THE ORAL HEALTH OF THE AI/AN POPULATION
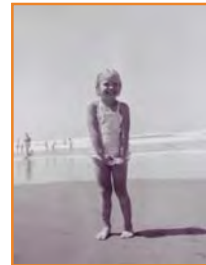Kathy Phipps, DrPH
August 21, 2018

ORAL HEALTH FROM A NATIONAL PERSPECTIVE (ALL RACES)

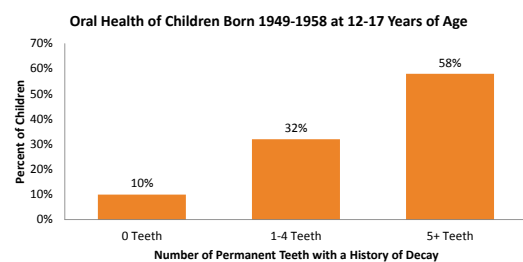## A TALE OF TWO GENERATIONS

GENERATION #1: CHILDREN BORN 1949-58 (BABY BOOMERS)

ORAL HEALTH OF BOOMERS IN 1966-70

U.S. ORAL HEALTH SURVEY: 1966-1970

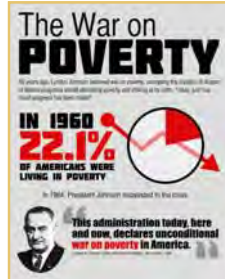**Oral Health of Children Born 1949-1958 at 12-17 Years of Age**

0 Teeth: 10%
1-4 Teeth: 32%
5+ Teeth: 58%

Number of Permanent Teeth with a History of Decay

Data Source: National Health Survey, 1966-1970, www.cdc.gov/nchs/data/series/sr_11/sr11_144acc.pdf

AMERICA IN TRANSITION

Economic/Social Changes

- Higher standard of living
- More universal education
- Improved housing
- Medicaid
- Urbanization
- Unionization

AMERICA IN TRANSITION

Oral Health Specific Changes

- Water fluoridation
  - 1950s & 1960s
- Fluoride toothpaste
  - 1960s
- Other topical fluorides

AMERICA IN TRANSITION

Oral Health Specific Changes

- Higher quality dentistry
  - "Pain-free" dentistry
- Increased access to care
  - Employee benefits (1954)
    - Delta Dental – CA, OR, WA
    - Pilot program for children of longshoremen
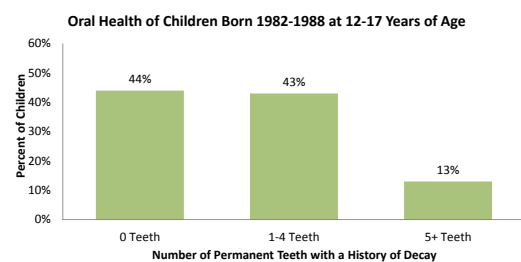 - Medicaid (1965)

GENERATION #2: CHILDREN BORN 1982-1988 (ECHO BOOMERS)
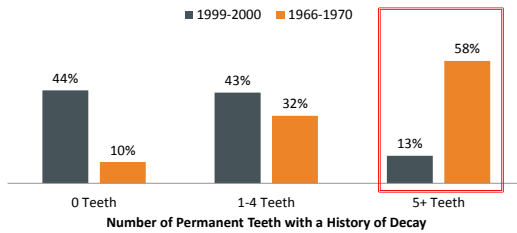

ORAL HEALTH OF ECHO BOOMERS IN 1999-2000

U.S. ORAL HEALTH SURVEY: 1999-2000

Oral Health of Children Born 1982-1988 at 12-17 Years of Age

Data Source: National Health & Nutrition Examination Survey, 1999-2000

SIGNIFICANT REDUCTION IN SEVERE DECAY

Oral Health of 12-17 Year Olds in 1999-2000 vs. 1966-1970

■ 1999-2000 ■ 1966-1970

- 0 Teeth: 44% (1999-2000), 10% (1966-1970)
- 1-4 Teeth: 43% (1999-2000), 32% (1966-1970)
- 5+ Teeth: 13% (1999-2000), 58% (1966-1970)

Number of Permanent Teeth with a History of Decay

ECHO BOOMERS BORN 1982-1988

Oral Health of 12-17 Year Olds in 1999-2000

- 0 Teeth: 44%
- 1-4 Teeth: 43%
- 5+ Teeth: 13%

Who are these children & why haven't they improved?

Number of Permanent Teeth with a History of Decay

Data Source: National Health & Nutrition Examination Survey, 1999-2000

CHILDREN AT HIGH-RISK OF DECAY

- Low-income
- Low parental education
- Racial/ethnic minorities
- Recent immigrants

ORAL HEALTH OF THE AI/AN POPULATION

HOW ORAL HEALTH IS MONITORED

- IHS coordinates periodic oral health surveys
  - Use standardized screening protocols similar to state/national surveys
    - "Basic Screening Survey" protocols
  - Clinics are randomly selected to participate
    - All Portland Area clinics are encouraged to participate
    - Clinic specific data can be used for program planning, program evaluation, advocacy, and grant writing

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HOW ORAL HEALTH IS MONITORED

- Survey populations to date
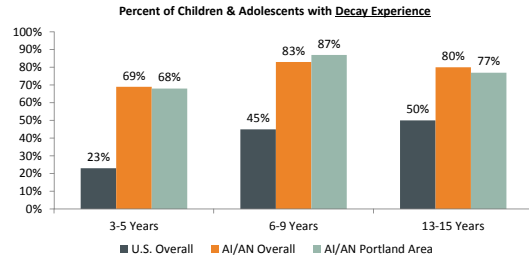 - Children – community based samples
  - Adolescents and adults – clinic based sample
- Having ***community based samples is very important*** because the oral health of clinic users may be different from the community as a whole
- Survey timeline

2010 1-5 Years	2011 6-8 Years	2012-2013 13-15 Years	2014 1-5 Years	2015 35+ Years	2016-2017 6-8 Years

OVERALL SUMMARY

- Regardless of age, AI/ANs have more dental disease and less access to care than other populations in the United States
  - Dental caries is a significant health problem for AI/ANs
  - Periodontal disease is a significant health problem for AI/AN adults
  - Many AI/ANs are not getting the dental care they need
  - Portland Area has less untreated decay than IHS overall
- Early prevention, before the age of two, is essential to reduce the prevalence of dental caries in AI/AN children
- Dental sealants are an essential preventive strategy but the appropriate children and teeth need to be targeted
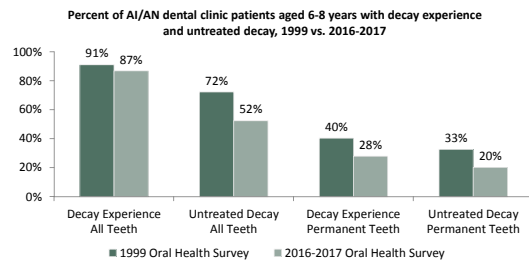
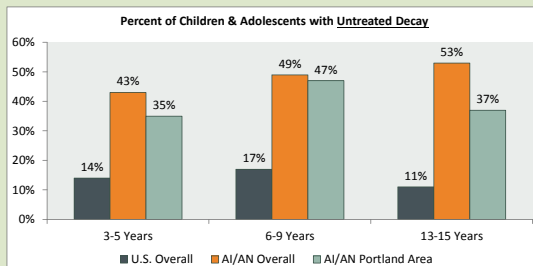## AI/AN CHILDREN HAVE MORE DISEASE THAN OTHER POPULATION GROUPS

Percent of Children & Adolescents with Decay Experience

Bar chart data:
- 3-5 Years: U.S. Overall 23%, AI/AN Overall 69%, AI/AN Portland Area 68%
- 6-9 Years: U.S. Overall 45%, AI/AN Overall 83%, AI/AN Portland Area 87%
- 13-15 Years: U.S. Overall 50%, AI/AN Overall 80%, AI/AN Portland Area 77%

Legend: ■ U.S. Overall ■ AI/AN Overall ■ AI/AN Portland Area

POTENTIAL REASONS FOR HIGH DISEASE RATES

- AI/AN children …
  - Erupt earlier than other populations
  - Acquire oral bacteria earlier than other populations
  - Have a higher prevalence of developmental enamel defects
- Social inequities …
  - Disparities in power and wealth, often accompanied by discrimination, social exclusion, poverty and low wages, lack of affordable housing, exposure to hazards and community social decay
  - Percent living in poverty: 28% for AI/ANs, 16% for the U.S. Overall
    - Oglala Lakota County, SD: 53% live in poverty
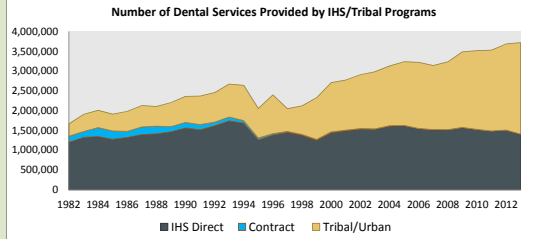
ORAL HEALTH IS IMPROVING

Percent of AI/AN dental clinic patients aged 6-8 years with decay experience and untreated decay, 1999 vs. 2016-2017

Bar chart data:
- Decay Experience All Teeth: 1999 91%, 2016-2017 87%
- Untreated Decay All Teeth: 1999 72%, 2016-2017 52%
- Decay Experience Permanent Teeth: 1999 40%, 2016-2017 28%
- Untreated Decay Permanent Teeth: 1999 33%, 2016-2017 20%

Legend: ■ 1999 Oral Health Survey ■ 2016-2017 Oral Health Survey

AI/AN CHILDREN HAVE LESS ACCESS TO CARE THAN OTHER POPULATION GROUPS

Percent of Children & Adolescents with Untreated Decay

Bar chart data:
- 3-5 Years: U.S. Overall 14%, AI/AN Overall 43%, AI/AN Portland Area 35%
- 6-9 Years: U.S. Overall 17%, AI/AN Overall 49%, AI/AN Portland Area 47%
- 13-15 Years: U.S. Overall 11%, AI/AN Overall 53%, AI/AN Portland Area 37%

Legend: ■ U.S. Overall ■ AI/AN Overall ■ AI/AN Portland Area

POTENTIAL REASONS FOR LOW ACCESS

- IHS/tribal programs are under funded
  - General U.S. Population: $291/person in 2013
  - Population served by IHS/tribes: $99 per person in 2011
- IHS/tribal programs have fewer dentists per person
  - General U.S. population: 1,525 people per dentist
  - Population served by IHS/tribes: 2,800 AI/AN patients per dentist
- People may not seek dental care
  - General U.S. population: 42% had dental visit in past year
  - Population served by IHS/tribes: 29% had dental visit in 2015
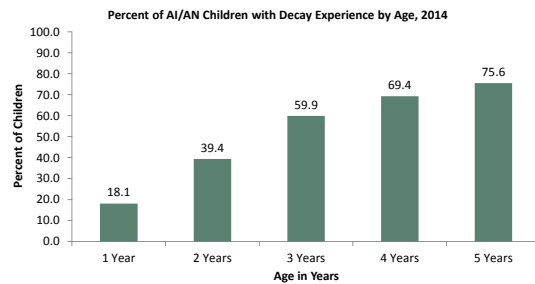
ACCESS IS IMPROVING

Number of Dental Services Provided by IHS/Tribal Programs

■ IHS Direct ■ Contract ■ Tribal/Urban

Number of dental services doubled since 1980s.
Percent with a dental visit increased from 25% in 2008 to 29% in 2015.

EARLY PREVENTION IS ESSENTIAL TWO IS TOO LATE

EARLY PREVENTION IS ESSENTIAL "TWO IS TOO LATE"

Percent of AI/AN Children with Decay Experience by Age, 2014

- 1 Year: 18.1
- 2 Years: 39.4
- 3 Years: 59.9
- 4 Years: 69.4
- 5 Years: 75.6

Percent of Children / Age in Years

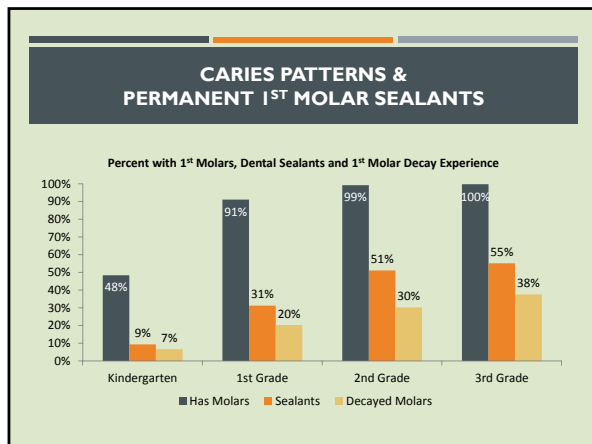## CARIES PATTERNS & SEALANTS PRIMARY TEETH

Which primary teeth are at highest risk of decay?

CARIES PATTERNS & PRIMARY MOLAR SEALANTS

- Teeth at highest risk in children 1-5 years
  - *Mandibular 1st molars*
  - Maxillary central incisors
  - Mandibular 2nd molars
  - Maxillary 1st molars
  - Maxillary 2nd molars
- Primary molar sealants must be in prevention "package"
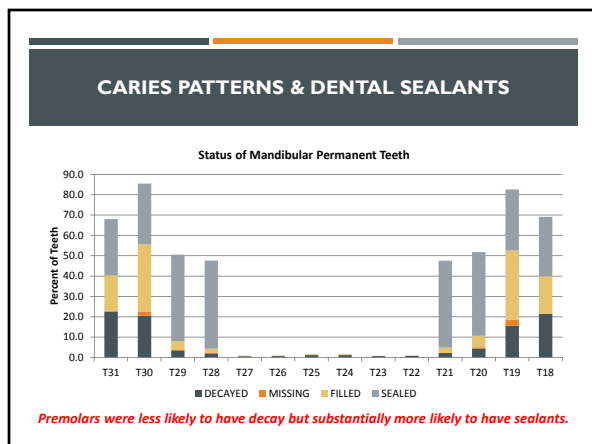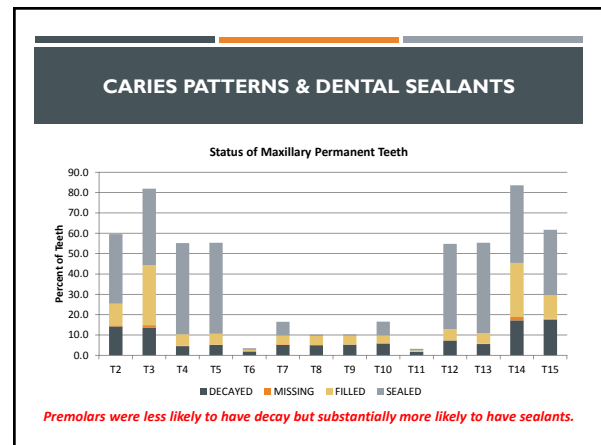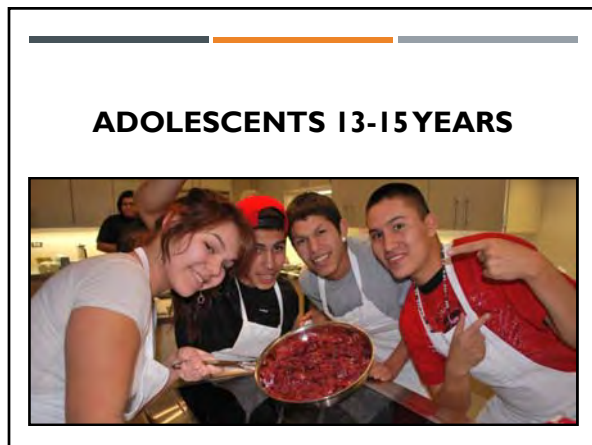

CHILDREN 6-9 YEARS OF AGE

Slide 1

**CARIES PATTERNS &
PERMANENT 1ST MOLAR SEALANTS**

Percent with 1st Molars, Dental Sealants and 1st Molar Decay Experience

Legend: ■ Has Molars ■ Sealants ■ Decayed Molars

- Kindergarten: 48%, 9%, 7%
- 1st Grade: 91%, 31%, 20%
- 2nd Grade: 99%, 51%, 30%
- 3rd Grade: 100%, 55%, 38%

Slide 2

DENTAL SEALANTS

- AI/AN children erupt earlier than other populations
- School programs should target K, 1st and 2nd grade with follow-up in 3rd grade
  - Use glass ionomer sealants on partially erupted molars

Slide 3

ADOLESCENTS 13-15 YEARS

Slide 4

CARIES PATTERNS & DENTAL SEALANTS

Status of Maxillary Permanent Teeth

Percent of Teeth — T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15

Legend: ■ DECAYED ■ MISSING ■ FILLED ■ SEALED

Premolars were less likely to have decay but substantially more likely to have sealants.

Slide 5

CARIES PATTERNS & DENTAL SEALANTS

Status of Mandibular Permanent Teeth

Percent of Teeth — T31, T30, T29, T28, T27, T26, T25, T24, T23, T22, T21, T20, T19, T18

Legend: ■ DECAYED ■ MISSING ■ FILLED ■ SEALED

Premolars were less likely to have decay but substantially more likely to have sealants.

Slide 6

CARIES PATTERNS & DENTAL SEALANTS

- Focus additional efforts on sealing permanent molars
- Question to consider …
  - Is it cost effect to seal premolars?