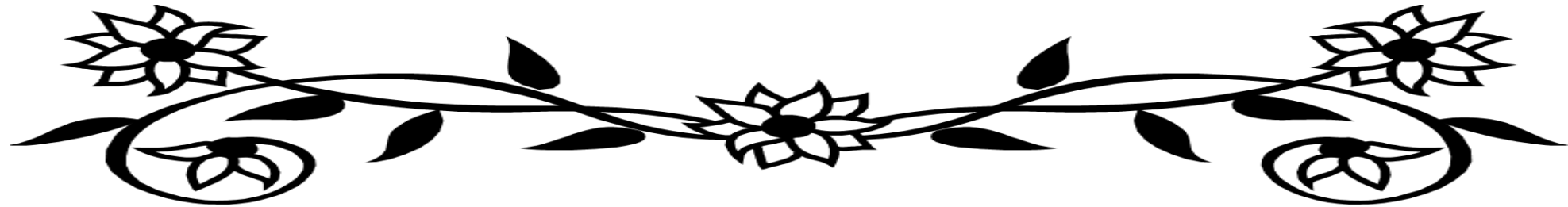


# Indigenous Plant Medicine: Issues to Consider for Clinicians Working in Native Communities



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# From the natural world to the bedside



# World view of Traditional Medicine can be challenging for some physicians

“The sum total of knowledge, skills, & practices indigenous to different cultures, **whether explicable or not**, used in the maintenance of health as well as in the prevention, diagnosis, improvement of treatment of physical and mental illness”

[www.who.int/medicines/areas/traditional/](http://www.who.int/medicines/areas/traditional/)

# The views of physicians practicing in Indian Country are very limited

“Acknowledgment and tolerance of health practices different from our own can lead to greater flexibility and understanding within the medical care system, thereby allowing for care with less confrontation and conflict.”

Day TW. Minn Med. 1992 Mar;75(3):15-7

# Most non-Native doctors in ITU sites lack basic knowledge of the role of traditional medicine in Native communities

- Usually omitted from new staff orientation agendas
  - Some tribes have regular in-services
- Role of Indian Health Service Clinical Support Center annual primary care and OB/GYN conferences
  - Division of Diabetes Treatment & Prevention webinars
- Role of Association of American Indian Physicians cross-cultural medicine annual conference [www.aaip.org](http://www.aaip.org)
- Role of medical schools with AIAN health curriculum
  - Minnesota, Washington, others
- Role of tribal colleges in preserving plant knowledge
  - NW Indian College (WA), Salish Kootenai College (MT)



# Demographic shifts: Urban Natives use traditional healing also

- Fuchs, 1979 (San Francisco); Buchwald, 2000 (Seattle) studies
  - 40% of those using urban Indian clinics also using traditional medicine
- Hollow, 1996: 62% use rate in urban HMO (unpublished)
- Marbella et al, 1998 (Milwaukee)
  - 38% used TIM; more common with older patients
  - Spiritual healers, herbalists, medicine men, elder in order of frequency of use
  - Some saw more than one type of healer
    - Only 5% wanted physical well-being

# AI college students and plant medicine

- Self reported medicinal plant use at two Midwest universities, one serving a tribal population
- 23% of AI students were using plant medicine
- Those who used this had:
  - Higher rates of commercial tobacco use
  - Lower self-assessment of health
  - Less prescription medicine use

# Advice from Native healers may differ from physician advice

- When given advice, patients usually went with the advice of the healer for use of herbal remedies above that of their clinic provider
- Rated higher than physician's 61% of the time
- Patients told their doctors about use of TIM only 14.8% of the time

Marbella, AM, Harris MC, Diehr S, Ignace G, Ignace G. (1998). Use of Native American healers among Native American patients in an urban Native American health center. Arch Fam Med, 7(2): 182-185.



# Questions student doctors are asking about plant medicines

- Does it work?
- What and where is the evidence?
  - How do I view studies that are not “gold standard”?
- What are the pharmacologic active ingredients?
- Could I be sued if there is a bad outcome?
- Where and how do patients get them? Can they be purchased?
- How do you know who is a legitimate healer in a community?
- My patients don't bring this up- how do I respectfully ask about TIM in an interview?

# Questions doctors in practice are asking

- Evidence of effectiveness? Where do I find it?
- Do I document plant or TIM use in a medical record? If yes, how?
- Safety, side effects, & drug interactions- where to find information?
- How do I know correct dosing? Or, if a medicine is of good quality?
- Where are patient information websites that are vetted?
- Could I get sued for recommending this?
- What about use with vulnerable populations: active cancer, children, pregnant women, chronic disease including mental health
- How do I ask patients about this?
- How to monitor when there may be interaction potential?
- How do I identify traditional practitioners in the community?

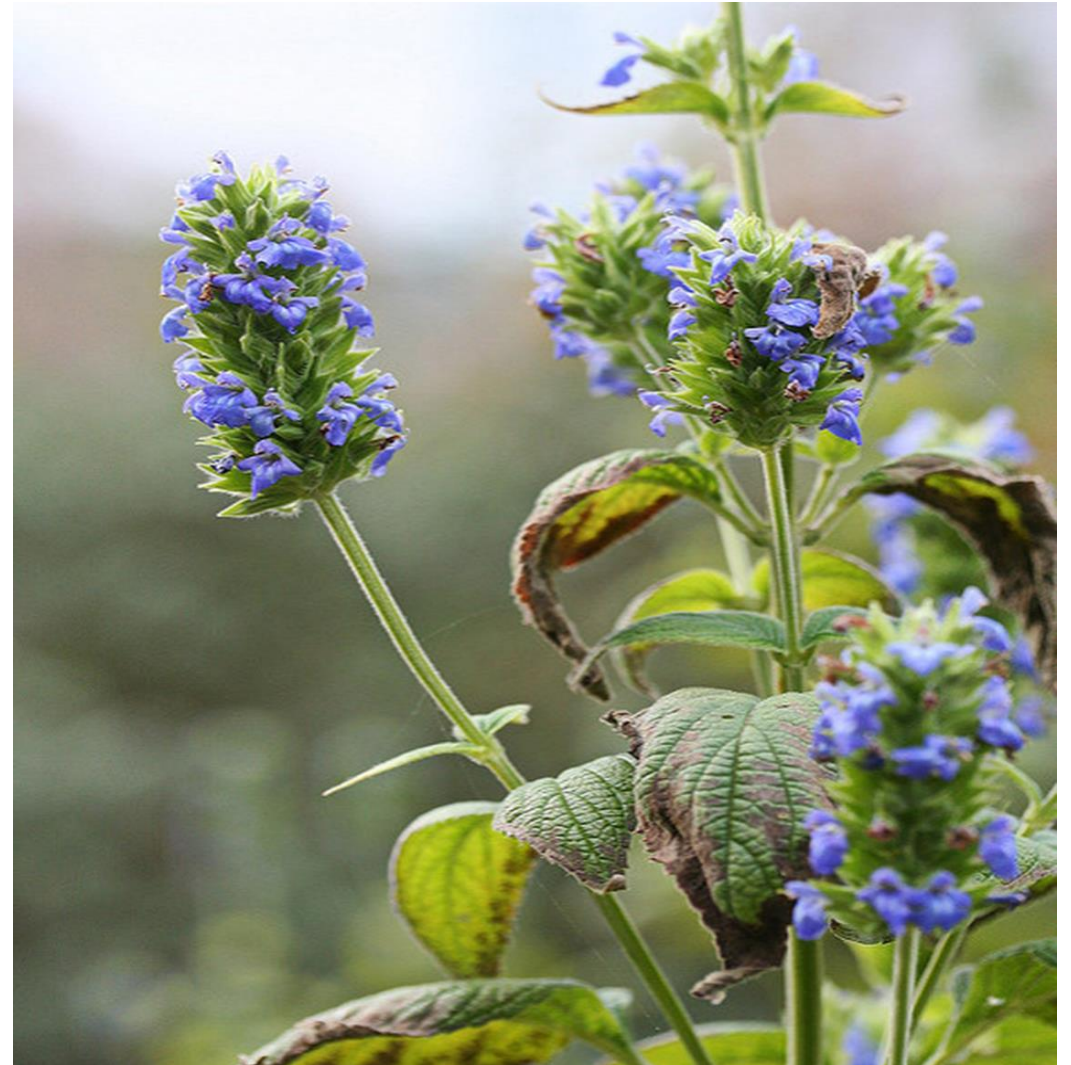
# DOE versus POEM data

- Term coined by Shaughnessy and Siwek in 2003 in *American Family Physician*
- Disease oriented endpoint (DOE): in vitro activity, pathophysiology, etiology, or mechanism of treatment action of drugs
- Patient oriented evidence that matters (POEM): measurable outcome that actually affects a persons quality of life
  - Did the research focus on an outcome that patients care about (e.g., morbidity, mortality, quality of life)?
  - Is the problem that has been studied common and is the intervention feasible?
  - Does the information have the potential to change the practice of many physicians?

# Chia seed and weight loss

- DBRCT, type 2 DM overweight or obese patients, 77 total
- 6 month trial of chia seed use along w calorie restricted diet and conventional treatment
- 30 g/1000 kcal/day of chia seed vs oat bran control
- Weight was main endpoint; waist circumference, body composition, glycemic control, and C-reactive protein also measured
- Chia seed group lost more weight than oat-bran group
  - Smaller waist size & lower C-reactive protein levels

Vuksan V et al. Salba-chia (*Salvia hispanica* L.) in the treatment of overweight and obese patients with type 2 diabetes: A double-blind randomized controlled trial. *Nutr Metab Cardiovasc Dis.* February 2017;27(2):138-146



# Depression management interests among Alaska Native and American Indian adults in primary care

- 125 patients screened positive for depression
- Overall preference for counseling and medications over peer support groups, herbal remedies, and spiritual support
- Those 18-39 years of age were more likely to prefer medications
  - Less likely to choose spiritual or peer support than those 40 and older
- Patients with moderate and severe depression were more likely to prefer exercise, healthy eating, and stress reduction than individuals with mild depression

Avey JP, Dirks LG, Dillard DA. J Affect Disord. 2018 Oct 15;239:214-219

# Future Cochrane Database evidence-based protocols involving Native plants

- Ginseng for erectile dysfunction, 2017

# Where physicians are going for information on TIM and plant medicine

- Google
- Up to Date <https://www.uptodate.com/home>
- *Natural Medicines* database  
<http://naturaldatabase.therapeuticresearch.com/content.aspx>
- Consumer Labs <https://www.consumerlab.com/>
- Cochrane Library for EBM <https://www.cochranelibrary.com/>
- USDA National Nutrient Database  
<https://ndb.nal.usda.gov/ndb/foods>
- PubMed literature searches not frequently used
- Tribal publications
- Elders in the community or local classes



# Few clinicians are asking

- Who is doing the research? Who funds it?
  - Are American Indian or Alaska Native communities full partners or the PIs?
- What do tribal members want to know?
- What are the legal, ethical or cultural aspects of medicinal plant conservation?
- How is traditional knowledge being protected?
- Is there “whole system” research?
- What is the impact of global warming and continued ecologic disruption on traditional medicinal plants and food sources?

# PubMed search on American Indian or Alaska Native plant medicine: July 2016-July 2018

- Lumbee traditional medicine: Neuroprotective activities of medicinal plants used to treat Parkinson's disease-related symptoms.  
de Rus J et al. J Ethnopharmacol. 2017 Jul 12;206:408-425. doi: 10.1016/j.jep.2017.02.021. Epub 2017 Feb 15
- Pikuni-Blackfeet traditional medicine: Neuroprotective activities of medicinal plants used to treat Parkinson's disease-related symptoms  
de Rus J et al. J Ethnopharmacol. 2017 Jul 12;206:393-407. doi: 10.1016/j.jep.2017.01.001. Epub 2017 Jan 11

# In vitro research examples

Chemical composition & anti-herpes simplex virus type 1 (HSV-1) activity of extracts from *Cornus canadensis* (Bunchberry)



Lavoie S. BMC Complement Altern Med. 2017 Feb 22;17(1):123

Effect of Cree traditional medicinal teas on the activity of human cytochrome P450-mediated metabolism

Longer brew times for Labrador tea was associated with more inhibition of CYP3A4 pathways



Tam TW. J Ethnopharmacol. 2014 Aug 8;155(1):841-6

# What do patients want?

- An individual approach that works for their world view, blended or not
- Not evidence-based medicine (EBM) but practice-based evidence that is collaborative and whole system
  - Not reductionist
- Not always staying with a strict definition of “traditional” medicine
  - Combined with other dietary and nutritional supplements from other parts of the world
- To be safe with their choices

There is a need for more  
translational research in this  
area