PREDICT
December 2025

Project Updates

We're officially 12 months into the project and we've found some interesting findings from both our data simulation studies and the application of the PREDICT methodologies to real-world data.

- See page 2 for a visual infographic of the findings from our fake data simulation studies.
- We have applied 3 out of 4 PREDICT methods to real-world data on two models 1) the prediction of a heart attack or stroke in 10 years (similar to QRisk) and 2) the prediction of a fall in 12 months time. Preliminary results show both the overprediction of future heart attack and stroke (page 3).
- We are carrying out a basic health economic analysis to estimate the economical impact of overprescribing statins (page 3).
- We are working with patients and the public by gathering experiences and options to help develop strategies to improve regulation of healthcare prediction models.

PPIE Expression of Interest

Due to the doctor's strikes we had to rearrange our PPIE event to January. In this event we will be exploring how it feels to be told by a doctor *"you are at risk of developing a disease e.g. heart attack or falls"*, because the doctor or the computer has calculated your risk.
If you have recent experience of this happening to you, whether it went well or badly, we would be really keen to hear from you, please contact Sam or Oliver if you're interested (email addresses on the next page).

We look forward to sharing the findings from these discussions with you in our next newsletter updates.

Key Links

Project website

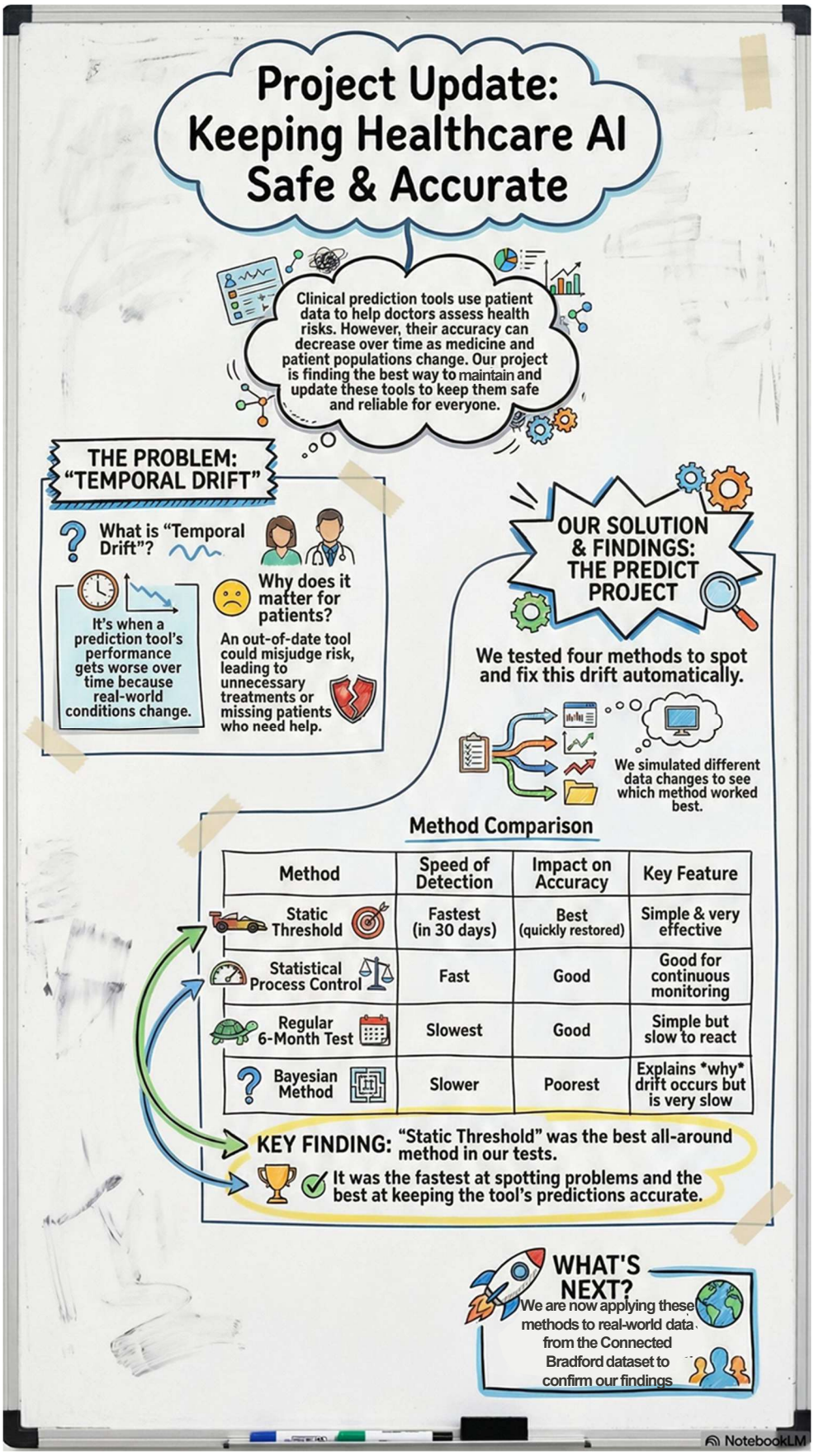
PREDICT software

NIHR Press Release on other research with similar funding

AI considered for prescribing drugs in the USA – key example of why this research is so important

Previous newsletters

Check out our AI-generated project update summary:



This summary infographic was generated using Gemini Pro, providing the model with our code and publication draft to extract key features.

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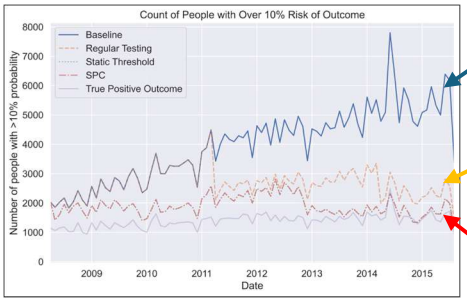
Preliminary Results

Below is an example of the number of people predicted to have over a 10% chance of a heart attack or stroke in the following 10 years using 3 methods, versus the true number who had a heart attack or stroke.



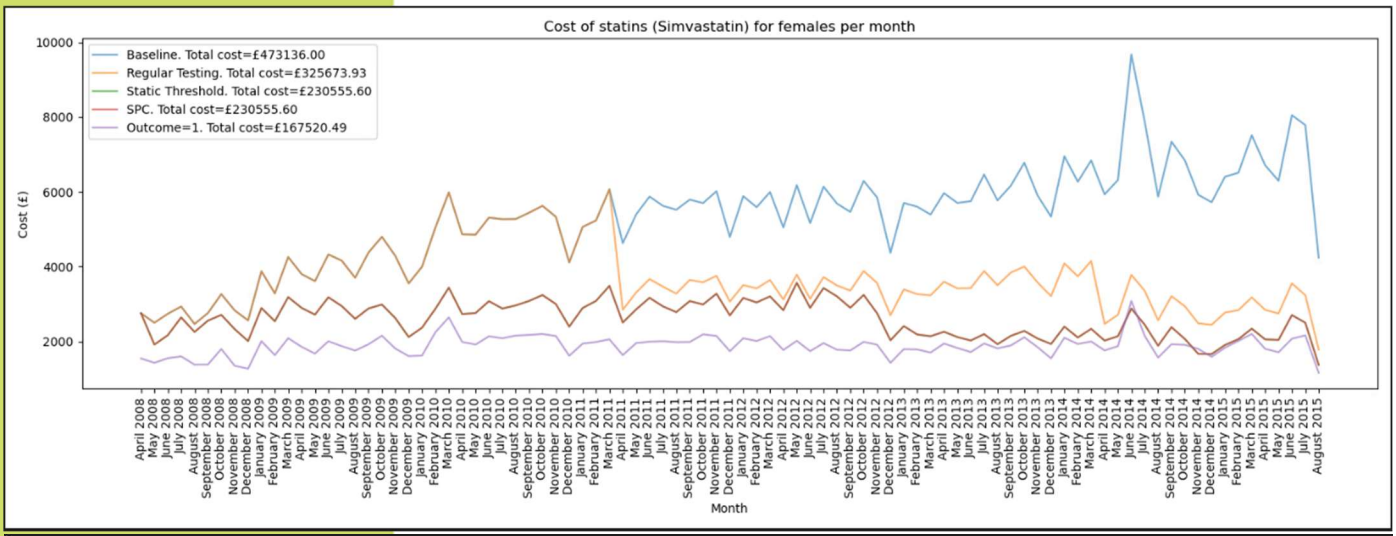
The non-updated model keeps predicting increasing numbers of people to have a high risk of a heart attack or stroke in 10 years.

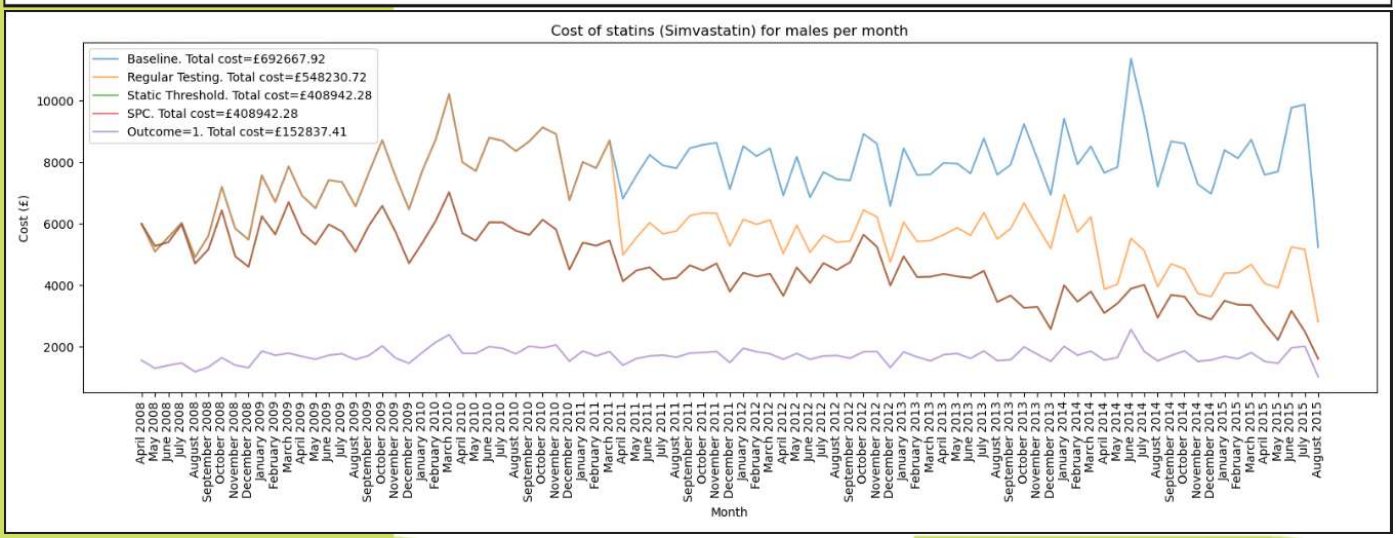
Updating the model at 3-year intervals reduces the overprediction, but may not be frequent enough.

Setting thresholds and checking the model monthly allows us to reduce numbers of overprediction.

The two Figures below show that if we don't update or check our heart attack prediction models for 7 years, we could be charging the NHS for misclassification! In the female population, not updating the model could've cost the NHS around £242,581 in overpredicting heart attack risk, and another £283,725 in the male population. That's over half a million pounds!

The data used was based on patient records from Bradford, so this is just a small portion of the money that is potentially costing the NHS across the UK.





Cost of statins per month in females and males in the Bradford region depending on whether we don't update the model (Baseline) or update it with various methods (Regular Testing, Static Threshold, and SPC). Outcome=1 is the number of people who had a heart attack or stroke and the cost to prescribe these individuals statins.