Meeting the Nation's Primary Care Needs

Current and Prospective Roles of Doctors of Chiropractic and Naturopathic Medicine, Practitioners of Acupuncture and Oriental Medicine, and Direct-Entry Midwives

Naturopathic Physician Chapter Only

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Developed through the Primary Care Project of the
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This Chapter in Collaboration with the:
Association of Accredited Naturopathic Medical Colleges

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Executive Summary

Context: The United States faces a growing shortage of primary care providers. An emergent theme in many, if not most, of the proposals to address this need is the importance of examining the use of non-medical doctor (M.D.) practitioners. However, workforce analyses and healthcare delivery practices have not to date engaged the potential contributions of four licensed disciplines that are already frequently accessed by significant numbers of people as their first choice, primary provider of care. These are the doctors of chiropractic and naturopathic medicine, practitioners and doctors of acupuncture and Oriental medicine, and direct-entry midwives.

Goal: The goal of this paper is to assist policy makers, regulators, third-party payers, delivery system administrators, practitioners, and other concerned parties as well as the disciplines themselves in considering the optimal use of these professions as part of the nation's primary care matrix.

Methods: The Board of Directors of the Academic Consortium for Complementary and Alternative Health Care (www.accahc.org), the membership of which includes most of the councils of colleges, accreditation agencies and certification and testing organizations from these four disciplines, endorsed the project and named the project directors. These co-directors created partnerships with councils of colleges from three of the professions and the accrediting agency from the fourth field. Each organization named a writing team to represent it on the project. These teams collaborated with the co-directors to set the dimensions of the discipline-specific chapters which would guide the writing teams. The teams developed a template of fourteen fields to be addressed within 5500 words. Each discipline specific chapter was subsequently endorsed by the relevant partner organizations. The analysis and recommendations were in turn endorsed by the ACCAHC Board of Director prior to publication.

Findings: The approximately 107,500 licensed practitioners in these fields belong to disciplines with an existing, strong, self-identification as providers of primary care. Most of their clinical encounters are the result of patients seeking practitioners of these disciplines out as their initial choice for dealing with a health concern or problem. The existing accreditation standards for each of the disciplines recognize, to at least some significant degree, a broad scope of practice with educational requirements that encompass prevention and public health and treatment of acute conditions, as well as the management and co-management of chronic conditions. In numerous jurisdictions, some of these disciplines are already legally recognized as primary care providers. Some are currently included in medical home planning and programs to stimulate provision of primary care services to the underserved. As such, these disciplines presently relieve some of the burden on the primary care system. Generally unrecognized by the conventional medical community and workforce planners, these practitioner groups represent a hidden dimension of primary care in the United States.

Recommendations as Endorsed by the ACCAHC Board of Directors

Based upon our review and analysis of the chapters prepared by the disciplinary groups we (MSG, JW) took the liberty to set out a series of recommendations to both the disciplines themselves, as well as the larger health care policy community. These recommendations were endorsed by the ACCAHC Board of Directors. Each is made in the spirit of advancing the discussion of how these professions might be effectively brought into the larger health care community to assist in the delivery of high quality primary care.

To Academic, Research and Policy Leaders in the Professions of Acupuncture and Oriental Medicine, Chiropractic, Direct-Entry Midwifery and Naturopathic Medicine:

- There is a pressing need for the leadership of each of the professions to communicate clearly with the academic leaders and health care policy makers, as well as other stakeholders regarding your profession's roles relative to primary care, especially with regard to how any gaps or deficiencies in your profession's relationship to elements of conventional primary care might be remedied or worked with or around for those members of your profession who are interested. To move the discussion forward, a discussion of how and under what circumstances the discipline's typical educational processes or practices will be modified must be engaged. What specific forms of additional education and competency testing do you recommend to become primary care providers?
- The distinctions internal to each profession between primary care and specialists must be clarified not only for those outside the profession, but internally as well. Absent clarity on this point, other stakeholders and providers will find it difficult to work with you collaboratively. If only a subset of your profession is interested in primary care, clear boundaries need to be agreed upon and followed.
- Support and collaborate with other researchers in conducting outcomes and epidemiological research that can assist your own discipline and other stakeholders in understanding your discipline's potential for helping meet primary care needs.
- If your discipline believes it encompasses a distinct model of primary care, or can make a unique contribution to conventional primary care practice or patient-centered medical homes, make your case to the larger health care community, including identifying and prioritizing supportive evidence-based research strategies.
- Convene a meeting of leaders in your discipline and include significant representation from other stakeholders to clarify and refine your strategy.

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[38] Flexner, Abraham (1910), *Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching,* Bulletin No. 4, New York City: The Carnegie Foundation for the Advancement of Teaching. Web. 10 January 2013.

To Health Workforce Planners, Health Care Professionals, Policy Makers, Funding Agencies, , Government Agencies, and Other Stakeholders:

- Make it a priority to learn about this "hidden dimension of primary care" by funding and conducting high quality health services & epidemiological research on those individuals and families whose "first choice" for treatment is a licensed practitioner from one of these four disciplines.
- Consider use of these practitioners, as appropriate, in limited population primary care strategies (such as for the birth process, or for back pain), and conduct well designed evaluations of the outcomes in terms of patient satisfaction, quality of life, and cost. Dentistry, podiatry and optometry each provide models.
- Examine the experience in states in which these disciplines are formally included as primary care practitioners. To some significant degree, these jurisdictions are functioning as pilot projects for the nation.
- Include members of these professions in primary care medical or health homes. This low risk form of inclusion offers an exceptional opportunity to both examine outcomes while enhancing the patient-centered nature of these institutions.

To Leaders of these Disciplines in Collaboration with Policy Makers and Other Stakeholders

- Utilize the papers delivered in this project as the basis of a multi-stakeholder, interprofessional working summit where each discipline can further develop a strategy that will help guide these professions into a more appropriate relationship to the nation's primary care matrix. The summit should be convened by an independent agency. Participants would include workforce experts, delivery system leaders, researchers and professional and academic leaders from each of these fields. Recommendations would be bilateral: to the profession and to the broader healthcare regulatory, payment and delivery system.

A Note on Names of Members of the Discipline

Various names are used for professionals in this discipline due to such factors as state requirements, professional associations and personal preferences. Most of those are utilized one or more times in this document.

Naturopathic medicine: naturopathic physician, naturopathic doctor, naturopathic medical doctor, doctor of naturopathic medicine, naturopath

Naturopathic Physicians in Primary Care

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Endorsed by the
Association of Accredited Naturopathic Medical Colleges (AANMC)

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Internal Definitions of Primary Care

The American Association of Naturopathic Physicians defines naturopathic primary care as, "… a distinct method of primary health care — an art, science, philosophy and practice of diagnosis, treatment and prevention of illness. Naturopathic physicians seek to restore and maintain optimum health in their patients by emphasizing nature's inherent self-healing process, the *vis medicatrix naturae*. This is accomplished through education and the rational use of natural therapeutics.

Naturopathic medicine is distinguished by the principles upon which its practice is based. These principles are continually reexamined in the light of scientific advances. The techniques of naturopathic medicine include modern and traditional, scientific and empirical methods."[1,2]

The naturopathic profession established primary care as its foundational training and scope of practice consistent with the Institute of Medicine (IOM) definition, when the term first came into usage. The term, "primary care," and its implications for the clinician's scope of practice and responsibility was formally incorporated by the American Association of Naturopathic Physicians (AANP) House of Delegates in its *Definition of Naturopathic Medicine* position paper adopted in 1989.

Internal Discussions Regarding Primary Care

There has been considerable discussion regarding the distinction between "primary care" and "specialty care." After much debate in the 1990s, naturopathic medical schools determined that training would focus on primary care, rather than specialty care. A solid foundation in primary care was determined to be essential for practicing medicine at the physician level. Some NDs do not wish to practice as primary care providers (PCP's) and have expressed concern about being held to a PCP standard. In practice, an ND can choose to specialize, using the process of informed consent with patients to define the scope of practice or specialty offered.

Those NDs who specialize may augment their training through additional professional degrees or certifications (e.g., Master of Public Health or Certificate of Midwifery) or may choose to emphasize specific areas of practice. Specialties in naturopathic care are based upon *conditions or systems* (i.e., cancer, environmental medicine, or the cardiovascular system), on *population groups* (e.g.., naturopathic midwifery or pediatrics), or upon treatment *modalities* (e.g., homeopathic or physical medicine).

Because naturopathic clinical education is conducted in outpatient settings, there is some debate that naturopathic students may not observe sufficient hospital-managed pathology to practice effectively as PCPs. The strong safety record of practicing naturopathic physicians suggests that this is not the case.[3,4] Most hospital-based care is provided by specialist "hospitalist" physicians, not by primary care providers, who are most optimally trained to deliver care where it is provided: in the community, on an outpatient basis.

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[1] Naturopathic Medicine. 2011; www.naturopathic.org. Accessed May 5, 2011.

[2] Zeff J, Snider P, Myers S. A hierarchy of healing: the therapeutic order. In: Pizzorno J, Murray M, eds. *Textbook of Natural Medicine.* Vol 1. 3 ed. St Louis, MO: Churchill Livingstone Elsevier; 2006:27-39.

[3] Bradley R, Kozura E, Buckle H, Kaltunas J, Tais S, Standish LJ. Description of clinical risk factor changes during naturopathic care for type 2 diabetes. *J Altern Complement Med.* Jun 2009;15(6):633-638.

[4] Stewart D, Weeks J, Bent S. Utilization, patient satisfaction, and cost implications of acupuncture, massage, and naturopathic medicine offered as covered health benefits: a comparison of two delivery models. *Altern Ther Health Med.* Jul-Aug 2001;7(4):66-70.

Challenges in defining primary care are more evident when comparing different medical environments, such as those posed by medical priorities established in Canada and the United States.

Practice Model, Including Referral and Co-management

Naturopathic primary care is guided by: i) application of the professions' principles and clinical theory, and ii) by employment of the profession's Therapeutic Order and the Determinants of Health.[2] Employing this clinical approach (treating disease by working with nature to restore health) also drives naturopathic evaluation and management decisions.

The Naturopathic Principles

Naturopathic physicians understand illness as a disruption of normal orderly function, and healing as a process by which living systems return to equilibrium. The guiding principles of naturopathic medical practice (below) are based on the premise that healing is intrinsic to the nature of living organisms.

1. *Vis medicatrix naturae* (the healing power of nature): the inherent organizing forces underlying this process, such as homeostasis, adaptation, metabolism or tissue repair.
2. *Primum non nocere* (do no harm): first choose interventions that do the least harm to the patient and that do not further disrupt a system attempting to regain homeostasis. This principle is fundamental to the restoration of health.
3. *Tolle causum* (treat the cause): when confronted with an ill patient, seek to understand the totality of fundamental causes disrupting the patient's optimal equilibrium.
4. *Tolle totum* (treat the whole person): required in order to remove the cause of the illness.
5. *Docere* (doctor as teacher): while removing or moderating insults and stressors that result in harm to patients, NDs engage patients in the essential responsibilities of self-care.
6. *Preventir* (prevention): mutual efforts at prevention and health promotion predominate in the physician-patient relationship.

These principles do not replace the biological foundation of pathology, but offer practitioners an expanded perspective when treating individual patients. Although these practice principles form the foundation of the naturopathic approach to health and health care, scientific advances in physics, genomics, epigenetics, medical ecology, systems biology, and public health underpin these concepts, and are increasing understanding of health and healing across many disciplines.[5]

Therapeutic Order

In naturopathic clinical theory, the wisdom of the body always seeks to optimize health and wellness. Illness is considered a process of disturbance to health. Recovery occurs within the context of natural systems, including socioeconomic, cultural, and environmental systems. Disturbances such as infection, poor nutrition, chronic stress or toxic exposures are identified and minimized by naturopathic physicians

[5] Cramer EH, Jones P, Keenan NL, Thompson BL. Is naturopathy as effective as conventional therapy for treatment of menopausal symptoms? *J Altern Complement Med.* Aug 2003;9(4):529-538.

in partnership with patients, in order to restore health. To accomplish this, NDs first recognize the factors that determine health. A "determinant of health" becomes a disturbance when it is compromised in some way. In working to restore health, NDs employ the following "therapeutic order," beginning with minimal intervention and proceeding to higher levels of intervention, as necessary:

1. Incorporate behaviors to re-establish conditions for health, (stress management, whole food diet, physical activity, health-promoting lifestyle).
2. Stimulate the body's natural healing mechanisms through techniques, such as hydrotherapy, which can increase blood and lymph circulation.
3. Support weakened or damaged systems (with homeopathy, nutritional prescriptions, botanical medicines, specific exercises, mind body techniques, or other interventions).
4. Correct structural integrity (through physical medicine techniques, including soft tissue and osseous manipulation).
5. Address pathology using specific natural substances, such as dietary supplements.
6. Address pathology using pharmaceutical or synthetic substances.
7. Employ surgical correction and "higher force" therapies with greater physiological side effects, as necessary.

The order is specific, but is not fixed — it is adapted to each patient's need for safe and effective acute and chronic care.[2,6]

Determinants of Health

Determinants of health may be either health promoting or health disturbing factors. Determinants include modifiable behavioral factors, such as drug and alcohol use, poor diet or frank malnutrition, a sedentary lifestyle, lack of exercise, unsafe sexual practices, and/or environmental and socioeconomic factors. Many of the behavioral factors include psychological and spiritual components. Disruptions in these areas create increased stress on individuals, families, and communities, with attendant consequences. Naturopathic physicians evaluate patients with these areas in mind, looking for aspects of disturbance in diet, digestion, spirit, mental-emotional health, environment and stress. In this evaluation, NDs employ a body of knowledge somewhat unique to naturopathic medicine, to evaluate not solely in terms of pathologic entity, but in terms of normal function and subclinical functional disturbance.[2]

Naturopathic medicine ascribes to a therapeutic hierarchy that integrates a full spectrum of modern biomedicine within a continuum that includes mental, emotional, and spiritual therapies, as appropriate to each patient's needs. Applied in this context, biomedical science is highly valued, both diagnostically and therapeutically.[7]

Condition-specific treatment guidelines present a challenge, because naturopathic primary care is guided by theory and philosophy, and employs a varied and complex array of therapeutic modalities. Given that naturopathic medicine embodies the whole person, each patient's treatment is, by definition, individualized. This makes developing a single practice model a challenging endeavor.

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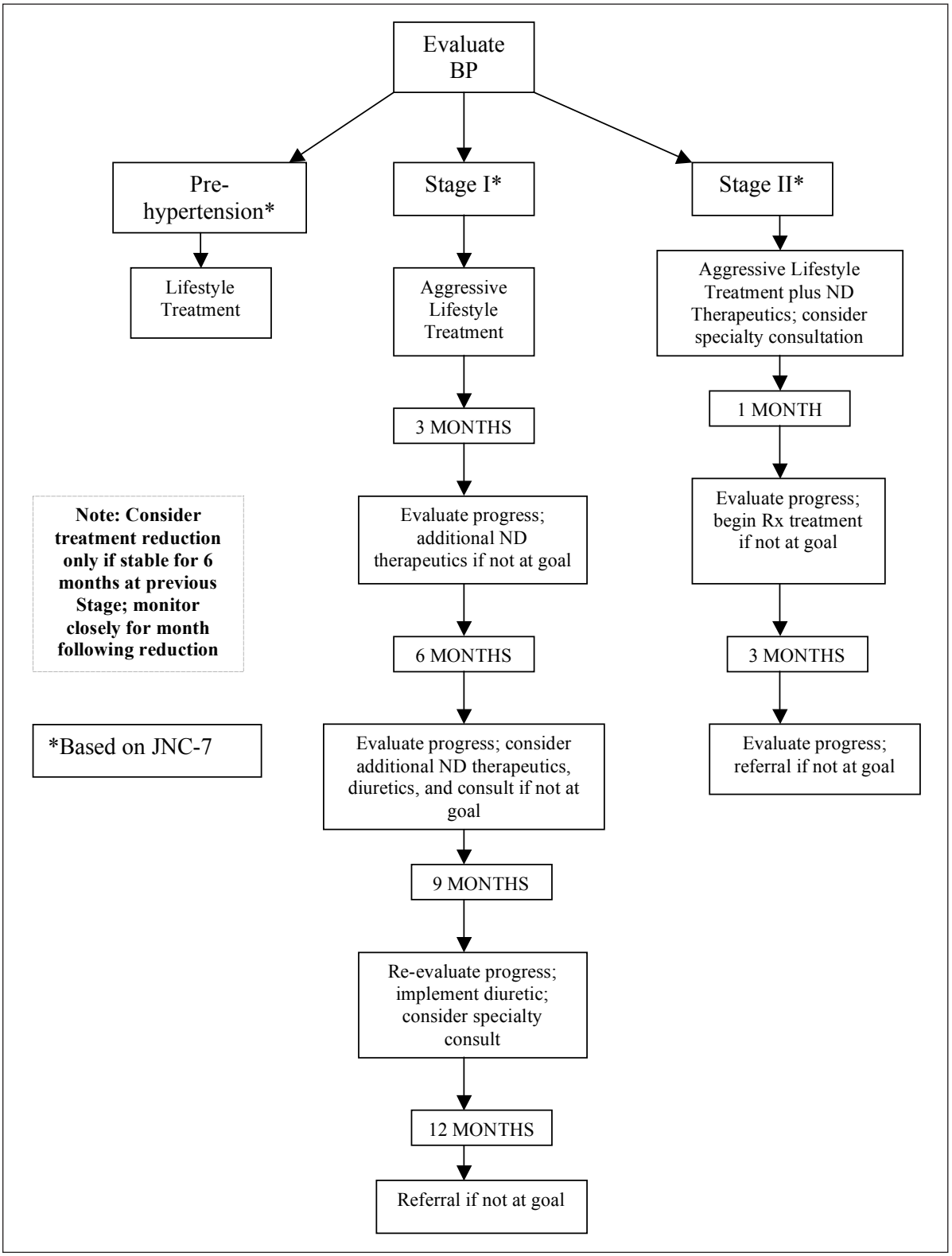
[6] Fleming SA, Gutknecht NC. Naturopathy and the primary care practice. *Prim Care.* Mar 2009;37(1):119-136.

[7] Dunne N, Benda W, Kim L, et al. Naturopathic medicine: what can patients expect? *J Fam Pract.* Dec 2005;54(12):1067-1072.

Figure 1. Algorithmic Approach to Naturopathic Hypertension Management



TLC: Therapeutic Lifestyle Change/ health behavior modification
Courtesy of Ryan Bradley, ND, MPH and the AANP Clinical Guidelines Working Group. 2008.

Addressing condition-specific care standards

Two main models of care are employed to develop, investigate, apply and teach condition-specific standards. These models articulate the application of naturopathic principles and philosophy to the practice of primary care.

Clinical management process model: practitioners define a sequential process for thorough patient evaluation and flexibility in therapeutic approach to optimize patient adherence and treatment success. If a patient requires or prefers treatment options beyond the experience or scope of the ND, then consultation with another provider may ensue. If the patient's condition does not improve according to expectations and prudent timelines, the ND PCP may consider either co-management and/or referral, with transference of care. This is taught and implemented as part of the clinical curriculum in naturopathic medical schools within the rubric of clinical judgment.[8]

Outcomes process model: this is used especially within research and is exemplified in the Seventh Joint National Committee guidelines (JNC7) for conventional medical management of hypertension.[9] In this model, the ND PCP tracks and targets conventional biomarkers of disease (e.g., blood pressure readings) while utilizing individualized therapeutic interventions to reach the general guideline-directed goals (Figure 1). As scientific knowledge evolves, guidelines and recommended treatment goals are also updated; yet, therapeutic strategies to reach the goals remain the discretion of the ND PCP. Similarly, when outcomes are not achieved, the treatment protocol must be modified.

Evidence of Patient Use as First Contact Provider

The number of patients selecting an ND as their PCP is unknown, but information from insurance claims data and national surveys provides an estimate. In 2006, there were 4,010 licensed NDs in the US and Canada — a 91% increase from 2001.[6] Studies and articles published in recent years indicate that naturopathic medicine is accessed by an increasing number of patients as their first entrance into the medical system by choice.[6,10]

Evidence of Wellness, Health Promotion and Primary Prevention Services

The Institute of Medicine (IOM) defines primary care as, "…the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and

[8] Nahin RL, Dahlhamer JM, Taylor BL, et al. Health behaviors and risk factors in those who use complementary and alternative medicine. *BMC Public Health.* 2007;7:217.

[9] Chobanian AV, Bakris GL, Black HR, et al. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: the JNC 7 report. *Jama.* May 21 2003;289(19):2560-2572.

[10] Litchy A. Naturopathic Physicians: holistic primary care and integrative medicine specialists. *Journal of Dietary Supplements.* 2011;8(4):369-377.

community."[11] The 2001 IOM report, Crossing the Quality Chasm, called for extensive overhaul and redesign of US health care.[4] A key strategy identified by the IOM is to provide patient-centered care that is respectful of and responsive to individual patient needs and preferences, and to ensure patient values guide clinical decisions. By philosophy, training and practice, modern naturopathic primary care satisfies these criteria by providing individualized, comprehensive, patient-centered care for all conditions and demographics.

Governmental or Regulatory Agency Recognition as Primary Care Providers

Historically, naturopathic physicians were licensed as "drugless healers" (WA State "Drugless Healing Act, 1919"; Connecticut Statutes Chapter 373 Naturopathy, Section 20-34, also passed in the early 1900's) who primarily used non-invasive therapeutics, including diet, lifestyle changes, botanicals, homeopathic medicines, manual techniques and hydrotherapy. By contrast, a recent law passed in California in 2003 defines naturopathic medicine as a "distinct and comprehensive system of primary health care practiced by a naturopathic doctor for the diagnosis, treatment and prevention of human health conditions, injuries, and disease." (California Statutes, Business and Professions Code Section 3613.c and 3640) California, Hawaii, Montana, Oregon, New Hampshire, Utah, Vermont, Washington and other states now license naturopathic physicians as PCPs with broad scope (see Table 1). All other naturopathic licensing acts authorize a broad range of diagnostic and therapeutic procedures and responsibilities in the naturopathic scope of practice, implicitly primary care.

As the naturopathic profession has evolved, its scope of practice has evolved to include prescriptive authority for legend drugs and for office procedures, minor surgery, and intravenous therapy, which were absent in older laws but included in recently passed or rewritten state laws. Differences in both the era in which the law was first passed and in the degree to which the practice is defined prevent consistent licensing and practice across states and provinces.

State programs in Washington (Health Professional Loan Repayment and Scholarship Program), Oregon (Oregon Rural Health Coordinating Council), and Vermont (Medicaid and Medical Homes) authorize NDs as PCPs for services to rural, underserved, and special needs communities. Washington and Oregon provide student loan forgiveness to ND graduates for these services. Washington State's Medical Home Act authorizes NDs as PCPs in Medical Homes.

In states where naturopathic physicians are licensed, federal programs [e.g., the Breast and Cervical Cancer Program (BCCP) and Federally Qualified Healthcare Clinics program (FQHC)] accept naturopathic physicians as PCPs in their grants for service to medically underserved populations].

In Canada, three of the 10 provinces and 3 territories (British Columbia, Alberta and Ontario), have comprehensive regulations that allow for a broad scope of primary care practice for naturopathic doctors. Manitoba, Saskatchewan and Nova Scotia, while regulated, provide a limited scope of practice due to the restrictions of the legislation. All are in the process of updating their regulations to reflect the scope of practice granted to naturopathic physicians in British Columbia as are the naturopathic associations in the remaining provinces and territories that as yet do not have regulation.

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[11] *Primary Care: America's Health in a New Era.* Washington D.C.: Institute of Medicine;1996.

Third-party Payer Recognition as Primary Care Providers

Three states mandate insurance coverage of NDs: Connecticut, Washington and Vermont. Coverage in other states often is available at the insurer's discretion. In the past, insurance systems relied on PCPs as gatekeepers. In this context, payer-recognition of PCP status conferred specific recognition of the rights and responsibilities of primary care. Currently, many insurers offer patients the option of direct access to an ND as their PCP. Patients also may self-refer to a naturopathic physician for specialist care, without pre-authorization.

A study of insured patients from three major insurers in Washington State found that 1.6% of 600,000 enrollees from three major insurance companies in Washington filed claims for naturopathic services in 2002.[12] National data from the National Health Statistics Reports (NHSR) estimates 0.2% for naturopathic services in 2002 and 0.3% in 2007.[13]

Research Relative to Naturopathic Medicine as Primary Care

The Naturopathic Medical Research Agenda (NMRA) (2006) outlines priorities for research in key clinical areas and methodologies.[14] Classic research designs, such as randomized controlled trials, are not always appropriate for naturopathic or primary care research.[15,16,17,18] The 2005 Institute of Medicine (IOM) report Complementary and Alternative Medicine in the United States identified important gaps in knowledge for CAM effectiveness and utilization, and recommended addressing these gaps through outcomes research on routine care delivery.[19]

Although the literature based on naturopathic outcomes in disease and health is limited, there is increasing evidence demonstrating effectiveness and cost-effectiveness. Studies in these areas are underway at all seven North American naturopathic medical schools and are reported by the nonprofit organization, Naturopathic Physician's Research Institute (http://nprinstitute.org).

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[12] Cherkin DC, Deyo RA, Sherman KJ, et al. Characteristics of visits to licensed acupuncturists, chiropractors, massage therapists, and naturopathic physicians. *J Am Board Fam Pract.* Nov-Dec 2002;15(6):463-472.

[13] Barnes PM, Bloom B, Nahin RL. Complementary and alternative medicine use among adults and children: United States, 2007. *Natl Health Stat Report.* Dec 10 2008(12):1-23.

[14] Standish LJ, Calabrese C, Snider P. The naturopathic medical research agenda: the future and foundation of naturopathic medical science. *J Altern Complement Med.* Apr 2006;12(3):341-345.

[15] Verhoef MJ, Mulkins A, Kania A, Findlay-Reece B, Mior S. Identifying the barriers to conducting outcomes research in integrative health care clinic settings--a qualitative study. *BMC Health Serv Res.*10:14.

[16] Ritenbaugh C, Aickin M, Bradley R, Caspi O, Grimsgaard S, Musial F. Whole systems research becomes real: new results and next steps. *J Altern Complement Med.* Jan;16(1):131-137.

[17] Khorsan R, York A, Coulter ID, Wurzman R, Walter JA, Coeytaux RR. Patient-based outcome assessment instruments in acupuncture research. *J Altern Complement Med.* Jan;16(1):27-35.

[18] Aickin M. Comparative effectiveness research and CAM. J Altern Complement Med. Jan;16(1):1-2.

[19] *Complementary and Alternative Medicine in the United States.* Washington D.C: Institute of Medicine. National Academies Press; 2005.

16 Whole Systems Naturopathic Medicine Research Studies

1. Bradley, RB, Sherman, KJ, Catz, S, Calabrese C, Oberg, E, Jorndan L, Grothaus L, Cherkin, D. Adjunctive Naturopathic Care for Type 2 Diabetes: patient-reported and clinical outcomes after one year. BMC Complement Altern Med. 2012 Apr 18;12:44. doi: 10.1186/1472-6882-12-44
2. Bradley RD, Kozura EV, Oberg EB, Fitzpatrick AL, Probsfield J. Observed Changes in Risk During Naturopathic Treatment of Hypertension. Evidence-based Complementary and Alternative Medicine 2010;doi:10.1093/ecam/nep219
3. Bradley R, Kozura E, Buckle H, Kaltunas J, Tais S, Standish LJ. Description of clinical risk factor changes during naturopathic care for type 2 diabetes. *J Altern Complement Med.* Jun 2009;15(6):633-638.
4. Cooley K, Szczurko O, Perri D, et al. Naturopathic care for anxiety: a randomized controlled trial ISRCTN78958974. PLoS One. 2009;4(8):e6628.
5. Cramer EH, Jones P, Keenan NL, Thompson BL. Is naturopathy as effective as conventional therapy for treatment of menopausal symptoms? *J Altern Complement Med.* Aug 2003;9(4):529-538.
6. Greenlee H, Atkinson C, Stanczyk FZ, Lampe JW. A pilot and feasibility study on the effects of naturopathic botanical and dietary interventions on sex steroid hormone metabolism in premenopausal women. *Cancer Epidemiol Biomarkers Prev.* Aug 2007;16(8):1601-1609.
7. Herman PM, Szczurko O, Cooley K, Mills EJ. Cost-effectiveness of naturopathic care for chronic low back pain. *Altern Ther Health Med.* Mar-Apr 2008;14(2):32-39.
8. Milliman WB, Lamson DW, Brignall MS. Hepatitis C; a retrospective study, literature review, and naturopathic protocol. *Altern Med Rev.* Aug 2000;5(4):355-371.
9. Oberg EB, Bradley RB, Allen J, McCrory MA. Evaluation of a naturopathic nutrition program for type 2 diabetes. Complement *Ther Clin Pract.* March 2011;doi:10.1016/j.ctcp.2011.02.00.
10. Ritenbaugh C, Hammerschlag R, Calabrese C, et al. A pilot whole systems clinical trial of traditional Chinese medicine and naturopathic medicine for the treatment of temporomandibular disorders. *J Altern Complement Med.* Jun 2008;14(5):475-487.
11. Shinto L, Calabrese C, Morris C, et al. A randomized pilot study of naturopathic medicine in multiple sclerosis. *J Altern Complement Med.* Jun 2008;14(5):489-496.
12. Secor ER, Markow MJ, Mackenzie J, Thrall RS. Implementation of outcome measures in a complementary and alternative medicine clinic: evidence of decreased pain and improved quality of life. *J Altern Complement Med.* Jun 2004;10(3):506-513.
13. Szczurko O, Cooley K, Busse JW, et al. Naturopathic care for chronic low back pain: a randomized trial. *PLoS One.* 2007;2(9):e919.
14. Szczurko O, Cooley K, Mills EJ, Zhou Q, Perri D, Seely D. Naturopathic treatment of rotator cuff tendinitis among canadian postal workers: A randomized controlled trial. *Arthritis Rheum.* Jul 30 2009;61(8):1037-1045.
15. Seely D, Szczurko O, Cooley K, Fritz H, Aberdour S, Herrington C, Herman P,Rouchotas P, Lescheid D, Bradley R, Gignac T, Berhnardt B. Naturopathic medicine for the prevention of cardiovascular disease: a randomized clinical trial. *BMC Complementary and Alternative Medicine* June 2012; 12:O26.

Professional Goals or Objectives Relative to Primary Care

The range of health conditions for which naturopathic physicians administer care reflects a similar diversity and frequency as that seen in conventional primary care.[20,21] Naturopathic pediatric case mix reflects primary care responsibilities: health supervision visits (27.4%), infectious disease (20.6%), mental health conditions (12.7%), and immunizations (18-27% of visits by children).[22] In another study, almost 75% of all general naturopathic visits were for chronic complaints, most frequently fatigue, headache, and back symptoms. Screening lab tests were ordered at 4-10% of visits.[23]

Prevention and health promotion are key responsibilities of PCPs, a fact increasingly emphasized as conventional family medicine attempts to redefine itself through initiatives such as Medical Home demonstration projects and Chronic Care Model,[24,25] which acknowledge the importance of "patient-centered" primary care. Principles of healthy lifestyles are now incorporated in the national guidelines and standards of care of every major disease organization.[26] Health promotion is a cornerstone of naturopathic medicine, both philosophically and in care delivery.[8,27]

Overall, rates of health promotion counseling in conventional primary care have been low. Naturopathic physicians exemplify a way in which this can be accomplished in a primary care setting. Analysis of the 2000 National Ambulatory Medical Care Survey revealed that among conventional primary care providers, few PCPs provided health counseling about diet (21.7%), physical activity (15.7%), or stress reduction (2.5%); hospital-based outpatient care is even lower.[28] In comparison, a study of naturopathic physician practices specific to diabetes care found 100% of patients received dietary counseling, 94% received instruction about increasing physical activity, and 69% received counseling for stress reduction.[29]

The settings in which naturopathic physicians practice reflect their role as primary care providers. Work in public health clinics, hospitals, school-based clinics, academic health centers, and medical schools indicate that the primary care needs of patients are being effectively met by naturopathic physicians.[30]

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Comparative Educational Standards for Primary Care Practice

Naturopathic medical education in the US requires 4-5 years and a bachelor's degree with science prerequisites for admission. The first two years include biomedical and diagnostic sciences. Subsequent years include clinical sciences and therapeutic modalities. Upon successful completion of the biomedical portion of the program, students are eligible to sit for Part I of the Naturopathic Physicians Licensing Examination (NPLEX) administered by the North American Board of Naturopathic Examiners (NABNE). Graduates who have passed NPLEX, Part I must then pass the clinical portion of NPLEX, Part II, to obtain licensure.[6]

All licensing jurisdictions require naturopathic physicians to have graduated from a college accredited by the Council on Naturopathic Medical Education (CNME) and to have passed the Naturopathic Physicians Licensing Examinations (NPLEX) in order to become licensed. The CNME is the professional accrediting agency for naturopathic medicine, certified by the US Department of Education.

Educational Standards as a Basis for Primary Care Practice

Clinical education in naturopathic medical schools includes assessment, diagnosis, and treatment of disease from pediatrics to end-of-life care. Prevention and health promotion are a routine part of all patient care. Emphasis is placed on naturopathic therapeutics, including nutrition, physical medicine, lifestyle counseling, pharmacology, and minor surgery. Students are exposed to a variety of patients and conditions in supervised clinical education, including acute and chronic conditions affecting the medically underserved. Clinical training includes rotations in community health centers, homeless clinics, senior center/retirement homes, and a variety of private and institutional settings.

Before graduation, all medical schools use outcomes-based assessments to evaluate students' clinical skills in clinical practice areas, including organ systems (e.g., cardiology), special populations (e.g., pediatrics), diagnostic evaluation, clinical judgment, application of therapeutic modalities, and patient management. Students are required to precept with experienced practitioners in varying practice settings, in addition to attending grand rounds, topical lectures, demonstrations, and case presentations. Members of the Council of Chief Academic and Clinical Officers (CCACO), representing administrators from the seven current North American naturopathic medical schools, meet regularly to discuss issues relevant to education and outcomes assessment and to revise naturopathic educational outcome standards.

Focused Education to Enhance Skills in Primary Care

The federally recognized Council on Naturopathic Medical Education (CNME) has established primary care as the academic and clinical training standard for naturopathic physicians:

"[The naturopathic medical curriculum] [s]upports students in becoming clinically competent, caring and ethical primary care/general practice physicians/doctors with a well-developed sense of personal wellness, knowledge of their unique skills as healers, and full understanding of their scope of practice and its strengths and limitations."[5]

"A clinical experience that provides students with the opportunities to develop the clinical knowledge, skills and critical judgment necessary for safe and effective practice as a primary care/general practice naturopathic physician/doctor, including patient counseling on health promotion and disease prevention, patient assessment, diagnosis, treatment, prognosis and management, and referral as appropriate…." [31]

Recently, the number of residencies in naturopathic family practice has increased; yet, residency opportunities remain too few to accommodate all graduates. This will continue to be a problem as long as the majority of residencies remain self-funded by the medical schools and private residency sites. In comparison, federally subsidized conventional medical residencies are available through Medicare. Currently, all residencies are currently certified by the CNME. The Post Graduate Naturopathic Medical Residency Society is actively pursuing residency site expansion, to meet current demand.

Licensure requirements for continuing medical education vary by state, and are offered by regional and national naturopathic professional organizations.

Barriers to a Greater Role in Primary Care Practice

Patient access is the primary barrier limiting the role of naturopathic primary care in North America. This has been partially improved by incorporation into third-party payment schemes in many jurisdictions. Most patients currently pay out-of-pocket for naturopathic medicine and this disproportionately affects access by patients of lower socioeconomic status. When this barrier is removed and third-party insurers reimburse naturopathic services, utilization increases. However, even in geographic regions where insurance coverage has been obtained, additional obstacles are present:

a) Use of "caps:" a dollar limit placed on the expenditure allowable for all CAM care.
b) Limiting the number of visits to any CAM provider.
c) Restricting care to specified diagnoses.
d) Limiting diagnostic procedures that may be ordered by CAM providers.
e) Exclusion from federal programs, such as Medicare.
f) Unequal reimbursement rates for equal services.

Some of these strategies have been successfully litigated in Washington State and Vermont in favor of patient access and provider rights (WAC 284-43-205). Other states have had varied success in overcoming these barriers. Some licensing jurisdictions are operating under laws that have not kept pace with the changing healthcare landscape. NDs in these jurisdictions may be prevented from practicing as PCPs by default. For example, in Connecticut, NDs are not recognized as PCPs by law, and third-party payers in that state have defined NDs as specialists.

In Canada, the healthcare system is publicly funded and NDs are not included with the exception of those practicing in British Columbia which provides minimal coverage for those patients that qualify for assistance. This creates a barrier for patients to access primary care services from naturopathic doctors in three significant ways. First, people may not access NDs because, in a universal healthcare system, third party insurance often provides insufficient coverage. Second, many people do not have access to third party insurance and simply cannot afford the cost of naturopathic medical care. Third, in a system where

[31] *Handbook of Accreditation:* Council on Naturopathic Medical Education;2007 p12 B. *Academic Component; p14, Clinical Component.*

healthcare is perceived as being free, patients do not prioritize 'fee for service' care from a naturopathic doctor as part of their medical care.

Access has been defined as a barrier, as indicated above. Several recent papers have been published discussing these concerns and defining the role of naturopathic medicine in primary care.[32,33,34,35,36]

Re-thinking Primary Care

Consistent with the goals of primary care, naturopathic medicine contributes to improved health and wellness of the US population through delivery of high quality, patient-centered, primary care that prioritizes prevention of disease and restoration of optimal health using natural, minimally invasive therapies. The profession represents a workforce of approximately 6000 licensed physicians, nationwide, with hundreds more being added annually.[37]

The future of the naturopathic profession will in large part be determined by its success in legislative efforts to expand public access to naturopathic care through state licensure and inclusion of naturopathic physicians in federal programs such as Medicare, Indian Health Services, the Veterans Administration, and future programs. Clinical outcomes research is increasingly emphasized as a professional goal in order to:

- provide health services data to policy makers in order to quantify the impact of naturopathic primary care on the nation's health
- study comparative effectiveness of different aspects of naturopathic medicine
- apply findings for broader dissemination and quality improvement. This is exemplified by recent large NIH-funded research studies focusing on clinical outcomes of whole practice naturopathic medicine and the formation of the practice-based Naturopathic Physician's Research Network (http://nprinstitute.org/nprn).

The US and Canada currently face a serious shortage of physician-level PCPs, exponentially escalating healthcare costs, epidemics of lifestyle-related chronic disease and obesity, and increasing dissatisfaction with conventional medicine. Naturopathic physicians are a valuable resource for modeling sustainable, efficacious primary care in light of these critical shortages. As naturopathic approaches to these public health challenges are found effective through research, then naturopathic primary care and its emphasis on direct care, prevention, wellness, and health promotion will shape a new therapeutic order for these nations' public health policies.

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Table 1: Current Primary Care in State Licensing and Practice Acts for Naturopathic Physicians

State	Legislation title / #	Purpose
CA	Business and Professions Code, Section 3613(c)	Insurance coverage
CA	SB907	Practice
HI	§455-8; §16-88-81	Practice
MT	37-26-103	Practice
NH	3.28E-01	Practice
OR	Oregon Rural Health Coordinating Council	Rural Primary Health Care – Student Loan Forgiveness
UT	58-71-102: Definitions #11	Practice
VT	Ch. 107. 8 V.S.A. § 4088d. Coverage for covered services provided by naturopathic physicians	Insurance coverage
VT	Ch. 107. 18 V.S.A. § 704. Medical home	Medical Homes Act
VT	Ch. 107. 8 V.S.A. § 4088d. Coverage for covered services provided by naturopathic physicians	Medicaid
WA	WA State Dept. of Health: "Staffing the New Health Care System" 1995	Practice
WA	RCW 74.09.470 (Public assistance; DSHS) Children's affordable health coverage	Children's health care
WA	SB 5093 - 2007- Concerning access to health care services for children	Children's health care
WA	HB 2549 (2008) Establishing a patient-centered primary care-collaborative program.	Medical Homes Act