The Diagnosis of Urinary Tract infection in Young children (DUTY): a diagnostic prospective observational study to derive and validate a clinical algorithm for the diagnosis of urinary tract infection in children presenting to primary care with an acute illness

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Plain English summary

The DUTY (Diagnosis of Urinary Tract infection in Young children) study was designed to improve the way in which doctors and nurses find out when a young child has a urine infection so that they can start effective treatment earlier.

A total of 7163 children under 5 years old, who were visiting their general practitioner (GP) or a similar NHS service, joined the study. All were unwell or had urine symptoms. We collected details about the child’s illness and their general health, and a urine sample. We preferred the urine sample to be collected by a ‘clean catch’ (straight from the child into a urine container), but where this was not possible we used a ‘nappy pad’ (a clean towel put into the child’s nappy after cleaning their bottom). Once we had the urine, we did a simple test (urine dipstick) at the GP practice. After that, it was sent to a research laboratory to see if there was an infection.

We looked to see if any parent-reported symptoms or doctor-/nurse-reported examination findings or the dipstick test results made a urine infection more likely. We found that they did, especially when children were able to provide a ‘clean-catch’ sample. These urine infections were more likely when their parents said that children:

- had pain/crying when they passed urine
- had smelly urine
- had had a previous urine infection and
- did not have a severe cough.

Urine infections were also more likely:

- when the doctor/nurse thought that the child was more unwell, and
- when the dipstick test was positive.
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This report

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