Check temperature and symptoms in all infants/children
- unexplained fever 38°C or more or
- loin pain/tenderness suggesting pyelonephritis

No

Management depends on age and symptoms

Infants younger than 3 months:
- **Most common symptoms:** fever, vomiting, lethargy, irritability, poor feeding, failure to thrive
- **Less common:** abdominal pain, jaundice, haematuria, offensive urine

Refer urgently to paediatric specialist care and send a urine sample for urgent microscopy and culture

- **Positive nitrite and Positive leucocyte**
  - **Treat as UTI and start antibiotic**
  - Send urine for culture if:
    - under 3 years
    - suspected pyelonephritis
    - risk of serious illness
    - past UTI
    - no response to treatment and urine sample not already sent

- **Positive nitrite Negative leucocyte**
  - **Treat as UTI and start antibiotic if dipstick on fresh urine sample**
  - Send urine for culture to confirm diagnosis and reassess with result
  - Repeat urine if not fresh (as old samples can give false positives)

- **Negative nitrite Positive leucocyte**
  - **Send urine for culture**
    - **Under 3 years:** start antibiotic and reassess with culture result
    - **Over 3 years:** only start antibiotics if good clinical evidence of UTI; leucocytes may indicate infection outside urinary tract

- **Negative nitrite and Negative leucocyte**
  - **UTI unlikely**
    - Do not start antibiotics
    - Exclude other causes
    - Send urine for culture if:
      - suspected pyelonephritis
      - risk of serious illness
      - under 3 months
      - recurrent UTI
      - no response to treatment within 24-48 hours and urine sample not sent
      - symptoms and dipsticks results do not correlate

Yes

Consider referral to a paediatric specialist
Test urine within 24 hours
If urine test positive, treat with antibiotic using NICE/PHE guideline on pyelonephritis: antimicrobial prescribing

Infant or child over 3 months with suspected UTI:
- **Most common symptoms:** fever, frequency, dysuria, abdominal pain, loin tenderness, vomiting, poor feeding, dysfunctional voiding, changes to continence
- **Less common:** lethargy, irritability, haematuria, offensive urine, failure to thrive, malaise, cloudy urine

Perform a urine dipstick test

- **Positive nitrite and Positive leucocyte**
  - **Treat as UTI and start antibiotic**
  - Send urine for culture to confirm diagnosis and reassess with result
  - Repeat urine if not fresh (as old samples can give false positives)

- **Positive nitrite Negative leucocyte**
  - **Treat as UTI and start antibiotic if dipstick on fresh urine sample**
  - Send urine for culture if:
    - under 3 years
    - suspected pyelonephritis
    - risk of serious illness
    - past UTI
    - no response to treatment and urine sample not already sent

- **Negative nitrite Positive leucocyte**
  - **Send urine for culture**
    - **Under 3 years:** start antibiotic and reassess with culture result
    - **Over 3 years:** only start antibiotics if good clinical evidence of UTI; leucocytes may indicate infection outside urinary tract

- **Negative nitrite and Negative leucocyte**
  - **UTI unlikely**
    - Do not start antibiotics
    - Exclude other causes
    - Send urine for culture if:
      - suspected pyelonephritis
      - risk of serious illness
      - under 3 months
      - recurrent UTI
      - no response to treatment within 24-48 hours and urine sample not sent
      - symptoms and dipsticks results do not correlate

In all follow NICE/PHE guideline on lower UTI: antimicrobial prescribing, safety-net and give self-care advice: advise carer to bring the infant or child for reassessment if the infant or child is not improved or worse after 24–48 hours

Refer to NICE CG54 for other things to consider in suspected UTI in children

For treatment refer to joint NICE/PHE guidance: NICE guidelines on UTI (lower): antimicrobial prescribing or NICE guidelines on pyelonephritis (acute): antimicrobial prescribing

Key:
- Urgent alert
- UTI signs/symptom
- Action advised
- Other advice

UTI=urinary tract infection; NICE=National Institute for Health and Care Excellence; PHE=Public Health England; CG=Clinical Guideline