Obstetricians/gynecologists (OB/GYNs) provide services related to women's reproductive health. OB/GYN services include both preventive treatments (such as Pap tests, breast exams, and contraceptive counseling), as well as routine, specialized treatments associated with reproductive health (such as gynecological surgeries, prenatal care, and managing menopause). Because of their specialized training, OB/GYNs are vitally important to the improvement of women's health. Early detection of breast and cervical cancer can dramatically improve survival rates, which are two conditions that are more likely to be fatal among Mississippi's women than in other parts of the nation. Prenatal care is frequently (though not exclusively) provided by OB/GYNs; this type of care enables expectant mothers to be aware of risk factors and potential complications for both the mother and the child and ultimately reduces congenital defects and diseases among infants.

Using data provided by the Mississippi State Board of Medical Licensure (MSBML), the Mississippi Physician Workforce database was constructed. The database includes information on all physicians who applied for license renewal with the MSBML. Of the 8,435 physicians who applied for license renewal in 2007, 4,894 physicians worked at least part-time in Mississippi. Each primary practice location of these active physicians was classified into their respective county. Physicians who listed obstetrics and gynecology as a specialty were selected out and aggregated by county. The county population was calculated. Next, we identified contiguous counties for each of the 82 counties. For example, Newton County's adjacent counties were Kemper, Lauderdale, Clarke, Jasper, Smith, Scott, and Leake (see Map 2). These adjacent counties' populations and numbers of OB/GYNs were then added to the original county's population and number of OB/GYNs to come up with a total population and number of OB/GYNs for each county's micro-region, defined as the county plus its contiguous counties. Combining counties in such a way results in a calculation that is likely to resemble access to care for the specific county's citizens given propensity to travel for care. The resulting population and number of OB/GYNs were then used to calculate a patient-to-physician ratio. This ratio was divided by NEJM standards to produce similar numbers as to the previous calculations. Again, for counties with a ratio less than 1.0, the county's micro-region was deemed to have an acceptable patient-to-physician ratio relative to the NEJM standards and adequate access to care. The results are displayed on Map 2.

Using this small region analysis, the most extreme disparities are nearly entirely eliminated. The number of counties with no access to OB/GYNs drops from 46 to one (Jefferson Davis, population: 12,815). In addition, 32 counties are within recommended patient loads, 36 have patient loads that are up to double the recommended levels, ten are between two and four times the recommended levels, and three are more than four times the recommended patient loads. These three counties with the highest patient loads are Marion (population: 25,735), Attala (population: 19,600), and Leake (population: 22,828). While both Attala and Leake counties are approximately the midway point between two major population centers (Tupelo and Jackson), Marion County, as well as Jefferson Davis County, are close to Hattiesburg. As such, it may be that the Hattiesburg area is being heavily relied upon or that physician supply has not caught up with the growing demand. This may also indicate a bias in our analysis as the regional distance was not measured in miles, but by contiguous counties.

Finally, Mississippi Area Health Education Centers serve Mississippi by partnering with schools, health care providers, and communities to improve the access to quality health education through education, interventions, and recruitment of professionals. Mississippi AHEC has divided Mississippi into seven regions that are consistent economically, culturally, and racially. These seven regions are North Central, North East, East Central, Southern, Southwest, Central, and Delta.

Each county was placed into its respective AHEC region. The county figures were then aggregated by their AHEC region to give a population and number of OB/GYNs for each of the seven AHEC regions. The resulting populations were divided by the resulting number of OB/GYNs to produce an AHEC patient-to-physician ratio, which was then divided by the NEJM recommendations to compare access to care for each of the AHEC regions, relative to populations. The results were then mapped.

Map 3 shows some disparity, though few extremes, in patient loads for OB/GYNs. Central, Southwest, and North East AHEC regions fall within recommended guidelines and, in the case of Central and Southwest, have significant surpluses of OB/GYNs. The Southern (1.14) and Delta (1.25) AHECs fall between the recommended level and 1.5 times the recommended level. The final two, North Central and East Central AHECs, are more than 1.5 times the recommended patient load, indicating that they would benefit from the addition of at least a 50% increase in the number of OB/GYNs in that AHEC.

OB/GYN care is vital in Mississippi. With the second highest teenage birth rate, the highest percentage of births that are born pre-term, higher than average rates of death due to cervical breast cancer—despite lower rates of reported prevalence—the lack of OB/GYN care is evident in outcomes for Mississippi women and their offspring. If Mississippi hopes to raise its standard of living, we should strive to not only increase the number of OB/GYNs across the state, but also look for ways to more appropriately distribute these physicians.