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Opportunity and Prosperity for All

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in depth

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Different City, Different Treatment

Saving Money and Improving Care in North Carolina

BY ADAM LINKER, HEALTH POLICY ANALYST

NC HEALTH ACCESS COALITION
P.O. Box 28068 • Raleigh, NC • 27611-8068
DIRECTOR: Adam Searing: 919/856-2568
www.ncjustice.org

EXECUTIVE SUMMARY

Neighboring communities across North Carolina have widely different surgery rates.

This variation can't be explained by disease rates, the availability of medical care, or the poverty level of different communities.

Physician preference is driving care even when multiple, valid treatment options exist for a given diagnosis.

By studying and limiting this variation the state could save money and give patients more control over their own health care.

NORTH CAROLINA COULD SAVE MILLIONS in health costs with more efficient, patient-centered care.

From community to community in North Carolina there is great variation in the frequency of surgical procedures – variation that can't be explained by disease rates or factors such as age, sex, or race.

When we compare the rates of surgical procedures within and between different towns and cities in North Carolina using 2005 Medicare data it is clear that some locations perform an unusually high number of certain elective surgeries.

For many diagnoses there are several possible treatment options and each medical path offers its own set of promises, side effects, and perils. Patients suffering chronic chest pain from coronary artery disease generally have three options - medical treatment with lifestyle changes, angioplasty, or bypass surgery. Each choice carries significant tradeoffs. Medication to ameliorate the chest pain may provide only temporary relief but avoids the dangers of surgery. Angioplasty, where a balloon is inserted into the coronary arteries to break up plaque, is less invasive than bypass surgery but symptoms may return quickly. Bypass surgery, where new arteries are grafted onto the coronary arteries to bypass narrowed

arterial blood vessels is more durable but carries significant risks of death or disability.

In most places in the state, and across the country, angioplasties are performed at much higher rates than bypass surgery because the procedure is less invasive and requires less recovery time. In Raleigh, for example, there were 4.8 bypass surgeries performed per 1,000 Medicare enrollees in 2005 compared to 11.49 angioplasties per 1,000 Medicare enrollees. In Charlotte there were 2.34 bypass surgeries compared to 10.6 angioplasties per 1,000 Medicare enrollees.

This pattern of angioplasty rates outstripping bypass rates does not hold in several communities in North Carolina. In 2005 Fayetteville had 8.33 bypass surgeries compared to 6.45 angioplasties per 1,000 Medicare enrollees. Similarly, in Franklin there were 7.16 bypass surgeries performed compared to 6.27 angioplasties per 1,000 Medicare patients.

When surgical rates between communities are examined unusual patterns also emerge. Physicians in Sanford, for example, perform twice as many cardiac bypass surgeries as physicians in Greenville. In Sanford, 7.08 per 1,000 Medicare enrollees underwent bypass surgery compared to 3.18 per 1,000 Medicare enrollees in Greenville. Sanford had one-and-a-half times more bypass surgeries than Raleigh, 7.08 per 1,000 compared to 4.8 per 1,000.

These surgical discrepancies - where patients with similar diseases get radically different treatments - exist all across the state, even between neighboring communities.

The number of cardiac bypass surgeries performed in the state varies more than **three fold** across North Carolina. The number of angioplasties performed varies more than **six fold** across the state. This makes little sense for patients or for the health care system.

In Morganton, for example, patients underwent bypass surgery one-and-a-half times more often than patients who live only 22 miles to the west in Hickory, 6.24 per 1,000 Medicare enrollees compared to 4 per 1,000. People in Morganton (6.24 per 1,000) are also twice as likely to undergo cardiac bypass surgery as are residents of nearby Rutherfordton (2.87 per 1,000).

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Geography is often destiny when it comes to medical care

[The information used in this report are drawn from the data tools available through the Dartmouth Atlas of Health Care produced by the The Dartmouth Institute for Health Policy & Clinical Practice. The numbers presented here are based on 2005 Medicare data and are adjusted for age, sex, and race.]

■ When we go to the doctor and receive a diagnosis where multiple valid options exist we would like to think that we have some say over the course of treatment. But the patterns in this report suggest that geography often trumps patient preference in guiding care.

In other words, where you live is more important than what you prefer in determining how your medical condition is treated.

The propensity of certain communities to favor one type of treatment over another is known as **unwarranted variation**, and researchers at Dartmouth Medical School have studied this phenomenon for many years. Dartmouth data show that within North Carolina there is a great deal of unwarranted variation across towns and cities in the frequency of certain surgical procedures.

Where you live is more important than what you prefer in determining how your medical condition is treated.

The variations in treatment are not likely explained by the relative sickness of people living in different geographic areas or the preferences of patients in neighboring communities. It is doubtful that arterial plaque is twice as common in Morehead City or New Bern as it is in Greenville, even though residents of Morehead City have twice the number of carotid endarterectomies (a surgical treatment for arterial plaque buildup) as do people living in Greenville. People are likely not that much sicker in Morganton than in the nearby communities of Hickory or Rutherfordton.

Disease rates and demographics also do not explain why physicians in Fayetteville and Franklin perform more bypass surgeries than angioplasties than almost anywhere else in the country.

Instead, the variation is most likely explained by the preferences of physicians and caregivers in different communities. Treatments such as knee replacement, bypass surgery, and carotid endarterectomies are what Dartmouth researchers call "preference sensitive" care. Preference sensitive care is when several possible treatments exist for a diagnosis. In that case it should be up to the fully informed patient to guide the care, but often it is physician preference that determines the course of action.

Let's go back to the example of chronic chest

pain from coronary artery disease, which generally leads to treatment with medication, bypass surgery, or angioplasty.

Like bypass surgery, the number of angioplasties performed varies widely across the state from community to community. People in Smithfield are more than three times as likely as people in Rocky Mount to have an angioplasty; Smithfield residents are more than twice as likely to get an angioplasty as are Raleigh residents and more than five times as likely to undergo the procedure as several communities in the in the western part of the state, including Marion.

This suggests that there are either one or two physician practices in Smithfield performing a large number of angioplasties or the tendency of the medical community in Smithfield is to prefer angioplasties over other options to treat coronary artery disease.

Physician preference drives care instead of patient choice

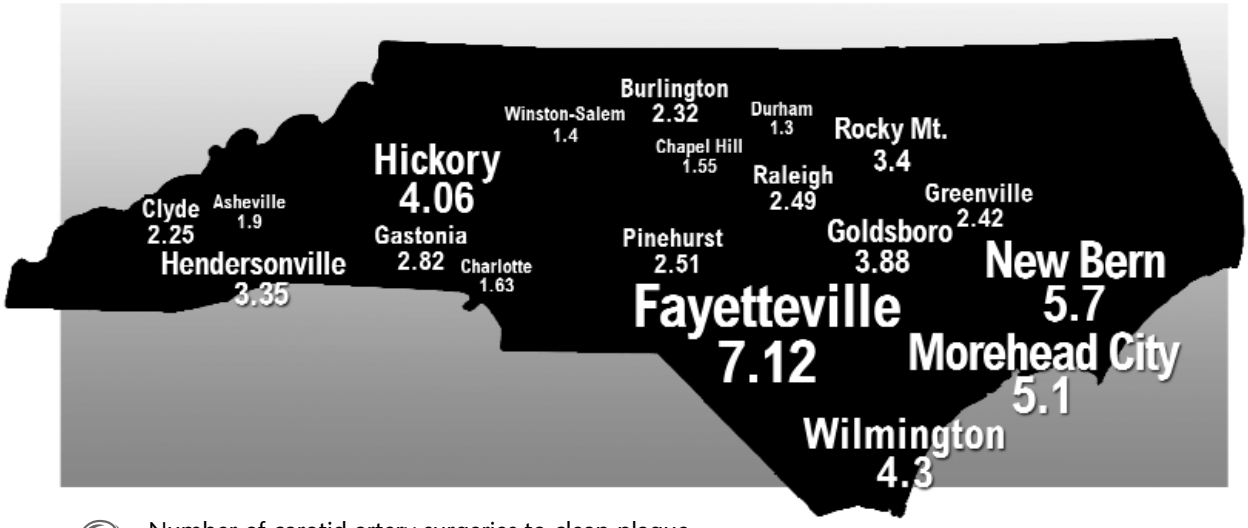
■ The wide variation in how patients are treated suggests that in many areas of the state physicians are driving care - even when multiple, valid treatment options exist - instead of patients. This observation has broad implications for our health care system and the effort to contain costs. Several studies suggest that patients tend to favor less expensive and less invasive care when given the option, but in many communities it seems that doctors and surgeons push for more aggressive interventions to treat disease.

Another example: One possible treatment for plaque buildup in the carotid artery (a major artery running through the neck) is a surgical procedure called a carotid endarterectomy where a surgeon slices open a part of the patient's neck and removes the calcium and cholesterol deposits that restrict blood flow. Less invasive measures besides the carotid endarterectomy are also treatment options as is aggressive medical therapy using drugs and lifestyle changes.

Despite the different options available, 7.12 out of 1,000 Medicare patients in Fayetteville underwent carotid endarterectomy in 2005, whereas 1.3 out of 1,000 Medicare patients in Durham submitted to the surgical procedure - a more than six fold difference.

Again, we have to look at why so many more Fayetteville residents undergo the surgical treatment to clean the carotid artery. Do Fayetteville residents need to have six times more carotid endarterectomies than people in Durham? Do denizens of Fayetteville prefer carotid endarterectomies six times more often than do people in Durham? Both scenarios are unlikely.

In our system of care physicians tend to prefer, and perfect, one treatment more than others. This is not because the physician does not want to do what is right for patients. The physician simply believes, sometimes without empirical evidence, that one course of action is superior to all other treatment options. When doctors form such preferences, however, it tends to overshadow the preferences of the patient.



Number of carotid artery surgeries to clean plaque buildup per 1000 Medicare enrollees. It is also possible to treat narrowing of the carotid artery with aspirin and lifestyle changes.

SOURCE: Dartmouth Atlas of Health Care. All data is 2005 and adjusted for age, sex, and race.

Controlling unwarranted variation can lead to more effective and cost-efficient care

It is important that all health care providers in North Carolina practice patient-centered care, which is different than consumer-driven medicine. Instead of weakening the doctor-patient relationship by asking people to shop around for the physician with the most competitive prices, patient centered care strengthens the doctor-patient relationship.

What, then, is patient-centered care? When different medical treatment options exist for a patient, especially treatment options that involve significant tradeoffs, all patients want the risks and benefits of each course of action thoroughly explained. Everyone benefits when medical providers carefully explain all of the options available to a patient. It is easier to establish informed consent for a fully informed patient. And fully informed patients are more likely to participate in their care.

When a person is faced with a potentially life threatening diagnosis such as cancer, the patient is understandably frightened and confused. But where multiple courses of action exist the doctor must ensure that the patient understands the diagnosis and all of the side effects and tradeoffs involved with different surgical or medical treatments.

The values and preferences of the fully informed patient should guide the care.

The values and preferences of the fully

PROCEDURE RATES FOR 8 NC CITIES

	Bypass Surgery	Angioplasty
Asheville	4.44	5.21
Burlington	3.47	8.46
Charlotte	2.34	10.6
FAYETTEVILLE	8.33	6.45
FRANKLIN	7.16	6.27
Raleigh	4.8	11.49
Wilmington	4.43	9.65
Winston-Salem	4.04	8.18

Procedures per 1000 Medicare enrollees.

informed patient should guide the care.

Patient centered medicine bestows benefits on individual patients and doctors and on the state's health care system. Studies show that informed patients tend to prefer less invasive procedures when given the option. There is reason to believe that the patterns examined in the report among Medicare patients hold true for many Medicaid and privately insured patients as well. That means that there are physicians performing knee replacements and expensive cardiac bypass surgeries when patients want less expensive, less invasive alternatives.

Most importantly, we need to raise awareness in the state that these variations exist. Physicians are too busy running their businesses to study these statewide trends and note when small geographic areas have unusually high rates of particular procedures. North Carolina policymakers need to create structures that can help patients and physicians understand these patterns and work to remedy unnecessary variations in care. Ensuring that patients and physicians are armed with the latest information on diagnosing and treating disease will help North Carolina contain costs while promoting quality care for everyone in the state.

RECOMMENDATIONS: What can be done about unwarranted variation?

- **North Carolina should work** with the state's large research universities to establish a cooperative Institute for Health Care Cost, Effectiveness, and Research to help study unwarranted variation. The Institute could work with physician groups in disseminating information on the effectiveness of various treatment options. The Institute could also conduct comparative effectiveness research to test new drugs, devices, and medical procedures against existing technologies and techniques.

- **To assist North Carolina in creating** an ethic of patient centered care the state should work with several large multi-specialty physician groups to pilot extensive use of patient decision aids and study patient satisfaction, surgery rates, and outcomes. Decision

aids are videos or booklets that help explain disease and treatment options to patients. A pilot study could help determine which decision aids are most helpful and effective for which diagnoses.

- **The state should expand** the Community Care of North Carolina model that works to coordinate care for Medicaid patients and alerts providers about variations in how similar practices are providing care. In state fiscal years 2005 and 2006 CCNC saved the state an estimated $231 million. Better coordination of care, especially for patients with chronic disease, would even out some of the unwarranted variation in the state and help constrain health care costs. □

NC JUSTICE CENTER'S

Health Access Coalition

Adam Searing, *Project Director*
adam@ncjustice.org

www.nchac.org

NORTH CAROLINA JUSTICE CENTER

Opportunity and Prosperity for All

224 S. Dawson Street • P.O. Box 28068 • Raleigh, NC 27611
919/856-2570 voice • 919/856-2175 fax • www.ncjustice.org • contact@ncjustice.org

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