



An Evaluation of Osteopathic School Programs Designed to Promote Rural Location by Graduates

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CONTEXT & PURPOSE

Many osteopathic medical schools across the United States seek to produce physicians who will ultimately practice in rural areas. Most of these schools offer courses and programs designed to promote rural practice locations among their graduates.

This poster explores how mandatory and optional programs offered by Oklahoma State University College of Osteopathic Medicine (OSU COM), and student perception of them, influenced the practice location decisions of students graduating between 1997 and 2002.

RURAL MEDICAL EDUCATION PROGRAMS

Summer Rural Externship (SRE) - Summer after 1st Year (optional)

A 4-week experience with a primary care physician in a community-based rural setting. Students spend 30-35 hours/week seeing patients with the physician.

Early Clinical Experience (ECE) - Summer after 1st Year (optional)

A five-day tour of urban and rural physician offices across the state. The students and physicians discuss career topics and how/why they made their own location decisions.

Community Clinic Clerkship (CC) - 3rd Year (mandatory)

One-month rotation. Students are introduced to concepts and issues relevant to a rural practice that is close to urban resources. Weekly lectures are provided and allow for comparison of urban and rural practice.

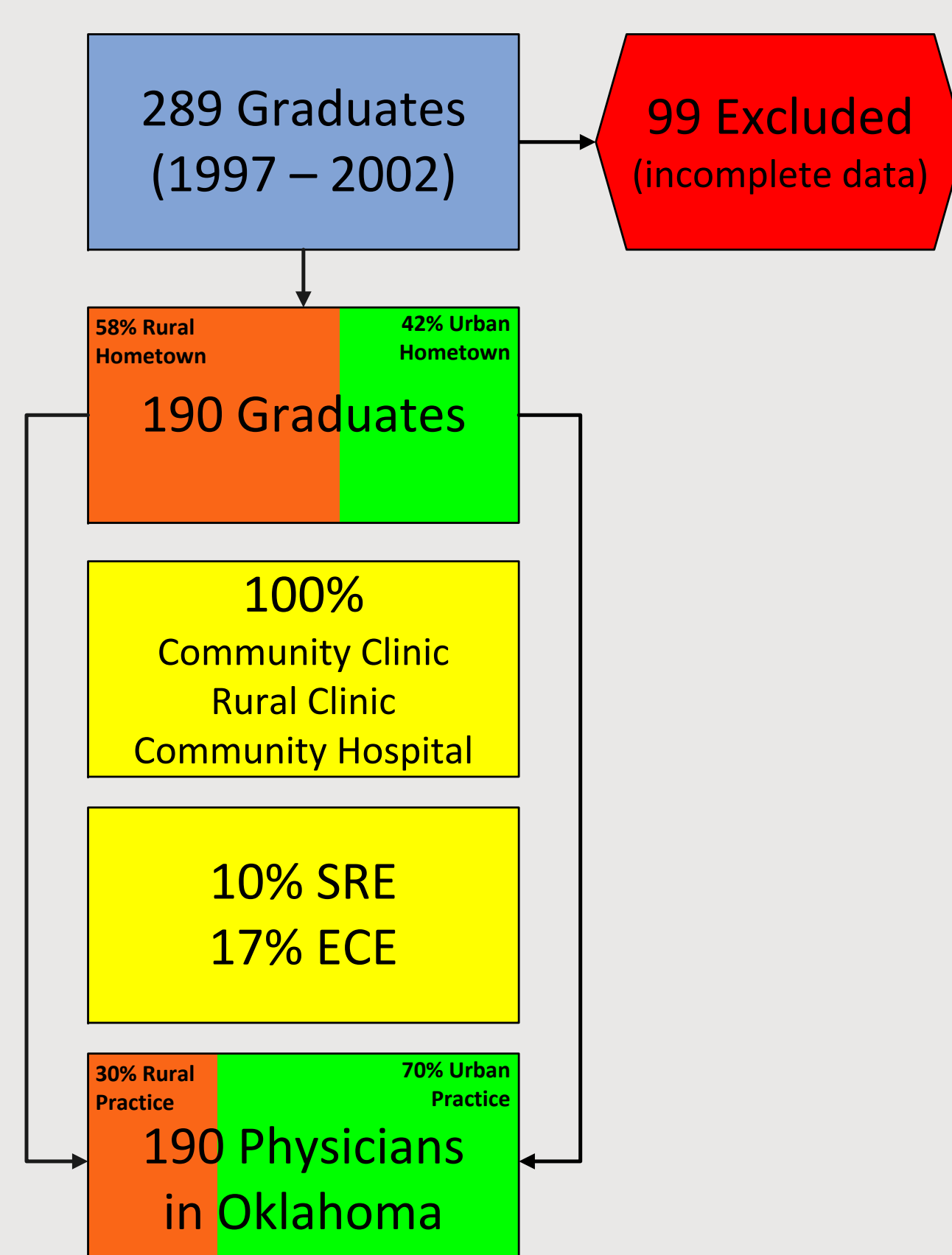
Rural Clinic Clerkship (RC) - 3rd Year (mandatory)

One-month rotation after the Community Clinic Clerkship. Students are directly involved in a functioning rural family practice that does not have access to large urban resources.

Community Hospital Rotations (CH1 & CH2) - 4th Year (mandatory)

Two consecutive one-month rotations. The primary purpose behind the rotations is to provide students direct involvement and experience in a small community hospital.

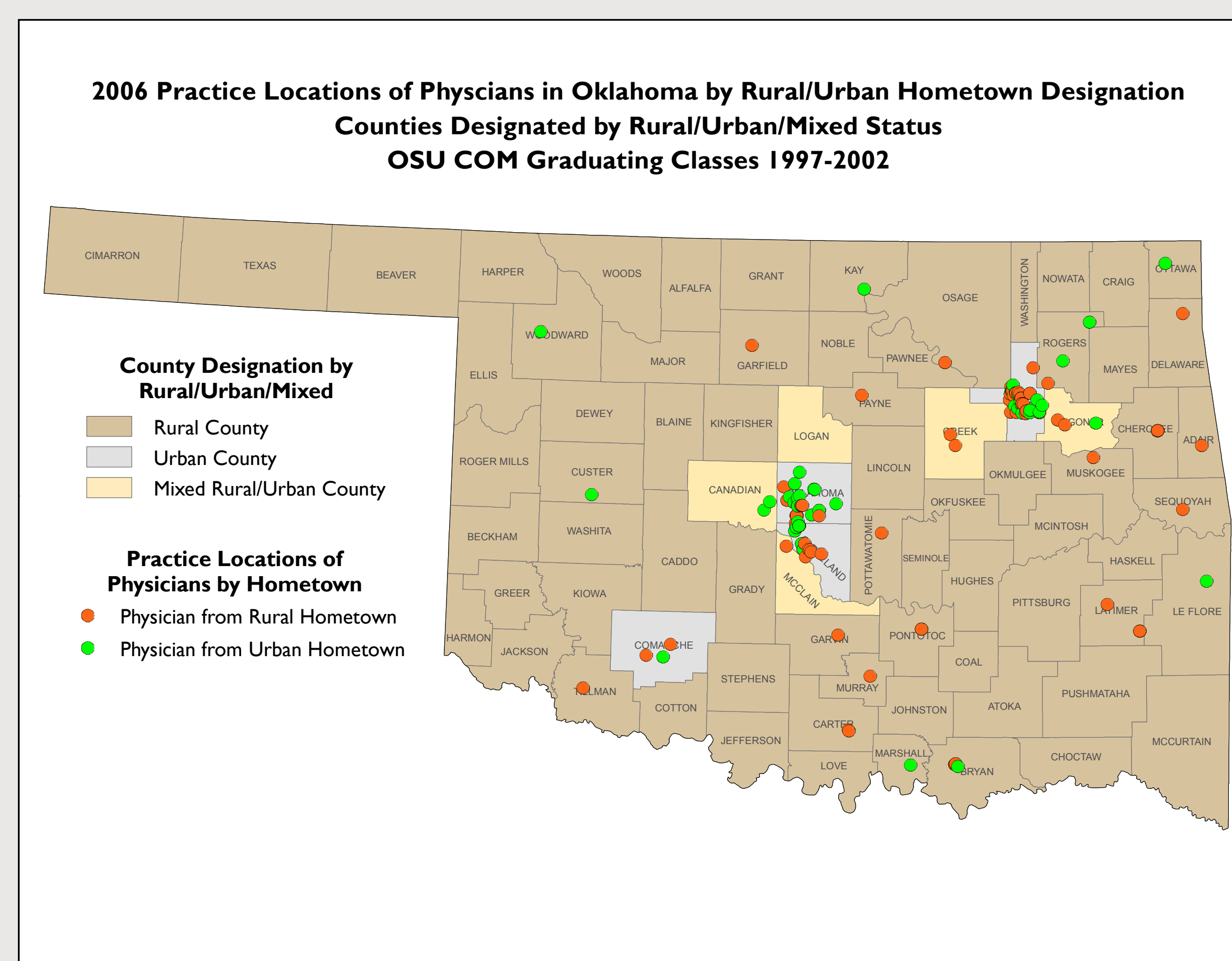
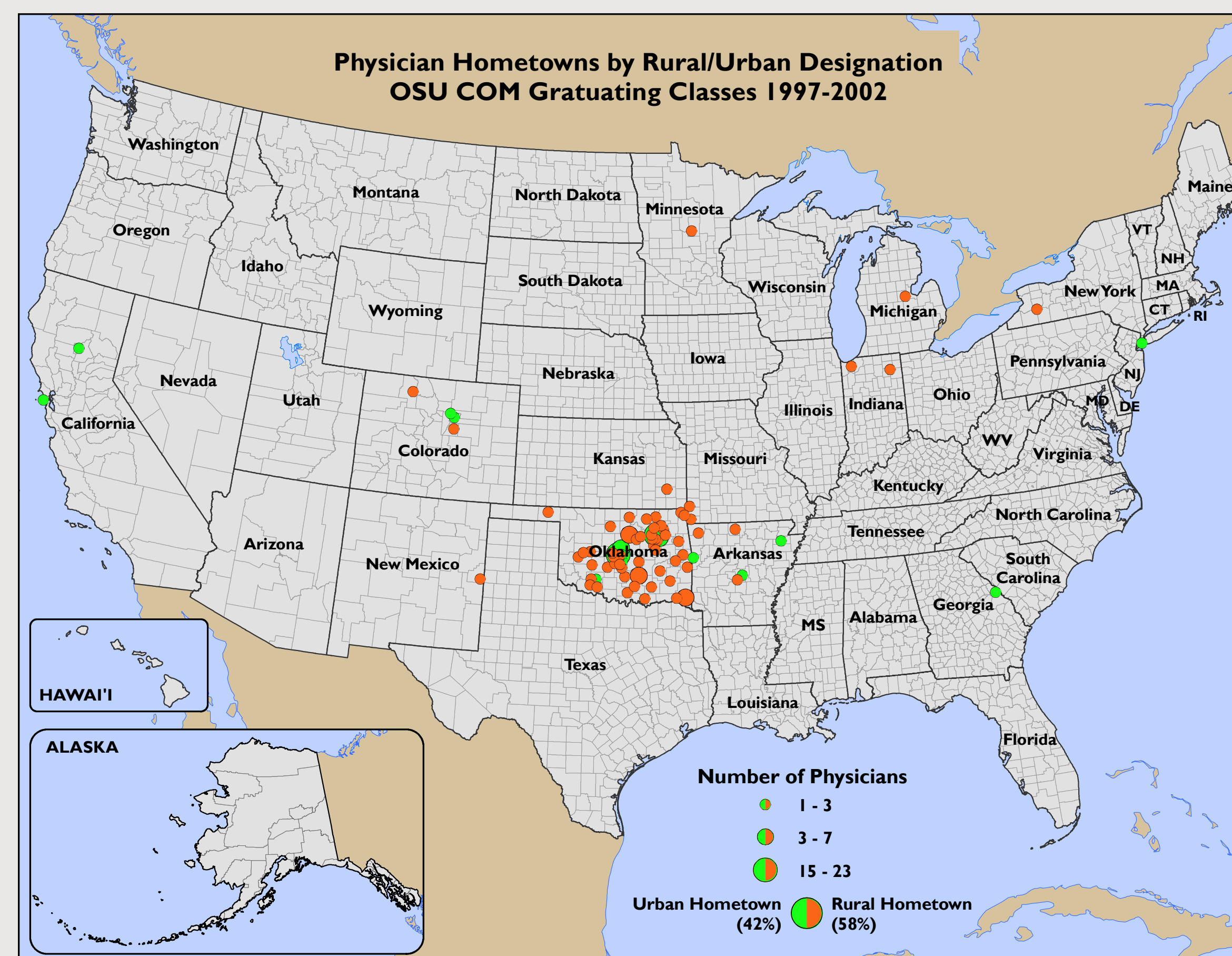
DATA



Mandatory Course Evaluations†	CC	RC	CH1	CH2
Appropriate Orientation	3.64	3.66	3.53	3.58
Effective Personal Instruction	3.66	3.75	3.64	3.68
Demonstration of Osteo. Techniques	3.38	3.42	3.20	3.13
Formal Education	3.42	3.41	3.37	3.35
Overall	3.64	3.80	3.58	3.60
Recommend	0.94	0.96	0.94	0.96
# of Observations	47	167	149	159

† Course evaluations are scored on a 4-point Likert scale.

Recommend is 0/1 variable. 1=recommend; 0 = not recommend



METHODS

We used a standard logit framework for analyzing binary decision variables to determine what courses (or parts) might impact the practice location decision. The dependent variable is whether the graduate practices in a rural (1) or urban (0) location. This variable was regressed against a series of independent variables. The resulting parameter values and statistical significance indicated if the variables positively or negatively influenced (if at all) the location decision. The model is formally specified as:

$$y_i^* = X_i\beta + Z_{i1}\alpha_1 + Z_{i2}\alpha_2 + E_{i1}\tau_1 + E_{i2}\tau_2 + E_{i3}\tau_3 + E_{i4}\tau_4 + \varepsilon_i$$

$$y_i = 1 \text{ if } y_i^* \geq 0 \text{ and } y_i = 0 \text{ if } y_i^* < 0$$

To determine the impact of the individual programs, we first ran the model including the physician's hometown (X_i) as the only independent variable. The optional programs (Z_{i1} , Z_{i2}) and various mandatory evaluations (E_{i1} , E_{i2} , E_{i3} , E_{i4}) were added to determine if the parameter values are significant in promoting a rural practice location. In a case with all 5 evaluations included for each program, there were 20 separate E_i variables. If the programs were having the desired impact, then we expected to see a positive and statistically significant coefficient on the optional programs (indicating that participation positively impacted the likelihood of rural practice) and on the mandatory evaluations (indicating that a more positive evaluation resulted in a higher probability of rural practice). The variables β , α_1 , τ_1 , τ_2 , τ_3 , and τ_4 provided information about how each independent variable impacted the perceived value of practicing in a rural area. The variable ε_i is the model's error term.

RESULTS

Model 1 includes rural hometown as the sole independent variable. It shows a positive relationship and indicates that students raised in a rural area are 11.9% more likely to practice in a rural area as compared to those raised in an urban area. Unfortunately, the lone variable only explain 1.4% of the variation in the dependent variable. Also, the model fails to correctly predict a rural practice.

Model 2 adds the optional programs. This model suggests that participating in the SRE increases a student's probability of practicing in a rural area by roughly 23.9%. Participation in the ECE showed no impact on rural practice location.

Model 3 adds the overall evaluation variables from the required rotations. The small number of observations renders the rural hometown and SRE insignificant and leaves this model inferior as compared to the others.

Model 4 removes the evaluations of the CC rotation. This model shows increased probability of rural practice for those students raised in rural hometowns and for those participating in SRE. Participation in the SRE increases probability of rural practice by 32.4%, while a more favorable evaluation of the CH1 rotation increases the probability of a rural practice by 20%.

Model 5 includes lower-level evaluations of all the required rotations. Again, the small sample size leaves the model inferior. But, the rural hometown and SRE variables are both significant at the 5% level. The model has a good fit with a pseudo $R^2 = 0.265$ and 50% of the rural practice locations predicted.

	Model 1	Model 2	Model 3	Model 4	Model 5
Rural Hometown	0.583*	0.633*	-0.239	0.845*	3.430**
SRE		1.020*	1.839	1.515**	3.160**
ECE		-0.103	0.850	0.214	-1.311
CC - Overall			0.541		
RC - Orientation					-0.255
RC - Personal Inst.					-0.743
RC - Osteo. Techs.					0.531
RC - Formal Ed.					-0.437
RC - Overall			1.155	.0374	
CH1 - Orientation					1.142
CH1 - Personal Inst.					0.457
CH1 - Osteo. Techs.					-1.198
CH1 - Formal Ed.					0.986
CH1 - Overall			2.809*	1.245*	
CH2 - Orientation					0.046
CH2 - Personal Inst.					3.360
CH2 - Osteo. Techs.					0.445
CH2 - Formal Ed.					-0.688
CH2 - Overall			-1.071	-0.157	
Constant	-1.197**	-1.366**	-14.191**	-7.451**	-17.98**
Pseudo R ²	0.014	0.031	0.200	0.107	0.265
% Correctly Predicted					
Rural Practice	0.00	0.08	0.55	0.12	0.50
Urban Practice	1.00	0.96	0.92	0.99	0.81
# of Observations	163	163	36	106	53

** and * indicates significance at the p = 0.05 and p = 0.10 level, respectively

CONCLUSIONS

The findings show that programs implemented by OSU COM can influence the locations of where graduates practice. In particular, programs taking place in the 1st and 4th year of training have an impact on rural practice location, implying that students can be influenced both early and late in their medical school careers. Future efforts should be directed at developing better course evaluation instruments and using other measures of rurality.