Alaska's YK Delta

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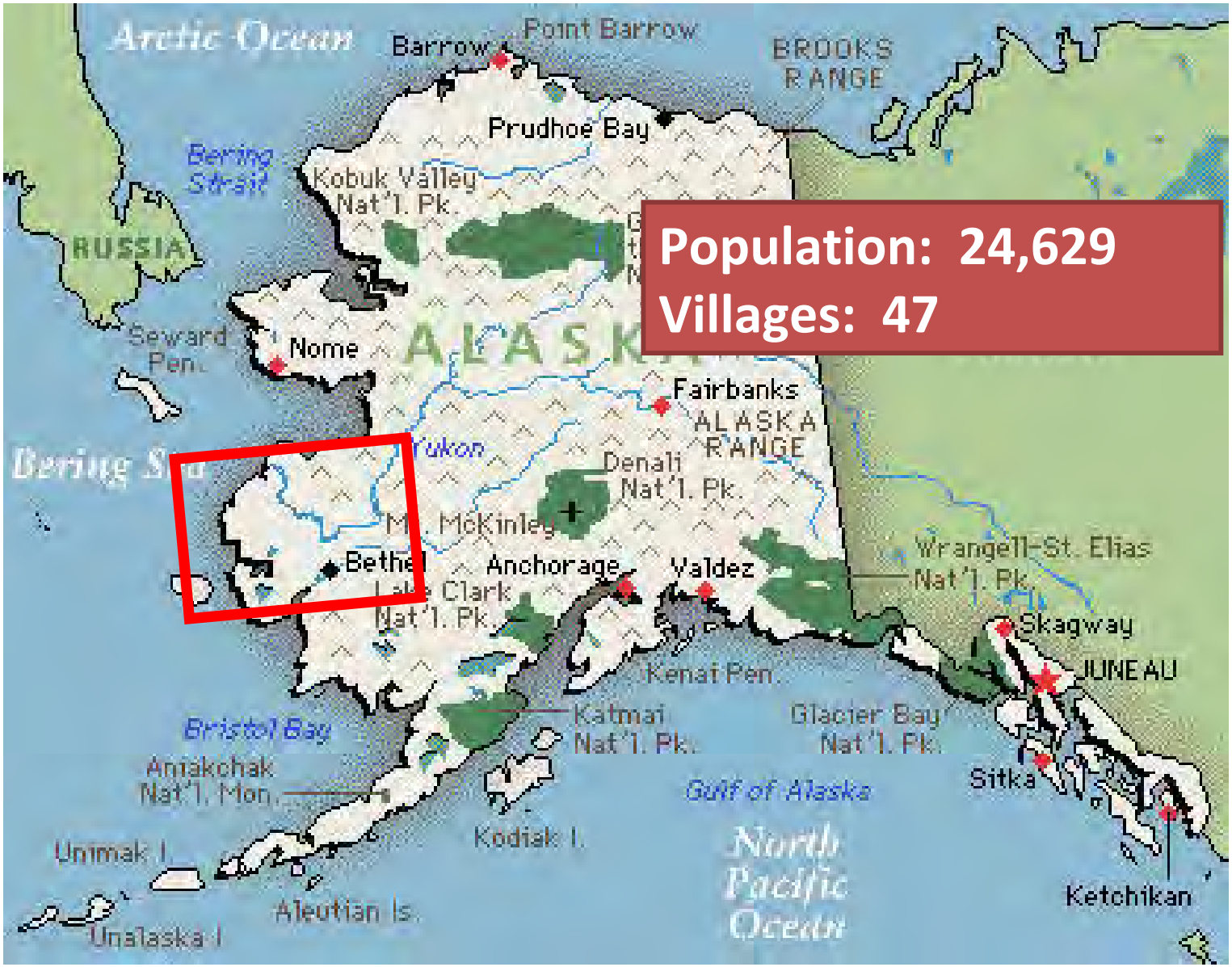
NOHC
April 2017

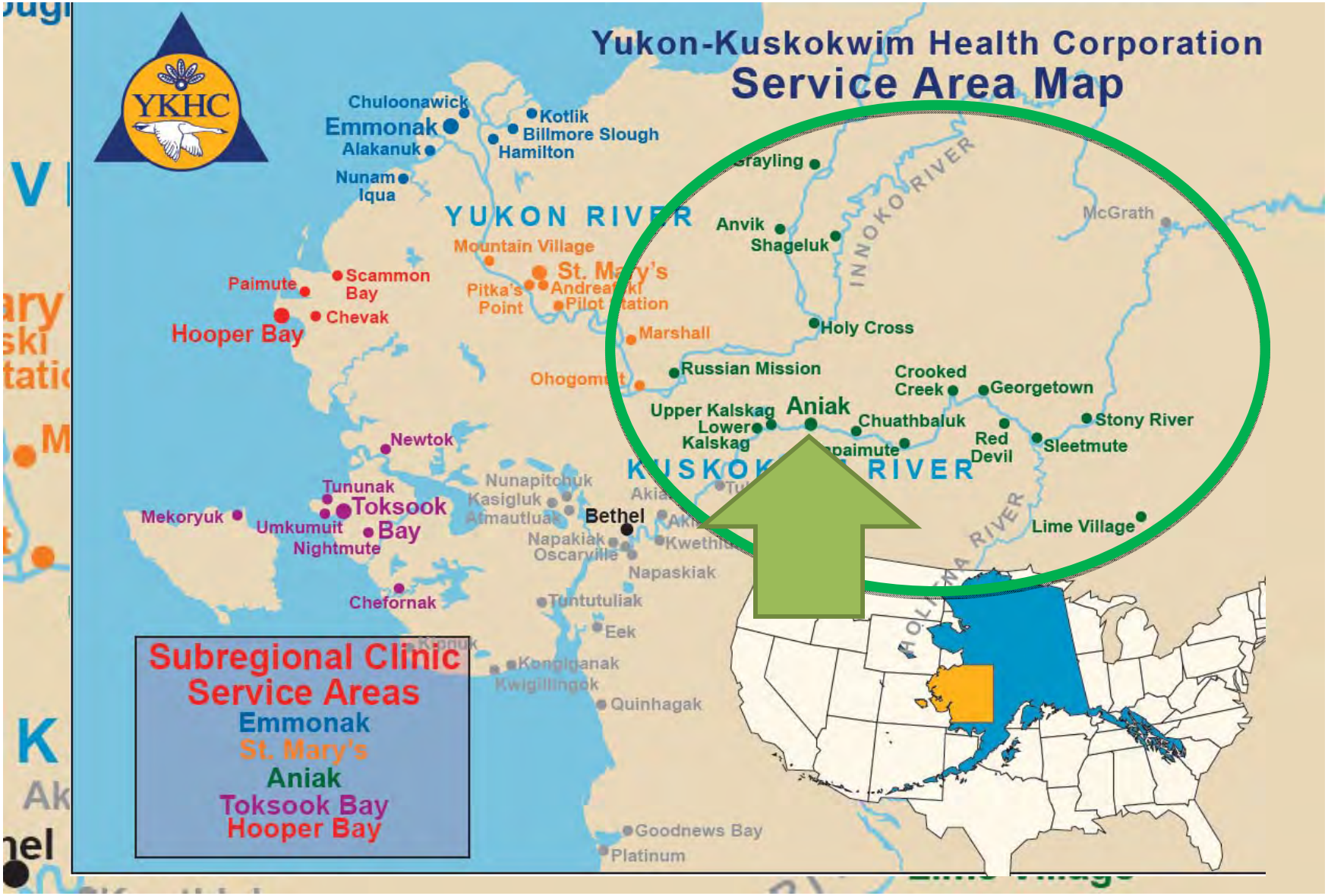

Arctic Ocean
Barrow
Point Barrow
BROOKS RANGE
Prudhoe Bay
Bering Strait
Kobuk Valley Nat'l. Pk.
RUSSIA
Seward Pen.
Nome
ALASKA
Fairbanks
ALASKA RANGE
Yukon
Denali Nat'l. Pk.
Mt. McKinley
Bethel
Anchorage
Valdez
Lake Clark Nat'l. Pk.
Wrangell-St. Elias Nat'l. Pk.
Skagway
JUNEAU
Kenai Pen.
Katmai Nat'l. Pk.
Glacier Bay Nat'l. Pk.
Bristol Bay
Aniakchak Nat'l. Mon.
Gulf of Alaska
Sitka
Kodiak I.
Unimak I.
Aleutian Is.
North Pacific Ocean
Ketchikan
Unalaska I.
Population: 24,629
Villages: 47


Yukon-Kuskokwim Health Corporation
Service Area Map
2017
YKHC
Chuloonawick
Emmonak
Kotlik
Billmore Slough
Hamilton
Nunam Iqua
Grayling
YUKON RIVER
Anvik
Shageluk
Mountain Village
St. Mary's
Pitka Point
Pilot Station
Paimute
Scammon Bay
Hooper Bay
Marshall
Holy Cross
Russian Mission
Crooked Creek
Georgetown
Aniak
Upper Kalskag
Lower Kalskag
Chuathbaluk
Stony River
Napaimute
Red Devil
Sleetmute
KUSKOKWIM RIVER
Newtok
Tununak
Toksook Bay
Mekoryuk
Umkumuit
Nightmute
Nunapitchuk
Kasigluk
Akiak
Tuluksak
Napaskiak
Oscarville
Kwethluk
Lime Village
Chefornak
Goodnews Bay
Platinum
INNOKO RIVER
KOYUKUK RIVER
1
2
Subregional Clinic
Service Areas
Emmonak
St. Mary's
Aniak
Toksook Bay
Hooper Bay

The Therapist Team

- Conan Murat, practicing since 2005

- Melanie Kerschner, certified 2014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Tuntutuliak
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UNIVERSITY of WASHINGTON

Dental Therapists and Dental Utilization in Alaska's **YK Delta**

Chi D, Lenaker D, Mancl L, Dunbar M, Babb M

National Oral Health Conference

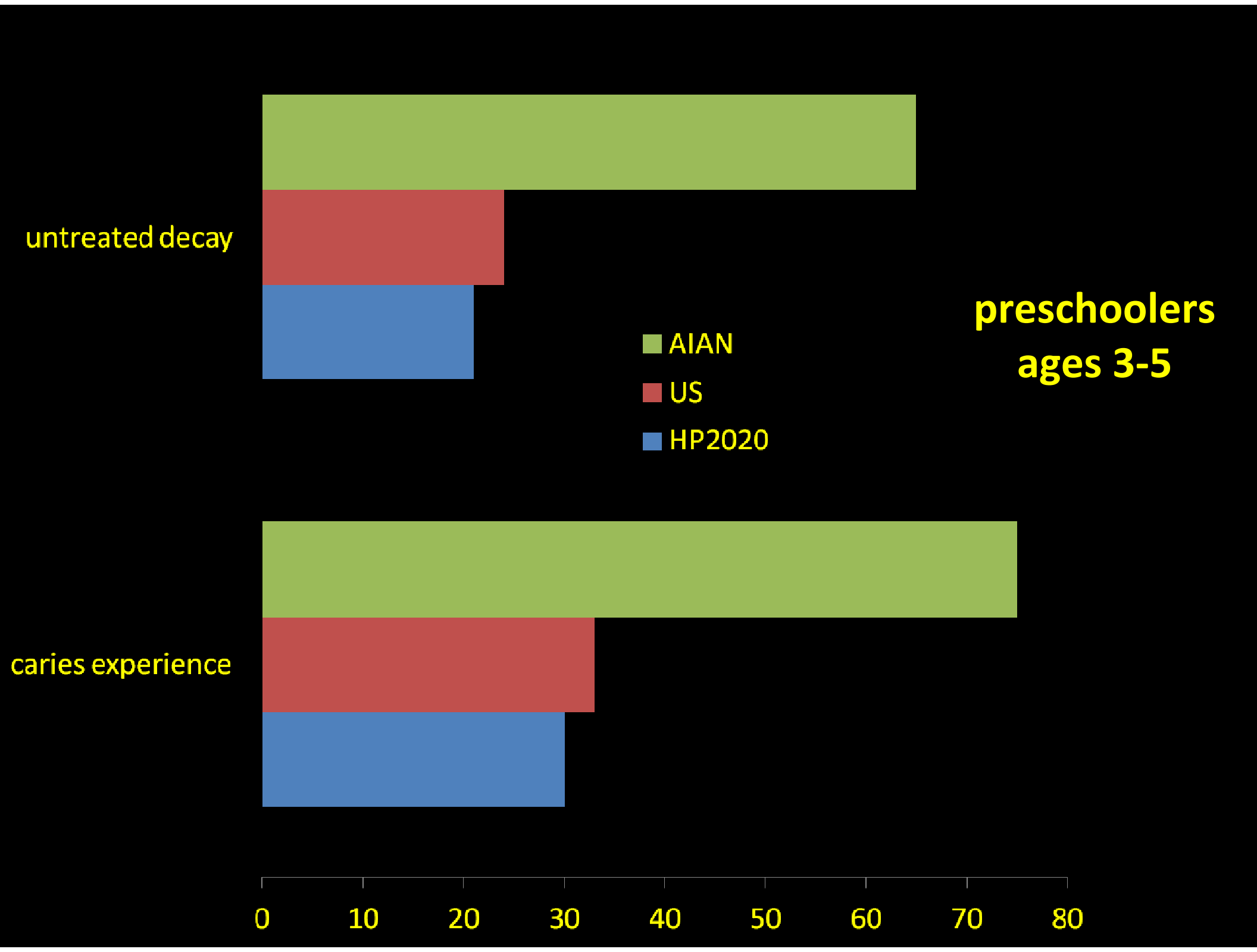
April 2017

Alaska’s care delivery context


Era Alaska
N1275N
KPN
FROZEN
CHECKED BAGGAGE
INSPECTED


HONDA
RANCHER

dental disease


untreated decay
caries experience
AIAN
US
HP2020
preschoolers
ages 3-5
0
10
20
30
40
50
60
70
80

context

Tooth decay: a multifactorial disease

- High sugar diet
- Inadequate fluoride
- No dental care

Alaska Native history and context

- Settler colonialism: sugar, flour, fat, salt
- Permafrost
- Isolated communities and provider shortages

previous work

No difference in diagnosis or complications between dental therapists and general dentists (Bolin 2008)

Comparable preps and restorations (Bader et al. 2011)

Shorter wait times and high patient satisfaction (Kellogg Foundation 2010)

Gap: No long-term evaluation of dental therapists

questions

1. What is the relationship between dental therapists and use?

   Rationale: General assessment

2. How large of a difference is possible with dental therapists?

   Rationale: Clinical relevance

methods

Data (2006 to 2015)

- YKHC dental EHR, N=28,191
- Medicaid data, N=22,351
- Community-level geocoding

Predictor: dental therapist treatment days (EHR)

- Q1 – Continuous variable
- Q2 – None vs. high

methods

5 dental utilization measures (EHR and Medicaid)

(a) Children with preventive care (exam, cleaning, or fluoride)

(b) Children <3y with D-E-F-G extraction

(c) Children <6y with treatment under general anesthesia

(d) Adults with preventive care

(e) Adults with extraction

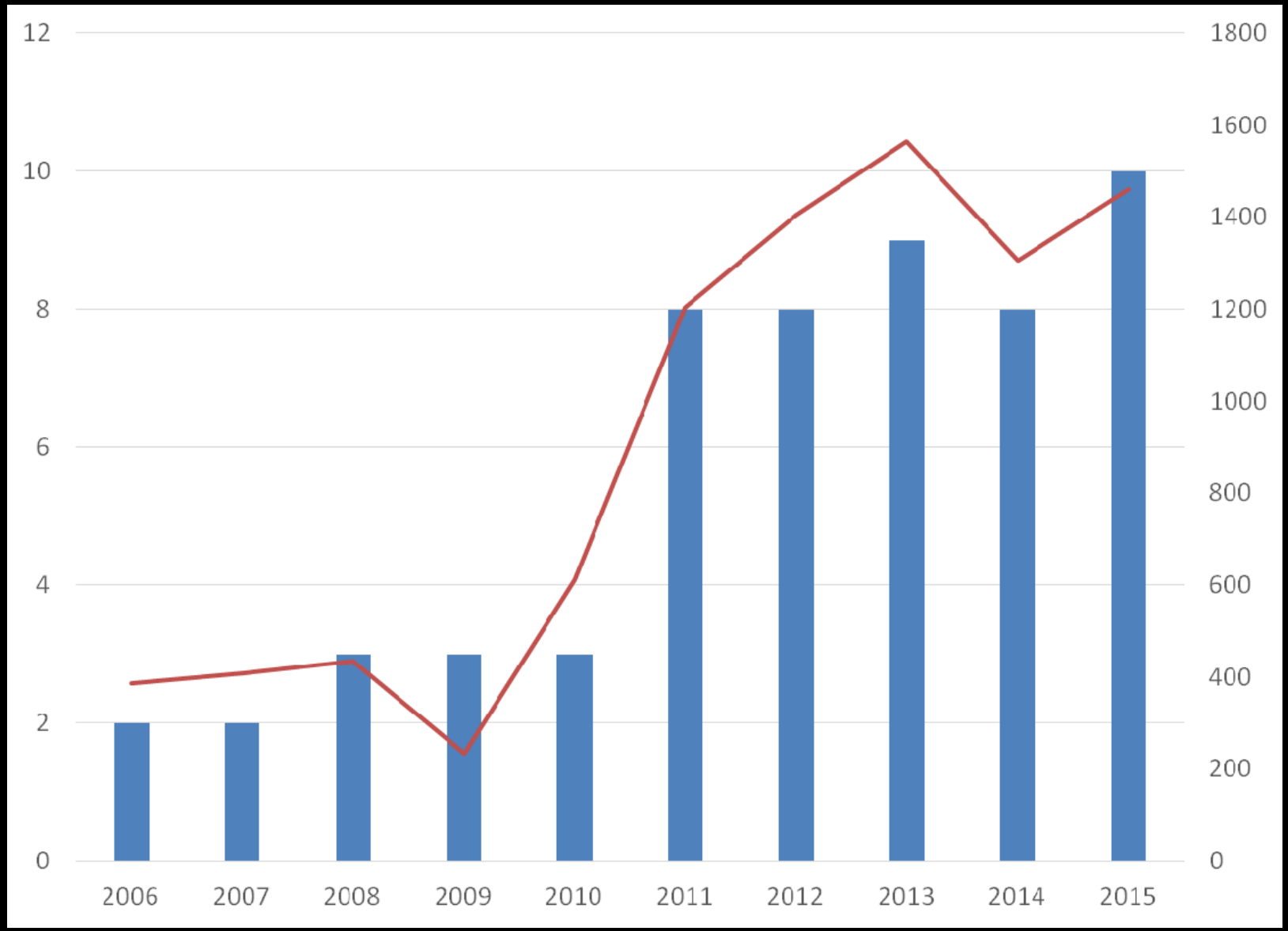
methods

Q1: Spearman partial correlation coefficients

- adjusted for
  - year
  - dentist treatment days
  - baseline poverty

Q2: comparisons of proportions

dental therapists and treatment days



utilization rates

Outcome	10-year mean (EHR)	10-year mean (Medicaid)
Child preventive care	31.8%	15.4%
D-E-F-G extraction	14.0%	3.1%
General anesthesia	5.7%	5.4%
Adult preventive care	18.7%	3.8%
Adult extraction	32.9%	7.8%

Spearman partial correlation coefficients*

Outcome	Coefficient (EHR)	P-value	Coefficient (Medicaid)	P-value
Child preventive care	**+0.26**	<.0001	**+0.23**	<.001
D-E-F-G extraction	**-0.28**	<.0001	**-0.17**	0.03
General anesthesia	**-0.27**	<.0001	**+0.05**	0.45
Adult preventive care	**+0.30**	<.0001	**+0.20**	<.001
Adult extraction	**-0.46**	<.0001	**-0.16**	0.02

*adjusted for year, dentist treatment days, and baseline poverty

Children: 2006-2015*

Preventive care

None: 15.5%
High: 24.8%

60% difference

D-E-F-G extractions

None: 7.3%
High: 1.9%

284% difference

General Anesthesia

None: 7.9%
High: 5.5%

44% difference

*Medicaid data

Adults: 2006-2015*

Preventive care

None: 3.2%
High: 5.6%

75% difference

Extractions

None: 9.6%
High: 7.1%

26% difference

*Medicaid data

clinical significance

- 2,695 Medicaid-enrolled children <3y
- D-E-F-G extraction

- lowering to 1.9% reduces to 52 from 114 the number of children with extractions

limitations

- observational, claims data study (≠causation)
- mechanisms – qualitative study
- dental therapists are part of the solution
  - Sugared fruit drinks

main findings

- dental therapists
  - positively associated with preventive care
  - negatively associated with extractions
  - not associated with general anesthesia
- high dental therapist communities – utilization patterns consistent with ideal outcomes
  - more preventive care
  - fewer extractions
  - less general anesthesia

thank you

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