# Taking the pee

## Improving time to urine collection in febrile infants

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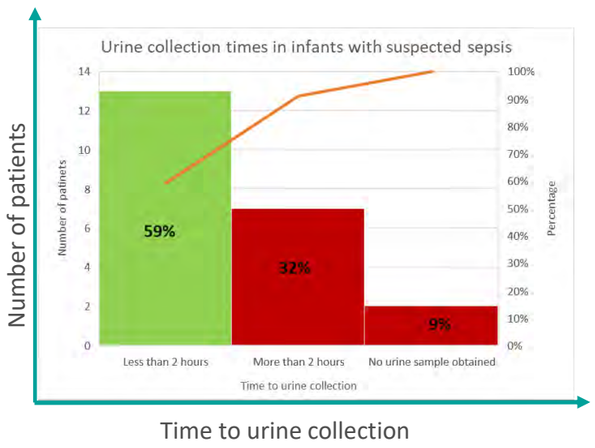
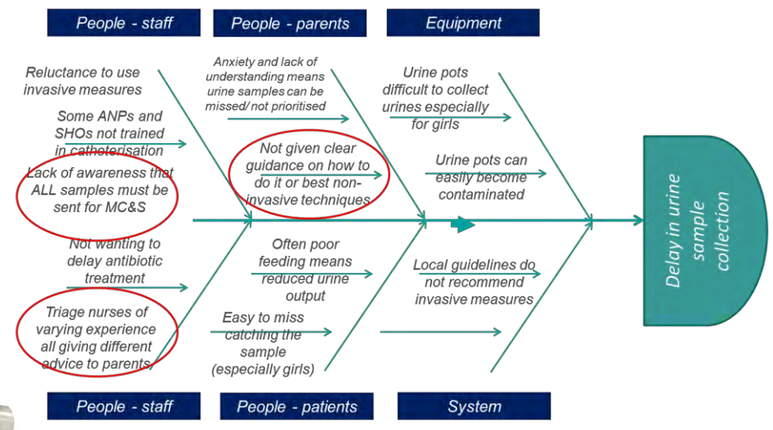
## BACKGROUND

Babies < 3 months old with a fever must have urine sent for microscopy and culture to determine if a urine infection is the cause of the fever. There is often a delay getting these 'clean catch' samples which can impair treatment and follow up.

**PROBLEM**
Urgent urine testing for babies under 3 months with fever is often delayed. Serious infections can be missed. This is stressful for parents and risks harm to the babies




## DIAGNOSTICS


## AIM AND MEASUREMENT DEFINITIONS

**Aim:** In febrile children < 3months old to reduce the time from triage to urine collection to under 2 hours by September 2023
**Chosen measure:** Time from triage to urine collection (measured by recorded time of urinalysis)
**Inclusions:** Babies < 3months old presenting to the emergency department (ED) with a history of fever or documented fever >38 degrees.
**Exclusions:** Babies in whom the treating clinician decides urine collection and antibiotics are not required due to alternative diagnosis (post immunisations, bronchiolitis)
**Sampling method and frequency:**
-Identify all eligible patients admitted to the ward or the paediatric assessment unit by looking at the PAU admissions book and the ward list
-Look at time of triage in electronic records
-Look at time of urine dip in electronic records
-Update this weekly

| Change ideas | LOGICAL? Definitely = 2 Maybe = 1 No = 0 | QUICK & EASY? Definitely = 2 Maybe = 1 No = 0 | EXCITES ME? Definitely = 2 Maybe = 1 No = 0 | SCORE Logic X Quick X Exciting |
|---|---|---|---|---|
| Discuss the problem with relevant stakeholders and increase awareness | 2 | 2 | 2 | 8 |
| Explanation sheet in triage for nurses and parents | 2 | 2 | 2 | 8 |
| Information sheets for parents | 1 | 2 | 2 | 4 |
| Teaching for clinicians – importance of sending urine for MC&S | 2 | 2 | 2 | 8 |
| Teaching session for A&E staff on urine collection methods | 2 | 0 | 1 | 2 |
| Clinical skills sessions – in/out catheters | 1 | 0 | 1 | 1 |
| Change guideline to include catheter collection | 2 | 0 | 2 | 0 |

## PDSA cycles

### PDSA Test 1.1

- Modify aim to ensure it will not result in delayed antibiotics.
- Staff teaching re: urinalysis in this age group.
- Unified guidance for staff and parents on the best evidence-based methods for collecting urine.

Discuss the issues of delayed and missed urine samples, why this happens and the impact of it

- Potential risk identified of delayed antibiotic administration.
- Lack of awareness that urine dipstick results are unreliable in this age group.
- Variability in guidance given to parents.

Present the fishbone diagram to paediatric medical staff and A&E staff and get feedback to better understand the problem and develop additional change ideas

### PDSA Test 2.1

- Inform all staff about new posters.
- Ask staff to encourage parents to photograph the posters.
- Put up posters in the rest of the department

Provide a written information sheet explaining how to collect urine samples in infants to help the triage nurses give clear guidance to parents

Not all triage nurses had noticed the posters.
Parents spend a short time in triage where the poster was.

Write information sheet, get approval from the paediatric consultant body and A&E matron, print and laminate copies and display them in A&E.

### PDSA Test 3.1

Emails with each F2/GP rotation as well as the September and March paediatric trainee start dates. I will also hold a teaching session on sepsis and urinary tract infections in infants.

Increase awareness amongst clinical staff that all urine samples in children under 3 months must be sent for urine microscopy, culture and sensitivity.

I had some feedback mainly from the more junior paediatric doctors (F2s/GP trainees) to say that this information was helpful.

Email all paediatric medical staff seeing these patients in A&E with local and NICE guidance.

### PDSA Test 2.2

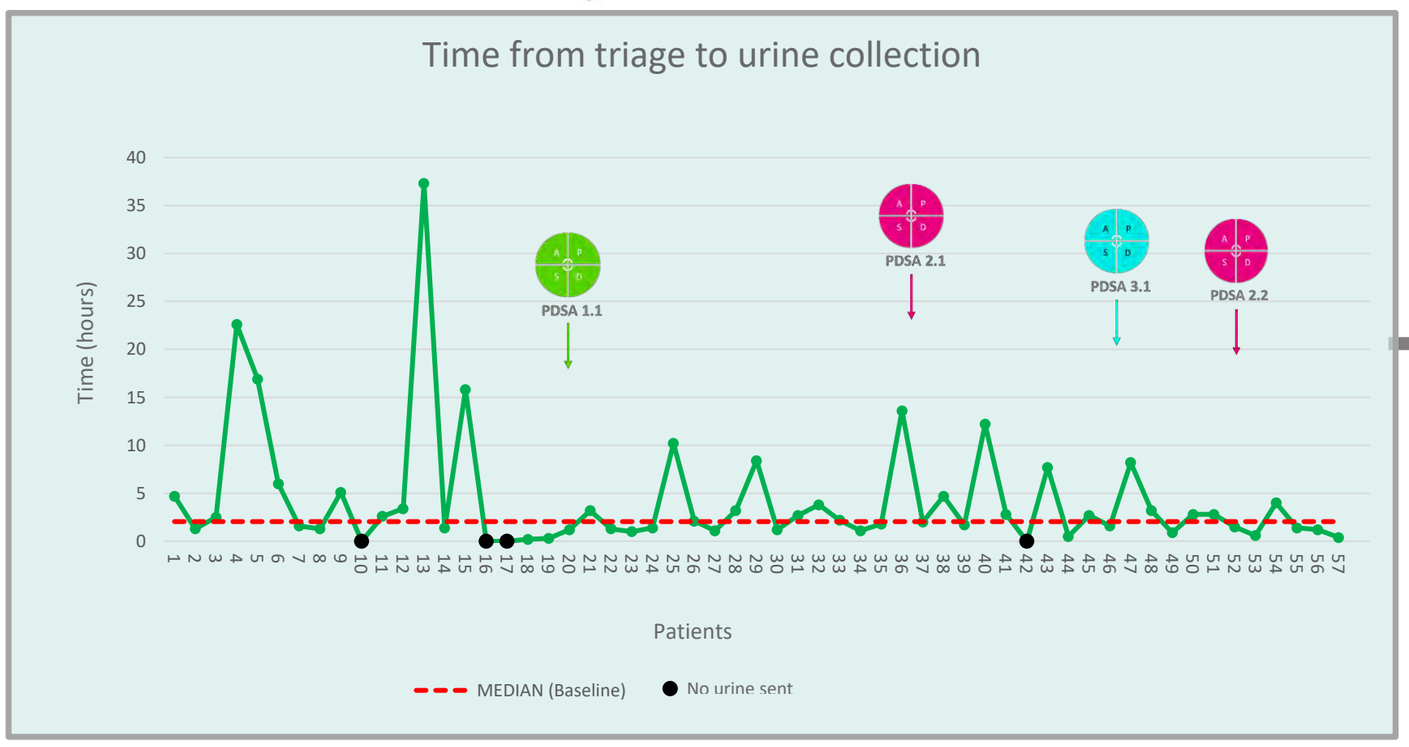
- Display posters in each cubicle.
- Plan interventions to promote invasive urine collection methods.

Increase awareness and use of the poster. Get feedback from the emergency department staff about how to improve it.

- Some staff unaware of the long term follow up babies with UTIs get.
- Suggestions given re: best places to display posters.
- Invasive urine collection methods discussed.

Present this ongoing quality improvement project at the emergency department clinical governance meeting

## RUN CHART




## REFLECTIONS & LEARNING

- The run chart shows a decrease in extremely long delays in urine collection times; however, it is still not uncommon for babies to wait 5-10 hours.
- Following the intervention more samples were sent for appropriate microbiology testing as per guidelines rather than dipstick tested.
- Identifying key people who are committed to ongoing progress helps (e.g., ED matron, general paediatric consultant)
- Introducing changes when staff turnover is high can be challenging, change ideas need to be sustainable.
- There are confounding factors which I had not predicted for, such as junior doctor strikes resulting in period of consultant led care in ED.
- Simple interventions led to an improvement in practice.
- There are more interventions which should result in further improvements in the future.



*Acknowledgements:*
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Change CHAMPION