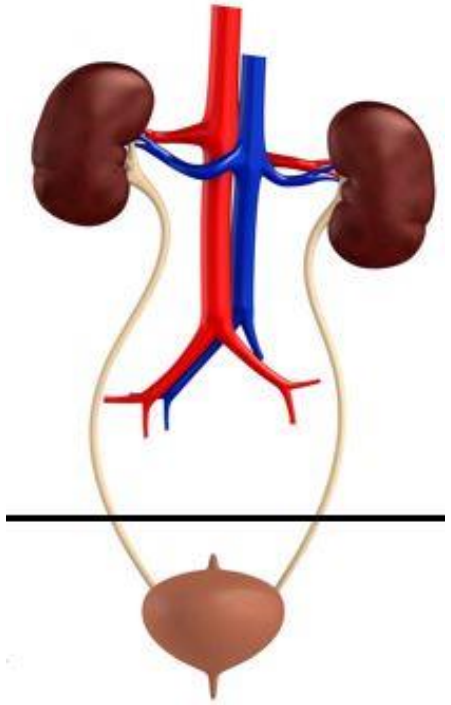
The epidemiology, aetiology, and diagnostics of urinary tract infection (UTI) in children and adolescents in the WHO African region

A scoping review



Research group meeting Global Child Health and the SDGs

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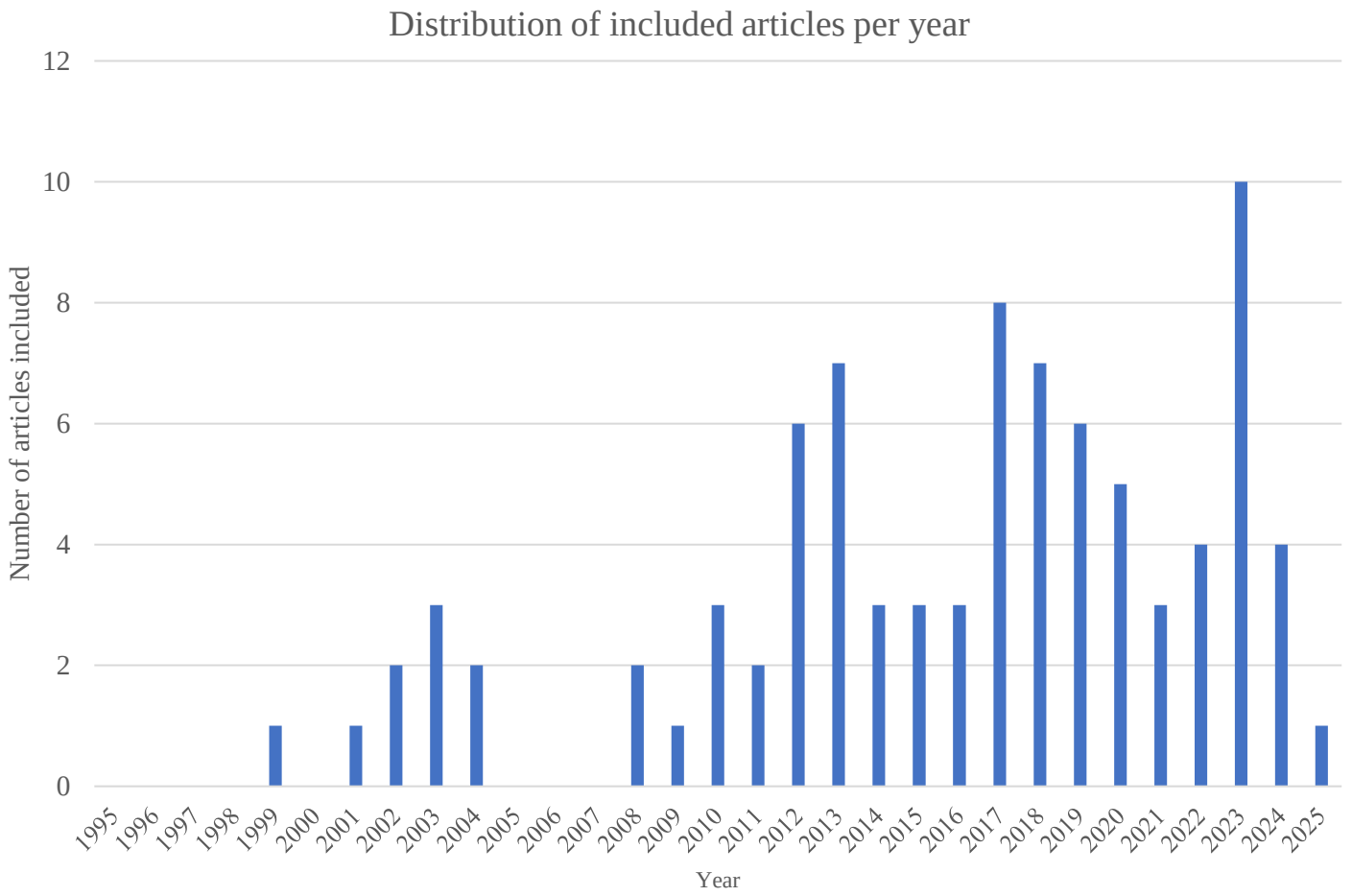
Childhood UTI in the WHO African region is…

- A common cause of fever
- A comorbidity of malnutrition, SCD, HIV, malaria, schistosomiasis, and others
- Difficult to diagnose
- Resource-intensive
- Subject to point-of-care diagnostic research

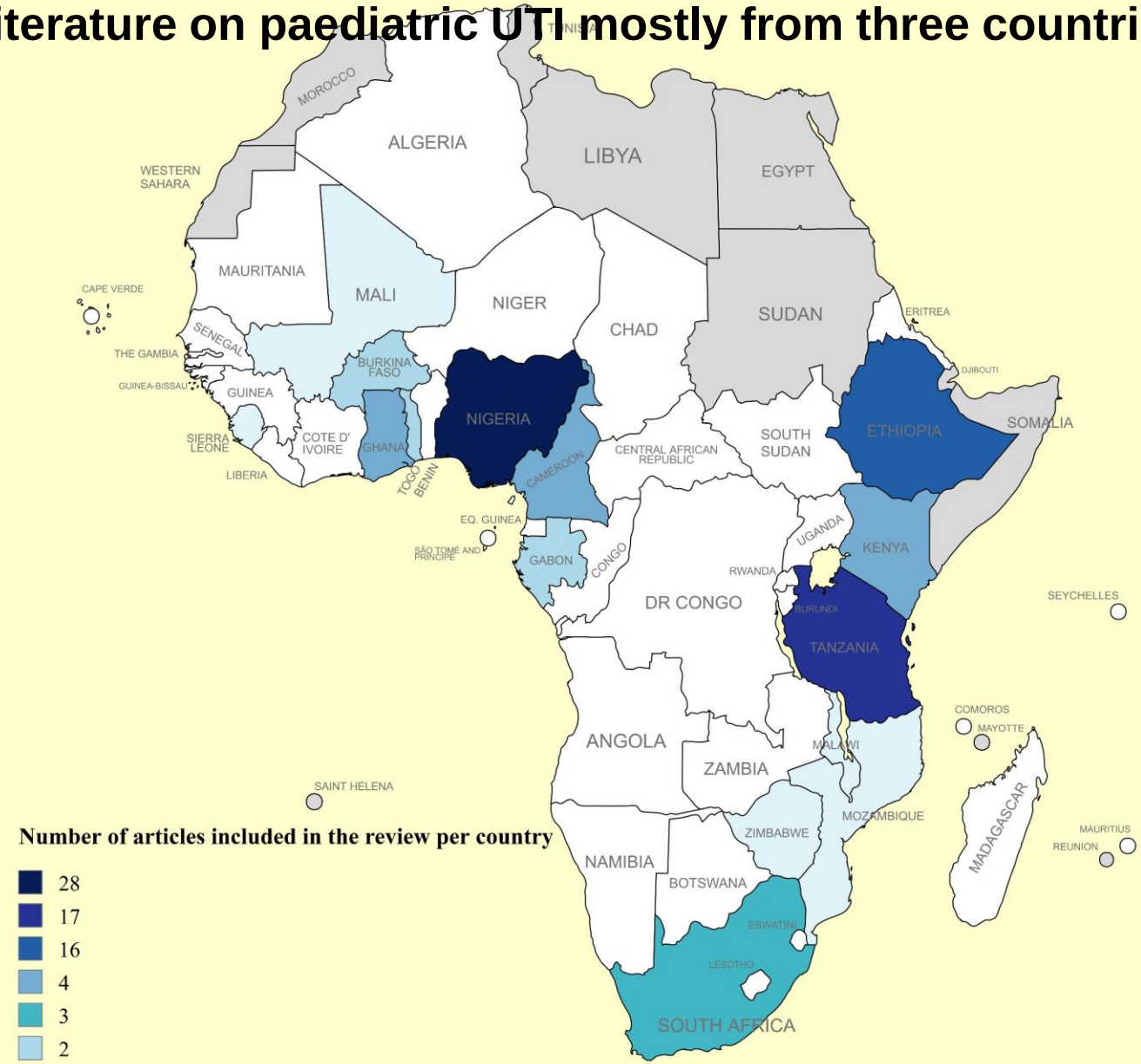
Methodology:

Scoping review

- 1994 articles from PubMed, Web of Science, CABI Global Health, Global Index Medicus, African Journals Online
- Time frame: 1995 – 2025
  - 87 included for full-text review



Literature on paediatric UTI mostly from three countries



RQ 1 – High UTI prevalence, varying across patient subgroups

- Overall range 19.7% to 45.8% in children with fever or other UTI symptoms
- Highest in children ≤ 2 years and with immunocompromising conditions
- After neonatal age higher in girls, uncircumcision a risk factor in boys

RQ 2 – Diagnostic workflows varying across healthcare facilities

Sample collection

- Done by parents, guardians, or patients themselves (33)
- Plastic urine bag (10)
- Catheterization or suprapubic aspiration (30)

Rapid testing – urine dipstick and microscopy

- Dipstick: 30 articles, microscopy: 27 articles
- Dipstick positivity justifying urine culture (10)
- Issues of cost and availability
- Trade-offs between sensitivity and specificity

Urine culture

- Gold standard for bacteria identification
- Always done in 72 articles
- Varying inoculation conditions
- Varying cutoffs for no. of CFU/ml
- Presumptive treatment prior to culture common (23 articles without adjustment)

RQ 3 UTI mostly caused by gram-negatives

Bacterial species and gram staining	n (articles)	Mean frequency
Escherichia coli (-)	76	0.470
Klebsiella spp (-)	68	0.210
Staphylococcus aureus (+)	54	0.150
Enterococcus spp (+)	22	0.089
Proteus mirabilis (-)	39	0.081
Pseudomonas aeruginosa (-)	34	0.075

Conclusions

- UTI should be tested for in febrile children
- Presumptive antibiotic treatment is a common phenomenon
- Linkage to AST and treatment is worth investigating
- Guidelines should define cutoff colony counts for urine culture
- Further investigation on sub-regional differences in the bacterial pattern and management of childhood UTI is desirable
- POC testing should be made available and affordable

Thank you!

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