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Commissioning For Quality and Innovation (CQUIN) Schemes, Revisiting Urinary Tract Infection (UTI) Management. What worked? What Lasted? What Next?

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Aim

To investigate whether improvements in key care processes in the UTI management pathway observed during the 2019/20 UTI CQUIN scheme⁽¹⁾ were sustained two years later.

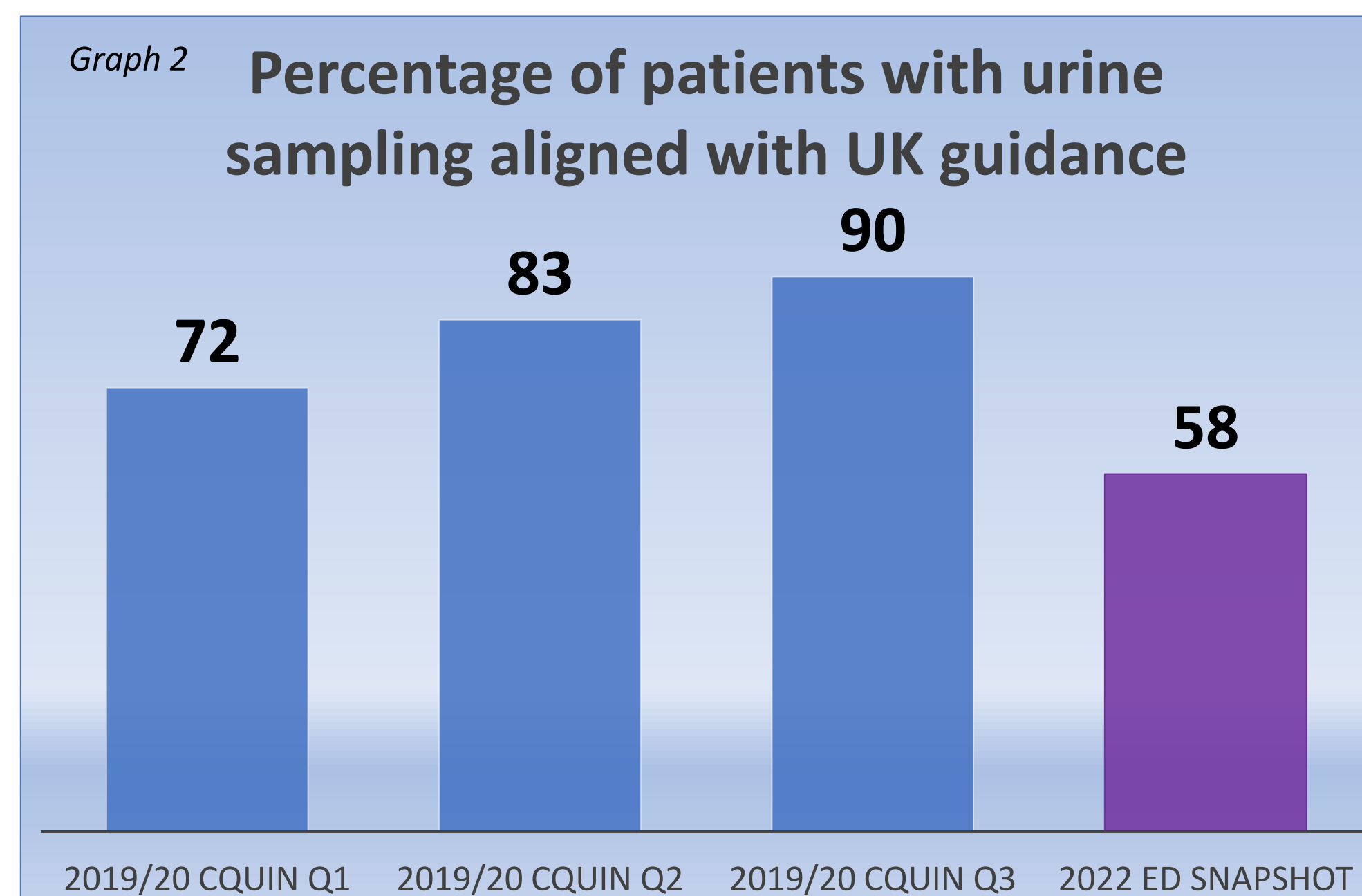
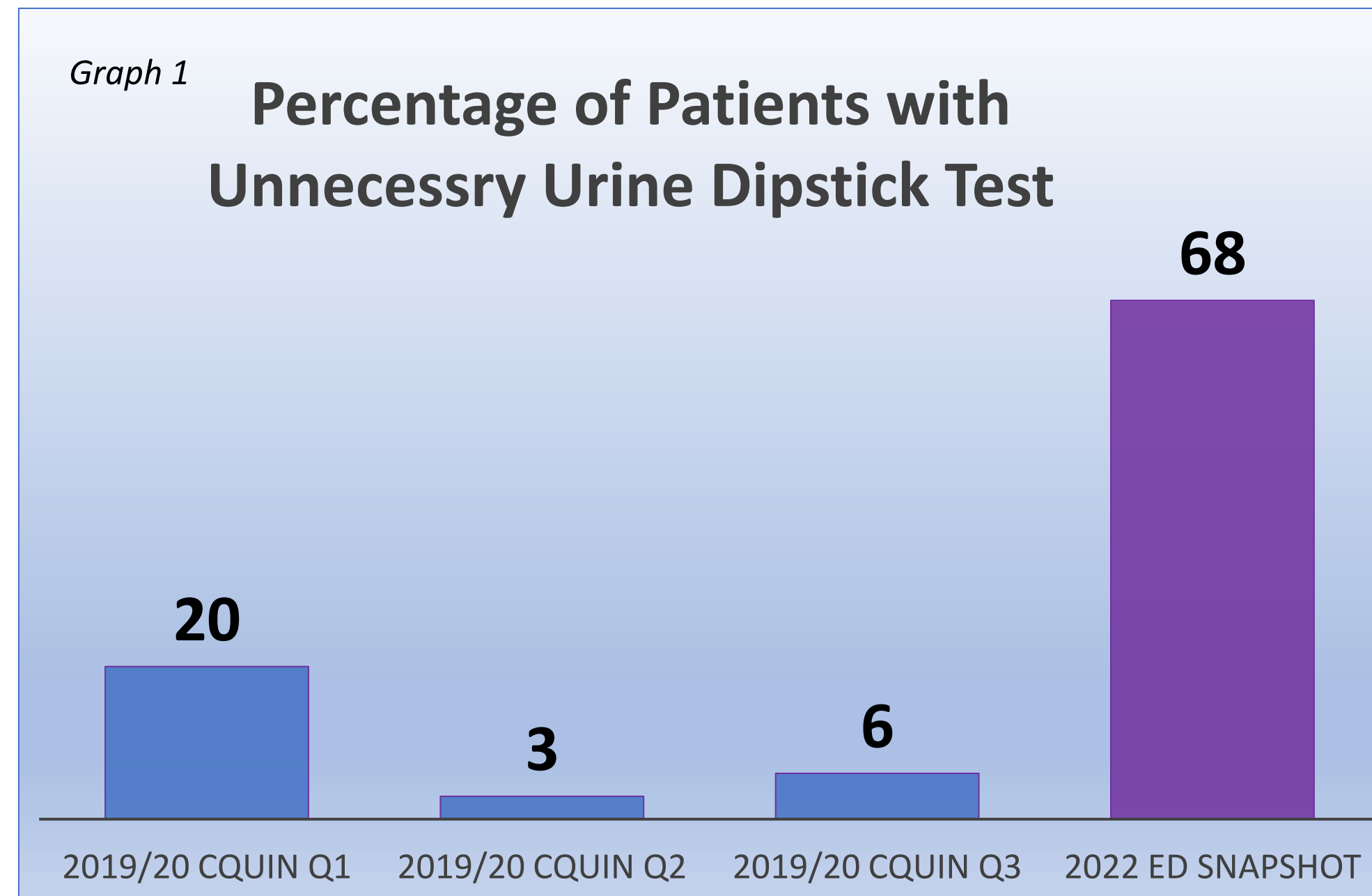
Objective

Service evaluation of the UTI pathway including compliance with two of the CQUIN care processes:

1. Diagnosis excludes use of urine dipstick in people aged 65+
2. Urine sample sent to microbiology as per UK guidance⁽²⁾

Patient group:

- Age 65+
- Presenting to the Emergency Department (ED)
- Diagnosed with UTI
- Not admitted



Conclusions

Following interventions centred around education implemented during the 2019/20 UTI CQUIN scheme, improved practice was observed in elderly patients with possible UTI regarding:

- urine dipstick testing
- appropriate urine sampling

Two years later these improvements have not been sustained.

When planning improvement interventions to support the 2022/23 UTI CQUIN⁽³⁾ consideration should be given to a bundle of interventions including education, data feedback and systems improvement, for example, computerised decision support systems (CDSS) to embed sustained change. Ongoing monitoring is required after the CQUIN scheme has ended to identify if improvements achieved are sustained.

Background

CQUIN schemes encourage a short term improvement focus on a specific area of clinical priority identified by NHS England. Improvement of the UTI pathway is a high priority workstream due to the impact on healthcare (*Table 1*). In 2019, CQUIN CCG1a: Improving the management of lower UTI in older people⁽¹⁾ was successfully adopted at the RUH resulting in increased alignment with UK guidance on UTI diagnosis⁽²⁾ and NICE treatment guidance^(4,5). A second broader CQUIN scheme was proposed for 2022, CCG2: Appropriate antibiotic prescribing for UTI in adults aged 16+⁽³⁾. Around 80% of antibiotics prescribed in secondary care are initiated in ED prompting a focus on this hospital department.

2019, Consequences of UTI⁽³⁾

175,000 hospital admissions

Cost £450 million

1/3 of UTI admissions have a length of stay >7 days

UTI leading cause of gram negative blood stream infections

Table 1: Impact of UTI on healthcare

Results

Graphs 1 and 2 illustrate stepwise improvement in urine dipstick and urine sampling practice during the 2019/20 CQUIN, but behaviour had returned to baseline in the ED by Autumn 2022. *Graph 3* illustrates that during the 2019/20 CQUIN a slight improvement was seen in appropriate urine sampling in patients with UTI symptoms with a corresponding decrease in urine sampling in asymptomatic patients (*Graph 4*). Culturing urine from asymptomatic patients may lead to unnecessary antibiotic use and should be avoided. In ED in 2022 low levels of urine sampling overall were observed.

Methods

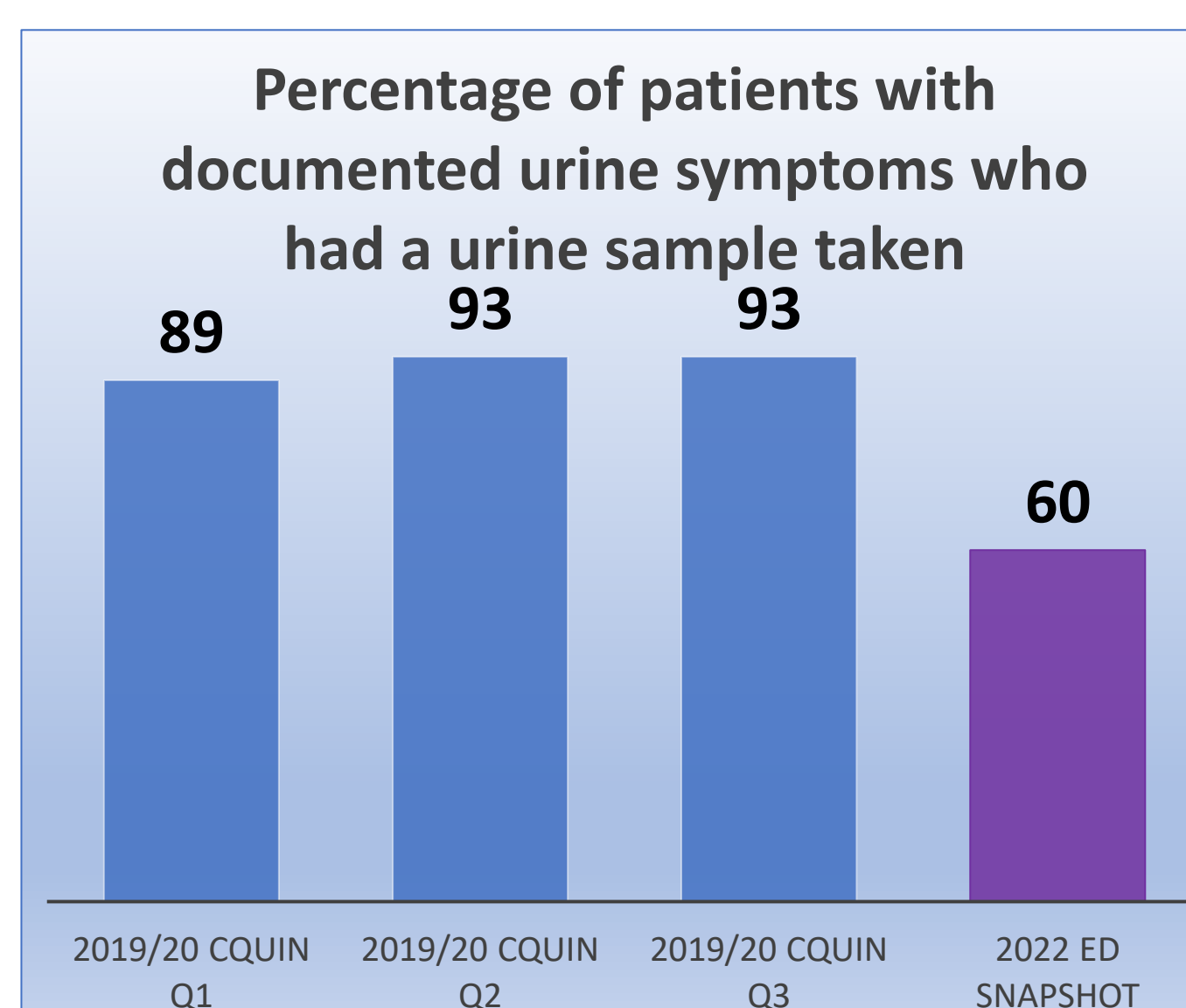
A search of the electronic patient record for key terms (*Table 2*) identified 6076 ED attendances at RUH for patients aged 65+ between August 1st and October 31st, 2021 of which 40 were identified with a primary diagnosis of UTI not requiring hospital admission. Paramedic, ED and Urgent Treatment Centre notes (paper and electronic) were reviewed in detail and information gathered regarding:

- Presence/absence of UTI symptoms aligned to diagnostic guidelines⁽²⁾
- Presence/absence of urine dipstick test
- Presence/absence of urine sample for culture and sensitivity testing

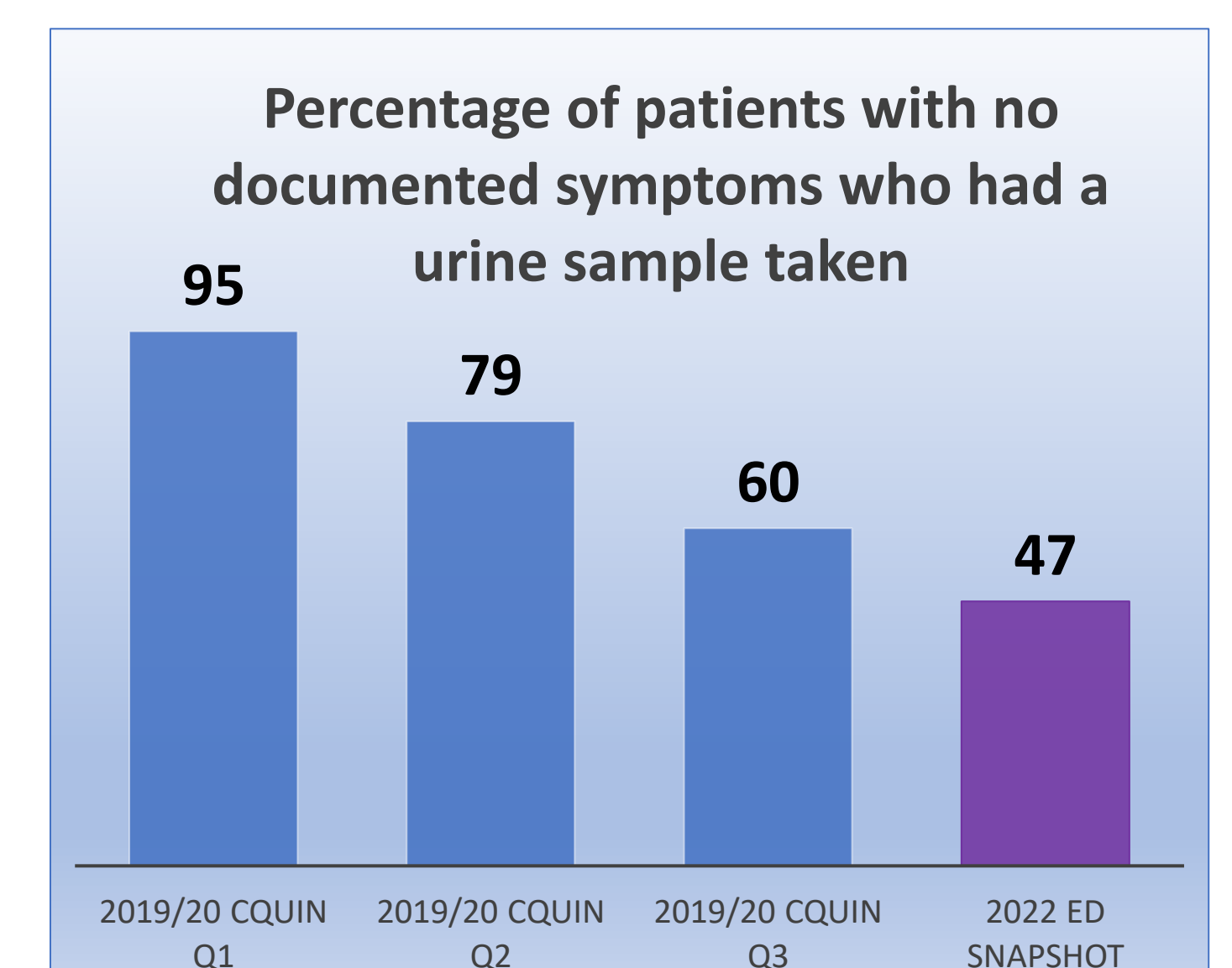
Findings were compared with identical trust data for patients obtained during the 2019/20 CQUIN: Q1 April-June; Q2 July-September; Q3 October-December. During Q1 to Q3 2019/20 educational improvement interventions were implemented.

Search Terms	Search fields
Urin, UTI, pyelonephritis, cystitis, urosepsis, CAUTI, AKI, Acute Kidney Injury, Flank pain	Reason for visit, Chief Complaint, Presenting Complaint, ECDS

Table 2: key terms used to search electronic patient record when identifying eligible patients



Graph 3



Graph 4

Limitations and Future work

The 2022 ED data set was significantly smaller than the 2019/20 CQUIN cohorts (40 Vs 100) due to available resource. 2019/20 CQUIN patients were randomly selected from throughout the hospital whereas ED 2022 data was collected solely from non admitted ED patients so results may represent poor practice in ED, however most diagnosis and urine sampling takes place in ED whether the patient was admitted or discharged so likely measuring behaviours of the same staff area in both time periods. Allocation of appropriateness of urine sampling relies on accurate documentation of symptoms. Future work during the 2022/23 CQUIN will focus on improving appropriate urine sampling in ED to ensure UTI is accurately diagnosed and unnecessary antibiotic treatment avoided. Improvement initiatives will engage stakeholders to embed changes in process to enhance sustainability of effect.

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