

ORAL HEALTH OF AI/AN PRESCHOOL CHILDREN

2014 IHS ORAL HEALTH SURVEY
NATIONAL, AREA AND CLINIC LEVEL RESULTS



SURVEY METHODS

- Probability sample of Tribal and IHS Service Units
- Dentists, hygienists & therapists screened AI/AN children 1-5 years of age in ***community-based settings***
 - Medical & well child clinics
 - Early Head Start, Head Start & other preschool settings
 - WIC
 - Kindergarten
 - Community events
- Dental clinic patients were ***not*** screened

DATA ANALYSIS

- Statistical analyses were performed using the complex survey procedures in SAS v9.3
 - All analyses accounted for the stratified cluster sampling strategy
 - Confidence intervals are wide because of cluster sampling design
- Sample weights were developed using the age specific 2013 user population estimates to produce population estimates based on selection probabilities

NUMBER OF SITES AND CHILDREN

- Screening goal:
 - 400 children per IHS Area equally divided by age – 80 per age year
 - *Some IHS Areas did not meet the screening goal for some age years*
- 81 IHS Service Units participated
 - 49% of the 165 IHS Service Units
 - **NOTE:** Some Service Units include multiple Tribal programs
- 11,873 AI/AN children aged 1-5 years were screened
 - Largest ever survey of this age group (3,000 more than 2010 survey)
 - Represents 8% of the 2013 user population aged 1-5 years (n=141,339)
 - The majority of the children screened were 3-4 years of age

NUMBER OF CHILDREN SCREENED

(BLUE HIGHLIGHTED CELLS = DID NOT MEET GOAL FOR AGE)

IHS Area	Number of Service Units	Number of Children Screened					
		1 Year	2 Years	3 Years	4 Years	5 Years	Total
Alaska	7	99	108	211	383	282	1,083
Albuquerque	6	76	99	226	284	169	854
Bemidji	7	90	122	279	363	223	1,077
Billings	8	130	173	381	431	215	1,330
California	8	26	69	110	119	73	397
Great Plains	6	48	73	334	358	163	976
Nashville	7	141	153	280	322	335	1,231
Navajo	4	92	81	103	162	186	624
Oklahoma City	5	161	173	463	628	224	1,649
Phoenix	8	98	84	202	287	125	796
Portland	13	162	158	327	454	204	1,305
Tucson	2	57	65	152	212	65	551
Total	81	1,180	1,358	3,068	4,003	2,264	11,873

Screening goal: 400 children per IHS Area equally divided by age – 80 per age year

NUMBER OF CHILDREN SCREENED

- Impact of not reaching screening goals
 - Larger confidence intervals making potential changes in oral health status more difficult to detect
 - If a particular age year is underrepresented, Area results may not be reflective of the overall population

IHS NATIONAL RESULTS

KEY FINDINGS

1. Tooth decay continues to be a significant health problem for AI/AN preschool children
2. AI/AN children continue to have more tooth decay than other populations in the United States
3. Early prevention, before the age of two, is essential to reduce the prevalence of tooth decay in AI/AN children
4. Many AI/AN preschool children are not getting the dental care they need
5. Dental sealants on primary molars may be underutilized

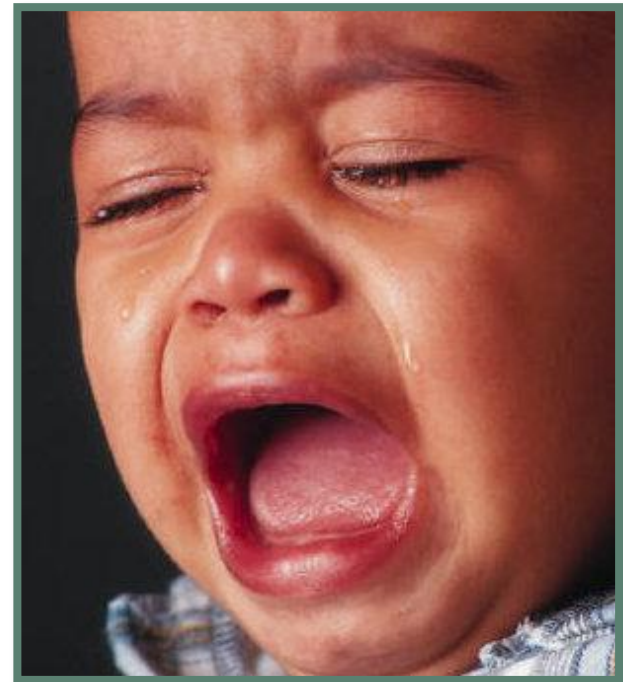
FINDING #1: TOOTH DECAY CONTINUES TO BE A SIGNIFICANT HEALTH PROBLEM



More than 5 out of every 10 American Indian and Alaska Native children (54%) between 1-5 years of age has experienced tooth decay.

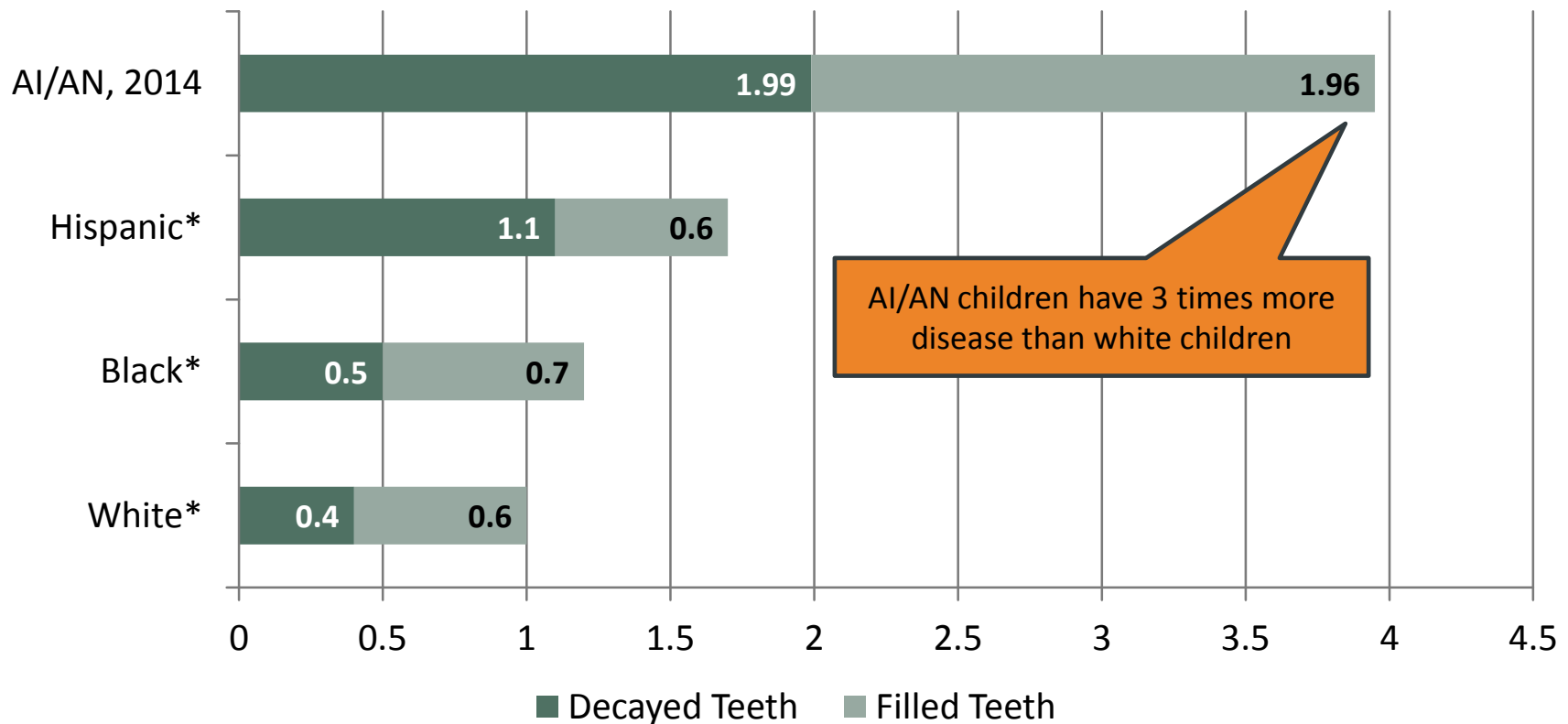
FINDING #1 (CONT.): TOOTH DECAY CONTINUES TO BE A SIGNIFICANT HEALTH PROBLEM

- Tooth decay can cause needless pain, suffering and infection
- Tooth decay may affect a child's ability to eat, communicate and learn
- Many children with decay must be treated in a hospital setting at a cost exceeding \$6,000 per child



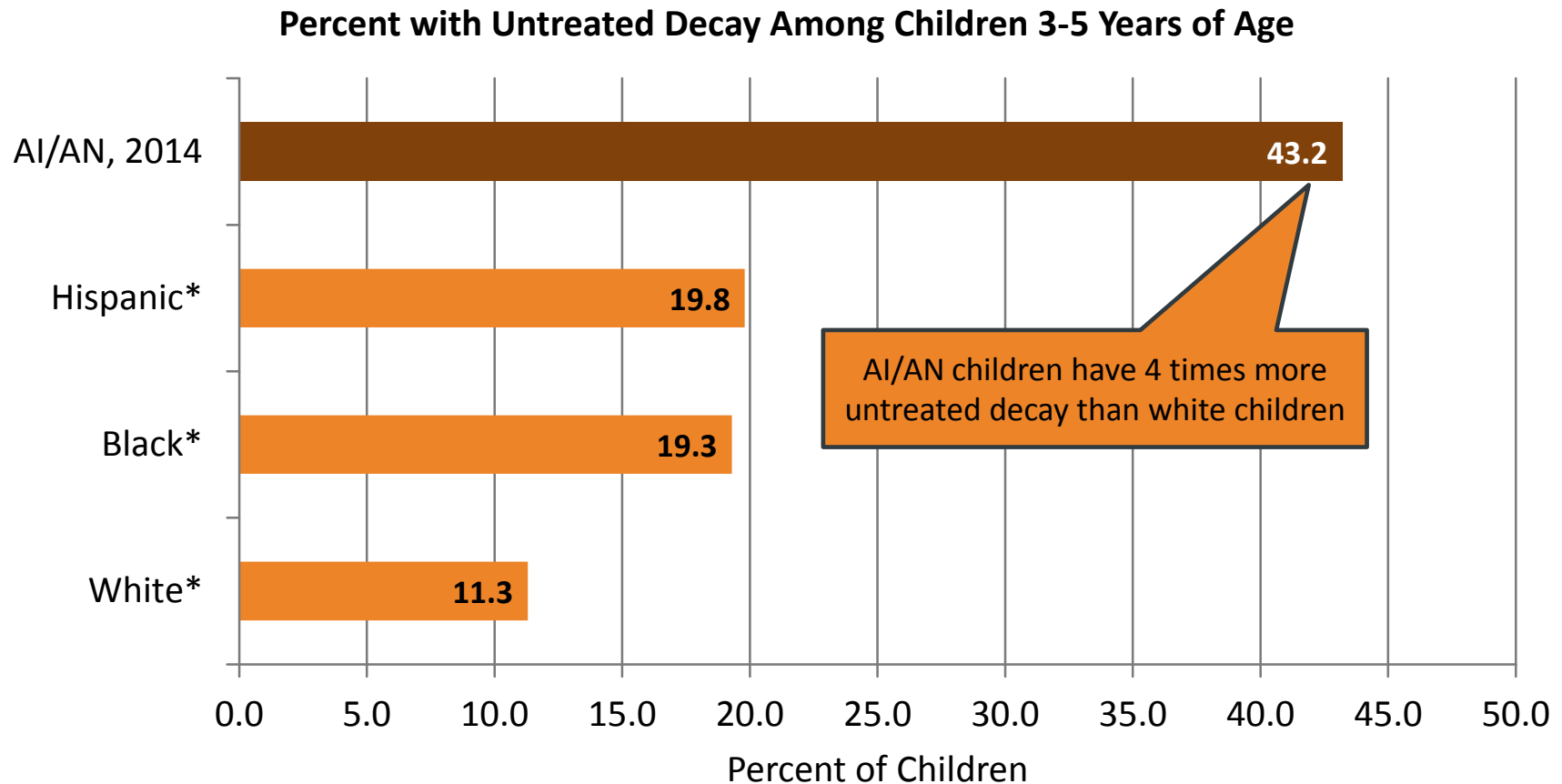
FINDING # 2: AI/AN CHILDREN HAVE MORE TOOTH DECAY THAN OTHER POPULATIONS

Mean Number of Decayed and Filled Primary Teeth (dft) Among Children 2-5 Years of Age



* Data Source: NHANES 1999-2002

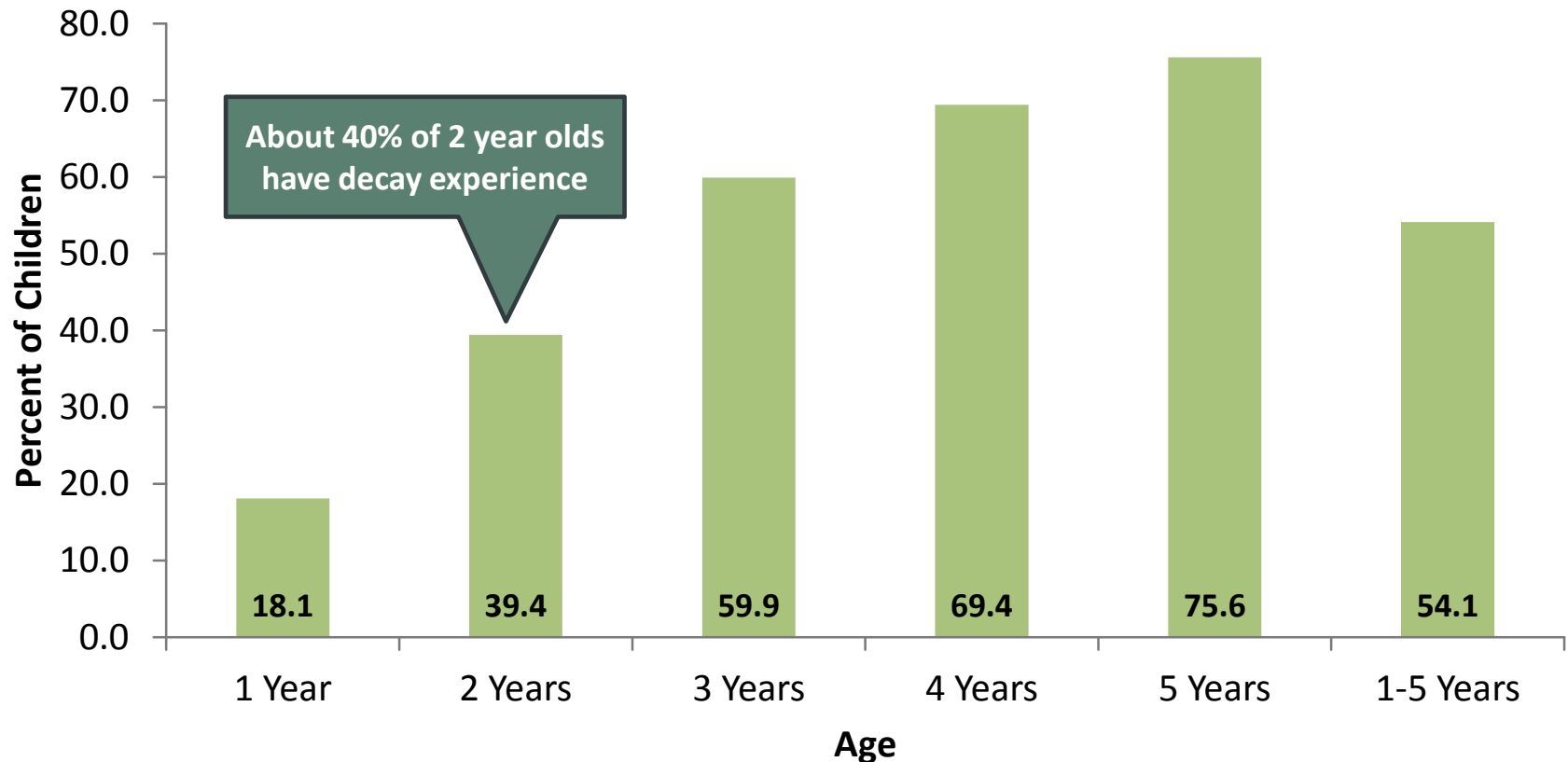
FINDING # 2 (CONT.): AI/AN CHILDREN HAVE MORE TOOTH DECAY THAN OTHER POPULATIONS



* Data Source: NHANES 2009-2010

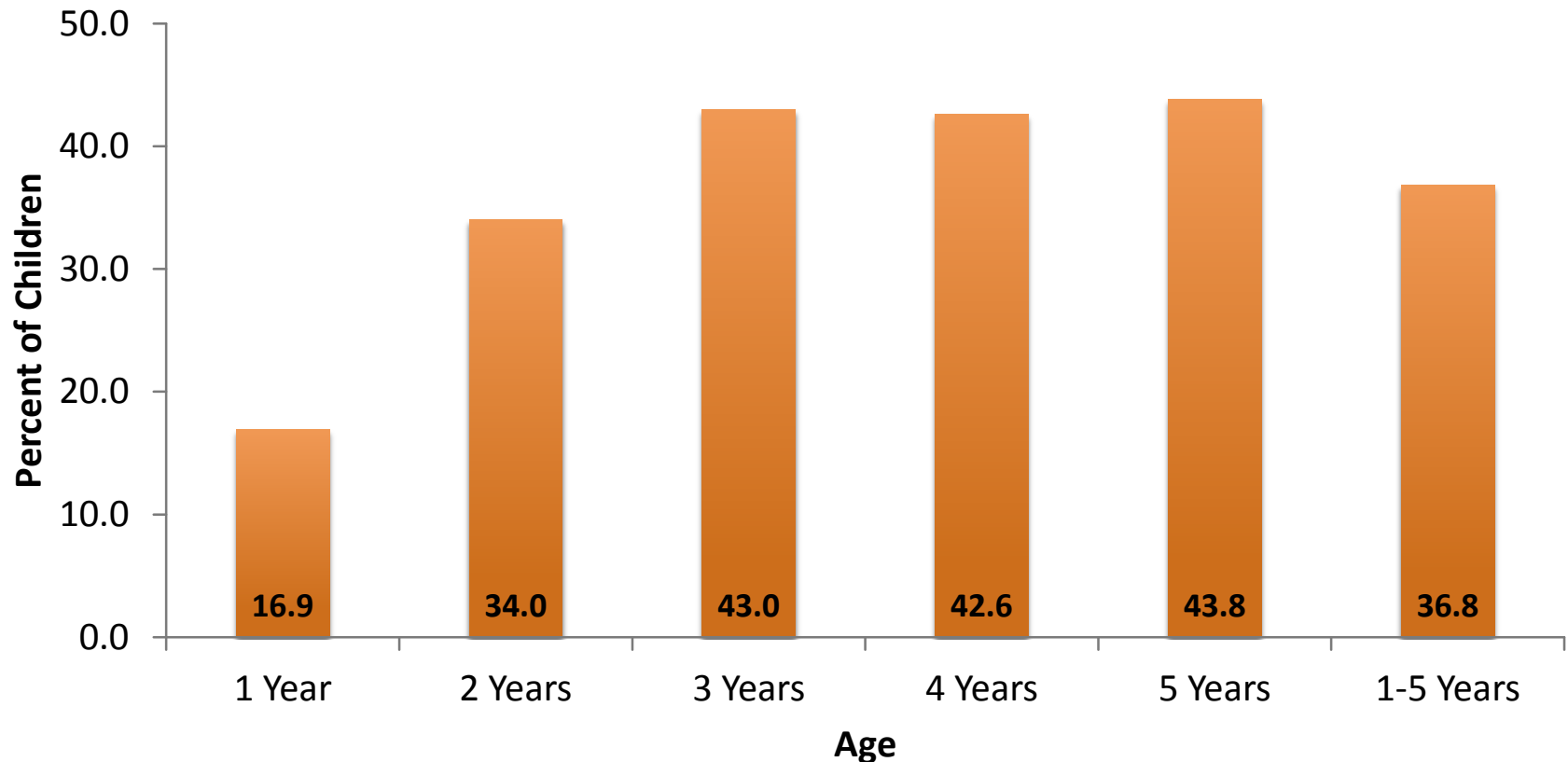
FINDING #3: EARLY PREVENTION IS ESSENTIAL “TWO IS TOO LATE”

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



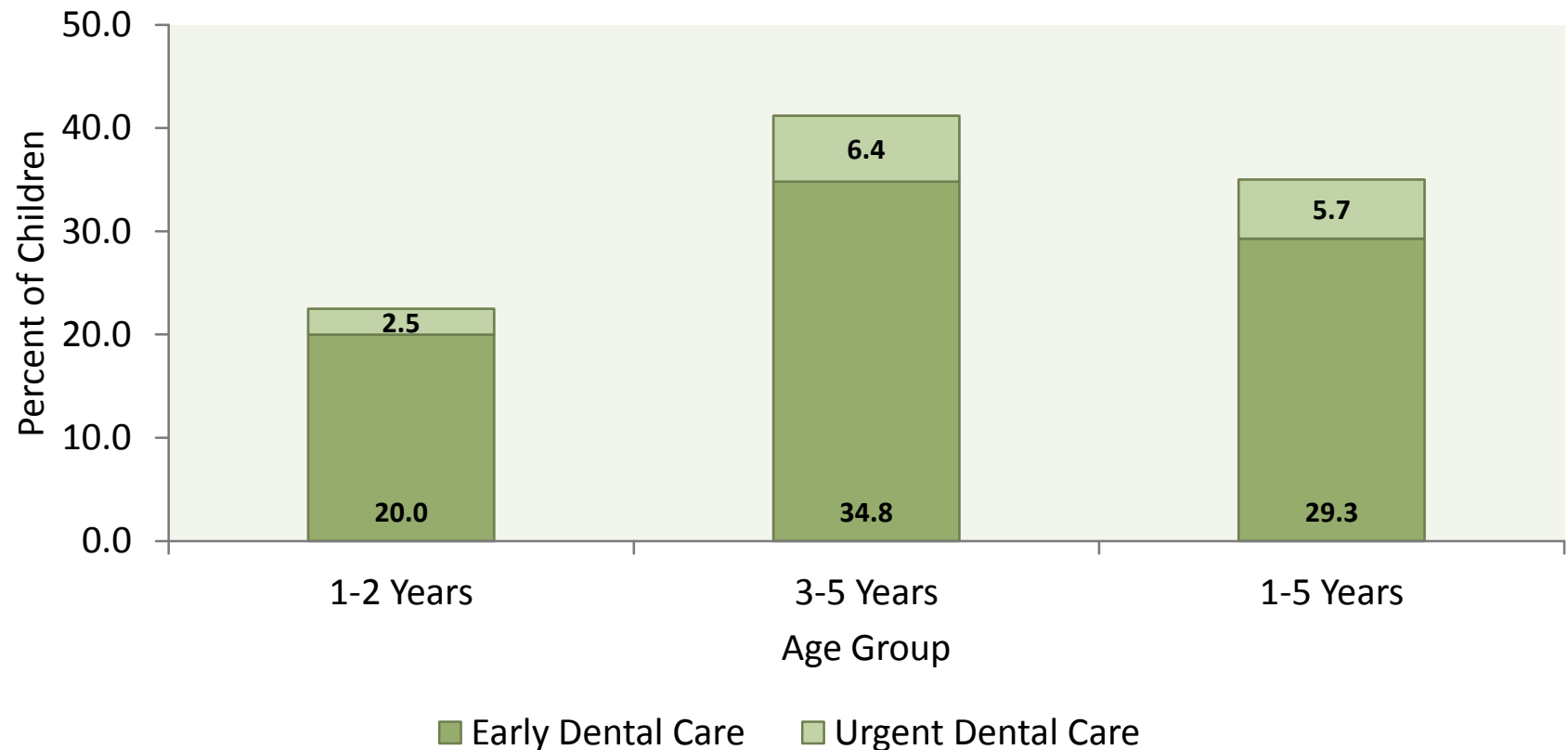
FINDING #4: MANY HAVE UNTREATED DECAY AND AREN'T GETTING NEEDED DENTAL CARE

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



FINDING #4 (CONT.): MANY HAVE UNTREATED DECAY AND AREN'T GETTING NEEDED DENTAL CARE

Percent of AI/AN Children Needing Early and Urgent Dental Care by Age Group 2014

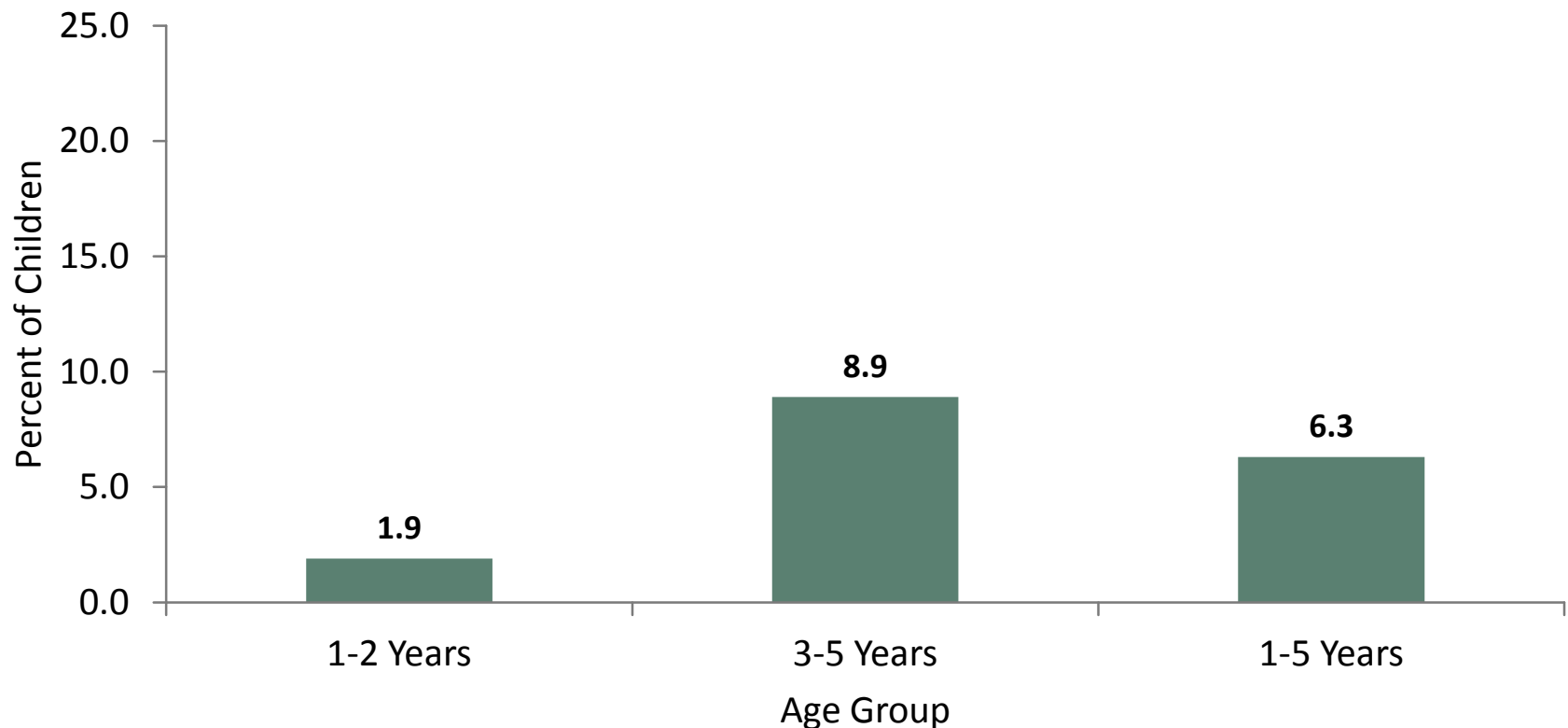


Urgent dental care: Child has symptoms such as pain or infection and should receive dental care within 48 hours

Early dental care: Child needs dental care but does not have pain or an infection

FINDING # 5: DENTAL SEALANTS ON PRIMARY MOLARS MAY BE UNDERUTILIZED

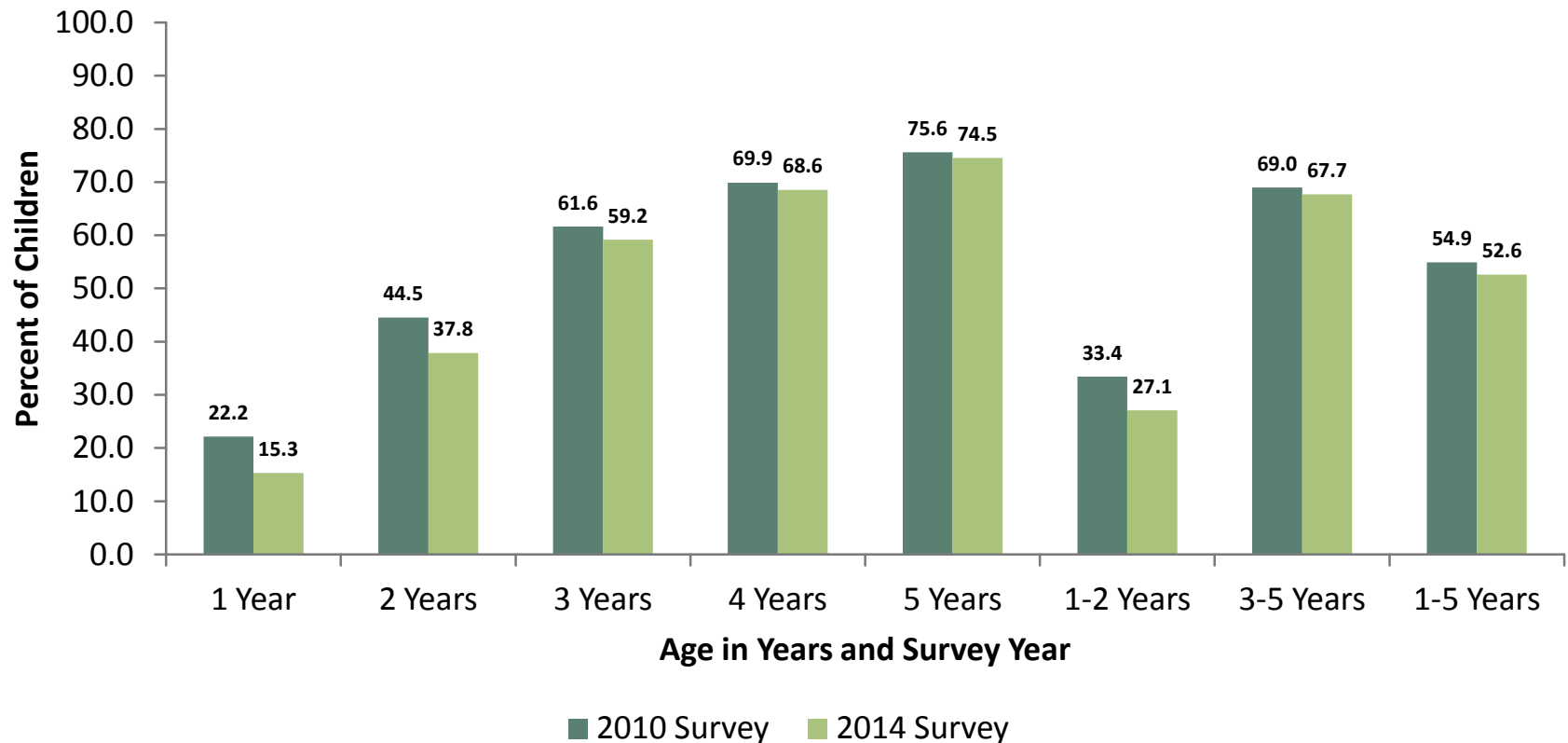
Percent of AI/AN Children with Sealants on Primary Molars by Age Group, 2014



SUMMARY DATA

SUMMARY – DECAY EXPERIENCE

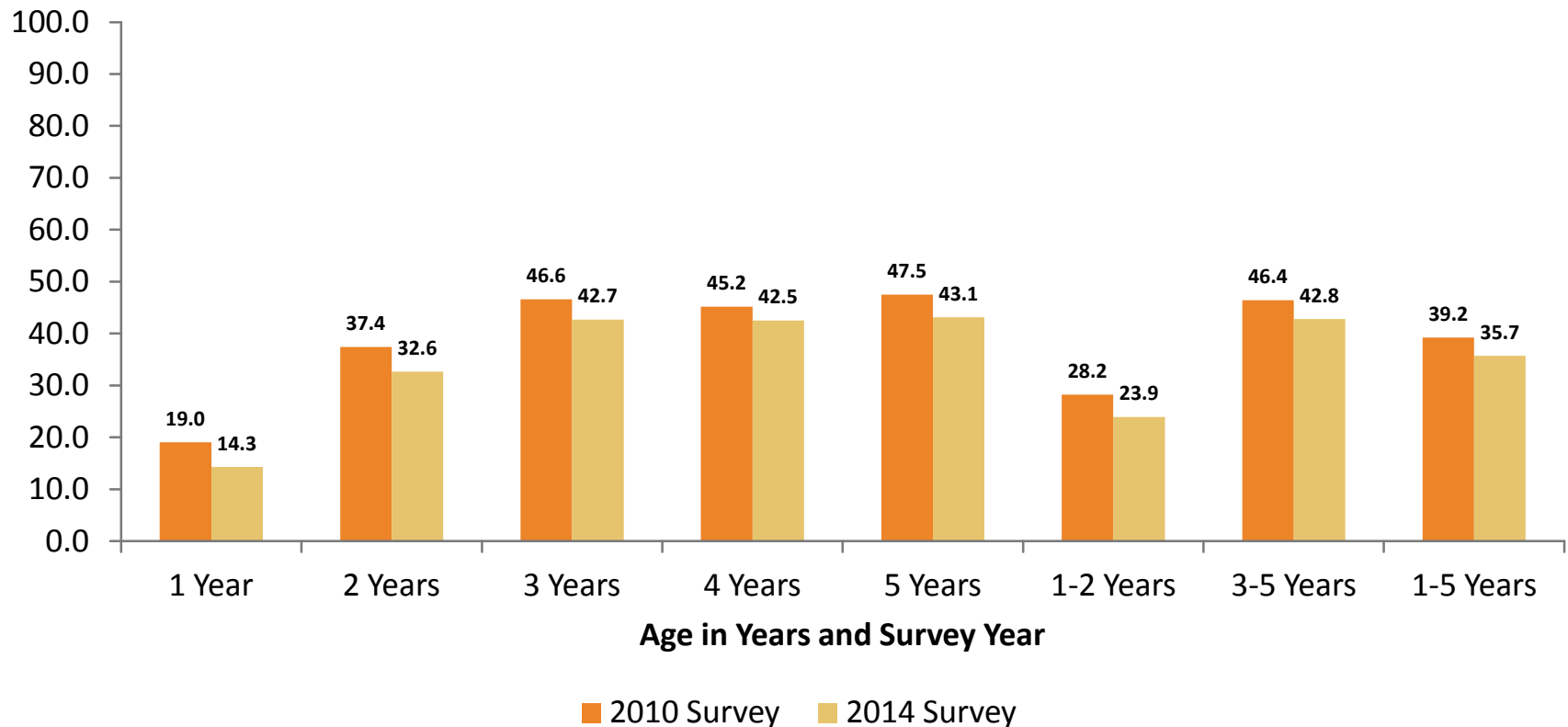
Percent of AI/AN Children with Decay Experience by Age, 2010 & 2014



59 Service Units participated in both 2010 (n=8,155) and 2014 (n=9,118) – data presented is for those 59 Service Units.
Differences are not statistically significant.

SUMMARY - UNTREATED DECAY

Percent of AI/AN Children with Untreated Decay by Age, 2010 & 2014

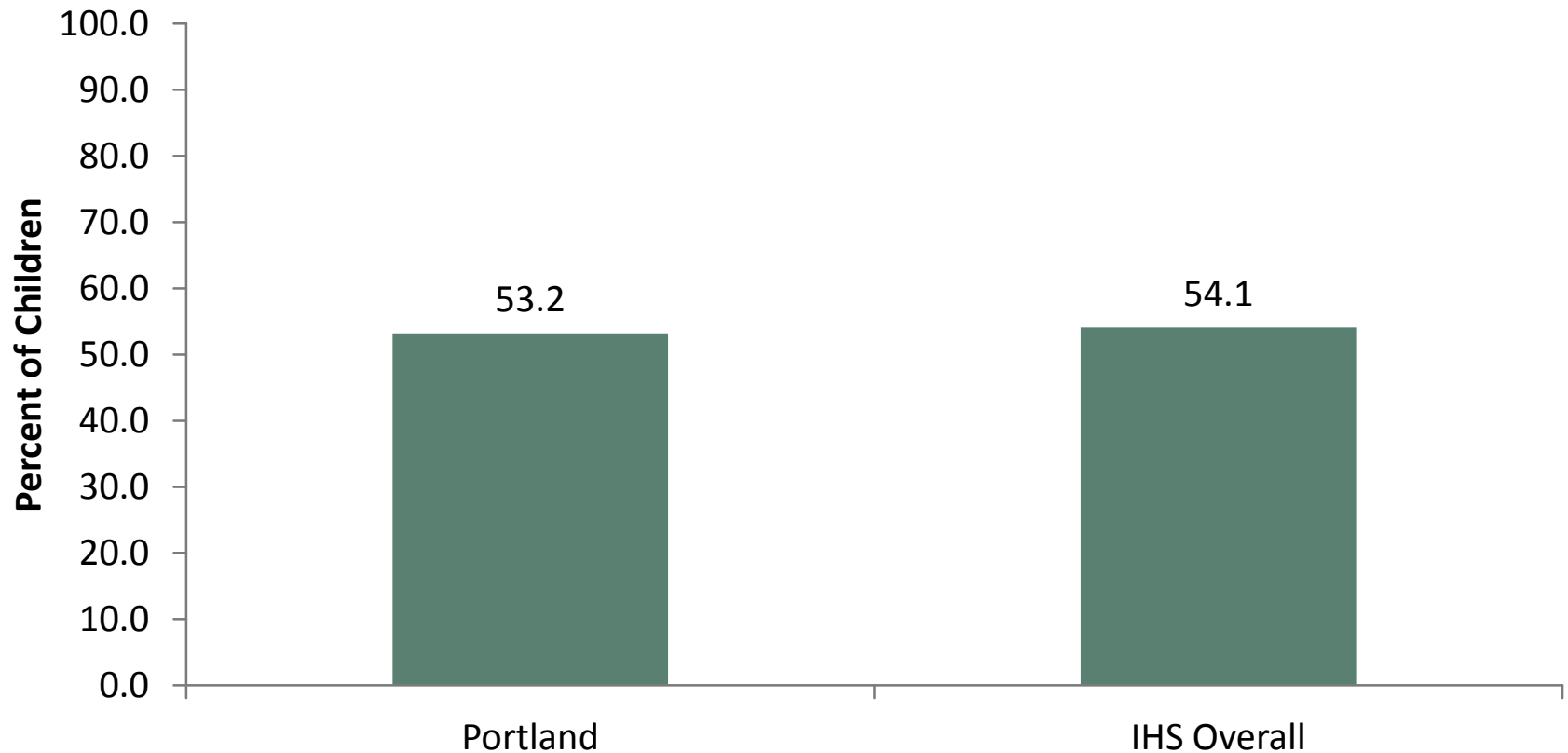


59 Service Units participated in both 2010 (n=8,155) and 2014 (n=9,118) – data presented is for those 59 Service Units.
Differences are not statistically significant.

RESULTS – BY IHS AREA

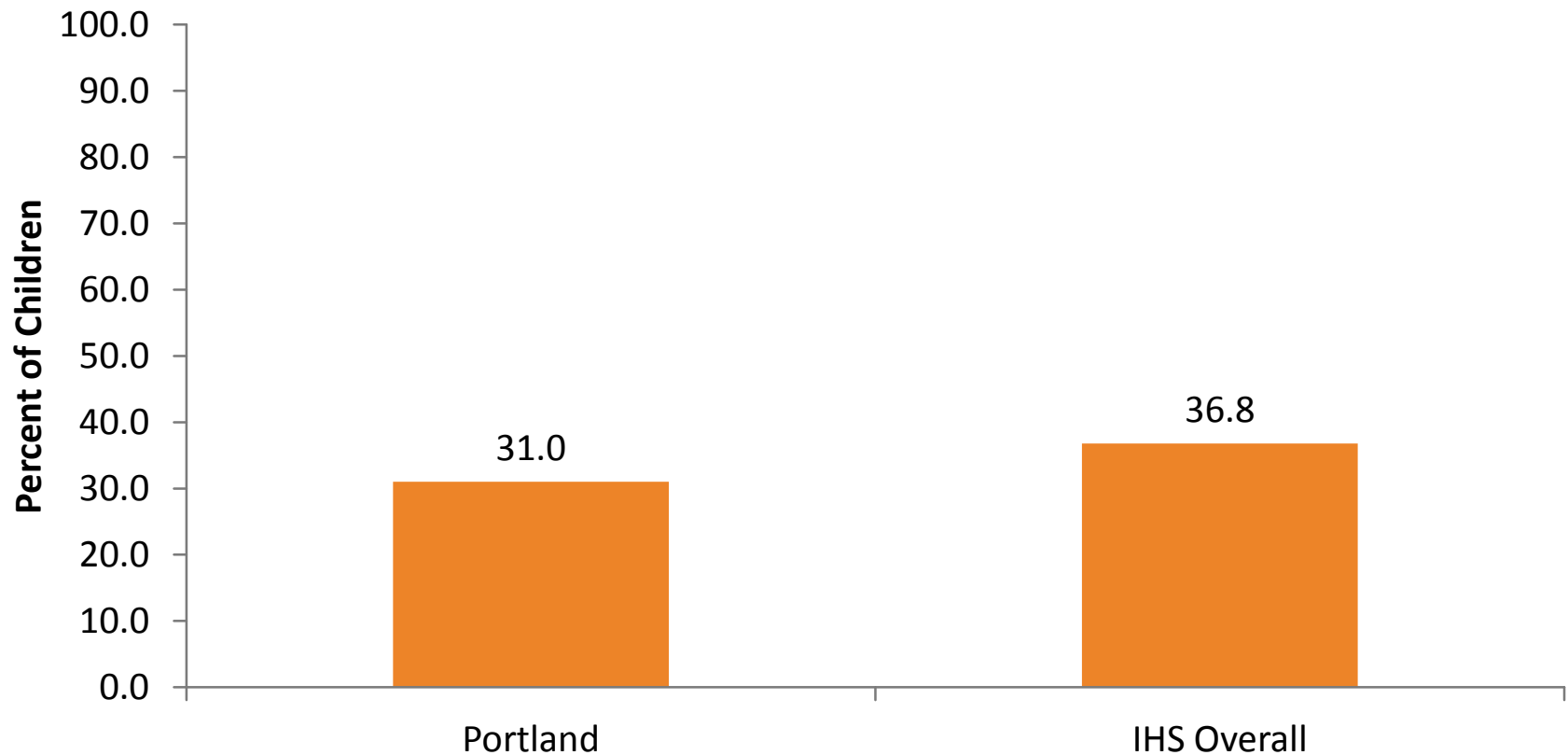
DECAY EXPERIENCE

Percent of AI/AN Children 1-5 Years with Decay Experience, 2014



UNTREATED DECAY

Percent of AI/AN Children 1-5 Years with Untreated Decay, 2014



COMPARISONS BETWEEN 2010 AND 2014

IHS Area	Decay Experience (1-5 Yrs)			Untreated Decay (1-5 Yrs)		
	2010	2014	% Decrease	2010	2014	% Decrease
Portland	54.3	48.1	11%	35.8	26.0	27%
IHS Overall	54.9	52.6	4%	39.2	35.7	9%

Data is from the clinics that participated in both 2010 and 2014

A negative number means that there was an increase between 2010 and 2014

RESULTS – PORTLAND AREA CLINICS

WARNING: CLINIC DIFFERENCES MAY BE DUE TO DIFFERENCES IN THE AGE DISTRIBUTION OF CHILDREN SCREENED OR SMALL SAMPLE SIZES

PORTLAND AREA CLINICS

NUMBER OF CHILDREN SCREENED – PAGE 1 OF 2

Clinic /Tribe	1 Year	2 Years	3 Years	4 Years	5 Years	TOTAL
PORT-1	0	1	22	26	1	50
PORT-2	4	4	13	30	1	52
PORT-3	10	10	16	17	5	58
PORT-4	4	6	12	10	7	39
PORT-5	0	0	8	13	5	26
PORT-6	5	6	9	17	7	44
PORT-7	10	12	24	25	15	86
PORT-8	17	22	24	22	15	100
PORT-9	12	12	16	14	0	54
PORT-10	10	12	28	64	77	191

PORTLAND AREA CLINICS NUMBER OF CHILDREN SCREENED – PAGE 2 OF 2

Clinic /Tribe	1 Year	2 Years	3 Years	4 Years	5 Years	TOTAL
PORT-11	4	4	24	19	20	71
PORT-12	0	0	11	12	0	23
PORT-13	8	4	2	5	1	20
PORT-14	0	0	6	14	5	25
PORT-15	9	10	10	18	9	56
PORT-16	9	15	27	29	13	93
PORT-17	59	38	71	117	17	302
PORT-18	1	2	4	2	6	15
Portland Area Total	162	158	327	454	204	1,305
IHS Total	1,180	1,358	3,068	4,003	2,264	11,873

PORTLAND AREA CLINICS

ORAL HEALTH STATUS OF CHILDREN SCREENED

PAGE 1 OF 2

Warning: Clinic differences may be due to differences in the age distribution of children screened or small sample sizes.

Clinic/Tribe	Decay Experience (%)	Untreated Decay (%)	Dental Sealants (%)
PORT-1	79.7	50.3	5.3
PORT-2	65.6	39.0	8.2
PORT-3	27.6	23.6	20.1
PORT-4	53.5	34.8	0.0
PORT-5	86.6	39.5	26.7
PORT-6	35.4	17.4	25.2
PORT-7	46.2	31.9	2.3
PORT-8	48.4	25.7	0.0
PORT-9	35.1	21.5	2.6
PORT-10	58.8	16.4	10.9

PORTLAND AREA CLINICS

ORAL HEALTH STATUS OF CHILDREN SCREENED

PAGE 2 OF 2

Warning: Clinic differences may be due to differences in the age distribution of children screened or small sample sizes.

Clinic/Tribe	Decay Experience (%)	Untreated Decay (%)	Dental Sealants (%)
PORT-11	62.5	46.2	0.0
PORT-12	70.2	17.5	0.0
PORT-13	51.0	14.9	0.0
PORT-14	54.0	40.4	30.3
PORT-15	46.0	24.0	0.0
PORT-16	84.7	62.7	15.8
PORT-17	46.8	28.0	12.1
PORT-18	32.4	32.4	0.0
Portland Area Total	53.2	31.0	8.4
IHS Total	54.1	36.8	6.3

ADDITIONAL DATA TABLES

PERCENT OF AI/AN CHILDREN WITH DECAY EXPERIENCE, UNTREATED DECAY, SEALANTS AND NEED FOR DENTAL CARE BY AGE, 2014

Variable	1 Year (n=1,180)		2 Years (n=1,358)		3 Years (n=3,068)		4 Years (n=4,003)		5 Years (n=2,264)		1-5 Years (n=11,873)		2-5 Years (n=10,693)		3-5 Years (n=9,335)	
Decay Experience (95% CI)	18.1		39.4		59.9		69.4		75.6		54.1		61.7		68.5	
	13.6	22.6	33.1	45.7	53.0	66.8	63.7	75.0	69.2	82.1	48.9	59.3	55.9	67.4	62.7	74.4
Untreated Decay (95% CI)	16.9		34.0		43.0		42.6		43.8		36.8		41.0		43.2	
	12.6	21.2	28.3	39.8	36.4	49.6	37.6	47.7	36.4	51.2	32.0	41.7	35.6	46.4	37.6	48.8
Primary Molar Sealants (95% CI)	0.3		3.3		8.5		7.9		10.2		6.3		7.6		8.9	
	0.0	0.8	1.4	5.2	4.7	12.4	4.3	11.4	5.5	15.0	3.7	8.9	4.5	10.6	5.0	12.8
Early or Urgent Care* (95% CI)	16.8		31.5		41.4		40.5		41.6		35.0		38.9		41.1	
	12.4	21.1	26.3	36.7	35.3	47.4	34.4	46.5	33.6	49.5	30.0	40.0	33.2	44.5	35.1	47.1
Urgent Care* (95% CI)	2.9		5.9		6.5		6.5		6.1		5.7		6.2		6.4	
	0.3	5.5	3.6	8.2	4.0	8.9	4.5	8.6	3.9	8.3	4.2	7.2	4.7	7.8	4.7	8.0

* Information on treatment urgency was missing for 137 children

MEAN NUMBER OF DECAYED, MISSING AND FILLED TEETH (DMFT) AND MEAN PERCENT OF ERUPTED TEETH WITH DECAY EXPERIENCE AMONG AI/AN CHILDREN BY AGE, 2014

Variable	1 Year (n=1,180)		2 Years (n=1,358)		3 Years (n=3,068)		4 Years (n=4,003)		5 Years (n=2,264)		1-5 Years (n=11,873)		2-5 Years (n=10,693)		3-5 Years (n=9,335)	
Decayed Teeth (95% CI)	0.70		1.65		2.25		2.08		1.97		1.77		1.99		2.10	
	0.46	0.94	1.26	2.05	1.82	2.69	1.71	2.46	1.47	2.48	1.47	2.07	1.65	2.34	1.74	2.46
Missing Teeth (95% CI)	0.04		0.15		0.41		0.63		0.85		0.44		0.52		0.64	
	0.01	0.07	0.07	0.23	0.29	0.54	0.49	0.78	0.64	1.07	0.34	0.53	0.41	0.64	0.51	0.77
Filled Teeth (95% CI)	0.05		0.36		1.41		2.62		3.27		1.63		1.96		2.46	
	0.01	0.09	0.23	0.48	1.11	1.72	2.33	2.92	2.80	3.74	1.43	1.83	1.72	2.21	2.15	2.77
dmft (95% CI)	0.80		2.16		4.08		5.34		6.10		3.84		4.48		5.20	
	0.56	1.03	1.66	2.66	3.48	4.68	4.69	5.99	5.35	6.84	3.36	4.32	3.93	5.03	4.58	5.81
Percent of Teeth* (95% CI)	5.2		11.5		20.5		26.8		31.6		19.8		22.9		26.4	
	3.7	6.7	8.8	14.1	17.5	23.5	23.5	30.1	27.6	35.6	17.3	22.3	20.1	25.7	23.3	29.6

* Percent of erupted primary teeth with decay experience. Two one-year old children did not have any teeth and are excluded.

Note: 21 children had missing data for 1 or more teeth. Variables do not include teeth with missing data.

PORTLAND AREA COMPARED TO IHS OVERALL

Percent of AI/AN children 1-5 Years with decay experience and untreated decay, 2014

IHS Area	Number Screened	Decay Experience			Untreated Decay		
		Percent	Lower 95% CL	Upper 95% CL	Percent	Lower 95% CL	Upper 95% CL
Portland	1,305	53.2	48.9	57.5	31.0	20.7	41.3
IHS Overall	11,873	54.1	48.9	59.3	36.8	32.0	41.7

Percent of AI/AN children 1-5 Years needing dental, 2014

IHS Area	Number Screened	Early or Urgent Dental Care			Urgent Dental Care		
		Percent	Lower 95% CL	Upper 95% CL	Percent	Lower 95% CL	Upper 95% CL
Portland	1,296	31.4	19.9	42.9	5.7	1.8	9.5
IHS Overall	11,736	35.0	30.0	40.0	5.7	4.2	7.2

PORTLAND AREA COMPARED TO IHS OVERALL

Mean number of decayed, missing or filled teeth (dmft) and mean percent of erupted teeth with decay experience among AI/AN children 1-5 Years, 2014

IHS Area	Number Screened	Decayed, Missing or Filled Teeth (dmft)			Percent of Teeth with Decay Experience		
		Mean	Lower 95% CL	Upper 95% CL	Mean Percent	Lower 95% CL	Upper 95% CL
Portland	1,305	3.47	2.99	3.95	17.9	15.5	20.4
IHS Overall	11,873	3.84	3.36	4.32	19.8	17.3	22.3

Percent of AI/AN children 1-5 Years with dental sealants on primary molars, 2014

IHS Area	Number Screened	Dental Sealants on Primary Molars		
		Percent	Lower 95% CL	Upper 95% CL
Portland	1,305	8.4	4.4	12.4
IHS Overall	11,873	6.3	3.7	8.9