Collaborative Scopes of Care
ADVISORY COMMITTEE

Final Report of Findings

EXECUTIVE SUMMARY

December 30, 2008

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Acknowledgements

Many individuals played important roles in the deliberations and final report of the Scopes of Care Advisory Committee, most importantly the members themselves. The consensus-building skill and evidence-based science expertise of its chair, Ned Calonge, M.D., Chief Medical Officer of the Colorado Department of Public Health and the Environment, deserve special recognition. Dr. Calonge brought the committee through a number of potentially contentious discussions to a place where consensus was both possible and attained.

Jessica Waclawski, research assistant at the Colorado Health Institute (CHI), sat by Ned's side, supporting the work of the Committee with great finesse, cheerfulness and responsiveness as the many drafts of the final report were being written. Claire Brockbank and Deb Van Houten, consultants to CHI, were diligent in their reviews of the evidence supporting the practice of APNs and PAs as primary care providers and tracking down the additional facts necessary to support the findings of the report. Pam Hanes, Ph.D., President and CEO of CHI provided overall guidance to the staff and served as primary editor of the final document.

The staff and consultants of CHI would like to extend their heartfelt thanks to all committee members as their active engagement in the process and drafting of the final report made our work much easier and enjoyable. It was an honor to be a part of a process that will have significant policy implications for some time to come.

Finally, the Governor's Office would like to acknowledge The Colorado Trust and Caring for Colorado Foundation for their generous support of the Collaborative Scopes of Care study.

Collaborative Scopes of Care

ADVISORY COMMITTEE

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- The Honorable Sara Gagliardi, State Representative
- Susan T. Miller, Healthcare Section Director, Colorado Division of Regulatory Agencies

Executive Summary

On February 7, 2008, Governor Ritter issued Executive Order B 003 08 establishing the Collaborative Scopes of Care Study and creating an advisory committee to oversee the conduct of an evidence-based review that would inform the study findings. In issuing this executive order, the governor acknowledged that "it is clear from health manpower studies that we do not have sufficient numbers of providers, especially physicians and dentists, to meet the current [health care] needs of Coloradans. This problem is especially acute in rural and other underserved areas." Further, Governor Ritter called for a research group to "undertake a study of scopes of practices for advanced practice nurses, physician assistants and dental hygienists in terms of the services that are delivered, the settings in which those services are delivered and the quality of care provided."

The purpose of this evidence-based review is to assess studies that directly relate to the following three key research questions:

1. What are the quality, safety, efficacy and cost-effectiveness issues related to utilizing advanced practice nurses (APNs), physician assistants (PAs) and dental hygienists (DHs) as primary care providers, paying particular attention to the provision of primary care provided to underserved populations?

2. What is the quality, safety and efficacy evidence for utilizing independent practice certified registered nurse anesthetists (CRNAs) in anesthesia settings?

3. Are there models of care, care settings or aspects of care settings including relationships between different providers that have been shown to improve access to quality primary health care when employing APNs, PAs and DHs?

The focus of the study was collaborative models of *primary health care* delivery. The definition of primary health care utilized to answer the study questions was "basic physical, oral and mental health care provided by physicians, dentists and other health care professionals such as advanced practice nurses, physician assistants, certified nurse midwives and dental hygienists who are licensed to provide preventive, early intervention and continuous health care services. Primary care is ongoing and can involve the establishment of a medical home for individuals at all stages of the life course from pregnancy and childbirth through old age."

For the purposes of this study, obstetrics, gynecological and anesthesia care provided in rural areas in particular were included in the evidence-based review because of the unique obstetrics and anesthesia access to care issues that are encountered in many rural areas of the state.

Physician Assistants: Evidence from the Literature Review

The literature search identified a total of 430 articles. From these articles, 27 qualified for a full article review and nine studies were considered to have sufficient evidence to be included in the report. Three of the nine articles were also included in the APN review where PAs were included in the study design.

All of the studies were observational. Five articles grouped PAs with NPs together and assessed quality, outcomes and/or processes of care relative to that provided by physicians. The heterogeneity of the studies limited our ability to present a set of findings across the studies related to specific aspects of quality, outcomes or efficacy.

PA studies generally occurred prior to 1980, when the profession was young and resulted in an emerging literature as evidenced in the studies identified through the literature search tools. PAs

practice under state medical practice acts and as such have a statutorily defined relationship with a supervising physician; thus, controlled experiments concerning scope of practice are less frequent than for other non-physician primary care providers such as NPs and certified nurse-midwives (CNMs) who function under a separate practice act.

Quality of care

The quality of care in the studies reviewed was found to be comparable between PAs, NPs and physicians, particularly with regard to diabetic care. Other differences, however, were noted between NPs and PAs. [i,ii] For example, an analysis of data from the National Ambulatory Medical Care Survey (NAMCS) for the period between 1997 and 2002 found a significantly larger proportion of NPs practicing in primary care settings when compared to PAs (60% vs. 31%). Another study found that PAs were more likely than NPs to work in a community health center. Still another study found NPs were significantly more likely to assess HbA1c and lipid levels in their diabetic patients than PAs (80% vs. 58%) and that these assessment rates were similar to those of physicians.[iii]

Processes of care

The process of care outcomes most often studied included prescribing, referrals and practice patterns. One study found that a large majority of PAs appropriately were referring their patients to a physician for follow-up care—79% referred up to 10 patients a week to their supervising physician and 75% referred a similar number of patients to a non-supervising consulting physician each week.[iv] In the analysis of NAMCS data, researchers found that PAs practicing in a rural area prescribed fewer medications than those practicing in an urban area as well as fewer than NPs and physicians practicing in rural areas. The mean number of medications recorded per visit was similar across all provider types. PAs and NPs at tertiary hospitals in Ohio and Pennsylvania included in one study were more likely to include a patient's social history in admission notes than physicians to whom they were being compared.

Patient satisfaction

Only one study analyzed patient satisfaction within a closed panel model HMO. An 8-item questionnaire was administered to patients to assess satisfaction with their primary care provider type and no statistical differences were found between physician and non-physician providers.

Access to care

Two of the studies reviewed discussed dimensions of access where type of payment was found to increase the likelihood of utilizing a PA or NP with the exception of payments within an HMO that increased the likelihood of utilizing a physician. Practicing in a rural setting had a significant and positive impact on the use of PAs and NPs for a primary care visit, but the study was conducted in a hospital outpatient clinic, thus limiting the application of the study's findings to other care settings.[v] In a study undertaken in California and Washington, PAs were significantly more likely than physicians to work in a rural area, including health professional shortage areas (HPSAs). PAs were also more likely to provide care to vulnerable populations.[vi]

In general, the studies reviewed found no significant differences in patient outcomes or satisfaction with the care provided by PAs when compared to physicians.

Advanced Practice Nurses: Evidence from the Literature Review

The literature search returned a total of 1,116 articles—778 related to NPs, 191 related to CNMs and 147 related to CRNAs. From these articles, 122 qualified for a full article review which produced 17 studies that met the criteria to produce an evidence basis. Twelve studies were specific to NP practice,

four to CNM practice and three to CRNAs. Two of the studies examined both NP and CNM practice in a community setting.

Twelve studies took place in a primary care setting and five in a hospital setting. One intervention occurred in Colorado, while two of the three systematic reviews were conducted in the United Kingdom, all of which contained studies conducted in the U.S. Ten studies dealt exclusively with an adult population, four included a pediatric population and in the three meta-analyses, the patient populations were not specifically discussed. One systematic review focused on the quality of care provided by NPs and CNMs relative to physician care. Three studies were randomized case-control studies that compared the outcomes associated with NP care versus that of physicians. There was sufficient heterogeneity between the studies that a common and/or consistent set of findings with regard to processes and quality of care did not emerge from the evidence-based review.

Quality of care

Consistent with earlier systematic reviews of APNs, the two meta-analyses reviewed by CHI staff found that NPs deliver comparable quality of care to that provided by physicians with regard to the outcomes measured. One of the studies reviewed in the first meta-analysis examining the role NPs and NMs in primary care included studies related to NP/NM teams, NP/physician teams and NM/physician teams practicing in primary care settings.[vii]

The Horrocks (2002) systematic review included studies that compared NPs and physicians providing first point of contact care in primary care settings. The models of care were not specifically referenced in the review but rather various outcomes were compared between the two types of practitioners.[viii] In general, this meta-analysis included evaluations of APNs functioning either as members of an interdisciplinary health care team or in a collaborative relationship with a physician or other primary care professionals. [ix,x]

In one study (Ohman-Strickland, 2008), the research design specifically looked at family medicine practices that employed NPs, PAs or neither and compared outcomes across the various types of practices including physician-only practices. Two studies focused specifically on diabetic patients where NPs were found to be more likely to monitor HbA1c and lipid levels than physicians. In one study, diabetic patients who were managed by a NP/physician team demonstrated significant improvements in long-term diabetes control reflected in decreased HbA1c levels. In this study, 66% of NPs assessed HbA1c levels compared to 49% of physicians; and 80% of NPs assessed lipid levels compared to 68% of physicians.

In the studies that met the evidence-based review criteria, nurse-midwives and CRNAs had equivalent quality of care when compared to physicians. Study design and data limitations did not allow for generalizations of comparative quality between physicians and APNs, particularly with regard to specific populations such as older adults at one end of the age continuum and children at the other end.

Process of care

Process of care outcomes included in the studies reviewed were: time spent with patients, prescribing practices and frequency of ordering of diagnostic tests. NPs were found to spend more time with patients, averaging 11.57 minutes compared to physicians who spent an average of 7.28 minutes per patient. The researchers did not report productivity measures.[xi] In the Venning et al. (2000) study, no significant differences were found in prescribing practices of NPs and physicians, but NPs ordered more tests than physicians and were significantly more likely to schedule a follow-up visit.[xii] In the Litaker study, NPs scored higher on measures of providing preventive care and patient education than

physicians.[xiii] The Brown and Grimes (1995) meta-analysis found that in low-risk births attended by CNMs, women received less analgesia, anesthesia and fetal monitoring and fewer episiotomies, forceps deliveries and intravenous fluids. There were no studies that specifically measured processes of care for CRNAs versus anesthesiologists. In the studies where relative costs were discussed, when practicing alone APNs cost less, but when practicing on a team costs were higher than physicians practicing alone.[xiv]

Patient satisfaction

Health service utilization and patient surveys were used to measure satisfaction in nine studies. Patient satisfaction was consistently and significantly higher for NPs, especially when measuring satisfaction with patient education and treatment plans. CNMs received higher satisfaction ratings than obstetricians.[xv] In general, the studies reviewed found higher levels of patient satisfaction with NPs and higher satisfaction ratings for patient education provided by NPs. NPs were found to spend more time with their patients, which was hypothesized to explain, in part, the higher patient satisfaction scores they achieved. There were no studies measuring satisfaction with care and services provided by CRNAs versus anesthesiologists.

Access to care

Four studies discussed access to primary care but due to the heterogeneity of settings in the studies reviewed, they could not be directly compared or similar conclusions drawn. One urban-based study found access to prenatal care for indigent women was increased when compared to a non-intervention group (52.5% vs. 44.6%).[xvi] Another study comparing primary care physicians and non-physician primary care providers in California and Washington found that a greater proportion of NPs and CNMs in California worked in a rural area or HPSA compared to physicians. These non-physician primary care providers also served a greater proportion of Medicaid, uninsured and minority patients in their practices than the physicians included in the study.[xvii] Like Colorado, California requires a collaborative agreement for prescriptive authority between an APN and physician. A study comparing CRNA-only hospitals with anesthesiologist-only hospitals found that CRNAs served a greater percentage of Medicaid patients than anesthesiologists (43% vs. 30%).[xviii]

Dental Hygienists: Evidence from the Literature Review

The literature search returned a total of 410 articles of which 30 qualified for a full article review. The full article review produced five articles that were included in the evidence-based findings.[xix] All five of these articles received a fair rating by CHI reviewers. Three of the five articles reported on the same study, but reported on different aspects of the study findings: quality of care, patient satisfaction and patient demographics.

The *Health Manpower Pilot Project* conducted in California in 1987 was the first study of its kind to evaluate the quality of independently practicing dental hygienists under statutory pilot authority granted by the California Legislature which specified that prior to making changes in health personnel licensure, pilots should be conducted to produce an evidence basis for recommended changes. Although Colorado allowed the independent practice of dental hygienists and Washington permitted such practice in institutional settings in 1987, no studies had been conducted to assess the impacts on access or the quality of care provided by independently practicing dental hygienists. It was consistently noted that evidenced-based research about the independent practice of dental hygiene was negligible prior to this study.

Quality of care

The California study compared the quality of care provided by dentists in six dental practices and in nine independent dental hygienist practices by randomly selecting and reviewing, through chart audits and

225 patient records, the quality of care provided.[xx] Dental hygienists outperformed dentists on several quality indicators including appropriate follow-up to medical concerns, maintaining complete and up-to-date patient medical and oral health histories and administration of radiographs. In summary, the demonstration project found no differences in quality of care although it was forced to end the project prematurely because of a lawsuit brought by the California Dental Association.[xxi]

A second parallel study conducted in Colorado found the quality of care to be at least equivalent and at times better than that provided by dentists in the areas of completeness of medical histories, appropriateness of recorded patients' caries status, recorded soft-tissue findings and periodontal status. The evidence from these studies found that independently practicing dental hygienists were able to competently provide dental hygiene services within their scope of practice based on their education and training. The studies also found that independently practicing hygienists increased patient referrals to the dentist and had better patient follow-up rates.

Patient satisfaction

The vast majority of patients being seen by a dental hygienist in the studies reviewed were satisfied with the care they received, found their hygienists' examinations to be thorough and were satisfied with the fees charged.

Policy recommendations from the SOC Advisory Committee

DENTAL HYGIENISTS (DHS)

FINDINGS FROM EVIDENCE-BASED REVIEW - The evidence found that dental hygienists in unsupervised practice can competently deliver a range of oral health care preventive services including dental hygiene care such as teeth cleaning, application of fluoride varnishes and sealants within their scope of training, education and licensure in Colorado. Further, that the quality of care provided by dental hygienists is at least comparable to that provided by dentists, primarily in the areas of prevention and maintenance of healthy oral hygiene practices. It also was found that unsupervised practicing hygienists facilitated referrals to dentists for follow-up care.

UNRESOLVED PRACTICE ISSUE - DHs practicing within the full scope of their license, as defined in statute and evidenced by successful completion of their required education and knowledge base, face a current statutory restriction with regard to making a dental hygiene diagnosis, specifically in the situation where a DH could inform a patient or the parent of a child patient about the presence of caries or gum problems. Although DHs receive education in the evaluation, identification and dental hygiene diagnosis of oral hygiene-related diseases, they are unable to specifically inform the patient, parent or guardian for example, that the reason a sealant cannot be applied to their teeth or their child's teeth is due to the presence of dental caries. Of the six other states where DH practice acts were examined, none permitted that a dental hygiene diagnosis could be completed by a dental hygienist.

Resolving this issue could enable more specific, accurate and timely communication between patients and dentists upon referral by a licensed dental hygienist. A dental hygiene diagnosis could motivate the patient and provide a sense of importance to seeking necessary follow-up evaluation and care. On the other hand, an inaccurate dental hygiene diagnosis could lead to an unnecessary referral and delayed treatment of an undiagnosed condition, possibly increasing malpractice liability for a dentist who accepts referrals from dental hygienists. As there is no strong evidence basis for either of these possible scenarios, changes in policy must be supported by careful consideration of the balance between potential benefits and potential harms, both important quality of care issues.

BARRIERS TO PRACTICE - Reimbursement policies wherein not all dental payers in the state directly reimburse DHs for services provided and authorized under their current scope of practice have been identified as a potential barrier to practice, although there may be additional factors that impede dental hygienists' ability to provide care within their scope of education and training in settings of limited dental care access.

DH Recommendation – The SOC Advisory Committee recommends that an evaluation be conducted and options recommended for reimbursement policies which would enhance the use of dental hygienists in areas where oral health access is lacking.

ADVANCED PRACTICE NURSES (APNS)

FINDINGS FROM EVIDENCE-BASED REVIEW - The evidence-based review found that APNs working as members of interdisciplinary health care teams deliver quality health care comparable to physicians in a variety of settings while receiving high patient satisfaction ratings. CNMs and CRNAs were found to provide quality specialty care without the direct supervision of a physician, often operating under specific practice protocols developed in consultation with a licensed physician. Further, that consultation and referral to other appropriate providers consistent with training and scope of practice is a necessary component of primary health care to be exercised by all primary care providers.

BARRIER – A barrier to APN practice that was identified by members of the advisory committee, key informants and through public testimony was that some APNs, particularly those practicing in rural areas, find it difficult to identify physicians willing to enter into a collaborative agreement for purposes of prescriptive authority. Various reasons for this difficulty have been put forth, ranging from a shortage of primary care physicians in certain geographic areas, a lack of knowledge and understanding about the legal implications of the collaborative agreement, financial constraints imposed upon APNs when they must pay for the agreement and general liability concerns from both physicians and APNs.

APN Recommendations

1. Evaluate the efficacy of changes to APN law and regulations that would allow more flexibility in, or other changes to, the collaborative agreement requirement for prescriptive authority by APNs that would address the identified barriers.
2. Evaluate and recommend policies that would support and enhance the delivery of health care through interdisciplinary teams including physicians, APNs and other health care professionals.

CRNA Recommendation – Evaluate the efficacy of implementing changes currently authorized under the federal opt-out provision for Medicare Part A reimbursement to allow Colorado hospitals to bill for CRNA services directly taking into account hospital location and CRNA practice experience.

MODELS OF CARE POLICY RECOMMENDATIONS

Oral Health Recommendation – Consider conducting a feasibility study to evaluate the costs, benefits and quality of care considerations for Colorado to develop training programs for Community Dental Health Coordinators, Advanced Dental Hygiene Practitioners and/or Dental Therapists as a means of expanding access to primary oral health in the state.

REIMBURSEMENT RECOMMENDATIONS

UNRESOLVED ISSUE - Colorado statutes (CRS 10-16-104) require that dental care plans reimburse for any service that may be lawfully performed by a person licensed to practice in Colorado. DHs were specifically referenced in this regulation to ensure that insurance carriers doing business in Colorado

honor the individual scopes of practice of oral health care providers. However, dental carriers have argued that they are not insurance companies and are therefore exempt from this provision.

Colorado statute also indicates that an insurance company shall not be precluded from setting different fee schedules for different services performed by different health professionals, but that the same fee schedule shall be used for those health services that are substantially identical although performed by different professionals. The State of Colorado reimburses all licensed health care providers at the same rate for the same services provided under the Medicaid program. However, based on anecdotal information from private payers, this rule does not appear to be uniformly practiced among all private insurers.

Reimbursement Recommendation – Consider adding to the current reporting requirements imposed by HB 08-1389 a provision that would require insurers to disclose to the Colorado Insurance Commissioner their reimbursement policies regarding the reimbursement of allied health professionals providing identical services to physicians and dentists within their respective scopes of practice.

Reimbursement Recommendation – Consider requiring all vendors contracting with the State of Colorado for individuals covered by state-sponsored insurance programs and state-funded programs that directly deliver services to children and adults provide direct reimbursement to DHs and APNs for services provided within their respective scopes of practice.

POLICY MONITORING RECOMMENDATIONS

PROBLEM – Effective and informed policymaking assumes the availability of objective and reliable data, both to frame policy options and then to monitor the implementation of policies once enacted. In spite of recent foundation investments in health professions data, Colorado still suffers (as do most other states) from significant data deficits in the area of health professions workforce data. These data deficits result in sub-optimal estimates of workforce supply and the distribution of Colorado's primary care workforce.

Data Collection and Policy Monitoring Recommendation – The governor and/or legislature should consider sponsoring legislation that would require the health professions licensing boards housed in the Department of Regulatory Agencies to collect additional information from all applicants for a new or renewed Colorado license such as practice setting (e.g., community health center, private clinic, solo practice, school-based health center), practice address, years in active practice, certifications held, date of birth, highest degree held and/or others to be determined.

UNRESOLVED ISSUE – Upon completion of an evidence-based review of the literature, one which employed rigorous standards for study inclusion, CHI staff has found that a consistent and generalizable body of evidence that can be applied to a Colorado context is lacking. The studies reported in the peer-reviewed literature have been conducted in select care settings and with specific population groups, thus limiting their application across populations and care settings.

Recommendation to build a Colorado-specific evidence basis for collaborative models of primary care - While negotiations continue to take place around elements of the Nurse Practice Act and the scope of practice of dental hygienists, the governor and/or legislature should consider authorizing demonstration projects to test the efficacy, safety and quality of care provided by APNs, PAs and dental hygienists as primary health care providers in medically underserved areas of Colorado. These studies should employ the highest standards of clinical and health services research to provide definite evidence of the processes and outcomes of care associated with various models of collaborative, interdisciplinary primary care practice.

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Bill Ritter, Jr.
Governor

B 003 08

EXECUTIVE ORDER

Commissioning the Collaborative Scopes of Care Study and Creating an Advisory Committee

Pursuant to the authority vested in the Office of the Governor of the State of Colorado, I, Bill Ritter, Jr., Governor of the State of Colorado, hereby issue this Executive Order commissioning the Collaborative Scopes of Care Study and creating the Collaborative Scopes of Care Advisory Committee (the "Advisory Committee").

I. Background and Need

The health care system in Colorado involves a complex interface between individuals, patients, facilities, insurers, state policy and health care providers. One important aspect of the system is the availability of qualified health care professionals to provide appropriate, high quality care to the appropriate patient in the appropriate setting. It is clear from health manpower studies that we do not have sufficient numbers of providers, especially physicians and dentists, to meet the current needs of Coloradans. This problem is especially acute in rural and other underserved communities, where many individuals simply have no access to health care regardless of whether they are insured or can otherwise afford care. In addition, the threat of the next influenza pandemic, while marked by uncertainty in terms of when it will occur or with what severity, has highlighted the current inadequate health care workforce by revealing how meager our available medical provider surge capacity is, compared to what we would require in order to respond and mitigate the impact of a pandemic. Finally, it is apparent from the experience of other states that have negotiated local health care reform, that expansion of access is met with insufficient numbers of professionals to provide care for the newly covered individuals.

One approach currently being evaluated and adopted in other states has been to carefully examine the potential collaborative roles of other health care providers, including advanced practice nurses, physician assistants, and dental hygienists in meeting the medical and dental needs in communities. There is a rich research literature comparing the health outcomes from nurses and hygienists that indicates there are systems and settings where high quality care with good health outcomes can be provided to patients by non-physician or non-dentist professionals.

A systematic review and synthesis of this research would be valuable to policy makers in evaluating regulatory policies that could be addressed to appropriately enhance the scope of practice for regulated health professionals in such a way to expand availability of care providers in the face of higher demand from either expanded access to care or public health emergencies while preserving and protecting high quality standards for care.

II. Mission and Scope

'The Governor's Office of Policy and Initiatives shall commission a study involving the review and synthesis of the available research regarding expanded and collaborative scopes of practice for advance practice nurses, physician assistants, and dental hygienists. In initiating the study, the Governor's Office shall identify an appropriate research entity (the "research group") with documented skill, expertise, and experience in health services research and systematic evidence review and synthesis. The research group shall undertake a study of scopes of practice for advanced practice nurses, physician assistants, and dental hygienists in terms of the services that are delivered, the settings in which those services are delivered, and the quality of care provided.

The Advisory Committee is created to provide guidance and advice to the research group and shall work in collaboration with the Department of Regulatory Agencies and the Department of Public Health and Environment. Moreover, the Advisory Committee shall:

A. Advise the research group on the study workplan, analytic framework, literature search, evidence evaluation, and evidence synthesis for the study.

B. Work with the research group on creating a final study report for distribution to the Governor and the General Assembly. The report shall be delivered no later than December 31, 2008.

III. Membership

The Advisory Committee shall be composed of twelve (12) voting members, appointed by and serving at the pleasure of the Governor, as follows:

A. The State Chief Medical Officer, who shall serve as the Advisory Committee Chair.

B. Four physicians who hold unrestricted active Colorado medical licenses. One of these physicians shall practice as an anesthesiologist, one as a family physician, one as a pediatrician, and one as an obstetrician/gynecologist.

C. Four advanced practice nurses (APN) who hold unrestricted active Colorado nursing licenses. One of these APNs shall practice in primary care, one shall practice in pediatrics, one shall be a certified nurse midwife, and one shall be a certified registered nurse anesthetist.

D. A registered nurse who holds an unrestricted active Colorado nursing license and who is not an APN.

E. A dentist who holds an unrestricted active Colorado dental license.

F. A dental hygienist who holds an unrestricted active Colorado dental hygienist license.

The Advisory Committee shall also have seven (7) non-voting, *ex-officio* members, serving at the pleasure of the Governor, appointed as follows:

A. One Democratic and one Republican member of the Colorado Senate, appointed by the Governor in consultation with the President and Minority Leader of the Senate.

B. One Democratic and one Republican member of the Colorado House of Representatives, appointed by the Governor in consultation with the Speaker of the House of Representatives and the Minority Leader of the House of Representatives.

C. The Executive Director of the Department of Regulatory Agencies or his designee.

D. The Executive Director of the Department of Health Care Policy and Financing or her designee.

E. A representative from the Governor's Office of Policy and Initiatives, appointed by the Governor.

IV. Staffing and Resources

'The Office of the Governor, in consultation with the Advisory Committee, shall identify the research entity to undertake the study, identify and secure resources to fund the research study, and find resources to support the Advisory Committee. The Office of the Governor shall have the power to accept money and in-kind contributions from private entities, but only to the extent such donations are necessary to cover its expenses, including but not limited to the research study discussed above.

Members of the Advisory Committee shall serve without compensation, but may, at the discretion of the Chair and upon the approval of the Office of the Governor, be reimbursed for any actual expenses incurred.

V. Directive

The Collaborative Scopes of Care Study is hereby commissioned and the Collaborative Scopes of Care Advisory Committee is hereby created.

VI. Duration

This Executive Order shall remain in force until January 31, 2009, at which time the Advisory Committee shall be dissolved.

GIVEN under my hand and the Executive Seal of the State of Colorado this seventh day of February, 2008.

Bill Ritter, Jr.
Governor

[i] Cipher, D., and R. Hooker. (2006). "Prescribing trends by nurse practitioners and physician assistants in the United States." *Journal of the American Academy of Nurse Practitioners* 18: 291-96.
[ii] Ohman-Strickland, P., et al. (2008). "Quality of diabetes care in family medicine practices: Influence of NPs and PAs." *Annals of Family Medicine* 6(1):14-22.
[iii] Ibid.
[iv] Enns, S., R. Muma and M. Lary. (2000). "Examining referral practices of primary care physician assistants." *Journal of the American Academy of Physician Assistants* 13(5):81-87.
[v] Anderson, D., and M. Hampton. (1999). "Physician assistants and nurse practitioners: Rural-urban settings and reimbursement for services." *The Journal of Rural Health* 15(2): 252-262
[vi] Grumbach, K., et al. (2003). "Who is caring for the underserved? A comparison of primary care physicians and nonphysician clinicians in California and Washington." *Annals of Family Medicine*1(2): 97-104.
[vii] Brown, S., and D. Grimes. (1995). "A meta-analysis of nurse practitioners and nurse midwives in primary care." *Nursing Research* 44(8): 32-39.
[viii] Horrocks, S., E. Anderson and C. Salisbury. (2002). "Systematic review of whether nurse practitioners working in primary care can provide equivalent care to doctors." *British Medical Journal* 324 (2002): 819-823.
[ix] Relevant studies include: Lenaway, et al.; Ohman-Strickland, et al. Mundinger, et al. (2000 and 2004); Litaker, et al.; Hamric, et al.; Laurant, et al.; Brown, et al.; Oakley, et al.; Simonson, et al.; and Pine, et al.
[x] Ibid.
[xi] Venning. "Randomised controlled trial comparing cost effectiveness of general practitioners and nurse practitioners in primary care."
[xii] Ibid.
[xiii] Litaker, D., et al. (2003). "Physician-nurse practitioner teams in chronic disease management: The impact on costs, clinical effectiveness and patients' perception of care." *Journal of Interprofessional Care*17 (3): 223-234.
[xiv] Ibid.
[xv] Oakley, D., et al. (1996). "Comparison of outcomes of maternity care by obstetricians and certified nurse midwives." *Outcomes of Care* 88(5): 823-29.
[xvi] Lenaway, D., et al. (1998). "Evaluation of a public-private certified nurse-midwife maternity program for indigent women." *American Journal of Public Health* 88(4):675-79.
[xvii] Grumbach. (2003). "Who is caring for the underserved?"
[xviii] Simonson, D., M. Ahern and M. Hendryx. (2007). "Anesthesia staffing and anesthetic complications during Cesarean delivery: A retrospective analysis." *Nursing Research* 56(1): 9-17.
[xix] See Appendix # for the literature bibliography
[xx] Researchers were not able to recruit a comparison group of dental practices willing to participate. Therefore, a convenience sample of dental practices was identified wherein independent evaluators reviewed dental records provided by a governmental agency and private insurance company during the same period.
[xxi] Evidence must exist in the record that there had been adequate follow-up based on affirmative answers to medical questions indicating that it was safe to proceed with dental care.