

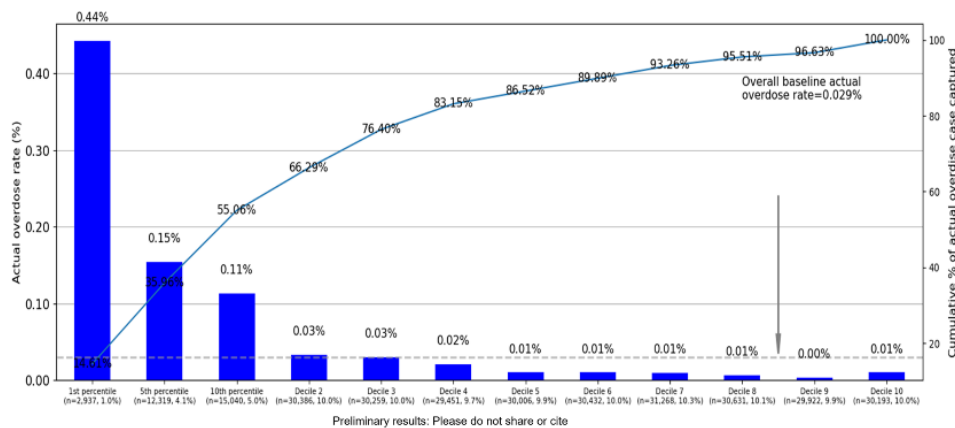
mPROVEN: Machine-Learning Prediction and Reducing Overdoses with EHR Nudges

Why is this work important?

We previously developed a **highly accurate overdose risk prediction model** with Medicare data and validated it in PA and AZ Medicaid. Now we are adapting that algorithm for UPMC EHR data and will run it within the UPMC system. We will **combine the generated risk score with a behavioral nudge intervention** for primary care physicians to improve opioid prescribing safety and reduce overdose risk.

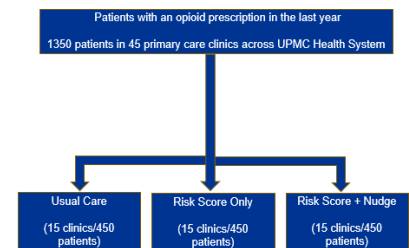
How did we develop our risk prediction model?

Using EHR data, we created a cohort of individuals who had a primary care visit with a UPMC provider and who had been prescribed an opioid. We **created XXX predictor variables**, including sociodemographics, patterns of prescription and healthcare use, prescriber factors, and lab results. **Our model predicts overdose within the three months after the index date.**



How will we test the intervention?

After we **design and refine the nudge intervention** based on several rounds of focus groups, we will **test the intervention in a cluster RCT** in UPMC primary care clinics.



Why is the Pitt CP3 model different?

- Our **overdose risk prediction model** can run in real time to avoid data lags.
- The model can **stratify individuals by risk to better target prevention activities**.
- We develop our model in a **true partnership** with stakeholders.
- Our **interprofessional team has a wide range of expertise** in community-based overdose prevention, medical care, health services, and data science.
- Our combination of a risk score + behavioral nudge intervention is the **first of its kind**.
- Our model **accounts for complex interactions among a variety of factors**, and we are **always transparent** about model creation.

How can I learn more about integrating data to help prevent overdose?

Our team is happy to consult with you to discuss how we can work together to create a predictive risk model with your data. Please email cp3@pitt.edu to set up a time to meet. For more information on this and our other risk prediction projects, please visit [our website](#).