Louisiana's Uninsured Population:
Parish-level Estimates

A Report from the 2009 Louisiana Health Insurance Survey

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The Louisiana Health Insurance Survey (LHIS) represents the most comprehensive data collection effort in assessing health insurance coverage in Louisiana. The survey has been conducted every two years since 2003 with analysis from the 2009 LHIS providing the most recent estimates of insurance coverage in the state. As summarized in the 2009 LHIS Report, overall uninsured rates have fallen slightly for both children and adults relative to estimates from the 2007 LHIS. Statewide, approximately 5 percent of children and 20 percent of adults remain uninsured. The continuing decline in the uninsured rate is particularly noteworthy in light of worsening economic conditions over the last year. The purpose of this report is to present estimates of the uninsured rates for children and adults in each of Louisiana's 64 parishes based on the 2009 LHIS.

Parish-level estimates provide several benefits over the statewide and regional estimates included in the 2009 LHIS Report. The national recession has affected parishes differentially. Other regional economic trends such as the diminishing effect of the rebuilding since the 2005 hurricane season can be expected to impact some parishes more than others. Moreover, targeted efforts to enroll children in Medicaid or LaCHIP may reduce the uninsured rate in one parish to a greater extent than regional estimates might suggest. The 2009 parish-level estimates are compared to past estimates in Appendix A to demonstrate trends in uninsured rates for each parish over time. These parish-level estimates help measure the success of past efforts to reduce the uninsured rate in Louisiana localities and are intended to provide better guidance to DHH in determining target areas for future Medicaid/LaCHIP outreach and enrollment. The estimates can also inform state and local decision making regarding providing care to the uninsured.

As with estimates from previous years of the LHIS, the 2009 estimates benefit from methodological improvements. Parish-level estimates from the 2005 LHIS introduced a statistical method that "borrows" information from other data sources and other parts of the state to improve estimates when the sample size is small. Specifically, the small area estimation technique blended the estimates derived directly from the sample individuals with a synthetic estimate based on characteristics of the parish such as the unemployment rate and average income. The 2007 LHIS also used small area estimation and incorporated an individual-level adjustment for Medicaid underreporting, as described in the 2007 LHIS Report. The 2009 methodology continues to use a similar small area estimation technique and individual-level adjustments for Medicaid underreporting. However, additional work has been done to assess and improve the models for developing synthetic estimates in order to provide a better basis for future forecasts.

Separate models are used to develop synthetic estimates for children and adults. The current blended estimates were compared to 2007 estimates and the periodic forecasts presented since the 2007 survey. Alternate specifications were tested for the models used to create synthetic estimates for both child and adult uninsured rates. The performance of each model was assessed by updating the 2007 estimates and periodic forecasts with the model of interest and determining how well the model would have performed over the previous two years in predicting the changes that were revealed by the 2009 survey. A summary of the evaluation of forecast performance is provided in Appendix B. For the child model, the same specification that was used in 2007 was chosen as the preferred model for 2009 estimates. However, significant changes were made to the adult model to allow for more flexible relationships between the explanatory variables and the expected uninsured rate.
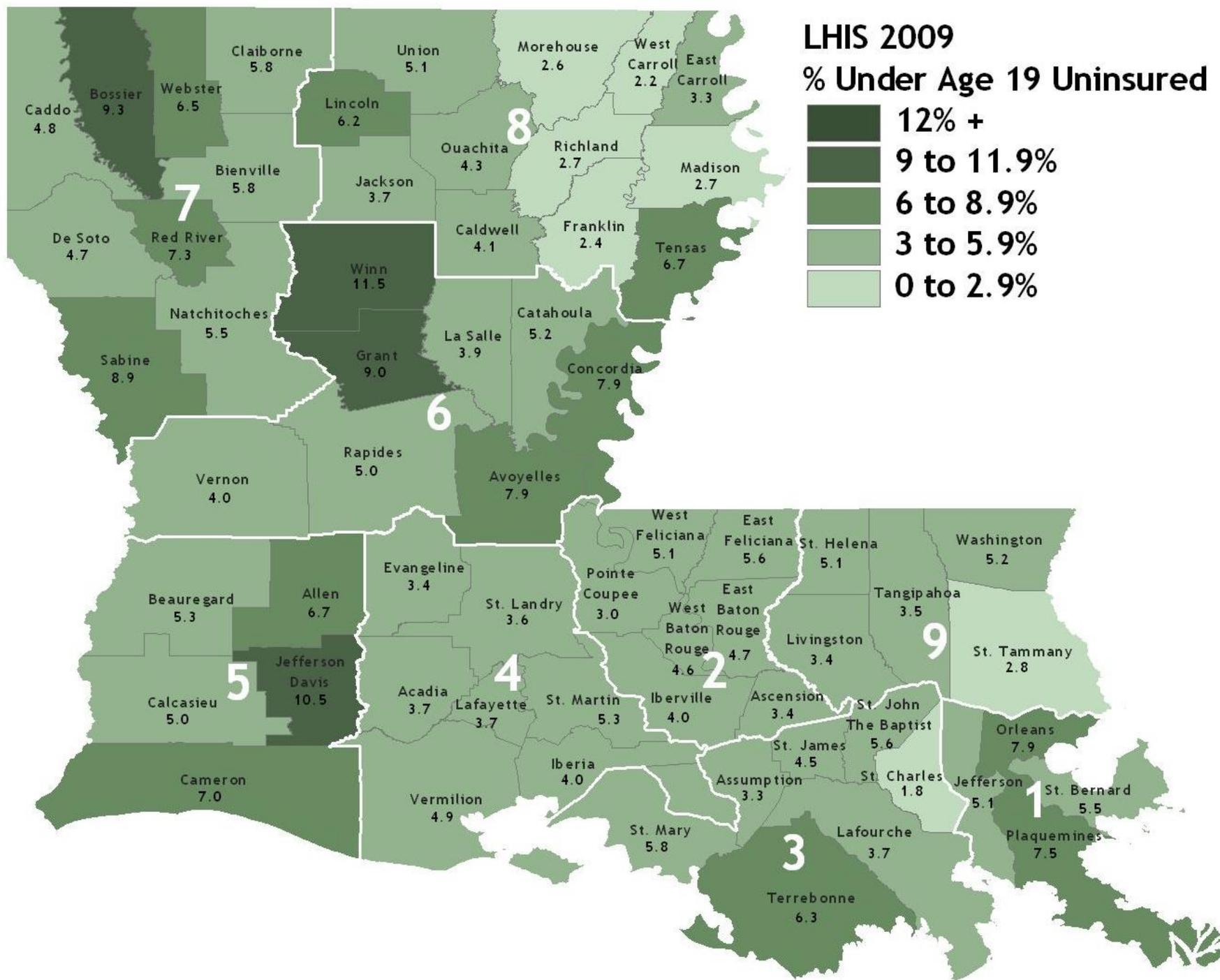
The figures and tables below present the final parish-level estimates as well as some of the key underlying data upon which those estimates are based. Figure 1 illustrates the relative magnitude of the uninsured rates across parishes for children. Winn Parish has the highest uninsured rate for children at 11.5 percent. This is based largely on having one of the highest uninsured rates among sample individuals from the parish at 16.0 percent. However, the small sample size in that parish led to a notable decrease when averaging in the synthetic estimate based on other characteristics of the parish, such as Medicaid enrollment and the unemployment rate, which imply that the parish has a lower uninsured rate. St. Charles Parish has the lowest estimated uninsured rate for children at 1.8 percent. As with Winn Parish, this estimate is based largely on having the lowest reported uninsured rate among sample respondents within the parish at 0.4 percent. However, the synthetic estimates increase the final estimate.

Figure 2 illustrates the relative magnitude of the uninsured rates across parishes for adults. East Carroll Parish has the highest uninsured rate for adults at 41.4 percent. It should be noted that there is a large margin of error on this estimate due to the small sample size. For this parish, while the direct estimate was only 35.0 percent, the characteristics of the parish imply a higher uninsured rate and blending in the synthetic estimate increases the final estimate. St. Tammany Parish has the lowest uninsured rate for adults at 10.4 percent. Notably, St. Tammany has one of the lowest direct estimates and characteristics that also imply a low uninsured rate for the parish, which is captured by the synthetic estimate.

Generally speaking, uninsured rates tend to be slightly higher in central and north Louisiana than south Louisiana. With regard to some of the largest parishes in the state, East Baton Rouge Parish has an uninsured rate among children of 4.7 percent and among the non-elderly adult population of 16.4 percent while the Jefferson and Orleans Parishes have slightly higher uninsured rates. Orleans Parish has an estimated 7.9 percent of children uninsured and 21.4 percent of adults uninsured. Jefferson Parish has an estimated 5.1 percent of children uninsured and 17.1 percent of adults uninsured.

The remainder of this document summarizes the parish-level study in greater detail, beginning with a more detailed description of how statistical models were used to obtain more precise estimates, particularly in parishes with small sample sizes.

Figure 1: Uninsured Rates for Children (under 19) by Parish

LHIS 2009
% Under Age 19 Uninsured

- 12% +
- 9 to 11.9%
- 6 to 8.9%
- 3 to 5.9%
- 0 to 2.9%

Caddo 4.8
Bossier 9.3
Webster 6.5
Claiborne 5.8
Union 5.1
Morehouse 2.6
West Carroll 2.2
East Carroll 3.3
Lincoln 6.2
8
Ouachita 4.3
Richland 2.7
Madison 2.7
Bienville 5.8
7
Jackson 3.7
De Soto 4.7
Red River 7.3
Caldwell 4.1
Franklin 2.4
Tensas 6.7
Winn 11.5
Natchitoches 5.5
Catahoula 5.2
Sabine 8.9
Grant 9.0
La Salle 3.9
Concordia 7.9
6
Rapides 5.0
Vernon 4.0
Avoyelles 7.9
West Feliciana 5.1
East Feliciana 5.6
St. Helena 5.1
Washington 5.2
Evangeline 3.4
Pointe Coupee 3.0
East Baton Rouge 4.7
Tangipahoa 3.5
9
Beauregard 5.3
Allen 6.7
St. Landry 3.6
West Baton Rouge 4.6
Livingston 3.4
St. Tammany 2.8
5
Jefferson Davis 10.5
Acadia 3.7
Lafayette 3.7
St. Martin 5.3
4
Iberville 4.0
2
Ascension 3.4
St. John The Baptist 5.6
Orleans 7.9
Calcasieu 5.0
St. James 4.5
St. Charles 1.8
Jefferson 5.1
St. Bernard 5.5
Iberia 4.0
Assumption 3.3
1
Cameron 7.0
Vermilion 4.9
Plaquemines 7.5
St. Mary 5.8
Lafourche 3.7
3
Terrebonne 6.3

Figure 2: Uninsured Rates for Adults (Age 19 through 64) by Parish

LHIS 2009
% Age 19 thru 64 Uninsured
- 32% +
- 27 to 31.9%
- 22 to 26.9%
- 17 to 21.9%
- 0 to 16.9%

Caddo 25.0
Bossier 20.3
Webster 28.2
Claiborne 24.0
Union 27.8
Morehouse 34.4
West Carroll 35.9
East Carroll 41.4
Lincoln 30.7
Ouachita 25.6
Richland 29.8
Madison 35.7
Bienville 32.6
Jackson 27.8
De Soto 26.9
Red River 34.0
7
Caldwell 32.4
Franklin 31.7
Tensas 36.9
Natchitoches 24.6
Winn 28.7
Grant 26.3
La Salle 20.6
Catahoula 30.5
Concordia 29.4
Sabine 27.6
8
6
Rapides 21.3
Avoyelles 23.6
Vernon 14.9
West Feliciana 17.5
East Feliciana 22.1
St. Helena 32.0
Washington 26.7
Evangeline 22.6
St. Landry 20.0
Pointe Coupee 17.5
East Baton Rouge 16.4
Tangipahoa 20.8
St. Tammany 10.4
Beauregard 18.9
Allen 21.4
West Baton Rouge 15.3
Livingston 14.6
9
Calcasieu 19.9
Jefferson Davis 21.7
5
Acadia 25.0
Lafayette 14.9
4
St. Martin 22.6
Iberville 18.5
2
Ascension 16.8
St. John The Baptist 22.0
Orleans 21.4
Cameron 18.7
Vermilion 18.7
Iberia 20.3
St. James 24.8
St. Charles 13.3
Jefferson 17.1
1
St. Bernard 29.9
St. Mary 25.5
Assumption 21.3
Lafourche 14.3
Plaquemines 26.8
Terrebonne 17.8
3

I. Methodology

The purpose of this section is to describe the methodology used to produce parish-level estimates from the 2009 LHIS. Discussion of small area estimation, sample size, and parish and regional level estimates are included in this section. Small area estimation provides more precise estimates of the percent of uninsured citizens in a parish based on the fact that parishes which are similar in other attributes are also likely to have similar rates of insurance coverage.

Small Area Estimation

Various methods of small area estimation exist, and while each does provide insight into the study of health policy, different techniques offer different strengths and weaknesses. The various methods include:

• Direct survey estimation

• Synthetic estimation

• Blended estimation

The simplest method is direct survey estimation, which simply uses the survey to estimate the proportion of uninsured children or adults in each parish. The synthetic estimation method consists of constructing estimates by building a statistical model to predict uninsured rates at the parish level. In essence, the statistical model takes advantage of the fact that we would expect parishes that are similar in terms of other characteristics (income, Medicaid enrollment, etc.) to have similar insurance coverage rates. Finally, this blended estimation option, called information borrowing, allows us to blend the survey estimates with synthetic estimates. The blended estimates place greater weight on the direct survey estimates in parishes where a large sample exists and rely more heavily on synthetic estimates in parishes where the sample size is small. A technical discussion of the statistical methodology is included in Appendix C.

Sample Size

Like the 2005 and 2007 rounds of the LHIS, the 2009 LHIS sampling design was created with the intent to produce parish-level estimates. Specifically, the random sample was created with the intent of contacting 65 households in each parish. Additional households were allocated to ensure adequate sample sizes for regions. An additional poverty oversample was added to ensure adequate responses for statistical analyses among this population of interest. Because not all households contain children, the number of children covered by this survey methodology may be lower than 65 in some cases, but the number of adults in each parish is likely to be quite a bit higher given that many households contain multiple adults.

The final, or blended, estimates are weighted averages of the direct and synthetic estimates. The weights are based on the estimated accuracy of direct estimates relative to the synthetic estimates, which depends in large part on the sample size in the parish. For example, a direct estimate from a parish with a larger sample size will be given more weight relative to the synthetic estimate than the direct estimate from a parish with a small sample size. Table 1 summarizes the direct estimates for children and adults,

which are based only on the individuals sampled in the 2009 LHIS. The table also shows the sample size and margin of error for each estimate, which are two measures that indicate how accurate each estimate is. With a sample of 1,128 adults 19-64 years of age, the margin of error for the East Baton Rouge Parish direct estimate is only 2.3% indicating a relatively high degree of accuracy. The margin of error for the East Carroll Parish direct estimate, based on 80 adults, is 8.8%. Furthermore, estimates for children in that parish are based on a sample of only 25 children under 19 and may offer relatively low accuracy.

Parish and Regional Estimates

After developing synthetic estimates and averaging those with the direct estimates, a scaling or "raking" stage was incorporated to produce the final estimates. This step ensures that the parish-level estimates agree with regional estimates. Table 2 contains the final blended estimates for children under 19 and adults aged 19 thru 64.

Data Utilized

As new data becomes available, the models can be run again to produce forecasts of uninsured rates in other time periods. The parish-level data used to produce the results found in this report came from the following sources:

1. 2009 LHIS survey

2. July 2009 unemployment data by parish

3. October 2009 free & reduced school lunch enrollment

4. July 2008 Census population estimates by parish, age group, gender, and race

5. July 2009 Medicaid enrollment

6. 2007 average annual gross income from the IRS

II. Discussion

This report contains detailed Louisiana parish-level estimates of the proportion of the population that is uninsured for both those under 19 and those between 19 and 64. While the uninsured rate has fallen statewide, the parish-level estimates reveal that this improvement has not been seen equally across the state. The LaCHIP and Medicaid programs are a great equalizing factor in keeping uninsured rates more similar for children than what is seen for adults. The parish-level estimates for children and adults are shown in Table 3 with the estimated number of uninsured individuals based on the most recent Census data available from July 2008.

Not surprisingly, the results indicate that insurance coverage rates are highly correlated with parish income for those 19 to 64. While the state as a whole has been somewhat insulated from the national recession, some parishes have disproportionately felt the effects of the downturn and seen rising unemployment rates, which result in lost insurance for individuals and higher uninsured rates for those

most affected parishes. For example, the unemployment rate in Bossier Parish went up from 2.8 percent in 2007 to 7.1 percent in July 2009. Over the same time period, the uninsured rate for children rose from 3.3 percent to 9.3 percent in Bossier Parish.

The good news is that significant economic development projects have been announced over the past year in some of the hardest hit parishes offering hope for new jobs and associated increases in insurance coverage. Moreover, targeted efforts to increase enrollment in Medicaid and LaCHIP should further reduce disparities in insurance coverage moving forward.

Table 1: 2009 Survey Estimates of the Uninsured

Parish	Region	Children (Under 19)			Adults (19-64)		
		Number Surveyed	Percent Uninsured	Margin of Error	Number Surveyed	Percent Uninsured	Margin of Error
Jefferson	1	523	3.9%	1.9%	1360	15.1%	2.1%
Orleans	1	323	6.7%	2.4%	883	18.5%	2.6%
Plaquemines	1	74	7.2%	5.0%	140	23.6%	6.6%
St. Bernard	1	42	3.2%	6.6%	126	25.7%	7.0%
Ascension	2	139	3.1%	3.6%	226	14.3%	5.2%
East Baton Rouge	2	509	4.6%	1.9%	1128	15.9%	2.3%
East Feliciana	2	80	4.9%	4.8%	193	18.7%	5.6%
Iberville	2	79	2.5%	4.8%	211	13.2%	5.4%
Pointe Coupee	2	49	0.0%	6.1%	134	10.1%	6.8%
West Baton Rouge	2	102	3.9%	4.2%	231	10.4%	5.2%
West Feliciana	2	53	7.4%	5.9%	126	11.5%	7.0%
Assumption	3	92	2.5%	4.5%	218	18.1%	5.3%
Lafourche	3	173	3.4%	3.2%	426	12.0%	3.8%
St. Charles	3	133	0.4%	3.7%	316	9.6%	4.4%
St. James	3	29	3.4%	7.9%	91	19.1%	8.2%
St. John The Baptist	3	92	5.0%	4.5%	199	17.8%	5.6%
St. Mary	3	126	7.0%	3.8%	253	24.2%	4.9%
Terrebonne	3	216	7.0%	2.9%	502	16.3%	3.5%
Acadia	4	132	3.3%	3.7%	306	22.6%	4.5%
Evangeline	4	100	2.0%	4.3%	217	16.8%	5.3%
Iberia	4	170	3.7%	3.3%	360	16.6%	4.1%
Lafayette	4	340	3.1%	2.3%	664	12.6%	3.0%
St. Landry	4	151	2.9%	3.5%	326	15.3%	4.3%
St. Martin	4	125	5.7%	3.8%	307	19.0%	4.5%
Vermilion	4	111	5.4%	4.1%	275	14.2%	4.7%
Allen	5	99	6.0%	4.3%	206	16.3%	5.5%
Beauregard	5	87	4.1%	4.6%	253	15.1%	4.9%
Calcasieu	5	460	4.0%	2.0%	954	19.2%	2.5%
Cameron	5	65	5.4%	5.3%	122	13.4%	7.1%
Jefferson Davis	5	97	11.1%	4.3%	241	18.9%	5.1%
Avoyelles	6	117	7.2%	3.9%	272	19.4%	4.8%
Catahoula	6	45	3.0%	6.4%	146	27.4%	6.5%
Concordia	6	94	8.1%	4.4%	189	25.6%	5.7%
Grant	6	70	10.0%	5.1%	176	23.1%	5.9%
La Salle	6	94	2.1%	4.4%	240	16.5%	5.1%
Rapides	6	274	3.9%	2.6%	597	19.4%	3.2%
Vernon	6	135	1.9%	3.7%	237	7.2%	5.1%
Winn	6	56	16.0%	5.7%	172	25.5%	6.0%

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Table 1 (continued): 2009 Survey Estimates of the Uninsured

Parish	Region	Children (Under 19)			Adults (19-64)		
		Number Surveyed	Percent Uninsured	Margin of Error	Number Surveyed	Percent Uninsured	Margin of Error
Bienville	7	81	4.7%	4.7%	170	28.9%	6.0%
Bossier	7	184	9.6%	3.1%	344	16.3%	4.2%
Caddo	7	327	3.9%	2.4%	670	22.4%	3.0%
Claiborne	7	56	3.5%	5.7%	172	15.0%	6.0%
De Soto	7	75	2.1%	4.9%	176	20.8%	5.9%
Natchitoches	7	115	4.0%	4.0%	241	18.7%	5.1%
Red River	7	53	5.7%	5.9%	132	29.3%	6.8%
Sabine	7	55	10.4%	5.8%	145	22.0%	6.5%
Webster	7	111	6.6%	4.1%	267	24.5%	4.8%
Caldwell	8	70	5.7%	5.1%	186	27.9%	5.7%
East Carroll	8	25	0.0%	8.5%	80	35.0%	8.8%
Franklin	8	51	1.0%	6.0%	159	25.1%	6.2%
Jackson	8	70	4.3%	5.1%	148	20.9%	6.4%
Lincoln	8	76	9.1%	4.9%	197	26.1%	5.6%
Madison	8	46	0.0%	6.3%	130	29.0%	6.9%
Morehouse	8	81	2.2%	4.7%	156	28.1%	6.3%
Ouachita	8	169	5.3%	3.3%	321	21.1%	4.4%
Richland	8	69	2.1%	5.1%	195	23.6%	5.6%
Tensas	8	17	16.3%	10.4%	67	25.3%	9.6%
Union	8	62	6.4%	5.4%	158	19.3%	6.2%
West Carroll	8	33	1.6%	7.4%	114	29.8%	7.3%
Livingston	9	255	3.5%	2.7%	486	11.7%	3.6%
St. Helena	9	34	2.2%	7.3%	96	27.5%	8.0%
St. Tammany	9	464	2.5%	2.0%	977	8.7%	2.5%
Tangipahoa	9	280	3.2%	2.6%	547	18.3%	3.4%
Washington	9	135	5.1%	3.7%	308	23.8%	4.5%

Table 2: Blended Estimates of the Uninsured and Margins of Error

Parish	Region	Children (Under 19)		Adults (19-64)	
		Percent Uninsured	Margin of Error	Percent Uninsured	Margin of Error
Jefferson	1	5.1%	1.8%	17.1%	2.1%
Orleans	1	7.9%	2.2%	21.4%	2.6%
Plaquemines	1	7.5%	3.6%	26.8%	5.1%
St. Bernard	1	5.5%	4.2%	29.9%	5.2%
Ascension	2	3.4%	3.0%	16.8%	4.4%
East Baton Rouge	2	4.7%	1.8%	16.4%	2.3%
East Feliciana	2	5.6%	3.5%	22.1%	4.8%
Iberville	2	4.0%	3.5%	18.5%	4.7%
Pointe Coupee	2	3.0%	3.9%	17.5%	5.4%
West Baton Rouge	2	4.6%	3.3%	15.3%	4.5%
West Feliciana	2	5.1%	3.8%	17.5%	5.4%
Assumption	3	3.3%	3.5%	21.3%	4.5%
Lafourche	3	3.7%	2.8%	14.3%	3.5%
St. Charles	3	1.8%	3.1%	13.3%	4.0%
St. James	3	4.5%	4.5%	24.8%	6.0%
St. John The Baptist	3	5.6%	3.5%	22.0%	4.9%
St. Mary	3	5.8%	3.2%	25.5%	4.3%
Terrebonne	3	6.3%	2.6%	17.8%	3.3%
Acadia	4	3.7%	3.0%	25.0%	3.9%
Evangeline	4	3.4%	3.2%	22.6%	4.5%
Iberia	4	4.0%	2.7%	20.3%	3.7%
Lafayette	4	3.7%	2.1%	14.9%	2.9%
St. Landry	4	3.6%	2.8%	20.0%	3.9%
St. Martin	4	5.3%	3.0%	22.6%	3.9%
Vermilion	4	4.9%	3.1%	18.7%	4.1%
Allen	5	6.7%	3.5%	21.4%	4.6%
Beauregard	5	5.3%	3.6%	18.9%	4.3%
Calcasieu	5	5.0%	1.9%	19.9%	2.5%
Cameron	5	7.0%	3.9%	18.7%	5.4%
Jefferson Davis	5	10.5%	3.5%	21.7%	4.4%
Avoyelles	6	7.9%	3.2%	23.6%	4.2%
Catahoula	6	5.2%	4.1%	30.5%	5.1%
Concordia	6	7.9%	3.4%	29.4%	4.8%
Grant	6	9.0%	3.7%	26.3%	4.8%
La Salle	6	3.9%	3.4%	20.6%	4.3%
Rapides	6	5.0%	2.4%	21.3%	3.1%
Vernon	6	4.0%	3.1%	14.9%	4.3%
Winn	6	11.5%	3.9%	28.7%	4.9%

Table 2 (continued): Blended Estimates of the Uninsured and Margins of Error

Parish	Region	Children (Under 19)		Adults (19-64)	
		Percent Uninsured	Margin of Error	Percent Uninsured	Margin of Error
Bienville	7	5.8%	3.4%	32.6%	4.8%
Bossier	7	9.3%	2.7%	20.3%	3.7%
Caddo	7	4.8%	2.2%	25.0%	2.9%
Claiborne	7	5.8%	3.7%	24.0%	4.9%
De Soto	7	4.7%	3.5%	26.9%	4.8%
Natchitoches	7	5.5%	3.1%	24.6%	4.3%
Red River	7	7.3%	3.8%	34.0%	5.3%
Sabine	7	8.9%	3.8%	27.6%	5.1%
Webster	7	6.5%	3.2%	28.2%	4.1%
Caldwell	8	4.1%	3.9%	32.4%	4.8%
East Carroll	8	3.3%	4.8%	41.4%	6.3%
Franklin	8	2.4%	4.1%	31.7%	5.1%
Jackson	8	3.7%	3.8%	27.8%	5.1%
Lincoln	8	6.2%	3.7%	30.7%	4.7%
Madison	8	2.7%	4.3%	35.7%	5.4%
Morehouse	8	2.6%	3.7%	34.4%	5.1%
Ouachita	8	4.3%	2.9%	25.6%	3.9%
Richland	8	2.7%	3.8%	29.8%	4.7%
Tensas	8	6.7%	5.0%	36.9%	6.5%
Union	8	5.1%	4.0%	27.8%	5.1%
West Carroll	8	2.2%	4.6%	35.9%	5.6%
Livingston	9	3.4%	2.4%	14.6%	3.3%
St. Helena	9	5.1%	4.1%	32.0%	5.9%
St. Tammany	9	2.8%	1.9%	10.4%	2.4%
Tangipahoa	9	3.5%	2.3%	20.8%	3.2%
Washington	9	5.2%	3.0%	26.7%	4.0%

Table 3: Estimated Number of Uninsured Individuals

Parish	Region	Children (Under 19)			Adults (19-64)		
		July 2008 Population	2009 Percent Uninsured	Estimated Number Uninsured	July 2008 Population	2009 Percent Uninsured	Estimated Number Uninsured
Jefferson	1	108,858	5.1%	5,515	267,714	17.1%	45,894
Orleans	1	72,185	7.9%	5,692	201,324	21.4%	43,063
Plaquemines	1	5,895	7.5%	444	13,016	26.8%	3,493
St. Bernard	1	8,401	5.5%	460	25,998	29.9%	7,771
Ascension	2	30,427	3.4%	1,033	63,013	16.8%	10,581
East Baton Rouge	2	117,067	4.7%	5,516	265,890	16.4%	43,680
East Feliciana	2	4,974	5.6%	281	13,318	22.1%	2,947
Iberville	2	8,201	4.0%	324	20,614	18.5%	3,804
Pointe Coupee	2	5,656	3.0%	169	13,442	17.5%	2,357
West Baton Rouge	2	6,062	4.6%	277	14,099	15.3%	2,152
West Feliciana	2	2,489	5.1%	128	11,239	17.5%	1,969
Assumption	3	5,777	3.3%	193	14,319	21.3%	3,051
Lafourche	3	24,001	3.7%	880	57,481	14.3%	8,245
St. Charles	3	14,103	1.8%	250	32,390	13.3%	4,299
St. James	3	5,747	4.5%	256	12,799	24.8%	3,177
St. John The Baptist	3	14,063	5.6%	793	28,907	22.0%	6,354
St. Mary	3	13,987	5.8%	806	30,200	25.5%	7,687
Terrebonne	3	30,465	6.3%	1,922	66,367	17.8%	11,842
Acadia	4	17,317	3.7%	635	35,163	25.0%	8,788
Evangeline	4	10,127	3.4%	349	20,931	22.6%	4,734
Iberia	4	21,317	4.0%	858	44,545	20.3%	9,026
Lafayette	4	56,856	3.7%	2,085	128,994	14.9%	19,243
St. Landry	4	26,078	3.6%	951	53,050	20.0%	10,597
St. Martin	4	14,282	5.3%	752	32,126	22.6%	7,253
Vermilion	4	14,996	4.9%	734	33,583	18.7%	6,275

Table 3 (continued): Estimated Number of Uninsured Individuals

Parish	Region	Children (Under 19)			Adults (19-64)		
		July 2008 Population	2009 Percent Uninsured	Estimated Number Uninsured	July 2008 Population	2009 Percent Uninsured	Estimated Number Uninsured
Allen	5	6,216	6.7%	417	16,236	21.4%	3,479
Beauregard	5	9,261	5.3%	495	21,323	18.9%	4,029
Calcasieu	5	50,158	5.0%	2,527	112,214	19.9%	22,371
Cameron	5	1,593	7.0%	112	4,791	18.7%	897
Jefferson Davis	5	8,614	10.5%	901	18,168	21.7%	3,948
Avoyelles	6	11,141	7.9%	877	25,583	23.6%	6,026
Catahoula	6	2,608	5.2%	135	6,393	30.5%	1,950
Concordia	6	4,977	7.9%	394	11,056	29.4%	3,246
Grant	6	5,319	9.0%	481	12,059	26.3%	3,174
La Salle	6	3,519	3.9%	138	8,372	20.6%	1,726
Rapides	6	35,767	5.0%	1,795	79,189	21.3%	16,859
Vernon	6	15,190	4.0%	615	25,647	14.9%	3,821
Winn	6	3,572	11.5%	409	9,590	28.7%	2,751
Bienville	7	3,629	5.8%	210	8,460	32.6%	2,756
Bossier	7	31,487	9.3%	2,922	65,819	20.3%	13,354
Caddo	7	67,561	4.8%	3,217	150,457	25.0%	37,550
Claiborne	7	3,563	5.8%	206	9,932	24.0%	2,384
De Soto	7	6,986	4.7%	328	15,779	26.9%	4,251
Natchitoches	7	11,266	5.5%	620	23,367	24.6%	5,755
Red River	7	2,550	7.3%	187	5,200	34.0%	1,768
Sabine	7	6,202	8.9%	550	13,674	27.6%	3,775
Webster	7	9,924	6.5%	650	23,821	28.2%	6,713

Table 3 (continued): Estimated Number of Uninsured Individuals

Parish	Region	Children (Under 19)			Adults (19-64)		
		July 2008 Population	2009 Percent Uninsured	Estimated Number Uninsured	July 2008 Population	2009 Percent Uninsured	Estimated Number Uninsured
Caldwell	8	2,426	4.1%	100	6,446	32.4%	2,087
East Carroll	8	2,288	3.3%	75	4,759	41.4%	1,968
Franklin	8	5,230	2.4%	125	11,449	31.7%	3,632
Jackson	8	3,723	3.7%	137	8,882	27.8%	2,471
Lincoln	8	11,616	6.2%	725	25,787	30.7%	7,920
Madison	8	3,540	2.7%	95	6,877	35.7%	2,452
Morehouse	8	7,330	2.6%	187	16,655	34.4%	5,723
Ouachita	8	42,262	4.3%	1,818	89,103	25.6%	22,774
Richland	8	5,453	2.7%	149	12,097	29.8%	3,602
Tensas	8	1,377	6.7%	92	3,453	36.9%	1,274
Union	8	5,763	5.1%	292	13,127	27.8%	3,651
West Carroll	8	2,684	2.2%	58	6,778	35.9%	2,432
Livingston	9	34,120	3.4%	1,176	75,099	14.6%	10,950
St. Helena	9	2,661	5.1%	136	6,485	32.0%	2,078
St. Tammany	9	61,372	2.8%	1,743	140,353	10.4%	14,666
Tangipahoa	9	33,144	3.5%	1,168	70,985	20.8%	14,780
Washington	9	12,212	5.2%	634	26,860	26.7%	7,162

Appendix A: Comparison of 2009 Estimates to Previous Years

Table A.1: Comparison to Past Estimates of Uninsured Children

Parish	Region	2003	2005	2007	2009
Jefferson	1	9.6%	7.8%	8.9%	5.1%
Orleans	1	9.9%	6.8%	9.5%	7.9%
Plaquemines	1	7.7%	7.7%	6.9%	7.5%
St. Bernard	1	8.6%	8.7%	11.0%	5.5%
Ascension	2	13.7%	3.2%	6.8%	3.4%
East Baton Rouge	2	9.7%	9.7%	4.2%	4.7%
East Feliciana	2	10.0%	7.3%	2.6%	5.6%
Iberville	2	15.1%	9.6%	3.1%	4.0%
Pointe Coupee	2	14.1%	2.5%	7.9%	3.0%
West Baton Rouge	2	14.7%	3.0%	5.9%	4.6%
West Feliciana	2	5.9%	5.2%	4.0%	5.1%
Assumption	3	15.5%	12.1%	7.8%	3.3%
Lafourche	3	12.3%	11.5%	3.3%	3.7%
St. Charles	3	9.1%	1.4%	3.1%	1.8%
St. James	3	13.1%	7.6%	7.4%	4.5%
St. John The Baptist	3	11.3%	4.1%	8.4%	5.6%
St. Mary	3	12.4%	5.4%	4.6%	5.8%
Terrebonne	3	10.1%	10.3%	1.8%	6.3%
Acadia	4	12.3%	10.2%	6.9%	3.7%
Evangeline	4	6.8%	8.9%	5.9%	3.4%
Iberia	4	9.2%	8.4%	3.0%	4.0%
Lafayette	4	11.0%	9.6%	5.1%	3.7%
St. Landry	4	11.3%	8.9%	5.7%	3.6%
St. Martin	4	11.2%	12.8%	7.0%	5.3%
Vermilion	4	14.4%	12.1%	6.7%	4.9%
Allen	5	13.5%	1.9%	4.2%	6.7%
Beauregard	5	16.5%	7.0%	5.7%	5.3%
Calcasieu	5	14.5%	3.1%	5.7%	5.0%
Cameron	5	23.9%	7.3%	7.8%	7.0%
Jefferson Davis	5	20.7%	8.0%	6.8%	10.5%
Avoyelles	6	9.3%	10.3%	3.8%	7.9%
Catahoula	6	11.0%	11.8%	3.6%	5.2%
Concordia	6	13.1%	2.4%	5.9%	7.9%
Grant	6	9.0%	15.8%	2.3%	9.0%
La Salle	6	10.0%	10.4%	1.9%	3.9%
Rapides	6	4.1%	10.2%	5.0%	5.0%
Vernon	6	2.3%	9.1%	5.2%	4.0%
Winn	6	12.2%	15.4%	5.7%	11.5%

Table A.1 (continued): Comparison to Past Estimates of Uninsured Children

Parish	Region	2003	2005	2007	2009
Bienville	7	19.6%	6.5%	4.5%	5.8%
Bossier	7	10.6%	1.9%	3.3%	9.3%
Caddo	7	14.6%	4.1%	5.1%	4.8%
Claiborne	7	15.2%	6.0%	6.5%	5.8%
De Soto	7	21.5%	0.6%	6.4%	4.7%
Natchitoches	7	14.6%	3.0%	6.2%	5.5%
Red River	7	27.2%	9.1%	3.2%	7.3%
Sabine	7	20.7%	8.4%	5.5%	8.9%
Webster	7	19.3%	3.5%	2.9%	6.5%
Caldwell	8	9.9%	7.6%	4.3%	4.1%
East Carroll	8	14.7%	3.2%	8.2%	3.3%
Franklin	8	14.8%	10.1%	1.5%	2.4%
Jackson	8	16.1%	12.1%	2.9%	3.7%
Lincoln	8	10.0%	9.5%	5.5%	6.2%
Madison	8	11.8%	6.8%	7.5%	2.7%
Morehouse	8	14.4%	4.5%	6.6%	2.6%
Ouachita	8	8.7%	7.7%	4.6%	4.3%
Richland	8	14.3%	6.7%	1.6%	2.7%
Tensas	8	11.8%	8.7%	4.7%	6.7%
Union	8	12.8%	3.7%	8.0%	5.1%
West Carroll	8	12.2%	6.5%	6.7%	2.2%
Livingston	9	12.5%	4.9%	3.0%	3.4%
St. Helena	9	14.1%	7.1%	8.5%	5.1%
St. Tammany	9	7.6%	8.1%	4.2%	2.8%
Tangipahoa	9	10.4%	10.8%	7.1%	3.5%
Washington	9	17.2%	7.7%	10.7%	5.2%

Table A.2: Comparison to Past Estimates of Uninsured Adults

Parish	Region	2003	2005	2007	2009
Jefferson	1	20.1%	20.9%	21.1%	17.1%
Orleans	1	21.6%	26.1%	21.1%	21.4%
Plaquemines	1	20.5%	23.1%	19.5%	26.8%
St. Bernard	1	22.1%	21.5%	30.7%	29.9%
Ascension	2	19.3%	14.8%	15.0%	16.8%
East Baton Rouge	2	19.3%	20.6%	16.7%	16.4%
East Feliciana	2	19.8%	22.9%	16.9%	22.1%
Iberville	2	19.3%	26.1%	20.4%	18.5%
Pointe Coupee	2	20.1%	24.2%	17.5%	17.5%
West Baton Rouge	2	19.2%	17.5%	19.5%	15.3%
West Feliciana	2	15.1%	18.8%	16.4%	17.5%
Assumption	3	23.8%	25.5%	22.1%	21.3%
Lafourche	3	21.6%	24.5%	16.3%	14.3%
St. Charles	3	15.4%	17.1%	14.0%	13.3%
St. James	3	23.8%	18.6%	23.9%	24.8%
St. John The Baptist	3	19.3%	17.6%	18.8%	22.0%
St. Mary	3	23.9%	27.3%	20.3%	25.5%
Terrebonne	3	22.2%	25.3%	22.2%	17.8%
Acadia	4	24.9%	26.0%	22.4%	25.0%
Evangeline	4	22.7%	26.9%	20.9%	22.6%
Iberia	4	23.3%	19.1%	20.4%	20.3%
Lafayette	4	20.2%	19.2%	16.6%	14.9%
St. Landry	4	25.7%	23.3%	20.4%	20.0%
St. Martin	4	26.5%	24.6%	22.0%	22.6%
Vermilion	4	24.9%	21.9%	18.3%	18.7%
Allen	5	21.4%	32.5%	27.6%	21.4%
Beauregard	5	22.3%	29.1%	25.7%	18.9%
Calcasieu	5	19.8%	28.5%	27.1%	19.9%
Cameron	5	19.9%	29.0%	28.5%	18.7%
Jefferson Davis	5	21.4%	30.4%	27.5%	21.7%
Avoyelles	6	24.2%	34.0%	24.4%	23.6%
Catahoula	6	29.1%	35.8%	29.4%	30.5%
Concordia	6	28.8%	29.1%	22.9%	29.4%
Grant	6	24.4%	32.2%	25.8%	26.3%
La Salle	6	25.8%	34.9%	17.4%	20.6%
Rapides	6	21.5%	27.6%	18.6%	21.3%
Vernon	6	12.0%	27.0%	19.7%	14.9%
Winn	6	27.0%	35.7%	25.4%	28.7%

Table A.2 (continued): Comparison to Past Estimates of Uninsured Adults

Parish	Region	2003	2005	2007	2009
Bienville	7	25.9%	35.0%	28.1%	32.6%
Bossier	7	13.7%	22.0%	18.3%	20.3%
Caddo	7	22.7%	25.2%	25.2%	25.0%
Claiborne	7	24.8%	31.8%	29.3%	24.0%
De Soto	7	22.9%	28.9%	28.6%	26.9%
Natchitoches	7	22.8%	29.0%	24.8%	24.6%
Red River	7	27.7%	34.1%	32.5%	34.0%
Sabine	7	23.7%	33.7%	31.5%	27.6%
Webster	7	26.7%	28.3%	29.4%	28.2%
Caldwell	8	29.7%	28.9%	31.5%	32.4%
East Carroll	8	29.3%	30.6%	35.6%	41.4%
Franklin	8	32.1%	35.1%	28.2%	31.7%
Jackson	8	27.3%	26.5%	21.9%	27.8%
Lincoln	8	24.6%	20.5%	21.1%	30.7%
Madison	8	33.1%	33.3%	30.6%	35.7%
Morehouse	8	29.7%	28.1%	25.9%	34.4%
Ouachita	8	24.5%	23.7%	23.3%	25.6%
Richland	8	34.3%	29.0%	23.4%	29.8%
Tensas	8	30.8%	30.3%	34.4%	36.9%
Union	8	27.9%	28.1%	24.6%	27.8%
West Carroll	8	33.3%	26.3%	31.1%	35.9%
Livingston	9	18.0%	21.4%	18.6%	14.6%
St. Helena	9	19.4%	29.7%	29.4%	32.0%
St. Tammany	9	13.3%	16.1%	13.4%	10.4%
Tangipahoa	9	21.9%	27.8%	25.2%	20.8%
Washington	9	22.4%	28.5%	34.5%	26.7%

Appendix B: Evaluation of Model Performance

Evaluation of forecast performance was carried out for each model by changing the set of control variables in the model and then repeating the parish-level estimation from the 2007 LHIS, 2009 LHIS and the intermittent forecasts that have been provided over the last two years. The synthetic estimates, which are driven by characteristics of the parish such as unemployment rate and Medicaid enrollment, are the determining factor in changing the parish-level estimates from one forecast to the next. The forecasts were considered informative if the synthetic estimates for the intermittent forecasts moved the uninsured rates in the direction of the 2009 LHIS estimates. For reference, summary tables are provided below with the 2007 blended estimates, the forecast from the fourth quarter of 2008 and the 2009 blended estimates. Estimates of the uninsured rate for children are provided in Table B.1 and those for adults are in Table B.2.

For children, the model produced forecasts that changed the parish-level uninsured rate in the direction of the 2009 estimates for 48 parishes. Because every estimate has a margin of error, deviations of only one or two percent are typically not significant. After considering that statistical variation, the child model is shown to produce forecasts that move in the right direction, or in the wrong direction in an insignificant way, for 63 of the 64 parishes.

For adults, the model is not able to forecast uninsured rates with as much accuracy. The model produced forecasts that changed the parish-level uninsured rate in the direction of 2009 estimates for only 32 parishes. However, after considering the margin of error on each forecast, the adult model is shown to produce forecasts that move in the right direction, or in the wrong direction in only an insignificant way, for 48 of 64 parishes.

Table B.1: Evaluation of Forecast Performance for Uninsured Children

Parish	Region	2007 Estimates	2008 Q4 Forecast	2009 Estimates
Jefferson	1	8.9%	9.0%	5.1%
Orleans	1	9.5%	8.3%	7.9%
Plaquemines	1	6.9%	7.8%	7.5%
St. Bernard	1	11.0%	6.3%	5.5%
Ascension	2	6.8%	6.0%	3.4%
East Baton Rouge	2	4.2%	4.3%	4.7%
East Feliciana	2	2.6%	3.3%	5.6%
Iberville	2	3.1%	3.6%	4.0%
Pointe Coupee	2	7.9%	7.3%	3.0%
West Baton Rouge	2	5.9%	6.0%	4.6%
West Feliciana	2	4.0%	3.9%	5.1%
Assumption	3	7.8%	6.5%	3.3%
Lafourche	3	3.3%	3.5%	3.7%
St. Charles	3	3.1%	3.3%	1.8%
St. James	3	7.4%	6.6%	4.5%
St. John The Baptist	3	8.4%	7.9%	5.6%
St. Mary	3	4.6%	4.5%	5.8%
Terrebonne	3	1.8%	2.3%	6.3%
Acadia	4	6.9%	6.1%	3.7%
Evangeline	4	5.9%	5.9%	3.4%
Iberia	4	3.0%	3.2%	4.0%
Lafayette	4	5.1%	5.2%	3.7%
St. Landry	4	5.7%	5.5%	3.6%
St. Martin	4	7.0%	6.1%	5.3%
Vermilion	4	6.7%	6.3%	4.9%
Allen	5	4.2%	4.5%	6.7%
Beauregard	5	5.7%	5.8%	5.3%
Calcasieu	5	5.7%	5.7%	5.0%
Cameron	5	7.8%	8.6%	7.0%
Jefferson Davis	5	6.8%	6.3%	10.5%
Avoyelles	6	3.8%	4.0%	7.9%
Catahoula	6	3.6%	3.6%	5.2%
Concordia	6	5.9%	4.8%	7.9%
Grant	6	2.3%	3.0%	9.0%
La Salle	6	1.9%	2.2%	3.9%
Rapides	6	5.0%	4.8%	5.0%
Vernon	6	5.2%	5.2%	4.0%
Winn	6	5.7%	4.9%	11.5%

Table B.1 (continued): Evaluation of Forecast Performance for Uninsured Children

Parish	Region	2007 Estimates	2008 Q4 Forecast	2009 Estimates
Bienville	7	4.5%	4.7%	5.8%
Bossier	7	3.3%	3.4%	9.3%
Caddo	7	5.1%	5.0%	4.8%
Claiborne	7	6.5%	5.8%	5.8%
De Soto	7	6.4%	5.8%	4.7%
Natchitoches	7	6.2%	5.9%	5.5%
Red River	7	3.2%	3.7%	7.3%
Sabine	7	5.5%	5.5%	8.9%
Webster	7	2.9%	3.1%	6.5%
Caldwell	8	4.3%	4.1%	4.1%
East Carroll	8	8.2%	6.8%	3.3%
Franklin	8	1.5%	1.9%	2.4%
Jackson	8	2.9%	3.4%	3.7%
Lincoln	8	5.5%	5.5%	6.2%
Madison	8	7.5%	6.6%	2.7%
Morehouse	8	6.6%	5.9%	2.6%
Ouachita	8	4.6%	4.5%	4.3%
Richland	8	1.6%	2.1%	2.7%
Tensas	8	4.7%	5.2%	6.7%
Union	8	8.0%	7.4%	5.1%
West Carroll	8	6.7%	5.8%	2.2%
Livingston	9	3.0%	3.4%	3.4%
St. Helena	9	8.5%	8.4%	5.1%
St. Tammany	9	4.2%	4.4%	2.8%
Tangipahoa	9	7.1%	7.0%	3.5%
Washington	9	10.7%	9.8%	5.2%

Table B.2: Evaluation of Forecast Performance for Uninsured Adults

Parish	Region	2007 Estimates	2008 Q4 Forecast	2009 Estimates
Jefferson	1	21.1%	21.9%	17.1%
Orleans	1	21.1%	21.8%	21.4%
Plaquemines	1	19.5%	21.6%	26.8%
St. Bernard	1	30.7%	28.6%	29.9%
Ascension	2	15.0%	15.7%	16.8%
East Baton Rouge	2	16.7%	17.4%	16.4%
East Feliciana	2	16.9%	19.3%	22.1%
Iberville	2	20.4%	22.9%	18.5%
Pointe Coupee	2	17.5%	19.8%	17.5%
West Baton Rouge	2	19.5%	20.7%	15.3%
West Feliciana	2	16.4%	17.0%	17.5%
Assumption	3	22.1%	23.0%	21.3%
Lafourche	3	16.3%	17.6%	14.3%
St. Charles	3	14.0%	15.3%	13.3%
St. James	3	23.9%	24.9%	24.8%
St. John The Baptist	3	18.8%	20.5%	22.0%
St. Mary	3	20.3%	21.5%	25.5%
Terrebonne	3	22.2%	22.1%	17.8%
Acadia	4	22.4%	22.5%	25.0%
Evangeline	4	20.9%	22.6%	22.6%
Iberia	4	20.4%	21.4%	20.3%
Lafayette	4	16.6%	17.5%	14.9%
St. Landry	4	20.4%	21.7%	20.0%
St. Martin	4	22.0%	22.7%	22.6%
Vermilion	4	18.3%	19.5%	18.7%
Allen	5	27.6%	29.4%	21.4%
Beauregard	5	25.7%	26.8%	18.9%
Calcasieu	5	27.1%	27.6%	19.9%
Cameron	5	28.5%	30.5%	18.7%
Jefferson Davis	5	27.5%	28.2%	21.7%
Avoyelles	6	24.4%	26.0%	23.6%
Catahoula	6	29.4%	28.7%	30.5%
Concordia	6	22.9%	24.4%	29.4%
Grant	6	25.8%	25.8%	26.3%
La Salle	6	17.4%	18.7%	20.6%
Rapides	6	18.6%	19.9%	21.3%
Vernon	6	19.7%	21.1%	14.9%
Winn	6	25.4%	25.9%	28.7%

Table B.2 (continued): Evaluation of Forecast Performance for Uninsured Adults

Parish	Region	2007 Estimates	2008 Q4 Forecast	2009 Estimates
Bienville	7	28.1%	29.7%	32.6%
Bossier	7	18.3%	19.5%	20.3%
Caddo	7	25.2%	26.1%	25.0%
Claiborne	7	29.3%	30.7%	24.0%
De Soto	7	28.6%	29.5%	26.9%
Natchitoches	7	24.8%	27.1%	24.6%
Red River	7	32.5%	33.5%	34.0%
Sabine	7	31.5%	30.9%	27.6%
Webster	7	29.4%	29.5%	28.2%
Caldwell	8	31.5%	30.3%	32.4%
East Carroll	8	35.6%	36.3%	41.4%
Franklin	8	28.2%	30.3%	31.7%
Jackson	8	21.9%	23.9%	27.8%
Lincoln	8	21.1%	23.6%	30.7%
Madison	8	30.6%	32.9%	35.7%
Morehouse	8	25.9%	28.6%	34.4%
Ouachita	8	23.3%	24.4%	25.6%
Richland	8	23.4%	26.7%	29.8%
Tensas	8	34.4%	35.1%	36.9%
Union	8	24.6%	27.1%	27.8%
West Carroll	8	31.1%	31.8%	35.9%
Livingston	9	18.6%	19.9%	14.6%
St. Helena	9	29.4%	30.3%	32.0%
St. Tammany	9	13.4%	14.3%	10.4%
Tangipahoa	9	25.2%	26.5%	20.8%
Washington	9	34.5%	33.9%	26.7%

Appendix C: Technical Appendix

Construction of Synthetic Estimates

Our methodology consists of constructing synthetic estimates of parish uninsured rates similar to:

$$\hat{y}_i^{Synthetic} = \hat{\beta}_0 + \hat{\beta}_1 x_{1i} + \hat{\beta}_2 x_{2i} + \ldots + \hat{\beta}_k x_{ki}$$

Intuitively, the methodology should use the survey estimate y_i^{Direct} when the survey estimate is accurate and $y_i^{Synthetic}$ when the survey standard error is large and y_i^{Direct} is inaccurate. We accomplish this goal by creating a blended estimate:

$$y_i^{Blended} = w_1 y_i^{Direct} + w_2 y_i^{Synthetic}$$

where $w_1 = 1 - \dfrac{SE(Y^{Direct})}{(SE(Y^{Direct}) + SE(Y^{Synthetic}))}$ and

$$w_2 = \dfrac{SE(Y^{Direct})}{(SE(Y^{Direct}) + SE(Y^{Synthetic}))}.^1$$

For the children's model, the independent variable is equal to the child's probability of being uninsured. For many children, this is simply zero or one depending on the survey response. But, for children who are eligible for Medicaid, the bias correction model was used to assign a probability of being on Medicaid based on the individual and family characteristics. The explanatory variables are the percent of working age adults in the house who are unemployed, an indicator equal to one if the child lives in a family below 185% of the federal poverty line, household income, an indicator equal to one if the child is black, an indicator equal to one if the child is female, an indicator equal to one if the child is on Medicaid or LaCHIP, three indicator variables for age category, and indicator variables for DHH region. Note that we constrain the coefficients of the 185% of poverty indicator and Medicaid control to sum to zero.

The adult model is similar in spirit to the child model, but with some notable differences. As in 2007, the adult equation deletes the Medicaid indicator. However, several new controls have been added to allow for more flexible relationships between the explanatory variables and the probability of being uninsured. New variables include squared terms of the unemployment rate and income and interactions of those terms as well as interactions of the income terms and the 185 percent poverty indicator. In addition, an interaction was introduced between the unemployment rate and the female indicator variable because insurance coverage may be less closely tied to employment for women than for men. Finally, interactions between age and gender were added to allow the effects of age to differ by race.

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[1] Note that this weighting scheme differs from the pure empirical Bayes used in the 2003 LHIS and tends to place more weight on direct estimates for our sample. We thank Gestur Davidson of SHADAC for suggesting the new weights.

Overall results appear as expected. Uninsured rates are higher among poorer individuals and among the unemployed. Given the sample sizes, we have more confidence in the regional estimates and scaled the parish-level estimates so that the regional totals match those from the full report. This process of scaling the parish estimates to equal regional estimates is called raking the estimates and ensures consistency across reports.