

# Modeling Uninsurance Estimates at the County Level

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## BACKGROUND

The Patient Protection and Affordable Care Act (ACA) marketplace and Medicaid expansions were fully implemented in 2014

- Many of the provisions implemented by states
- Health information at low levels of geography can lead to action at local levels to improve the health of a community

Sub-state data are needed for implementation and evaluation of the ACA

- Inform outreach and enrollment efforts
- Monitor and evaluate the impact and effectiveness of the law

## DATA

### Individual state-based surveys

- Pros: Tailored questions focused on particular situations and programs within a state; timely; often official source of state uninsurance estimates
- Cons: Often lack sufficient sample to produce reliable estimates at the county level

### American Community Survey (ACS)

- Pros: Estimates available for all counties from 5-year products
- Cons: Pooling 2014 with several years prior to ACA implementation is difficult to interpret

### Small Area Health Insurance Estimates (SAHIE) Program

- Pros: Single year estimates available for all counties
- Cons: Only provides a limited set of uninsurance estimates with a delayed data release

## RESEARCH OBJECTIVE

Produce uninsurance rates for all counties in Oklahoma for the non-elderly population. The objective was to use the state-based survey, the Oklahoma Health Care Insurance and Access Survey (OHIS). We evaluated multiple options based on estimates of uncertainty.

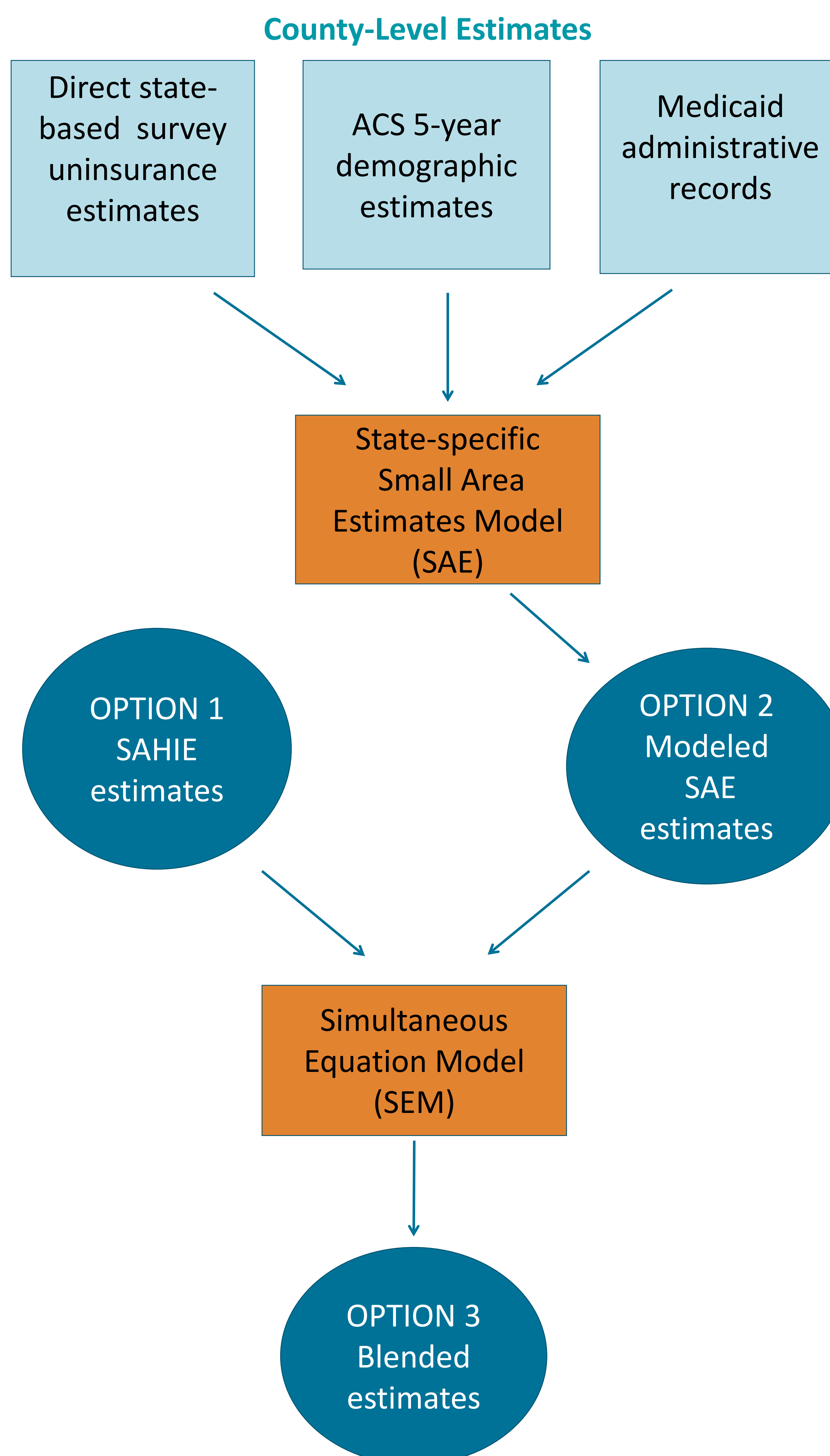
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## METHODOLOGY

We constructed the models in steps so multiple options could be considered

Most current data available at the time of the analysis

- 2013 state OHIS survey, 2007-2011 ACS, 2012 Medicaid administrative records, and 2011 SAHIE



## RESULTS

Comparison of descriptive statistics across all counties in Oklahoma

	Direct Estimates (%)	SAHIE (Option 1) (%)	SAE Model (Option 2) (%)	SEM Model (Option 3) (%)
Estimates				
High	61.4	28.6	37.3	27.9
Low	0.0	15.7	14.3	15.8
Average	22.5	22.9	20.9	22.6
Coefficient of Variation (CV)				
High	103.4	6.4	31.1	5.9
Low	9.3	2.4	7.6	2.1
Average	39.7	4.7	14.7	4.5
CV > 30%	62.5	0.0	1.3	0.0

Estimates from Option 2 are appealing as they rely solely on uninsurance as measured by the state-based survey, but the predicted county level estimates have high variance

Estimates from Option 3 use multiple sources of the outcome variable, taking advantage of the greater precision of the SAHIE estimates while still using the state-based survey

- Option 3 was selected by Oklahoma

## CONCLUSIONS

Reliable sub-state data is needed to monitor and evaluate the ACA. As modeling estimates becomes more common it's important to understand the strengths and weaknesses of the methods

Having SAHIE, essentially a benchmark, was unique and demonstrated the importance of providing measures of uncertainty and transparency in documentation

Given the precision of SAHIE, modeling uninsurance using state-based survey data may not yield much gain, but the approach can be used for other outcome variables