

Evaluation of Management of Breast Abscesses in Waikato DHB over 10 Years

Phase I of a III-Phase Study in Evidence-Based Standardisation

Background

- Principles of management of breast abscesses revolve around **antibiotic therapy** as well as **collection evacuation** via bedside needle aspiration, USS-guided percutaneous aspiration or incision and drainage (I&D). International rates of recurrence have been reported as high as 50%².
- There is currently no consensus amongst clinicians on the **optimal management** of breast abscesses¹. This means that there is minimal guidance on standardised usage of imaging, antibiotic choice and surgical intervention
- Over the last decade, there has been a surge of evidence supporting the use of minimally invasive aspiration techniques in breast abscesses, resulting in subsequent migration of practice away from I&D (as 1st choice) unless there is compromised skin, recurrence or concern around large size of abscess (no exact cut-off).
- However, there is an ongoing lack of clarity in **definitive indication for surgical incision and drainage**, minimal data on **variation of practice** and scarcity of ethnicity-based analysis in our **NZ population**.

Aim

- The primary objective of this study is to **evaluate the current practices in the management of breast abscess** in Waikato Hospital
- We aim to use this data to better understand current practices and guide the **development of a best-practice management algorithm**, based on current evidence, for future practice –**Phase II**: Pathway to standardise care of breast abscesses across Waikato DHB. **Phase III**: re-evaluation of practice and patient outcome after implementation of pathway
- Across Waikato Hospital, breast abscesses are often managed by ED, any of the acute general surgical teams and at times, obstetrics. Given the lack of clear guidelines in managing breast abscesses, **heterogeneity of practice** was expected.
- We hypothesised that there is large variability in practice in the management of breast abscess across various teams and departments and that this may have resulted in inconsistent and poorer patient outcomes

Method

- This is a retrospective cohort study undertaken at **Waikato Hospital** of all presentations of breast abscess to Waikato Hospital between **1 July 2008 and 1 July 2018**.
- Patients under the age of 16 and simple mastitis without collections were excluded. ~600 entries were incomplete.
- Data collected included patient **demographics**, clinical **examination** at initial presentation, usage of **ultrasound** to assess breast abscess, **antibiotic choice** and duration, **choice of drainage** (use of USS-guided aspiration, bedside percutaneous aspiration vs I&D)
- We also collected data on **systemic factors** such as **wait-times** for investigations or interventions, **primary treating team**, modality of **follow-up**
- Rates of **recurrence** following primary presentation with breast abscesses within 2 years of treatment were also recorded
- Descriptive data is reported for practice evaluation. X² test was used to compare the rates of recurrence of abscess with investigations, interventions, as well as systemic factors. P<0.05 was considered statistically significant for this study.

Fig.1 Demographics (n=628)

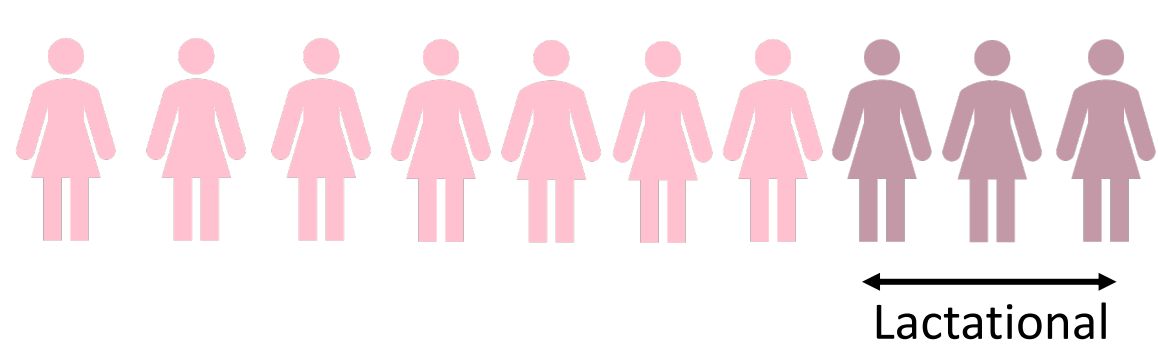
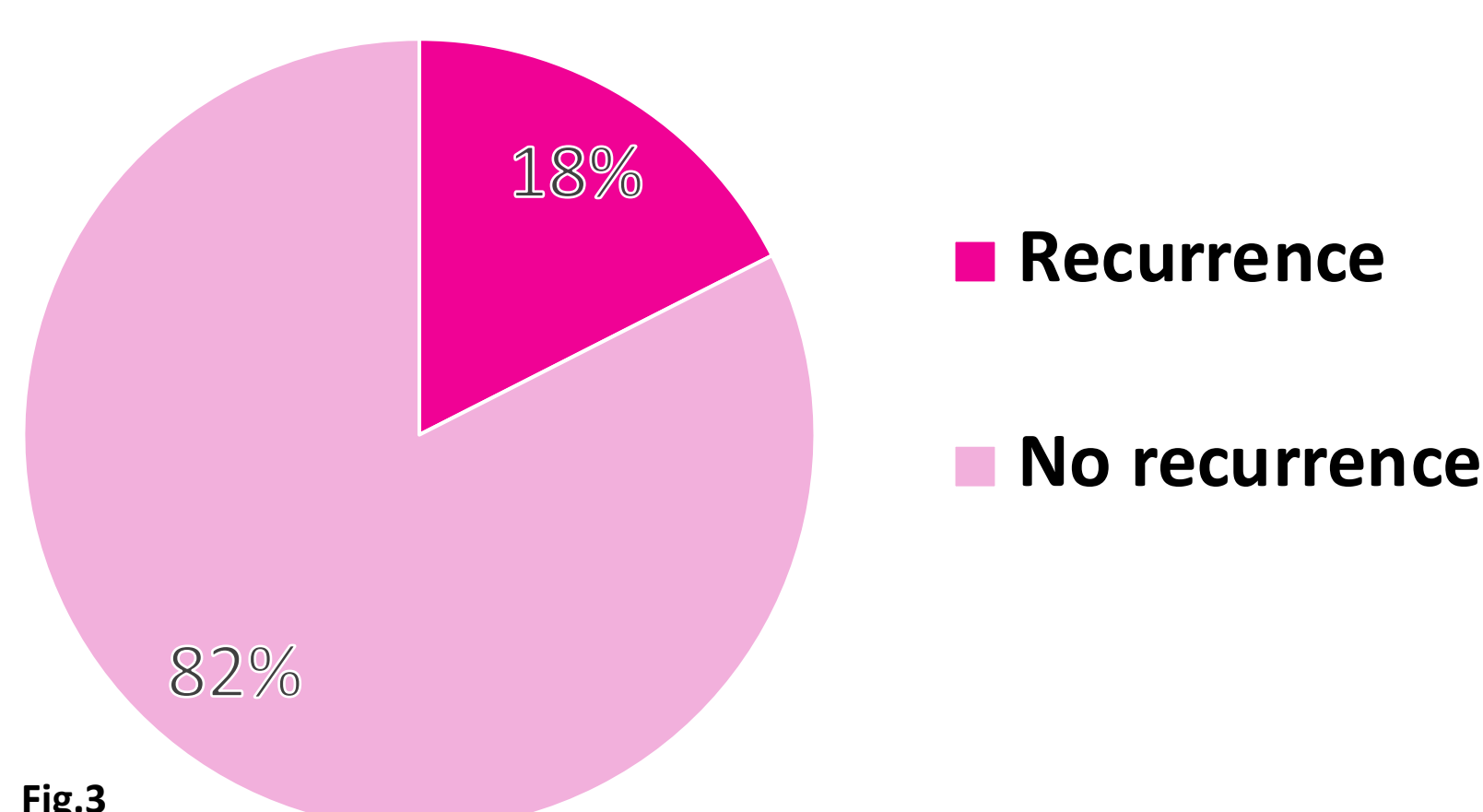
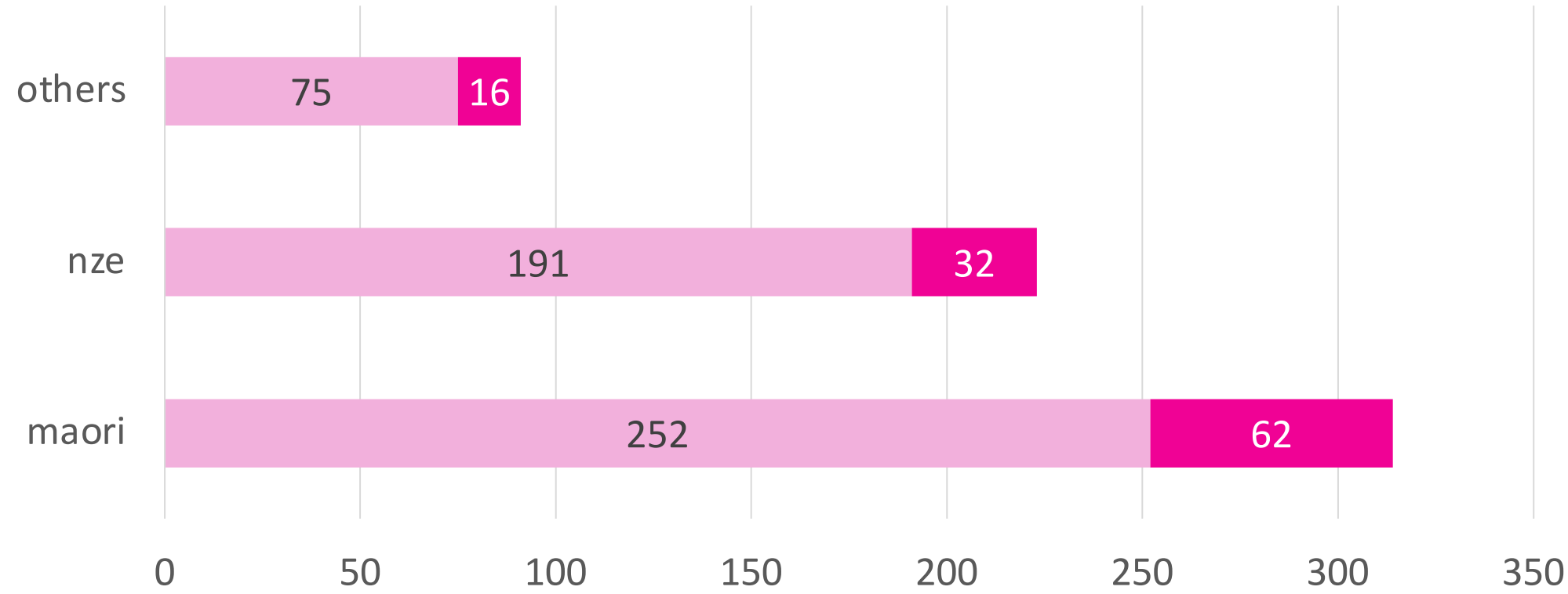


Fig.2 Ethnicity & Recurrence



Discussion

- Our practice evaluation confirms large variability in practice and deviation from evidence-based management → $p=0.009$ (Fig. 7). Despite this, we have a relatively low recurrence rate (18%) compared to internationally reported data (~50%)².
- Although majority of our patients were Maori, the recurrence rate is similar across all the ethnicities, reflecting the standard of health equity in breast abscesses in Waikato DHB.
- However, there is significant lack of USS imaging (69.9%), non-evidence-based or lack of antibiotic therapy (22.8%), and overuse of I&D –upon evaluating the proportion of abscesses that truly required I&D (i.e large size of abscess, skin compromise or recurrence).
- I&D recurrence rate was extremely low at 12.2%. Interestingly, minimally invasive aspiration techniques do not seem to be any better than being treated with antibiotics alone. Most minimally invasive aspirations require serial presentations (up to twice a week) to achieve optimal resolution. Unfortunately, most our patients in this subgroup have not had multiple aspirations. We have identified social/geographical challenges amongst our patients as well as limited resource allocation to handle the volume of repeated aspirations in our center.
- Although this reflects well on known efficiency of I&Ds, more minimally invasive management needs to be undertaken in abscesses fit for such therapy. In keeping with best practice with breast abscesses, this minimises patient discomfort with being kept inpatient, starvation for OT, cosmetic distortion as well as reduces the cost implication around I&Ds.
- Our data also shows that breast team involvement or breast team follow up is not necessary for optimal patient outcome

Results

- Demographics** (Fig.1) → N=628
 - lactational (30.3%) vs non-lactational (69.7%)
 - Age → mean: 30.6, median: 29
 - Ethnicity: ~50% of breast abscesses → Maori (Fig.2)
- Practice evaluation:**
 - USS (188 USS, no USS 437 → **69.9%**) –Fig.4
 - Antibiotic therapy** (Fig.5)
 - Most: Augmentin or Flucloxacillin (75.8%)
 - Other combinations (12.6%), Not prescribed (10.4%)
 - Intervention** (Fig.6)
 - Most got I&D even when not indicated (64%)
 - Follow-up** (39.7%), not followed up (60.3%)
- Recurrence:** 18% overall (Fig.3)
 - Ethnicity: **Maori (19.7%)**, NZE (14.3%) and others (17.6%) → Statistically not significant ($p=0.269$)
 - Smokers 24%** vs non-smokers 15% ($p<0.005$)
 - Low recurrence rate for I&D** (12.2%), similar rates for bedside aspiration (29.0%), USS-guided (30.6%), no intervention at all (27.0%) ($p<0.0001$)
 - Not affected by primary team** (breast vs non-breast)
 - Primary breast team 16% recurrence, Primary team non-breast 18% recurrence
 - Statistically not significant ($p=0.569$)
 - Not affected by location of follow-up**
 - Breast Care follow up 21% recurrence, Non-breast follow up 6% recurrence, No follow-up 16% recurrence
 - Statistically not significant ($p=0.159$)

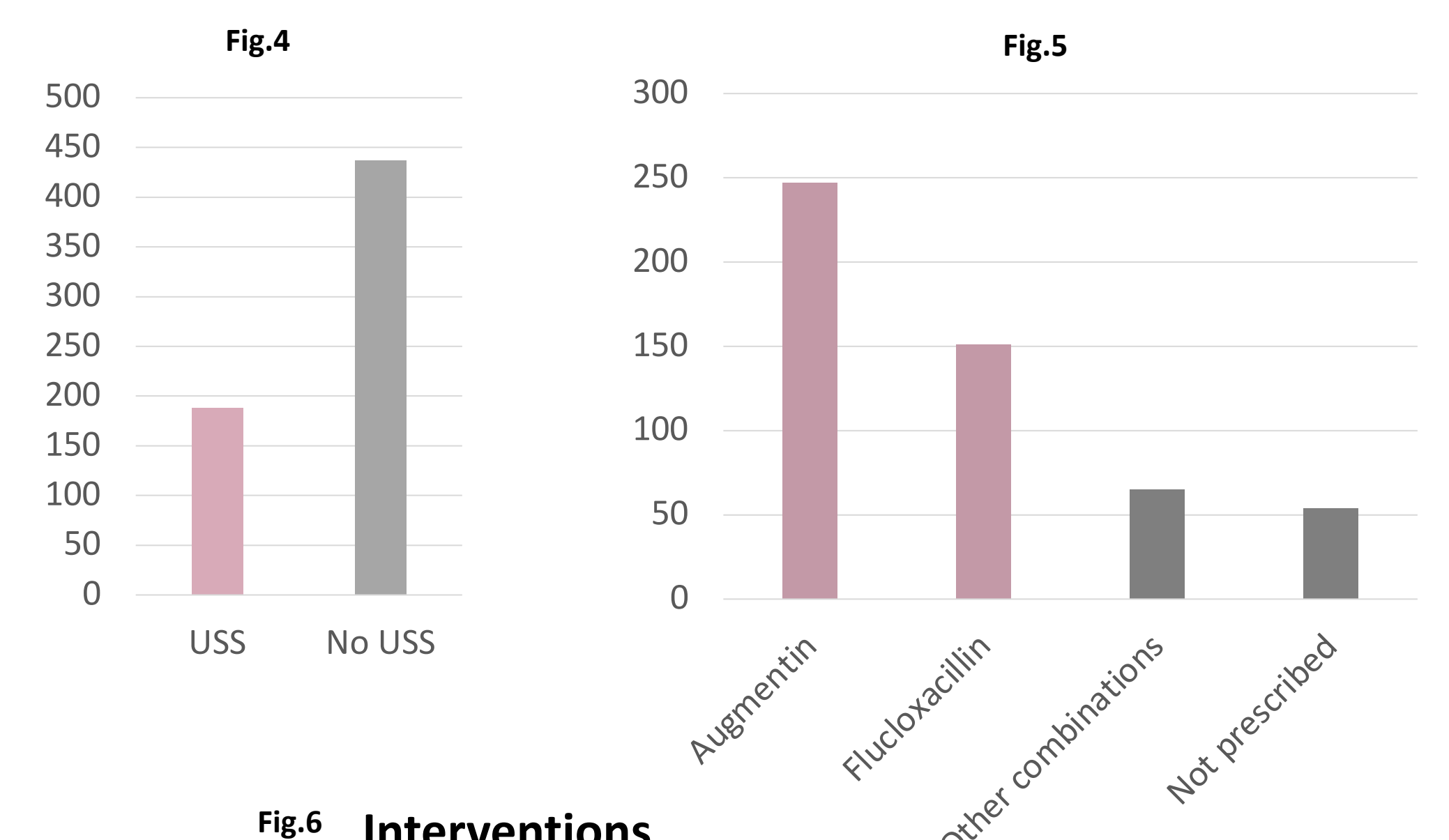


Fig.6 Interventions

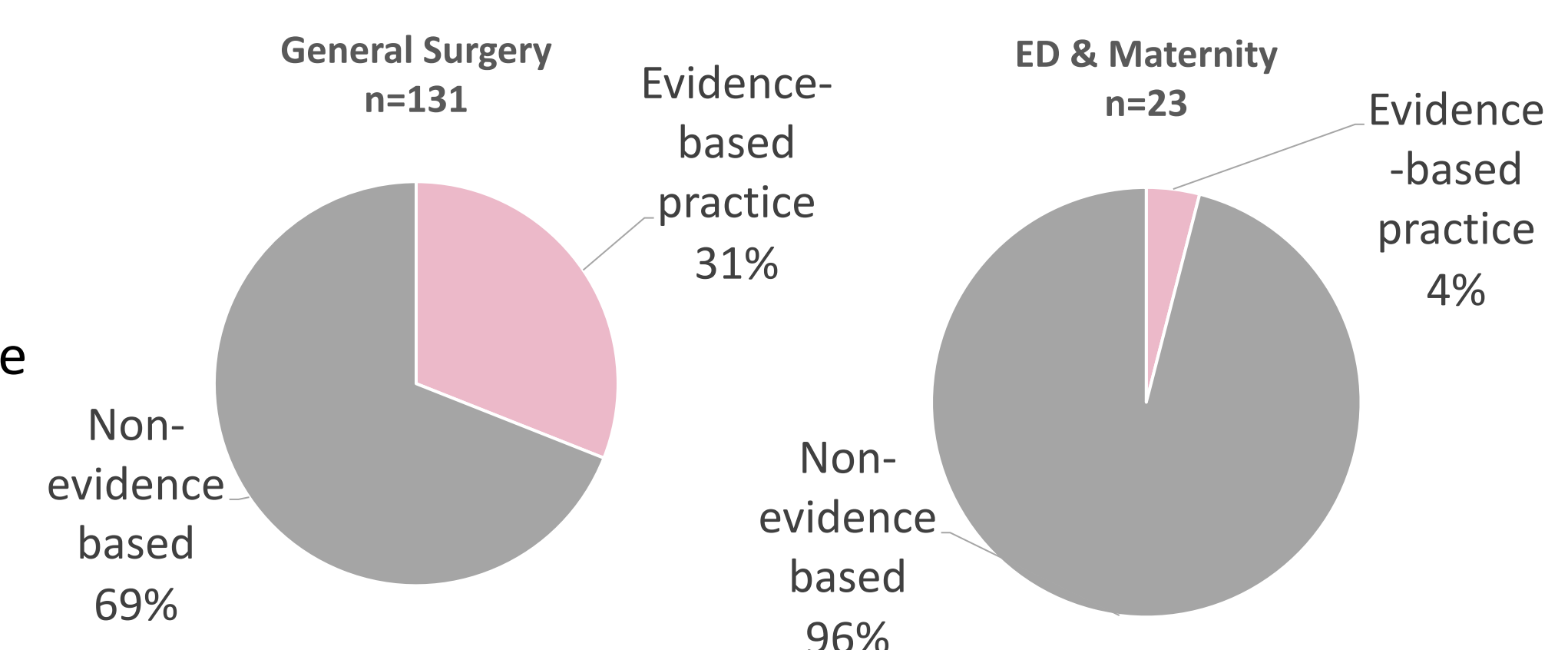
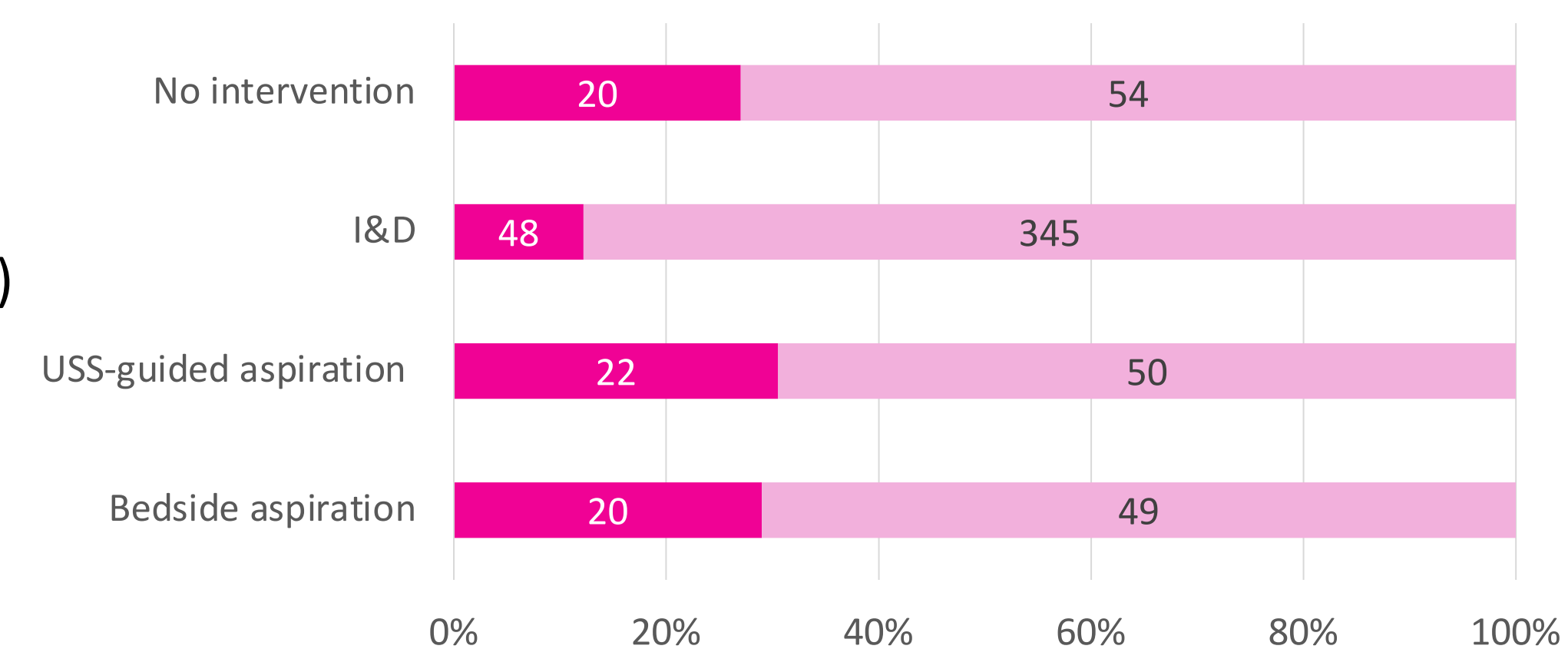


Fig. 7 Evidence-based Management between departments n=154. ($p=0.009$)

Conclusion

- Low recurrence rate compared to internationally reported standard
- Although we have a preponderance of Maori patients with breast abscesses, the lack of outcome disparity acts as an indicator of health equity
- Heterogenous practice reinforces the need for a standardised evidence-based management pathway.
- Improved access to repeated serial aspirations is vital to correcting low threshold for I&D
- Breast team involvement or breast clinic follow up not required for optimal patient outcome

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