NC IOM STEERING COMMITTEE ON PRIMARY CARE AND SPECIALTY SUPPLY
February 13, 2006
North Carolina Hospital Association, Cary

MEETING NOTES

WELCOME
E. Harvey Estes, Jr., MD
Chair, Steering Committee

EXPANDING MEDICAL STUDENT CLASS SIZE AND INNOVATIONS IN MEDICAL EDUCATION
J. Lloyd Michener, MD
Chair, Department of Community and Family Medicine
Duke University Medical Center
Chair
Council of Academic Societies of the Association of American Medical Colleges

Dr. Michener explained that he would give an update on workforce data and then discuss what the data mean to North Carolina. The focus of the discussion will be to determine what the North Carolina medical schools are doing to increase the number of physicians in the state.

Allopathic physician graduates make up about two-thirds of all the entering physicians in the workforce supply. This is interesting because it is generally believed that allopathic physicians represent more of the physician workforce. However, allopathic physicians represent 64% of physicians. The other major physician types are US International Medical Graduates (IMGs) and Non-US IMGs, who represent 5% and 20% of the physician workforce, respectively.

Q: Are there any non-US osteopathic graduates?
A: No.

Allopathic graduation trends over the past 20 years have been flat. The allopathic graduation trend sharply contrasts with osteopathic graduation rates, which have grown dramatically since 1980.

There has also been rapid growth in US-IMGs who primarily attend Caribbean medical schools. Currently, over 20 medical schools are located in the Caribbean, which is a significant increase from the five Caribbean medical schools found there in the early 1990s. The number of physician assistants is also growing rapidly, with just under 4,000 graduating nationally, up from the 1,500 that were graduating in 1980.

Additionally, we are seeing the hours worked by physicians decline. As physicians get older, they tend to work shorter hours, and the younger physician cohort works fewer hours than their seniors did at the same age.

The result is that the per capital number of physicians in the United States is lower than most developed countries.

Q: What drives utilization?
A: The key factors influencing the future demand for physician services include: population growth, aging of the population, public expectations, economic growth of the nation, national investment in healthcare interventions, advances in medicine leading to improved diagnosis and treatment, changes in organizations, delivery and financing, efforts to weed out unnecessary/marginally beneficial services, and cost containment efforts.

Population growth is increasing, leading to an increase in use of services. Additionally, the aging of the population has an affect on service use. According to 2000 data, the eleven most costly medical conditions are far more prevalent among the elderly. As people age and have more chronic diseases, they have more diseases that need to be treated. When looking at office visits by cohorts, older people make more office visits than younger people. Older people also make more office visits than they did years ago.

Q: Can you predict office visits in the United States based on population growth?
A: Yes, we are predicting a 26% increase in office visits due to the population growth. However, if we include increased utilization as people get older, then the expectation is for a 53% increase in office visits between 2000 and 2020.

Comment: This increase is also due to the number of current treatment options that are currently available. People visit the doctor more often because there are more medical services to treat them.

These data will drive a recommendation at the American Medical Association meeting to raise their recommendation from a 15% growth in medical school class size to 30%. Thirty percent is striking, but it still wouldn't offset the population growth.

The current unmet need is 30 million people. There are several primary medical care health professional shortage areas. We know that the health workforce isn't distributed equally. The 53% increase in office visits due to population growth and the aging of the population will occur and so far nothing has been discussed to change the maldistribution problem.

The geneticists are trying to figure out how they are going to help a practicing population and an increasingly educated public deal with all the genetic tests, despite the fact that geneticists are in short supply. In addition, radiologists are seeing themselves as a shortage professional area.

Q: Why is family medicine not on the list of profession shortages?
A: There is concurrence among the American College of Physicians that a shortage of primary care physicians exists, namely around older adults. However, a consensus has not been reached.
Comment: The radiology shortage is being eased by the ability to digitize images and have them analyzed by an off-site third party.
Comment: One example is a person who was injured and needed to have a Magnetic Resonance Image (MRI) of his head. The MRI was sent to a Duke-trained radiologist in Australia. The report was back in 30 minutes and the treatment was based on that report. The world is changing rapidly.

Comment: Yes, there are many more global healthcare services. On the other hand, we are facing local needs. For some procedures and diagnoses telemedicine is insufficient.
Comment: If we base our projections on the office visit that occurs today, that is not what the office visit of the future will be or should be. Clearly our patients are not going to be willing to come to the offices, and wait, and then be rushed through. We have to think about what our patients are going to be willing to pay for and what they are willing to tolerate in the future.
Comment: The same generation that decided the small stores weren't good because they didn't want to wait are now going to do the same thing with traditional healthcare. We have to train people to do something different, not just what we have always done things.

Dr. Michener highlighted four strategies to increase the supply of physicians: 1) increase US medical school enrollment and graduations; 2) increase the number of IMGs entering training; 3) retain active physicians longer; and 4) increase productivity & effectiveness

Although, the data show that medical needs are increasing, half of the medical schools said that they were most likely not going to do anything to increase their enrollment. Most of the schools that are definitely going to make changes are in the South where the population ratios of the physicians are skewed, such as in Florida. When you ask the deans what the problems are, the number one issue is money available for students and expansion, followed by space, limited lab space, limited ambulatory preceptors, limited clinical training sites, and limited clinical faculty.

Q: What level of expansion are the deans concerned about?
A: About half of the deans were somewhat concerned about a 20% expansion. They were concerned about a drop in the quality of the applicant pool if the class size were increased.

A 30% growth requires an additional 4,000 allopathic matriculants by 2015, which is a dramatic increase in growth. Pragmatically, what are folks doing about it? Texas A&M is going to increase their class size from 100 to 200 per year.

Some schools are opening a new campus of an existing school, rather than opening a brand new school. For example, in Nevada, Pittsburgh is opening a new medical school in Las Vegas. New Mexico has a satellite medical campus that is complete, but has not opened yet. Florida State is the newest medical school and is growing fast. Students will do basic sciences at the original medical school and will complete their clinical training at the new site.

Harvard has pioneered the idea of training students at a clinical site for a year where they are assigned to a group of patients, whom they follow for a year. Students are thus able to experience medicine through the patient's perspective.

Other difficulties involved with opening a new medical school include: money, space, and faculty. Medical school training is expensive unless you raise the tuition dollars to run it like a profitable school. There may be lessons to be learned from the Caribbean programs. New federal support is another option. Construction is probably the least of the problems. Insufficient attention is given to newer teaching methods, such as web-based education and simulators. There are some superb simulators available. Practice surgical procedures allow, for example, young urologists to practice procedures with joysticks, like video games. On option to consider is to use more medical doctors and professors from the community as teachers, rather than just the on-campus faculty.

Q: Have deans faced problems dealing with the retirement and disability of physicians?
A: No, the deans are dealing with an opposite problem. They are actually dealing with faculty who want to continue teaching.

The US healthcare workforce is increasingly white, while our population is increasingly diverse. Despite concerted efforts, the medical school classes and faculty do not represent the US population at large. Embedded with that is something worse. If you look at socioeconomic status over the past 20 years, the medical school students and faculty have become rapidly more in the top 1% of the national income. We have an increasingly elite medical school class and faculty taking care of an increasingly diverse population.

There is a big curve, a ten year cycle, of student interest in general medicine. We spend a lot of time worrying about it. I think that what is highlighted on tv and popular culture is affecting the interest. This phenomenon is similar in other countries, such as Australia and Canada.

<u>New Paradigms of Care</u>
What healthcare is and what is needed is changing. The discussion will shift from individuals to communities. Healthcare providers can't take care of a huge community with chronic diseases one at a time. Case managers must be used in the community, and physicians need to be trained to work in teams. There is very little pragmatic instruction on working with a team, where the leadership needs to shift depending on the patient's needs. Considering the idea of patient/family centered practices, there aren't many physicians that arrange their practice schedules around when patients would like be seen.

Ed Wagner of Seattle, Washington has been looking at how to provide more effective care to a group of people with chronic diseases. This is the Wagner model of chronic disease, which tries to inform an activated patient. Patients who know about their diseases and want to be involved in their care are the foundation for a prepared, proactive practice team. What has been found is that this pattern leads to spectacularly better outcomes.

Looking at average primary care practitioner hours per day, studies indicate that 4.3 hours are spent on acute care, 2.8 on chronic care, and 1.2 on preventive care.

Q: What does it take to meet the evidence-based guidelines for a standard panel of patients?
A: It takes 10.6 hours per day for just the top ten chronic diseases. If you look at that for preventive care, it would require 7.4 hours per day. It just isn't possible. Therefore, we need a different way of providing healthcare to give patients the care they need.

What needs to be considered is thinking about family practitioners as working with physician assistants and nurse practitioners, and being supported by disease registries and electronic medical records. In addition, family practitioners can work with patients through school health programs, occupational health programs, and case managers.

Comment: There is an access problem. All of the preventive and problems go away when there is no accessibility to care. It is only when you get rid of the access problem that you can serve the preventive, occupational, and chronic problems.
Comment: Helping physicians believe that what happens in the community is important to their office is critical for building strong patient-physician relationships.

REACTORS PANEL
A reactors panel comprised of representatives from North Carolina's four medical schools was asked to discuss what, if any, plans are being made by the schools to address the physician shortage concerns.

Mac Ernest, MD
Associate Dean for Student Services and Professor
Department of Obstetrics and Gynecology
Bowman Grey School of Medicine
Wake Forest University

Drs. Applegate, Olger, and Nelson and I have been talking about the issue of expansion. We currently have 108 students admitted per year, and this has been consistent for the past 20 years. For a number of reasons, we have been looking at expansion. We are currently looking at expansion of less than 10%. We haven't made our decision yet, but we have started looking at it from the very beginning.

The beginning of the list starts with the pool of applicants. We want to be rated as one of the top schools in the country. We are at or above the national average of GPA and MCAT scores, but, we are concerned we could drop below that if we expand the class size. The deans feel pressure to be above the national average.

The next thing we have to deal with is the basic science space- specifically anatomy teaching space. One of the hallmarks of anatomy teaching space is working in small groups of six students at a table. If we expand even by five or ten, then that would increase the number of students per cadaver. Six to ten is not a big deal and we have done that, but it does put more pressure on the groups. When those groups are paying, it puts some pressure on the anatomy lab to not expand. We have 124 seats in our auditorium to deal with more students, so that isn't a terrible barrier. We have a lot of small group facilitators and groups of six students doing clinical problems, and increasing the size would affect the number clinical science faculty needed. We would probably have the same issues with clinical faculty if we expand. We probably wouldn't get as much resistance from the basic sciences faculty, but with the clinical faculty, we would.

There is a real cost to medical school. We've looked at the scholarship funding. We do not have a large endowment, so the students that are added to the rolls will come in without scholarship money. This would hurt the distribution of students, because those students would have to be wealthy enough to pay for school. We have been looking at the cost to the school. We would have to add faculty time, buy computers, and pay for some of the tests. So, the money generation isn't really great. Those are our problems.

The fourth year isn't a problem. There are a huge number of sites and they never get full. The rotations would be more problematic because the preceptors could get burned out if they get extra students. How much can these private practitioners and clinicians tolerate?

We are very actively pursuing expansion, but our numbers are nowhere near 30%.

Q: Has the AAMC looked at the impact of a 30% increase in population of the MCAT and GPA scores?
A: We have looked at that, but I don't know exactly would be.

Comment: In deciding that the allopathic schools want to maintain certain standards, we are forcing a whole bunch of students out of our education system. They are still going out of the country to study and coming back into the system to work.

Q: Is there outcome data for MCAT scores?
A: It is that they will do well on the next few tests, but it doesn't say anything about the practice success.

Q: Can you talk a little bit about your class and faculty diversity?
A: We have an increasingly diverse student population, but a very stagnant faculty. There is a limited pool of students in underrepresented groups, but even more so for

faculty. The student classes are about 13% underrepresented minorities, but only 5% of the faculty.

Comment: In my clinical career, I see physicians not always meeting the expectations that our patients have of them. I wonder if there is any correlation between MCAT scores and better physicians.
Comment: I would doubt that the quality of professionalism is correlated at all with MCAT scores.
Comment: There was a study in academic medicine looking at disciplinary action and the only thing that was predictive was MCAT scores, or if the student has disciplinary action while in school. How you behave in school is how you will behave in practice.
Comment: What do you call the guy that is the last in the medical school class- you call him a doctor. It doesn't represent how you practice.

Q: What about physicians becoming more of a team with physician assistants and nurse practitioners? Is any training being done to combine that team approach?
A: We just hired a new director for our physician assistant (PA) program. Most of the 3rd year rotations have PAs with them, so they do exactly the same things as the medical students. The medical students see that the PA students can keep up with them and work just as hard. I think that puts the PA program in a very good light. We do have a lot of the clinical rotations that overlap.
Comment: But, that is a very different thing than training the two to work together as a team.

Comment: There was a handout that was prepared by the AAMC. On the last page it shows the first year matriculation by state of residency. The number of students from North Carolina has gone down and the number of out of state students has gone up at Bowman Grey. Do you know why? Doesn't the General Assembly give Bowman Gray and Duke money for in-state students?
A: The amount of money we get from the state has been stagnant or reduced. We have decided to take that away from being a factor and rather looking at the admission standards as being more important. It is not on purpose that we are not getting as many North Carolina students. It is just that we are looking for the most qualified students. We are the 2nd or 3rd least expensive school in the country. We think that is due to a number of reasons.

Comment: At Duke our in-state funding has been reduced. With our financial situation in the state, state funding for in-state students hasn't been bumped up.

Bruce Johnson, MD
Brody School of Medicine
East Carolina University

Brody was given a three-part mission when it was started. One of the parts is to admit and support underrepresented minority or disadvantaged students. It seems to be doing its job fairly well. With exception of the traditionally black medical schools, it has had

the highest African American populations. In addition, it has had the second highest Native American population.

About 50% of Brody medical graduates go into primary care specialties, up to 75% if you include ob/gyn as a primary care specialty. About 50% of graduates of Brody School of Medicine stay in North Carolina and 25% stay in eastern North Carolina. As a means of fulfilling these missions, Brody has slightly different admissions standards. We accept the fact that some of the students do not have the same high rankings as some of the other schools in North Carolina. The scores and other means of judging how the students have done are generally below the norm for the country. The good news is that by the time they graduate, they are up at the same average as the rest of the country. The resources in the school are put into the first two years of basic sciences. There are a significant number of students that are identified as at risk of having problems with the basic medical classes. There is a pre- medical summer program to prepare these students, and there is a great deal of tutoring available to them. The seminar size is kept small. The basic science faculty are encouraged to provide additional help with the courses. There is an open effort to advise students to hold back and repeat years if they are having trouble, so the class size does fluctuate from year to year. What this focus does is to put considerable stress on the basic science faculty to provide services to these students. As a clinical clinician, I think I have a lot of contact with the students, but according to the dean, the pressure on the basic science faculty is just as great.

One of the other issues is the basic electronic needs. There is a system called Blackboard and students can access electronic documents when they would like. It is fine, but it isn't really different than photocopying things for students. There are efforts to have lectures videotaped, and there are other measures/innovations. ECU is one of the most adept at distance teaching, but it doesn't answer a lot of the needs that students have for interactions with their teachers and with each other.

When Brody was founded, there was a legislative limit of 75 students. The classrooms were built for only about 82 students. Paying for the increase in faculty is another issue. In addition to the laudable numbers of underrepresented students, Brody has the lowest tuition in the country. The idea of raising tuition to pay for some of the expansion needs is a difficult one to face.

Brody is a community hospital. At the present time, the ability of the current clinical faculty to provide education to students is at its limit. You can get more clinical faculty, but many of them have to pay for themselves and the payor pool at ECU is not a very good one. There are some problems with burnout of our preceptors in family medicine, which is the most highly developed set of preceptors at Brody. Having an excessive number of students can drag preceptors down. A student is less useful than a scribe according to Medicaid, so overburdening our clinicians is a problem.

There are also some problems with being able to maintain curricular equivalence. Some preceptors will be better than others. Some students will learn more at one site compared to another. It also relates to the development of certain satellite settings.

Q: Would ECU be interested in increasing the student class size, if they increased the cap?
A: I think the cap is an artificial one and they are looking into increasing the class size. I think they were looking at 15%.

Q: What is the number of minority students that actually enter Brody?
A: It is very close to the number that is matriculating. The number that graduate is over 90%.

Q: We have a very difficult time recruiting minorities into our community health center. Do you know how many go into primary care?
A: Twenty five percent stay in eastern North Carolina. The numbers for some of the programs at Brody are similar to what you see in the rest of the country. Two-thirds of residents stay within 50 miles of where they did their training.

Robert N. Golden, MD
Vice Dean, UNC School of Medicine
Assad Meymandi Professor and Chair of Psychiatry
School of Medicine
University of North Carolina

UNC has been under considerable encouragement to increase class size and we have looked at this a number of times and ways, and we have decided not to go down that route. We have decided we want to get away from large lecture halls and move more towards small group and one-on-one kinds of things. Those smaller groups are very expensive, particularly in the time, for our faculty.

The new standard to document the types of patients that you are seeing is also putting us under a strain. We have decided that medical school education doesn't always get the full attention and support that others get. Sometimes that is because of practical economics. Clinicians can be told to try to see more patients because they get paid per patient. Educators can't be told to go out and get more tuition dollars or students. So what we are developing is an academy of educators, which we are committing deans' funds to teachers that are giving a significant time to medical education. We will pay for their time and effort. We feel by doing that, it will be a competitive process, and the best and the brightest will become teachers. We will get good role models, if we can recruit and support primary care doctors to spend time with students, it will enhance recruitment of students into those fields.

Another example of innovations is from the University of Wisconsin. They have a new program called Wisconsin Academy for Rural Medicine (WARM). They are going to expand from 155 students per year to 177. The 22 new students will be supported by this new endowment. They will be recruited from Wisconsin Natives. They will go into a rural track. They will spend most of their time in their 3rd and 4th year in rural areas.

There is no guarantee that the students won't go into another area after their education, but they will get quality time and education in rural areas. It is integral to have a well-established site if you want to recruit into it. Students need to have a positive experience. If you expand too quickly, you will lose the majority of them.

We have a series of programs that reach out to high school students to start recruiting bright and talented minority children who might not get as much exposure to science based on where they are growing up. We have a college program that brings students in the summers and teaches them to interview and write a medical school application. We are delighted if a student in that program ends up in our dental school, rather than medical school. We are also delighted if they go to another medical school. Recently, I went over the results of that program and for the last several years, our UNC medical students who entered through the Medical Education Development (MED) program have done better than the typical student coming through the other avenues. These are students who have higher risk factors growing up.

Faculty role models are really important. We have a program called Simons Minority Scholars program. With a little bit of encouragement, the chairs agreed to give up a percent of our state funds and put it in a common pool of money. Any time a chair has a faculty member that they want to bring in who would be a good mentor, particularly for the minority students, we would support the faculty member through those funds.

In general, you don't get as much bang for your buck as going after increased class size as you can in recruiting faculty and medical students. But you can do it by using a specific track for working in underserved areas. If you do that, you may get a good return on your investment. But if you just expand your class size in the regular program, I don't know that you will be as successful in serving the underserved areas.

We have one Latino department chair and just last Monday we recruited an African American chair. We have done very poorly, not only in terms of minority department chairs, but also in terms of women. Our demographics of chairs are similar to comparable institutions. I am more optimistic about turning it around for women than I am for minorities. In some areas, there are increasing numbers of women. But, for African American and Hispanic populations, there isn't as much of a pipeline effect.

Comment: The department chair in a medical school has a lot of power as to who gets trained in a residency program. They also have a lot of power in who gets accepted into medical school. I don't think North Carolina serves itself well by having no African American medical school chair at the premiere state medical school.

Comment: It is a real challenge. We will not be more successful as quickly because of the limited candidate pool to draw from. It is somewhat better in some areas. Part of it is that the rich get richer. If there is a community that already has an African American chair, it is easier to recruit others in that area. It would be glib to suggest that this is something that would be easier to turn around in a couple of years.

Q: Is there any work being done at UNC to train people in teams?

A: We are preparing a proposal for foundation funding that, if supported, will create a scholars program at UNC that will bring together all of the health affairs schools. It will bring together teams with faculty supervisors focused on increasing supply in underserved areas. This would be a competitive scholarship program. People will have summer "internships" where they will be placed in a certain area as a team to work on improving service, under the leadership of a faculty member. When they graduate, they will have grown up in a team model, across the disciplines.

J. Lloyd Michener, MD
Chairman of Community and Family Medicine
Duke University Medical Center

Duke School of Medicine is exploring options for expanding the size of its health programs- the School of Medicine and the Physician Assistant program. The School of Nursing is clearly going to expand. There is no commitment from the other schools, but we are looking into it.

We look at in-state status for the School of Medicine as one of the factors that makes up the diversity of the student body. We are also going back into the high schools and colleges to deal with the pipeline effects. We are doing a lot of work around chronic disease. We have been doing team training going back decades. Physician assistants at Duke sit on the admissions group in the medical school and do training of medical school students. Community Care network teaches about working as a community team. We are also spending a lot of time looking at research and whether our research programs are adequately connected to the needs of our communities, and we have not found them to reflect the community needs. It is a bridge that needs to be built and we have agreed on that in the last few weeks. The questions we need to be asking concerns whether or not we are reflecting the concerns of the people in the state and in the broader community. The other thing is getting our research into practice more quickly. Lastly, we are in the throws of a reanalysis of our funding. We are starting with a clean accounting system and looking at how we fund our educators, researchers, and clinicians. We are trying to make sure that we are supporting the missions that we have.

Comment: In the medical school, we have 25-30% underrepresented minorities and in the physician assistant program the number is 25%. It is also a focus in the faculty recruitment.
Comment: You are the only medical school with an African American dean at the medical school.

Q: Would that scholarship apply to minority students, particularly? When we have an African American or Hispanic physician, we see an increase in the number of minority patients. I am afraid that we are not doing a good enough job supporting and funding this group of people.
A: We are delighted to reach out to community-based physicians and offer them adjunct faculty positions, where they can drop in. In turn, we ask them to be mentors for

residents and medical students. Our dean of student affairs is an African American woman. We have a very talented fellow who runs our minority programs.

SCHOOLS OF OSTEOPATHY

Michael K. Murphy, DO, FACOFP
Executive Director, A-OPTIC
Associate Dean Post Graduate Education
Pikeville College School of Osteopathic Medicine

The doctor of osteopathy (DO) population has gotten younger. Over 50% of our population is under the age of 45 years old. We make up only 8% of the national population of doctors, but we are currently 15% of the physicians in small rural towns.

In 1969, there were only three DO schools. In the late 1970s there was some sponsorship by state schools. We have now grown from 5 to 26 schools and there are other programs planned in Seattle and Denver. Unfortunately, there is a large gap in the Midwest. DOs come from all 50 states. Over 3500 students graduate per year, with more than 50 practicing in North Carolina.

Osteopathic students are choosing to go into the primary care specialties. Seventy-five percent of all our training is done in six states. I am trying to increase these opportunities in states where the students are coming from. Over 80% of students would prefer a dually accredited program. Five states require an American Osteopathic Association (AOA) approved internship for licensure.

One option for increasing osteopathic physicians in North Carolina would be to start a North Carolina college of osteopathic medicine. Some of the advantages of starting a new program is that you have total control, it only takes four to six years to establish, and there is a good pool of students. The disadvantages of starting a new program include dealing with resistance to development of a new program, spending $20-100 million on infrastructure, a lack of DO trainers and faculty, and the need to develop residency programs.

Another option is to contract with existing colleges to develop a DO program. The advantages of this option include that there is existing infrastructure, minimal scholarship cost, short time to accomplish (12-18 months), trainees stay where they train, and there is a good pool of students. The disadvantages of starting a new program at an existing institution include resistance from the "establishment," limited money, and a lack of DO faculty.

A third option is to develop American Osteopathic Association approved postgraduate training. The advantages of this idea include that there is already existing infrastructure, there are minimal costs, it would take a short time (12-18 months) to accomplish, and trainees stay where they train. The disadvantages could include resistance from the "establishment," and a lack of faculty.

Pikeville College School of Osteopathic Medicine (PSCOM) has a success story. It is mission driven and is accomplishing its objectives. It takes 75 students per year. Sixty percent are from University of Kentucky (UK) and 80% practice in the Appalachian area.

The Kentucky primary care scholarship program has two parts. Two scholarships go to two schools- Pikeville College and UK. UK costs $17,000 per year and Pikeville costs $35,000 per year. Due to the lower cost, UK was able to cherry-pick the best students, so Pikeville started providing a scholarship. If the student wanted to be a primary care physician, the scholarship would pay the difference in the cost of the tuition between the two institutions. A UK graduate has no obligation to continue to stay in Kentucky. However, a Pikeville medical school graduate must practice primary care in Kentucky, or pay back the scholarship.

Q: What is an OPTI?
A: An Osteopathic Postdoctoral Training Institution that is an AOA approved health care facility with affiliated health care facilities.

There has been work in the last five years to develop DO training programs in North Carolina. There is one in New Hanover and another is being developed in Fayetteville. Therefore, North Carolina may see an increase in the number of osteopathic doctors.

One of the advantages of DO is that they want to be family doctors are ready to practice- you don't have to retrain how they think. They are doing very well.

Association with schools/colleges of osteopathic medicine provides access to interested DO medical students. Osteopathic lectures will be added to the curriculum. Every DO in a program meeting AOA standards is awarded an AOA internship.

The disadvantage of developing a osteopathic medical school/program is that it must meet two sets of standards- the AOA and the Accreditation Council for Graduate Medical Education (ACGME). There are two sets of inspections and the program must have an Osteopathic Director of Medical Education (DO DME). Many OPTIs have yearly dues and yearly AOA program accreditation fees. In rural Virginia, it took them two years to find a qualified DO DME. Once they found that person, it took them no time to get AOA accreditation.

The challenges to DOs in North Carolina are that there is no osteopathic medical school in North Carolina; a small pool of DOs to help with medical education and residency programs; it is difficult to send DO students back to North Carolina for clinical undergraduate rotations (core sites); there are no direct linkages with DO schools; and few dual accredited residency programs.

Q: Where does the money come from to train medical students and residents? There must be something fundamentally economically different from US allopathic medical

schools that there aren't almost any allopathic medical schools being built, but there are quite a few osteopathic schools being built.
A: DO programs don't have to go through quite as much to get everything approved.

Comment: The professors in an allopathic school are usually linked with a research program, while the osteopathic faculty are primary care doctors.
Comment: There is a 75% and 90% ratio of teaching to research in osteopathic schools. The osteopathic profession is built on volunteer faculty.

Q: What do you think is the % of students matriculating in the 3rd year? Does anyone stay on campus?
A: It depends on where the school is. In a non-rural areas, 80% are dispersed across the US, and 20% stay in the area. In rural areas, they send students to about 12 different core sites. They are required to do computer-based training modules. The preceptor model is either a zero or a ten so there can be a problem with preceptors passing people who shouldn't be passed.

Q: What is the percentage of the tuition? It is heavily weighted to first two years for costs?
A: Costs are probably $45,000 for the first two years (each), and $10,000-15,000 for the last two years.

Comment: There is a clean demarcation that is explicit in the accreditation structure between AOA and for an LCGME.
Comment: That may be correct. I don't know. But we remain self-contained. Everything is under the umbrella of AOA.

Q: A new medical school is generally started as part of a university. Osteopathic schools seem to open without combination with a university. How does that work?
A: It is economics primarily. In West Virginia, there were not enough primary care practitioners, so they started a school. It is economically driven. There is no giant oversight to determine where a school should be.

Q: How many osteopathic schools are state-sponsored?
A: I think it is five or six- Michigan State, West Virginia, Ohio, Texas, and Oklahoma. Some have some funding from AHEC dollars, but that is changing.

Q: Are they all nonprofit?
A: At this point in time, yes. We do have an inquiry from a group that would like to be a for-profit program

Comment: Several of the residencies in our department have developed osteopathic residencies. The number of osteopathic graduates going into primary care is dropping fairly rapidly. The trend is similar to that of allopathic schools.
Comment: I think it depends on the mission of the school. Some of the problems focus on not having developed the rotations, residencies, and post-graduate education.

If you expand the classes of the schools without changing the mission, you will just produce a few more students that are going into primary care. You have to look at what is driving the school and what the outcomes should be.

Q: Do you think over the next five to seven years there will be the possibility of a combined match?

A: It depends on if you are talking to the AOA or the match. In reality, there are five matches. Graduates who are not from the Liaison Committee for Graduate Medical Education (LCGME) programs are treated as IMGs. Some will contract with the DOs prior to the match. If they don't have to pay the money for the match and you will contract with me to go where they want to go, then they will sign. The AOA match, then the AOA scramble and, then the ARMP match, then the ARMP scramble are two processes that could potentially be combined. It would be bad for the profession, so until there is a better relationship between the two programs, that won't change.

Comment: When you take a DO residency, you continue with your manipulation skills. If you don't go to a DO residency, then you lose your manipulation skills because you aren't doing it for three years. Osteopathics get paid for manipulation skills and that is why a combined program is good. Our education is 100% the same in the residency programs, we just continue to work on the manipulation skills in the program through telemedicine.

Q: What is the fee to be a part of that consortium?

A: It varies widely. The Pikeville model is based on what it costs to run the program divided by the number of partners we have. Ours is approximately $9500. In a neighboring state with a captive population, their fee is somewhere between $250,000 and $350,000.

Q: I think there is some concern about how to move forward with negotiating for a new osteopathic program. When you think about developing one, where do you go? My perception of the answer is many different directions. Is there is no central planning for osteopathic medical education?

A: Correct, there is not. The two programs near us contacted with us to provide consultation. Consulting can be easily arranged through the Commission on Osteopathic College Accreditation (COCA) if North Carolina would be interested in a feasibility group.

TRAINING PHYSICIAN ASSISTANTS

Justine Strand, MPH, PA-C
Chief, Physician Assistant Division
Associate Clinical Professor
Department of Community and Family Medicine
Duke University Medical Center

Dr. Stead, Chairman of the Department of Medicine at Duke died last year. He started the physician assistant profession because he was holding a lot of continuing medical education classes (CMEs) and none of the rural physicians could come due to job related constraints. He based it on fast-track training of physicians during WWII. He also based the profession on Buddy Treadwell, who was an African American high school graduate who started working with Dr. Johnson. He taught buddy to suture, give medicine, etc. When Dr. Johnson would leave for the AMA meeting, he would leave Buddy in charge. This was in the 1940s and 1950s. Buddy would send patients over to Duke. This was a very fascinating North Carolina story. This was another incident that Dr. Stead saw as evidence that you could teach people to do some similar practices. The first group of physician assistants was mainly Vietnam vets who were trained to do battlefield surgery. He used this group very successfully. Then in 1980, the PA population began to shift from mostly men to a preponderance of women.

Physician assistants function under negotiated performance autonomy, and are health professional licensed to practice medicine with physician supervision. The profession was developed to do what physicians do.

There are nearly 60,000 practicing PAs in the United States. Of PA graduates, 89% are in active clinical practice. Two hundred and twenty-one million patients visited PAs in 2005. They are licensed to practice in all states, the District of Columbia, and most territories and are authorized to prescribe medications in nine states, DC, and Guam. According to the Bureau of Labor Statistics, it is the fastest growing occupation. It takes about 26 months to complete the curriculum, it is competency-based, and all PAs are trained as generalists. The selection process is selected for academic potential and good interpersonal skills, not for academic achievement.

First year coursework includes anatomy, physiology, pathophysiology, pharmacology, behavioral and social science, health policy patient interviewing and physical diagnosis, and clinical medicine of all organ systems. The second year rotations include family medicine, pediatrics, general internal medicine, prenatal care and surgery, emergency medicine, and general surgery. These are the required rotations from the Accreditation Review Commission for the Education of Physician's Assistants (ARCPA), our accrediting agency. We have one professional association, one board, one accrediting agency, and one education association. We have more than 2,000 hours of clinical training, which is very intense.

Every PA program in North Carolina (four total) awards a Master degree and the majority of all PA programs award a Master degree. PAs must pass the national exam, National Commission on Certification of Physician Assistants (NCCPA), upon graduation and must maintain certification by 100 hours of continuing medical education every two years, and recertification by exam every six years.

There are now 136 programs accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA), which is more than allopathic medical schools. The schools account for 4,500 graduates every year. These PA programs

proliferated in the mid-1990s. Many of the PA programs are in osteopathic medical schools as well.

The total number of PAs that have graduated from North Carolina schools is over 3,000. North Carolina has 5% of the PAs in the US. This state is considered to be nirvana for PAs, in terms of relationships with physicians and resources, such as those from the Office of Research, Demonstrations and. Rural Health Development (ORDRHD). North Carolina also has enabling legislation and PAs here have good relationships with doctors.

In the early years, a few programs existed, then a big proliferation began from 1969-1972 and then again in the mid-1990s. The program length average is 26 months.

Information about North Carolina's PA programs is as follows:
Duke PA Program
Established in 1965
Total tuition is $49,992
Accept 45 to 49 graduates per year
Total graduates to date=1,157
39% of graduates are in primary care
44% of graduates are in North Carolina

ECU PA Program
Established in 1996
Total tuition $15,312 ($56,600 out of state)
Accept 24 to 45 graduates per year
Total graduates to date=210
40% in primary care
88% in North Carolina

Methodist College PA Program
Established in 1996
Total tuition is $49,700
Accept 25 to 30 graduates per year
Total graduates to date=104
51% of graduates are in primary care
86% of graduates are in North Carolina

Wake Forest University PA Program
Established in 1971
Total tuition is $40,432
Accept 44 to 48 graduates per year
Total graduates to date=1,328
38% of graduates are in primary care
67% of graduates are in North Carolina

Comment: I think the differences in percentages of students from Duke and Wake that stay in North Carolina is related to where the program's students come from.
Comment: Yes, they are truly national programs. Those two programs started very early in the life of the profession so they draw students from across the US.

Q: What is happening in the marketplace?
A: Dr. Stead used to call us the convenient practitioners because we can fit wherever we were needed. For many years, we were proud to say that more than 50% of PAs went into primary care. There is a lot of pushing and pulling because of the 80-hour work week. Where there is a need, there is opportunity. People are being pulled to things that they may not have considered. In states like North Carolina that may have a lot of PAs, much of the job market is saturated. If there were more primary care physicians, you would pull people to other opportunities.

Q: Are you seeing salary differentials in different areas?
A: Yes, I think that has always been the situation. Providers willing to work long hours in intense jobs are always making more money.

Comment: The average PA salary is about $70,000 to $75,000 and for new grads is about $60,000 to $65,000.

Q: Reimbursement for direct services, how does that work for Medicaid and Medicare, between an MD and a PA?
A: Some want us just to bill under the physician's name- that is the case for Medicaid. PAs are reimbursed at 85% of physician billing for Medicare. But, it is generally coded the same across the board. The fixed costs are about the same.

Q: To what extent do PAs differ from physicians, do you think of them as a team providing different services?
A: If you have seen one practice, you've seen one practice. We don't like the substitutive model very much. Most of the research shows that 85% to 90% of PAs are able to do the same things as doctors. In many places, the PA may see the less complex cases. I think it really depends. As people work over time, the situation changes.

Q: How many PAs drop out after that first year of practice?
A: Not many. We teach PAs to assimilate and work with supervision. We teach them how to assess a practice, how to interview, and the whole picture.

Q: What are the prerequisites for getting into PA school? Is a prerequisite haven taken science courses? Have you thought of changing that to respond to the increasing need for health providers?
A: Yes. We have science requirements and a minimum of six months hands-on patient care experience. One of the national problems is that there are many different program requirements. Anatomy, physiology, biology are the main requirements. We don't require physics and calculus. We mainly require natural sciences courses.

Comment: The first year for a PA may not be as stressful as it is for the practice. I find taking a brand new PA somewhat stressful, especially if you have brand new family practice physician.

Q: Have there been some programs where there would be a residency? I would hate to think that they are not going into primary care, but rather a subspecialty, because we can't accommodate.

A: There are PAs and NPs that feel a lot of stress and therefore, we put together a program through ORDRHD in Clinton, where we trained PAs with Kate B. Reynolds (KBR) grant support. This worked really well, but there were difficulties getting people to participate because this position only paid $20,000 compared to the $70,000 many PAs could get elsewhere. It was about a 50K difference in salary, so we had trouble recruiting. But the people who went through it thought it was a great experience, and just what they needed. The first year is supposed to be an extension of education because the physician is supposed to be helping the PA to learn to work in the office setting.

Comment: One of the things we are talking about now is models for sustaining some practitioners in underserved communities by providing training opportunities and support on team-based models, etc.

Q: Is there any data on who the supervising physicians are of PAs and what your faculty diversity is in your PA program?

A: In my division, a portion of our HRSA grant is to recruit minority preceptors. In our program, we are working intentionally on trying to recruit minority preceptors. I know that the numbers aren't good, but we are trying.

TRAINING NURSE PRACTITIONERS

Bobby Lowery, NP
Nurse Practitioners in North Carolina
Chair, North Carolina Nurses Association (NCNA)
Executive Council of Nurse Practitioners

There has been a lot of exposure to different nurse practitioner (NP) programs across the state. From a regulatory standpoint, North Carolina requires a core curriculum where there are a minimum number of courses and clinical hours. This is very different from the national certifying requirements that require a minimum of 500 clinical hours. Most North Carolina NP programs average a minimum of 750-800 hours in this state.

The core curriculum includes clinical and preventive services (health promotion and prevention of disease). Health promotion and disease promotion have been an integral part of the program since the 1960s. We believe the best healthcare is interdisciplinary healthcare. We value the strength that all team members bring to the table and we try to focus on that in the curriculum.

There are two avenues of certification. One is through American Nurses Credentialing Center (ANCC), the other is through American Academy of Nurse Practitioners (AANP). AANP certifies only for NPS, whereas the ANCC certifies all different kinds of nurses.

There are currently seven NP programs in North Carolina and they are located in UNC-Charlotte, UNC-Greensboro, ECU, UNC-Chapel Hill, Duke University, UNC-Wilmington, and Winston-Salem State University.

Q: How do we target NPs across the state?
A: Geographically, the NP programs are spread out quite well across the state.

Nurse practitioner programs vary in length, and they range from 56 hours down to 42 hours. The 56-hour program is the ECU program, which is currently under revision to adjust the clinical hours to reflect what is expected across the state and in the requirements. This will be done to bring those demands of learning into other courses, and get those students into practice more quickly. The average length is two and a half years, or five semesters.

We must look at private versus public sector NP programs. Duke is the most expensive program because it is private. However, the state university system average is between $9,000 and $11,000. ECU is more economical at $9,300. This is tuition for the whole program, not per year.

Because Duke is privately funded, it is not included in these data. The trends here are from 2000-2004 and there were 95 programs in residential programs. In 2004, there were 204 students enrolled. There is an online option as far as the didactic program for NP education. There was a lot of creative work across the state to use distance education based on the blackboard format, so that students can go through a clinic and experience in a structured and standardized matter, what it is like to see patients all day. The faculty can see how the students react in the virtual environment. There is the residential component and the online component. Most programs aren't just one or the other. We have both.

From 1990-2005, there was a peak of NP graduates in the late 1990s and early 2000s, but then those numbers slow down to 72 students graduating from state NP programs in North Carolina in 2005. When you look at those students in the UNC system, you can see from 2003-2004, there was a total of 124, of those 77 % took their first positions in primary care settings. Most NPs are certified and credentialed in primary care areas. About 56% of NPs work in primary care in North Carolina. As NPs get experience, they may start practicing in more specialty programs.

There has been a decline in the number of NP graduates since 2000. Yet, there is an increase in the number of registered NPs in North Carolina, so a larger percentage of current NPs may be coming from other states. This data suggests that one explanation could be that there are many applicants who have yet to find employment in primary care. A lot are applicants, but don't have a job to go to at this point. A decrease in NP grads

can also be related to nursing faculty shortages, competition for clinical sites, and non-traditional students/part-time study leading to longer trajectory for graduation. In the early days of the program, they were usually all on-campus and comprised of young students. We now have a broad demographic of experience. We also have both full and part-time options. A number of our students choose the statewide option. They still must have jobs where they bring money in to support their families.

In 2004, the AACN proposed the Doctorate of Nursing Practice (DNP) as the entry degree for all advanced practice nurses, including NPs. There are currently 14 programs that already have the DNP program and have graduated students already.

NP education is standardized from regulatory and certification standpoints. It averages 48 hours, 5 semesters, and costs approximately $9300. There has been a sharp decline in NP graduates with a concurrent increase in NP registrants suggesting that large a percentage of current NPs are coming from other states.

Q: What is the relationship of the nursing market and the NP market in North Carolina over the last 5 years? Have the salaries for RNs in hospitals had an impact on NPs?
A: We have waiting lists for the NP programs. There is a market need for the services they supply. While nationally there is a nursing shortage, it is not impacting the NPs in North Carolina.

Q: Are the NPs as highly recruited to work after they finish?
A: That is a multi-factorial issue. NPs are highly recruited in primary care and family practice. Some of the issue is market saturation. For example, in the triangle area, there are a lot of NPs. Some NPs may not want to move to areas where there are higher demands. For the most part, NPs are very highly recruited and most are able to find employment in their area of study.

Q: To what extent will NPs be a significant part of the solution to healthcare, and primary care in particular? There is a lengthening time to completion of the program, a push for a doctorate, and a need for acute care setting. Seemingly, is it likely that there will be a significant number of NPs filling our healthcare needs?
A: There are already many NPs serving the needs. DNP is a hot topic. The literature suggests that Masters prepared level NPs provide high quality healthcare. However, if there is a mandatory doctorate level, it will increase time of program and decrease the availability to practice. Whether the issue of shortage in the general nursing areas will impact enrollment, we don't know.

Comment: The nursing shortage is a big problem for us, so we have taken some new NPs and made deals where half-time they are a nurse, and half-time the are an NP in training for the first few years. Then, we get two, so that we have a full time nurse and a full time NP. People have been calling us to take NP students.

Q: What is going on with those placements? There is a time factor with students in a practice.

A: Using a NP to fill the dual role with a generalist and a NP is two different issues because there are shortages in both areas. An NP already has the experience of the RN that they bring to the table. Whether or not that is the best use of their time is debatable. Dual roles of NPs is a unique use of their time in certain settings.

Comment: I think we should underscore the benefit of having distance education programs. What you are able to do is take someone in a community who would otherwise not be able to go to school and train them in that community. It is recruiting folks who traditionally would not have been able to go to school.

Q: What are the differences between the two avenues of certification?
A: Only the acronyms. In nursing, there is a history of having dual certification agencies. As the profession has evolved, the AANP, which is the oldest professional association of just NPs, then took on the role of developing and providing certification exams. One certification is no better than the other.

Q: Does an NP have to have a physician sponsor?
A: Yes, NPs require a relationship with a supervising physician. The agreement is defined scope of practice, based on education and certification.
Q: If an NP has chosen a psychiatric track, do they have to be supervised by a psychiatrist?
A: Yes, if they are practicing in a psychiatric setting, or doing advanced psychiatric nursing.

Comment: There is something screwy on the data on graduates because we have started so many more programs. We do have more going part time, but as that pushes through, we are increasing the number of NP graduates. We have many more students coming through the pipeline now than we did five or ten years ago. Also, we do pay preceptors who take NP students for their primary care precept through AHEC.
Comment: It really is just an integral lag. At ECU, the number of the students has tripled in the last few years.

TRAINING CERTIFIED NURSE MIDWIVES

Jackie Hutcherson, CNM, RN-C, MSN
School of Family and Community Nursing
East Carolina University

There has been growth in certified nurse midwives (CNM), but we aren't on the same level as physician assistants. Our CNM graduates are across the state, based on 2005 data. Forty-four of our CNMs are practicing in North Carolina as of 2005. They are practicing in rural areas, which meets the mission of our programs.

There are 195 CNMs currently approved to practice in North Carolina and 25% are ECU graduates. We see ourselves as being dually trained in nursing and the art of midwifery. We practice in many private sectors, including family practices and

obstetrics/gynecology. We also have a shared caseload. Many times the CNM does all normal births in the practice and the obstetrician is there for complications. This allows the obstetrician to be in solo practice, and/or focus on other gynecological surgery needs. Certified nurse midwives also work at health departments, federal clinics, hospitals, and university settings teaching medical students and residents in ob/gyn and family medicine. One way to change the practice is to have them work side by side with physicians. When Dr. Edward Newton came to ECU he wanted CNMs to teach residents normal birth, which is what we are best at. Hopefully residents are learning normal birth from CNMs. We see this as the future for us to continue to grow. There are also hospital based settings where there is a shortage of obstetricians and CNMs can fill an important gap.

In 2003, there were 11,513 resident deliveries attended by CNMs reported in North Carolina, representing 9.7% of all resident births. We don't know how many of these received prenatal care from a CNM. Also, some receive prenatal care, but aren't delivered by CNMs because they had a cesarean section. That makes it difficult to calculate the full impact of CNMs.

Primarily, we are at major universities and usually there is only one program in a state. There are different ways to teach nurse midwifery education. There are 37 nurse midwifery programs. Most of the education is obtained in a graduate level program. Eighteen of 37 programs have a master of science in nursing and three have PhD programs.

CNM started in 1981 and was based on a legislative effort. Our profession is the outgrowth of a task force. CNM programs are accredited by the American College of Nurse Midwives (ACNM). We have only one accrediting body. The curriculum is based on core competencies. The education or the curriculum would be similar at different schools. We all sit for a certification exam and 100% of our training is via distance education. The richness of distance education is evidence-based medicine, which allows us to challenge our students about their education and their reading. Graduate education is about reading independently and discussion in seminars. Seminars are done in small groups. They must present information back to us. They are a much smarter group of students. One of our students said it cost approximately $10,000 for the program. We have a 37 credit hour program. Cost is charged by the hour and it costs only $6,000 for in-state tuition, while out-of-state tuition is $29,000. We are very similar in terms of cost to our sister programs. Therefore, we have a lot of students that look to us to come here. Many move to North Carolina to get in-state tuition.

CNMs pay about $840 per year for malpractice insurance, and textbooks are also fairly expensive at $800-$1000.

Comment: We should consider giving students various options for getting into the Master of Science in Nursing (MSN) Program. The other way is a post graduate certificate for someone who has a master degree in some other program. The time component will be the same for each student, but it will be more part-time because

they already have a master's core. We actually have two programs to meet the demands of the nursing shortage. We have alternate entry to Master of Science in Nursing (MSN). Individuals with one bachelor degree can come back and in one intensive year are qualified to take their National Council Licensure Exam (NCLEX) and then they are qualified to start their Master program. We then ask them to gain experience through working. For our program, students will slow down to be a part-time student and work part-time. We have very bright women and men coming into that program. We only allow 12 students per year through the alternate program. We've only been through one cohort and we are trying not to grow too fast, so that we can maintain our standards.

One big area is prenatal care before delivery, the care during delivery, and newborn care. We also train our students about common primary care problems. This allows them to be sufficiently a part of a primary care setting. The last thing is preparing students to take the national exam.

We see that if we are to go forward, we have to keep growing. Fortunately, the program is growing. We got a continuation for our HRSA grant. In the first three years, that grant provided assistance for the distance education. Now, we are fine tuning the process. Our population is between 20 and 25% minority. Also, we are focusing to make sure that our preceptors are well taken care of because it is very important to have a site to train our students. We hope through this grant we can help them. A third focus is to realize our Hispanic population is growing and to see how we can incorporate training with the Hispanic population and training in Spanish. We traditionally send our students back to where they come from. They can do most of their education in their homes, look at providing clinical settings, and use the resources of AHEC for housing to accomplish this. It is also a changing student population. Most students used to be full-time, but now they aren't. Lastly, we've seen an in surge of students, which has been wonderful. We may have to limit our enrollment because we don't have enough clinical sites.

Q: How big is the class?
A: Twenty-six students, but we will see four students graduate this spring. Eleven students graduated last spring. We will have seven students in their second year and 12 in first year in the fall. We are working towards having 12 students in the first and 12 in the second year.

Q: Are there plans to expand if you have the clinical sites?
A: The dilemma is CNMs have to be trained by CNMs. Sometimes we can use NPs and physicians, but this is what limits us. If we expand, one may have to go outside the state, because then we would have more clinical sites.

Q: Are students having trouble finding jobs?
A: If they are willing to move, they can usually find jobs. Many graduates have created positions for themselves.

Q: Is there any relationship between CNMs and lay midwives?

A: The art of midwifery is the same, but we are drastically different in training and educational preparation. Professional nurse midwifery has some of the same education, but it isn't as consistent. They have a very different kind of education. We perceive ourselves as being different, although the art of midwifery is the same. Also it is not legal to be a lay midwife. Most of our births are done in a hospital. No lay midwifery births are performed in a hospital.

Q: Sponsorship. Do you have to have a physician sponsor?
A: The approved practice must have a physician signature, but it can be a family practice doctor.

Comment: A multi-disciplinary community based advisory group was formed at ECU. We sit down monthly to talk about clinical preceptorships. It has been very useful to talk about common issues and sit with our AHEC people and try to look at how we can best utilize our preceptors for all of our programs, so that we aren't competing for them. Once a year we have a preceptor education day for all preceptors and that has been very useful for providing as much information as we can for the preceptors.

Policy implications to address the provider shortage issue.
Our charge is to describe the problem and come up with potential solutions, including the following:

- Expanding the class size for allopathic schools.
- Starting new medical schools in North Carolina – allopathic or osteopathic.
- Contracting for osteopathic slots in schools that already exist.
- Expanding the number of PA or NP schools or students.
- Changing admission policies towards a focus on what we are trying to accomplish by focusing on North Carolina students, rural residents, and underrepresented minorities.
- Focus on expert teachers who are paid and supported to teach, underrepresented minorities, and support for students.
- Community-based medical education. Make sure clinical sites are appropriate and high quality. We also need to provide more help for preceptors.
- Incorporate more of a team-based approach into health-based education. Learn how to develop a team-based approach, not just train in the same place.
- Incentives to get people into primary care and other underserved specialties.
- Scholarships and loan forgiveness programs.
- Effective use of distance education for didactic part of education.

Q: Medical student slots are supposedly high compared to the rest of the county (per capita). Is that true?
A: In terms of medical school slots, we are a little bit above the middle, but not very high.

Comment: The common theme across providers is declining interest in primary care. Some attention has been given to the needs, but we have not addressed the issue of dealing with systematic problems that may exist. Also, we need to ensure the training is focused on chronic diseases.

Comment: I think this team-based approach and the chronic disease management idea is good, but it is not paid for in the fee-for-service model.

Comment: The MMA asked for some demonstrations to do that and there is the ability to design some way to create reimbursement mechanisms and those are now beginning. They are actually going ahead, but unfortunately it is being done with CNS approval. They haven't determined costs of these programs. The concept will be carried out in clinics, but the financial structure hasn't been worked out.

Comment: There is a shortage of clinical sites in the community and there is pressure growing on the system because it is bearing on the productivity side for everyone.

Comment: There are very high levels of preceptor satisfaction in North Carolina.

Comment: The financial issues do not show up on the top of everyone's list. Duke's PA program has a bootcamp, where students are taught how not to be a drag.

Meeting Adjourned