



## The Migration Patterns of Physicians Who Were in Residency Training in South Carolina in 2009

This data brief summarizes South Carolina-relevant findings from a research study done by the Carolina Healthcare Workforce Center that examined the movement of physicians in the U.S. between 2009 and 2015. The study analyzed both physicians in residency training programs in 2009, as well as all other actively practicing physicians within each state in 2009, and their subsequent location in 2015.<sup>i</sup> This information was used to construct an online interactive system of maps called [DocFlows](#) that allows users to compare the migration flows of physicians who were in residency training in 2009 with the larger established physician workforce in a specific state.

Over the past decade the structure of the physician labor market has changed substantially. Historically, the majority of physicians beginning their practice career became professional entrepreneurs who owned their practice or entered into partnership agreements with other physicians in a group practice. In 2009 69% of physicians in active practice in South Carolina had an ownership interest in their practice and 63% of them worked in a private office. Just six years later, in 2015, the number with an ownership interest dropped to 57% and 55% worked in a private office setting.<sup>ii</sup> These changes reflect the fact that physicians, especially new physicians, are now operating in a job market largely driven by hospital and healthcare systems and their staffing needs.

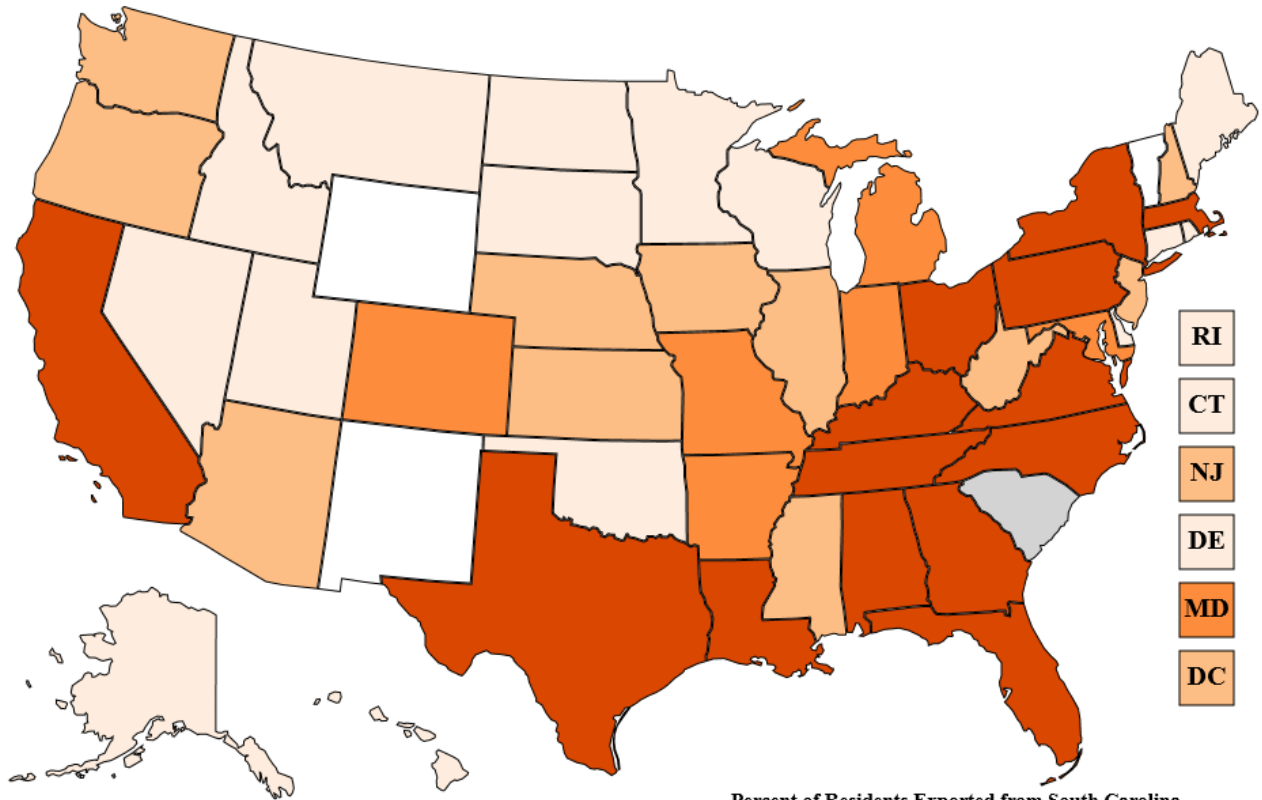
The maps and data presented on the following pages describe the in- and out-migration patterns of the physicians who were in South Carolina residency training programs in 2009 and reveal how different their experience has been compared to our established physicians – those who had completed residency training by 2009 and were in active practice in the state. South Carolina's overall retention rate for physicians moving from residency training in 2009 to active practice in 2015 was 41% compared to the state's retention rate for our established physicians which was 86% over the same period.<sup>iii</sup>

On the whole, South Carolina imported more new physicians (those in residency training in 2009 who were in active practice by 2015) than it lost, making it a net importer for new physicians beginning their practice career. A total of 903 new physicians who were in residency programs in other states in 2009 moved into South Carolina by 2015, while we lost 794 of our 2009 residents to other states. The result was a net gain of 109 new physicians.

The same is true when examining the migration patterns of physicians who were already established in practice in South Carolina during 2009: 14% (n=1,171) were located in another state by 2015. But when examining established physicians in practice in the state in 2015 we find that 18% of them (n=1,535) had been in another state in 2009. The difference is a net import of 364 established physicians between 2009 and 2015.

Readers interested in seeing the retention and migration rates for other states can find that information on the DocFlows website: [DocFlows.unc.edu](http://DocFlows.unc.edu) Maps describing the in-flow and out-flow of physicians who were in residency training in 2009 are replicated on the following pages, along with a summary of which states received new physicians from South Carolina and which states provided new physicians to South Carolina over that 2009 – 2015 period.

## Where is South Carolina exporting residents in all specialties to?



The current map shows the percentage of residents in all specialties who were training in South Carolina in 2009 but who were practicing physicians in another state in 2015 as a percent of the total number of residents training in South Carolina in 2009. For instance, of the 1,336 residents in all specialties in South Carolina in 2009 who were also active physicians in 2015, 125 were practicing physicians in Georgia in 2015, which is 9.36% ( $125 / 1,336 * 100$ ). This percentage is the mapped value.

Percent of Residents Exported from South Carolina

0.37% 0.72% 1.1%

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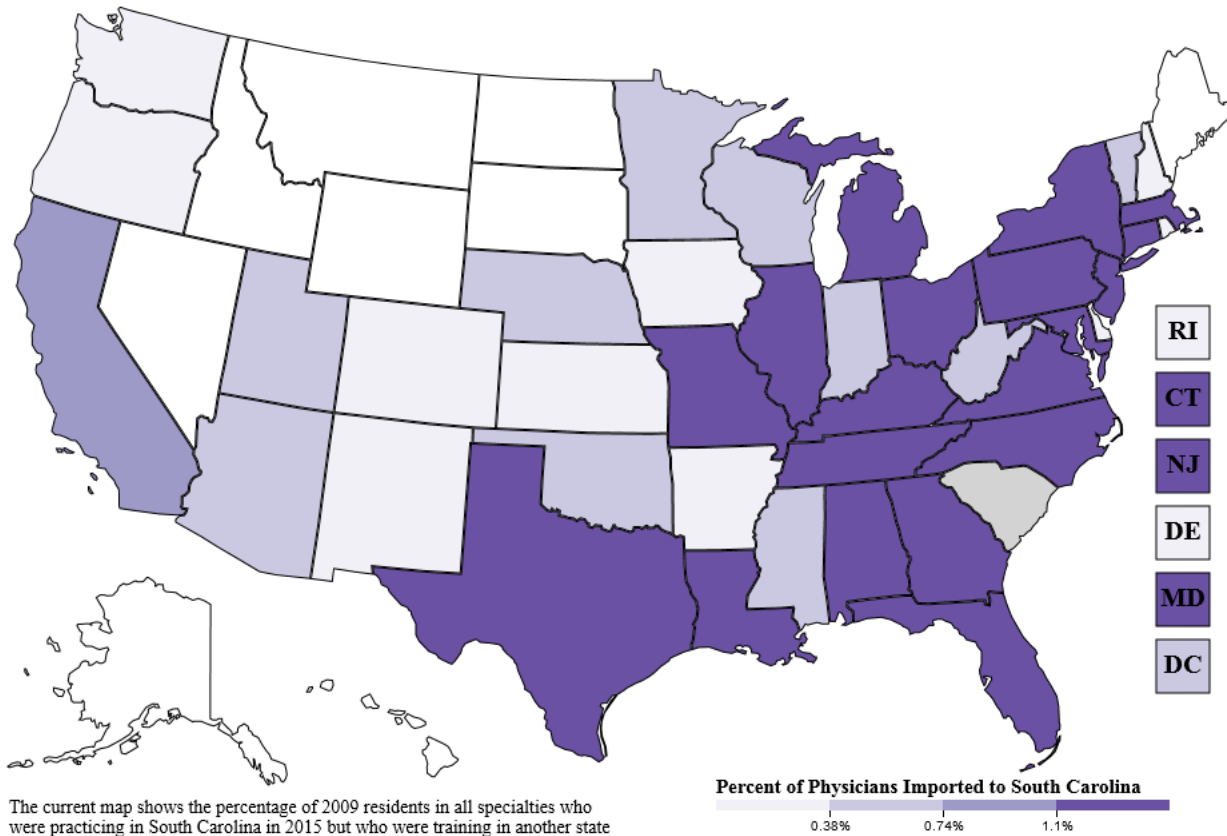
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\*This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under HRSA Cooperative Agreement U81HP26495-04-01: Health Workforce Research Centers Program, with a total award amount of \$545,050. The content and conclusions are those of the authors and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

The number of residents who were in training programs in South Carolina in 2009 and who were actively practicing as a physician somewhere else in the U.S. by 2015 totaled 1,336.<sup>iv</sup> Of that group, 794 (59.4%) left South Carolina to practice in another state. The table below reports where those 794 new physicians were located in 2015.

Georgia	125	Massachusetts	15	Kansas	6	Delaware	2
North Carolina	116	Indiana	14	New Hampshire	5	Utah	2
Florida	85	Arkansas	12	Oregon	5	Wisconsin	2
Tennessee	42	Michigan	12	Iowa	5	Alaska	1
Texas	35	Maryland	11	Nebraska	5	Montana	1
California	32	Colorado	10	New Jersey	5	South Dakota	1
Alabama	32	Missouri	10	Idaho	4	Hawaii	1
Virginia	31	Arizona	8	Nevada	4	Connecticut	1
Kentucky	26	West Virginia	8	Minnesota	4	Wyoming	0
Louisiana	23	Illinois	8	Rhode Island	3	New Mexico	0
Ohio	23	Washington	7	Oklahoma	3	Vermont	0
Pennsylvania	21	Mississippi	7	North Dakota	2	<b>Total SC Exports:</b>	<b>794</b>
New York	17	Massachusetts	15	Maine	2		

## Who is training South Carolina's physicians in all specialties?



The current map shows the percentage of 2009 residents in all specialties who were practicing in South Carolina in 2015 but who were training in another state in 2009. For instance, of the 1,445 physicians in all specialties who were in training in 2009 and actively practicing in South Carolina in 2015, 99 were residents in North Carolina in 2009, which is 6.85% ( $99 / 1,445 * 100$ ). This percentage is the mapped value.

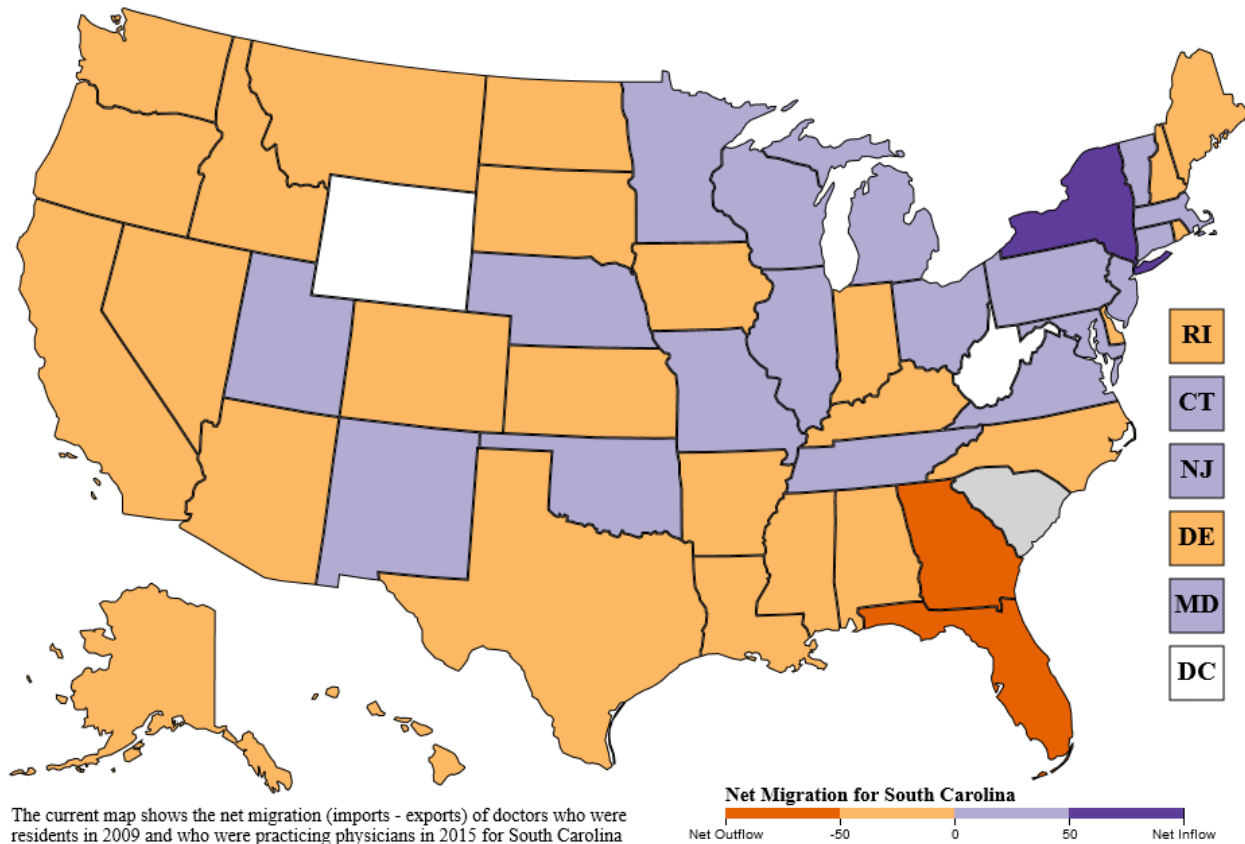
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Although a significant portion of the residents who were in South Carolina GME programs in 2009 transitioned to other states for their practice locations by 2015, South Carolina drew in an even larger number of new physicians who had trained in other states: a total of 903. The table below reports where those new physicians coming into South Carolina received their residency training. North Carolina and New York were the largest contributing states.

North Carolina	99	Michigan	25	Minnesota	6	Delaware	1
New York	97	Kentucky	23	Oklahoma	6	Idaho	0
Virginia	69	Louisiana	22	Utah	6	Nevada	0
Ohio	59	New Jersey	21	Vermont	6	North Dakota	0
Georgia	54	Missouri	18	Arkansas	5	Maine	0
Tennessee	44	Connecticut	17	Washington	5	Alaska	0
Illinois	44	California	15	Colorado	4	Montana	0
Pennsylvania	43	Indiana	9	Iowa	4	South Dakota	0
Florida	34	West Virginia	8	Kansas	3	Hawaii	0
Texas	33	Nebraska	8	New Mexico	3	Wyoming	0
Massachusetts	32	Wisconsin	7	Oregon	2		
Alabama	29	Arizona	6	Rhode Island	2		
Maryland	27	Mississippi	6	New Hampshire	1	<b>Total SC Imports:</b>	<b>903</b>

## To which states is South Carolina a net importer or net exporter of residents?



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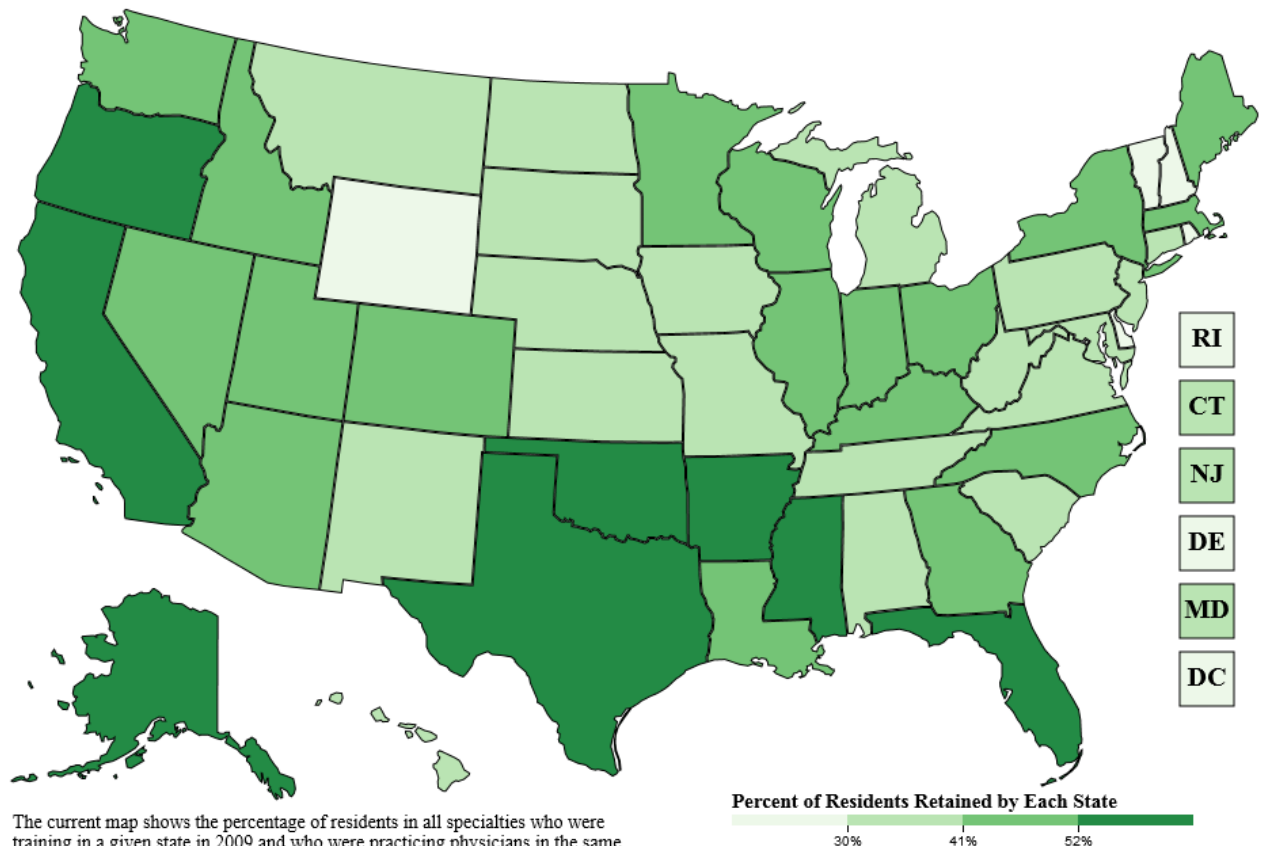
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The net migration of 2009 residents into other states or from other states is summarized below. A positive number indicates a net inflow from that state into South Carolina (more gained from that state than were lost to that state). A negative number indicates a net outflow from South Carolina to that state among physicians that were in South Carolina residency training programs in 2009.

New York	80	Utah	4	Mississippi	-1	Idaho	-4
Virginia	38	Nebraska	3	Montana	-1	Nevada	-4
Illinois	36	New Mexico	3	Rhode Island	-1	New Hampshire	-4
Ohio	36	Oklahoma	3	South Dakota	-1	Indiana	-5
Pennsylvania	22	Minnesota	2	Arizona	-2	Colorado	-6
Massachusetts	17	Tennessee	2	Maine	-2	Arkansas	-7
Connecticut	16	West Virginia	0	North Dakota	-2	California	-17
Maryland	16	Wyoming	0	Texas	-2	North Carolina	-17
New Jersey	16	Alaska	-1	Washington	-2	Florida	-51
Michigan	13	Delaware	-1	Alabama	-3	Georgia	-71
Missouri	8	Hawaii	-1	Kansas	-3		
Vermont	6	Iowa	-1	Kentucky	-3		
Wisconsin	5	Louisiana	-1	Oregon	-3	<b>Net Inflow to SC:</b>	<b>109</b>

## How well does each state retain its residents?



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South Carolina had 1,336 residents in GME training programs in the state in 2009 who went on to be practicing physicians in 2015. A total of 794 of them (59%) left the state for other practice locations. That means that, of that 2009 group of residents trained in the state that are the basis of this analysis, 41% of them began their careers as actively practicing physicians in South Carolina. In addition to the ones we trained and retained in South Carolina, we imported a total of 903 physicians who had received their residency training in other states – a net gain of 109 over the number who were training in South Carolina residency programs in 2009.

## Conclusions

Given the changing structure of the job market affecting physicians (fewer self-owned practices and more employment by health systems or large group practices), policies designed to recruit physicians into rural or underserved areas may need to be re-evaluated. Hospitals and health systems have always concentrated specialty physicians nearby, but now have a more direct influence on where primary care physicians will practice. Those changes are illustrated by the much higher rate of state-to-state movement among newly trained physicians compared to the much lower migration rate seen among established physicians between 2009 and 2015.

## End Notes and References

<sup>i</sup> For more information about the study and the physicians included in the analysis see the interactive website that makes all of the information available online: [docflows.unc.edu](http://docflows.unc.edu).

<sup>ii</sup> Practice Characteristics of the Established Physician Workforce in South Carolina: 2009 – 2015. South Carolina Office for Healthcare Workforce. August, 2017. Available at [www.SCohw.org](http://www.SCohw.org)

<sup>iii</sup> That is, only 14% of the established physicians in practice in South Carolina in 2009 were found to be practicing in another state in 2015.

<sup>iv</sup> These figures are based on the data used by the Carolina Healthcare Workforce Center for this analysis, drawn from the AMA Master List database.

**More about DocFlows:** Created by the Carolina Healthcare Workforce Center at the University of North Carolina – Chapel Hill, one of six HRSA-funded research centers focused on healthcare workforce issues in the United States, the **DocFlows** system uses information on MDs and DOs from the American Medical Association Master List database to allow users to examine the ways in which physicians migrated from one state to another between 2009 and 2015. Users identify a state to analyze by clicking on (or “selecting”) that state in a map and then choosing which calculation to apply (import to the state, export from the state, and net gain/loss for the state) for either residents or actively practicing physicians. The model also gives the user the option to narrow the results from all physicians to only those in a particular clinical specialty.

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