

NC Institute of Medicine
PRIMARY CARE AND SPECIALTY SUPPLY STEERING COMMITTEE

Durham, NC
October 18, 2005

Meeting Summary

Steering Committee members: Thomas Bacon, Harvey Estes, Jr., John Frank, Bob Golden, Frank Harrison, Pam Highsmith, Donald Jablonski, Anita Jackson, Kathy Johnson, Jay Kennedy, Nancy Mathias, Jim McDeavitt, Teck Penland, Shiva Rao, Thomas Ricketts, III, Barbara Rowland, Marvin Swartz, Justine Strand, Tork Wade, Cathy Wright

Staff: Kristen Dubay, Thalia Fuller, Katie Gaul, Michaela Jones, Jen King, Andrea Radford, Pam Silberman

WELCOME AND INTRODUCTION

E. Harvey Estes, Jr., MD

Chair, Steering Committee

OVERVIEW OF THE PROJECT

Pam Silberman, JD, DrPH

President & CEO

North Carolina Institute of Medicine

The North Carolina Institute of Medicine (NC IOM) was chartered in 1983 by the North Carolina General Assembly to provide non-political analysis and advice on major health issues facing the state. An emerging issue, facing North Carolina, is the supply of primary care and specialty providers. Current data from the NC Health Professional Data System indicates that physician growth is no longer keeping pace with the population growth in North Carolina. The NC IOM, in collaboration with North Carolina Area Health Education Centers (AHEC) program and the Southeast Regional Workforce Center of the Cecil G. Sheps Center for Health Services Research, agreed to work together to study this potential problem. The goal of this study is to identify likely provider shortages, both in terms of provider specialty (e.g., OB-GYN, surgeons, psychiatrists, geriatricians, pediatric subspecialists, primary care), or areas of the state experiencing persistent shortages, and to address these potential problems before we are in the midst of a full-blown crisis. Another focus is to evaluate the needs of underserved population groups (e.g., uninsured, immigrants, frail and elderly) in determining the types of providers we need in the future.

Generally, the NC IOM creates a task force, comprised of between 40-60 people, to study important issues facing the state. However, the NC IOM's normal structure was changed for addressing this issue. Instead, a smaller steering committee (approximately 25 people) will meet over the next six to seven months. The steering committee will help

determine what data are needed and develop possible policy options for the state to consider. At the end of this time, the NC IOM will host two larger one-day consensus conferences including a much larger group of stakeholders (e.g., legislators, media, the CEOs of the academic health centers, Directors of AHEC programs, and other health professionals). The data and policy options developed in the steering committee will be presented to the larger group for input. The two large-group sessions will culminate in a report that will be disseminated to policy makers, legislators, and other stakeholders and interested individuals. In addition, an issue of the NC Medical Journal will be devoted to this topic, so the information will be widely distributed across the state.

The goal of this study will be to develop public and private policy options to ensure that North Carolina has an adequate supply of providers distributed throughout the state. Some of the options may include:

1. Increasing the supply of medical students
2. Increasing the number of residents trained in NC residency programs
3. In-state retention efforts
4. Efforts to increase the availability and utilization of non-physician mid-level practitioners, such as nurse practitioners and physician assistants, in the provision of primary care services where supply of physicians remains a problem
5. Out-of-state recruitment efforts
6. Quality of life issues
7. New models of primary care delivery

TRENDS IN PHYSICIAN SUPPLY IN NORTH CAROLINA

Thomas C. Ricketts, II, PhD

Deputy Director

Cecil G. Sheps Center for Health Services Research

The University of North Carolina at Chapel Hill

Dr. Ricketts noted that the initial focus of his research has been on physicians and how physician supply relates to other types of practitioners. The goals for the presentation are to highlight emerging trends in the supply of physicians, nurse practitioners, and physician assistants; to closely examine the characteristics of physicians who are new to practice in North Carolina; to estimate the future supply of physicians for the state under optional scenarios; and to review some medical workforce policy options in other states. The physician supply is growing, but the rate of growth has slowed.

Q: Does a slowing rate of physician supply growth mean an emerging physician shortage in the state, or will it be matched by slow growth and decreasing needs of the population?

A: We know that population growth is greater than the physician supply growth. We will have to consider whether this will be problematic in the future. National estimates are predicting a physician shortage in the future. In recent months, some national bodies predict there will be greater demand for physician services than

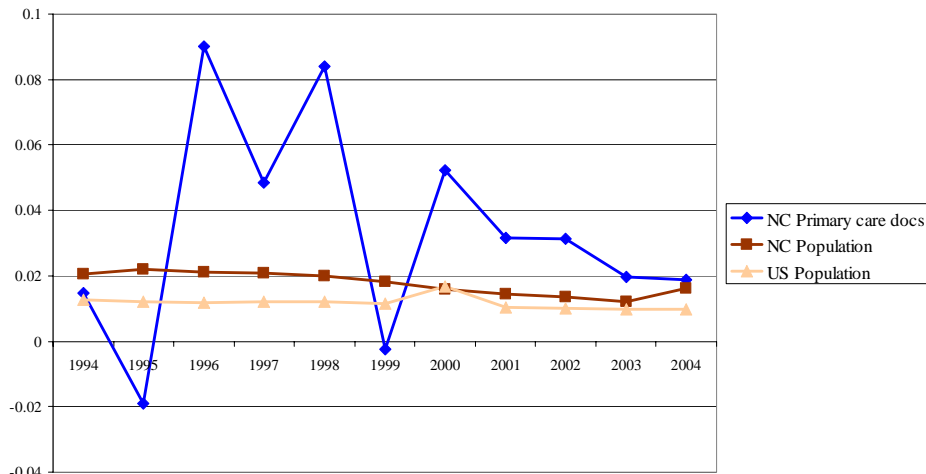
supply. North Carolina reflects those trends and is part of the larger national trend.

North Carolina's population is growing faster than the United States' population and will probably experience a decline in physicians-to-population in the near future. The supply input into medical practice has flattened, while the population is growing. North Carolina is moving ahead of the nation, in terms of population growth, and has a robust growth pattern despite an economic slow-down.

North Carolina's primary care physician growth rate surpassed the national growth rate in the 1980's, but currently North Carolina's growth rate is equivalent to the national one. Internal medicine and family practice have continued to see growths in provider supply, but this growth is not proportionate to the growth in the state's population.

The overall primary care physician supply has had a moderate growth rate from year-to-year (generally between 2-5%) (Chart 1). There were some fluctuations in the 1994-1995 time period, part of which was due to changes in how the licensure data was captured. (Better data are now available as a result of NC Medical Board changing its licensure registration to an online format). In recent years, North Carolina primary care physicians' growth rates are closer to the state's population growth. The question that arises is whether or not that growth rate will go below the population rate.

Chart 1: NC Primary Care Growth Now Equal to National Rate of Change



Source: US Census Bureau, NC State Demographer, Popworksheet.xls

In the national context, there has been static production of physicians from the allopathic medical schools. Florida the only state to open a new allopathic medical school (Florida State University), and may open another soon. Texas Arkansas, and Mississippi are also considering opening new medical schools. On the other hand, osteopathic schools have seen growth. For example, there are two new osteopathic medical schools in Florida, and new schools were opened in Nevada, Atlanta, Kentucky and Virginia. These are entrepreneurial medical schools that are taking advantage of medical demand. There is growth on the osteopathic side in the number of students, but it is a small proportion of the total number of physicians produced each year.

From the national context, states are facing a need to expand residencies. Utah has collaborated to form the University-Intermountain Consortium, which is an investment to increase supply. The President and Congress are not enthusiastic supporters of medical school training or other medical programs, such as nursing. They have cut programs, such as Title VII, in many of the past budgets. Currently, funding for Area Health Education Centers and other training programs are at serious risk because of the need to reduce the budget deficit.

There is a growing consensus that there will be a provider shortage in the future, although not every organization agrees. For example, the Association of American Medical Colleges predicts a provider shortage, however the American Academy of Family Physicians does not have the same projections. There is no unanimity among the professional groups that a national shortage is occurring despite the facts that: medical school enrollment has remained flat for the past ten years; the baseline of practitioners in the US has not expanded; the influx of international medical graduates is stable, but the total number of US residents is growing.

The Dynamics of Change in North Carolina.

In 2001, North Carolina had 1,600 new physicians who entered practice in the state. Some of those went into an active practice, while some opened a new practice. In the same year, there were 1,304 physicians who left practice (for a net gain of 377 physicians). In 2003, there was only a net gain of 250 physicians.

Q: Who is included in the statistics on people leaving? Does it include those who retire, left the state, or die? If you leave the state, do you have to give up your license to practice in North Carolina?

A: Those included in “leaving” the state are those that gave up their licenses, retired, or died.

Between 2002-2003, 143 physicians retired from practice, 330 moved out of state but maintained active licenses, and 658 left and there is no record of what happened. They gave up their license for various reasons. These data come from the NC Medical Board and it is very helpful that they have shared this information.

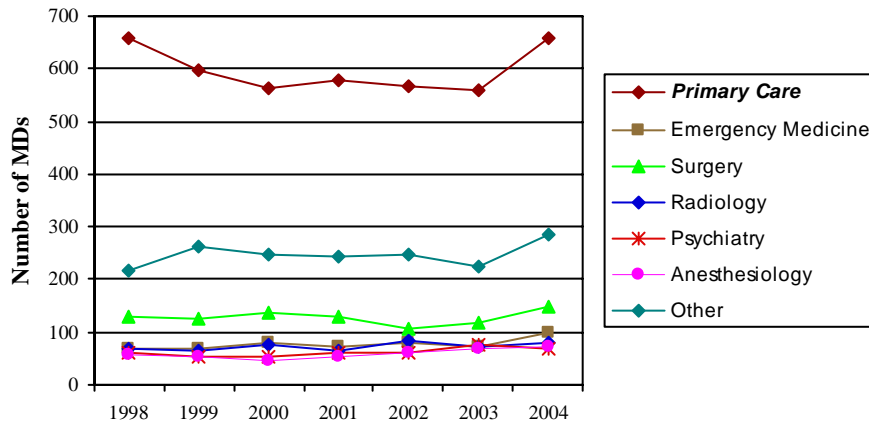
About half (51%) of the physicians that became inactive were women. The average age of inactive females was 42, compared to age 59 for inactive men. Supply trends should consider the practice patterns of women separately from men. Females can be choosing to become inactive due to family reasons or other jobs. Older male physicians may be more likely to become inactive because they are preparing for retirement. Every year, up to 20% of all physicians move into or out of active practice in North Carolina. This demonstrates very dynamic change. This is viewed as status change. The person may remain in the state, but is not available for patient care.

Overall, the number of newly licensed physicians has remained relatively stable between 1998 and 2004 (although there was a slight increase in newly licensed primary care

physicians between 2003 and 2004) (Chart 2). There has also been a relatively stable distribution across specialties.

General surgery is a very small percent of physicians and that is a major need. They may suffer problems of production and quality, where demand will not meet supply.

Chart 2: Newly Licensed Patient Care Providers in North Carolina, 2004



Many new patient care physicians in the state went to North Carolina medical schools (approximately 230 of the new patient care physicians in 2003 went to a North Carolina medical school). Fewer new patient care physicians were international medical graduates (87 in 2003), but this is equal to any of the North Carolina medical school graduates. Most of the new patient care physicians go to medical school outside of North Carolina.

A greater percentage of new patient care physicians do a residency in North Carolina. For example, twenty one percent of new family practitioners completed their education at a North Carolina medical school and 35% completed a residency in North Carolina. There is a better return from residency versus medical school.

The make-up of newly licensed physicians in North Carolina in 2004 was:

- 272 (19%) Internists
- 189 (13%) Family Medicine/General Practice
- 126 (9%) Pediatrics
- 73 (5%) Ob/Gyn
- 71 (5%) Anesthesiology
- 70 (5%) Psychiatry
- 50 (4%) General Surgery
- 562 (40%) Other Specialty

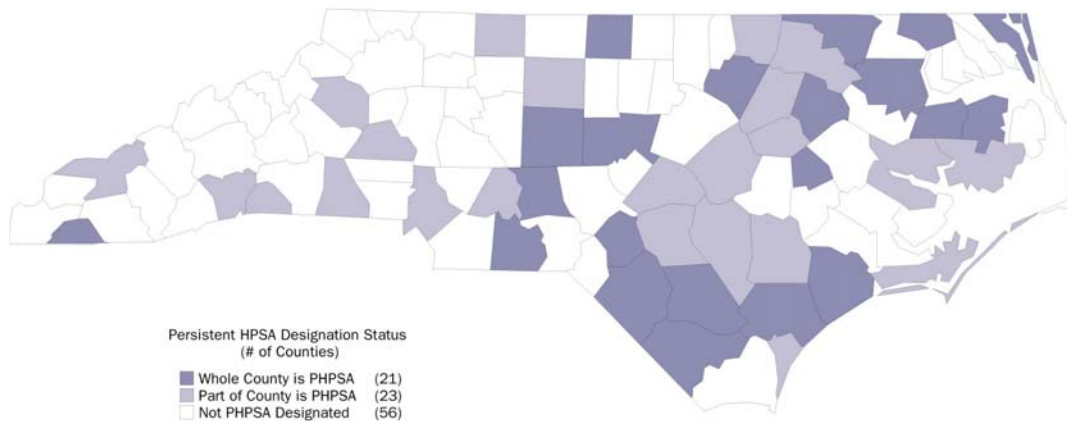
More than eight percent of newly licensed physicians perform obstetric deliveries, compared to 6.4% of all physicians. There is some slow-down in the number of people who are performing those procedures.

Newly licensed physicians were more likely than active physicians to be female and minority. The average age of newly licensed physicians has grown over time. New physicians are most likely to work in hospitals or hospital systems. This change happened in 1999, when physicians began working more in hospital settings than in other settings.

Emerging Problems in Underserved Counties

There are emerging problems in underserved counties, which are called Health Professional Shortage Areas (HPSA). HPSAs are federally designated areas that are eligible for certain federal programs. The designation is based on a number of factors, including primary care physician-to-population ratios. *Persistent* HPSAs are those that have been designated shortage areas consistently over time and those are the most important to analyze (see Map 1).

Map 1: Persistent Health Professional Shortage Areas (PHPSA), North Carolina Counties

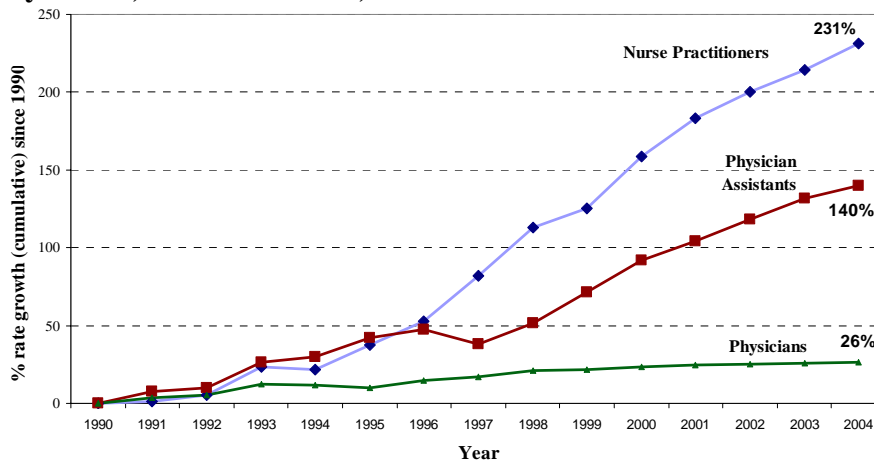


*Persistent HPSAs are those designated as HPSAs by the Health Resources and Services Administration (HRSA) from 1993 to 1997, or in 6 of the last 7 releases of HPSA definition.
 Source: Area Resource File, HRSA, DHHS, 1998.
 Produced by: North Carolina Rural Health Research and Policy Analysis Program,
 Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

Between 1979-2004, there has been a steady increase in primary care physicians (PCP) per 10,000 population in areas of the state that are not considered health professional shortage areas, or in counties where only part of the county is considered a shortage area (part county persistent HPSA). There was also an increase in the PCP to population ratio in persistent HPSAs between 1979 and 2001, but beginning in 2002—that ratio leveled off. Therefore, the future provider supply issues may be focused in the persistent shortage areas.

The Sheps Center is beginning to look at the nurse practitioner and physician assistant data. It is clear there is dramatic growth of nurse practitioners and physician assistants in North Carolina and the cumulative growth is very high (Chart 3).

Chart 3: Cumulative Growth of Nurse Practitioners, Physician Assistants and Physicians, North Carolina, 1990-2004



Q: Are nurse practitioners and physician’s assistants going to places where physicians are leaving?

A: No, they are mostly mixed in where they locate.

Q: Are nurse practitioners and physician assistants mostly educated in North Carolina or out of state?

A: We don’t know yet, but we expect it will mirror the physician trends.

There is a slight change in the distribution of primary care providers, including physicians, nurse practitioners, and physician assistants. Over the last five years, nurse practitioners and physician assistants are making up a larger portion of the primary care workforce. For example, nurse practitioners and physician assistants represented 22% of the workforce in non-metro areas in 1988, and 28% in 2003. Similarly, they represented 16% of the workforce in metropolitan areas in 1988, compared to 22% in 2003. Nurse practitioners and physician assistants are more likely to be located in counties where the whole county is a health professional shortage area (as a proportion of the overall primary care workforce), but the rate of growth in those counties is slower than in other areas.

Q: Do the nurse practitioners include midwives?

A: Yes.

Health profession shortage areas show that the proportions of nurse practitioners and physician assistants are growing. There are larger proportions of nurse practitioners and physician assistants in the health professional shortage areas, but their growth rates have been slightly faster in the non-shortage counties. In particular, the growth rates seem to be higher in areas where there are more physicians.

Q: Has the definition of health shortage area been the same over the years?

A: Yes, there has been no change in its definition.

The trend of physicians delivering babies has been fairly stable, growing at a rate similar to that of the population growth rate. However, of the 101 physicians who stopped providing obstetric deliveries between 2003 and 2004, 56 (56%) were family physicians. This is a disproportionate share since family physicians are just 13% of total physicians and 10% of physicians delivering babies.

- Q: When did the state drop the assistance to family physicians for performing obstetrics services? Wasn't the states' assistance known as the Rocky clause?*
A: Two years ago it stopped, but had become defunct over the past six or seven years. There is no state support now for the Rocky clause.

The average age of new physicians in North Carolina is 38.5 years. The newer physicians are getting older. Therefore, North Carolina is looking potentially at physicians with a shorter practice period.

- Q: To what extent does this reflect the older age of students leaving medical school, versus more physicians coming from other states to practice in North Carolina.*
A: We don't have that information, but we can try to find it.

Thirteen percent of North Carolina physicians are international medical graduates. This is relatively low compared to the national average of 24%. North Carolina is not an importer of international medical graduates. It doesn't have aggressive programs to bring them to the state nor are there aggressively expanding communities that would require the state to do so.

- Q: Do we know the male/female ratio of new residence in NC?*
A: No, but we can locate this information.

Osteopathic physicians have joint practices in the state, and they are a small, but growing component of physician supply. The field is currently experiencing rapid growth, at a rate greater than 10% per year. This growth may be the result of an effective expansion of osteopathic schools in the state. It is also one example of a dramatic growth trend of physicians in the state, but still represents only 2.2% of the total physician supply.

Pathways into Practice in North Carolina

There are three pathways through which physicians come to practice in North Carolina. They are from medical schools, residency programs, and in-migration from practice in other states. From there, physicians may choose to practice in metropolitan or non-metropolitan areas, or underserved areas or health professional shortage areas. Of the primary care physicians working in non-metropolitan areas, 55% studied in medical schools in US states outside of North Carolina or in Canada, 29% studied in North Carolina medical schools, and 16% were international medical graduates. Based on their training, international medical graduates had the highest percentage of primary care physicians that worked in non-metropolitan areas at 33%, compared to 24% of all primary care physicians that trained at both North Carolina medical schools and medical schools in other states and Canada.

The greatest percentage of primary care physicians working in health professional shortage areas are medical graduates from other US states and Canada. They account for 46% of primary care physicians in whole county health profession shortage areas (HPSA) and 58% of those in part county health profession shortage areas. North Carolina medical graduates and international medical graduates account for 29% and 25% of those in whole county HPSAs and 29% and 13% in part county HPSAs. However, looking at the data from the standpoint of medical education, international medical graduates have the greatest percentage of their primary care physicians working in whole county HPSAs (10%) and part county HPSAs (38%). By comparison, of North Carolina medical graduate primary care physicians, 5% work in whole county HPSAs and 34% in part county HPSAs. The percentages for physicians from US states and Canada are 4% and 35%, respectively.

Q: Is this a reflection of where rural health recruits from?

A: No, the Office of Research Demonstrations and Rural Health Development recruits from all groups, but the focus is always on home-grown North Carolina physicians.

A: The realities of the market are that a lot of practitioners come from areas/locations over which you have no control. The supply issue will not be completely solved by what we do, however we can make incremental differences.

Table 1: Practice States of Physicians Born in North Carolina

State	Practicing Physicians born in North Carolina
North Carolina	3354
Virginia	506
Georgia	375
South Carolina	375
California	359
Florida	339
Tennessee	304
Texas	279

Of physicians in the United States that were born in North Carolina, the top states to practice, other than North Carolina are the southeast states, California, and Texas. However, most remain in North Carolina to practice medicine. Looking at it from the standpoint of birth states of practicing North Carolina physicians, data indicate that the top five states are North Carolina (3354), New York (1691), Pennsylvania (1000), Ohio (817), and Virginia (708).

5,812 North Carolina medical graduates remain in North Carolina to practice. The top states (other than NC) from which physicians practicing in North Carolina received their medical degrees include New York (1,111), Pennsylvania (1036), Virginia (984), Ohio (817), and Georgia (658). North Carolina has more physicians from other states than it trains in state. The places from which they come are significant components of supply.

Projections of Future Supply

Projections of future supply indicate that, around 2008, the growth rate of the population will exceed the growth rate of primary care physicians. The growth rate of all physicians has met the population growth rate. North Carolina may begin to feel as though it is losing ground against the population growth, which could give a perception of lower productivity.

In recent weeks, the Sheps Center for Health Services Research has analyzed some of the numbers of physicians displaced by hurricane Katrina. Immediately, physician recruiters from all over the US began calling the Sheps Center looking for names of physicians that they could recruit. Over 100 telephone calls were received. This is reflection of the high national demand for primary care physicians.

Q: Considering the supply of primary care physicians, in terms of internal medicine and family medicine, do you know how many internists are actually primary care providers?

A: We have primary and secondary indicators in the file. These are what we consider more than likely primary care.

Q: What are the turnover rates of physicians in health professional shortage areas?

A: We can't be completely certain, but we could estimate it using data on new primary care part-time versus full-time physicians versus people who have been in practice for a while. Also, there is a national listing of student loan repayment physicians that can be crossed with the data.

Q: Have you analyzed the projections of population growth rate for the state in a regional manner?

A: Yes, we can make county estimates. I wouldn't make estimate by county, but rather by region. In the mountain states, there are issues of immigration and retirement which may inflate/deflate the projections. There are counties in the state that are losing population and practitioners. Some counties are gaining population faster than the medical community can accommodate.

Q: Do we have comparison data of the diversity of physician cohort changes versus diversity in population?

A: There is a growing number of minority physicians, but the percentage is still very far behind the population's demographics. The Latino physician community, in particular, lags behind the ratio within the population.

Comment: If you accept the idea that the diversity of physicians should mirror the population's demographics, then we should include this in the study.

Q: Is there state data for physician income?

A: The American Medical Association has state estimates of income. North Carolina is slightly below the curve in terms of per physician payment.

Comment: While interviewing residents, it has been noted that cost of living is one factor that attracts them to NC. I wonder if the cost of living compared to income is another factor.

Comment: In the analyses of the dynamics physicians entering and leaving the state, it would be useful to separate physicians who are practicing in the university medical schools and those who are not. We have more that work at the medical schools in academic areas. I bet those numbers are different than those in private groups. If we want to focus on the physicians in rural areas, we may want to take out some of the noise that could come from turnover in the academic areas. It would also be interesting to know more about where they go when they do transition into a private practice setting.

One thing that would be helpful from the steering committee is to determine what background information is needed to determine where North Carolina should focus to ensure that primary care and specialty provider supply does not become a problem in the state.

CONCLUSION

In an effort to determine the background information needed, steering committee members were asked what additional questions or data they would like to see in order to help examine the primary care and specialty supply. A list of questions was generated and is listed in Appendix A.

Dr. Silberman summarized some of the issues that were discussed. Some of the broader issues to explore include:

- 1) Specialty areas (OBGYN, cardiologists, physician assistants, nurse practitioners, CNMs). This includes looking at some of the population factors that would affect North Carolina's need for certain types of providers.
- 2) Areas of the state- regions, health profession shortage areas, rural/urban. Where are providers locating? In-migration versus out-migration.
- 3) What are potential solutions? Medical school and residency issues. Are we training, recruiting enough? Do we have the right types of training programs? Recruitment retention efforts, scholarship loan forgiveness, training in other communities. What has worked?
- 4) New models of healthcare delivery, quality of life issues. Reimbursement issues, team approach to providers. Tele-medicine.

APPENDIX A
Primary Care and Specialty Provider Supply Questions
Raised by Steering Committee
October 18, 2005

General issues:

- ✓ Look at historical workforce efforts in the past (e.g. past predictions for over/under supply and what actually occurred)
- ✓ Examine national AAFP provider supply predictions (using different model of practice)
- ✓ Trends in part-time vs. full-time
- ✓ Trends in numbers of practitioners who speak Spanish

Specialty areas (including NP, PN, CNM) (including population trends that would impact on specialty—e.g., children/elderly, emergence of chronic diseases); demographic makeup of providers

- ✓ Hours in practice by specialty (e.g., part time/full time)
- ✓ Diversity of practitioners (as it compares to diversity of the state's population)
- ✓ Physician/provider income data by specialty
- ✓ Length of time in practice (in private practice vs. academics)
- ✓ Growth in geriatric population, children, chronic diseases
- ✓ Are there certain types of providers that we are experiencing shortages? Are there national guidelines to look at specialty rates? How to determine shortages?
- ✓ Supply of OB/GYNs or other practitioners who deliver babies, did changes in ROCI laws make a difference in supply of providers who deliver babies
- ✓ Physicians/other providers who have left practice by type of professional
- ✓ Trends by specialty area (psychiatry, general surgery, OB/GYN, cardiology, pediatric subspecialists, geriatricians, other)
- ✓ Growth in hospitalists
- ✓ Want information on specialties of providers who left practice
- ✓ What types of practices are NP/PA/CNM entering (e.g., are PAs entering academic health centers? Are CNMs delivering babies?)
- ✓ Changing ages of different professionals (by specialty)

Areas of state—distribution issues (including population trends and economy)

- ✓ HPSAs: provider-to-population ratios, turnover rates, supply of providers to uninsured
- ✓ Projection of population growth in different regions/counties; rural/urban
- ✓ Provider income vs. cost of living in different areas of state
- ✓ Average panel size for doctors (urban/rural; FNP/PA vs. physician)
- ✓ Supply of providers to uninsured across state
- ✓ Need to examine provider supply for HPSAs, rural/urban separately for PA/NP/MD/DO/CNM

- ✓ Physicians/other providers who have left practice by rural/urban/ HPSAs
- ✓ Where are hospitalists located
- ✓ Payor mix of providers in rural/urban areas or HPSA, non-HPSAs (e.g., who is serving the uninsured)?
- ✓ Growth of Latino population and impact on practice (e.g., CNM, OB/GYN or other practices that have a large Latino practice without source of payment)
- ✓ Comparison of numbers of births by region to practitioners who deliver babies

Medical school training/residency programs (osteopaths, allopaths, residency programs, training of NP, PA, etc.)

- ✓ Total numbers of residency slots?
- ✓ Are residency slots being filled? By whom?
- ✓ Trends in residency slots over the last 10 years (can we graph filled residencies year by year to see trends)?
- ✓ Trends in newly licensed providers, how to train them and keep them here
- ✓ Why do residents leave the state?
- ✓ Age of medical students, PA, NP, CNM? Are students getting older? If so, what does that tell us about years of potential practice (YPP)?
- ✓ Retraining possibilities (e.g., specialists to primary care)

Recruitment/retention efforts (including scholarship, loan forgiveness, medical school or residency training programs)

- ✓ Retention for different loan forgiveness/scholarship programs (i.e., track record) (e.g., state ORH programs, community practitioners, NHSC, other)
- ✓ Overview of past recruitment and retention efforts
- ✓ Recruitment of IMGs
- ✓ The 10 states listed in slides 42-45, what percentage of the total number of providers trained do these 10 states represent?
- ✓ Examine recruitment efforts based on years of potential practice (YPP)
- ✓ Recruitment success for hospitals?

New models of healthcare delivery/quality of life issues (use of teams, telemedicine, lifestyle, income/educational loans, influence of disruptive technology on workforce)

- ✓ Tort reform and impact of malpractice liability on medical practice
- ✓ Practice economics (debt of average medical students)
- ✓ Licensure laws as compared to other states (MD, DO)
- ✓ Trends in PCP and whether they have admitting privileges to hospitals
- ✓ Relationship of per capita income of community/region to per capita number of providers
- ✓ Salary differentials for safety net providers vs. those in private practice
- ✓ Different models of provider supply when incorporate NP/PA into mix
- ✓ Other potential practice models to address unmet mental health needs