Naturopathic Physicians as Whole Health Specialists

The Future is Whole Person Health Care





Medicine that is natural, non-toxic and non-invasive.

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executive summary SUMMARY

Naturopathic Physicians: Medical Specialists in Preventive Care & Whole Person Health

Naturopathic physicians are a uniquely educated and skilled, accredited healthcare workforce serving as <u>primary care</u> and <u>specialty care</u> physicians throughout the US*.

Why Naturopathic Medicine? Why Now?

Today, the health of Americans and the nation's healthcare system are significantly challenged by an increasing incidence of non-communicable and lifestyle-related preventable diseases, such as obesity, type 2 diabetes, and cardiovascular disease, compounded by a sharp *escalation*¹ in multimorbidities that present <u>specific challenges</u>² to primary care environments. With declining life expectancy³ and decreasing access to care, especially for vulnerable individuals, the US has been engulfed by a global pandemic that further burdens its population and health system. In addition to millions of lives lost and monumental pressure on its heroic healthcare workforce, the profession of medicine and the public it serves remain vulnerable to this and to other unpredictable threats to public health.

Licensed naturopathic physicians contribute an accessible, effective <u>model of primary and specialty</u> <u>clinical care</u>⁴ to address these unprecedented current and future healthcare challenges. Its comprehensive systems approach to clinical decision making addresses underlying contributions to disease and incorporates behavioral, lifestyle, and other interventions to support disease prevention and to improve patient outcomes.

To achieve their patients' goals this model supports the interprofessional collaboration of naturopathic physicians with other healthcare professionals. Naturopathic physicians working in integrative settings provide an exceptionally well qualified experience base for fostering high performance, cost effective team-based care.

The guiding principles and models of naturopathic medicine include:

- <u>The Naturopathic Therapeutic Order</u>[™]⁵, a clinical heuristic of whole person assessment and treatment that addresses underlying causes of disease, and uses the least invasive means necessary to achieve optimal patient health.
- <u>The Naturopathic Determinants of Health</u>⁵ a comprehensive focus on the complex internal and external factors that affect health, and help both physician and patient target health optimization, as well as disease prevention.
- <u>Six Principles of Naturopathic Practice</u>⁶ that guide the way in which physicians apply their clinical model in practice that include and support its 'Whole Person, Whole Health' approach to clinical care, leading with the healing power of nature (<u>Vis Medicatrix Naturae</u>⁷) that recognizes that with the proper support, the body has the natural capacity to recover from injury and illness (both physical and mental/emotional).

Naturopathic Medicine Is:

- Comprehensive in its approach to whole health, whole person primary care.
- Focused on addressing underlying causes of acute and chronic diseases.
- Dedicated to health promotion, minimally invasive therapies, and reducing healthcare costs.
- Individualized to engage patients and to support health-related lifestyle and behavioral change.

This white paper provides supporting evidence for the profession's significant and unique contributions to preventive, whole person care and models of integrative clinical practice, to:

 Inform readers about the naturopathic medical profession in order to strengthen the US healthcare workforce by delineating the unique clinical practice of naturopathic physicians, and their contribution to both individual patient and population health. (continued...)

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- Demonstrate the clinical efficacy of naturopathic theory and practice, as evidenced in contemporary clinical research, particularly when addressing chronic disease.
- Illustrate robust models of interprofessional collaboration, and integrative practice between naturopathic physicians and other licensed healthcare providers.
- Advocate for further inclusion of naturopathic physicians within the current healthcare workforce, including the clinical, educational, research, and public health sectors.

As a profession, naturopathic physicians support: accredited naturopathic medical education, nationwide regulation and licensure, inter-professional clinical partnerships, and integration into today's healthcare workforce. The profession stands ready to provide training for its model of care to collaborate with other healthcare professionals and to share its knowledge, while working toward the collective goal of enhancing whole health care for an increasingly receptive public.

*For details about the global practice of naturopathic medicine, please see: Overview of international naturopathic practice and patient characteristics: results from a cross-sectional study in 14 countries.

Naturopathic Physicians:

Collaborative Partners to Address Current Health System Needs

Can naturopathic physicians help address current healthcare challenges?

Despite its world-class technological and scientific advancements, there is widespread evidence that the US healthcare system requires our collaborative effort to rectify its greatest barriers. With the highest spending⁹ on health of any other developed nation, the US still incurs the highest rate of hospitalizations, preventable deaths, and incidence of chronic disease. A brief review of recent system-wide government, industry, and private initiatives throughout the last decade reveals an array of barriers in rectifying this healthcare crisis:

Workforce Decline: A rapidly declining workforce of physicians and other providers - a longstanding issue that has weakened a system encumbered by pandemic requirements:



Collaborative Partners to Address Current Health System Needs continued..

Healthcare Disparities: Continuing disparities, such as inadequate access to services and coverage:



Chronic Conditions & Multimorbidities*: Mounting social and economic burden from numerous chronic conditions and multimorbidities, such as heart disease, hypertension, dyslipidemia, depression, and type 2 diabetes, continue to decrease quality of life and longevity for individuals, and to increase healthcare system spending:



Multimorbidities account for 50% or more of the primary care patient load.¹⁵ This contributes to *clinical inertia*¹⁶ (the lack of treatment intensification when therapeutic targets aren't met), a "potentially leading cause" of preventable adverse events, morbidity, mortality, and excess healthcare costs."

nce of two or more noncommunicable diseases²²

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Naturopathic Physicians:

These disparities were most recently targeted by the US DHHS in *Healthy People 2030*¹²

"Expanding access to health services is an important step social, cultural, and geographic barriers to health care must...be considered," toward reducing health disparities... factors like economic,

> A highly fragmented and complex healthcare system, especially for those with chronic conditions, has led to decreased care quality, lapses in care, higher <u>healthcare costs</u>¹³, and numerous initiatives to redress the organization and delivery of primary care¹⁴.

> > BMC Medical Education

BAC Part of Samper Nature

Understanding the clinical reasoning processe involved in the management of multimorbidity ambulatory setting: study protocol of a stim recall research

M. C. Aubitel ⁽²⁾, S. Carto Nation, J. Sader, C. Riz, T. Fasser, J. M. Surrow, M. Ne BMC Medical Education: PL Article number: 31 (2021) Cite this article

Studies indicate US physicians¹⁷ are challenged by the *diagnostic complexities*² and *psychosocial factors*¹⁸ these present, and can benefit from a greater educational focus in *preventive* healthcare¹⁹.

The Future of Whole Pers

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Naturopathic Physicians:

Collaborative Partners to Address Current Health System Needs ...continued...

Increasing Costs: Staggering healthcare costs, often due to many of the problems cited here, continues to be a *policy focus*²⁰ among numerous healthcare players:

National Health Council Domains & Values: Reducing Health Care Costs for Patients

	the state of the s
Promote High-Value Health Care	 Integrate the perspectives of patients with chronic conditions Promote care coordination, health promotion, adherence, pr Ensure costs for health care products and services align with applian. Reward providers for efficiency and effectiveness on the bas Provide patients with adequate and transparent options for c and care. Ensure atfiniable and predictable out-of-pocket costs Support mechanisms that share risk across plans appropriate patients with chronic conditions
Stimulate Research and Competition	 Encourage early and continuous engagement of patients will throughout the research continuum. Promote competition to drive lower-cost and higher-quality p support the development and use of patient-reported and p Promote research that evaluates health-system level approx Support comparative effectiveness research that involves po of care Facilitate research collaborations, data sharing, and clinical
Cush Costs Research his	· Ensure cost containment stortening do not advantable affect a

"<u>The National Health Council</u>²⁰ envisions a society in which all people have access to quality health care that respects personal goals and aspirations, and is designed around the health outcomes most important to patients. One of the biggest barriers to access is the rising cost of care, especially for the more than 160 million American with chronic diseases and disabilities."

- <u>Promote²¹ care coordination, health promotion,</u> adherence, prevention, and disease management
- Ensure costs for health care products and services align with their value to patients and the health care system ..."

Declining Patient Satisfaction: Declining patient satisfaction has led to regular provider and facility assessment:



Such assessments are conducted via the Consumer Assessment of Healthcare <u>Providers Survey²³, potential financial</u> <u>consequences²⁴ for organizations not</u> meeting satisfaction benchmarks...



...and to increased concerns from *patient* advocacy groups²⁵.

These challenges are system-wide and intersubjective; consequently, weakness in one area tumbles into others like a stack of dominoes. As public trust in health care continues to erode, the innovative, whole health, whole person clinical approach of qualified naturopathic physicians offers distinct assets to respond specifically to these issues. Recognized by

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the <u>US Senate in 2014</u>²⁶, naturopathic physicians represent a prepared healthcare workforce that can provide accessible care, improve patients' health, engage patients in their own health care, and reduce healthcare costs while working effectively within the healthcare system.

Collaborative Partners to Address Current Health System Needs ...continued

Find a formal definition of naturopathic medicine^{27a} and its Principles of Practice from the *American* Association of Naturopathic Physicians (AANP)^{27b}, the national professional society representing licensed naturopathic doctors (NDs), naturopathic medical students, and other healthcare professionals allied with the naturopathic medical profession.

Naturopathic Medical Education: Creating gualified physicians

Licensed and registered NDs graduate from 4-year, graduate-level naturopathic medical schools accredited by the Council on Naturopathic Medical Education, which is recognized by the US Department of Education. *The Association of Accredited Naturopathic Medical Colleges*²⁸ (AANMC) supports the academic efforts of accredited and recognized schools. Its mission is to support member organizations in delivering high quality, innovative, accessible, state-of-the-art naturopathic medical education and research.

- 4-year doctoral program
- 4100 total hours, 1200 clinical hours
- 2 years biomedical sciences, 2 years clinical sciences
- 700 patient visits required to graduate
- Approximately 400 graduates, annually
- 4 board specialties & a dozen or more certifications currently available

*Examine the curricula*³⁰ from naturopathic medical schools and *find out more*³¹ about naturopathic medical education.



Naturopathic Physicians:

• 8 naturopathic medical schools in the US and Canada accredited by the US Department of Education

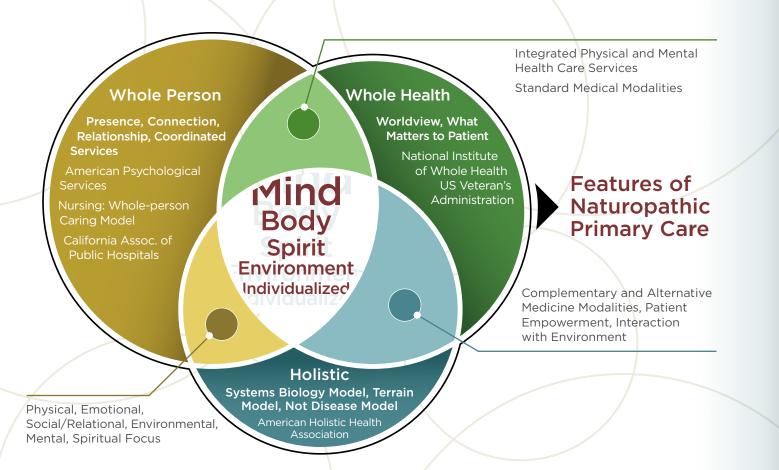
Postdoctoral licensing examination by the <u>North American Board of Naturopathic Examiners</u>²⁹

Reveal the unique benefits and outcomes of naturopathic medicine

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Naturopathic Physicians Offer:

A Whole Health, Whole Person Approach to Primary Care



Naturopathic physicians offer a comprehensive, 'whole health,' 'whole person,' and 'holistic' clinical approach to primary care. Use of these terms varies widely among healthcare professions and has evolved concomitant with attempts to respond to healthcare challenges. Definitions have developed independently, which has resulted in some ambiguity, given the variations inherent within isolated professional silos. Naturopathic physicians

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have contributed extensively in the literature^{32a} for many years toward clarifying these definitions. A recent systematic literature review^{32b} into how these terms are used among primary care providers (PCPs) illuminated six themes of usage, but their ubiquitous use in health care still enhances confusion about professional domains and clinical approaches for both patients and providers. The figure here illuminates this.

Whole Person Care, in some cases, refers to integrating systems of care: namely, primary care and behavioral health³³, and in some models, social services³⁴. The nursing profession's model of whole person caring³⁵ focuses on domains of care (physical, emotional, social/relational, menta spiritual), and on 'therapeutic partnering' with patients. This term also is used to refer to health care that incorporates the social determinants of <u>health</u>³⁶. A 2018 study <u>by Thomas, et al.</u>³⁷, found primary care doctors use the term to refer to, "...an approach that considers multiple dimensions of the patient and their context, including biological, psychological, social and possibly spiritual and ecological factors, and addresses these in an integrated fashion that keeps sight of the whole." Despite a multidimensional emphasis meta analysis showed the physicians didn't consider 'whole person care' necessarily to include CAM practices.

Whole Health Care, as described by the National Institute of Whole Health³⁸, addresses five main aspects of care (similar to those identified by

The Importance of Integration

Regardless of the nuanced differences among these terms, *Thomas' 2018 survey*³⁷ emphasizes that whole person care, "...requires both multidimensionality and integration... particularly where multiple providers are involved in care." Integration is achieved, according to the *Integrative Health Policy Consortium*⁴² with, "...a collaborative, comprehensive, person-centered approach to <u>health creation</u>⁴³ and disease care that addresses all factors impacting health ...and embraces all evidence-informed disciplines, both conventional and complementary, in order to achieve optimal well-being."

What differentiates the whole health, whole person care delivered by naturopathic physicians?

Naturopathic physicians approach whole health, whole person care according to the profession's foundational theory⁴⁴. This theory, first proposed in 1913 and then expanded from 1997 to 2013⁴⁵, and its clinical models are based on the profession's characterization of living organisms as adaptive⁴⁶, allostatic⁴⁷, autopoietic⁴⁸, and

Naturopathic Physicians Offer:

A Whole Health, Whole Person Approach to Primary Care continued...

<u>'</u> al,	whole person care): physical/structural, emotional/ mental, nutritional/chemical, environmental, and spiritual health. As an approach to care, the <u>US</u> <u>Veterans Administration</u> ³⁹ focuses on patient- centered, personalized care in its description of whole health as "what matters to you, not what is the matter with you."
-	Holistic Care encompasses similar body-mind-spirit domains, but also is described by the <u>American</u> <u>Holistic Health Association</u> ⁴⁰ as conceptualizing individuals as interdependent living systems. Although holistic care includes complementary and alternative medicine therapies, it is foremost, " <u>an approach to health and disease that</u> <u>transcends any particular therapy.</u> ⁴¹ " It incorporates 'more recent scientific discoveries' such as <i>psychoneuroimmunology</i> ^{41a} that is used effectively
-	to reduce stress, inflammation processes, etc. and <u>biofield coherence</u> ^{41b} therapies used effectively for <u>mental health wellness</u> ^{41c} and <u>pain, and that</u> <u>show promise in chronic diseases like cancer,</u> <u>cardiovascular disease, etc.</u> ^{41d}

	<u>emergent</u> ⁴⁹ systems. For every individual patient, therefore, naturopathic physicians conceptualize 'whole person and whole health' as:	
<u> </u>	 supporting the factors that enhance health, decreasing the factors that disturb health and increase susceptibility to illness, and 	
3	 supporting the body's individual process to optimize and/or return to health. 	

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Naturopathic Physicians Offer:

A Whole Health, Whole Person Approach to Primary Care ...continued...



The naturopathic clinical model emphasizes not only wellness, disease prevention, and health optimization, but also potential recovery from intractable illness - a once-rejected concept that now is gaining increased recognition from contemporary research, such as the International Journal of Disease Reversal and Prevention (IJDRP)⁵⁵.

Naturopathic clinical theory also *extends* these concepts to address all determinants of health⁵ (all components of the individual's external and internal environment, in addition to those defined by the US <u>Centers for Disease Control & Prevention</u>⁵⁰). This includes not only the environmental, social, and economic determinants well-known in the public health arena, but also notably (1) the body's internal chemical, mechanical, and cellular components and (2) life or spiritual crises where individuals have lost touch with a deeper sense of purpose and place from living in a disconnected world. This is a comprehensive model that belies its seemingly old-fashioned terminology, 'terrain.' This term, once widely used in 19th-century *medicine*⁵¹, is now expanded in naturopathic clinical theory to include contemporary empirical and research evidence from genetics, epigenetics, systems biology, immunology, *bioelectric signaling*⁵², <u>mechanobiology</u>⁵³, and psychoneuroimmunology⁵⁴.

How do naturopathic physicians apply 'whole health, whole person' care in clinical practice?

To apply this model in clinical practice, NDs rely on the profession's conceptual hallmarks of its clinical theory (terrain, disease, and healing):

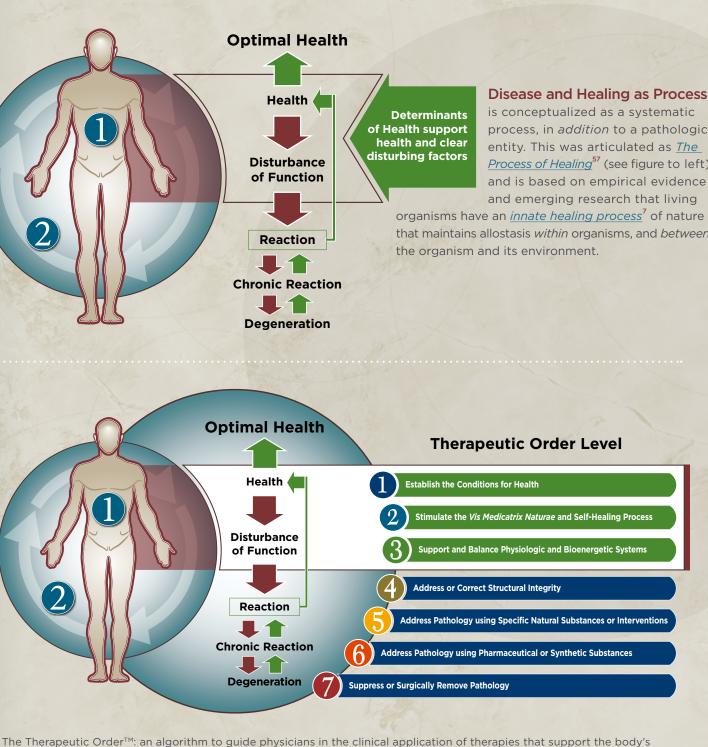
Terrain is a focus on numerous and complex *determinants of health*⁵ rather than on pathology, alone. A key feature of this model is its complex systems approach⁵⁶: the continuous interplay between and among internal systems and external environments, and the factors that support or detract from an individual's health. It is this conceptualization of living organisms that dictates the multi-modality approach of naturopathic medicine.



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Determinants of Health: Genetic (and Immunity) Psychosocial Behavioral 2 Determinants of Health: Environmental, Social Economic

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homeodynamic process of healing.

Clinical Response to Disease via the Therapeutic Order^{TM5}, is developed by the naturopathic profession through a heuristic consensual process, is a structured algorithm providing a hierarchical framework (see figure above⁴⁵) to apply the Process of Healing theory in practice. Rather than a prescriptive clinical guideline, it is a conceptual roadmap that guides physicians through general concepts that must be considered in order to arrive at effective therapies for individual patients.

Naturopathic Physicians Offer:

A Whole Health, Whole Person Approach to Primary Care ...continued...



Disease and Healing as Process

process, in addition to a pathologic entity. This was articulated as The Process of Healing⁵⁷ (see figure to left) and is based on empirical evidence and emerging research that living

that maintains allostasis within organisms, and between

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Naturopathic Physicians Offer:

A Whole Health, Whole Person Approach to Primary Care ...continued...

Naturopathic Treatment of Gastroesophageal Reflux Disease (GERD)

The following is an example of a model of care for the treatment of GERD from a naturopathic perspective as compared to a conventional approach to treatment.

Patient Journey with Therapeutic Order Perspective





Level 1 Establish Foundations for Optimal Health:

- 1. Assess social/environmental determinant of health (see page 10)
- 2. Avoid irritant foods, smaller bites, chew well, drink between meals
- 3. Anti-inflammatory diet: soothing/fermented foods for microbiome
- 4. Post meals: avoid lying down and wearing tight clothing
- 5. Gentle walk after meals, no extreme exercise
- 6. Raise head of bed, slim down, quit smoking, moderate alcohol or abstain
- 7. Seven+ hours of <u>sleep</u> to balance sympathetic/parasympathetic nervous systems

Level 2 Stimulate Self-Healing Mechanisms

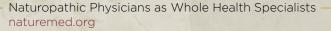
1. Acupuncture

- 2. Therapeutic fasting
- 3. Individualized homeopathic remedy
- 4. Stress management: gentle exercise, hobbies, time with loved ones, gardening, nature, breathing exercises and mindfulness meditation

Level 3 Support & Restore Weakened Systems

- 1. Supplements to strengthen lower esophageal sphincter (LES)
- 2. Abdominal breathing exercises to strengthen lower esophageal sphincter
- 3. Massage and body work to support stress management
- 4. Central nervous system support
- 5. Vagus nerve support
- 6. Hydrotherapy

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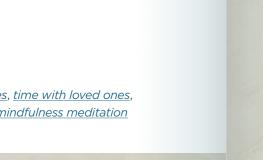




Level 6 Synthetic Symptom Relief

Level 7 High Force Intervention





Naturopathic Physicians Offer:

A Whole Health, Whole Person Approach to Primary Care ...continued...

Level 4 Address Physical Alignment:

1. Naturopathic adjustments to bones, joints, and muscles to reduce stressors

2. Cranio-sacral therapy

3. Physiotherapy recommendations

4. Exercise prescription

Level 5 Natural Symptom Control

1. Melatonin for stomach acid, strengthening LES, and reducing inflammation, discomfort and sleep

2. <u>Probiotics</u> to reduce inflammation and <u>abdominal discomfort</u>

3. Supplements to soothe mucous membranes: curcumin, slippery elm, aloe vera juice, zinc carnosine, licorice root

4. Support Central Nervous System with Omega-3 fatty acids

1. Employ drug therapy while working on the above to address underlying causes

1. Diagnostic endoscopy

2. Surgery and above co-management for complicated and severe GERD (see Phase 3, pg. 15)



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A Whole Health, Whole Person Approach to Primary Care ...continued...

Conventional Treatment of GERD

Phases of Diagnosis and Treatment

The following is a suggested treatment for GERD as a patient might experience from a medical doctor in a traditional medical setting. It is recognized that every physician has his or her own protocols and order of treatment. This is for comparative purposes.

Phase 1 Mild GERD

- Elimination of food triggers, weight loss, smoking cessation, moderate alcohol intake or abstain, lift head of bed, breathing exercises to strengthen LES.
- 2. Low-dose histamine 2 receptor antagonists (H2RAs)
- 3. Incrementally increase potency of medication for symptom control
- 4. Concomitant antacids and/or sodium alginate as needed

Phase 2 Continued GERD

- 1. Increase dose of H2RAs to standard dose, twice daily for a minimum of two weeks
- 2. Persistent symptoms: replace H2RAs with once-daily proton pump inhibitors (PPIs) at

- a low dose, increase to standard doses if required.
- 3. Once symptoms are controlled, treatment continues for at least eight weeks.

Phase 3 Diagnostic and Surgical Intervention

- 1. Severe GERD may require one of more of the following:
- 2. X-rays of upper GI tract
- 3. Esophageal manometry
- 4. Diagnostic endoscopy or ambulatory acid (pH) probe test

* Mayo Clinic's GERD Care Team Recommendations



Compared to Conventional Treatment Naturopathic Medicine focuses on whole patient care, using diet, lifestyle and gentle treatments to support health and wellness.

Long-Haul COVID-19 Case: "Steven" 25 yo Male

Physician: Michelle Simon, PhD, ND

The following is an example of a naturopathic approach to the treatment of long-haul COVID-19:

Presentation

CC of diarrhea. Other symptoms included severe fatigue and brain fog, insomnia, esophageal reflux, muscle pain and fasciculations (chest), poor circulation, and poor digestion.

History

The patient has been treated for small intestine bacterial overgrowth (SIBO) and candidiasis. 6 mo ago he was healthy, running and weight training regularly. He experienced COVID in early January, 2021. He has a history of chronic anxiety. His diet was limited and poor, history of eating mostly peanut butter sandwiches and protein bars.

Labs Ordered at Initial Visit/Results

Fasting blood tests: CBC with differential, thyroid studies, chemistry panel, and a nutrient panel. *Results:* Vitamin D, magnesium, vitamin C deficiency; borderline low in several B vitamins. Extremely deficient in glutathione. Heterozygous for MTHFR defects related to B12 and folate metabolism.

Patient did not disclose COVID Infection until Wk 4 of evaluation

Four Week F/U T-Long Haul COVID Dx/Tx

- Refer for 6 sessions of IV glutathione with magnesium and vitamin D
- Vitamin A fat-soluble form
- Vitamin C with meals and increase to bowel tolerance
- Vitamin D
- B vitamins in a good multi or "B complex."
- Minerals daily with meals
- NAC with meal
- Quercetin with food
- Melatonin

Seven Week F/U

Overall improving slowly. Energy and brain fog much improved. Still some muscle twitching and pain. Exercising now but notices that this worsens symptoms. Anxiety more prominent. New onset of heart palpitations. To improve cellular energy generation, Tx now focused on his mitochondrial function:

Curcumin - to help repair/improve cell
 <u>membranes/permeability</u>

- Taurine
- Dietary protein
- Consider reading/listening to the book
 Breath by James Nestor
- Do Relaxing Breath Exercises (handout) at least daily, or whenever anxious
- Consider counseling to address anxiety

Nine Week F/U

Presentation: For the first time, his mood is "good" and he is feeling hopeful. He is now able to sleep seven hours. Exercise still worsens symptoms. The choice was made at this point to focus on diet as the intervention to support his metabolic detoxification systems.

Tx: Vegetables, vegetables, vegetables:

- "Eat a rainbow" of different colored vegetables each day for a <u>variety of</u> <u>anthocyanidins</u>; many different kinds per week goal
- Add in some fermented vegetables kimchee, sauerkraut or kefir

Twelve Week F/U

Presentation: He is back to work, able to engage in moderate exercise, and continues to have 7 hours of restful sleep. He has no complaints of mood alteration (including anxiety) or fatigue. Pain in chest has resolved. Re-test of Vitamin D showed 32 ng/ml – improved, now in the "normal" range. Goal: 40- 50 ng/dL range in 3 mo.

Tx:

- Discontinue quercetin, curcumin, Greens First, glutathione and NAC
- Continue with melatonin for 6 weeks and then taper off, vitamin D, magnesium, multimineral

Key takeaways from Steven's case

- Steven, although young, was not resilient.
- His poor diet, devoid of vegetables, helped create a nutrient deficient status.
- Inadequate stress management and anxiety were further taxing his ability to recover.
- Glutathione administration was a major factor in his recovery.

A Whole Health, Whole Person Approach to Primary Care ...continued

How is the naturopathic clinical approach individualized for patients?

NDs rely on the six naturopathic principles of practice to guide them in applying their clinical theory to individual patients: The Healing Power of Nature (Vis Medicatrix Naturae'), Identify and Treat the Causes, First Do No Harm, Doctor as Teacher (Docere), Treat the Whole Person, and Prevention. Docere is the main principle guiding naturopathic physicians' interaction with patients.

The Clinical Encounter

A standard naturopathic clinical encounter begins with a comprehensive, systems-based assessment that is highly individualized to each patient and that addresses underlying mechanisms driving the disease process. Physicians address individual signs and symptoms, as well as the many determinants that influence health and illness. This is measured against an understanding of the multiple physiological systems in question, and evaluation of circumstances and conditions that create clinical dysfunction, including:

- comprehensive personal history (medical, psychosocial, socioeconomic)
- family history
- genetics and epigenetics
- environmental and occupational exposures
- medication history (including medications, supplements, and botanicals)
- diet and lifestyle

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- psycho-emotional health (including trauma history, stress resilience, coping style, and psychosocial support)
- systems function (digestive, hepatobiliary, cardiovascular, renal, endocrine, musculoskeletal, immunological, neurological)
- Lack of purpose (commitment to something meaningful provides a motivation for change)

NDs may use a range of naturopathic, conventional, functional, and specialized diagnostic tests to perform this comprehensive evaluation, including but not limited to:

- comprehensive physical exam, including skin, pain, cognitive, communication, posture, gait, activities of daily living, fitness, GYN/prostate, etc.
- psycho-social-spiritual evaluations including diet, activity, sleep, spiritual practices
- standard tests, such as blood analysis, urinalysis, stool tests, and diagnostic imaging
- specialized tests, such as food sensitivity testing, biochemical analyses (e.g., methylation, oxidation, detoxification), metabolic pathways, comprehensive stool analysis, toxins and toxic load, advanced hormone testing, neurotransmitter testing, and advanced cardiometabolic testing)

We believe that naturopathic medicine, with its unique principles and practices, has the potential to reverse the tide of chronic illness that overwhelms existing health care systems and to empower people to achieve and maintain their optimal lifelong health.

Vaturopathic Naturopathic Physicians Offer:

Whole Health, Whole Person Therapies

Naturopathic physicians prioritize early intervention and non-invasive treatments designed to address clinical systems and underlying causes of dysfunction, rather than focusing primarily on symptom management. This includes instituting not only therapies that support health, but also approaches that eliminate sources of dysfunction. Treatment choices include evidence-

Guided by the naturopathic medical school curriculum and scope of practice and informed by the Therapeutic Order^{TMS} clinical methodology addresses treatment at several levels, based on the individual's needs:

- spiritual health, toxin exposure management, social and environmental determinants
- Therapeutic diets and nutrition therapy
- Botanical medicines and dietary supplements
- Restorative therapies: hydrotherapy, manual medicine, homeopathy, etc.
- Evidence-based, disease-targeted therapy: therapeutic use of nutrients, vitamins, herbs, and (where state regulations include it in the profession's scope of practice) pharmaceuticals
- Physical medicine modalities: massage, acupuncture, physical therapy, regenerative injection therapy (trigger point therapy, prolotherapy, platelet therapy, etc.)
- Mind-body techniques: mindfulness meditation, yoga, relaxation modalities, sensory-based therapies, behavioral modification, biofeedback, etc.

As primary care providers, naturopathic physicians coordinate treatment plans to involve families, caregivers, and other physicians or health providers to ensure patients receive collaborative, comprehensive, and effective treatment.

Where's the evidence for naturopathic concepts and its approach to medicine?

There is a strong predilection to *evidence from* randomized controlled trials (RCTs)⁵⁸. In addition, naturopathic practice embraces empirical evidence gained from observation and extrapolation of consistent patterns occurring in populations.

*Historically*⁵⁹, medical evidence was largely empirical and informed mainly by retrospective case series.

based natural therapies, and may include necessary and appropriate pharmaceutical and/or other interventions. Treatment plans emphasize principles of healthy living and encourage patient engagement through education and advocacy, while offering additional perspectives and therapeutic options for both acute and chronic diseases.

· Foundational support: healthy diet, movement and exercise, stress management, emotional and



The randomized controlled trial (RCT) approach now underpins much of current medical research as the 'gold standard.' In 1992, evidence-based medicine (EBM) was introduced in an effort to utilize RCT evidence, provide a consistent approach to treatment for both clinicians and for patients, and to "put an end... to the disparities in treatments which make it that certain patients do not benefit from the best medicine available."60 Although assessment of evidence in EBM should include 3 components (RCT

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Naturopathic Physicians Offer:

Whole Health, Whole Person Therapies ...continued...

evidence, the physician's clinical experience, and patient preferences), the clinical guidelines developed to implement EBM have relied overwhelmingly on RCTs, creating a 'prevailing conceptual framework'⁶⁰ that precludes other forms of evidence. Consequently, EBM has more recently become weighted by its own limitations: an over-reliance on 'technical rationality' that allows little room for individual clinical judgment and that relies on the concept of the 'average patient' in lieu of embracing the individual variabilities inherent in living organisms.

As use of clinical guidelines became more ubiquitous, studies began revealing an increasing lack of use among physicians. One study of PCPs, for example, showed that 30% of treatment decisions were based on RCTs and 50% on, "convincing non-experimental evidence."⁶⁰ Conducting practice that is based only on the clinical guidelines of EBM has been criticized as

being too restrictive, time consuming, not applicable to patients, interfering with the physician-patient relationship, and "too distant from clinical reality." (pg 59).⁶⁰ Clinical guidelines have been cited as an underlying cause of the clinical inertia that contributes to the increasing healthcare burden of chronic conditions.

Naturopathic physicians employ RCT evidence⁵⁸ as well as *tacit knowledge*⁶¹ and *heuristics*⁶² (increasingly being recognized for their value) to guide clinical decisions, including those that, "...help physicians to work in the <u>context of uncertainty... " (pg 63)</u>⁶⁰ The Naturopathic Therapeutic Order™ is one such heuristic that guides NDs' clinical decisions, along with empirical and RCT evidence, when assessing modalities for individual patients.

New approaches to expanding epistemologies and types of research

There is an acute need for dedicated naturopathic medical research⁶³ in clinical settings⁶⁴. However, conducting randomized controlled trials can be incongruent with naturopathic medicine's multidisciplinary, whole-systems, multimodality approach.⁶⁵ Studies indicate⁶⁶ a 'paradigm shift' is required to successfully implement naturopathic research methodologies, but that the unique characteristics of naturopathic practice also can influence other areas of health research. As one possible solution to this issue, the Oxford Centre for Evidence-Based Medicine proposed a new study design (N-of-1 trials⁶⁷) in 2020 as a model for researching individual treatment interventions, but using rigorous research methods of group clinical trials. This approach may be useful to the emerging practice^{68a} of personalized medicine^{68b} and for addressing complex clinical approaches, such as those required to treat chronic illnesses.

In 2004, the profession completed a 2 year naturopathic medicine whole-system, multi-modality research agenda^{69a} involving 28 research scientists in the US, Canada and Australia. In 2019, a systematic review of the ensuing research showed that naturopathic medicine "/is effective for treating cardiovascular disease, musculoskeletal pain, type 2 diabetes, polycystic ovary syndrome, depression, anxiety, and a range of complex chronic conditions."69b

Already over 2,200 peer-reviewed journal articles have been published by the naturopathic research community between 1987 and 2019. 81% of these were published from 2010 to 2019. The top five article topics were cancer, complex intervention, mental health, nutrition, and herbal medicine. This naturopathic research community "has demonstrated sustained commitment to codifying existing knowledge, generating new knowledge, and disseminating this knowledge to the wider clinical and research community."^{69c} Much more medical research is essential, especially for complex chronic conditions where there is great need and promise.

For more about naturopathic research, see:

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World Naturopathic Federation's list of naturopathic research institutes

Emerging research in the development and progression of illness congruent with naturopathic philosophy and clinical theory (supporting terrain and removing obstacles to health)

- Non-pharmacologic approaches to treatment (e.g. for *pain* and *depression*⁷⁰)
- Intestinal hyperpermeability
- Immune system dysfunction/inflammation
- Microbiome role in health and disease
- Relationship between digestive health and psycho-emotional health (e.g. \underline{ASD}^{71})
- Stress and its role in health and disease (adrenal gland activity, stress hormones, etc.
- Food allergies, sensitivities, and intolerances
- Systemic toxemia and oxidative stress
- Mitochondrial dysfunction/cellular metabolism



Naturopathic Physicians Offer:

Whole Health, Whole Person Therapies ...continued...

t	•	Biofilms / biotoxins, and role in health and disease
	•	Social, environmental, and cultural determinants of health and disease
	•	Unity of disease and cause: comorbid conditions and determinants of health
	•	Engaging a multi-system healing response
	•	Individualization of whole person care
)	•	Mind-body biofield and energy-based modalities, including meditation and yoga

- Structure and posture: history of sports injury, trauma, and surgery
- Sleep dysfunction

Our long-term vision includes supporting extended clinical studies that compare naturopathic medical care to, conventional medical treatments.

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Whole Health, Whole Person Therapies ...continued...

Research Highlights: Clinical Outcomes Studies of Chronic Illness

Cardiovascular Disease

Naturopathic medicine for the prevention of cardiovascular disease: a randomized clinical trial.⁷⁴ Seely et al., 2016. Conclusion: Findings support the hypothesis that addition of naturopathic care to enhanced usual care may reduce the risk for cardiovascular disease among high-risk individuals.

Retrospective Analysis of Cardiovascular Disease Risk Parameters in Participants of a Preventive Health and Wellness Program.⁷⁵ Kimball, et al., 2019. Conclusion: a preventive approach to health and wellness provided by a multidisciplinary team including NDs has the potential to reduce the risk of CVD.

Naturopathic medicine for the prevention of cardiovascular disease: a randomized clinical trial.⁷⁴ Seely, et al., 2013. Conclusion: One year of care under the supervision of an ND resulted in a 3.07% reduction in 10-year CVD event risk compared with patients receiving conventional care, alone. After one year, naturopathic patients were 16.9% less likely to have developed metabolic syndrome than patients receiving conventional care. Findings supported the hypothesis that addition of naturopathic care to enhanced usual care may reduce CVD risk among high-risk patients.

Chronic Pain

Cost-effectiveness of naturopathic care for chronic low back pain.⁷⁶ Herman, et al. 2008. Conclusion: Naturopathic care was found to be more cost-effective than standard physical therapy for treating chronic low-back pain. Further studies on the economic impact of naturopathic medicine are warranted.

Epigenetic Aging Reversal

Potential reversal of epigenetic age using a diet and lifestyle intervention: a pilot randomized clinical trial.^{77a} Fitzgerald, et al. 2021. Conclusion: Participants in the treatment group scored an average 3.23 years younger per the Horvath DNAmAge clock at the end of the eight-week RCT program (p=0.018). The authors note that the largest risk factor for many chronic diseases and mental/physical dysfunction is advanced age and cite research showing interventions that produce even more modest healthspan extensions yield significant public health and healthcare economic benefits.

Depression

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Treatment of Depression and Anxiety by Naturopathic Physicians: An Observational Study of Naturopathic Medicine Within an Integrated Multidisciplinary Community Health Center.⁷⁷ Breed, et al. 2017. Conclusion: In this 6-month study of 112 patients at an integrative community health center, scores for symptoms of depression and anxiety improved significantly when compared with initial scores.

Multiple Conditions

The State of the Evidence for Whole-System, Multi-Modality Naturopathic Medicine: A Systematic Scoping *Review*, Myers, et al., **2019**.⁷⁸ Conclusion: Of the 33 studies that met inclusion criteria (n=9859), evidence of efficacy for naturopathic medicine was shown for treating musculoskeletal pain, type 2 diabetes, polycystic ovary syndrome, depression, anxiety, and a range of complex chronic conditions.

Multiple Sclerosis

A Randomized Pilot Study of Naturopathic Medicine in Multiple Sclerosis.⁷⁹ Shinto, et al. 2008. Conclusion: When usual care for MS was compared with usual care plus naturopathic care, there were no significant differences between groups; however, the group receiving combined care showed more improvement in neurologic impairment, quality of life, and fatigue.

Musculoskeletal Conditions

A critical overview of the current myofascial pain literature.⁸⁰ Dommerholt, et al. 2018.

Pediatric Cancer

Naturopathic Oncology Care for Pediatric Cancers: A Practice Survey.⁸¹ Psihogios, et al. 2019. Conclusion: In this clinical practice survey of OnCANP members, naturopathic interventions (natural health products, nutrition, physical medicine, and mental/emotional support) provided a "strong rationale for further inquiry in the care of children with cancer."

Polycystic Ovarian Syndrome

Study to Evaluate the Changes in Polycystic Ovarian Morphology after Naturopathic and Yogic Interventions.⁸² Ratnakumari, et al. 2018. Conclusion: Study findings indicate naturopathic and yoga interventions produced significant improvement in ovarian morphology and anthropometric measurements in the test group versus the control group.

Type 2 Diabetes Mellitus

Description of Clinical Risk Factor Changes During Naturopathic Care for Type 2 Diabetes. Bradley R, et al. 2009. J Altern. Complement. Med. 2009.15(6): 1-7. Bradley R, et al. 2009. J Altern. Complement. Med. 2009.15(6): 1-7.⁷² Conclusion: Naturopathic medicine supplies evidence-based lifestyle recommendations congruent with management guidelines for diabetes, hypertension, and hyperlipidemia from national organizations. Increased safety and efficacy research is warranted.

Adjunctive naturopathic care for type 2 diabetes: patient-reported and clinical outcomes after one year. Bradley, et al. 2012.⁷³ Conclusion: Glucose self-monitoring, dietary adherence, self-efficacy, motivation, and mood improved with adjunctive naturopathic care (ANC) for patients with inadequately controlled type 2 diabetes. Blood glucose reductions exceeded those for similar patients who did not receive ANC. Randomized clinical trials are required to determine if these benefits are correlated with ANC.

Naturopathic Physicians Offer:

Whole Health, Whole Person Therapies ...continued...

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The Principles of Naturphic Medicine

The Institute for Natural Medicine promotes naturopathic medicine which is defined by six principles that honor the body's innate wisdom to heal. This approach provides patients with tools for lifelong wellness.

Naturopathic medicine is a distinct primary health care profession, emphasizing prevention, treatment, and optimal health through the use of therapeutic methods and substances that encourage individuals' inherent self-healing process. *The practice of naturopathic* medicine includes modern and traditional, scientific, and empirical methods. [AANP House]

The following principles are the foundation of naturopathic medical practice:

The Healing Power of Nature: Trust in the body's inherent wisdom to heal itself.

Identify and Treat the Causes:

Look beyond the symptoms to the underlying cause.

First Do No Harm

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Utilize the most natural, least invasive and least toxic therapies.

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Doctor as Teacher:

Educate patients in the steps to achieving and maintaining health.

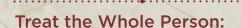
Prevention:

Focus on overall health, wellness and disease prevention.

Naturopathic practice includes the following diagnostic and therapeutic modalities:

Clinical and laboratory diagnostic testing, nutritional medicine, botanical medicine, naturopathic physical medicine (including naturopathic manipulative therapy), public health measures, hygiene, counseling, minor surgery, homeopathy, acupuncture, prescription medication, intravenous and injection therapy, and naturopathic obstetrics.

The Principles of Naturopathic Medicine: Whole Health, Whole Person Therapies ...continued



View the body as an integrated whole in all its physical and spiritual dimensions.



Jaturopathi Naturopathic Physicians Offer:

Focused Patient Engagement

Naturopathic physicians engage patients in their own healthcare by providing guidance and clinical support in the areas of nutrition, exercise, stress prevention, environmental toxin exposure, and other lifestyle measures. Its *Principles of Practice*⁵ (illustrated on pages <u>23 and 24</u>), guide NDs in applying naturopathic clinical theory to practice with patients. The Principle, Docere, refers specifically to teaching and guiding patients in their care. It is widely known that *clinical outcomes improve through collaborative patient engagement*⁸³ that enhances patients' self efficacy⁸⁴ (the ability to undertake required self-care tasks) and self-agency⁸⁵ (the feeling of having a level of control within the experience of illness).

Research Highlights: Patient satisfaction with & demand for naturopathic care

Patient-reported experiences with first-time naturopathic care for type 2 diabetes, Oberg, et al. 2012.⁷² Conclusion: The routine clinical approach used by NDs is consistent with behavior change theory and clinical strategies found most effective in promoting self-efficacy and improving clinical outcomes.

The Role for Naturopathic Medicine in Hospital-Based Care Bernhardt, et al. 2017.⁸⁷ Conclusion: The study of 1,711 acute-care inpatients with an average hospital stay of 11.9 days showed a high degree of patient satisfaction with combined care from naturopathic and academic medicine providers. Patient teams were composed according to specific patient needs and included: general medicine specialists, naturopathic physicians, anesthesiologists, neurologists, orthopedic surgeons, and allied healthcare providers.

Integration of naturopathic medicine into acute inpatient care: an approach for patient-centred medicine under diagnosis-related groups. Romeyke, et al. 2017.⁸⁸ Conclusion: A majority of patients rated integration of naturopathic practice into hospital settings positively. Integrating naturopathy may be effective for multi-morbid patients and patient-centered care can improve staff satisfaction levels. Integrating naturopathy into clinical practice "can serve as a Unique Selling Proposition."

Integration of naturopathic medicine into acute inpatient care: An approach for patient-centred medicine under diagnosis-related groups.⁸⁸ Romeyke, et al. 2017. Conclusion: This two-year study of 1700 acute-care patients showed patients were "very satisfied with the combination of naturopathy and academic medicine." Naturopathy can be integrated in acute-care settings, is especially viable for patients with multimorbidities, and can help improve staff satisfaction levels.



Naturopathic Naturopathic Physicians Offer: Offe **Approaches that Can Reduce Healthcare Costs**

With a focus on health promotion, disease prevention, and the naturopathic and minimally invasive treatment of common conditions, cost savings are incurred via six main avenues:

- disease, and its complications
- non-invasive treatments guided by the Therapeutic Order™⁵
- improved treatment response
- decreased recovery time from invasive procedures
- reduced insurance costs

Research Highlights: Reducing Healthcare Costs

Primary Prevention

A naturopathic approach to the prevention of cardiovascular disease: cost-effectiveness analysis of a pragmatic multi-worksite randomized clinical trial. Herman, et al. 2014.⁸⁹ Conclusion: This multi-worksitebased study showed that a naturopathic approach to CVD primary prevention significantly reduced CVD risk over usual care plus biometric screening, and reduced costs to society (\$1,138) and employers (\$1,187).

Group-Based Naturopathic Education for Primary Prevention of Noncommunicable Disease in Families and Children: A Feasibility Study. Solomonian, et al. 2019.⁹⁰ Conclusion: Group-based family education in primary prevention delivered by naturopathic physicians may be a feasible education method for caregivers. Healthy behaviors between parents and children were correlated. A majority of families were satisfied with the program and showed ongoing benefit at 6 weeks+ after completion.

Naturopathic medicine for the prevention of cardiovascular disease: a randomized clinical trial. Seely, et al. 2013.⁷⁴ Conclusion: For each quality-adjusted life years (QALY) saved, a lifestyle modification program costs \$8,800 while metformin therapy costs \$29,000. Additionally, the lifestyle modification program was shown to be cost-effective in all adults, while metformin was not cost-effective after age 65.

Improved Treatment Response

Naturopathic Treatment of Rotator Cuff Tendinitis Among Canadian Postal Workers: A Randomized Controlled Trial. Szczurko, et al. 2009.⁹¹ Conclusion: Patients receiving naturopathic care (n=43) showed greater improvement in shoulder function and in quality of life score than patients receiving standard physical exercises (n=42).

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• primary prevention that addresses root causes of illness to decrease the development and progression of

· enhanced effectiveness of conventional medical treatments by minimizing side effects through the use of

continued.

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Naturopathic Physicians Offer: Whole Health, Whole Person Therapies ...continued

Research Highlights: Reducing Healthcare Costs

Controlling Health Care Costs

The Federation of Naturopathic Medicine Regulatory Authorities reported minimal disciplinary actions between 2010 and 2020 in all jurisdictions where naturopathic physicians are regulated.

Premiums for naturopathic physicians are nearly five times lower than for medical doctors.⁹² The annual malpractice insurance rate for naturopathic doctors in Arizona, Oregon, Minnesota, and New Hampshire is approximately \$3,803; the rate is \$18,646 for medical doctors in the same states.⁹²

Comparison of Health Care Expenditures Among Insured Users and Nonusers of Complementary and Alternative Medicine in Washington State: A Cost Minimization Analysis. Lind, et al., 2010.⁹³ Conclusion: insured patients using naturopathic physicians and other CAM providers in this one year study had a lower average expenditure than non-users.

Studies from Washington State demonstrate naturopathic medicine costs insurers and consumers less than conventional care⁹⁴.

Change healthcare in America through awareness and access

Naturopathic Naturopathic Physicians Offer: Primary Care, Specialty Care and **Integrated Practice Models**

Naturopathic physicians are independent healthcare providers working in private practice and/or in team-based care environments who collaboratively co-manage patients through referrals across the spectrum of regulated health professionals (see table below). Enhanced integration between naturopathic physicians and other providers has been shown to enhance clinical outcomes, as well as increase patient choice and patient satisfaction⁹⁵. Furthermore, naturopathic physicians working in integrative settings provide an exceptionally well-qualified experience base for fostering high performance, cost effective team-based care.

provided by ND students at academic NM clinical centers (Teaching clinics) MD-ND primary & specialized integrative and collaborative care at academic IM clinical centers	Practice Model	E>
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Cedars-Sinai, Los Angeles

Columbia University, Herbert Irving Comprehensive ancer Center

George Washington Center For Integrative Medicine

lartford Hospital

Pregon Health Sciences University

ICI Health Susan Samueli Center Integrative lealth Institute

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Iniversity of Washington Medical Center-Roosevelt

Iniversity of Wisconsin Integrative Health Clinic

multitude of private clinics

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Naturopathic Physicians Offer:

Primary Care, Specialty Care and Integrated Practical Models ...continued...

Practice Model	Examples	Practice Model	Exar
Integrative health hospital or medical clinic with NDs on care team	University of Arizona Center for Integrative Medicine Beaumont Health Cancer Treatment Centers of America Integrative Medical Group of Irvine Lake Health Integrative Medicine Neil Riordan Center for Regenerative Medicine One Medical Integrative Health Restore PDX Seattle Cancer Care Alliance Amen Clinics Northwest Fred Hutchinson Cancer Research Center Northwestern Osher Center for Integrative Health Network Billings Clinic Cancer Center Clifton Springs Hospital & Clinic Goshen Center for Cancer Care New York University Langone Medical Center (NYULMC) North Hawaii Community Hospital Providence Integrative Medicine Program Swedish Medical Center, Colorado (Englewood)	 Interprofessional faculty that includes a duopathic physicians on faculty at includes a duopathic medical schools Dorement and regulatory and the second schools Interprofessional panel for CPT and the second physicians on the second physicians of the second physicians	Unive New Oreg CPT Advis Natio Integ Pain Cent Instit Acao Natio Natio Natio Natio Natio Natio Natio Natio Natio Natio Natio Sout Sout
MD-ND integrative primary care; or MD-ND primary care with ND specialists for botanical/herbal medicine and Native American patient population at Community Health Centers and Federally Qualified Health Centers	Family Health Centers HealthPoint CHC Mountain View Natural Medicine Shawnee Mission Health Summit Pacific Medical Center, WA	Revoutcome	

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Naturopathic Physicians Offer: Primary Care, Specialty Care and Integrated Practical Models ...continued

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Editorial Panel / Health Care Professionals visory Committee

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National Cancer Institute Advisory Panel

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the unique benefits and f naturopathic medicine

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Naturopathic Naturopathic Physicians Support: UPDOP Nationwide Regulation & Licensure

The naturopathic medical profession fully supports licensing and regulatory efforts to:

- provide transparency
 protect public health
- help consumers distinguish between qualified, licensed and licenseable Naturopathic Doctors, and lay naturopaths that are neither qualified, nor meet educational standards for licensure.

Regulatory and Oversight Organizations

<u>Council on Naturopathic Medical Education</u> (CNME) – accredits four-year, in-person doctoral programs in naturopathic medicine (ND programs) that qualify graduates for licensure in the US and Canada. These minimum standards and competencies are delineated in the <u>CNME Handbook of Accreditation, Part 4</u>⁹⁶ and include a mandate for the program of study to include at least 4,100 program hours of specified content. CNME's accreditation process is recognized by the rigorous educational standards of the <u>US Department of Education</u>⁹⁷.



North American Board of Naturopathic Examiners (NABNE) – qualifies applicants to take the two-part Naturopathic Physicians Licensing Examination (NPLEX), administers the exam, and sends exam results and transcripts to regulatory authorities. Only graduates of CNME-accredited ND programs are qualified by NABNE to take the NPLEX and a passing grade is required to be eligible for licensure. NPLEX is a <u>case based exam</u>⁹⁸ that comprehensively tests for competencies specified in the <u>CNME</u> <u>Handbook of Accreditation⁹⁶</u>.

Federation of Naturopathic Medicine Regulatory Authorities (FNMRA) – provides coordination and technical assistance to regulatory boards in states that license naturopathic physicians. It also accredits CE providers who produce CEs to address new information or practice gaps.



North American Board of Naturopathic Examiners

Regulatory and Oversight Organizations ...continued

Where are NDs regulated? *Naturopathic physicians <u>currently are</u> licensed or regulated*⁹⁹ in 25 jurisdictions, including 22 states and three US territories. Licensed and registered NDs have a specific scope of practice as defined by their state's law, and must fulfill State-mandated continuing education and reporting requirements. There is increasing momentum to license naturopathic physicians in all 50 states. From 2014 to 2020, 6 states have enacted licensure laws, 9 states have filed or pending bills for licensure, and 8 states plan to file bills in the next two years.

Insurance Coverage Coverage varies in states providing licensure, as you can see on this map of <u>Regulated States and Regulatory</u> <u>Authorities</u>¹⁰⁰. For example, all insurers in Vermont cover NDs as primary care providers (PCPs). In Oregon, however, all NDs are covered, but some plans cover them as PCPs and some as specialists. In Arizona, NDs are licensed with a robust scope of practice, but are not eligible as insured providers. Many insurers offer direct access to NDs as PCPs. Patients also may self-refer to NDs for specialty care.

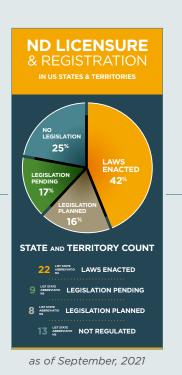
Credentialing Most private insurers use standard provider applications to credential NDs. Some insurers credential NDs only as 'complementary and alternative' providers, even though many of those NDs provide primary care. This can cause significant barriers to patient access to care. Some Managed Care Organizations credential NDs as PCPs, using standard provider applications. Typically, these are naturopathic physicians who work in Federally Qualified Healthcare Centers. Some Managed Care Organizations also cover ND patient visits as 'out-of-network' providers.

Billing Naturopathic physicians are represented on the Healthcare Professionals Advisory Committee of the AMA's <u>Current Procedural Terminology (CPT) Editorial Panel</u> and use the same diagnostic codes (CPT and ICD-10) and medical procedure forms (HCFA-1500 / CMS-1500) as other providers.

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Naturopathic Physicians Support:

Nationwide Regulation & Licensure ...continued



The Future of Whole Person Health Care naturemed.org

Naturopathic Naturopathic Physicians Support: UD A Future Partnership for Whole Health, Whole Person Care

Naturopathic physicians are educated as medical specialists in lifestyle, behavioral, and preventive medicine, which should be the central focus of primary care in this country. The future of US healthcare must focus on health professionals partnering with patients for their adoption of health habits that support prevention of chronic diseases and reduce the morbidity associated with chronic illness, informed by appropriate genetic considerations, nutritional analysis, mind-body health, and physical activity, while addressing other *determinants of health*⁵ as defined in this white paper. Naturopathic physicians are medically trained in addressing all these determinants of health to improve patient outcomes.

The COVID-19 pandemic has led to a shift in patient accountability and a greater interest in self-care. It is likely that the lengthy duration of the pandemic, and the understanding of how general health impacts the body's response to the virus, has led to and created a deeper appreciation and understanding of the importance of whole person health and lifestyle choices. Health status and outcomes like underlying conditions, supporting immunity, improving metabolic health, reducing stress, and making mental health a

priority have all entered the public conversation. The education and training of naturopathic physicians qualifies them as specialists in this whole person approach to patient health.

Even the way conventional medicine is practiced has changed:

- Large healthcare systems like the Veterans Administration have embraced a Whole Health approach to health care that is considered a "cutting edge approach to care" which is beginning to see impressive outcomes.
- The incorporation of new healthcare services, such as telemedicine, continue to evolve, creating greater opportunity for access to licensed naturopathic physicians.
- Healthcare policy and public health are also impacted by the pandemic.

Now is the time for naturopathic physicians to contribute their unique expertise to these changes and to critical forward-looking conversations occurring throughout the country.

Here is what we know today:

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- 1. COVID-19 has created a new awareness about individual health and the role overall health has in vulnerability to infectious disease. These changes further advance the opportunity for those committed to supporting the integration of naturopathic medicine and conventional health care.
- 2. Chronic lifestyle conditions such as type 2 diabetes and pre-diabetes, obesity, cardiovascular disease, stress, and other metabolic disorders play a key role in overall immune health, including the body's ability to combat infections, such as COVID-19.
- 3. After months during which health has become a focus of daily conversation, the public is embracing the need for self-care and personal accountability. This will likely change the way the public perceives health and the future healthcare they receive for generations to come.

A Future Partnership for Whole Health, Whole Person Care ...continued...

How Will the Acceptance and Integration of Naturopathic Medicine Change Health Care?

In order to fuel genuine change in the health of Americans, it is imperative that stakeholders recognize that most chronic conditions that make one more vulnerable to COVID-19 (and whatever next novel new virus is around the corner) are somewhat preventable. Through a scientifically-based and whole person oriented understanding of individual health, sustainable lifestyle-based strategies can be

and the principles and practices of naturopathic medicine, the following will occur:

- and medical system settings.
- hospitals, and clinical settings.
- 4. Naturopathic physicians will be universally regulated throughout the U.S.
- 5. Naturopathic physicians will be Medicare and Medicaid eligible providers.
- 6. Naturopathic physicians will be an integral part of the staffing team in hospital, community component to an integrative medical model.
- centers, FQHCs/CHCs, and other multi-provider settings.
- 8. Medical research across all disciplines will be co-produced with naturopathic physicians.
- Naturopathic Determinants of Health.
- and physical ability.

Naturopathic Physicians Support:

implemented to enhance resilience. Naturopathic medicine is ideally suited for teaching scientificallyinformed self-care and treating lifestyle-based and preventable ailments. A focus on the underlying cause, whole person health and prevention could reduce the incidence and severity of COVID-19 and may help to prevent and address "long-hauler" symptoms in the post-COVID patient population.

This paper presents a vision for the future, one in which naturopathic medicine is welcomed as an essential ally to conventional medicine. In a model that integrates naturopathic physicians

1. The least invasive means necessary approach of the naturopathic *Therapeutic Order*TM⁵ will be used in primary care and specialty practices to help patients achieve optimal health and well-being.

2. Naturopathic physicians will play a key role in teaching conventionally-trained physicians in academic

3. Academic and clinical experts and teachers will benefit from learning how to utilize the six *Principles* of Naturopathic Medicine⁶ and the Naturopathic Determinants of Health⁵ in medical schools, teaching

health, and integrated medicine clinics, where their training and perspective will be a sought-after

7. Naturopathic physicians will help foster high performance, cost effective team-based care in hospitals,

9. Clinical settings will support treatment of the behavioral aspects of chronic disease as outlined in the

10. Naturopathic physicians will provide leadership for the ongoing training and commitment to diversity, equity and inclusiveness in regard to ethnicity, gender, sexuality, class, religion and spirituality, income,

Naturopathic Physicians Support:

A Future Partnership for Whole Health, Whole Person Care ...continued

Future of Clinical Research

To truly measure the evidence of an integrated system, outcomes research must be developed to capture a multivariate approach for treatment of chronic diseases. The clinical evidence for naturopathic research is nuanced and therefore, the interconnectedness of multiple disciplines is essential. For example, there is now good evidence related to lifestyle medicine, specific nutrients or botanicals for particular ailments, the efficacy of body-mind medicine, etc. Presently, it takes much too long to get from laboratory to clinic. NDs are leading the way in some of these areas, bringing to light some of this research.

The following is suggested as a model for future research:

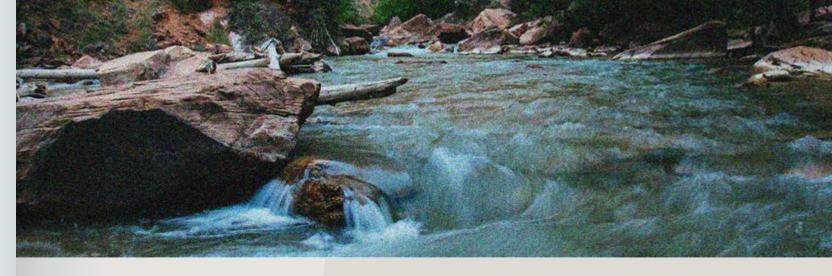
- Outcomes research captures a multivariate approach, including clinical effectiveness, quality-of-life measurements and cost-effectiveness analysis with detailed comparisons of conventional care.
- The type of research will identify pragmatic solutions to <u>chronic and complex illnesses that plague society</u>¹⁰
- Naturopathic research will make use of artificial intelligence capabilities as a means to aggregate complex data from multivariate studies.
- Virtual care models will offer extensions of clinical research to target underserved and hard-to-reach populations that have typically been left out of research.
- Applied research in regard to The Social Determinants of Health, to which the Naturopathic Profession has expertise (lifestyle and environment).

Conclusion

The future of healthcare in this country needs the input of all licensed healthcare professionals, including naturopathic physicians. As teachers and clinicians, the naturopathic medical community is ideally suited for integration into primary care settings, hospitals, academic centers, and public health entities.

The main difference between the naturopathic doctor's approach and that of conventionally trained doctors is that NDs are taught to use methods that build on the extraordinary ability of the body to heal itself.





Endorsements Sements

Lise Alschuler, ND, FABNO, Associate Director, Fellowship in Integrative Medicine Professor of Clinical Medicine

Naturopathic doctors have a resonant belief and deep expertise in natural medicine and whole person healthcare. Good healthcare is built upon collaboration. As specialists in natural medicine, naturopathic doctors are pollinators, spreading the essential principals and practices of naturopathic medicine for the betterment of healthcare. We have inherited this responsibility based on the profession's legacy of visionaries – Benedict and Louisa Lust, John Bastyr, Joseph Pizzorno, and many others – all of whom share a deep belief in the healing capacity of the healthcare system and the patients it serves.

<u>Susan E. Cavleff, PhD,</u> Professor Emerita San Diego State University, Author of Nature's Path: A History of Naturopathic Healing in America (2016)

As a nation we are at a crossroads with our individual and collective health. Naturopathic medicine gives each person the skills and knowledge to identify and control their physical and psychological well-being. It also offers insights into environmental toxins and their problematic health implications. Naturopathic physicians promote optimal wellness over time through prevention, healthy living and remedies that strengthen one's overall well-being. Now is the time for an enlightened paradigm that values wellness over organ-specific symptomatic treatment managed through pharmacology. Natural medicine offers self-determination and healthy well being through research, positive outcomes, and lower costs. It allows you to lead a more robust and full life.



References (_ _ _ _

- 1. Buttorff C, Ruder T, Bauman M. Multiple Chronic Conditions in the United States. Santa Monica, CA: RAND Corporation, 2017. https://www.rand.org/pubs/tools/TL221.html
- 2a. Audétat MC, Cairo Notari S, Sader J, et al. Understanding the clinical reasoning processes involved in the management of multimorbidity in an ambulatory setting: study protocol of a stimulated recall research. BMC Med Educ 21(31), 2021. <u>https://doi.org/10.1186/s12909-020-02459-w</u>
- National Research Council (US); Institute of Medicine (US). U.S. Health in International Perspective: Shorter Lives, Poorer Health. Woolf SH, Aron L, editors. Washington (DC): National Academies Press (US); 2013. PMID: <u>24006554</u>.
- 4. Bettenburg R, Milliman B, Oberg E, Pimentel E, Wallace J, Snider P. Naturopathic Physicians in Primary Care. In: Goldstein M, Weeks, J. 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. Seattle: ACCAHC, 2013. p. 65-68. <u>https://static1. squarespace.com/static/55861f1ae4b01ea9a58583a7/t/56 ec5ba362cd9413e14a7235/1458330548892/PCP_012314_ FINAL_REVISION.pdf</u>
- 5. Zeff JL, Snider P, Myers SP, DeGrandpre Z. <u>A Hierarchy of Healing : The Therapeutic Order A Unifying</u> <u>Theory of Naturopathic Medicine</u>. In: Murphy M, Pizzorno J, editors. The Textbook of Natural Medicine 4E. St Louis: Churchill Livingston, 2013. p. 18-33.
- 6. Principles of Naturopathic Medicine: House of Delegates Position Paper, Amended 2011. Washington, DC: AANP, 2011. <u>https://naturopathic.org/general/custom.</u> asp?page=PrinciplesNaturopathicMedicine
- Coulter I, Snider P, Neil A. Vitalism-A Worldview Revisited: A Critique Of Vitalism And Its Implications For Integrative Medicine. Integr Med (Encinitas);18(3):60-73, 2019 Jun. PMID: 32549817; PMCID: PMC7217401.
- 8. Steel A, Foley H, Bradley R, et al. Overview of international naturopathic practice and patient characteristics: results from a cross-sectional study in 14 countries. BMC Complement Med Ther, 18; 20: 59, 2020 Feb. <u>https://doi.org/10.1186/s12906-020-2851-7</u>
- Tikkanen R, Abrams, MK. U.S. Health Care from a Global Perspective, 2019: Higher Spending, Worse Outcomes? New York: Commonwealth Fund, 2020 Jan 30. <u>https://doi.org/10.26099/7avy-fc29</u>
- 10. 116th Congress (2019-2020). Healthcare Workforce Resilience Act. Washington, DC: Library of Congress, 2020 May 05. <u>https://www.congress.gov/bill/116thcongress/senate-bill/3599/text</u>
- Dall T, Reynolds R, Jones K, Chakrabarti R, Iacobucci W. 2019 Update - The Complexities of Physician Supply and Demand: Projections from 2017-2032. Washington, DC:

37 -

AAMC, 2019 Apr. https://aamc-black.global.ssl.fastly.net/ production/media/filer_public/31/13/3113ee5c-a038-4c16-89af-294a69826650/2019_update - the complexities_ of physician_supply_and_demand - projections_ from_2017-2032.pdf

- 12. Access to Health Services. Rockville, MD: Office of Disease Prevention and Health Promotion, Rockville, MD: Healthy People, US DHHS, 2020. <u>https://www. healthypeople.gov/2020/topics-objectives/topic/Accessto-Health-Services</u>
- 13. Frandsen BR, Joynt KE, Rebitzer JB, Jha MK. Care Fragmentation, Quality, and Costs Among Chronically III Patients. The American Journal of Managed Care;21(5), 2015 May 14. <u>https://www.ajmc.com/view/</u> <u>care-fragmentation-quality-costs-among-chronically-illpatients</u>
- 14. Health Care/System Redesign. Rockville, MD: Agency for Healthcare Research and Quality, US DHHS, 2020 Dec. <u>https://www.ahrq.gov/ncepcr/tools/redesign/index.html</u>
- 15. Glynn L G, Valderas J M, Healy P, Burke E, Newell J, Gillespie P, Murphy A W. The prevalence of multimorbidity in primary care and its effect on health care utilization and cost. Family Practice; 28(5):516-523, 2011 Oct. <u>https://doi.org/10.1093/fampra/cmr013 24</u> <u>March 2011</u>
- Mata-Cases M, Franch-Nadal J, Gratacòs M, Mauricio D. Therapeutic Inertia: Still a Long Way to Go That Cannot Be Postponed. Diabetes Spectrum; 33(1): 50-57, 2020 Feb. https://doi.org/10.2337/ds19-0018
- Darer JD, Hwang W, Hoangmai H, Bass EB, Anderson, G. More Training Needed in Chronic Care: A Survey of U.S. Physicians. Academic Medicine; 79(6):541-548, 2004 Jun. <u>https://journals.lww.com/academicmedicine/ Fulltext/2004/06000/More Training Needed in Chronic_Care__A_Survey_of.9.aspx</u>
- Chen C, Kotliar D, Drolet BC. 2015. Medical education in the United States: do residents feel prepared? Perspectives on Medical Education; 4(4):181-185, 2015. doi:10.1007/ s40037-015-0194-8. <u>http://dx.doi.org/10.1007/s40037-015-0194-8</u>.
- Van Gilder TJ, Remington P. Medical education needs to take 'an ounce of prevention' seriously. Stat, 2017 Jan 19. <u>https://www.statnews.com/2017/01/19/medicaleducation-prevention-chronic-illness/</u>
- 20. Policy Proposals for Reducing Health Care Costs. Washington, DC: National Health Council. Accessed 2021 May 23. <u>https://nationalhealthcouncil.org/policyproposals-for-reducing-health-care-costs/</u>
- 21. Domains & Values: Reducing Health Care Costs for Patients. Washington, DC: National Health Council, 2016 Dec. <u>https://nationalhealthcouncil.org/wp-content/</u> <u>uploads/2019/12/Domains Values Reducing Health</u> <u>Care Costs for Patients.pdf</u>

- 22. Sum G, Hone T, Atun R, et al. Multimorbidity and out-ofpocket expenditure on medicines: a systematic review. BMJ Global Health; 3:e000505, 2018. <u>https://gh.bmj.</u> <u>com/content/3/1/e000505</u>
- 23. Consumer Assessment of Healthcare Providers and Systems (CAHPS). Rockville, MD: Agency for Healthcare Research and Quality, US DHHS. Accessed 2021 May 23. <u>https://www.ahrq.gov/cahps/index.html</u>
- 24. Patient Satisfaction Reporting and Its Implications for Patient Care. AMA J Ethics. 2015;17(7):616-621. doi: 10.1001/journalofethics.2015.17.7.ecas3-1507. <u>https:// journalofethics.ama-assn.org/article/patient-satisfactionreporting-and-its-implications-patient-care/2015-07</u>
- 25. National Patient Advocate Foundation (NPAF). Washington, DC: NAPF. Accessed 2021 May 23. <u>https://www.npaf.org/</u>
- 26. 113th Congress (2013-2014). A resolution designating the week of October 6 through October 12, 2014, as "Naturopathic Medicine Week" to recognize the value of naturopathic medicine in providing safe, effective, and affordable health care. Washington, DC: Library of Congress, 2014 Sep 18. <u>https://www.congress.gov/</u> <u>bill/113th-congress/senate-resolution/420?q=%7B%22sea</u> rch%22%3A%5B%22naturopathic%22%5D%7D&r=1
- 27a. American Association of Naturopathic Physicians (AANP). House of Delegates Position Paper: Definition of Naturopathic Medicine. Washington, DC: AANP. Accessed 2021 May 23. <u>https://cdn.ymaws.com/ naturopathic.org/resource/resmgr/documents/</u> governance_docs/definition_naturopathic_medi.pdf
- 27b. American Association of Naturopathic Physicians (AANP). About Us. Washington, DC: AANP. Accessed 2021 May 23. <u>https://naturopathic.org/page/AboutUs</u>
- 28. About the Association of Accredited Naturopathic Medical Colleges (AANMC). Washington, DC: AANMC, Accessed 2021 May 23. <u>https://aanmc.org/about/</u>
- 29. North American Board of Naturopathic Examiners (NABNE). Portland, OR: NABNE. Accessed 2021 May 23. <u>https://www.nabne.org/</u>
- 30. Huber, C. Naturopathic Medical Education: A Comprehensive Curriculum. Tempe, AZ: ANRI/ NORI/INCRI. Accessed 2021 May 23. <u>https://</u> <u>naturopathicstandards.org/naturopathic-medical-</u> education-a-comprehensive-curriculum/
- 31. Naturopathic Medicine: Frequently Asked Questions. Washington, DC: AANP & INM, Accessed 2021 May 23. <u>https://cdn.ymaws.com/naturopathic.org/resource/</u> resmgr/documents/faq/faq-nmschoolquality.pdf
- 32a. Baer H, Beale C, Canaway R, & Connolly G. A Dialogue between Naturopathy and Critical Medical Anthropology: What Constitutes Holistic Health? Medical Anthropology Quarterly. 2012;26(2):241-256. Accessed 2021 July 19. <u>http://www.jstor.org/stable/41682568</u>

References ...continued...

- 32b. Thomas H, Mitchell G, Rich J, et al. Definition of whole person care in general practice in the English language literature: a systematic review. BMJ Open 2018 Dec 14;8:e023758. doi: <u>10.1136/bmjopen-2018-023758</u>
- 33. Miller BF, Gilchrist EC, Ross KM, Wong SL, Green LA. Creating a Culture of Whole Health: Recommendations for Integrating Behavioral Health and Primary Care. Denver: Eugene S. Farley, Jr. Health Policy Center University of Colorado School of Medicine, 2016 Feb. <u>https://www.apa.org/about/governance/president/</u> <u>culture-whole-health.pdf</u>
- 34. Whole Person Care Pilots. Sacramento: California Department of Health Care Services, 2021 Apr 06. <u>https://www.dhcs.ca.gov/services/Pages/</u> <u>WholePersonCarePilots.aspx</u>
- 35. Thornton L. The Model of Whole-Person Caring Creating and Sustaining a Healing Environment. Holist Nurs Pract 2005;19(3):106-115. doi: 10.1097/00004650-200505000-00006 Accessed 2021 May 26 at <u>http://</u> www.integrativenursinginstitute.org/pdf/wholecaring.pdf
- 36. Social Determinants of Health: Healthy People 2030. Rockville, MD: Office of Disease Prevention and Health Promotion, USDH, Accessed 2021 May 26. <u>https:// health.gov/healthypeople/objectives-and-data/browseobjectives#social-determinants-of-health</u>
- 37. Thomas H, Mitchell G, Rich J, Best M. Definition of whole person care in general practice in the English language literature: a systematic review. BMJ Open 2018, 8:e023758. <u>http://dx.doi.org/10.1136/ bmjopen-2018-023758</u>
- 38. Whole Health Programs National Institute of Whole Health. Wellesley, MA: National Institute of Whole Health, Accessed 2021 May 26. https://wholehealtheducation.com/
- 39. What is Whole Health? Washington, DC: Veterans Health Administration. <u>https://www.va.gov/wholehealth/</u>
- 40. Understanding Holistic. Anaheim, CA: American Holistic Health Association, Accessed 2021 May 26. <u>https://ahha.org/understanding-holistic/</u>
- 41. Pietroni P. Holism, Complementary Therapy and Primary Care. London: Taylor & Francis;91, 2009 Jul 06. <u>https:// doi.org/10.3109/13561828609038125</u>
- 41a. Straub RH, Cutolo M. Psychoneuroimmunologydevelopments in stress research. Wien Med Wochenschr. 2018 Mar;168(3-4):76-84. doi: 10.1007/s10354-017-0574-2. Epub 2017 Jun 9. PMID: <u>28600777</u>.
- 41b. Kafatos MC, Chevalier G, Chopra D, Hubacher J, Kak S, Theise ND. Biofield Science: Current Physics Perspectives. Glob Adv Health Med. 2015 Nov;4(Suppl):25-34. doi: 10.7453/gahmj.2015.011.suppl. Epub 2015 Nov 1. PMID: 26665039; PMCID: PMC4654779.

The Future of Whole Person Health Care naturemed.org

- 41c. Mangione L, Swengros D, Anderson JG. Mental Health Wellness and Biofield Therapies: An Integrative Review. Issues Ment Health Nurs. 2017 Nov;38(11):930-944. doi: 10.1080/01612840.2017.1364808. Epub 2017 Oct 2. PMID: 28968143.
- 41d. Jain S, Hammerschlag R, Mills P, et al. Clinical Studies of Biofield Therapies: Summary, Methodological Challenges, and Recommendations. Global Advances in Health and Medicine. January 2015. doi:<u>10.7453/gahmj.2015.034.suppl</u>
- 42. Integrative Health Policy Consortium. Washington, DC: Integrative Health Policy Consortium. Accessed 2021 May 26. <u>http://www.ihpc.org/</u>
- 43. Wisneski, L. The Transformation from Disease Care to Health Care in the U.S.: Education-Advocacy- Policy. Denver: Strauss Health Sciences Library, University of Colorado. Accessed 2021 May 26. <u>https://library. cuanschutz.edu/sites/default/files/workfiles/events/ conferences/future-trends-healthcare-conferenceseries/2019/presentations/opening_remarks_and welcome.pdf</u>
- 44. Lindlahr H. Nature Cure: Philosophy & Practice Based on the Unity of Disease & Cure. Salt Lake City: Project Gutenberg Literary Archive Foundation, 2003 Jul 1 (original publication date 1913). <u>https://www.gutenberg.</u> org/ebooks/4273
- 45. Finnell JS, Snider P, Myers SP, Zeff J. A Hierarchy of Healing: Origins of the Therapeutic Order and Implications for Research. Integr Med (Encinitas). 2019 Jun;18(3):54-59. PMID: 32549816; PMCID: *PMC7217399*.
- 46. Yam YB. Concepts: Adaptive. Cambridge, MA: New England Complex Systems Institute, 2011. <u>https://necsi.edu/adaptive</u>
- 47. Sterling P. Allostasis: A model of predictive regulation, Physiology & Behavior. 2012;106(1):5-15. <u>https://doi.</u> org/10.1016/j.physbeh.2011.06.004
- 48. Razeto-Barry P. Autopoiesis 40 years later. A review and a reformulation. Orig Life Evol Biosph. 2012 Dec;42(6):543-67. https://doi.org/10.1007/s11084-012-9297-y
- 49. Yam YB. Concepts: Emergence. Cambridge, MA: New England Complex Systems Institute, 2011. <u>https://necsi.edu/emergence</u>
- 50. About Social Determinants of Health (SDOH). Atlanta: CDC, 2021 Mar 10. <u>https://www.cdc.gov/</u> socialdeterminants/about.html
- 51. Biology Definition, History, Concepts, Branches, & Facts: Homeostasis. London: Britannica. Accessed 2021 May 26. https://www.britannica.com/science/biology#ref48815
- 52. McLaughlin KA, Levin M. Bioelectric signaling in regeneration: Mechanisms of ionic controls of growth and form. Developmental Biology;433(2):177-189, 2018. https://doi.org/10.1016/j.ydbio.2017.08.032

39 -

- 53. Which biochemical pathways are regulated by mechanical signals? Singapore: MBInfo, 2018. <u>https:// www.mechanobio.info/what-is-mechanosignaling/</u> signaling-pathways/
- 54. Lutgendorf SK, Costanzo ES. Psychoneuroimmunology and health psychology: an integrative model. Brain Behav Immun. 2003 Aug;17(4):225-32. PMID: 12831823. https://doi.org/10.1016/s0889-1591(03)00033-3
- 55. International Journal of Disease Reversal and Prevention (IJDRP. Accessed 2021 May 26. <u>https://</u> ijdrp.org/index.php/ijdrp/about#:~:text=The%20 IJDRP%2C%20International%20Journal%20of%20 Disease%20Reversal%20and,and%20lifestyle%20to%20 prevent%2C%20suspend%20and%20reverse%20disease
- 56. Edelman GM, Gally JA. Degeneracy and complexity in biological systems. PNAS 2001 Nov 20. 98(24):13763-13768; <u>https://doi.org/10.1073/pnas.231499798</u>
- 57. Zeff, Jared. The process of healing: a unifying theory of naturopathic medicine. J Naturopath Med. 1997, 7:122-125. https://www.researchgate.net/publication/291867092 The process of healing a unifying theory of naturopathic medicine
- 58. Ooi SL, Rae J, Pak SC. Implementation of evidencebased practice: A naturopath perspective. Complement Ther Clin Pract. 2016 Feb;22:24-8. <u>doi: 10.1016/j.</u> <u>ctcp.2015.11.004</u>. Epub 2015 Dec 1. PMID: 26850801.
- 59. Risse, GP. Organizing Medical Knowledge and Making Clinical Decisions: Phthisis and Student-Selected Case Histories. New Medical Challenges During the Scottish Enlightenment, 2005. Accessed 2021 Jun 16 at Academia.edu. <u>https://www.academia.edu/12098227/</u> Organizing Medical Knowledge and Making Clinical Decisions Phthisis and Student Selected Case Histories
- 60. Reach, G. Clinical Inertia: A Critique of Medical Reason. Cham, Switzerland: Springer International Publishing. 2015. <u>doi: 10.1007/978-3-319-09882-1</u>
- 61. Thornton T. Tacit knowledge as the unifying factor in evidence based medicine and clinical judgement. Philos Ethics Humanit Med. 2006;1, 2. <u>https://doi.org/10.1186/1747-5341-1-2</u>
- 62. Marewski JN, Gigerenzer G. Heuristic decision making in medicine. Dialogues Clin Neurosci. 2012 Mar;14(1):77-89. doi: 10.31887/DCNS.2012.14.1/jmarewski. PMID: <u>22577307</u>; PMCID: PMC3341653.
- 63. Adams, S, Steel, A. Future-Proofing the Field of Naturopathy Research: Nurturing International Research Leadership in an Evolving Profession. The Journal of Alternative and Complementary Medicine. 2019 Feb 20;25(2):133-4. <u>http://doi.org/10.1089/acm.2018.29057.jas</u>
- 64. Steel A, Peng W, Gray A, Adams J.The Role and Influence of Traditional and Scientific Knowledge in Naturopathic Education: A Qualitative Study. The Journal of Alternative and Complementary Medicine. 2019 Feb 20;25(2):196-201. <u>http://doi.org/10.1089/acm.2018.0293</u>

65. Wardle J, Oberg EB. The intersecting paradigms of naturopathic medicine and public health: opportunities for naturopathic medicine. J Altern Complement Med. 2011;17(11):1079-1084. *doi:10.1089/acm.2010.0830*

Methodology for Naturopathic Medicine Clinical Research. J Altern Complement Med. 2019;25(2):135-140. doi:1<u>0.1089/acm.2018.0403</u>

- 66. Schloss J, McIntyre E, Steel A, et al. Lessons from Outside and Within: Exploring Advancements in Methodology for Naturopathic Medicine Clinical Research. J Altern Complement Med. 2019;25(2):135-140. doi: <u>10.1089/acm.2018.0403</u>
- 67. Bradbury J, Avila B, Grace, S. Practice-Based Research in Complementary Medicine: Could N-of-1 Trials Become the New Gold Standard? Healthcare 2020, 8(1), 15. <u>https://doi.org/10.3390/healthcare8010015</u>
- 68a. Schork NJ. Personalized medicine: Time for oneperson trials. Nature. 2015;520(7549):609-611. doi: <u>10.1038/520609a</u>
- 68b. Bland JS. What is Evidence-Based Functional Medicine in the 21st Century? Integr Med (Encinitas). 2019 Jun;18(3):14-18. PMID: 32549804; PMCID: PMC7217393.
- 69a. Standish LJ, Calabrese C, Snider P. The naturopathic medical research agenda: the future and foundation of naturopathic medical science. J Altern Complement Med. 2006 Apr;12(3):341-5. doi: 10.1089/acm.2006.12.341. PMID: *16646736*.
- 69b. Myers SP, Vigar V. The State of the Evidence for Whole-System, Multi-Modality Naturopathic Medicine: A Systematic Scoping Review. J Altern Complement Med. 2019 Feb;25(2):141-168. doi: 10.1089/acm.2018.0340. PMID: 30785315; PMCID: PMC6389764.
- 69c. Steel A, Foley H, D'Souza J, Adams J, Wardle J. Knowledge Dissemination by the Naturopathic Profession: A Bibliometric Analysis of Naturopath-Authored, Peer-Reviewed Publications. J Altern Complement Med. 2021 Aug;27(8):630-640. doi: 10.1089/ acm.2020.0171. PMID: <u>33798398</u>.
- 70. Farah WH, Alsawas M, Mainou M, Alahdab F, Farah MH, Ahmed AT, Mohamed EA, Almasri J, Gionfriddo MR, Castaneda-Guarderas A, Mohammed K, Wang Z, Asi N, Sawchuk CN, Williams MD, Prokop LJ, Murad MH, LeBlanc A. Non-pharmacological treatment of depression: a systematic review and evidence map. Evid Based Med. 2016 Dec;21(6):214-221. doi: 10.1136/ebmed-2016-110522. Epub 2016 Nov 11. PMID: 27836921.
- 71. Adams JB, Audhya T, Geis E, Gehn E, Fimbres V, Pollard EL, Mitchell J, Ingram J, Hellmers R, Laake D, Matthews JS, Li K, Naviaux JC, Naviaux RK, Adams RL, Coleman DM, Quig DW. Comprehensive Nutritional and Dietary Intervention for Autism Spectrum Disorder-A Randomized, Controlled 12-Month Trial. Nutrients. 2018 Mar 17;10(3):369. doi: 10.3390/nu10030369. PMID: 29562612; PMCID: PMC5872787.

References ...continued...

- 72. Bradley R, Eva K, 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. 2009 Jun;15(6):633-638. DOI: 10.1089/acm.2008.0249. PMID: <u>19500011</u>; PMCID: PMC3046878.
- 73. Bradley R, Sherman KJ, Catz S et al. Adjunctive naturopathic care for type 2 diabetes: patient-reported and clinical outcomes after one year. BMC Complement Altern Med. 2012;12-44. https://doi.org/10.1186/1472-6882-12-44
- 74. Seely D, Szczurko O, Cooley K, Fritz H, Aberdour S, Herrington C, Herman P, Rouchotas P, Lescheid D, Bradley R, Gignac T, Bernhardt B, Zhou Q, Guyatt G. Naturopathic medicine for the prevention of cardiovascular disease: a randomized clinical trial. CMAJ. 2013 Jun 11;185(9):E409-16. doi: 10.1503/cmaj.120567. Epub 2013 Apr 29. Erratum in: CMAJ. 2016 Sep 6;188(12):901. PMID: <u>23630244</u>; PMCID: PMC3680587.
- 75. Kimball SM, Mirhosseini N, Rankin BD, Fyie K, Guarneri M. Retrospective Analysis of Cardiovascular Disease Risk Parameters in Participants of a Preventive Health and Wellness Program. Integr Med (Encinitas). 2019 Jun;18(3):78-95. PMID: 32549820; PMCID: PMC7217396.
- 76. Herman PM, Szczurko O, Cooley K, Mills EJ. C<u>ost-</u> effectiveness of naturopathic care for chronic low back pain. Altern Ther Health Med. 2008 Mar-Apr;14(2):32-9. PMID: 18383988.
- 77. Breed C, Bereznay C. Treatment of Depression and Anxiety by Naturopathic Physicians: An Observational Study of Naturopathic Medicine Within an Integrated Multidisciplinary Community Health Center. J Altern Complement Med. 2017 May;23(5):348-354. doi: 10.1089/ acm.2016.0232. Epub 2017 Feb 6. <u>PMID: 28165775</u>.
- 77a. Fitzgerald KN, Hodges R, Hanes D, Stack E, Cheishvili D, Szyf M, Henkel J, Twedt MW, Giannopoulou D, Herdell J, Logan S, Bradley R. Potential reversal of epigenetic age using a diet and lifestyle intervention: a pilot randomized clinical trial. Aging (Albany NY). 2021;13:9419-9432. <u>https://doi.org/10.18632/aging.202913</u>
- 78. Myers SP, Vigar V. The State of the Evidence for Whole-System, Multi-Modality Naturopathic Medicine: A Systematic Scoping Review. J Altern Complement Med. 2019 Feb;25(2):141-168. doi: 10.1089/acm.2018.0340. PMID: 30785315; PMCID: PMC6389764.
- 79. Shinto L, Calabrese C, Morris C, Yadav V, Griffith D, Frank R, Oken BS, Baldauf-Wagner S, Bourdette D. A randomized pilot study of naturopathic medicine in multiple sclerosis. J Altern Complement Med. 2008 Jun;14(5):489-96. doi: 10.1089/acm.2007.0757. Erratum in: J Altern Complement Med. 2008 Jul;14(6):793. PMID: 18532899; PMCID: PMC3154032.
- Dommerholt J, Hooks T, Chou L, Finnegan M. A critical overview of the current myofascial pain literature. Journal of Bodywork Movement Therapies. 2018 Nov 15;23(1):65-73. DOI: <u>https://doi.org/10.1016/j. jbmt.2018.11.002</u>

The Future of Whole Person Health Care naturemed.org

- Psihogios A, Ennis JK, Seely D. Naturopathic Oncology Care for Pediatric Cancers: A Practice Survey. Integrative Cancer Therapies. 2019 Sep 30; 18. <u>https://doi.</u> org/10.1177/1534735419878504
- Ratnakumari ME, Manavalan N, Sathyanath D, Ayda YR, Reka K. Study to Evaluate the Changes in Polycystic Ovarian Morphology after Naturopathic and Yogic Interventions. Int J Yoga. 2018 May-Aug;11(2):139-147. doi: 10.4103/ijoy.IJOY_62_16. PMID: <u>29755223</u>; PMCID: PMC5934949.
- 83. Laurance J, Henderson S, Howitt PJ, Matar M, Al Kuwari H, Edgman-Levitan S, Darzi A. Patient engagement: four case studies that highlight the potential for improved health outcomes and reduced costs. Health Aff (Millwood). 2014 Sep;33(9):1627-34. doi: 10.1377/ hlthaff.2014.0375. PMID: 25201668.
- Bodenheimer T, Lorig K, Holman H, Grumbach K. Patient self-management of chronic disease in primary care. JAMA. 2002 Nov 20;288(19):2469-75. doi: 10.1001/ jama.288.19.2469. PMID: <u>12435261</u>.
- Lysaker PH, Leonhardt BL. Agency: its nature and role in recovery from severe mental illness. World Psychiatry. 2012 Oct;11(3):165-6. doi: 10.1002/j.2051-5545.2012. tb00121.x. PMID: 23024671; PMCID: <u>PMC3449358</u>.
- 86. Oberg EB, Bradley R, Hsu C, et al. Patient-reported experiences with first-time naturopathic care for type 2 diabetes. PLoS One. 2012;7(11):e48549. doi: <u>10.1371/</u> journal.pone.0048549
- 87. Bernhardt B, Zeifman, M. The Role for Naturopathic Medicine in Hospital-Based Care A survey of patient satisfaction with a holistic approach. NMJ. 2017 Dec;9(12). <u>https://www.naturalmedicinejournal.com/</u> journal/2017-12/role-naturopathic-medicine-hospitalbased-care
- 88. Romeyke T, Nöhammer E, Scheuer HC, Stummer H. Integration of naturopathic medicine into acute inpatient care: An approach for patient-centred medicine under diagnosis-related groups. Complement Ther Clin Pract. 2017 Aug;28:9-17. doi: 10.1016/j.ctcp.2017.04.004. Epub 2017 Apr 13. PMID: 28779943.
- 89. Herman PM, Szczurko O, Cooley K, Seely D. A naturopathic approach to the prevention of cardiovascular disease: cost-effectiveness analysis of a pragmatic multi-worksite randomized clinical trial. J Occup Environ Med. 2014 Feb;56(2):171-6. doi: 10.1097/ JOM.00000000000066. PMID: 24451612; PMCID: PMC3921268.

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- 90. Solomonian L, Kwan V, Bhardwaj S. Group-Based Naturopathic Education for Primary Prevention of Noncommunicable Disease in Families and Children: A Feasibility Study. J Altern Complement Med. 2019;25(7):740D752. doi:10.1089/acm.2019.0067. PMID: <u>31314562</u>.
- 91. 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 Care & Research. 2009 Jul 30;61(8):1037-45. https://doi.org/10.1002/art.24675
- 92. Whitmer M. NCMIC Letter to Ron Mensching at National University of Health Sciences. 2017 Jan 26. Online access: <u>http://www.naturopathic.org/files/NCMIC%20</u> Letter%20re%20Malpractice%20Risk%201-26-17(2).pdf
- 93. Lind BK, Lafferty WE, Tyree PT, Diehr PK. Comparison of health care expenditures among insured users and nonusers of complementary and alternative medicine in Washington State: a cost minimization analysis. J Altern Complement Med. 2010 Apr;16(4):411-7. *PMC3110809*.
- 94. Tais S, Oberg E. The Economic Evaluation of Complementary and Alternative Medicine. <u>Natural</u> <u>Medicine Journal</u>. 2013, Feb; 5(2).
- 95. Orr DE, Bravo Gutiérrez G, Fette D. From parallel to partnership. Leadership in Health Services. Bradford, England: Europe PMC. 2019 Sep;32(4):493-508. DOI: <u>10.1108/lhs-12-2018-0063</u>
- 96. CNME. <u>CNME Accreditation Handbook</u>. Great Barrington, MA: CNME. 2020, Nov:34-54.
- 97. US Department of Education. <u>Accreditation in the United</u> <u>States</u>. Washington, DC: US DOE. Accessed June 21, 2021.
- 98. NABNE. *NPLEX Examination Overview*. Portland, OR: NABNE. Accessed June 21, 2021.
- 99. AANMC. *Naturopathic Doctor Licensure*. Washington, DC: AANMC. Accessed June 21, 2021.
- 100. AANP. <u>Regulated States and Regulatory Authorities</u>. Washington, DC: AANP. Accessed June 21, 2021.
- 101. Buttorff C, Teague R, Bauman M. <u>Multiple Chronic</u> <u>Conditions in the United States</u>. Santa Monica, CA: RAND Corporation, 2017.



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