Population-level prediction of depression, Alzheimer's and Parkinson's disease incidence using artificial intelligence: implications for health service planning

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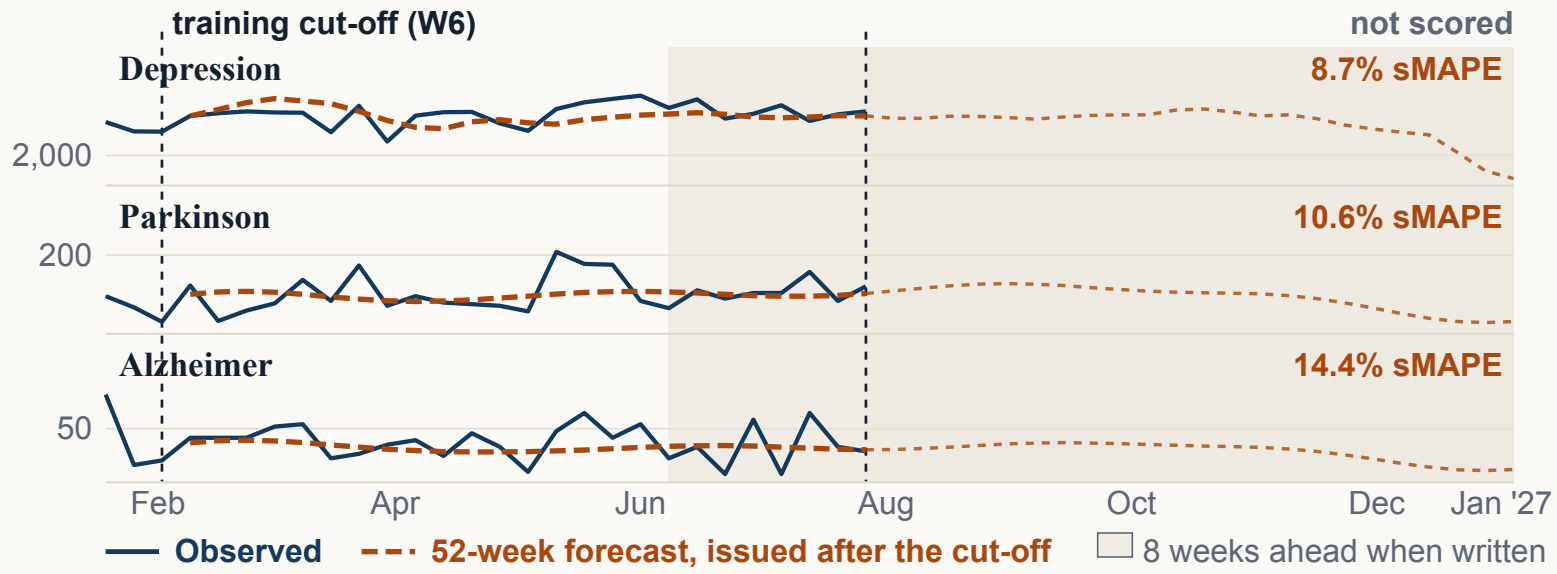
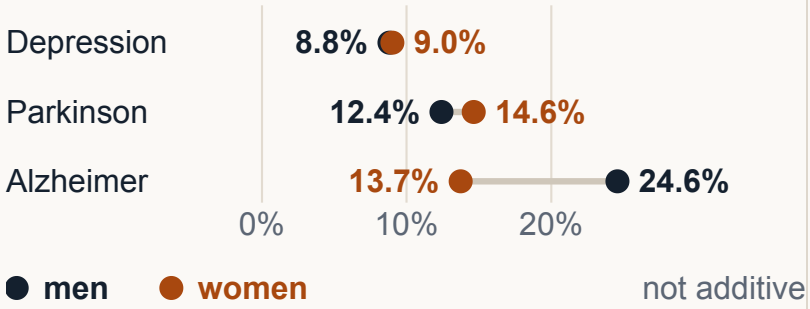


A forecast written in June predicted depression incidence eight weeks ahead to within 5.0%

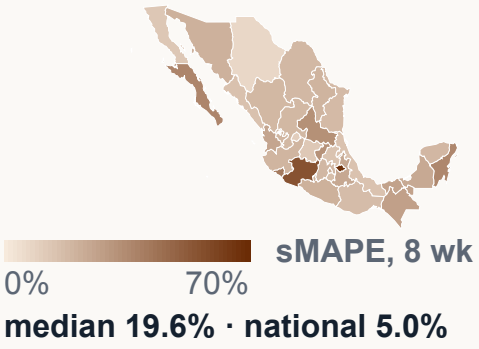
SMAPE	25 wk	8 wk
Depression	8.7%	5.0%
Parkinson	10.6%	6.7%
Alzheimer	14.4%	17.8%

25 wk follows the declared training cut-off; **8 wk** had not happened when the file was written. Lower is better.

By sex, 25 weeks



Depression, by state



median 19.6% · national 5.0%

Methods

Weekly SINAVE bulletins 2013–2026 (ICD-10 F32, G20, G30) by state and sex: **333 series**. Prophet, DeepAR, an ensemble and a stacked model competed per series; one was selected for each. General and sex counts come from different bulletin columns and are **not additive**.

Conclusions

Public data support forecasting accurate enough to plan with nationally. State-level error is far larger, and is shown.

Notified cases, not true incidence. No effect on patient outcomes was measured. **Equality:** sex-stratified · **Development:** 32 states · **Inclusion:** open access · **Transcultural:** a middle-income setting.

Ethics: ITESM-HGO confirmed no formal review required. **Funding and conflicts:** none. rebull@outlook.com · methods, data and code behind the QR