

Defining pre-eclampsia in large obstetric datasets: a comparison of clinician diagnosis, a pragmatic data approach, and ISSHP-based criteria

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Background

- Large datasets are useful only if the variables are reliable.
- Preeclampsia is usually identified in datasets based on a clinical code (e.g. ICD-10) that reflects a diagnosis made by a clinician.
- However, these diagnostic codes do not always reflect the international diagnostic criteria set out by the ISSHP.

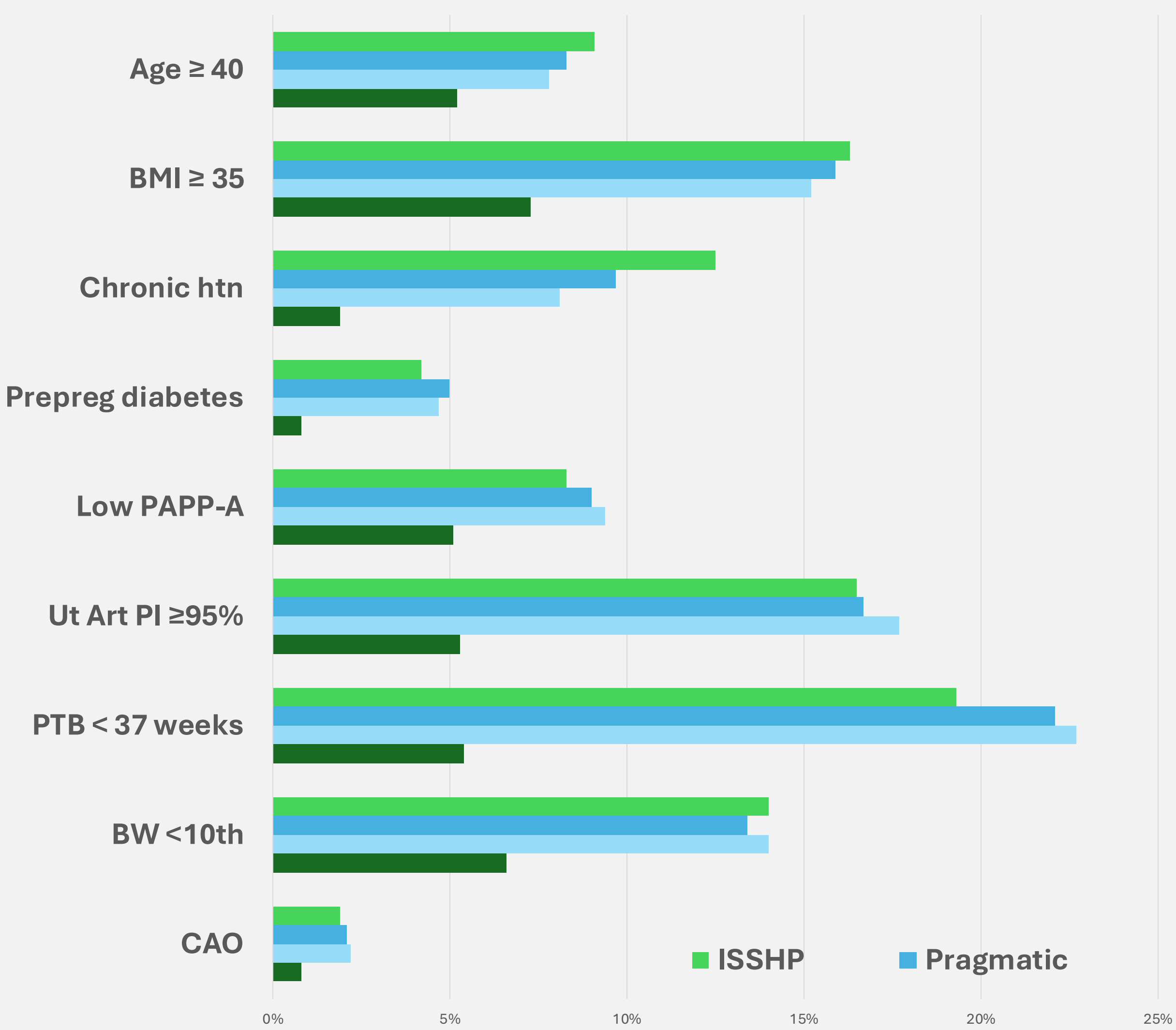
Methods

We tested 3 algorithms to identify preeclampsia in a large retrospective UK cohort (48,376 pregnancies):

- Clinician:** ICD-10 code
- Pragmatic:** ≥ 2 data points e.g. ICD-10 code + raised sFit/PIGF
- ISSHP:** hypertension + end-organ involvement (labs & ultrasound). ISSHP does not rely on a clinician diagnosis.

Validation vs Known Predictors and Outcomes

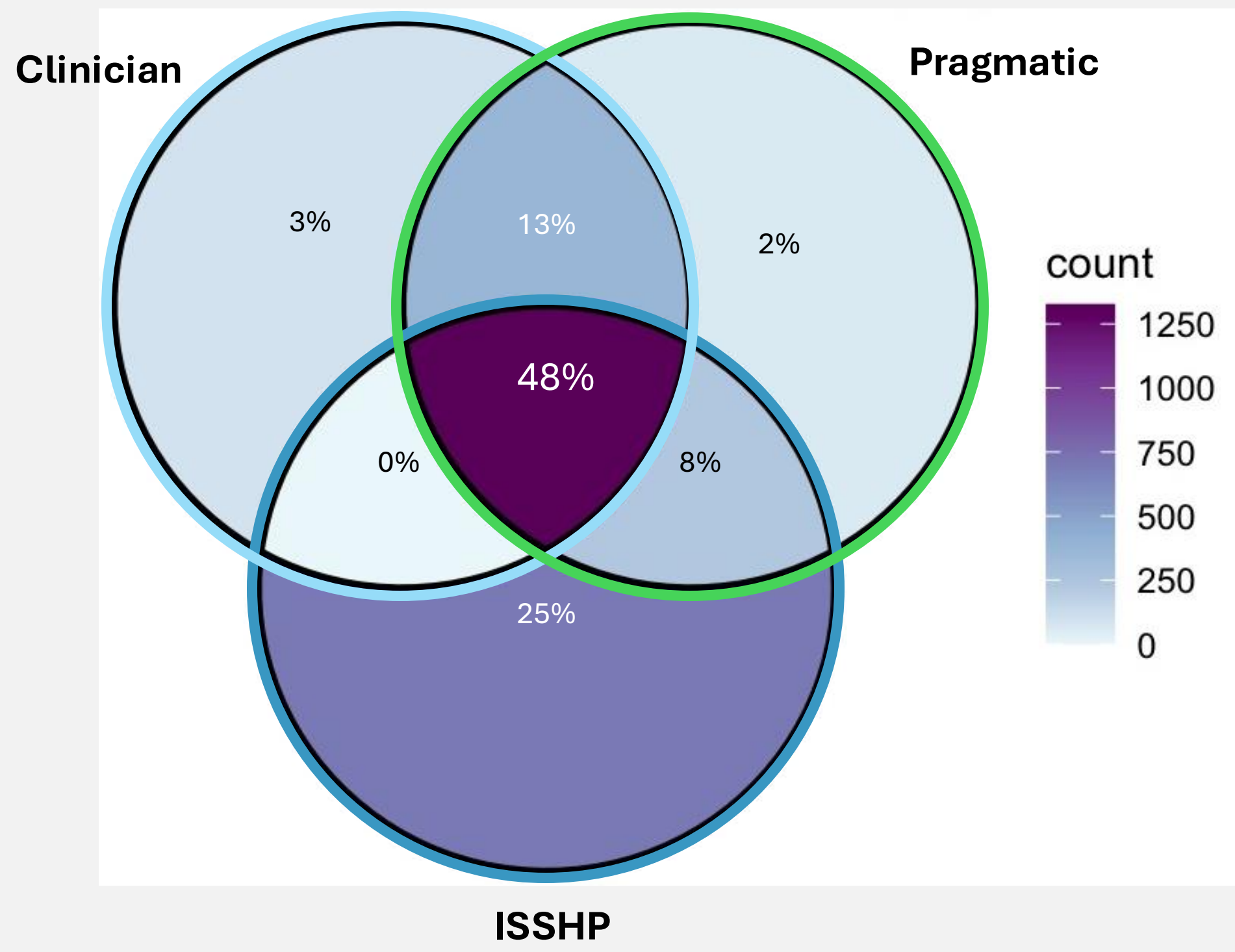
Each group was compared to the background cohort to see if they behaved as expected for cases of preeclampsia.



All groups differ significantly from the background cohort ($p < 0.001$)

Results

Overlap of the 3 groups



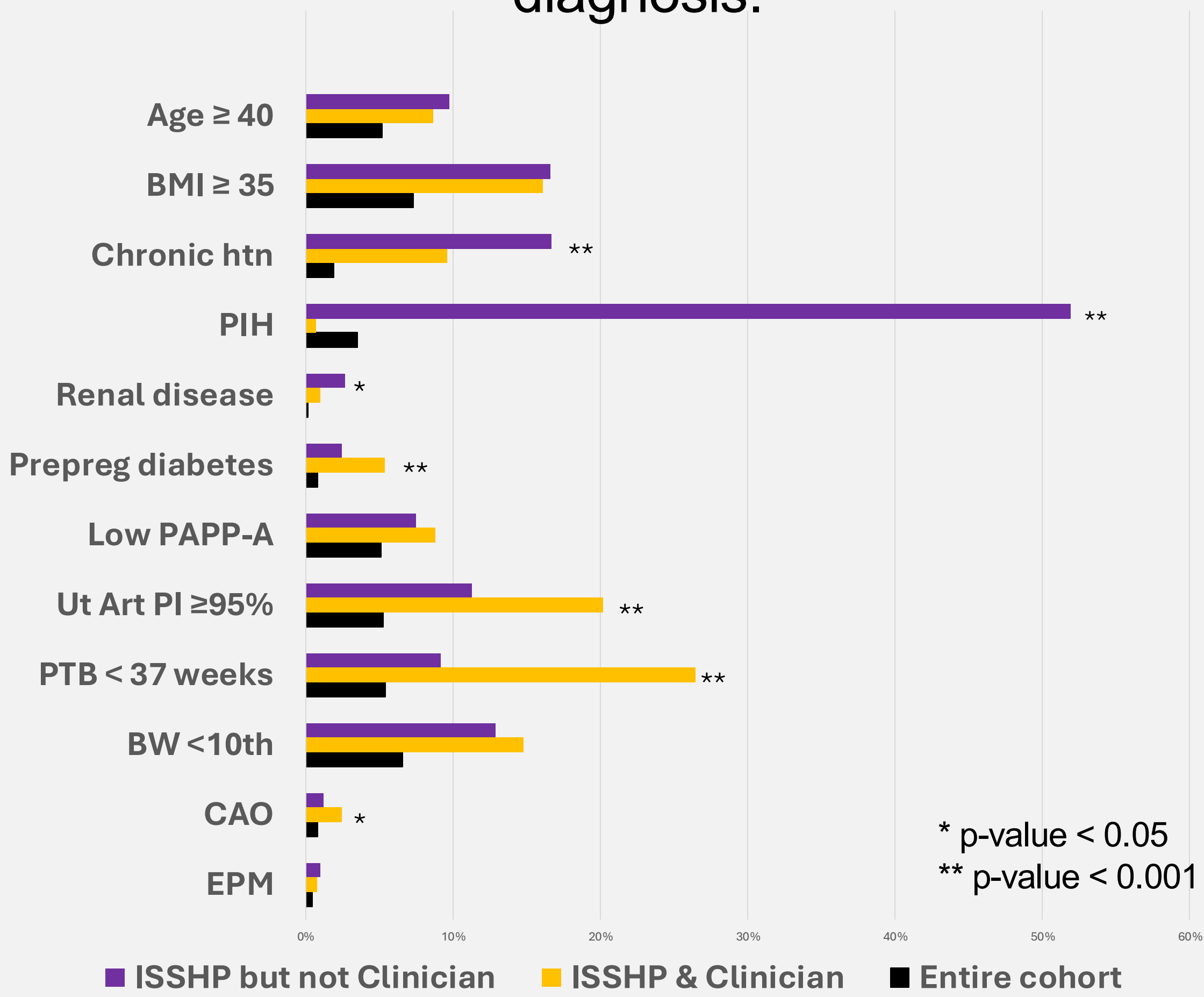
	Definition	Prevalence
	Clinician	3.7%
	Pragmatic	4.1%
	ISSHP	4.7%
	Meets all 3 definitions	2.7%
	Meets any definition	5.8%

Different criteria → Different prevalence
2.7% for strictest definition
5.8% for loosest definition

ISSHP criteria +/- Clinician

The ISSHP algorithm identifies more cases than Clinicians do. Are these false positive or missed cases?

We compared ISSHP with and without Clinician diagnosis.



- ISSHP without Clinician:
- more likely to be superimposed on pregnancy induced hypertension or chronic hypertension
 - less likely to have preterm birth or composite adverse outcome

Conclusions

Retrospective automation of preeclampsia diagnosis is feasible.

ISSHP criteria may uncover missed cases and could be applied prospectively to electronic health records—reducing reliance on clinician-coded diagnoses