

# Objectives

- Most public health workers recognize that topical fluoride treatments alone are insufficient to prevent tooth decay in children at high risk. New modalities are needed.
  - To describe the rationale for combined preventive treatments (fluoride varnish plus antimicrobials)
  - To present findings on the effectiveness of combined treatments.

# Rationale for Combined Treatment in Public Health

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Can fluoride varnish alone  
control caries in high risk  
preschoolers?

## Randomized Equivalence Trial of Intensive and Semiannual Applications of Fluoride Varnish in the Primary Dentition

- Latino children enrolled at Head Start
- Treated for 3 years
- dmfs average at age 7 = 10.0
- Semiannual treatment--7.4 (SD 7.7) new decayed primary surfaces/ 3 years
- Intensive treatment--9.8 (SD 8.6).

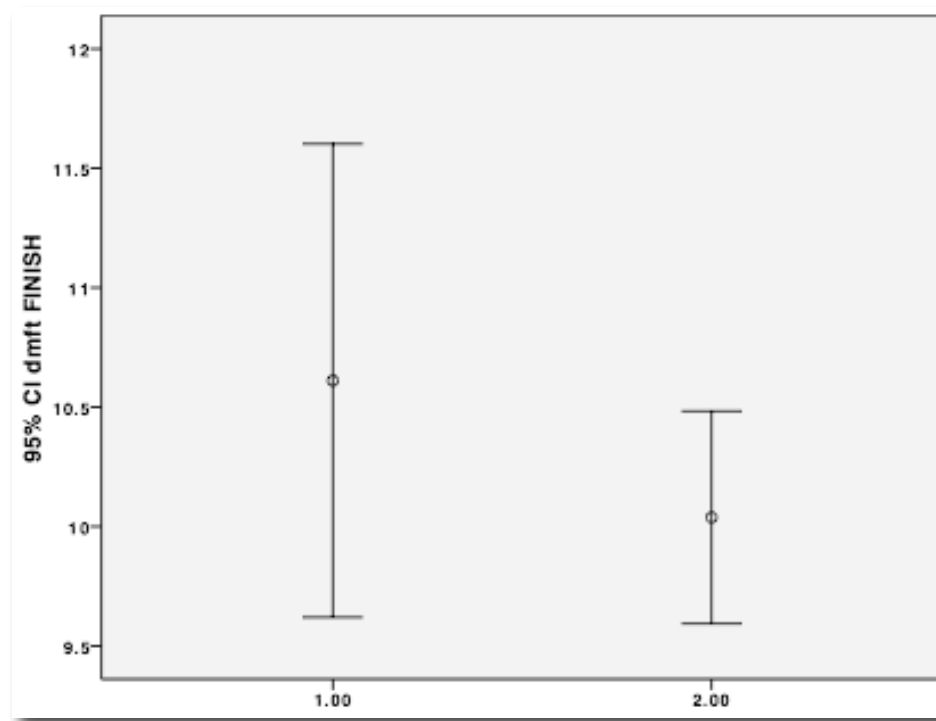
(Weinstein, Spiekerman & Milgrom, Caries Research 2009)

# Important Studies in Indian Country

- Holve (Navajo)
  - Varnish at 9, 12, 15, 18, 24, & 30 mo well child visits to pediatrician compared to historical controls at Head Start age.
  - 35% reduction in dmfs
  - 15.5 dfs ( $\geq 4$  tx) v. 23.6 dfs ( $< 4$  tx)
- Lawrence (Northern Cree)
  - Varnish in children 6 to 60 months.
  - 18% net reduction in dmfs
  - 10.2 dfs (2X/yr) v. 13.5 dfs (no tx) after 2 years

Can fluoride varnish plus supervised toothbrushing control caries in high risk children?

# Varnish & 2X Brushing with Fluoridated Toothpaste



Varnish  
alone

Combined tx

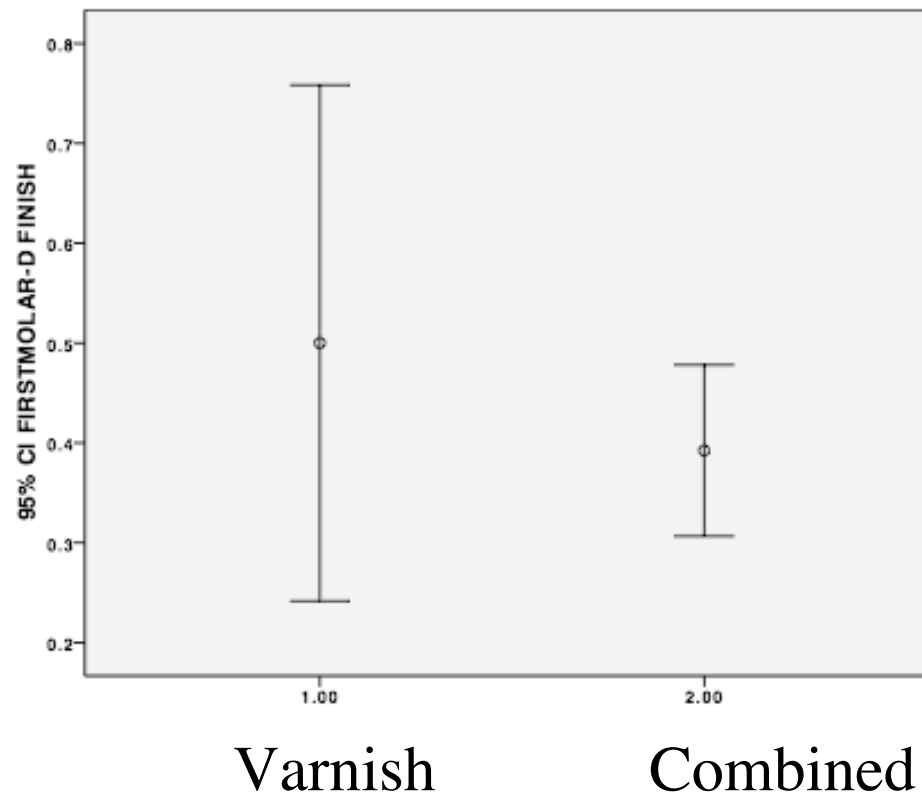
Kindergarten  
children in the  
Marshall Islands  
after 1 school  
year

10.3 (SD 4.3) v.  
8.2 dmft (SD  
4.0)



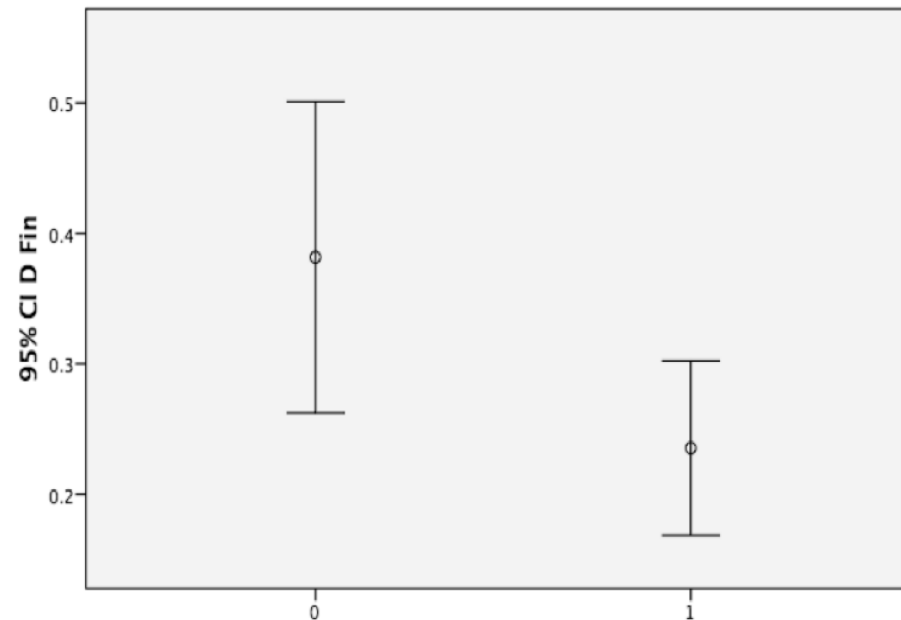
# Varnish & 2X Brushing with Fluoridated Toothpaste in Erupting First Molars

24.1 vs 12.8% of permanent molars decayed after one school year



Can combined treatment with PVP-Iodine & Fluoride Varnish improve caries prevention and control in high risk children?

Children who received Iodine plus FI varnish were twice as likely to have caries free permanent first molars than children who received FI varnish alone



Retrospective cohort study, Marshall Islands. Mean increase in D teeth was .29 (SD .69) vs .12 (SD .44) in erupting first permanent molars

Children 12-30 months treated with PVP-I & FV (ave 2.5 treatments) vs FV alone (ave 2.8 treatments) followed for 1 year.

- Any new decay
  - 40.7% combined
  - 54.4% FV alone
- WHO criteria mask change, cavities clinically smaller



Can combined treatment with PVP-Iodine, FV & fluoridated toothpaste improve caries prevention and control in high risk children? --no studies

# Purchasing PVP-Iodine



<http://prescriptiongiant.com>

<http://www.zuckermanpharmacy.com>

\$3-4/36

## James Alexander Povidone Iodine Swab Ampules

### James Alexander Povidone Iodine Swab Ampules Description:

An antiseptic microbicide for hospital and professional use with 10% povidone iodine solution and 1% iodine.

\$3-4/10



# Alternatives?

- Chlorhexidine varnish
- Xylitol syrup

# Cervitec Plus



- FDA approved varnish (2007)
- CHX-Thymol (Ivoclar Vivadent)-
- Does not contain fluoride
- Technique sensitive--dry field
- No studies in young children
- Moderately effective when applied 4/y



# Mother Applying Xylitol Syrup



# Pediatric Topical Syrups



Available as Xylarex, Arbor Pharmaceuticals

# Carries Outcome at about 25 Months of Age

Condition	Percent with Decayed teeth	No. teeth at last exam, Mean $\pm$ SD*	No. decayed teeth Mean $\pm$ SD [Max] <sup>†</sup>	Relative Risk <sup>‡</sup> (95% CI)	P-value <sup>§</sup>
Control (N=29)	51.7	17.2 $\pm$ 2.5	1.9 $\pm$ 2.4 [8]	1.00	-----
Xyl-2X (N=33)	24.2	17.2 $\pm$ 2.9	0.6 $\pm$ 1.1 [4]	0.30 (0.13, 0.66)	0.003
Xyl-3X (N=32)	40.6	16.6 $\pm$ 3.2	1.0 $\pm$ 1.4 [6]	0.50 (0.26, 0.96)	0.037

Will I get into trouble trying something new? What did we learn from the introduction of FV?