

Potential Savings from Reducing Healthcare Inflation

An Option for Alaska: The Only Arctic State

State of Alaska
Epidemiology



Bulletin

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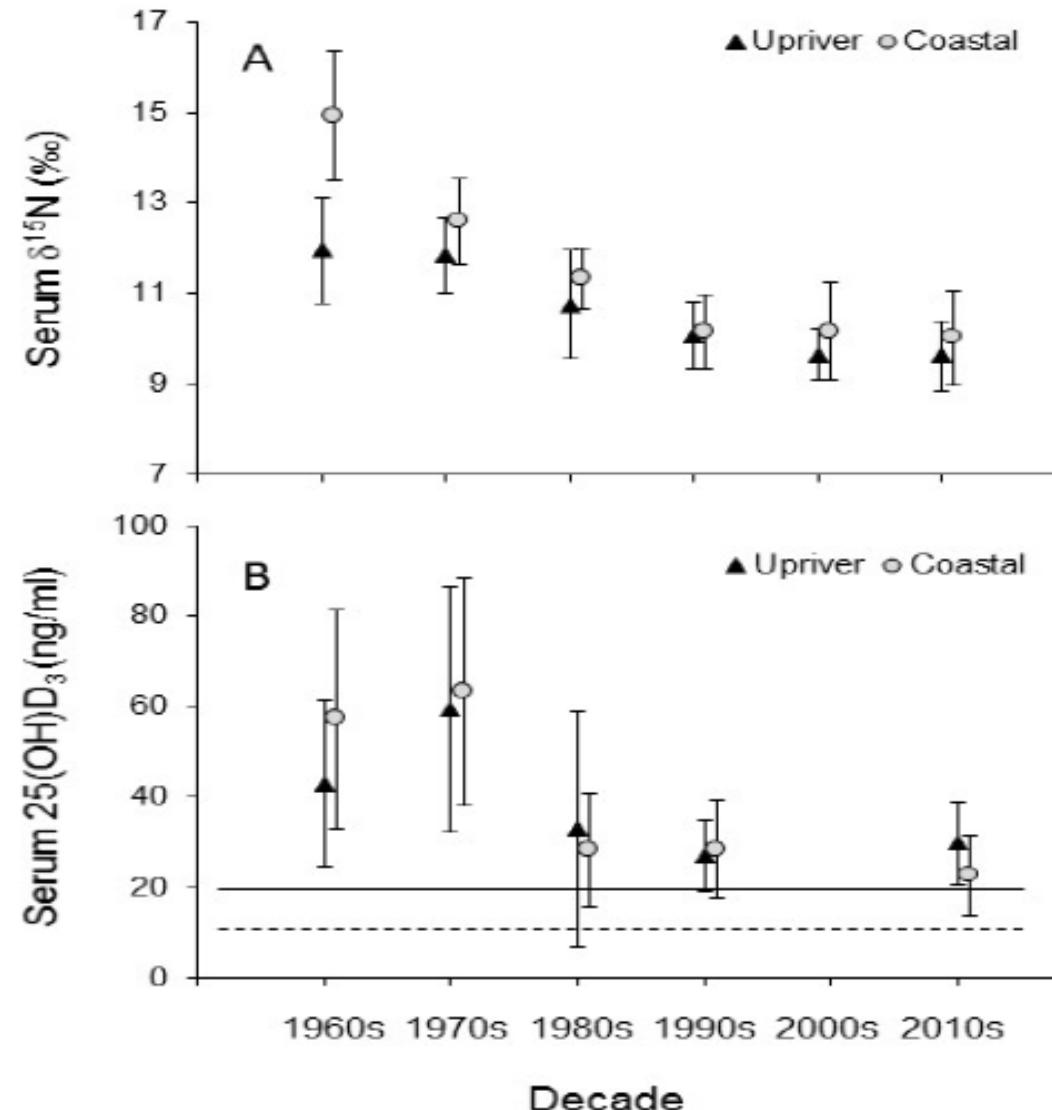
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Vitamin D Deficiency in Prenatal Alaska Native Women

Blood Levels of Marine Foods Marker and Vitamin D in Prenatal Alaska Native Women

Figure 1. Differences in Mean (A) Serum $\delta^{15}\text{N}$ Values, and (B) Serum 25(OH)D₃ Concentrations in Women Aged 20–29 Years — Yukon-Kuskokwim Delta, 1960–2015²



Source: Vitamin D Deficiency in Prenatal Alaska Native Women. State of Alaska Epidemiology. November 1, 2016

Representative Seaton

Potential Future Cost Savings for Alaska

Estimated Health Care Cost Savings for Canada of
Raising Vitamin D levels above 40 ng/ml:

\$12.5 billion or \$344 per person year

Alaska Population: 741,800

Alaska Potential Cost Savings
\$255,179,200

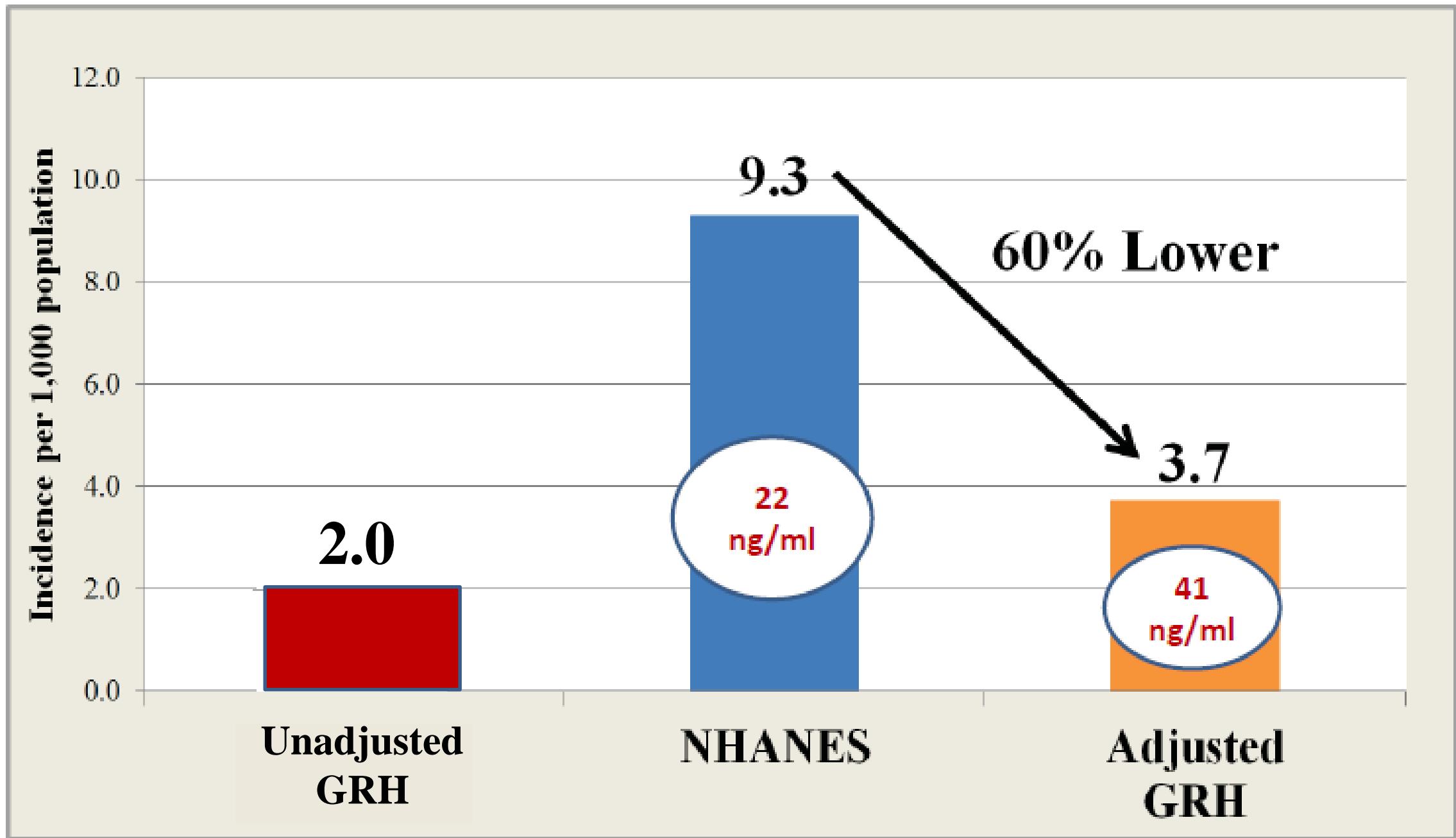
Data source: Estimated economic benefit of increasing 25-hydroxyvitamin D concentrations of Canadians to or above 100 nmol/L. Grant et al. Journal of Dermato-Endocrinology. 2016

Major Healthcare Cost Drivers

- 57% of total health care expenditures in North America in 2010 was diabetes-related
- Diabetes cost estimated to grow 34% between 2010 and 2030
- A meta-analysis review of 24 randomized control trials showed that vitamin D supplementation can significantly improve glycemic control
- A minimum 4000 IU/daily dose to bring vitamin D levels to >40 ng/ml was recommended to improve glycemic measures in type 2 diabetic patients

The Effect of Improved Serum 25-Hydroxyvitamin D Status on Glycemic Control in Diabetic Patients: A Meta-Analysis. Mirhosseini et al. Journal of Clinical Endocrinology & Metabolism. September 2017.

Type 2 Diabetes Incidence in GrassrootsHealth (N=4,933) and NHANES (N=4,078 Cohorts



Median 25(OH)D concentration in GRH cohort was 41 ng/ml and in NHANES was 22 ng/ml

Health Care Cost Avoidance

Example: Reduction in Opioid Use

2017 study: vitamin D & palliative care

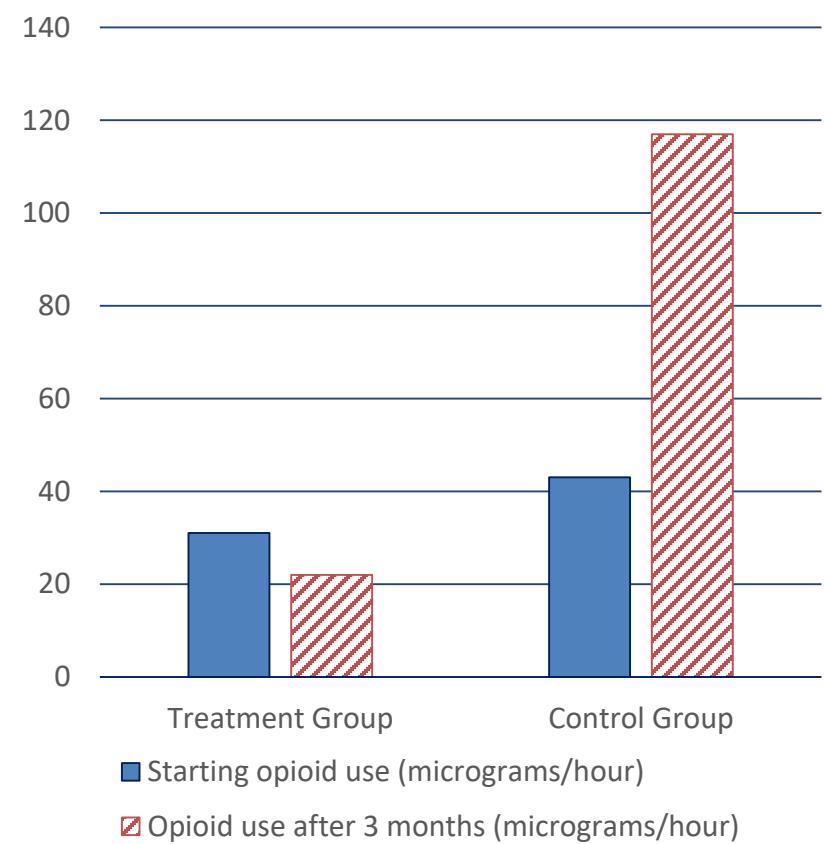
Supplement: 4000 IU vitamin D

Over three months

Treatment group **reduced** overall opioid use by **29%**

18% of treated patients stopped use completely

Control group **increased** overall opioid use by **172%**



Helde-Frankling, M. et al. Vitamin D supplementation to palliative cancer patients shows positive effects on pain and infections-Results from a matched case-control study. PLOS One, 2017.

What do we know about vitamin D?

- D₃ is more effective than D₂
- Daily is better than weekly or monthly
- Monthly, quarterly, or annually is generally ineffective
- Studies suggest 40 – 60 ng/ml is where disease risk reduction occurs
- Over-the-counter supplements available for less than \$16 per person a year

How Do We Get There

- Return Alaska to vitamin D levels seen in 1960s & 1970s
- Education & outreach
- Self-insured plan
- Changing the standard of care