

# Predicting Risk of Adult Maltreatment (PRAM)

The Administration for Community Living (ACL), in collaboration with the Centers for Medicare & Medicaid Services (CMS), leveraged artificial intelligence, machine learning, and other analytical tools to investigate patterns of risk and protective factors and their association with reported maltreatment as investigated by Adult Protective Services (APS) programs. Through a step-wise, iterative process, researchers, data scientists, and subject matter experts successfully applied predictive analytics to answer research questions.

The goal of PRAM is to prevent and effectively intervene in adult maltreatment to:



Improve quality of life and health quality outcomes for older adults and adults with disabilities



Reduce health care expenses

**Technical Expert Panel** To engage in thoughtful, expert-level discussions about the use case, methodology, and the application of the findings.

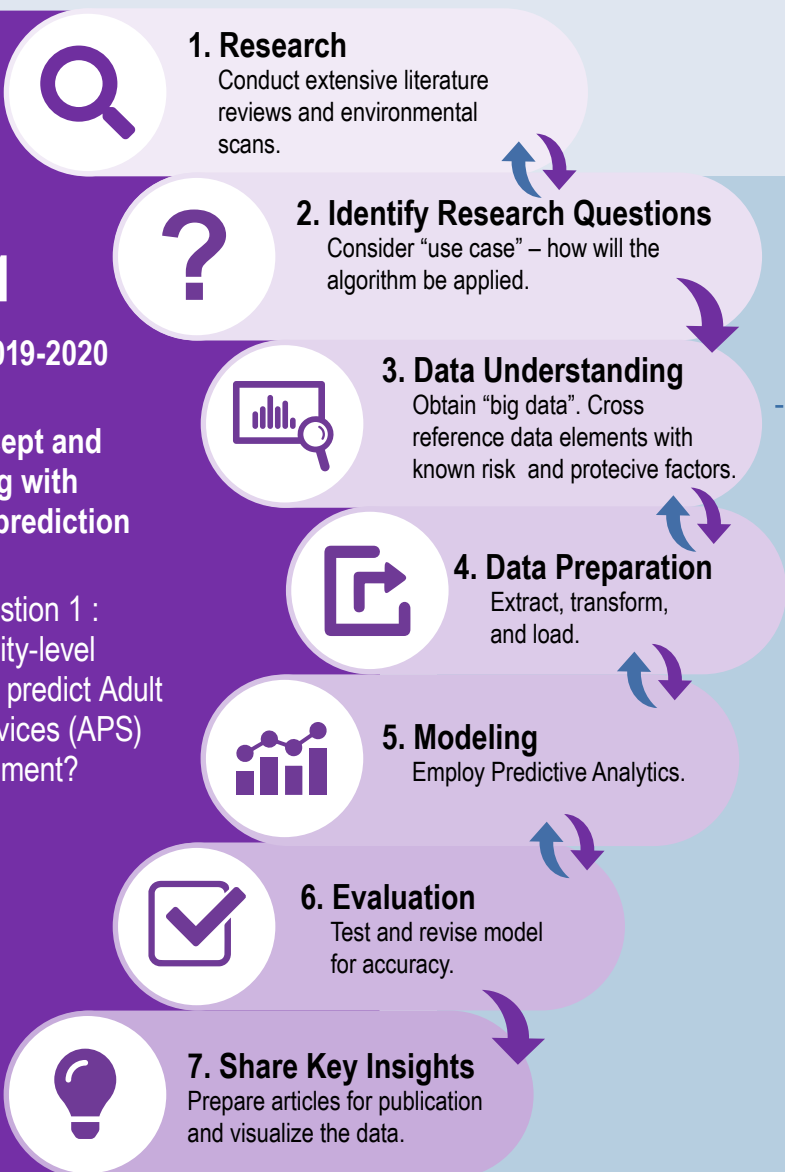


## Phase 1

September 2019-2020

Proof of concept and experimenting with place-based prediction

Research Question 1 :  
What community-level characteristics predict Adult Protective Services (APS) system involvement?



## Data Sources

ACS = American Community Survey,  
AHRF = Area Health Resources Files,  
CCD = Consumer Complaint Database  
CHR = County Health Rankings  
LTC = Long Term Care Focus  
NAMRS = National Adult Maltreatment Reporting System  
UCR = Uniform Crime Reporting  
SVI = Social Vulnerability Index



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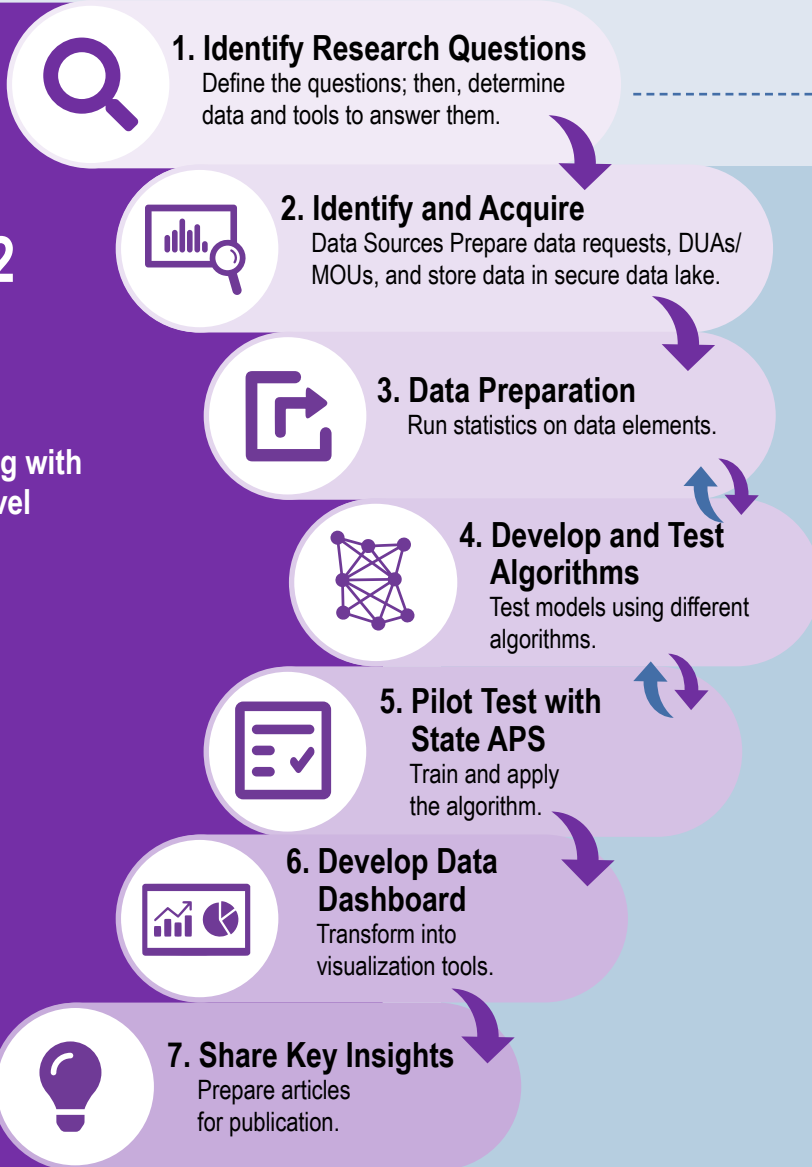
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## Phase 2

September 2020-Present

Experimenting with Individual Level Prediction



## Research Questions and Data Sources

**RQ1:** For cases referred to APS, can substantiation and recurrence be predicted?

**Data Sources:** NAMRS and publicly available data sources

**RQ2:** Can referral to APS be predicted at the individual level?

**Data Sources:** Individual APS data linked to other data sources

**RQ3:** Can abuse, neglect, or exploitation be predicted at the individual level?

**Data Sources:** CMS and ACS data



enhancing effectiveness of APS programs

