

A retrospective audit of treatment of urinary and respiratory tract infections in elderly care inpatients in the Belfast Trust – can antibiotic duration be reduced by improving review of cultures?

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Introduction

A rolling audit programme of antimicrobial prescribing and consumption trends in the Belfast Trust highlighted elderly care in Belfast City Hospital as an area for further audit of:

- Antibiotic duration
- Sending of cultures
- Review of cultures and action taken
- Senior review of antibiotics

Aims Of The Audit

- Is duration of antibiotic treatment of respiratory tract and urinary tract infection in keeping with trust guidelines?
- Are relevant cultures being sent before commencement of antimicrobials?
- Are culture results reviewed?
- Is senior review of antibiotics occurring and what is the impact on duration?
- Can we encourage the reduction in duration of antibiotic treatment by encouraging review of cultures?

Why reduce antibiotic duration ?

- Reduce risk of *C.difficile* infection
- Decrease risk of developing resistance
- Improve patient safety – minimise unintended consequences of antimicrobials.

Methods

- A sample of **44** patients with respiratory and urinary tract infections as per discharge coding were randomly selected over the time period of 2014-2015.
- The notes were reviewed and data collected on a form designed by the multi-disciplinary team.

Standards

- Cultures should where possible be taken prior to antibiotic administration
- Review of microbiology should be carried out and noted and resultant decisions documented
- Trust guidelines for duration suggest:
 - Urinary Tract infection: Female 3days Male 7days
 - Respiratory tract infection: 5-7days

Results

Demographics

- The sample of patients was made up of 27 females (average age 84.4 years) and 17 males (average age 84.1).
- 19 Patients had respiratory tract infection and 25 had urinary tract infection.

Results

Antibiotic Choice (Figure 1)

It was found that compliance with guidelines in antibiotic choice was good with a rate of 84%.

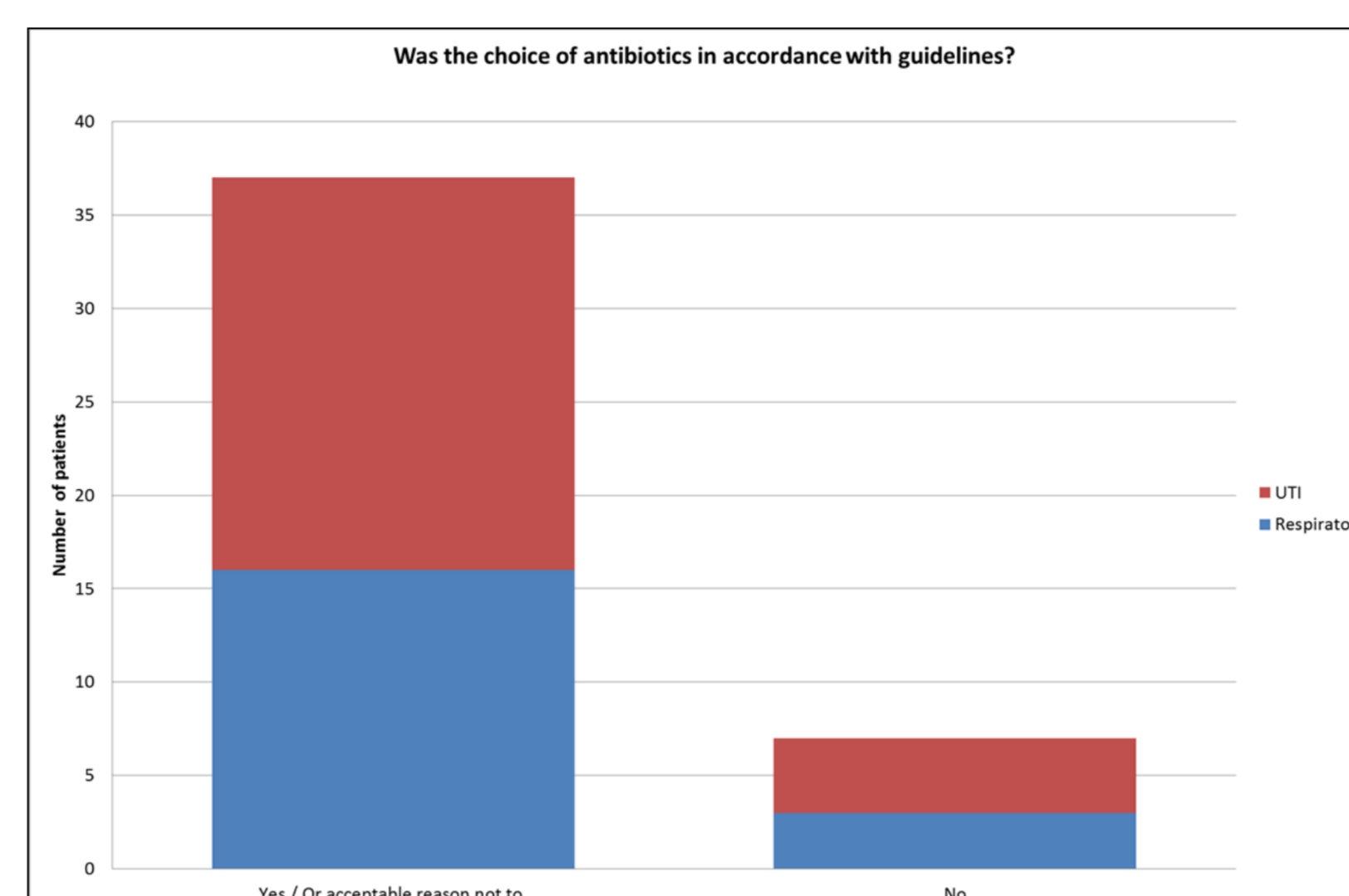


Figure 1

Antibiotic duration (Table 1)

Infection	Number of patients	Average Duration of treatment (days)	Recommended duration
Respiratory	19	9	5-7days
Urinary Tract	25 (10 male 15female)	7.4 female 9.5 male	3days female 7days male

Table 1

Cultures (Figure 2 and Table 2)

- Only 20% of patients had blood cultures taken prior to the commencement of antibiotics and 59% overall had a relevant culture taken (sputum or urine).
- 27% of patients had culture results acknowledged in their notes.
- Low numbers of patients started on IV antibiotics had blood cultures taken prior to commencement – 13% with respiratory infection and 23% with urinary infection.

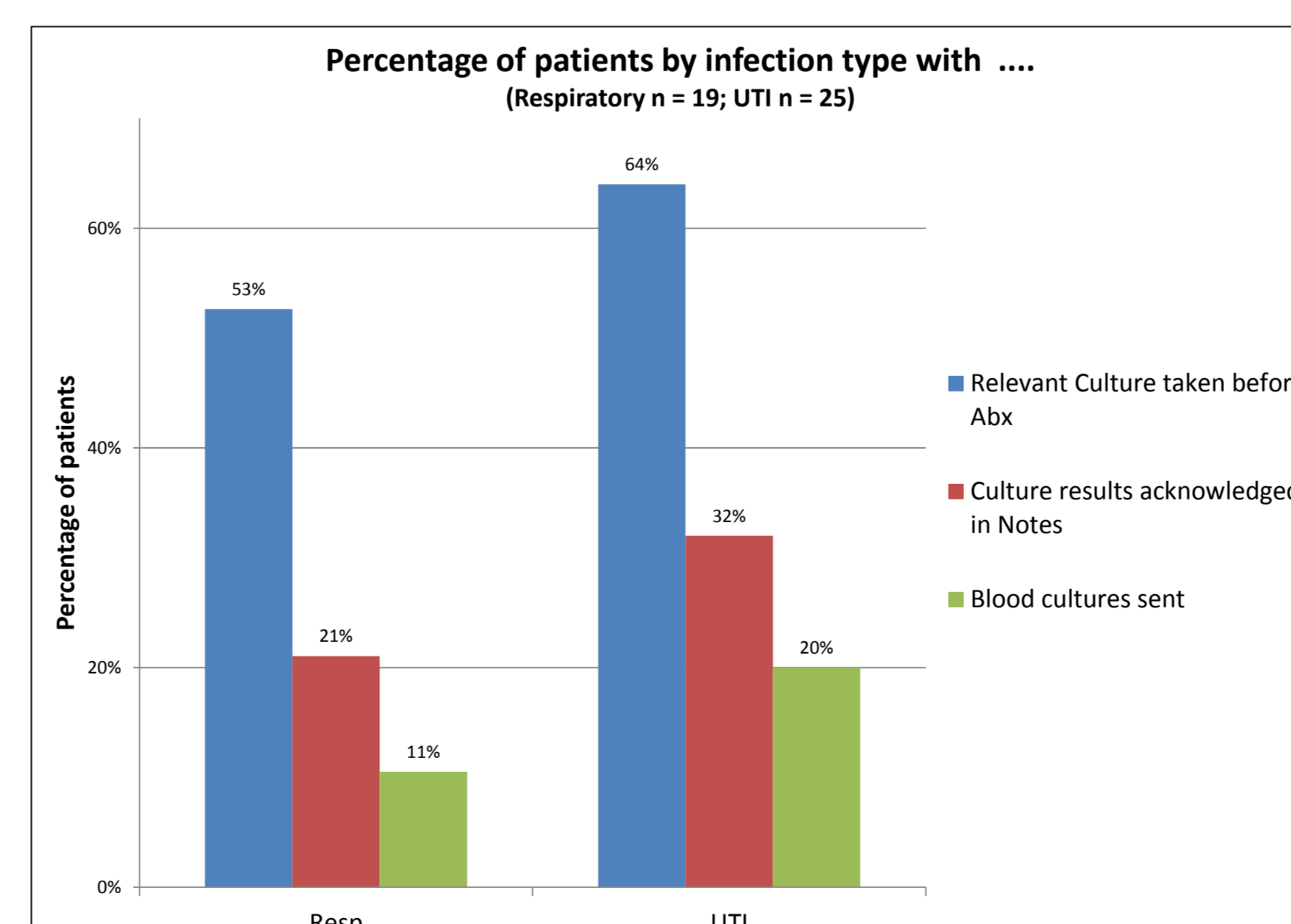


Figure 2

Infection	Number on IV Abx	Number with blood cultures sent	%with blood cultures sent
Respiratory	15	2	13.3
Urinary Tract	17	4	23.5

Table 2

Review of antibiotics by consultant (Figure 3 and 4)

- 90% of patients were reviewed by a consultant within 48 hours
- Resulted in a change in 47% of cases

Results continued

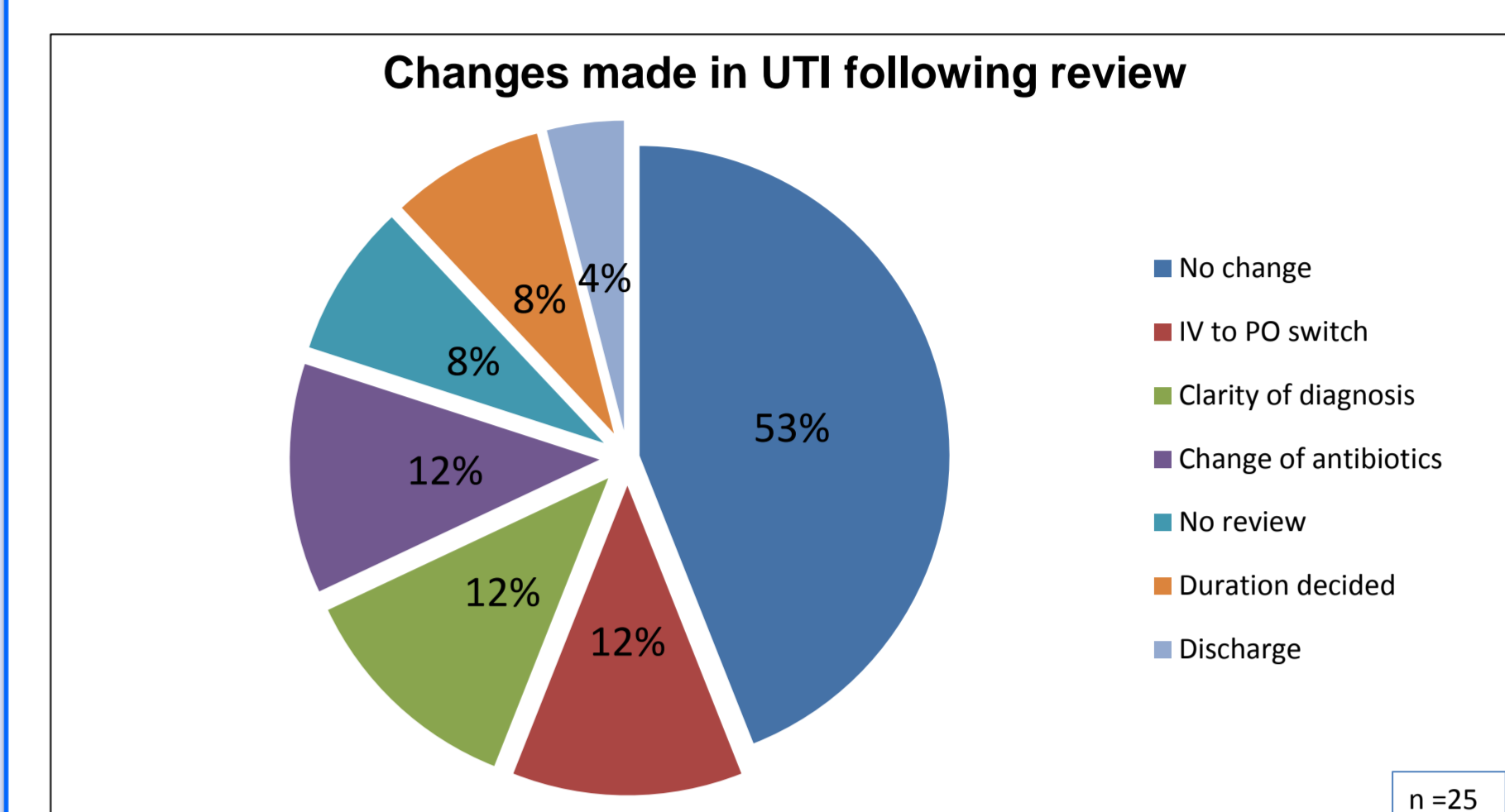


Figure 3

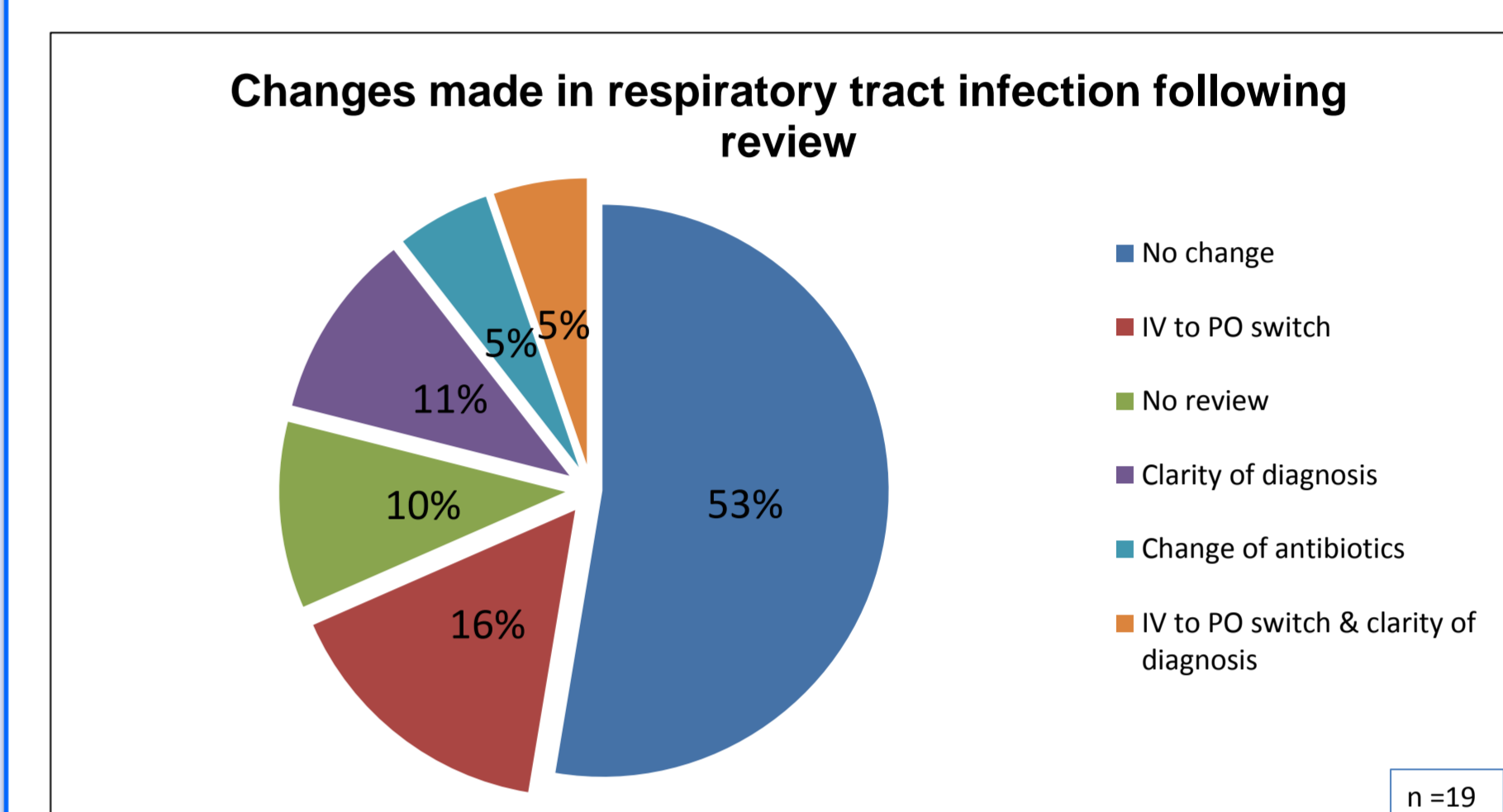


Figure 4

Interventions

- Internal audit programme - strong involvement of clinical team.
- Presentation of the results at the departmental governance meeting.
- Increase awareness of importance of cultures pre antibiotics especially if IV antibiotics being started.

Snapshot re-audit – overall improvement

- 10 patients on antibiotics
- 80% had relevant cultures sent before antibiotics
- 50% had results acknowledged in the notes
- 70% of consultant reviews addressed antibiotics

Further planned intervention

Ward junior doctor to keep a list of patients on antibiotics to encourage culture review and review by consultants at the daily multidisciplinary meeting with the overall aim of reducing duration

Conclusions

- Good adherence to policy in terms of antibiotic choice – 84%.
- Duration could be improved in order to reduce unnecessary use of antibiotics and education on this is required.
- Interventions to date have been successful in influencing prescribing behaviour in terms of duration and it is hoped that further intervention can lead to improved sending and checking of cultures, more meaningful review of antibiotics and subsequent shorter durations.