

Supplementary Online Content

Cerdá M, Mauro C, Hamilton A, et al. Association between recreational marijuana legalization in the United States and changes in marijuana use and cannabis use disorder from 2008 to 2016. *JAMA Psychiatry*. Published online November 13, 2019. doi:10.1001/jamapsychiatry.2019.3254

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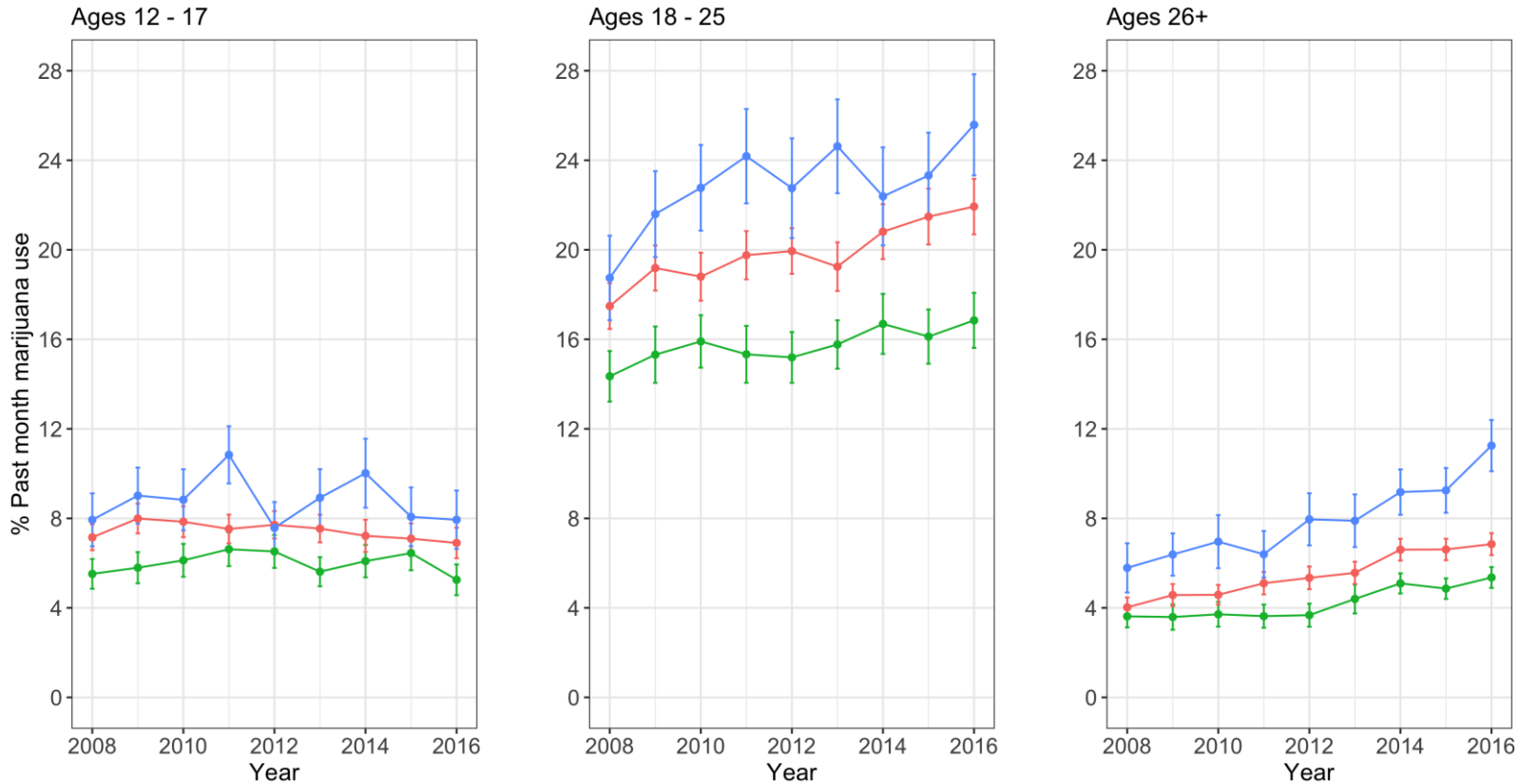
eTable 1. Type III Test of Fixed Effects: Interaction Between Age Group (3 – Level) and State RML Enactment Status (3 – Level)

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This supplementary material has been provided by the authors to give readers additional information about their work.

eFigure 1. Prevalence of Past Month Marijuana Use by Age Group and State RML Status, National Survey on Drug Use and Health, 2008-2016



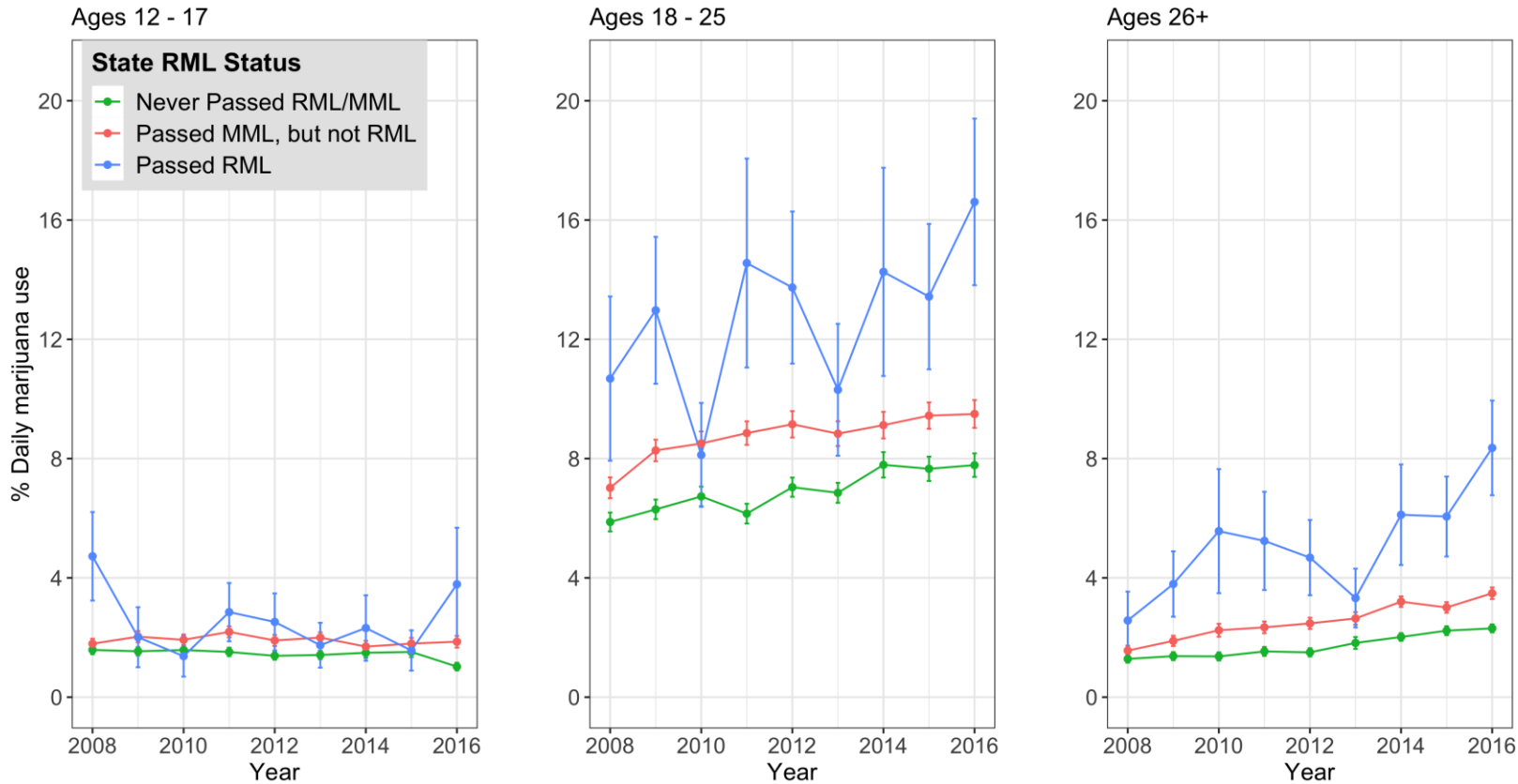
LEGEND – Past Month Users: Green lines = % among states that never passed medical marijuana laws (MML) or recreational marijuana laws (RML). Red lines = % among states that passed medical marijuana laws (MML) but not recreational marijuana laws (RML). Blue lines = % among states that passed recreational marijuana laws (RML). Error bars indicate +/- standard error of %.

Never enacted: Alabama, Arkansas, Georgia, Idaho, Iowa, Indiana, Kansas, Kentucky, Louisiana, Missouri, Mississippi, North Carolina, North Dakota, Nebraska, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming

Enacted MML (year), but not RML: Arizona (2010), California (pre-2008), Connecticut (2012), Delaware (2011), Florida (post-2016), Hawaii (pre-2008), Illinois (2013), Maine (pre-2008), Maryland (pre-2008), Massachusetts (2012), Michigan (2008), Minnesota (2014), Montana (pre-2008), Nevada (pre-2008), New Hampshire (2013), New Jersey (2010), New Mexico (pre-2008), New York (2014), Rhode Island (pre-2008), Vermont (pre-2008).

Enacted RML during study period (year): Alaska (2015), Colorado (2013), Oregon (2015), Washington (2013)

eFigure 2. Frequent Marijuana Use by Age Group and State RML Status, National Survey on Drug Use and Health, 2008-2016



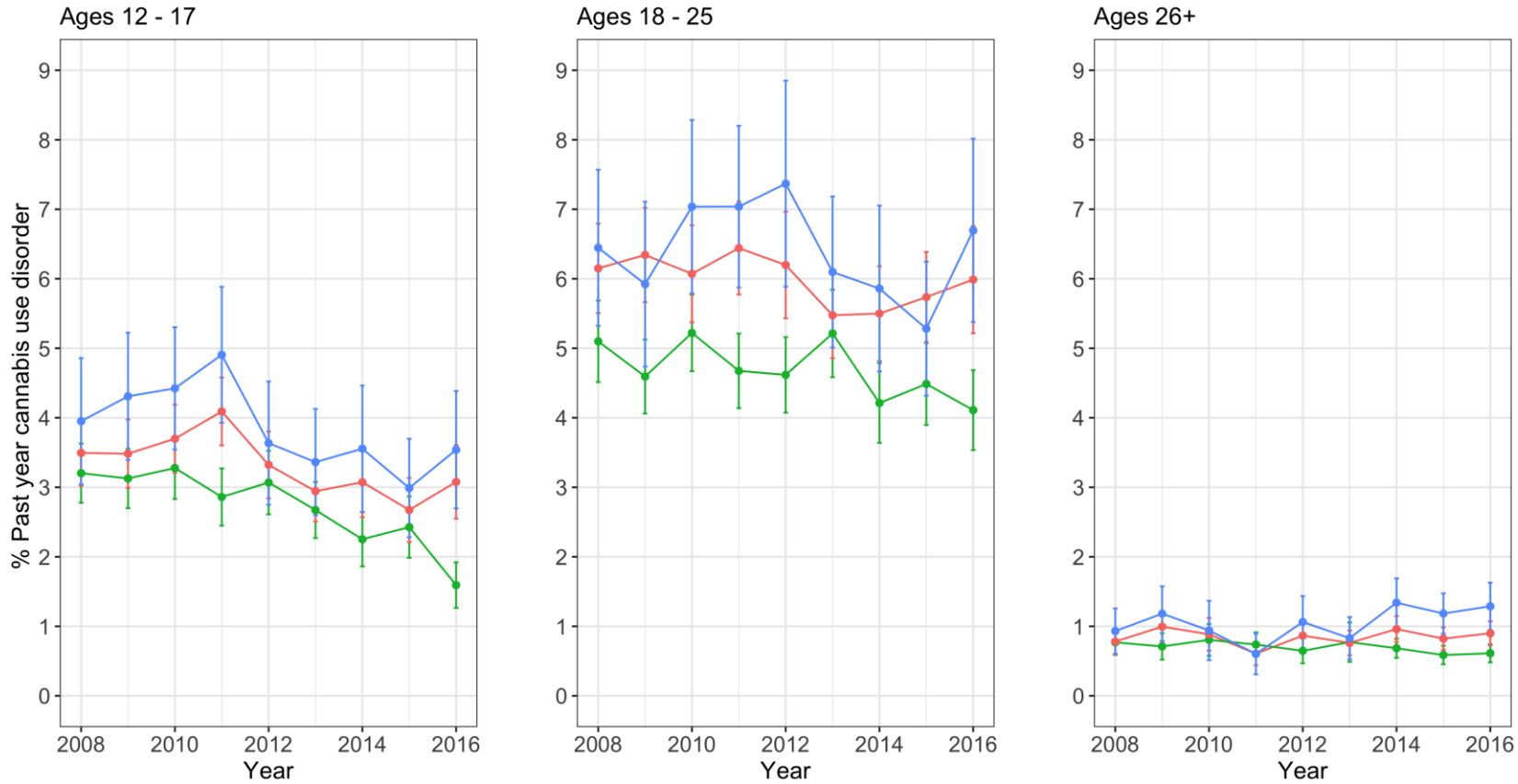
LEGEND - Frequent Marijuana Users: Green lines = % among states that never passed medical marijuana laws (MML) or recreational marijuana laws (RML). Red lines = % among states that passed medical marijuana laws (MML) but not recreational marijuana laws (RML). Blue lines = % among states that passed recreational marijuana laws (RML). Error bars indicate +/- standard error of %.

Footnote: Never enacted: Alabama, Arkansas, Georgia, Idaho, Iowa, Indiana, Kansas, Kentucky, Louisiana, Missouri, Mississippi, North Carolina, North Dakota, Nebraska, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming

Enacted MML (year), but not RML: Arizona (2010), California (pre-2008), Connecticut (2012), Delaware (2011), Florida (post-2016), Hawaii (pre-2008), Illinois (2013), Maine (pre-2008), Maryland (pre-2008), Massachusetts (2012), Michigan (2008), Minnesota (2014), Montana (pre-2008), Nevada (pre-2008), New Hampshire (2013), New Jersey (2010), New Mexico (pre-2008), New York (2014), Rhode Island (pre-2008), Vermont (pre-2008).

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eFigure 3. Past-Year Cannabis Use Disorder by Age Group and State RML Status, National Survey on Drug Use and Health, 2008-2016



LEGEND – Cannabis Use Disorder: Green lines = % among states that never passed medical marijuana laws (MML) or recreational marijuana laws (RML). Red lines = % among states that passed medical marijuana laws (MML) but not recreational marijuana laws (RML). Blue lines = % among states that passed recreational marijuana laws (RML). Error bars indicate +/- standard error of %.

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Enacted RML during study period (year): Alaska (2015), Colorado (2013), Oregon (2015), Washington (2013)

eTable 1. Type III Test of Fixed Effects: Interaction Between Age Group (3 – Level) and State RML Enactment Status (3 – Level)

Total Population			
	DF	F Value	Pr > F
Past month marijuana use	4	23.48	<0.001
Past month frequent marijuana use	4	11.17	<0.001
Past year cannabis use disorder	4	5.19	<0.001
Past month frequent marijuana use (among marijuana users)	4	0.12	0.975
Past year cannabis use disorder (among marijuana users)	4	1.41	0.229
Among MML states			
	DF	F Value	Pr > F
Past month marijuana use	4	17.26	<0.001
Past month frequent marijuana use	4	6.38	<0.001
Past year cannabis use disorder	4	4.81	<0.001
Past month frequent marijuana use (among marijuana users)	4	0.22	0.926
Past year cannabis use disorder (among marijuana users)	4	1.34	0.251

eTable 2. E-values for Adjusted Odds Ratios and Lower 95% Confidence Limit Comparing Before Versus After Recreational Marijuana Legalization (RML) Prevalence of Past-Month Marijuana Use, Frequent Marijuana Use, and Cannabis Use Disorder in the Past 12 Months^{a,b}

Age group	Past-month marijuana use		Frequent past-month marijuana use		Cannabis use disorder in the past year	
	Main aOR e-value	Lower CI e-value	Main aOR e-value	Lower CI e-value	Main aOR e-value	Lower CI e-value
12-17	1.48	-	1.48	-	1.81	1.11
18-25	1.40	-	1.43	-	1.25	-
26+	1.88	1.59	1.79	1.37	2.06	1.37

^aThe E-value indicates the minimum strength of association on the risk ratio scale between an unmeasured confounder and both the exposure and outcome that would be required to move the main adjusted odds ratio or the lower bound of the 95% confidence interval to the null after adjusting for said unmeasured confounder.

^bDashes (-) indicate that the lower bound of the confidence interval was already at or below the null value.

eTable 3. E-values for Adjusted Odds Ratios and Lower 95% Confidence Limit Comparing Before Versus After Recreational Marijuana Legalization (RML) Prevalence of Frequent Marijuana Use and Cannabis Use Disorder in the Past 12 Months Among Users^{a,b}

Age group	Frequent past-month marijuana use (among past-month users)		Cannabis use disorder in the past year (among past-year users)	
	Main aOR e-value	Lower CI e-value	Main aOR e-value	Lower CI e-value
12-17	1.11	-	1.51	1.08
18-25	1.25	-	1.23	-
26+	1.14	-	1.38	-

^aThe E-value indicates the minimum strength of association on the risk ratio scale between an unmeasured confounder and both the exposure and outcome that would be required to move the main adjusted odds ratio or the lower bound of the 95% confidence interval to the null after adjusting for said unmeasured confounder.

^bDashes (-) indicate that the lower bound of the confidence interval was already at or below the null value.