

How Useful Are Synthetic Estimates? A Comparison of Findings from the 1999 BRFSS and Five County Cardiovascular Health Study

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Synthetic estimates are often used to provide local level data when such data are unavailable. Synthetic estimates typically apply the age-, sex-, and race-specific statewide estimates of a given risk factor or condition to the age, sex, and race distribution of the local area. To the extent that a condition or risk factor is determined or influenced by age, sex, and race, this method may work well. However, for many conditions, these three demographic characteristics are only a part of the explanation for differences in the distribution of risk factors, conditions, or diseases.

In an effort to quantify the magnitude of the difference between synthetic estimates based on state level data and local level estimates based on local level data, we calculated synthetic estimates for seven chronic disease risk factors and conditions using data from Florida's Behavioral Risk Factor Surveillance System (BRFSS). These were compared to local level estimates from on data from a cardiovascular health study conducted in five rural North Florida counties, following the state BRFSS methodology.

Actual and synthetic estimates for each of the five counties and each of the seven chronic disease risk factors and conditions are displayed in the table. These data show that synthetic estimates generally underestimate the magnitude of the chronic disease risk factor or condition. In this situation, synthetic estimates are of little value as estimates of the prevalence of these conditions at the local level. Where local level data are required, they will need to be collected.

Table. Actual and Synthetic Estimates of the Prevalence of CVD Risk Factors Among Adults: Florida BRFSS and Five County CVH study

	Baker		Bradford		Columbia		Swanee		Union	
	*Actual	Syn- thetic	*Actual	Syn- thetic	*Actual	Syn- thetic	*Actual	Syn- thetic	*Actual	Syn- thetic
High Blood Pressure	29.0%	23.8%	32.6%	26.6%	30.8%	27.4%	34.1%	29.6%	33.3%	23.6%
	(25.0, 32.9)		(28.4, 36.8)		(27.3, 34.2)		(29.9, 8.3)		(29.1, 37.5)	
High Cholesterol	33.6%	28.5%	29.9%	30.3%	34.2%	30.8%	38.1%	32.8%	32.2%	27.8%
	(28.9, 38.3)		(25.2, 34.5)		(30.2, 38.1)		(33.1, 43.1)		(27.6, 36.9)	
Current Smoke	25.8%	22.8%	27.4%	21.3%	26.5%	21.1%	23.3%	20.3%	23.4%	22.8%
	(22.0, 29.6)		(23.5, 31.4)		(23.2, 29.7)		(19.6, 27.0)		(19.6, 27.1)	
Diabetes	7.8%	5.4%	6.5%	6.4%	6.6%	6.7%	7.1%	7.2%	6.5%	5.5%
	(5.4, 10.1)		(4.3, 8.7)		(4.8, 8.4)		(4.8, 9.4)		(4.3, 8.7)	
Overweight	69.0%	58.4%	63.1%	60.4%	64.3%	59.5%	65.6%	58.3%	71.9%	62.1%
	(64.8, 73.1)		(58.7, 67.5)		(60.7, 67.9)		(61.3, 69.8)		(67.9, 76.0)	
Obesity	26.7%	18.5%	27.6%	19.0%	25.3%	19.3%	25.6%	19.0%	31.9%	18.7%
	(22.8, 30.6)		(23.5, 31.6)		(22.1, 28.6)		(21.7, 29.5)		(27.7, 36.1)	
Chronic Drinking	5.1%	5.4%	6.0%	5.1%	5.8%	5.1%	7.3%	5.1%	3.6%	5.2%
	(3.2, 7.0)		(3.9, 8.1)		(4.1, 7.6)		(5.0, 9.6)		(1.9, 5.3)	

*(95%CI)