

BACKGROUND

- Urinalysis and urine cultures are frequently ordered in the emergency department without an indication, leading to unnecessary antibiotic use
- Unnecessary antibiotic use leads to increased resistance rates, increased adverse events, and increased spending of healthcare dollars
- Antimicrobial stewardship is a growing field that can limit use of antibiotics to conserve efficacy, avoid unnecessary side effect exposure, and reduce spending

OBJECTIVE

- Assess percent of patients with a true indication for urinalysis and urine culture
- Assess percent of patients receiving urinalysis and urine culture
- Assess percent of patients receiving unnecessary antibiotics for asymptomatic bacteriuria

METHODS

Study Design

- Retrospective cohort study

Inclusion Criteria

- Adults aged 18+ years old
- Admitted from the emergency department (ED) from July 1, 2021 – July 10, 2021
- Urinalysis and/or urine culture ordered in the ED

Exclusion Criteria

- Admission to the ICU
- Treatment for UTI prior to admission
- No documented review of systems

Study Measures

Urinalysis indicated:

- Sepsis workup
- Urinary symptoms (pain on urination, frequency, urgency, flank pain/tenderness, suprapubic tenderness)
- Altered mental status without explanation
- DKA
- Biliary obstruction
- Hepatitis
- Hematuria

Urine culture indicated:

- Positive urinalysis (presence of leukocyte esterase, nitrites, >10 WBC, presence of bacteria) plus urinary symptoms (see above)

Antibiotic given for asymptomatic bacteriuria without other indication:

- Positive urinalysis and/or urine culture without urinary symptoms

Data Analysis

- Descriptive statistics were used for this study

RESULTS

Of 168 patients reviewed in this study, 57 patients were included in the preliminary results. The majority of the patients not included in the results were excluded based on admission to a critical care unit.

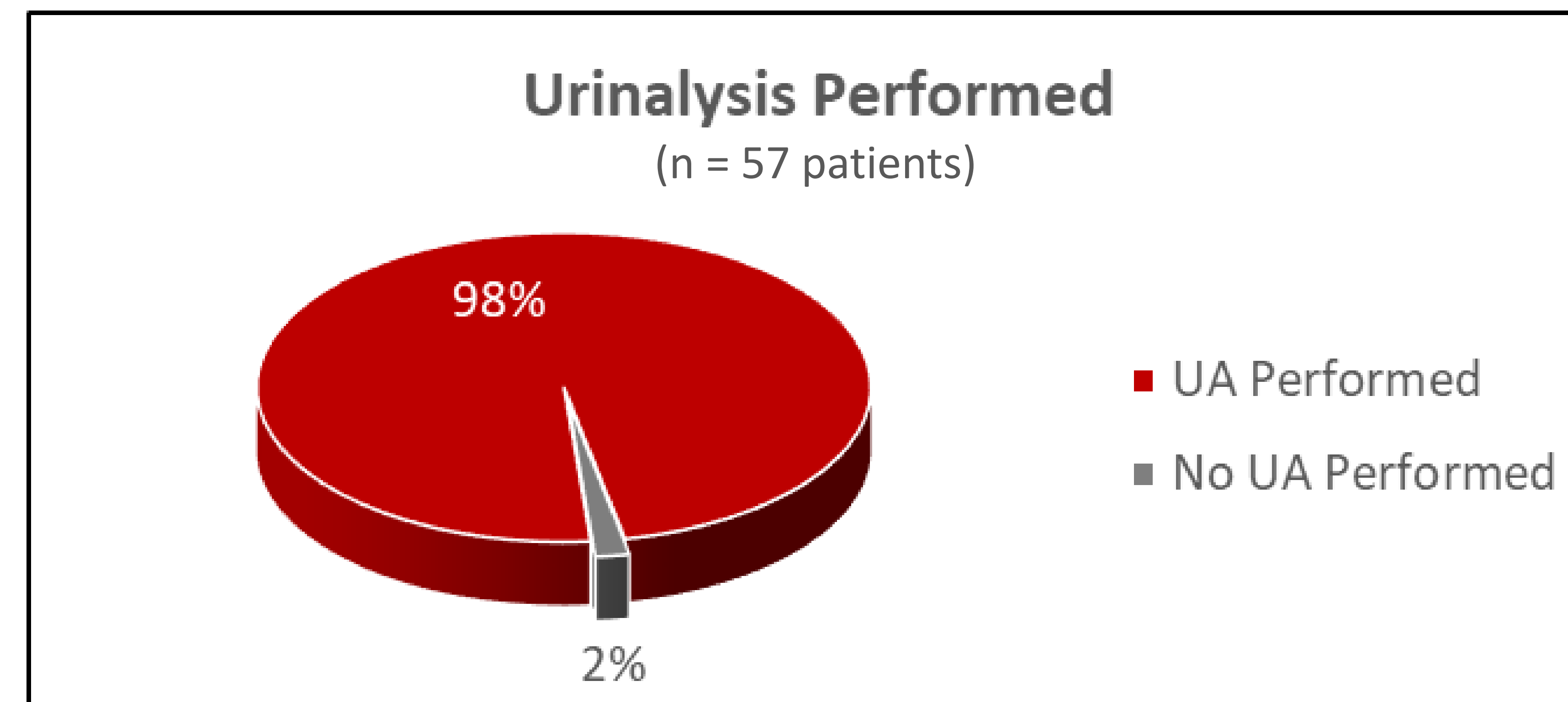


Figure 1 shows the proportion of patients that had a urinalysis performed of all the patients included.

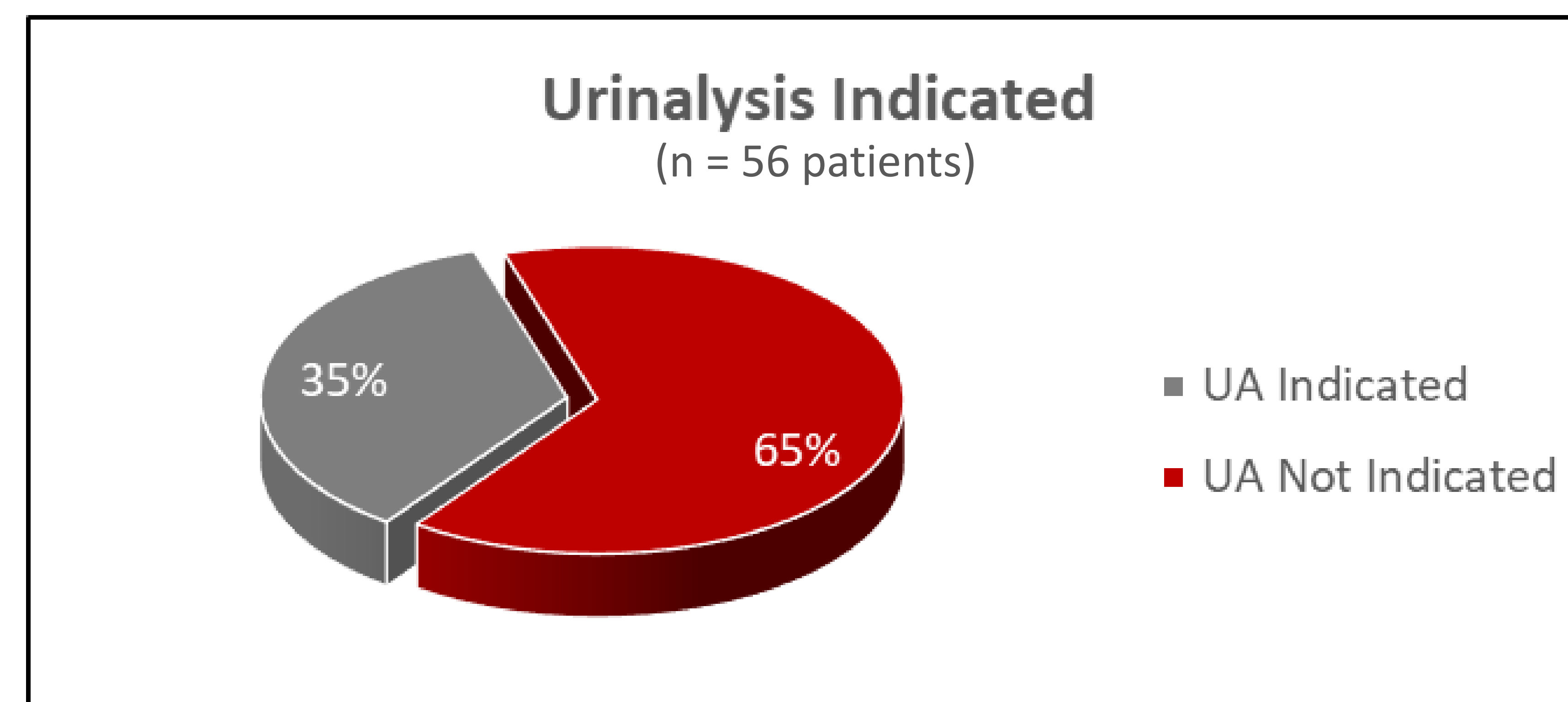


Figure 2 shows the proportion of patients that were indicated for a UA of all those that received one.

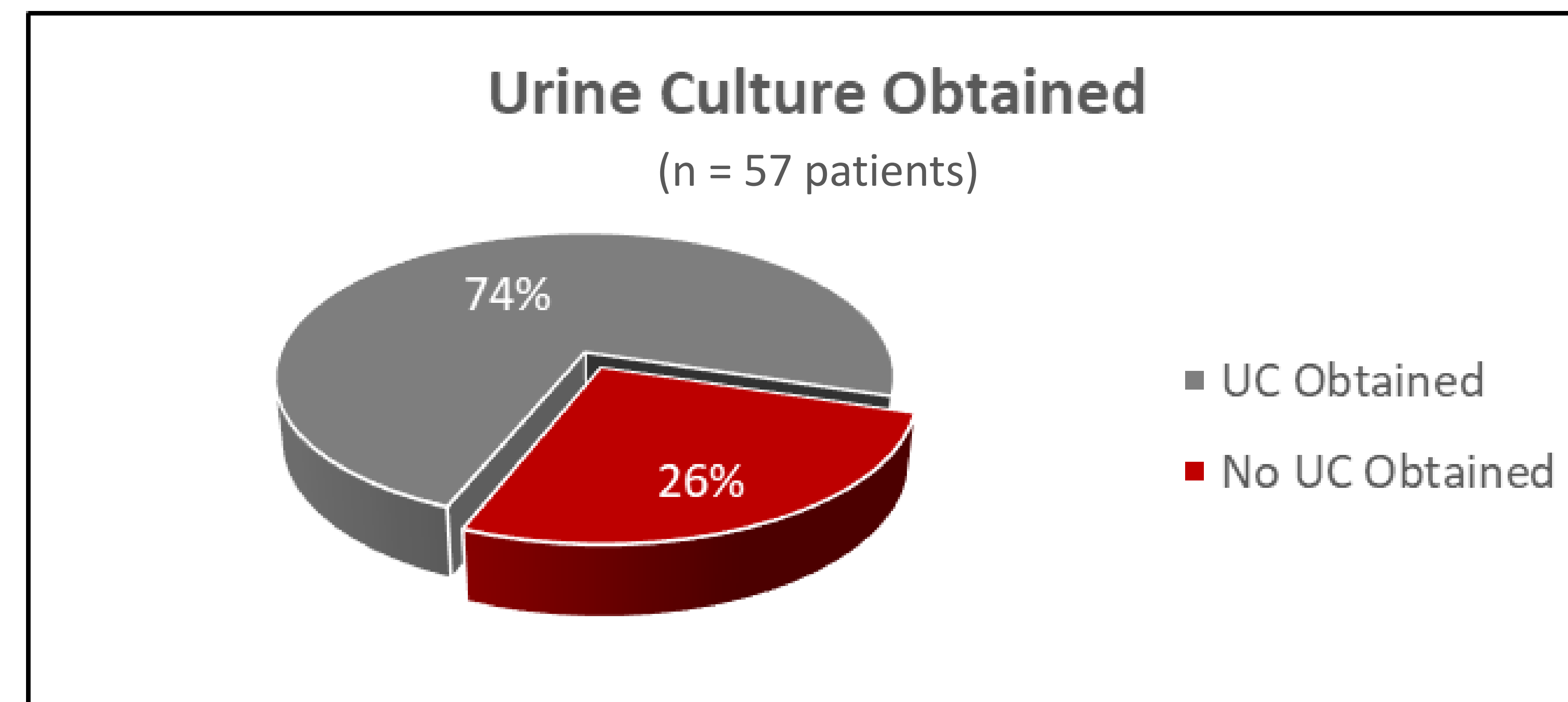


Figure 3 shows the proportion of patients that had a urine culture obtained of all those included.

RESULTS

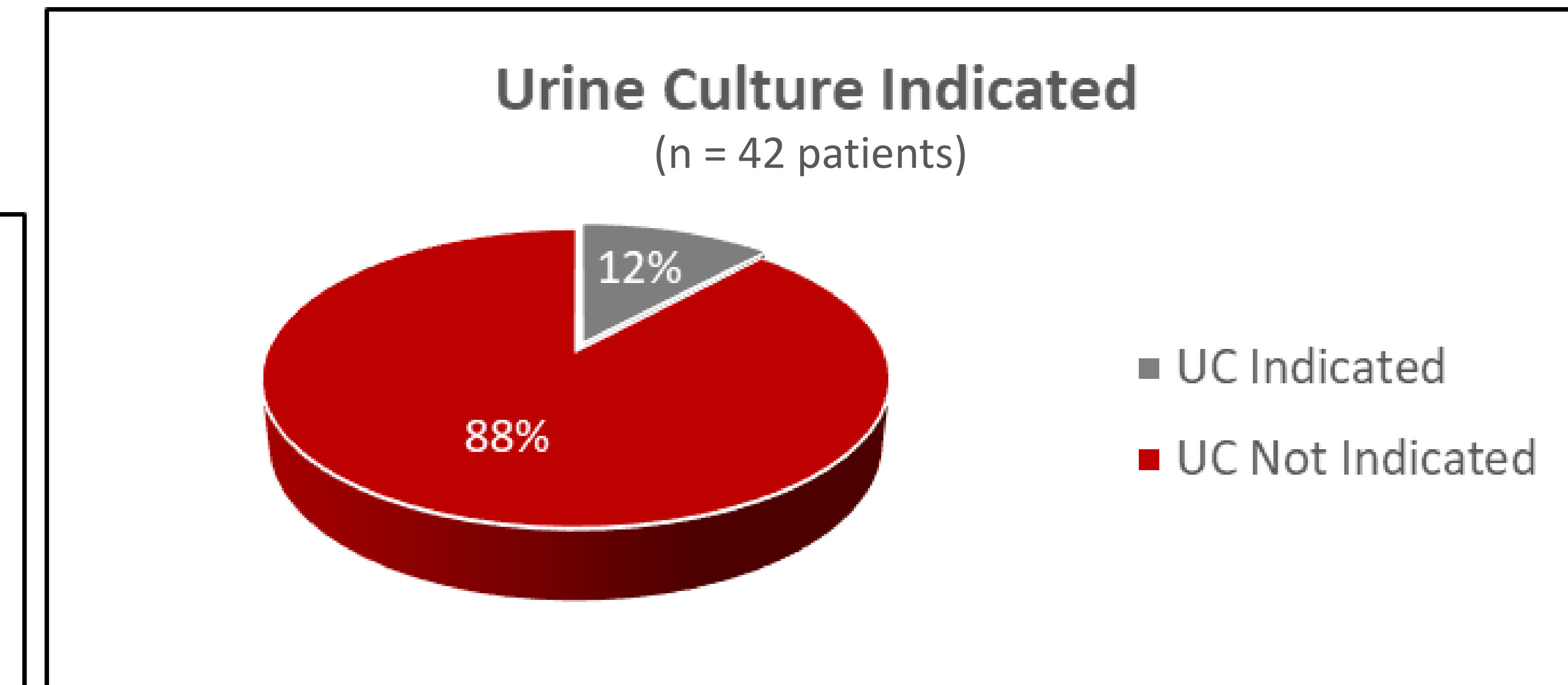


Figure 4 shows the proportion of patient that were indicated for a UC of all those that had one obtained.

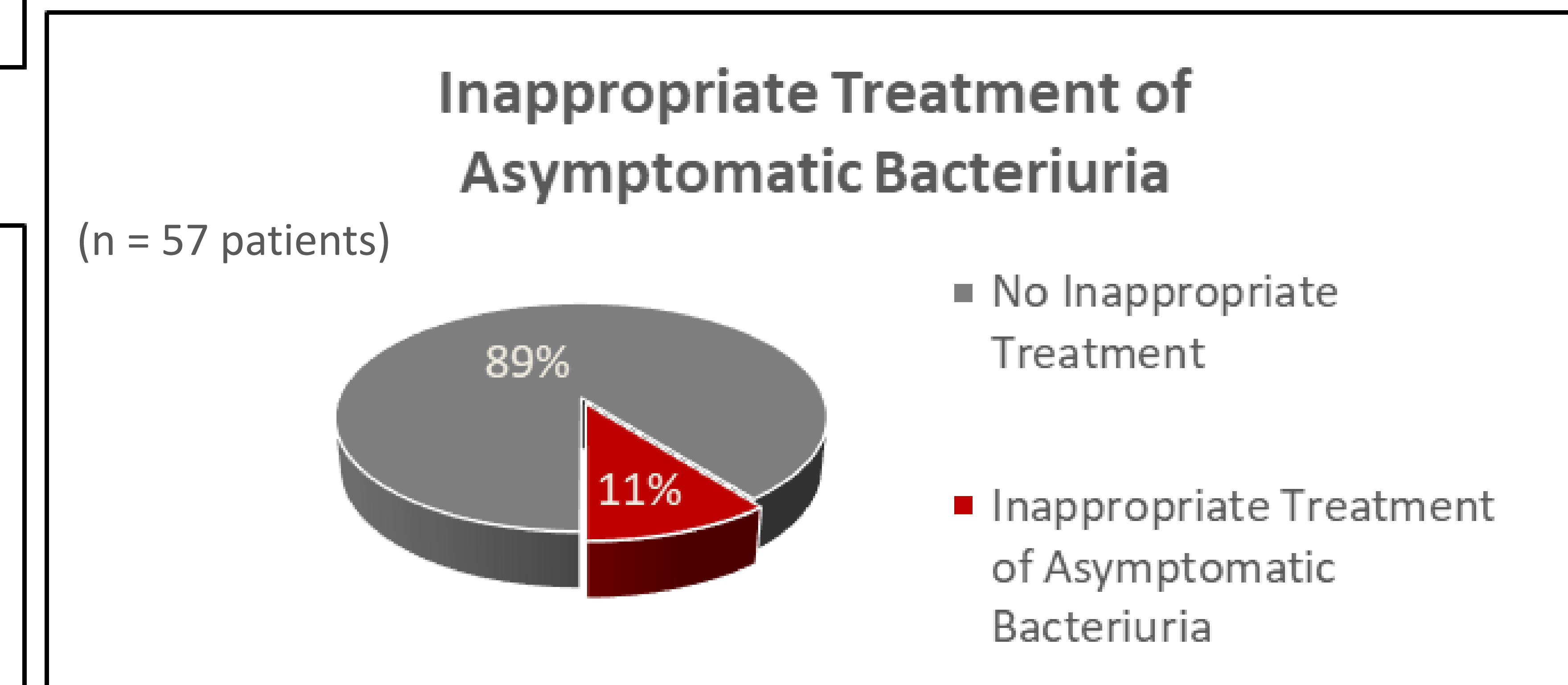


Figure 5 represents the proportion of patients that received inappropriate treatment of asymptomatic bacteriuria of all the patients included.

CONCLUSION

- Within the patients included in this study, a majority received either a urinalysis, a urine culture, or both. Of those patients, 98% had a urinalysis while only 35% were indicated and 74% received a urine culture while only 12% were indicated.
- 6 of the 57 patients were found to be inappropriately prescribed antibiotics.
- These labs can increase healthcare spending, increase workload for laboratory technicians, and in some cases lead to unnecessary antibiotic use
- Solutions to this problem may include ED pharmacist and provider education and changing the design of ED order sets
- Further studies to assess possible solutions will need to be done as solutions may be institution specific