

# SUPPLEMENTAL MATERIALS

## Supplemental Tables

Supplemental Table A. *Sample Size of Young Adults (Ages 18-25) for 2-Year Pooled Estimates Across States Included in the Analysis*

State	2002-2003		2004-2005		2006-2007		2008-2009		2010-2011		2012-2013		2014-2015		2016-2017		2018-2019		
	Un w.	Weighted	Un w.	Weighted	Un w.	Weighted	Un w.	Weighted	Unw	Weighted	Unw.	Weighted	Unw.	Weighted	Unw.	Weighted	Unw.	Weighted	
<b>AMU</b>																			
Alaska	NA	63,000	NA	73,000	NA	74,000	NA	77,000	NA	82,000	587	82,000	469	83,000	490	76,000	451	71,000	
California	NA	3,920,000	NA	3,974,000	NA	4,217,000	NA	4,330,000	NA	4,335,000	2,452	4,459,000	2,375	4,458,000	2,128	4,323,000	2,269	4,175,000	
Colorado	NA	494,000	NA	507,000	NA	517,000	NA	528,000	NA	560,000	605	565,000	552	587,000	439	592,000	526	589,000	
Maine	NA	131,000	NA	137,000	NA	128,000	NA	125,000	NA	130,000	631	129,000	442	126,000	460	124,000	494	121,000	
Nevada	NA	216,000	NA	240,000	NA	244,000	NA	247,000	NA	272,000	603	285,000	494	289,000	487	285,000	489	283,000	
Oregon	NA	385,000	NA	397,000	NA	387,000	NA	387,000	NA	411,000	607	412,000	486	415,000	501	418,000	419	415,000	
Washington	NA	654,000	NA	693,000	NA	672,000	NA	685,000	NA	726,000	599	738,000	474	746,000	469	740,000	483	738,000	
Wash, DC	NA	74,000	NA	65,000	NA	82,000	NA	87,000	NA	91,000	581	95,000	425	94,000	467	91,000	416	86,000	
<i>Total</i>	NA	5,937,000	NA	6,086,000	NA	6,321,000	NA	6,466,000	NA	6,607,000	6,665	6,765,000	5,717	6,798,000	5,441	6,649,000	5,547	6,478,000	
<b>MUO</b>																			
Arkansas	NA	302,000	NA	310,000	NA	298,000	NA	296,000	NA	311,000	660	319,000	456	319,000	502	316,000	436	312,000	
Delaware	NA	88,000	NA	92,000	NA	92,000	NA	94,000	NA	97,000	555	102,000	454	100,000	453	95,000	493	93,000	
Florida	NA	1,576,000	NA	1,720,000	NA	1,779,000	NA	1,805,000	NA	1,909,000	2,406	1,972,000	1,736	1,984,000	1,536	1,960,000	1,795	1,956,000	
Minnesota	NA	573,000	NA	597,000	NA	583,000	NA	574,000	NA	580,000	579	571,000	481	572,000	486	575,000	447	569,000	
New Hamp.	NA	130,000	NA	137,000	NA	134,000	NA	134,000	NA	142,000	643	140,000	469	142,000	439	142,000	441	140,000	
North Dakota	NA	82,000	NA	83,000	NA	89,000	NA	89,000	NA	93,000	583	96,000	530	103,000	469	97,000	440	92,000	
Ohio	NA	1,231,000	NA	1,258,000	NA	1,227,000	NA	1,213,000	NA	1,220,000	2,321	1,236,000	1,149	1,229,000	1,180	1,214,000	1,260	1,200,000	
Pennsylvania	NA	1,290,000	NA	1,323,000	NA	1,325,000	NA	1,343,000	NA	1,386,000	2,438	1,398,000	1,194	1,365,000	1,154	1,329,000	1,097	1,293,000	
<i>Total</i>	NA	5,272,000	NA	5,520,000	NA	5,527,000	NA	5,548,000	NA	5,738,000	10,185	5,834,000	6,469	5,814,000	6,219	5,728,000	6,409	5,655,000	
<b>Total</b>	NA	11,209,000	NA	11,606,000	NA	11,848,000	NA	12,014,000	NA	12,345,000	16,850	12,599,000	12,186	12,632,000	11,660	12,377,000	11,956	12,133,000	

AMU: Adult and Medical Use; MUO: Medical Use Only; Unw.: unweighted

Supplemental Table B. *Tests for Parallelism in Product Use Trends Across MUO and AMU States*

Product	Cohort 1	Cohort 2	Kmax	Numerator DF	Denominator DF	# of Permutations	P-Value	Significance Level	Parallelism
<i>All States (MUO=8; AMU=8)</i>									
Cannabis	1	1	1 Joinpoint	3	10	4500	0.099111	0.050000	Failed to reject
Blunts	0	1	1 Joinpoint	3	8	4500	0.0161556	0.050000	Failed to reject
Cigarettes	0	2	2 Joinpoints	5	6	4500	0.096667	0.050000	Failed to reject
Cigars	0	2	1 Joinpoint	3	10	4500	0.103556	0.050000	Failed to reject
<i>Sensitivity Analysis (MUO=3; AMU=8)*</i>									
Cannabis	0	1	0 Joinpoints	1	14	4500	0.064222	0.050000	Failed to reject
Blunts	0	1	1 Joinpoint	3	8	4500	0.158889	0.050000	Failed to reject
Cigarettes	0	1	1 Joinpoint	3	10	4500	0.531778	0.050000	Failed to reject
Cigars	0	1	1 Joinpoint	3	10	4500	0.089111	0.050000	Failed to reject

\*only includes Delaware, Minnesota, and New Hampshire

Supplemental Table C. *Past 30-Day Prevalence of Product Use Among Young Adults by Year and State*

State	2002-2003	2004-2005	2006-2007	2008-2009	2010-2011	2012-2013	2014-2015	2016-2017	2018-2019
<b>AMU Overall</b>									
Cannabis	18%	17%	18%	20%	23%	23%	22%	26%	29%
Blunts	n/a	8%	9%	11%	12%	13%	12%	11%	12%
Cigarettes	35%	33%	31%	31%	31%	28%	23%	19%	16%
Cigars	9%	11%	11%	10%	9%	9%	8%	6%	6%
<b>Alaska</b>									
Cannabis	25%	20%	19%	26%	26%	22%	23%	25%	29%
Blunts	n/a	7%	7%	11%	10%	11%	12%	10%	11%
Cigarettes	43%	40%	40%	40%	41%	35%	35%	29%	20%
Cigars	10%	9%	13%	11%	10%	10%	10%	6%	7%
<b>California</b>									
Cannabis	16%	16%	17%	19%	21%	23%	21%	23%	27%
Blunts	n/a	7%	9%	11%	13%	13%	12%	12%	12%
Cigarettes	32%	30%	29%	29%	27%	26%	22%	16%	13%
Cigars	9%	10%	10%	9%	8%	7%	7%	5%	5%
<b>Colorado</b>									
Cannabis	23%	22%	23%	24%	28%	30%	32%	33%	37%
Blunts	n/a	10%	9%	13%	12%	15%	15%	13%	14%
Cigarettes	45%	42%	42%	36%	36%	36%	30%	27%	19%
Cigars	11%	14%	13%	13%	14%	13%	12%	8%	8%
<b>Maine</b>									
Cannabis	25%	25%	27%	28%	23%	23%	28%	38%	39%
Blunts	n/a	9%	11%	11%	10%	10%	11%	16%	16%
Cigarettes	44%	46%	42%	43%	38%	30%	28%	28%	22%
Cigars	13%	14%	14%	14%	13%	13%	9%	9%	8%
<b>Nevada</b>									
Cannabis	18%	15%	10%	18%	21%	18%	17%	26%	32%
Blunts	n/a	7%	6%	11%	11%	12%	9%	12%	16%
Cigarettes	37%	39%	37%	32%	34%	34%	27%	22%	16%
Cigars	11%	10%	13%	9%	10%	8%	8%	7%	10%
<b>Oregon</b>									
Cannabis	22%	21%	18%	25%	26%	23%	27%	34%	33%
Blunts	n/a	8%	8%	11%	11%	10%	8%	12%	9%
Cigarettes	41%	41%	32%	36%	37%	27%	26%	26%	19%
Cigars	10%	13%	10%	11%	9%	10%	10%	8%	7%
<b>Washington</b>									
Cannabis	22%	18%	17%	18%	27%	25%	20%	24%	32%
Blunts	n/a	6%	9%	8%	10%	11%	8%	9%	11%
Cigarettes	42%	37%	32%	35%	39%	29%	22%	22%	15%
Cigars	8%	9%	14%	11%	10%	11%	9%	8%	7%
<b>Wash, DC</b>									
Cannabis	23%	17%	24%	17%	21%	24%	27%	34%	29%
Blunts	n/a	10%	12%	9%	10%	13%	16%	14%	10%
Cigarettes	31%	35%	35%	29%	27%	33%	23%	25%	17%
Cigars	10%	10%	10%	10%	11%	9%	15%	10%	5%
<b>MUO Overall</b>									
Cannabis	18%	17%	17%	17%	18%	20%	20%	21%	21%
Blunts	n/a	10%	11%	11%	12%	12%	12%	13%	12%
Cigarettes	43%	41%	40%	38%	35%	33%	28%	24%	19%
Cigars	13%	13%	13%	13%	12%	11%	10%	11%	9%
<b>Arkansas</b>									
Cannabis	18%	15%	15%	16%	15%	15%	17%	14%	15%
Blunts	n/a	9%	8%	11%	11%	10%	9%	9%	10%
Cigarettes	53%	45%	44%	44%	38%	33%	30%	26%	23%
Cigars	16%	17%	13%	10%	12%	10%	11%	9%	9%
<b>Delaware</b>									
Cannabis	21%	20%	18%	22%	21%	19%	22%	21%	28%
Blunts	n/a	14%	12%	17%	14%	14%	16%	17%	17%
Cigarettes	42%	38%	37%	42%	34%	34%	32%	22%	16%
Cigars	14%	14%	10%	12%	10%	10%	9%	12%	11%
<b>Florida</b>									
Cannabis	17%	18%	17%	14%	18%	19%	21%	23%	21%

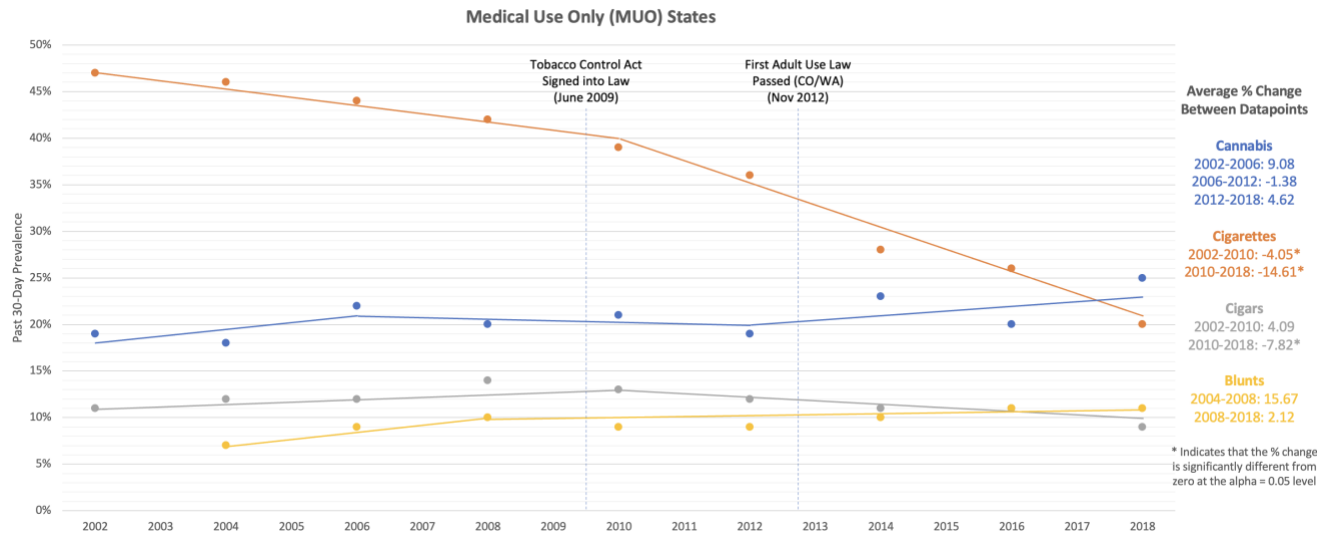
Blunts	n/a	12%	12%	10%	14%	13%	14%	15%	12%
Cigarettes	36%	36%	36%	32%	30%	28%	23%	18%	13%
Cigars	12%	13%	12%	12%	11%	10%	9%	10%	8%
<b>Minnesota</b>									
Cannabis	17%	17%	21%	18%	20%	16%	20%	18%	23%
Blunts	n/a	6%	7%	8%	7%	7%	8%	9%	9%
Cigarettes	48%	48%	45%	42%	40%	37%	27%	27%	20%
Cigars	10%	12%	12%	14%	13%	12%	10%	10%	8%
<b>New Hamp.</b>									
Cannabis	28%	24%	28%	28%	28%	28%	29%	29%	33%
Blunts	n/a	9%	9%	14%	16%	15%	15%	16%	16%
Cigarettes	44%	39%	43%	39%	37%	32%	31%	26%	25%
Cigars	11%	15%	13%	14%	14%	15%	14%	16%	12%
<b>North Dakota</b>									
Cannabis	16%	11%	12%	11%	11%	13%	15%	12%	15%
Blunts	n/a	2%	4%	4%	3%	6%	4%	5%	8%
Cigarettes	42%	42%	41%	36%	37%	34%	30%	26%	23%
Cigars	10%	12%	13%	12%	9%	9%	11%	7%	7%
<b>Ohio</b>									
Cannabis	18%	16%	17%	18%	18%	18%	19%	22%	22%
Blunts	n/a	9%	12%	12%	12%	12%	14%	15%	13%
Cigarettes	46%	43%	45%	42%	38%	36%	34%	29%	25%
Cigars	16%	15%	17%	15%	16%	13%	13%	12%	13%
<b>Pennsylvania</b>									
Cannabis	17%	18%	16%	17%	18%	19%	19%	22%	19%
Blunts	n/a	11%	10%	11%	11%	12%	11%	13%	11%
Cigarettes	45%	44%	38%	39%	37%	35%	30%	26%	23%
Cigars	11%	12%	11%	13%	12%	12%	11%	11%	9%

AMU: Adult and Medical Use; MUO: Medical Use Only

## Supplemental Figures

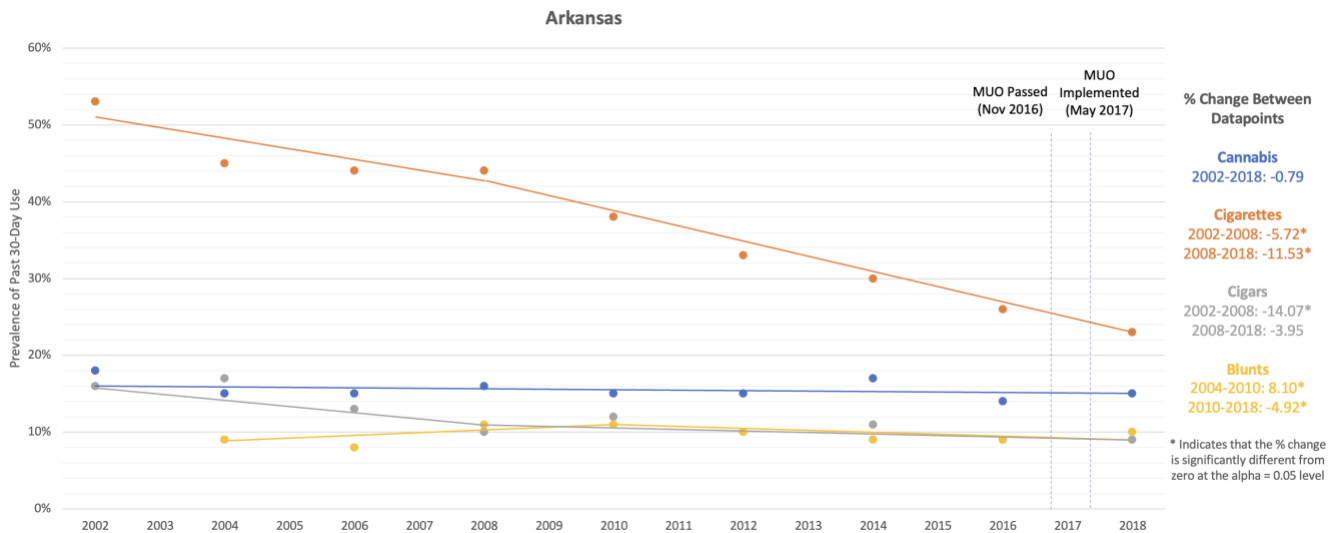
### Sensitivity Analysis: MUO States with Post-Implementation Data (vs. Post-Passage Data)

Supplemental Figure A. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in US States with Laws Permitting Medical Use Only (MUO; n = 3) from 2002-2018*

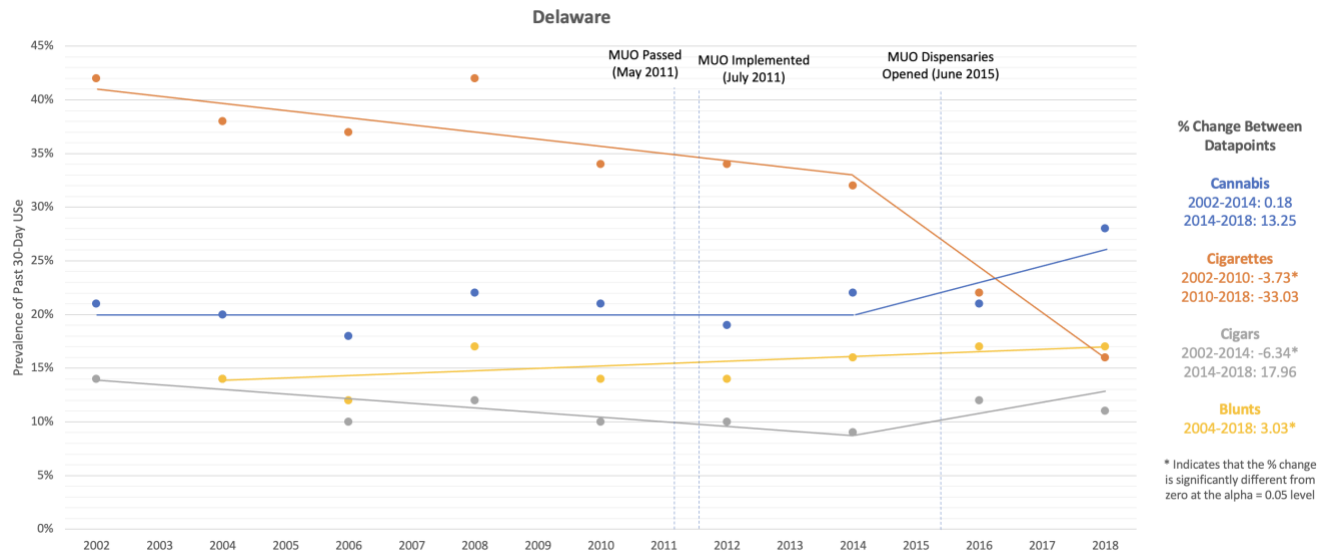


### Prevalence of Use Among States with Medical Use Only Cannabis Laws, by State (n = 8)

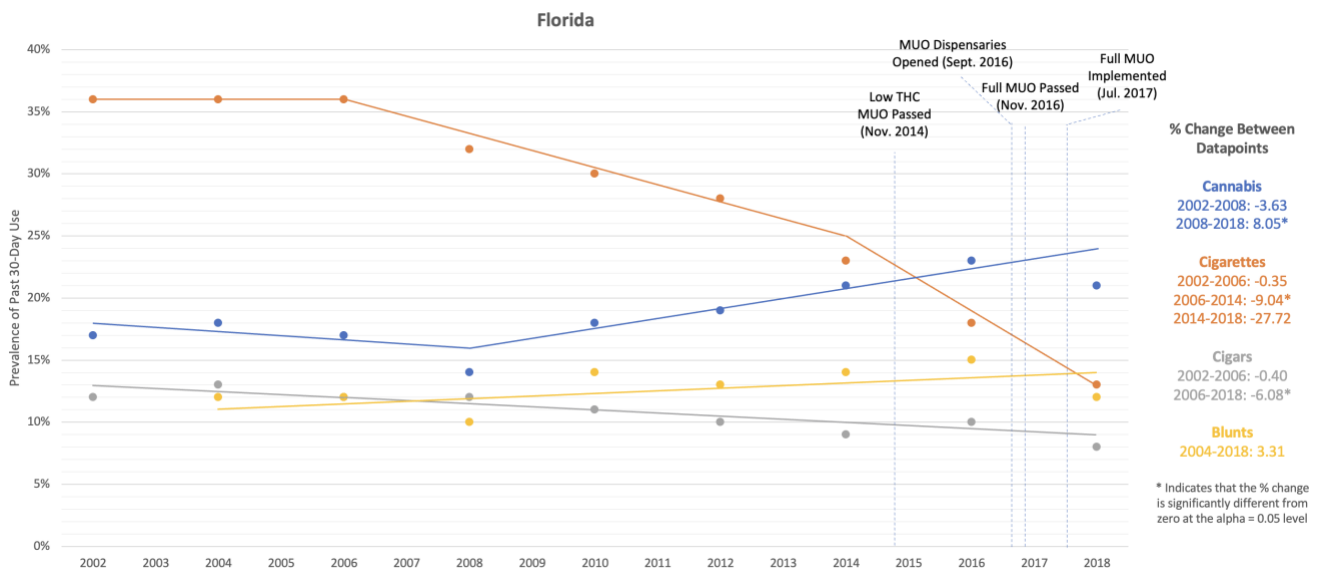
Supplemental Figure B. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Arkansas from 2002-2018*



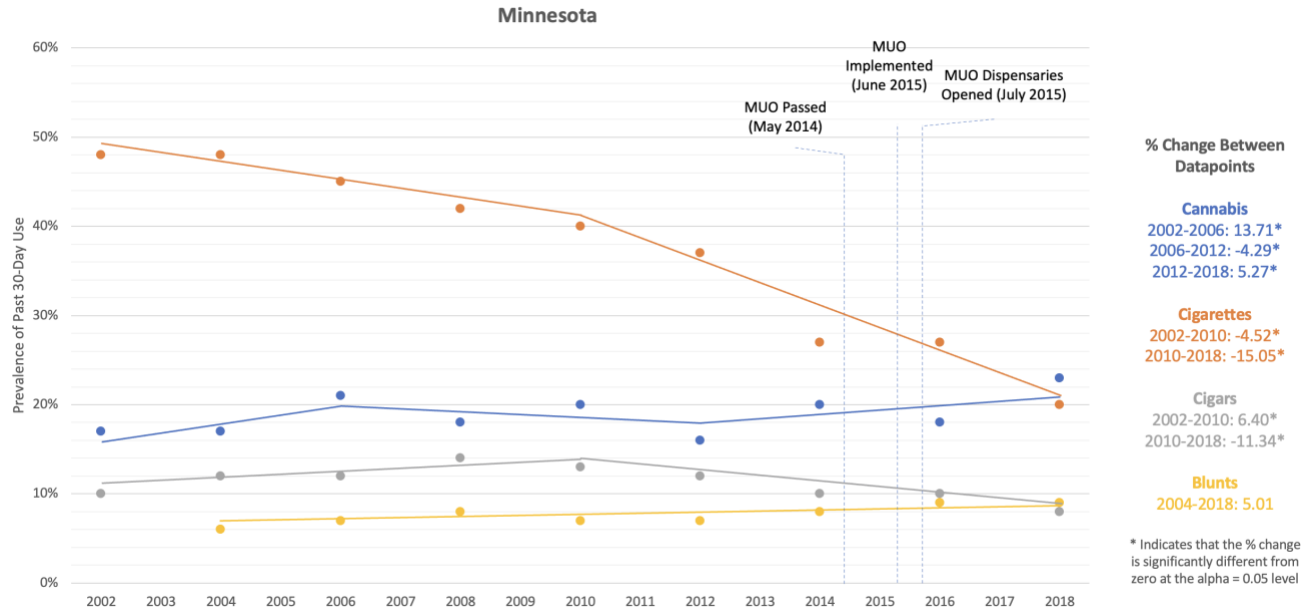
Supplemental Figure C. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Delaware from 2002-2018*



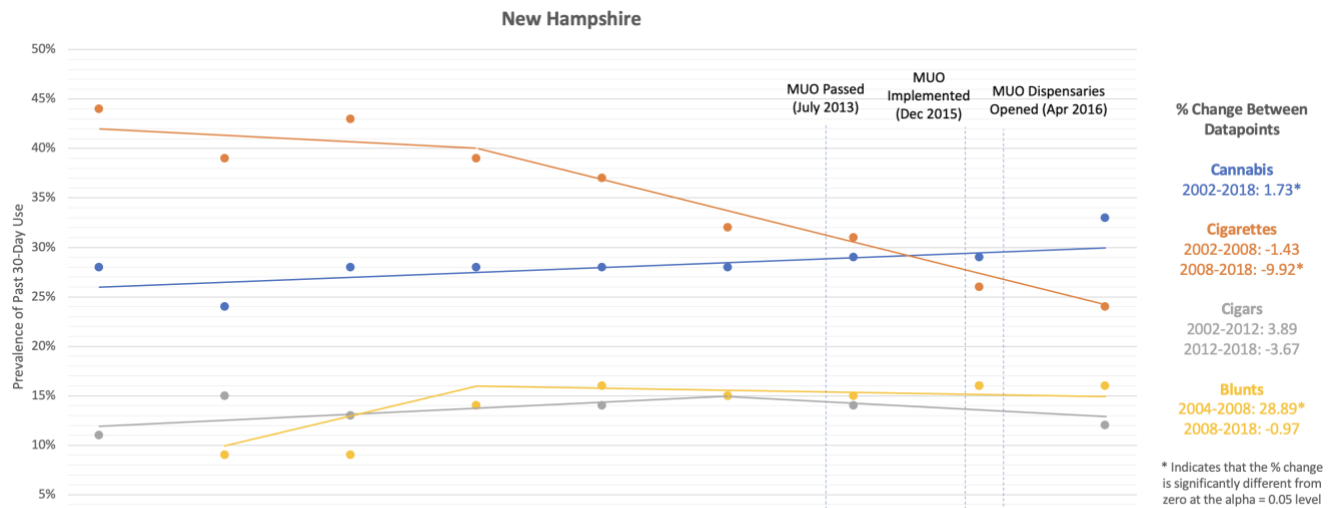
Supplemental Figure D. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Florida from 2002-2018*



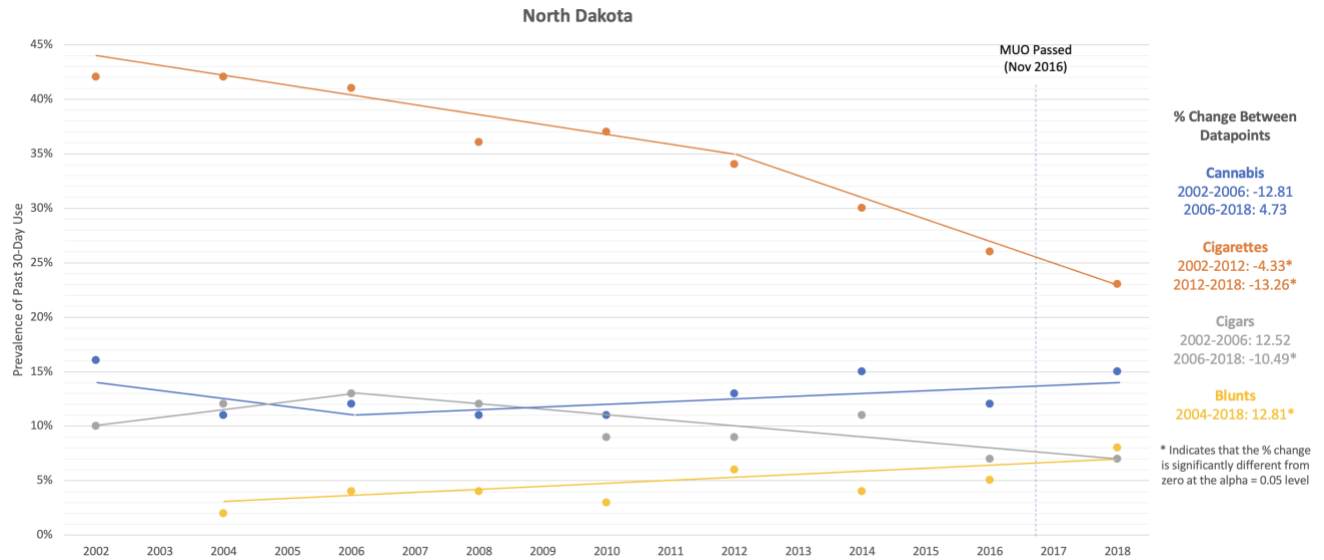
Supplemental Figure E. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Minnesota from 2002-2018*



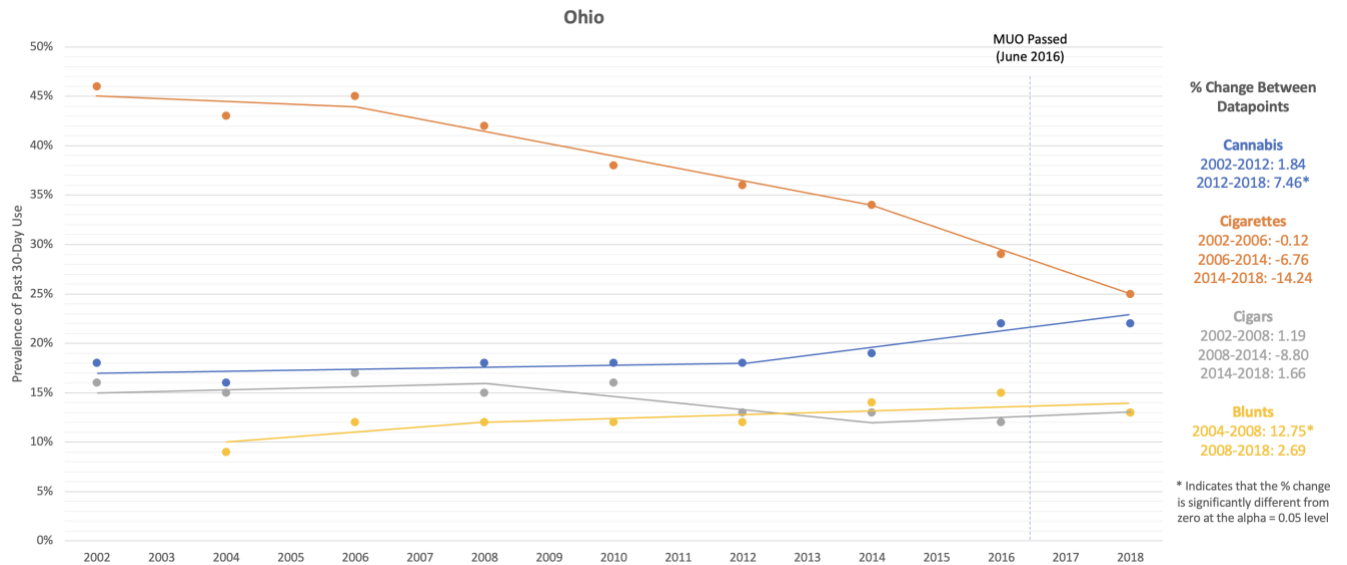
Supplemental Figure F. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in New Hampshire from 2002-2018*



Supplemental Figure G. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in North Dakota from 2002-2018*

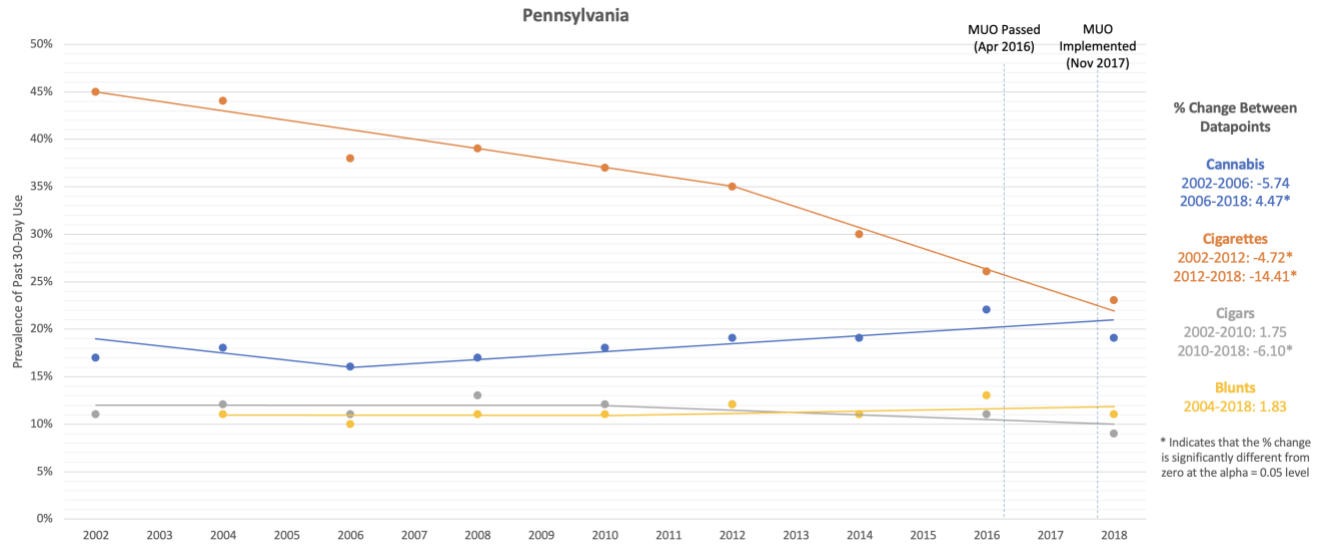


Supplemental Figure H. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Ohio from 2002-2018*



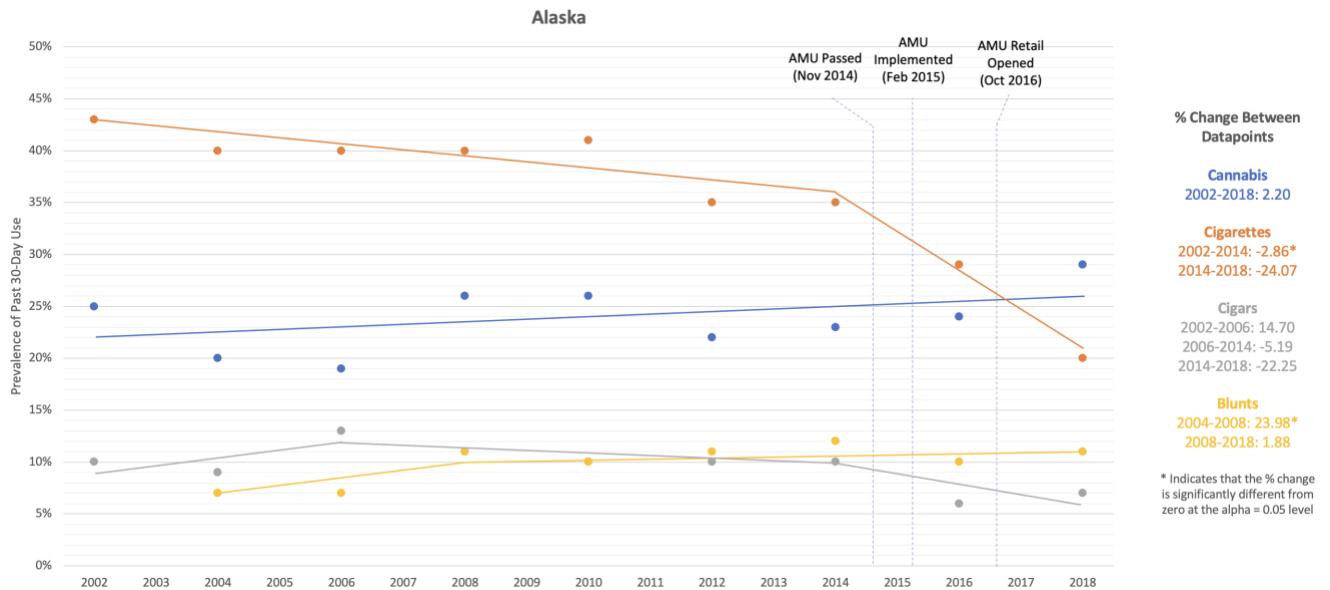


Supplemental Figure I. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Pennsylvania from 2002-2018*

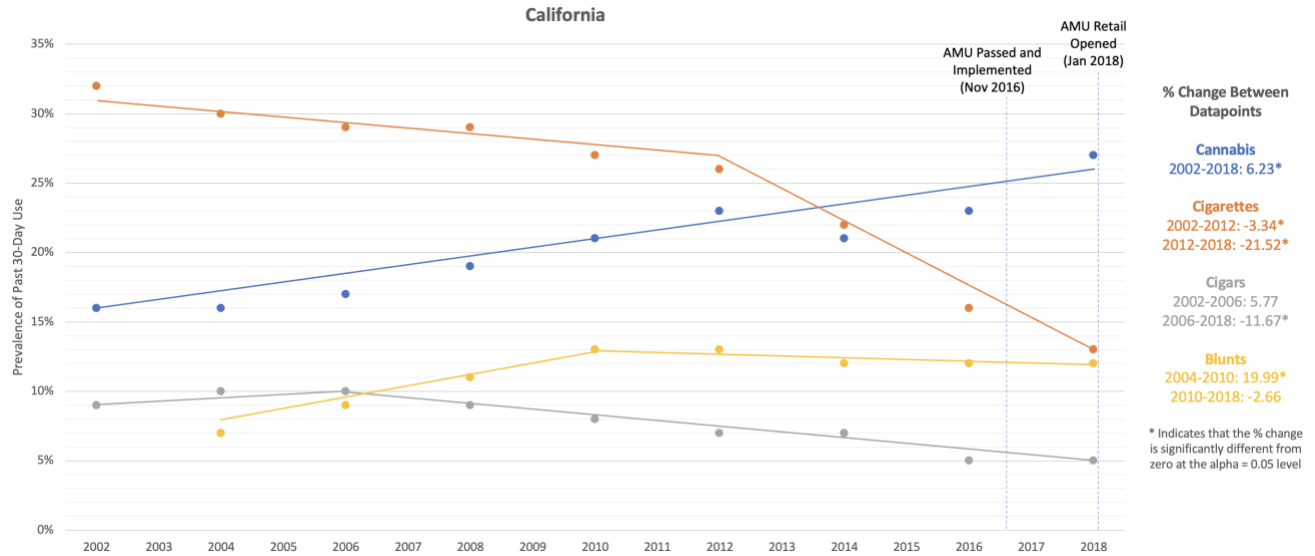


**States with Adult and Medical Use Cannabis Laws, by State (n = 8)**

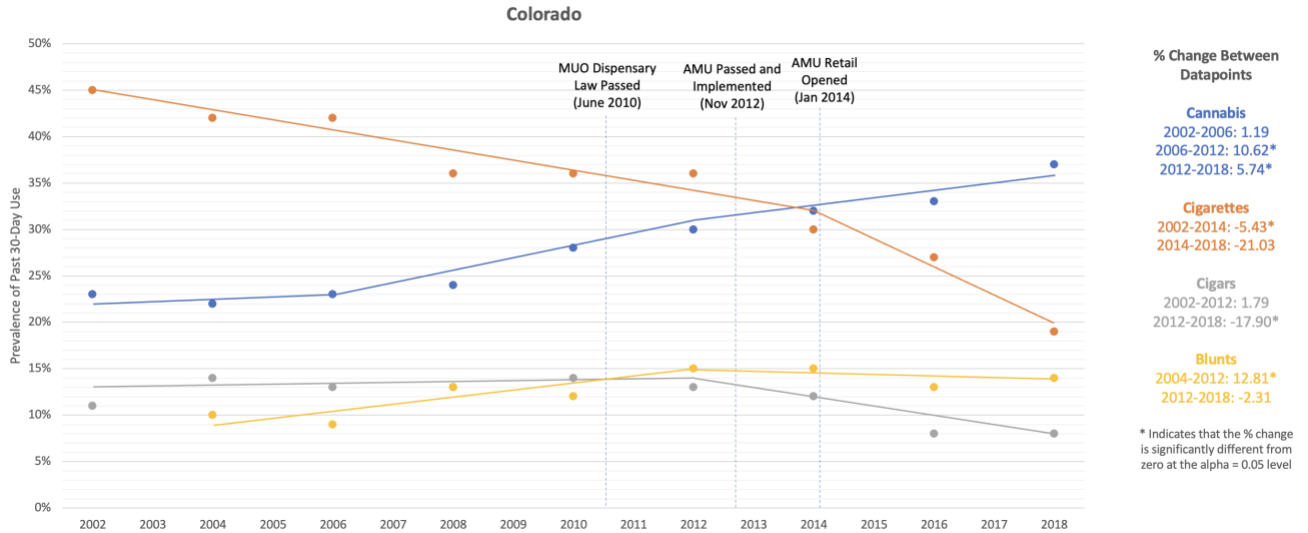
Supplemental Figure J. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Alaska from 2002-2018*



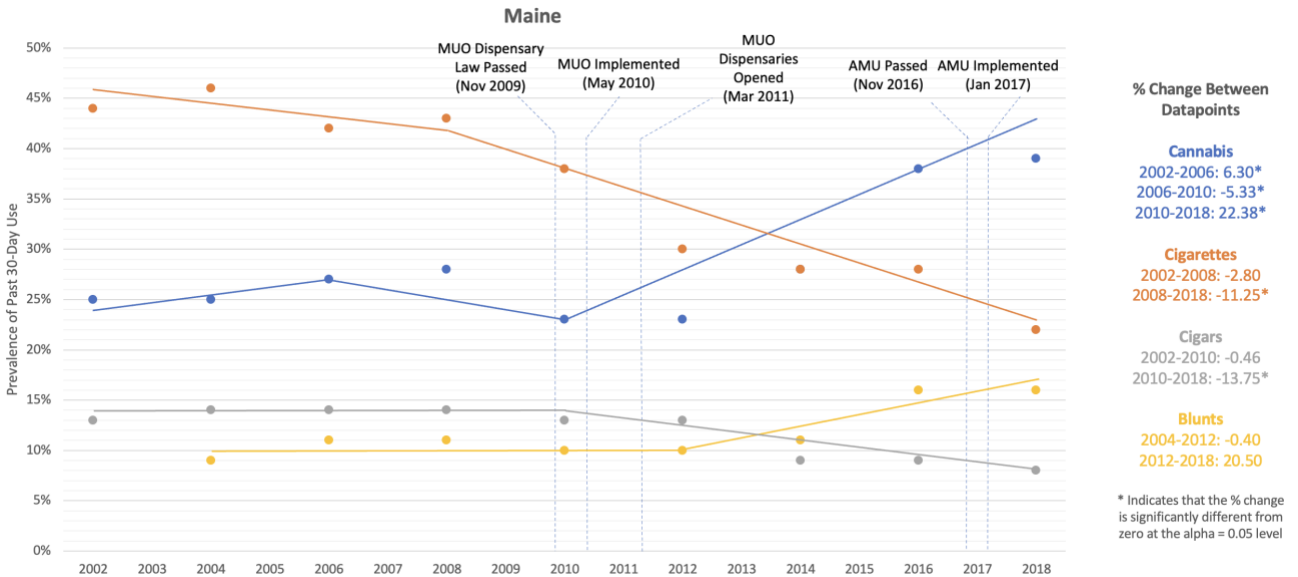
Supplemental Figure K. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in California from 2002-2018*



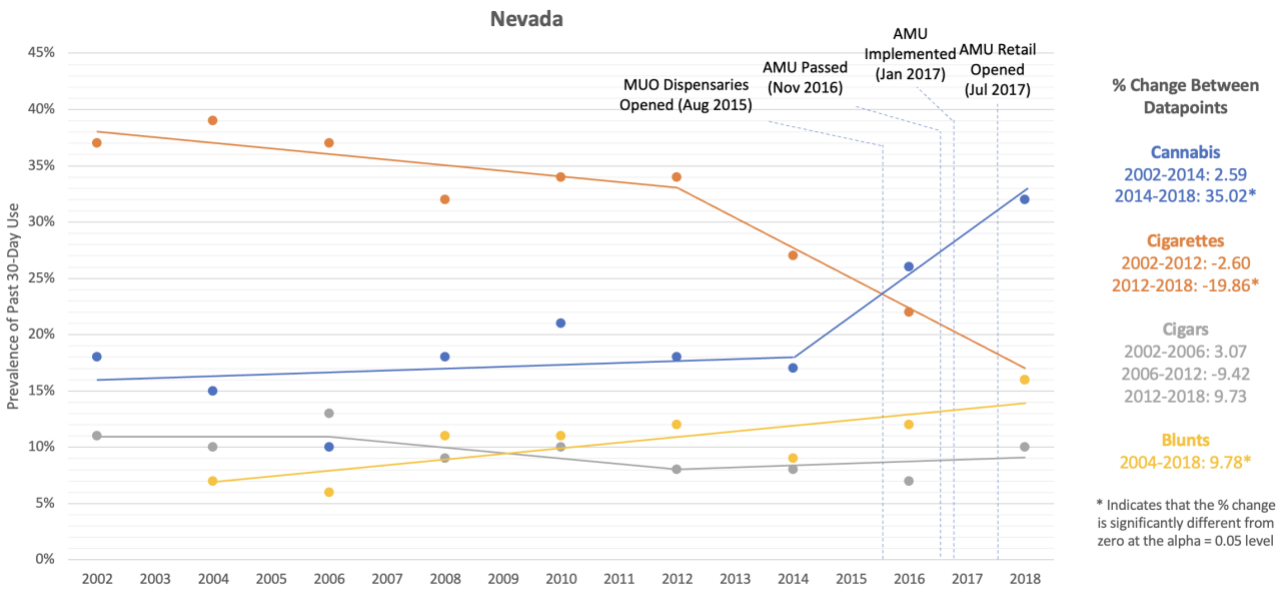
Supplemental Figure L. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Colorado from 2002-2018*



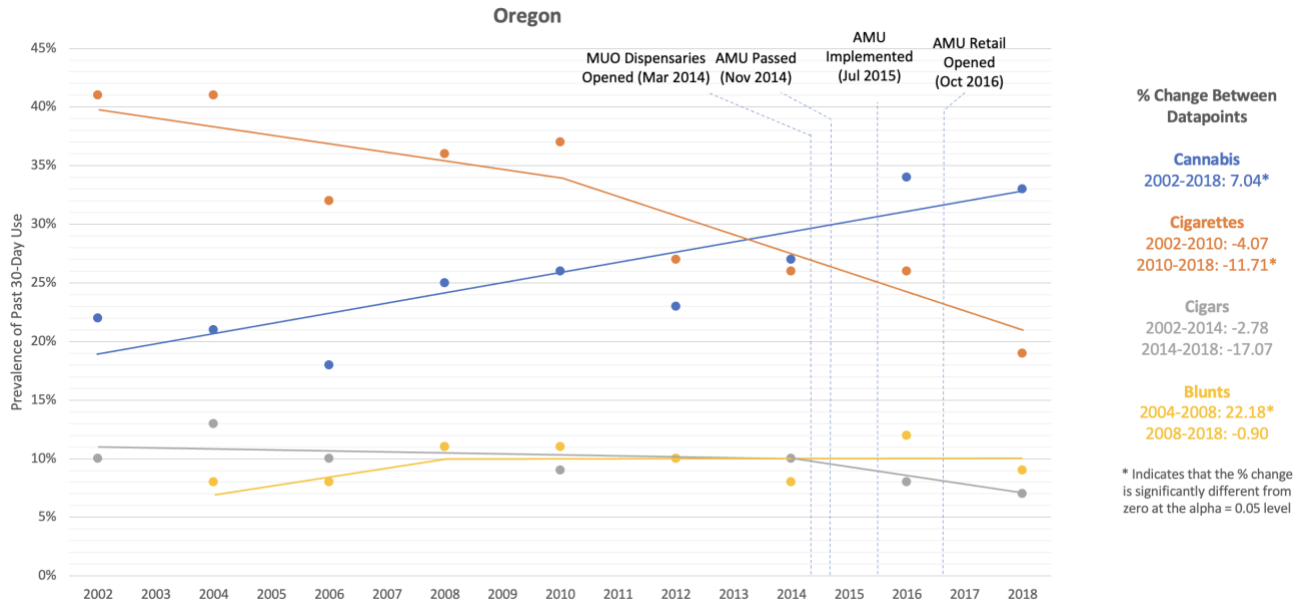
Supplemental Figure M. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Maine from 2002-2018*



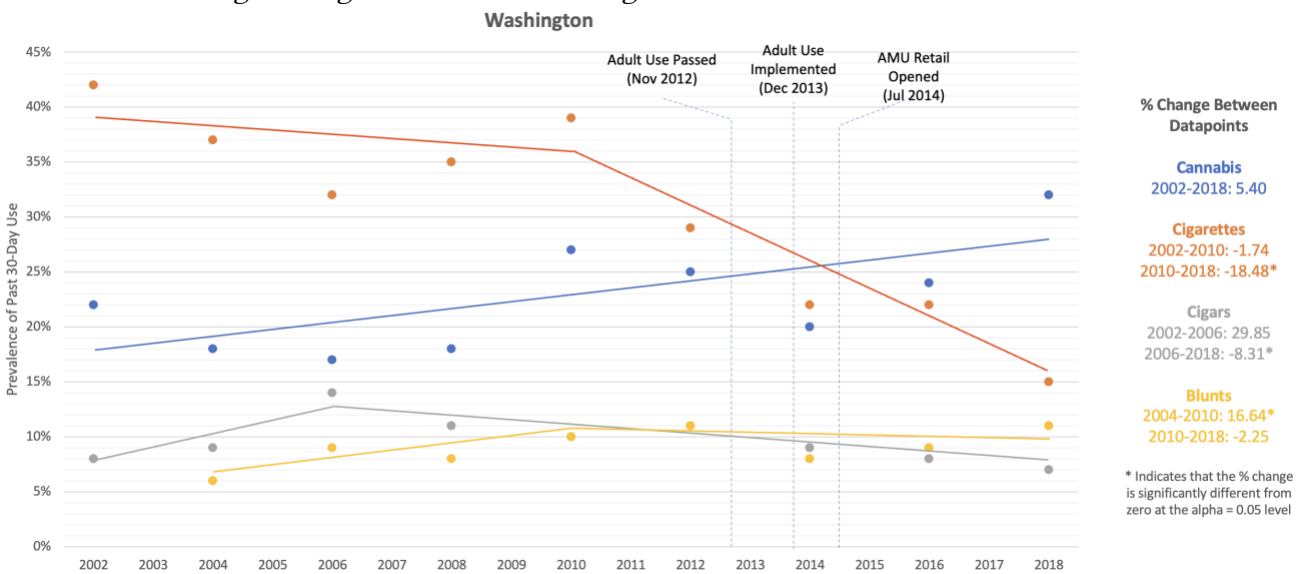
Supplemental Figure N. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Nevada from 2002-2018*



Supplemental Figure O. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Oregon from 2002-2018*



Supplemental Figure P. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Washington from 2002-2018*



Supplemental Figure Q. *Prevalence of Past 30-Day Cannabis, Cigarette, Cigar, and Blunt Use Among Young Adults in Washington, DC from 2002-2018*

