

# An analysis of the factors associated with the greatest disease burden in the pediatric population seen at Khayelitsha Emergency Department between 2014-15.

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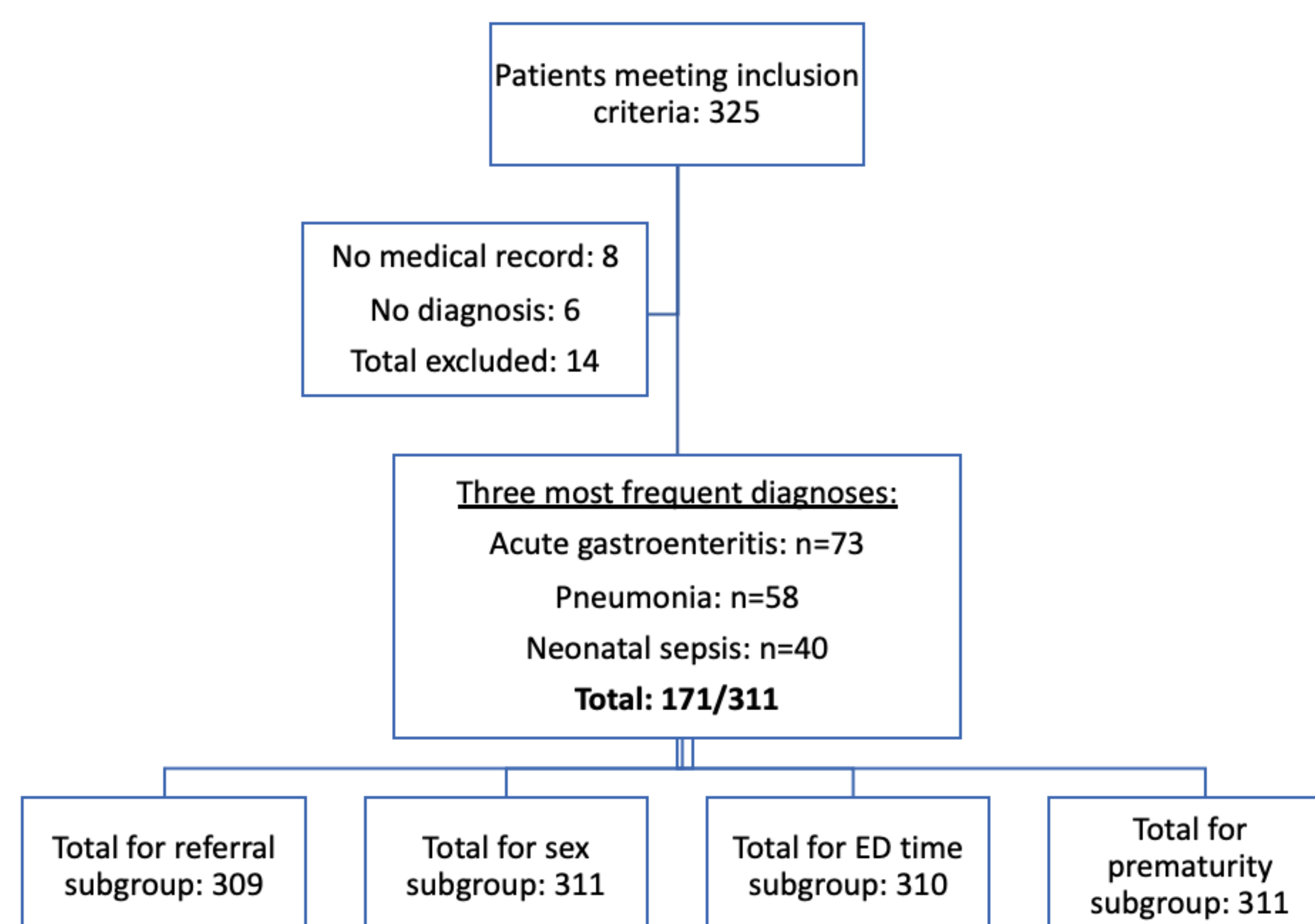


## Introduction

Khayelitsha District Hospital (KDH) is a district level tertiary hospital serving the partially informal township of Cape Town, South Africa. The under-five mortality rate in 2010 was 45% higher compared to the other three sub-districts in the Cape Metropolitan region.<sup>1</sup> This study examined the pediatric population to determine significant associations in the three most common diagnosis seen at KDH<sup>2</sup> with the goal of identifying opportunities available to minimize the morbidity and mortality of a vulnerable population.

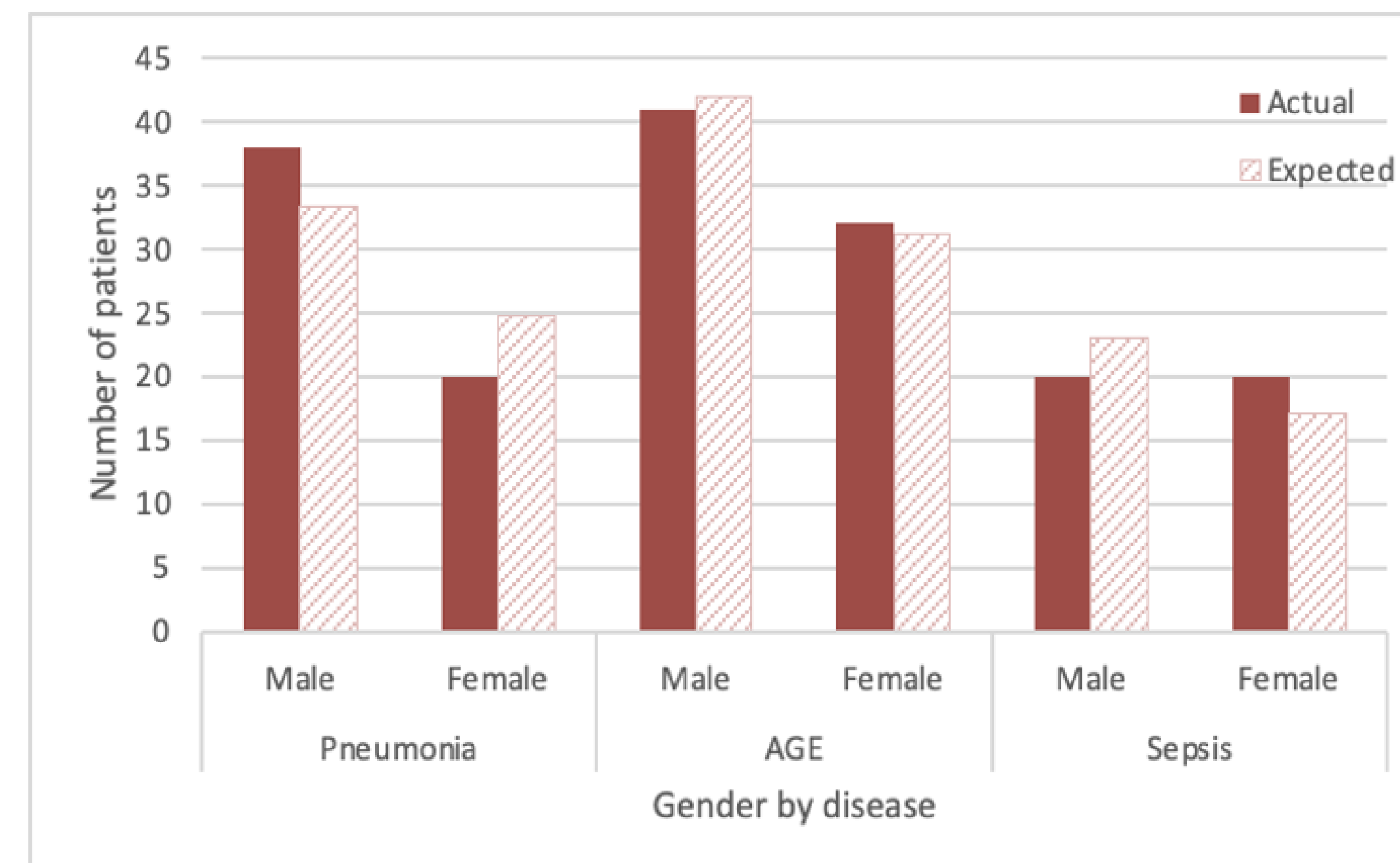
## Materials and Methods

- Retrospective cohort study analyzing 325 pediatric patients seen in the Resuscitation Zone of KDH from 1 Nov 2014 – 30 Apr 2015.
- Chi square statistical analysis by category.



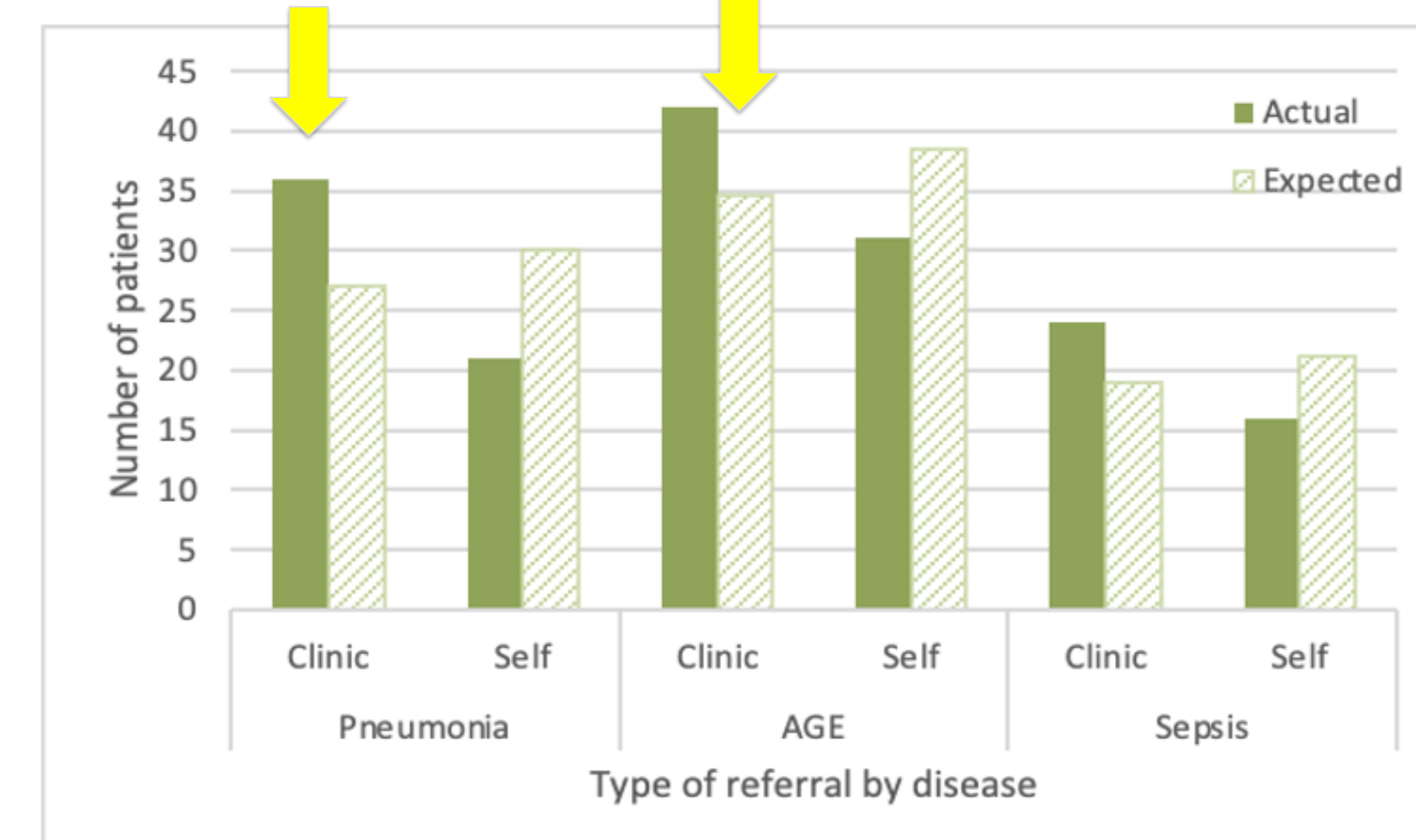
## Results

No significant correlations for sex.



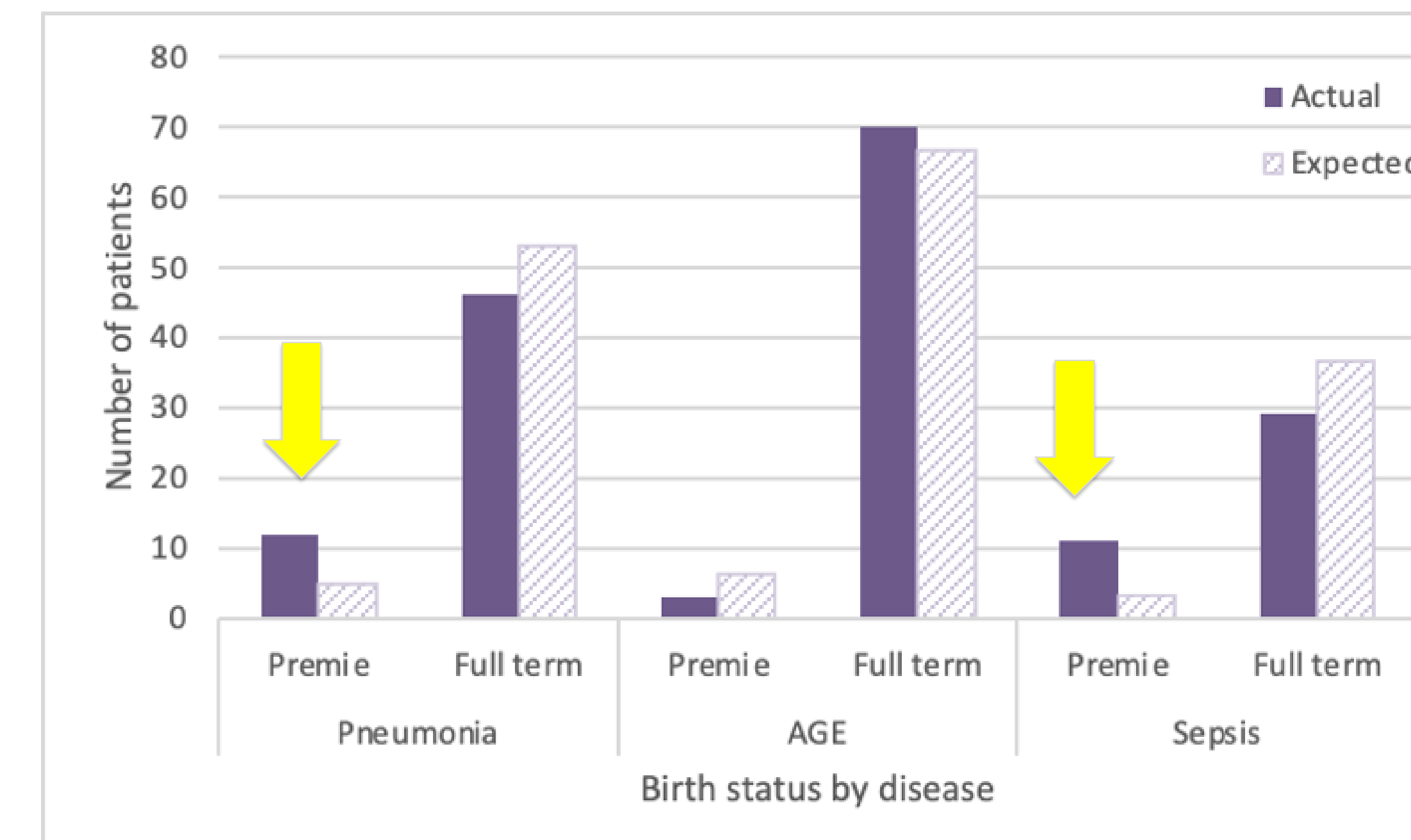
Association between most common diagnoses and sex (male vs female) in the pediatric patients.

More cases were referred from clinic sites when compared to self-presenting to the ED for AGE ( $\chi^2$ ,  $p = 0.046$ ) and pneumonia ( $\chi^2$ ,  $p = 0.008$ )



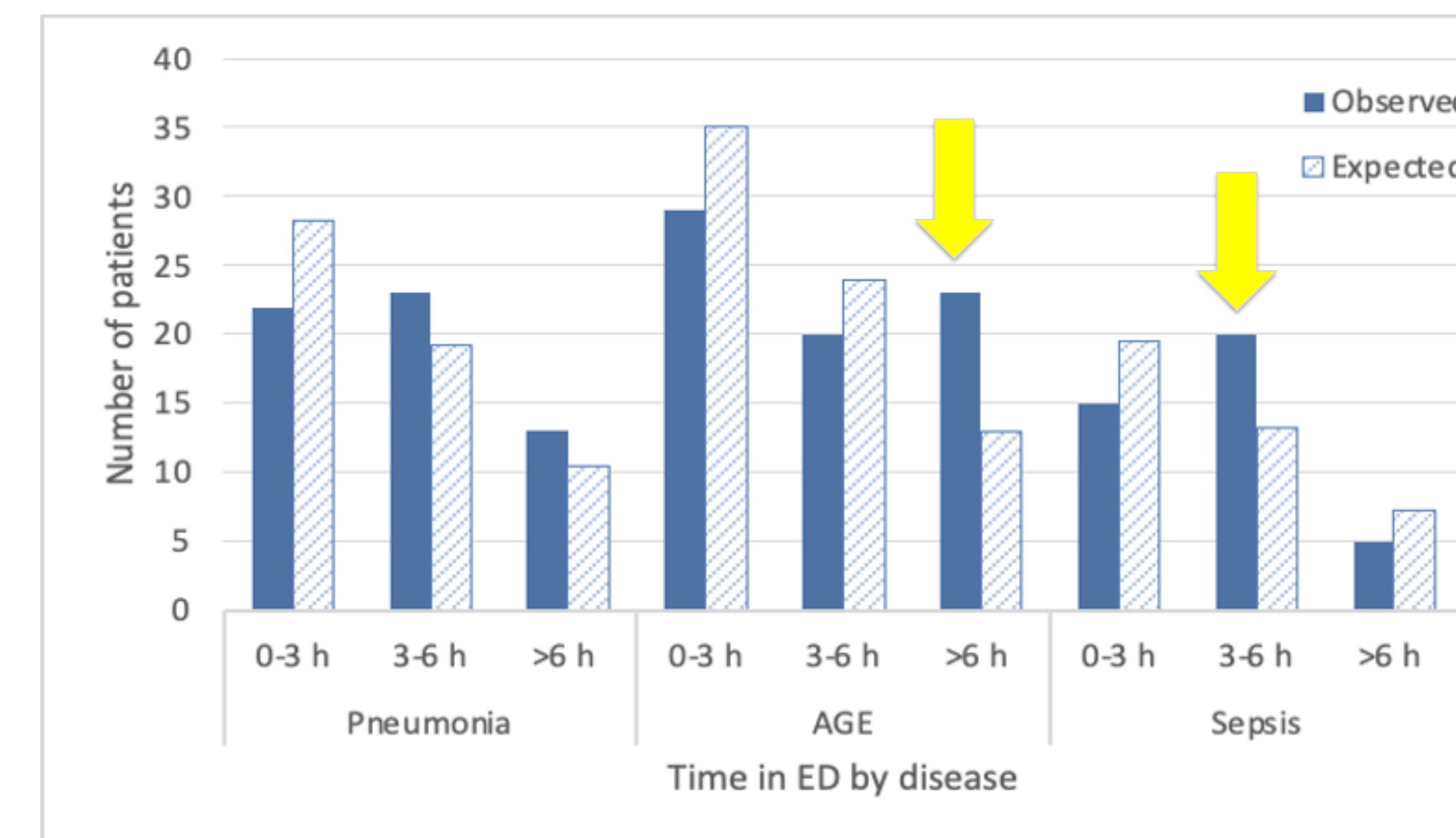
Association between most common diagnoses and nature of referral in the pediatric patients.

Pneumonia ( $\chi^2$ ,  $p = 0.0002$ ) and sepsis ( $\chi^2$ ,  $p = 0.00004$ ) were significantly correlated with higher numbers of disease in children with a history of premature birth



Association between most common diagnoses and prematurity in the pediatric patients.

AGE was significantly correlated with time in the ED >6 hours ( $\chi^2$ ,  $p = 0.0016$ ), and sepsis significantly correlated in the 3-6 hour category ( $\chi^2$ ,  $p=0.049$ ).



Association between most common diagnoses and time in the KDH Emergency Center in the pediatric patients.

## Conclusions

- Prematurity was associated with increased cases of pneumonia and sepsis, indicating need for prenatal care and treatment.
- Acute gastroenteritis and pneumonia had more cases being referred from clinic compared to self-presentation, likely related to the complexity of disease severities and resource availability.
- The length of stay for acute gastroenteritis was associated with higher cases staying in the ED > 6 hours, while length of stay for patients with sepsis was higher than expected for the 3-6 hour timeframe.

## Applications

- Allocating resources and staff to address gaps in care.
- Improving protocols and interventions to reduce morbidity and mortality.
- Areas for education in the community and healthcare providers.

## Limitations:

- Small sample size from 5 years prior.
- Data represents specific region and population.

## Literature cited

- Finlayson H, Smit L, Esterhuizen TM, Kruger M. The impact of a change in referral pathway on a pediatric short-stay ward in Cape Town, South Africa. Vol 102016.
- Richards D, Hunter L, Forey K, et al. Demographics and predictors of mortality in children undergoing resuscitation at Khayelitsha Hospital, Western Cape, South Africa. South African Journal of Child Health. 2018;12(3):127-131.

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