empirically awaiting

Provide family with UTI safety netting sheet Arrange follow-up / imaging as required (see boxes 3-4) If recurrent UTI's (see box 3), r/v risk factors (box 5) Think Safequarding

CS50217

Suspected Urinary Tract Infection

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Management - Acute Setting





Table 1: Normal Paediatric Values:

(APLS*)	Respiratory Rate at rest (b/min)	Heart Rate (b/min)
< 1 year	30 - 40	110 - 160
1 - 2 years	25 - 35	100 - 150
> 2 -5 years	25 - 30	95 - 140
5 - 12 years	20 - 25	80 - 120
Over 12	15 - 20	60 - 100

^{*} Advanced Paediatric Life Support The Practical Approach Fifth Edition Advanced Life Support Group Edited by Martin Samuels; Susan Wieteska Wiley-Blackwell / 2011 BMJ Books.

Box 1

Urine collection and preservation

- Clean catch is recommended method. Gentle suprapubic cutaneous stimulation using gauze soaked in cold fluid helps trigger voiding*
- If absolutely unavoidable pads / bags must be put on clean skin and checked very regularly to minimise contamination risk
- Unless urine can get straight to lab preservation in a boric acid (red top) container will allow 48 hours delay

*Urine collection in infants Kaufmann et al BMJ open



Box 2

Treatment

≤3 month: treat as pyelonephritis (refer to paediatrics)

>3 months of age:

If unable to tolerate oral Abs or systemically unwell (suggestive of bacteraemia), requires consideration of IV antibiotics—refer to paediatrics.

- Lower UTI: trimethoprim (4mg/kg (max 200mg/dose) 12 hourly for 3 days). If previous treatment with trimethoprim in preceding 3 months, use nitrofurantoin if able to swallow tablets (age 12-18 years 50mg 6 hourly) for 3 days or cefalexin 25mg/kg 8 hourly for 3 days (max 1g/dose). If confirmed severe penicillin allergy and unable to swallow nitrofurantoin tablets, prescribe ciprofloxacin 20mg/kg 12 hourly for 3 days (max 750mg/dose).
- Upper UTI/pyelonephritis: cefalexin (25mg/kg 8 hourly (max 1g/dose) for 7 days). If severe penicillin allergy, use ciprofloxacin 20mg/kg 12 hourly for 7 days (max 750mg/dose).
- For more information about treatment, see Wessex empirical antibiotic guide / microguide.

Box 3

Who needs imaging?

Ultrasound:

- Under 6 months within 6 weeks, acutely if atypical** or recurrent*** infection
- Over 6 months not routinely, acutely if atypical** infection, within 6 weeks if recurrent*** infection.

DMSA:

- Atypical** infections under 3 years
- Recurrent*** infections at all ages

MCUG:

- Under 6 months with atypical** or recurrent*** infections
- Consider in all under 6 months with abnormal ultrasound.
- Consider 6-18 months if non E-Coli UTI, poor flow, dilatation on USS or family history VUR

Box 4

Who needs paediatric follow-up?

- Children with recurrent UTIs not responding to simple advice (see risk factors)
- · Children with abnormal imaging or if appropriate imaging cannot be arranged in primary care

Box 5

Risk factors for recurrent UTIs

- Constipation
- Poor fluid intake
- Infrequent voiding esp at school (holding on)
- Irritable bladder (can happen following UTI)
- Neuropathic bladder
 - Examine spine
- Genitourinary abnormalities
 - Examine genitalia

For further information, see NICE guidelines: https://pathways.nice.org.uk/pathways/urinary-tract-infection-in-under-16s#path=view%3A/pathways/urinary-tract-infection-in-under-16s/diagnosing-urinary-tract-infection-in-under-16s.xml&content=view-index

^{**}Atypical UTI = seriously ill/ sepsis, poor urine flow, non E-Coli, abdominal or bladder mass, raised creatinine, failure to respond in 48 hours

*** Recurrent UTIs = ≥3 lower UTIs, ≥2 upper UTIs or 1 upper and 1 lower UTI