

# Say Yes To The Stress: Prevalence of Emergency Steroid Stress Plans

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## Background:

Exogenous glucocorticoids suppress endogenous steroids. Prolonged use, defined as greater than 3 weeks, poses a risk of adrenal insufficiency. Acute adrenal insufficiency is the sequela of acute physical stress in the absence of appropriate "stress" steroids and is a life-threatening emergency.

Patients at risk of adrenal insufficiency should be given an emergency steroid stress plan, advising them of appropriate stress doses to use in times of acute physical stress.

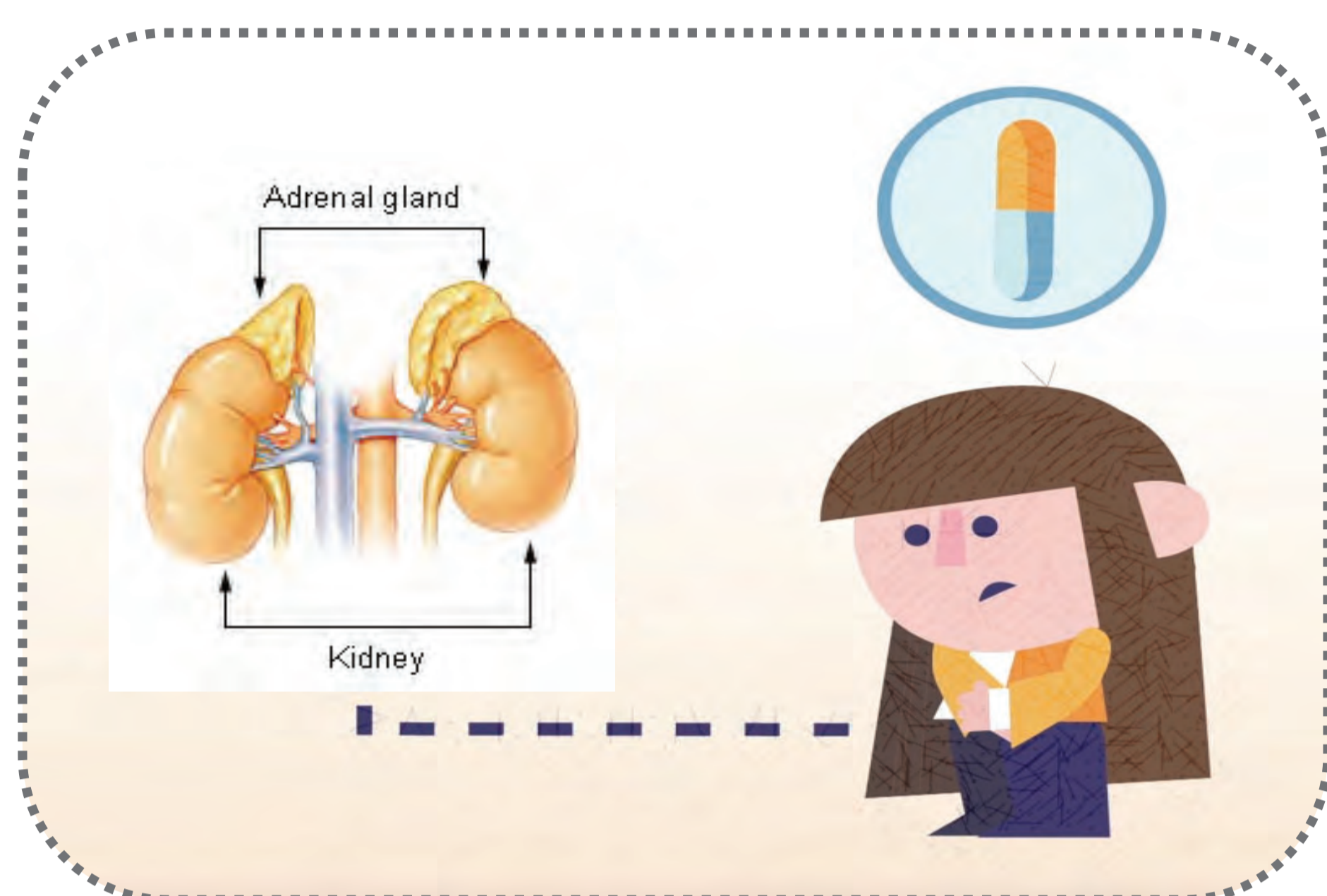


Figure 1. The paediatric patient and acute adrenal insufficiency.

## Aim:

To retrospectively identify patients at risk of glucocorticoid-induced adrenal insufficiency at Queensland Children's Hospital and determine the proportion that received an emergency steroid stress plan.

## Method:

iPharmacy<sup>®</sup> dispensing software was used to retrospectively audit patients dispensed prednisolone between 1<sup>st</sup> July 2017 - 1<sup>st</sup> July 2018. Patients' electronic medical records (Cerner Millennium<sup>®</sup>) were subsequently reviewed to identify glucocorticoid dose, duration and whether an emergency steroid stress plan had been provided and documented. Inclusion criterium was patients prescribed  $\geq 21$  consecutive days of prednisolone. Exclusion criteria were patients prescribed  $< 21$  days of prednisolone, alternate-day dosing and an Oncology diagnosis. Patients were grouped by treating team.

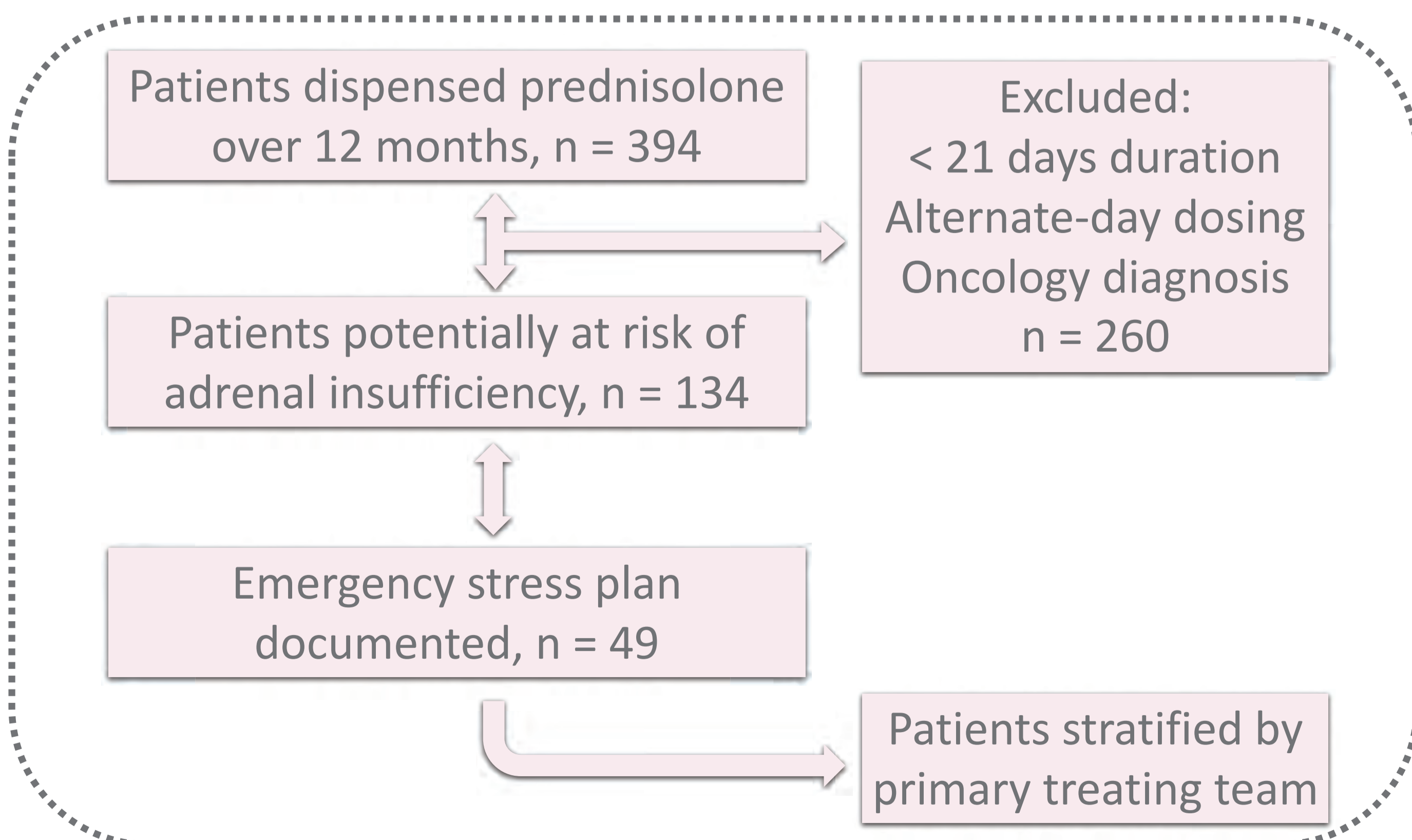


Figure 2. Audit identification, selection, inclusion and exclusion.



## Results:

394 patients were dispensed prednisolone over 12 months.

- 134 (34%) met inclusion criteria as potentially at-risk
- 49 (37%) of the 134 at-risk patients had an emergency plan documented in their electronic medical record (figure 3)

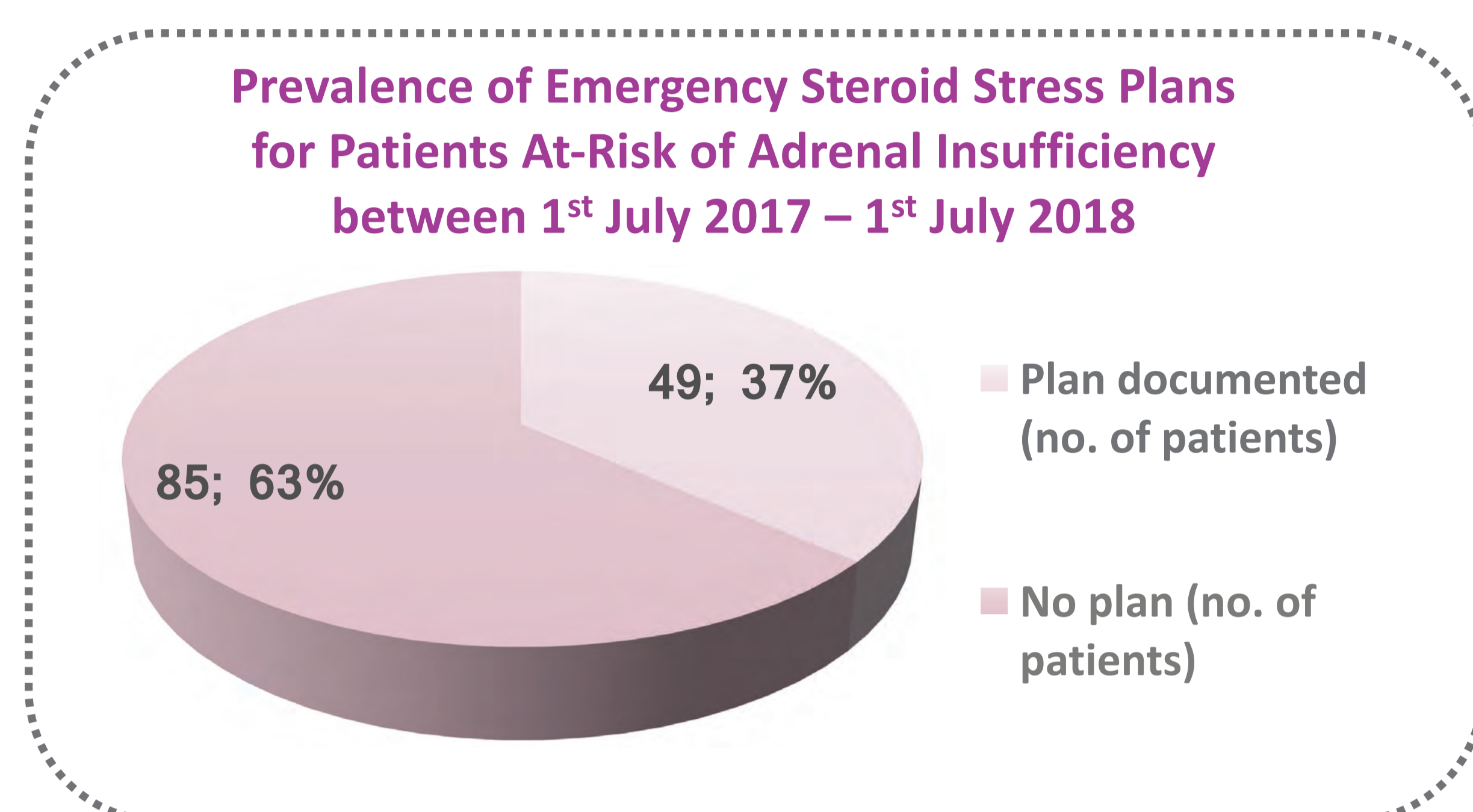


Figure 3. Prevalence of stress plans for patients prescribed prednisolone.

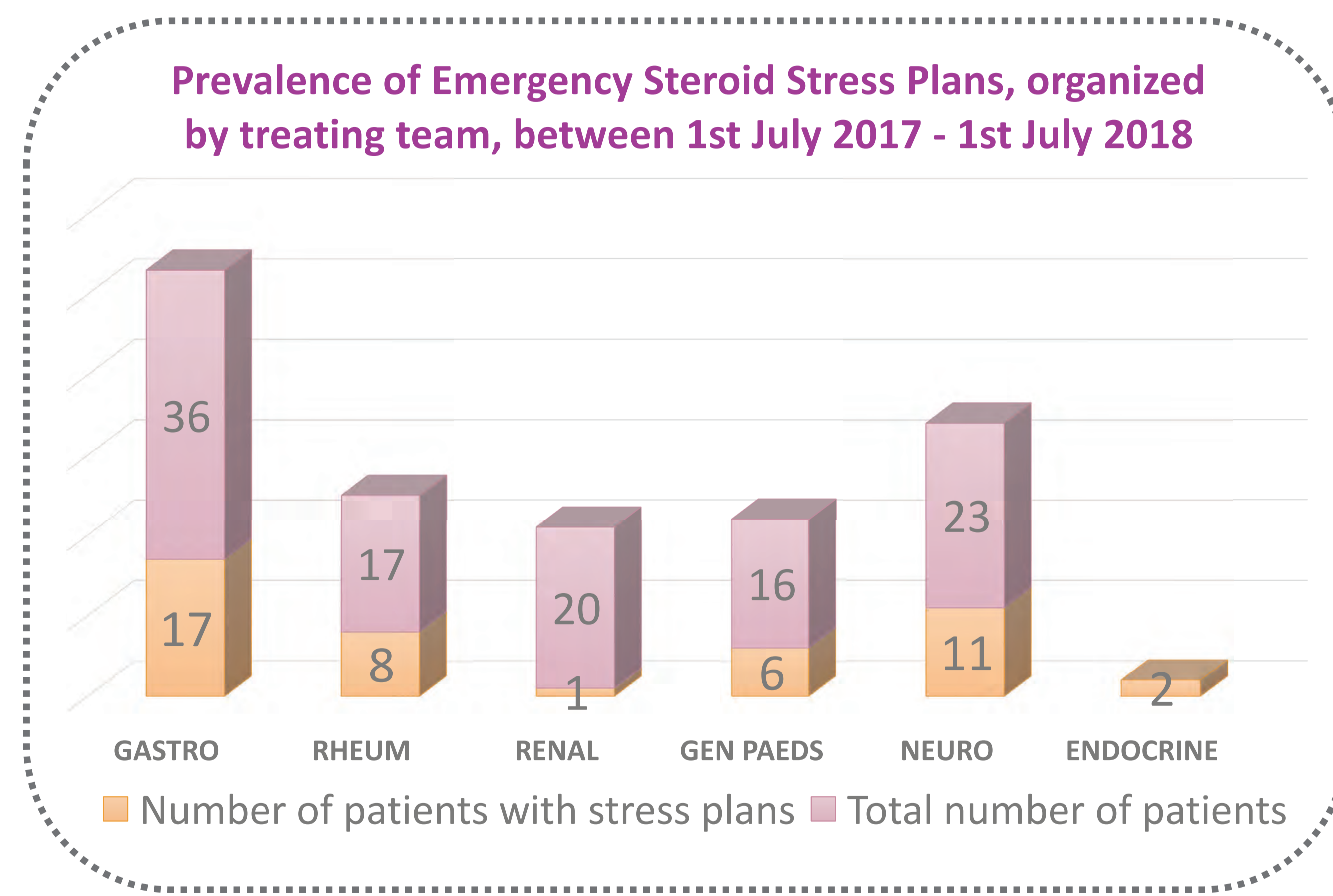


Figure 4. Prevalence of stress plans for patients prescribed prednisolone, organized by treating team.

## Discussion:

Clinicians that prescribed prednisolone more frequently were more likely to provide an emergency steroid stress plan. However, all teams - excluding Endocrine, as expected - provided stress plans to less than 50% of at-risk patients, demonstrating an overarching need for increased awareness.

Electronic medication management could address these gaps through automatic prompting at time of prescribing. Pharmacist-led identification of at-risk patients would likely be of benefit.

## Conclusion:

Many patients are at risk of glucocorticoid-induced adrenal insufficiency, but too few patients receive emergency steroid stress plans, representing an area that would benefit from pharmacist intervention and prospective research.