CONTAMINATED FINGERS: A POTENTIAL CAUSE OF *CHLAMYDIA TRACHOMATIS* POSITIVE URINE SPECIMENS

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Background: The detection of a sexually transmitted infection (STI) agent in a urogenital tract (UGT) specimen from a young child is regarded as being indicative of sexual abuse. However, the probabilities of contamination events that could conceivably lead to STI positive specimens in the absence of sexual contact are unclear. The objective was to estimate the potential for fingers that have come in contact with *Chlamydia trachomatis* positive urine to detectably contaminate *C. trachomatis* negative urine.

Methods: The study design was based on self-experimentation. Dilutions of *C. trachomatis* elementary bodies (EBs) were prepared. Participants contacted an EB dilution then a urine surrogate specimen. The experiment was performed by three participants using three *C. trachomatis* isolates, of genotype E, F and B. Two surrogate urine contact methods were used to mimic contamination of a carer assisting with a child's urine collection. All EB dilutions and urine surrogate specimens were subjected to *C. trachomatis* assay and quantification in a real-time PCR based diagnostic system.

Results: The amplimer crossing point (Cq) for EB dilutions was 10.0 ± 1.6 less than for corresponding finger contacted urine specimens, which corresponds to ~10 µl of EB suspension transferred. This was largely independent of participant identity, *C. trachomatis* strain or EB dilution. Hand decontamination led to large reductions in EBs transferred, but transfer remained consistently detectable. Recent Cq data from *C. trachomatis* positive clinical urine specimens were collated, and 20% clearly contained sufficient *C. trachomatis* to detectably contaminate another specimen by finger mediated transfer, as in this experiment.

Conclusion: This study directly demonstrated the potential for urine contaminated fingers to convert a *C. trachomatis* negative urine specimen to *C. trachomatis* positive as a result of contact. Accordingly, guidelines for first stream urine collection should incorporate precautions against contamination.

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