Session Parameters

Input File Tab:

Input File Name: d:\dropbox\work\opioid_trends\joinpoint_analysis\01_opioid_rates_long.csv

Delimiters: Comma Missing Character: NA File Contains Column Headers: Y

By Variables: opioid_type // race

Independent Variable: year

Shift Data Points: 0

Dependent Variable:

Run Type: Provided in Data File
Type of Variable: Age-Adjusted Rate

Heteroscedastic Error Option:
Standard Error (Provided)

Log Transformation: Yes {ln(y) = xb}

Count/Numerator:
Pop/Denominator:
Rate/Proportion/Pct: std_rate
Standard Error: sd
Adjustment Variable:
Standard Population:
Delay Variable:
Delay Standard Error:

Advanced Tab:

Method: Grid Search

Autocorrelated Errors Options: Fit an uncorrelated errors model

AAPC Confidence Intervals: Parametric # of Resamples: Not Applicable

Ranges: Entire Range ,

Additional Ranges:

Number of Observations:

Number Joinpoints: Min: 0 Max: 5

Minimum number of observations from a joinpoint to either end of the data: 3

Minimum number of observations between two points: 4

Number of points to place between adjacent observed x valeus in the grid search: 0

Model Selection Method: Permutation Test

Permutation Test Options:

Overall significance level for the permutations tests: 0.05

Number of randomly permuted data sets for permutation test: 9999

Early Stopping Options: Not Applicable

Jump Model / Comparability Ratio: Jump Model

Jump Location: 1998.5 Comparability Ratio: -1 Variance of CR: -1

Comparison Tab:

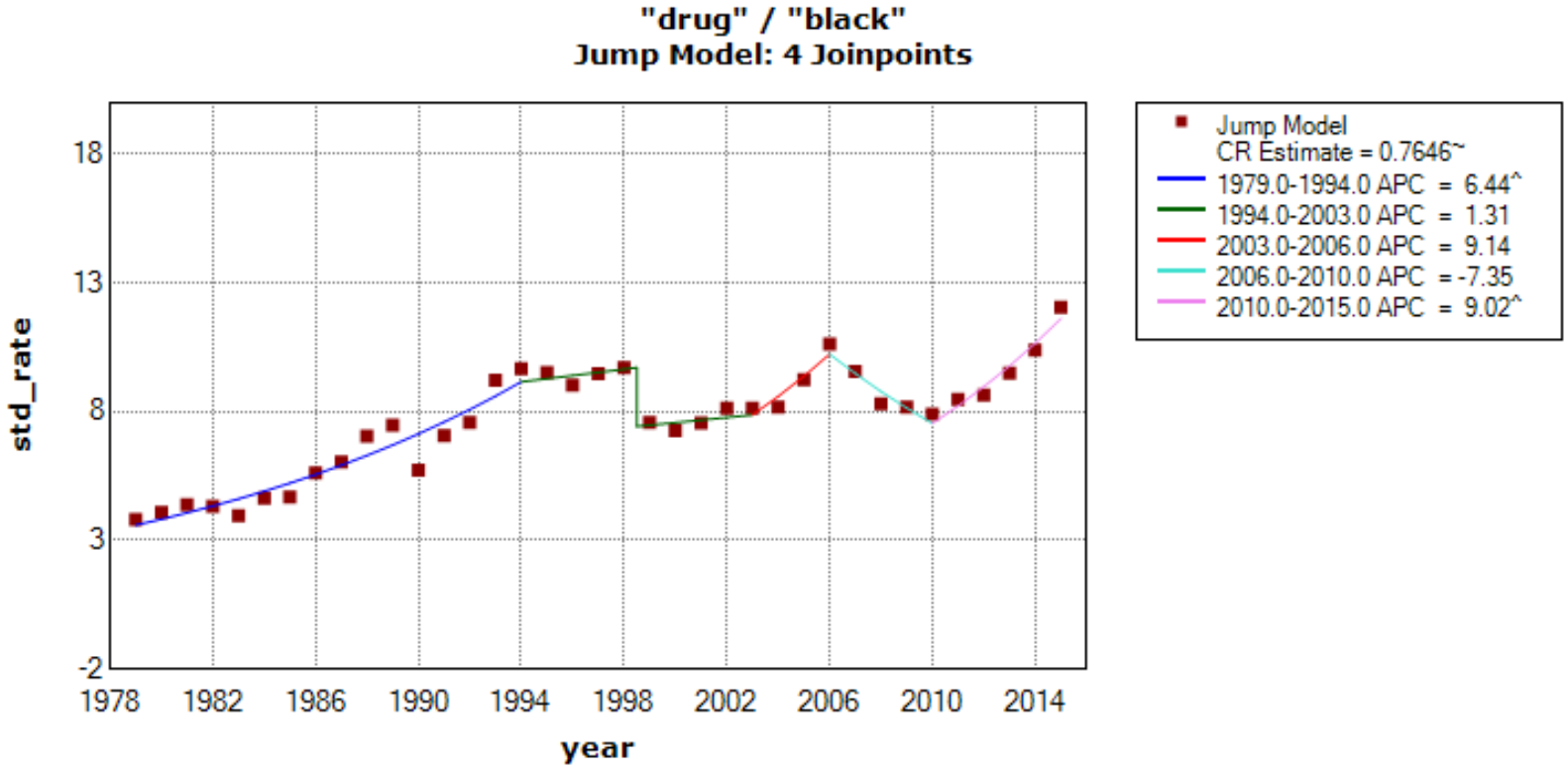
Comparison Type: None

Pairwise Comparison: Not Applicable

Significance level: Not Applicable

Max number of randomly permuted data sets: Not Applicable

"drug" / "black"
Jump Model: 4 Joinpoints



^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
~ Significant at level 0.05 for test of Comparability Ratio = 1.
Final Selected Model: Jump Model - 4 Joinpoints.

"drug" / "black", Jump Model: 4 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1979	3.80894	0.13668	3.59395		6.43957^
1980	4.08695	0.14418	3.82539		6.43957^
1981	4.38050	0.14725	4.07173		6.43957^
1982	4.32233	0.14263	4.33393		6.43957^
1983	3.96852	0.13766	4.61302		6.43957^
1984	4.64761	0.14510	4.91008		6.43957^
1985	4.68645	0.14462	5.22626		6.43957^
1986	5.62712	0.15683	5.56281		6.43957^
1987	6.04322	0.15912	5.92103		6.43957^
1988	7.05517	0.16915	6.30232		6.43957^
1989	7.46833	0.17248	6.70817		6.43957^
1990	5.73099	0.15022	7.14014		6.43957^
1991	7.07072	0.16447	7.59994		6.43957^
1992	7.57355	0.16832	8.08934		6.43957^
1993	9.22524	0.18286	8.61026		6.43957^
1994	9.66759	0.18623	9.16472	Joinpoint 1	
1995	9.51938	0.18215	9.28481		1.31036
1996	9.02306	0.17480	9.40648		1.31036
1997	9.48050	0.17755	9.52974		1.31036

"drug" / "black", Jump Model: 4 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1998	9.71422	0.17805	9.65461		1.31036
1999			9.71766		1.31036
1999			7.43050	Jump Point	1.31036
1999	7.57892	0.15386	7.47902		1.31036
2000	7.27093	0.14864	7.57702		1.31036
2001	7.55213	0.15002	7.67631		1.31036
2002	8.13343	0.15388	7.77690		1.31036
2003	8.14291	0.15297	7.87880	Joinpoint 2	
2004	8.19022	0.15199	8.59866		9.13670
2005	9.24541	0.15973	9.38430		9.13670
2006	10.63721	0.17008	10.24171	Joinpoint 3	
2007	9.55940	0.15981	9.48926		-7.34693
2008	8.30072	0.14786	8.79209		-7.34693
2009	8.17778	0.14548	8.14614		-7.34693
2010	7.89544	0.14174	7.54765	Joinpoint 4	
2011	8.47156	0.14598	8.22816		9.01624^
2012	8.64693	0.14659	8.97003		9.01624^
2013	9.49762	0.15223	9.77879		9.01624^
2014	10.39711	0.15878	10.66047		9.01624^

"drug" / "black", Jump Model: 4 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
2015	12.05853	0.17014	11.62165		9.01624^

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Model Statistics							
Cohort	Number of Joinpoints	Number of Observations	Number of Parameters	Degrees of Freedom	Sum of Squared Errors	Mean Squared Error	Autocorrelation Parameter
Jump Model	4	37	10	27	269.31631	9.97468	Uncorrelated

Jump Model							
Cohort	Jump Location	Jump Value ~	SE	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|

~ Comparability Ratio = exp(Jump Value)

Comparability Ratio							
Cohort	Jump Location	Comparability Ratio ~ (CR)	Standard Error of CR	Lower CI	Upper CI	Test Statistic *	P-Value *

~ Ratio of dependent variable before jump to after jump. CR is input to Comparability Ratio model and estimated by Jump Model (Comparability Ratio = exp (Jump Value)).

* t-distribution and Prob > |t| used for Jump Model. Normal (z) distribution and Prob > |z| used for CR model.

Estimated Joinpoints				
Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1994	1981	2001
Jump Model	2	2003	1985	2007
Jump Model	3	2006	2004	2010
Jump Model	4	2010	2008	2013

"drug" / "black", Jump Model: 4 Joinpoints continued...

Estimated Regression Coefficients (Beta)					
Standard Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-122.224667	12.660898	-9.653712	0.000000
Jump Model	Slope 1	0.062407	0.006370	9.796878	0.000000
Jump Model	Slope 2 - Slope 1	-0.049389	0.013022	-3.792846	0.000940
Jump Model	Slope 3 - Slope 2	0.074413	0.097576	0.762608	0.453448
Jump Model	Slope 4 - Slope 3	-0.163739	0.107546	-1.522500	0.141515
Jump Model	Slope 5 - Slope 4	0.162635	0.050348	3.230241	0.003701

- The statistic could not be calculated.

General Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-122.224667	12.660898	-9.653712	0.000000
Jump Model	Intercept 2	-23.743460	22.696516	-1.046128	0.306372
Jump Model	Intercept 3	-172.791840	194.266200	-0.889459	0.382965
Jump Model	Intercept 4	155.668971	93.623678	1.662709	0.109940
Jump Model	Intercept 5	-171.226993	38.243809	-4.477247	0.000171
Jump Model	Slope 1	0.062407	0.006370	9.796878	0.000000
Jump Model	Slope 2	0.013018	0.011357	1.146289	0.263462
Jump Model	Slope 3	0.087431	0.096913	0.902157	0.376325
Jump Model	Slope 4	-0.076308	0.046626	-1.636590	0.115328
Jump Model	Slope 5	0.086327	0.018996	4.544352	0.000145

- The statistic could not be calculated.

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	160.298345	160.298345	-0.080651	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-0.080651	-0.080651	0.000041	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	0.000000	515.131837	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	0.000000	-0.257765	0.000000	0.000000	0.000000	0.000000

"drug" / "black", Jump Model: 4 Joinpoints continued...

Covariance Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Intercept 5	0.000000	0.000000	0.000000	0.000000	37739.356313	-18.826980	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	-18.826980	0.009392	0.000000	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8765.393066	-4.365327
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-4.365327	0.002174
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Slope 5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Correlation Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Intercept 1	1.000000	-0.999998	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-0.999998	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	1.000000	-0.999999	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	-0.999999	1.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 5	0.000000	0.000000	0.000000	0.000000	-1.000000	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000	0.000000
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000
Jump Model	Slope 5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-1.000000

Estimated Joinpoints

Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1994	1981	2001
Jump Model	2	2003	1985	2007
Jump Model	3	2006	2004	2010
Jump Model	4	2010	2008	2013

"drug" / "black", Jump Model: 4 Joinpoints continued...

Annual Percent Change (APC)								
Cohort	**Segment**	**Lower EndPoint**	**Upper Endpoint**	**APC**	**Lower CI**	**Upper CI**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	1	1979	1994	6.440^	5.046	7.851	9.797	0.000
Jump Model	2	1994	2003	1.310	-1.042	3.719	1.146	0.263
Jump Model	3	2003	2006	9.137	-10.689	33.364	0.902	0.376
Jump Model	4	2006	2010	-7.347	-15.866	2.035	-1.637	0.115
Jump Model	5	2010	2015	9.016^	4.815	13.386	4.544	0.000

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

- The statistic could not be calculated.

Average Annual Percent Change (AAPC)								
Cohort	**Range**	**Lower EndPoint**	**Upper Endpoint**	**AAPC**	**Lower CI**	**Upper CI**	**Test Statistic ***	**P-Value ***
Jump Model	Full Range	1979	2015	4.087^	1.930	6.289	3.749	0.000

^ Indicates that the AAPC is significantly different from zero at the alpha = 0.05 level. Parametric method used to calculate CIs.
* If the AAPC is within one segment, the t-distribution is used. Otherwise, the normal (z) distribution is used.

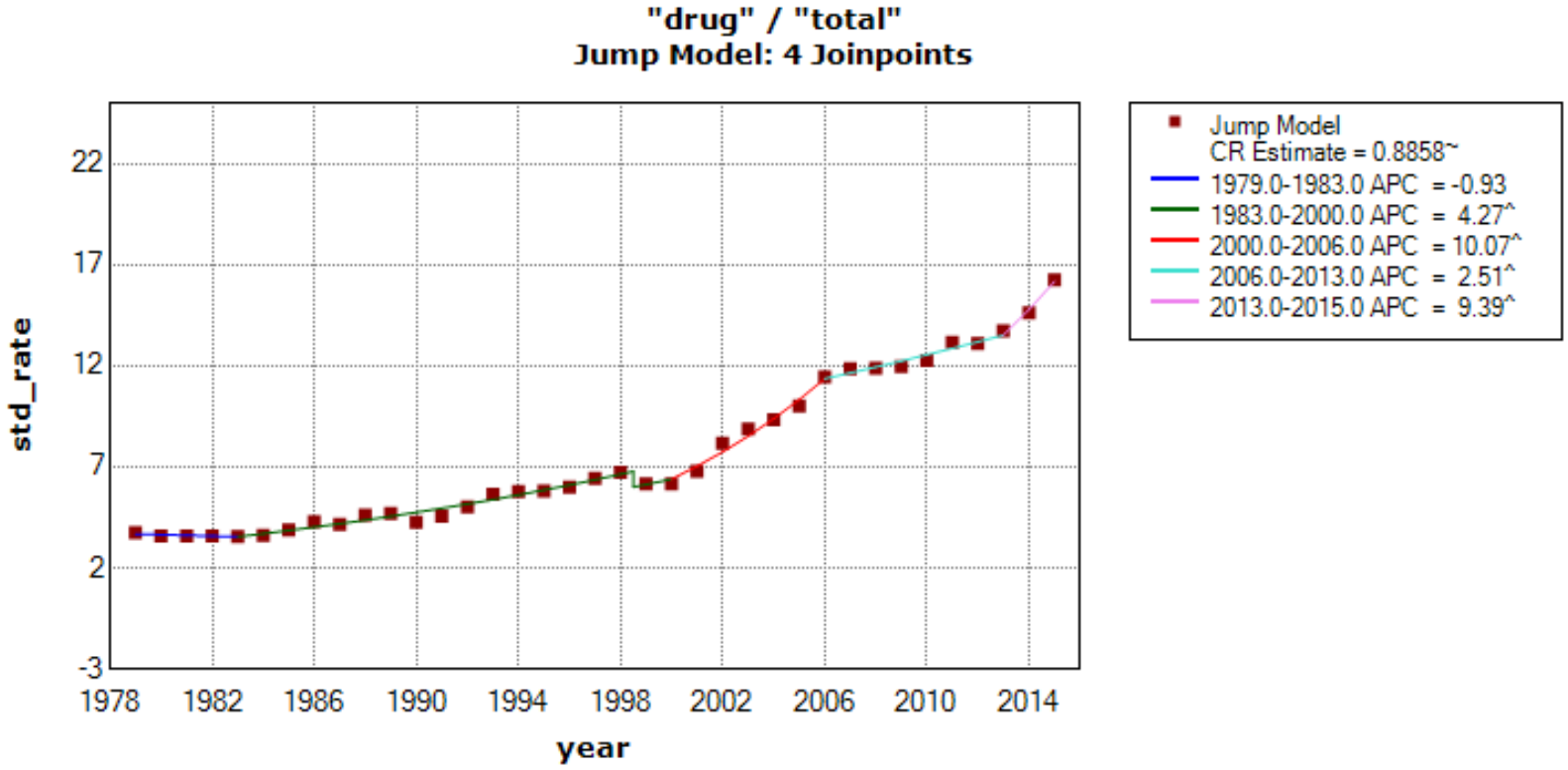
- The statistic could not be calculated.

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#1	0 Joinpoint(s)	5 Joinpoint(s) *	10	25	10000	0.0001000	0.0100000
Jump Model	#2	1 Joinpoint(s)	5 Joinpoint(s) *	8	25	10000	0.0001000	0.0125000
Jump Model	#3	2 Joinpoint(s) *	5 Joinpoint(s)	6	25	10000	0.0187000	0.0166667
Jump Model	#4	2 Joinpoint(s)	4 Joinpoint(s) *	4	27	10000	0.0075000	0.0166667
Jump Model	#5	3 Joinpoint(s)	4 Joinpoint(s) *	2	27	10000	0.0048000	0.0250000
Final Selected Model: Jump Model - 4 Joinpoint(s)								

* Final Selected Model

~ Significance level for individual test

"drug" / "total"
Jump Model: 4 Joinpoints



^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
~ Significant at level 0.05 for test of Comparability Ratio = 1.
Final Selected Model: Jump Model - 4 Joinpoints.

"drug" / "total", Jump Model: 4 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1979	3.74359	0.04337	3.67775		-0.92787
1980	3.57971	0.04227	3.64362		-0.92787
1981	3.56802	0.04186	3.60982		-0.92787
1982	3.58639	0.04133	3.57632		-0.92787
1983	3.56486	0.04105	3.54314	Joinpoint 1	
1984	3.61431	0.04076	3.69450		4.27206^
1985	3.88100	0.04193	3.85234		4.27206^
1986	4.27601	0.04352	4.01691		4.27206^
1987	4.13776	0.04250	4.18851		4.27206^
1988	4.61392	0.04446	4.36745		4.27206^
1989	4.70082	0.04457	4.55403		4.27206^
1990	4.26343	0.04225	4.74858		4.27206^
1991	4.54630	0.04319	4.95144		4.27206^
1992	5.02014	0.04493	5.16297		4.27206^
1993	5.63924	0.04726	5.38354		4.27206^
1994	5.77568	0.04748	5.61353		4.27206^
1995	5.80622	0.04724	5.85334		4.27206^
1996	5.98213	0.04763	6.10340		4.27206^
1997	6.42298	0.04906	6.36414		4.27206^

"drug" / "total", Jump Model: 4 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1998	6.73947	0.04999	6.63602		4.27206^
1999			6.77629		4.27206^
1999			6.00272	Jump Point	4.27206^
1999	6.15329	0.04749	6.12960		4.27206^
2000	6.16293	0.04676	6.39146	Joinpoint 2	
2001	6.78975	0.04881	7.03488		10.06700^
2002	8.15978	0.05329	7.74309		10.06700^
2003	8.86709	0.05534	8.52258		10.06700^
2004	9.33629	0.05655	9.38055		10.06700^
2005	10.02482	0.05832	10.32489		10.06700^
2006	11.44701	0.06206	11.36430	Joinpoint 3	
2007	11.85186	0.06291	11.64943		2.50907^
2008	11.88489	0.06283	11.94173		2.50907^
2009	11.95305	0.06283	12.24135		2.50907^
2010	12.26744	0.06350	12.54850		2.50907^
2011	13.15214	0.06566	12.86335		2.50907^
2012	13.09477	0.06535	13.18610		2.50907^
2013	13.72663	0.06667	13.51695	Joinpoint 4	
2014	14.63326	0.06880	14.78633		9.39103^

"drug" / "total", Jump Model: 4 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
2015	16.25080	0.07247	16.17491		9.39103^

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Model Statistics							
Cohort	Number of Joinpoints	Number of Observations	Number of Parameters	Degrees of Freedom	Sum of Squared Errors	Mean Squared Error	Autocorrelation Parameter
Jump Model	4	37	10	27	626.85489	23.21685	Uncorrelated

Jump Model							
Cohort	Jump Location	Jump Value ~	SE	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|

~ Comparability Ratio = exp(Jump Value)

Comparability Ratio							
Cohort	Jump Location	Comparability Ratio ~ (CR)	Standard Error of CR	Lower CI	Upper CI	Test Statistic *	P-Value *

~ Ratio of dependent variable before jump to after jump. CR is input to Comparability Ratio model and estimated by Jump Model (Comparability Ratio = exp (Jump Value)).

* t-distribution and Prob > |t| used for Jump Model. Normal (z) distribution and Prob > |z| used for CR model.

Estimated Joinpoints				
Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1983	1981	2001
Jump Model	2	2000	1995	2004
Jump Model	3	2006	2004	2008
Jump Model	4	2013	2008	2013

"drug" / "total", Jump Model: 4 Joinpoints continued...

Estimated Regression Coefficients (Beta)					
Standard Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	19.750568	58.144400	0.339681	0.737179
Jump Model	Slope 1	-0.009322	0.029358	-0.317525	0.753710
Jump Model	Slope 2 - Slope 1	0.051155	0.029491	1.734603	0.096195
Jump Model	Slope 3 - Slope 2	0.054086	0.011871	4.556198	0.000141
Jump Model	Slope 4 - Slope 3	-0.071138	0.013484	-5.275868	0.000024
Jump Model	Slope 5 - Slope 4	0.064978	0.037407	1.737044	0.095755

- The statistic could not be calculated.

General Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	19.750568	58.144400	0.339681	0.737179
Jump Model	Intercept 2	-81.690433	5.568884	-14.669085	0.000000
Jump Model	Intercept 3	-189.861989	23.111136	-8.215173	0.000000
Jump Model	Intercept 4	-47.159161	14.024439	-3.362641	0.002691
Jump Model	Intercept 5	-177.959058	74.034316	-2.403737	0.024684
Jump Model	Slope 1	-0.009322	0.029358	-0.317525	0.753710
Jump Model	Slope 2	0.041833	0.002795	14.968637	0.000000
Jump Model	Slope 3	0.095919	0.011537	8.313936	0.000000
Jump Model	Slope 4	0.024781	0.006979	3.550921	0.001703
Jump Model	Slope 5	0.089759	0.036750	2.442398	0.022690

- The statistic could not be calculated.

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	3380.771232	3380.771232	-1.707024	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-1.707024	-1.707024	0.000862	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	0.000000	31.012468	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	0.000000	-0.015563	0.000000	0.000000	0.000000	0.000000

"drug" / "total", Jump Model: 4 Joinpoints continued...

Covariance Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Intercept 5	0.000000	0.000000	0.000000	0.000000	534.124597	-0.266636	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	-0.266636	0.000133	0.000000	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	196.684896	-0.097873
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.097873	0.000049
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Slope 5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Correlation Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Intercept 1	1.000000	-1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-1.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	1.000000	-0.999997	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	-0.999997	1.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 5	0.000000	0.000000	0.000000	0.000000	-1.000000	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000	0.000000
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000
Jump Model	Slope 5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-1.000000

Estimated Joinpoints

Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1983	1981	2001
Jump Model	2	2000	1995	2004
Jump Model	3	2006	2004	2008
Jump Model	4	2013	2008	2013

"drug" / "total", Jump Model: 4 Joinpoints continued...

Annual Percent Change (APC)								
Cohort	**Segment**	**Lower EndPoint**	**Upper Endpoint**	**APC**	**Lower CI**	**Upper CI**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	1	1979	1983	-0.928	-6.766	5.275	-0.318	0.754
Jump Model	2	1983	2000	4.272^	3.671	4.877	14.969	0.000
Jump Model	3	2000	2006	10.067^	7.471	12.726	8.314	0.000
Jump Model	4	2006	2013	2.509^	1.040	4.000	3.551	0.002
Jump Model	5	2013	2015	9.391^	1.383	18.032	2.442	0.023

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

- The statistic could not be calculated.

Average Annual Percent Change (AAPC)								
Cohort	**Range**	**Lower EndPoint**	**Upper Endpoint**	**AAPC**	**Lower CI**	**Upper CI**	**Test Statistic ***	**P-Value ***
Jump Model	Full Range	1979	2015	4.552^	3.593	5.519	9.470	0.000

^ Indicates that the AAPC is significantly different from zero at the alpha = 0.05 level. Parametric method used to calculate CIs.
* If the AAPC is within one segment, the t-distribution is used. Otherwise, the normal (z) distribution is used.

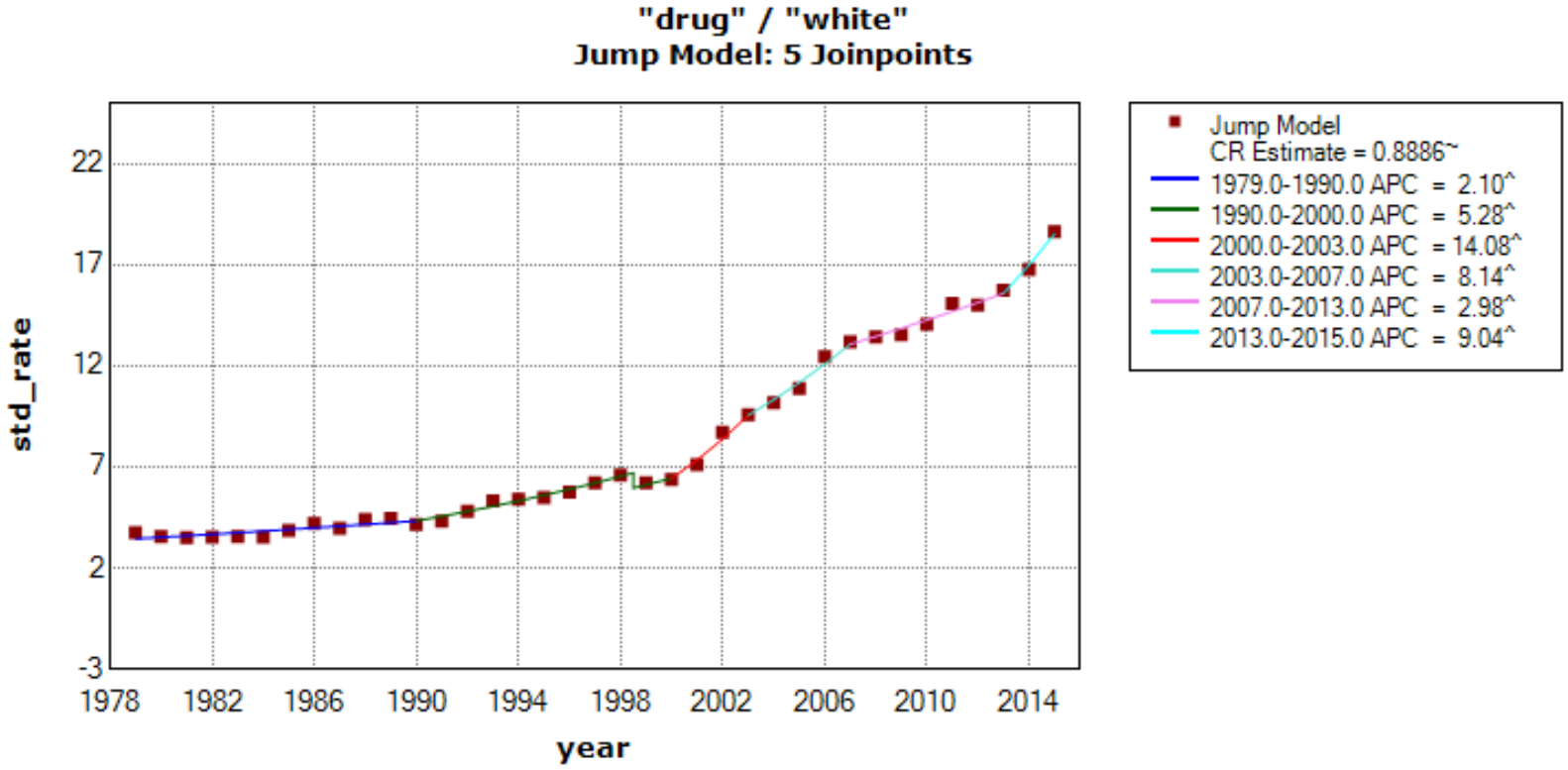
- The statistic could not be calculated.

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#1	0 Joinpoint(s)	5 Joinpoint(s) *	10	25	10000	0.0001000	0.0100000
Jump Model	#2	1 Joinpoint(s)	5 Joinpoint(s) *	8	25	10000	0.0001000	0.0125000
Jump Model	#3	2 Joinpoint(s)	5 Joinpoint(s) *	6	25	10000	0.0003000	0.0166667
Jump Model	#4	3 Joinpoint(s)	5 Joinpoint(s) *	4	25	10000	0.0069000	0.0250000
Jump Model	#5	4 Joinpoint(s) *	5 Joinpoint(s)	2	25	10000	0.3526000	0.0500000
Final Selected Model: Jump Model - 4 Joinpoint(s)								

* Final Selected Model

~ Significance level for individual test

"drug" / "white"
Jump Model: 5 Joinpoints



^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
~ Significant at level 0.05 for test of Comparability Ratio = 1.
Final Selected Model: Jump Model - 5 Joinpoints.

"drug" / "white", Jump Model: 5 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1979	3.75083	0.04630	3.44220		2.10276^
1980	3.55380	0.04491	3.51458		2.10276^
1981	3.49857	0.04426	3.58849		2.10276^
1982	3.53100	0.04389	3.66394		2.10276^
1983	3.54739	0.04379	3.74099		2.10276^
1984	3.53739	0.04324	3.81965		2.10276^
1985	3.84507	0.04480	3.89997		2.10276^
1986	4.19228	0.04628	3.98198		2.10276^
1987	3.95822	0.04474	4.06571		2.10276^
1988	4.39346	0.04674	4.15120		2.10276^
1989	4.44600	0.04677	4.23849		2.10276^
1990	4.14922	0.04501	4.32762	Joinpoint 1	
1991	4.32530	0.04556	4.55614		5.28058^
1992	4.80743	0.04764	4.79673		5.28058^
1993	5.32049	0.04984	5.05003		5.28058^
1994	5.41153	0.04995	5.31670		5.28058^
1995	5.48178	0.04998	5.59745		5.28058^
1996	5.75314	0.05095	5.89303		5.28058^
1997	6.22023	0.05277	6.20421		5.28058^

"drug" / "white", Jump Model: 5 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1998	6.58046	0.05408	6.53183		5.28058^
1999			6.70207		5.28058^
1999			5.95576	Jump Point	5.28058^
1999	6.20986	0.05242	6.11098		5.28058^
2000	6.37418	0.05264	6.43368	Joinpoint 2	
2001	7.11267	0.05544	7.33957		14.08051^
2002	8.69700	0.06119	8.37302		14.08051^
2003	9.58020	0.06414	9.55199	Joinpoint 3	
2004	10.16266	0.06595	10.32984		8.14338^
2005	10.87593	0.06806	11.17104		8.14338^
2006	12.46153	0.07274	12.08074		8.14338^
2007	13.17497	0.07469	13.06452	Joinpoint 4	
2008	13.43744	0.07538	13.45327		2.97560^
2009	13.53661	0.07560	13.85358		2.97560^
2010	14.05542	0.07707	14.26581		2.97560^
2011	15.07957	0.07989	14.69030		2.97560^
2012	15.01549	0.07967	15.12743		2.97560^
2013	15.72849	0.08143	15.57756	Joinpoint 5	
2014	16.76410	0.08421	16.98592		9.04095^

"drug" / "white", Jump Model: 5 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
2015	18.63200	0.08900	18.52161		9.04095^

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Model Statistics							
Cohort	Number of Joinpoints	Number of Observations	Number of Parameters	Degrees of Freedom	Sum of Squared Errors	Mean Squared Error	Autocorrelation Parameter
Jump Model	5	37	12	25	453.85329	18.15413	Uncorrelated

Jump Model							
Cohort	Jump Location	Jump Value ~	SE	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|

~ Comparability Ratio = exp(Jump Value)

Comparability Ratio							
Cohort	Jump Location	Comparability Ratio ~ (CR)	Standard Error of CR	Lower CI	Upper CI	Test Statistic *	P-Value *

~ Ratio of dependent variable before jump to after jump. CR is input to Comparability Ratio model and estimated by Jump Model (Comparability Ratio = exp (Jump Value)).

* t-distribution and Prob > |t| used for Jump Model. Normal (z) distribution and Prob > |z| used for CR model.

Estimated Joinpoints				
Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1990	1981	1997
Jump Model	2	2000	1984	2002
Jump Model	3	2003	1994	2007
Jump Model	4	2007	2001	2010
Jump Model	5	2013	2005	2013

"drug" / "white", Jump Model: 5 Joinpoints continued...

Estimated Regression Coefficients (Beta)					
Standard Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-39.946055	10.059702	-3.970899	0.000753
Jump Model	Slope 1	0.020810	0.005069	4.104943	0.000550
Jump Model	Slope 2 - Slope 1	0.030649	0.007453	4.112592	0.000541
Jump Model	Slope 3 - Slope 2	0.080275	0.048460	1.656539	0.113218
Jump Model	Slope 4 - Slope 3	-0.053446	0.052130	-1.025248	0.317488
Jump Model	Slope 5 - Slope 4	-0.048966	0.021485	-2.279027	0.033782
Jump Model	Slope 6 - Slope 5	0.057231	0.032757	1.747161	0.095949

- The statistic could not be calculated.

General Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-39.946055	10.059702	-3.970899	0.000753
Jump Model	Intercept 2	-100.938032	10.900156	-9.260237	0.000000
Jump Model	Intercept 3	-261.488805	96.376310	-2.713206	0.013385
Jump Model	Intercept 4	-154.435621	40.054326	-3.855654	0.000986
Jump Model	Intercept 5	-56.160992	15.899118	-3.532334	0.002092
Jump Model	Intercept 6	-171.367873	64.036726	-2.676087	0.014517
Jump Model	Slope 1	0.020810	0.005069	4.104943	0.000550
Jump Model	Slope 2	0.051459	0.005463	9.419969	0.000000
Jump Model	Slope 3	0.131734	0.048151	2.735867	0.012736
Jump Model	Slope 4	0.078288	0.019977	3.918992	0.000850
Jump Model	Slope 5	0.029322	0.007910	3.707052	0.001394
Jump Model	Slope 6	0.086553	0.031788	2.722872	0.013105

- The statistic could not be calculated.

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	101.197598	101.197598	-0.050997	0.000000	0.000000	0.000000	0.000000	0.000000

"drug" / "white", Jump Model: 5 Joinpoints continued...

Covariance Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Intercept 2	-0.050997	-0.050997	0.000026	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	0.000000	118.813409	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	0.000000	-0.059545	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 5	0.000000	0.000000	0.000000	0.000000	-4.640597	0.000000	0.000000	0.000000
Jump Model	Intercept 6	0.000000	0.000000	0.000000	0.000000	0.002319	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	0.000000	1604.349013	-0.800146	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	0.000000	-0.800146	0.000399	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	252.781942
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.125758
Jump Model	Slope 5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Slope 6	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Correlation Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Intercept 1	1.000000	-0.999999	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-0.999999	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	1.000000	-0.999999	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	-0.999999	1.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 6	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000	0.000000	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000	0.000000	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000
Jump Model	Slope 5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Slope 6	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

"drug" / "white", Jump Model: 5 Joinpoints continued...

Estimated Joinpoints				
Cohort	**Joinpoint**	**Estimate**	**Lower CI**	**Upper CI**
Jump Model	1	1990	1981	1997
Jump Model	2	2000	1984	2002
Jump Model	3	2003	1994	2007
Jump Model	4	2007	2001	2010
Jump Model	5	2013	2005	2013

Annual Percent Change (APC)								
Cohort	**Segment**	**Lower EndPoint**	**Upper Endpoint**	**APC**	**Lower CI**	**Upper CI**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	1	1979	1990	2.103^	1.029	3.188	4.105	0.001
Jump Model	2	1990	2000	5.281^	4.088	6.487	9.420	0.000
Jump Model	3	2000	2003	14.081^	3.179	26.134	2.736	0.013
Jump Model	4	2003	2007	8.143^	3.730	12.745	3.919	0.001
Jump Model	5	2007	2013	2.976^	1.290	4.689	3.707	0.001
Jump Model	6	2013	2015	9.041^	2.045	16.516	2.723	0.013

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

- The statistic could not be calculated.

Average Annual Percent Change (AAPC)								
Cohort	**Range**	**Lower EndPoint**	**Upper Endpoint**	**AAPC**	**Lower CI**	**Upper CI**	**Test Statistic ***	**P-Value ***
Jump Model	Full Range	1979	2015	5.130^	3.996	6.275	9.045	0.000

^ Indicates that the AAPC is significantly different from zero at the alpha = 0.05 level. Parametric method used to calculate CIs.
* If the AAPC is within one segment, the t-distribution is used. Otherwise, the normal (z) distribution is used.

- The statistic could not be calculated.

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#1	0 Joinpoint(s)	5 Joinpoint(s) *	10	25	10000	0.0001000	0.0100000

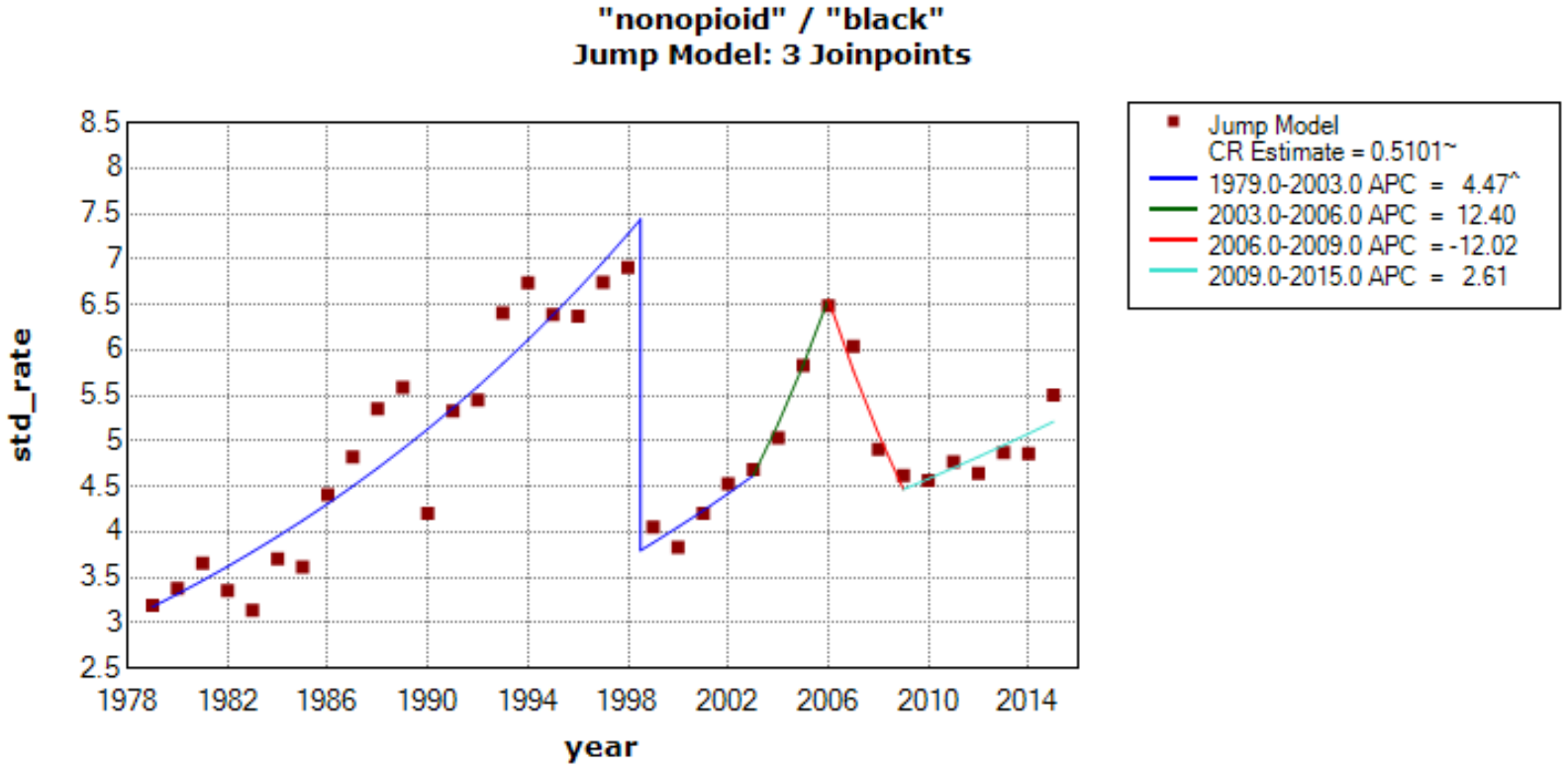
"drug" / "white", Jump Model: 5 Joinpoints continued...

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#2	1 Joinpoint(s)	5 Joinpoint(s) *	8	25	10000	0.0001000	0.0125000
Jump Model	#3	2 Joinpoint(s)	5 Joinpoint(s) *	6	25	10000	0.0003000	0.0166667
Jump Model	#4	3 Joinpoint(s)	5 Joinpoint(s) *	4	25	10000	0.0005000	0.0250000
Jump Model	#5	4 Joinpoint(s)	5 Joinpoint(s) *	2	25	10000	0.0362000	0.0500000
Final Selected Model: Jump Model - 5 Joinpoint(s)								

* Final Selected Model

~ Significance level for individual test

"nonopioid" / "black"
Jump Model: 3 Joinpoints



^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
~ Significant at level 0.05 for test of Comparability Ratio = 1.
Final Selected Model: Jump Model - 3 Joinpoints.

"nonopioid" / "black", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1979	3.18976	0.12632	3.17371		4.46509^
1980	3.37663	0.13254	3.31541		4.46509^
1981	3.65442	0.13555	3.46345		4.46509^
1982	3.35257	0.12675	3.61810		4.46509^
1983	3.13794	0.12374	3.77965		4.46509^
1984	3.70419	0.13072	3.94841		4.46509^
1985	3.61408	0.12826	4.12471		4.46509^
1986	4.40497	0.14006	4.30889		4.46509^
1987	4.82246	0.14233	4.50128		4.46509^
1988	5.35121	0.14774	4.70227		4.46509^
1989	5.58734	0.15022	4.91223		4.46509^
1990	4.20229	0.12985	5.13156		4.46509^
1991	5.33158	0.14332	5.36069		4.46509^
1992	5.44668	0.14326	5.60005		4.46509^
1993	6.40656	0.15315	5.85010		4.46509^
1994	6.74124	0.15591	6.11131		4.46509^
1995	6.38882	0.14937	6.38419		4.46509^
1996	6.37091	0.14742	6.66925		4.46509^
1997	6.74661	0.15057	6.96704		4.46509^

"nonopioid" / "black", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1998	6.90483	0.15079	7.27812		4.46509^
1999			7.43884		4.46509^
1999			3.79480	Jump Point	4.46509^
1999	4.05272	0.11313	3.87860		4.46509^
2000	3.82677	0.10865	4.05178		4.46509^
2001	4.20327	0.11259	4.23270		4.46509^
2002	4.53018	0.11521	4.42169		4.46509^
2003	4.68722	0.11661	4.61913	Joinpoint 1	
2004	5.03569	0.11967	5.19176		12.39708
2005	5.82841	0.12705	5.83539		12.39708
2006	6.48334	0.13313	6.55881	Joinpoint 2	
2007	6.03944	0.12741	5.77056		-12.01821
2008	4.90625	0.11415	5.07704		-12.01821
2009	4.62020	0.10967	4.46687	Joinpoint 3	
2010	4.56122	0.10825	4.58332		2.60698
2011	4.76781	0.10995	4.70281		2.60698
2012	4.64123	0.10783	4.82541		2.60698
2013	4.86973	0.10944	4.95121		2.60698
2014	4.85747	0.10873	5.08028		2.60698

"nonopioid" / "black", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
2015	5.50617	0.11508	5.21272		2.60698

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Model Statistics							
Cohort	Number of Joinpoints	Number of Observations	Number of Parameters	Degrees of Freedom	Sum of Squared Errors	Mean Squared Error	Autocorrelation Parameter
Jump Model	3	37	8	29	217.08619	7.48573	Uncorrelated

Jump Model							
Cohort	Jump Location	Jump Value ~	SE	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|

~ Comparability Ratio = exp(Jump Value)

Comparability Ratio							
Cohort	Jump Location	Comparability Ratio ~ (CR)	Standard Error of CR	Lower CI	Upper CI	Test Statistic *	P-Value *

~ Ratio of dependent variable before jump to after jump. CR is input to Comparability Ratio model and estimated by Jump Model (Comparability Ratio = exp (Jump Value)).

* t-distribution and Prob > |t| used for Jump Model. Normal (z) distribution and Prob > |z| used for CR model.

Estimated Joinpoints				
Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	2003	1995	2004
Jump Model	2	2006	2005	2008
Jump Model	3	2009	2008	2013

"nonopioid" / "black", Jump Model: 3 Joinpoints continued...

Estimated Regression Coefficients (Beta)					
Standard Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-85.293380	13.794554	-6.183120	0.000002
Jump Model	Slope 1	0.043683	0.006923	6.309551	0.000001
Jump Model	Slope 2 - Slope 1	0.073185	0.243533	0.300514	0.766175
Jump Model	Slope 3 - Slope 2	-0.244908	0.339811	-0.720718	0.477513
Jump Model	Slope 4 - Slope 3	0.153776	0.240509	0.639377	0.528172

- The statistic could not be calculated.

General Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-85.293380	13.794554	-6.183120	0.000002
Jump Model	Intercept 2	-231.882920	487.974583	-0.475195	0.638616
Jump Model	Intercept 3	259.402701	475.945210	0.545026	0.590380
Jump Model	Intercept 4	-49.533445	81.342297	-0.608951	0.547841
Jump Model	Slope 1	0.043683	0.006923	6.309551	0.000001
Jump Model	Slope 2	0.116868	0.243434	0.480079	0.635185
Jump Model	Slope 3	-0.128040	0.237089	-0.540051	0.593758
Jump Model	Slope 4	0.025736	0.040416	0.636774	0.529839

- The statistic could not be calculated.

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	190.289710	190.289710	-0.095503	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-0.095503	-0.095503	0.000048	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	0.000000	238119.193472	-118.789754	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	0.000000	-118.789754	0.059260	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	0.000000	226523.842524	-112.841510	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	0.000000	-112.841510	0.056211	0.000000

"nonopioid" / "black", Jump Model: 3 Joinpoints continued...

Covariance Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6616.569212
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-3.287523

Correlation Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Intercept 1	1.000000	-0.999995	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-0.999995	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	1.000000	-1.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	-1.000000	1.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000	0.000000	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000	0.000000	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000

Estimated Joinpoints

Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	2003	1995	2004
Jump Model	2	2006	2005	2008
Jump Model	3	2009	2008	2013

Annual Percent Change (APC)

Cohort	Segment	Lower EndPoint	Upper Endpoint	APC	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|
Jump Model	1	1979	2003	4.465^	2.989	5.962	6.310	0.000
Jump Model	2	2003	2006	12.397	-31.854	85.383	0.480	0.635
Jump Model	3	2006	2009	-12.018	-45.957	43.233	-0.540	0.594
Jump Model	4	2009	2015	2.607	-5.573	11.495	0.637	0.530

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

- The statistic could not be calculated.

"nonopioid" / "black", Jump Model: 3 Joinpoints continued...

Average Annual Percent Change (AAPC)								
Cohort	**Range**	**Lower EndPoint**	**Upper Endpoint**	**AAPC**	**Lower CI**	**Upper CI**	**Test Statistic ***	**P-Value ***
Jump Model	Full Range	1979	2015	3.301	-2.497	9.444	1.102	0.270

^ Indicates that the AAPC is significantly different from zero at the alpha = 0.05 level. Parametric method used to calculate CIs.
* If the AAPC is within one segment, the t-distribution is used. Otherwise, the normal (z) distribution is used.

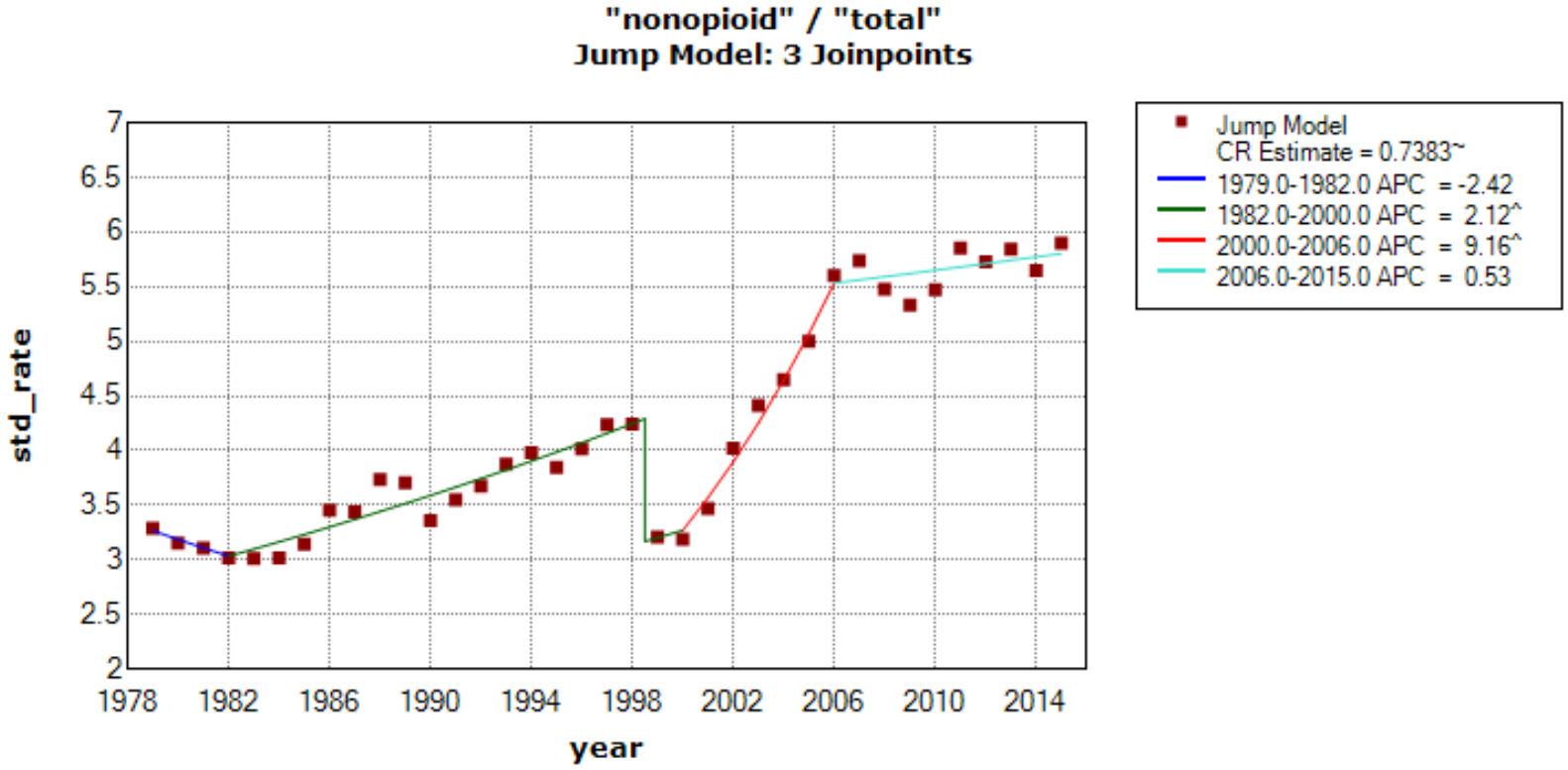
- The statistic could not be calculated.

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#1	0 Joinpoint(s)	5 Joinpoint(s) *	10	25	10000	0.0001000	0.0100000
Jump Model	#2	1 Joinpoint(s)	5 Joinpoint(s) *	8	25	10000	0.0002000	0.0125000
Jump Model	#3	2 Joinpoint(s)	5 Joinpoint(s) *	6	25	10000	0.0014000	0.0166667
Jump Model	#4	3 Joinpoint(s) *	5 Joinpoint(s)	4	25	10000	0.0380000	0.0250000
Jump Model	#5	3 Joinpoint(s) *	4 Joinpoint(s)	2	27	10000	0.2526000	0.0250000
Final Selected Model: Jump Model - 3 Joinpoint(s)								

* Final Selected Model

~ Significance level for individual test

"nonopioid" / "total"
Jump Model: 3 Joinpoints



^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
~ Significant at level 0.05 for test of Comparability Ratio = 1.
Final Selected Model: Jump Model - 3 Joinpoints.

"nonopioid" / "total", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1979	3.28766	0.04084	3.26547		-2.42437
1980	3.15328	0.03985	3.18630		-2.42437
1981	3.10844	0.03925	3.10905		-2.42437
1982	3.01904	0.03815	3.03368	Joinpoint 1	
1983	3.01411	0.03798	3.09811		2.12406^
1984	3.01787	0.03746	3.16392		2.12406^
1985	3.14243	0.03796	3.23112		2.12406^
1986	3.45190	0.03931	3.29975		2.12406^
1987	3.43840	0.03886	3.36984		2.12406^
1988	3.73364	0.04010	3.44142		2.12406^
1989	3.70294	0.03965	3.51452		2.12406^
1990	3.35688	0.03767	3.58917		2.12406^
1991	3.55059	0.03828	3.66541		2.12406^
1992	3.67493	0.03854	3.74326		2.12406^
1993	3.87673	0.03930	3.82277		2.12406^
1994	3.97925	0.03948	3.90397		2.12406^
1995	3.84569	0.03851	3.98689		2.12406^
1996	4.01600	0.03908	4.07157		2.12406^
1997	4.23659	0.03989	4.15806		2.12406^

"nonopioid" / "total", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1998	4.24350	0.03969	4.24638		2.12406^
1999			4.29124		2.12406^
1999			3.16841	Jump Point	2.12406^
1999	3.20938	0.03431	3.20188		2.12406^
2000	3.18801	0.03364	3.26989	Joinpoint 2	
2001	3.46634	0.03489	3.56944		9.16084^
2002	4.02009	0.03740	3.89643		9.16084^
2003	4.41147	0.03903	4.25338		9.16084^
2004	4.65078	0.03992	4.64302		9.16084^
2005	5.00085	0.04119	5.06836		9.16084^
2006	5.60484	0.04342	5.53267	Joinpoint 3	
2007	5.73814	0.04372	5.56212		0.53238
2008	5.47788	0.04261	5.59174		0.53238
2009	5.33210	0.04191	5.62150		0.53238
2010	5.47453	0.04230	5.65143		0.53238
2011	5.85391	0.04368	5.68152		0.53238
2012	5.72637	0.04304	5.71177		0.53238
2013	5.84379	0.04333	5.74217		0.53238
2014	5.64962	0.04255	5.77274		0.53238

"nonopioid" / "total", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
2015	5.89836	0.04342	5.80348		0.53238

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Model Statistics							
Cohort	Number of Joinpoints	Number of Observations	Number of Parameters	Degrees of Freedom	Sum of Squared Errors	Mean Squared Error	Autocorrelation Parameter
Jump Model	3	37	8	29	366.54925	12.63963	Uncorrelated

Jump Model							
Cohort	Jump Location	Jump Value ~	SE	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|

~ Comparability Ratio = exp(Jump Value)

Comparability Ratio							
Cohort	Jump Location	Comparability Ratio ~ (CR)	Standard Error of CR	Lower CI	Upper CI	Test Statistic *	P-Value *

~ Ratio of dependent variable before jump to after jump. CR is input to Comparability Ratio model and estimated by Jump Model (Comparability Ratio = exp (Jump Value)).

* t-distribution and Prob > |t| used for Jump Model. Normal (z) distribution and Prob > |z| used for CR model.

Estimated Joinpoints				
Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1982	1981	2001
Jump Model	2	2000	1996	2007
Jump Model	3	2006	2004	2013

"nonopioid" / "total", Jump Model: 3 Joinpoints continued...

Estimated Regression Coefficients (Beta)					
Standard Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	49.752744	107.995679	0.460692	0.648850
Jump Model	Slope 1	-0.024542	0.054544	-0.449959	0.656469
Jump Model	Slope 2 - Slope 1	0.045561	0.054645	0.833750	0.412017
Jump Model	Slope 3 - Slope 2	0.066634	0.017991	3.703678	0.001008
Jump Model	Slope 4 - Slope 3	-0.082343	0.018674	-4.409372	0.000160

- The statistic could not be calculated.

General Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	49.752744	107.995679	0.460692	0.648850
Jump Model	Intercept 2	-40.548274	6.640362	-6.106335	0.000002
Jump Model	Intercept 3	-173.816240	35.415769	-4.907877	0.000043
Jump Model	Intercept 4	-8.637137	12.093763	-0.714181	0.481478
Jump Model	Slope 1	-0.024542	0.054544	-0.449959	0.656469
Jump Model	Slope 2	0.021018	0.003334	6.304311	0.000001
Jump Model	Slope 3	0.087652	0.017680	4.957787	0.000038
Jump Model	Slope 4	0.005310	0.006014	0.882947	0.385356

- The statistic could not be calculated.

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	11663.066761	11663.066761	-5.890469	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-5.890469	-5.890469	0.002975	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	0.000000	44.094405	-0.022138	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	0.000000	-0.022138	0.000011	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	0.000000	1254.276712	-0.626140	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	0.000000	-0.626140	0.000313	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	146.259097

"nonopioid" / "total", Jump Model: 3 Joinpoints continued...

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.072726

Correlation Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	1.000000	-1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-1.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	1.000000	-0.999997	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	-0.999997	1.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000	0.000000	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000	0.000000	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-0.999999
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.999999	1.000000

Estimated Joinpoints				
Cohort	**Joinpoint**	**Estimate**	**Lower CI**	**Upper CI**
Jump Model	1	1982	1981	2001
Jump Model	2	2000	1996	2007
Jump Model	3	2006	2004	2013

Annual Percent Change (APC)								
Cohort	**Segment**	**Lower EndPoint**	**Upper Endpoint**	**APC**	**Lower CI**	**Upper CI**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	1	1979	1982	-2.424	-12.773	9.152	-0.450	0.656
Jump Model	2	1982	2000	2.124^	1.427	2.826	6.304	0.000
Jump Model	3	2000	2006	9.161^	5.265	13.201	4.958	0.000
Jump Model	4	2006	2015	0.532	-0.703	1.783	0.883	0.385

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

- The statistic could not be calculated.

"nonopioid" / "total", Jump Model: 3 Joinpoints continued...

Average Annual Percent Change (AAPC)								
Cohort	**Range**	**Lower EndPoint**	**Upper Endpoint**	**AAPC**	**Lower CI**	**Upper CI**	**Test Statistic ***	**P-Value ***
Jump Model	Full Range	1979	2015	2.470^	1.299	3.654	4.161	0.000

^ Indicates that the AAPC is significantly different from zero at the alpha = 0.05 level. Parametric method used to calculate CIs.
* If the AAPC is within one segment, the t-distribution is used. Otherwise, the normal (z) distribution is used.

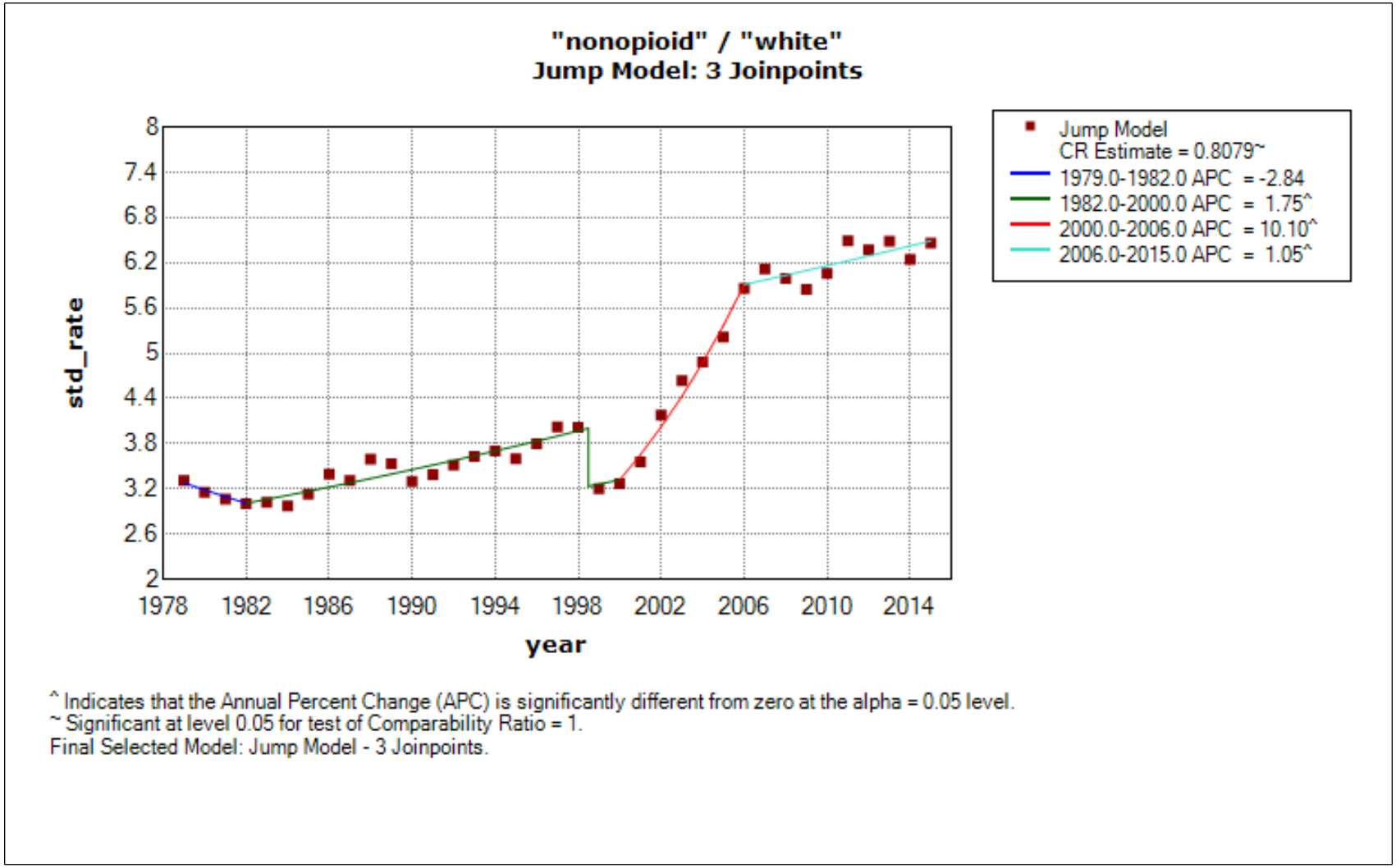
- The statistic could not be calculated.

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#1	0 Joinpoint(s)	5 Joinpoint(s) *	10	25	10000	0.0001000	0.0100000
Jump Model	#2	1 Joinpoint(s)	5 Joinpoint(s) *	8	25	10000	0.0001000	0.0125000
Jump Model	#3	2 Joinpoint(s)	5 Joinpoint(s) *	6	25	10000	0.0066000	0.0166667
Jump Model	#4	3 Joinpoint(s) *	5 Joinpoint(s)	4	25	10000	0.0279000	0.0250000
Jump Model	#5	3 Joinpoint(s) *	4 Joinpoint(s)	2	27	10000	0.2145000	0.0250000
Final Selected Model: Jump Model - 3 Joinpoint(s)								

* Final Selected Model

~ Significance level for individual test

"nonopioid" / "white"
Jump Model: 3 Joinpoints



^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
~ Significant at level 0.05 for test of Comparability Ratio = 1.
Final Selected Model: Jump Model - 3 Joinpoints.

"nonopioid" / "white", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1979	3.31075	0.04369	3.27972		-2.83843
1980	3.15637	0.04249	3.18663		-2.83843
1981	3.06389	0.04160	3.09618		-2.83843
1982	3.00504	0.04072	3.00829	Joinpoint 1	
1983	3.02409	0.04067	3.06086		1.74735^
1984	2.97237	0.03985	3.11434		1.74735^
1985	3.13218	0.04068	3.16876		1.74735^
1986	3.39782	0.04186	3.22413		1.74735^
1987	3.31097	0.04104	3.28047		1.74735^
1988	3.59514	0.04238	3.33779		1.74735^
1989	3.53422	0.04178	3.39611		1.74735^
1990	3.30050	0.04029	3.45545		1.74735^
1991	3.39042	0.04044	3.51583		1.74735^
1992	3.51842	0.04083	3.57727		1.74735^
1993	3.62953	0.04123	3.63977		1.74735^
1994	3.69990	0.04133	3.70337		1.74735^
1995	3.60162	0.04053	3.76808		1.74735^
1996	3.80086	0.04141	3.83392		1.74735^
1997	4.01979	0.04240	3.90092		1.74735^

"nonopioid" / "white", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1998	4.01601	0.04219	3.96908		1.74735^
1999			4.00361		1.74735^
1999			3.23434	Jump Point	1.74735^
1999	3.20214	0.03759	3.26248		1.74735^
2000	3.26959	0.03765	3.31949	Joinpoint 2	
2001	3.55605	0.03915	3.65459		10.09511^
2002	4.17839	0.04233	4.02353		10.09511^
2003	4.63632	0.04453	4.42971		10.09511^
2004	4.88457	0.04564	4.87689		10.09511^
2005	5.21212	0.04703	5.36922		10.09511^
2006	5.86087	0.04979	5.91124	Joinpoint 3	
2007	6.11946	0.05076	5.97305		1.04557^
2008	5.98910	0.05017	6.03550		1.04557^
2009	5.84821	0.04952	6.09861		1.04557^
2010	6.05938	0.05035	6.16237		1.04557^
2011	6.49208	0.05214	6.22681		1.04557^
2012	6.37363	0.05158	6.29191		1.04557^
2013	6.48802	0.05195	6.35770		1.04557^
2014	6.24551	0.05102	6.42417		1.04557^

"nonopioid" / "white", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
2015	6.46104	0.05198	6.49134		1.04557^

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Model Statistics							
Cohort	Number of Joinpoints	Number of Observations	Number of Parameters	Degrees of Freedom	Sum of Squared Errors	Mean Squared Error	Autocorrelation Parameter
Jump Model	3	37	8	29	281.65160	9.71212	Uncorrelated

Jump Model							
Cohort	Jump Location	Jump Value ~	SE	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|

~ Comparability Ratio = exp(Jump Value)

Comparability Ratio							
Cohort	Jump Location	Comparability Ratio ~ (CR)	Standard Error of CR	Lower CI	Upper CI	Test Statistic *	P-Value *

~ Ratio of dependent variable before jump to after jump. CR is input to Comparability Ratio model and estimated by Jump Model (Comparability Ratio = exp (Jump Value)).

* t-distribution and Prob > |t| used for Jump Model. Normal (z) distribution and Prob > |z| used for CR model.

Estimated Joinpoints				
Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1982	1981	2001
Jump Model	2	2000	1996	2004
Jump Model	3	2006	2005	2008

"nonopioid" / "white", Jump Model: 3 Joinpoints continued...

Estimated Regression Coefficients (Beta)					
Standard Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	58.172994	88.291624	0.658873	0.515770
Jump Model	Slope 1	-0.028795	0.044592	-0.645741	0.524106
Jump Model	Slope 2 - Slope 1	0.046118	0.044680	1.032183	0.311493
Jump Model	Slope 3 - Slope 2	0.078852	0.015047	5.240325	0.000018
Jump Model	Slope 4 - Slope 3	-0.085773	0.015606	-5.496258	0.000009

- The statistic could not be calculated.

General Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	58.172994	88.291624	0.658873	0.515770
Jump Model	Intercept 2	-33.232009	5.565475	-5.971100	0.000003
Jump Model	Intercept 3	-190.935641	29.617840	-6.446643	0.000001
Jump Model	Intercept 4	-18.874995	10.041526	-1.879694	0.071401
Jump Model	Slope 1	-0.028795	0.044592	-0.645741	0.524106
Jump Model	Slope 2	0.017323	0.002794	6.198940	0.000001
Jump Model	Slope 3	0.096174	0.014785	6.504703	0.000001
Jump Model	Slope 4	0.010401	0.004993	2.083151	0.047213

- The statistic could not be calculated.

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	7795.410868	7795.410868	-3.937113	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-3.937113	-3.937113	0.001988	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	0.000000	30.974514	-0.015552	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	0.000000	-0.015552	0.000008	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	0.000000	877.216428	-0.437910	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	0.000000	-0.437910	0.000219	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	100.832245

"nonopioid" / "white", Jump Model: 3 Joinpoints continued...

Covariance Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.050138

Correlation Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Intercept 1	1.000000	-1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-1.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	1.000000	-0.999997	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	-0.999997	1.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000	0.000000	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000	0.000000	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-0.999999
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.999999	1.000000

Estimated Joinpoints

Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1982	1981	2001
Jump Model	2	2000	1996	2004
Jump Model	3	2006	2005	2008

Annual Percent Change (APC)

Cohort	Segment	Lower EndPoint	Upper Endpoint	APC	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|
Jump Model	1	1979	1982	-2.838	-11.348	6.488	-0.646	0.524
Jump Model	2	1982	2000	1.747^	1.165	2.333	6.199	0.000
Jump Model	3	2000	2006	10.095^	6.799	13.492	6.505	0.000
Jump Model	4	2006	2015	1.046^	0.014	2.088	2.083	0.047

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

- The statistic could not be calculated.

"nonopioid" / "white", Jump Model: 3 Joinpoints continued...

Average Annual Percent Change (AAPC)								
Cohort	**Range**	**Lower EndPoint**	**Upper Endpoint**	**AAPC**	**Lower CI**	**Upper CI**	**Test Statistic ***	**P-Value ***
Jump Model	Full Range	1979	2015	2.520^	1.553	3.497	5.147	0.000

^ Indicates that the AAPC is significantly different from zero at the alpha = 0.05 level. Parametric method used to calculate CIs.
* If the AAPC is within one segment, the t-distribution is used. Otherwise, the normal (z) distribution is used.

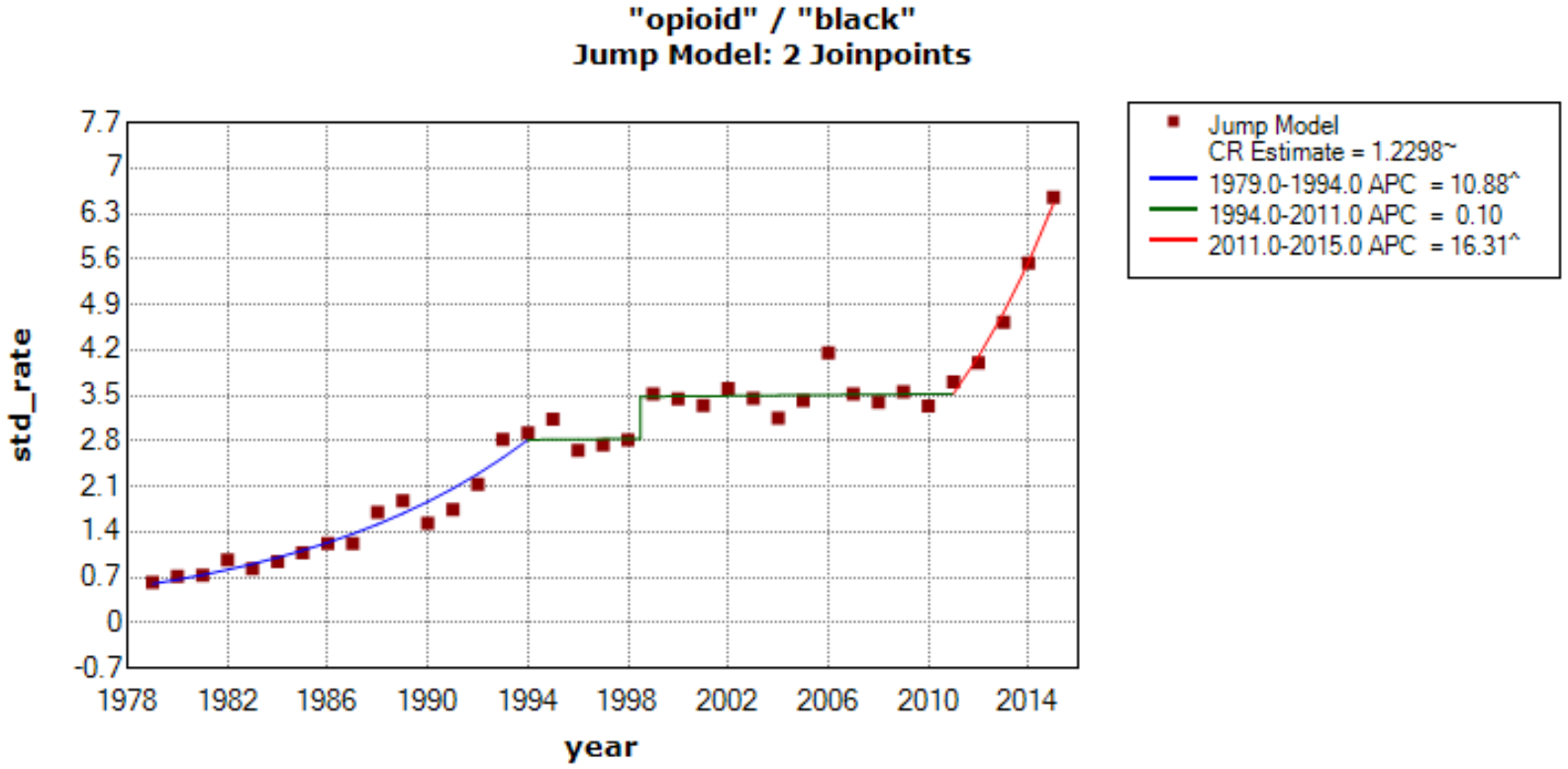
- The statistic could not be calculated.

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#1	0 Joinpoint(s)	5 Joinpoint(s) *	10	25	10000	0.0001000	0.0100000
Jump Model	#2	1 Joinpoint(s)	5 Joinpoint(s) *	8	25	10000	0.0001000	0.0125000
Jump Model	#3	2 Joinpoint(s)	5 Joinpoint(s) *	6	25	10000	0.0049000	0.0166667
Jump Model	#4	3 Joinpoint(s) *	5 Joinpoint(s)	4	25	10000	0.0378000	0.0250000
Jump Model	#5	3 Joinpoint(s) *	4 Joinpoint(s)	2	27	10000	0.3853000	0.0250000
Final Selected Model: Jump Model - 3 Joinpoint(s)								

* Final Selected Model

~ Significance level for individual test

"opioid" / "black"
Jump Model: 2 Joinpoints



^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
~ Significant at level 0.05 for test of Comparability Ratio = 1.
Final Selected Model: Jump Model - 2 Joinpoints.

"opioid" / "black", Jump Model: 2 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1979	0.61918	0.05219	0.59850		10.88029^
1980	0.71032	0.05678	0.66362		10.88029^
1981	0.72608	0.05752	0.73582		10.88029^
1982	0.96976	0.06539	0.81588		10.88029^
1983	0.83059	0.06032	0.90465		10.88029^
1984	0.94342	0.06299	1.00308		10.88029^
1985	1.07238	0.06682	1.11222		10.88029^
1986	1.22215	0.07056	1.23323		10.88029^
1987	1.22076	0.07114	1.36741		10.88029^
1988	1.70396	0.08237	1.51619		10.88029^
1989	1.88100	0.08474	1.68116		10.88029^
1990	1.52870	0.07553	1.86407		10.88029^
1991	1.73915	0.08067	2.06689		10.88029^
1992	2.12687	0.08837	2.29177		10.88029^
1993	2.81868	0.09990	2.54113		10.88029^
1994	2.92635	0.10186	2.81761	Joinpoint 1	
1995	3.13056	0.10425	2.82052		0.10341
1996	2.65215	0.09393	2.82344		0.10341
1997	2.73390	0.09409	2.82636		0.10341

"opioid" / "black", Jump Model: 2 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1998	2.80939	0.09468	2.82928		0.10341
1999			2.83074		0.10341
1999			3.48131	Jump Point	0.10341
1999	3.52621	0.10429	3.48311		0.10341
2000	3.44416	0.10144	3.48671		0.10341
2001	3.34886	0.09914	3.49032		0.10341
2002	3.60326	0.10200	3.49393		0.10341
2003	3.45569	0.09901	3.49754		0.10341
2004	3.15453	0.09370	3.50116		0.10341
2005	3.41700	0.09681	3.50478		0.10341
2006	4.15387	0.10584	3.50840		0.10341
2007	3.51996	0.09646	3.51203		0.10341
2008	3.39447	0.09397	3.51566		0.10341
2009	3.55758	0.09559	3.51930		0.10341
2010	3.33422	0.09151	3.52294		0.10341
2011	3.70375	0.09602	3.52658	Joinpoint 2	
2012	4.00570	0.09930	4.10172		16.30883^
2013	4.62788	0.10582	4.77067		16.30883^
2014	5.53964	0.11571	5.54871		16.30883^

"opioid" / "black", Jump Model: 2 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
2015	6.55236	0.12531	6.45363		16.30883^

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Model Statistics							
Cohort	Number of Joinpoints	Number of Observations	Number of Parameters	Degrees of Freedom	Sum of Squared Errors	Mean Squared Error	Autocorrelation Parameter
Jump Model	2	37	6	31	156.15916	5.03739	Uncorrelated

Jump Model							
Cohort	Jump Location	Jump Value ~	SE	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|

~ Comparability Ratio = exp(Jump Value)

Comparability Ratio							
Cohort	Jump Location	Comparability Ratio ~ (CR)	Standard Error of CR	Lower CI	Upper CI	Test Statistic *	P-Value *

~ Ratio of dependent variable before jump to after jump. CR is input to Comparability Ratio model and estimated by Jump Model (Comparability Ratio = exp (Jump Value)).

* t-distribution and Prob > |t| used for Jump Model. Normal (z) distribution and Prob > |z| used for CR model.

Estimated Joinpoints				
Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1994	1992	1996
Jump Model	2	2011	2009	2013

"opioid" / "black", Jump Model: 2 Joinpoints continued...

Estimated Regression Coefficients (Beta)					
Standard Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-204.906414	18.245106	-11.230760	0.000000
Jump Model	Slope 1	0.103281	0.009177	11.254191	0.000000
Jump Model	Slope 2 - Slope 1	-0.102247	0.010169	-10.054523	0.000000
Jump Model	Slope 3 - Slope 2	0.150045	0.026476	5.667260	0.000004

- The statistic could not be calculated.

General Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-204.906414	18.245106	-11.230760	0.000000
Jump Model	Intercept 2	-1.025002	8.776549	-0.116789	0.907833
Jump Model	Intercept 3	-302.765943	52.579693	-5.758230	0.000003
Jump Model	Slope 1	0.103281	0.009177	11.254191	0.000000
Jump Model	Slope 2	0.001034	0.004381	0.235903	0.815166
Jump Model	Slope 3	0.151079	0.026111	5.786070	0.000003

- The statistic could not be calculated.

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	332.883900	332.883900	-0.167437		0.000000	0.000000	0.000000	
Jump Model	Intercept 2	-0.167437	-0.167437	0.000084		0.000000	0.000000	0.000000	
Jump Model	Intercept 3	0.000000	0.000000	0.000000		77.027807	-0.038452	0.000000	
Jump Model	Slope 1	0.000000	0.000000	0.000000		-0.038452	0.000019	0.000000	
Jump Model	Slope 2	0.000000	0.000000	0.000000		0.000000	0.000000	2764.624147	
Jump Model	Slope 3	0.000000	0.000000	0.000000		0.000000	0.000000	-1.372896	

Correlation Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	1.000000	-0.999998	0.000000		0.000000	0.000000	0.000000	

"opioid" / "black", Jump Model: 2 Joinpoints continued...

Correlation Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 2	-0.999998	1.000000	0.000000		0.000000	0.000000	0.000000	
Jump Model	Intercept 3	0.000000	0.000000	1.000000		-0.999998	0.000000	0.000000	
Jump Model	Slope 1	0.000000	0.000000	-0.999998		1.000000	0.000000	0.000000	
Jump Model	Slope 2	0.000000	0.000000	0.000000		0.000000	1.000000	-1.000000	
Jump Model	Slope 3	0.000000	0.000000	0.000000		0.000000	-1.000000	1.000000	

Estimated Joinpoints				
Cohort	**Joinpoint**	**Estimate**	**Lower CI**	**Upper CI**
Jump Model	1	1994	1992	1996
Jump Model	2	2011	2009	2013

Annual Percent Change (APC)								
Cohort	**Segment**	**Lower EndPoint**	**Upper Endpoint**	**APC**	**Lower CI**	**Upper CI**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	1	1979	1994	10.880^	8.819	12.981	11.254	0.000
Jump Model	2	1994	2011	0.103	-0.790	1.004	0.236	0.815
Jump Model	3	2011	2015	16.309^	10.261	22.689	5.786	0.000

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

- The statistic could not be calculated.

Average Annual Percent Change (AAPC)								
Cohort	**Range**	**Lower EndPoint**	**Upper Endpoint**	**AAPC**	**Lower CI**	**Upper CI**	**Test Statistic ***	**P-Value ***
Jump Model	Full Range	1979	2015	6.216^	5.134	7.310	11.538	0.000

^ Indicates that the AAPC is significantly different from zero at the alpha = 0.05 level. Parametric method used to calculate CIs.
* If the AAPC is within one segment, the t-distribution is used. Otherwise, the normal (z) distribution is used.

- The statistic could not be calculated.

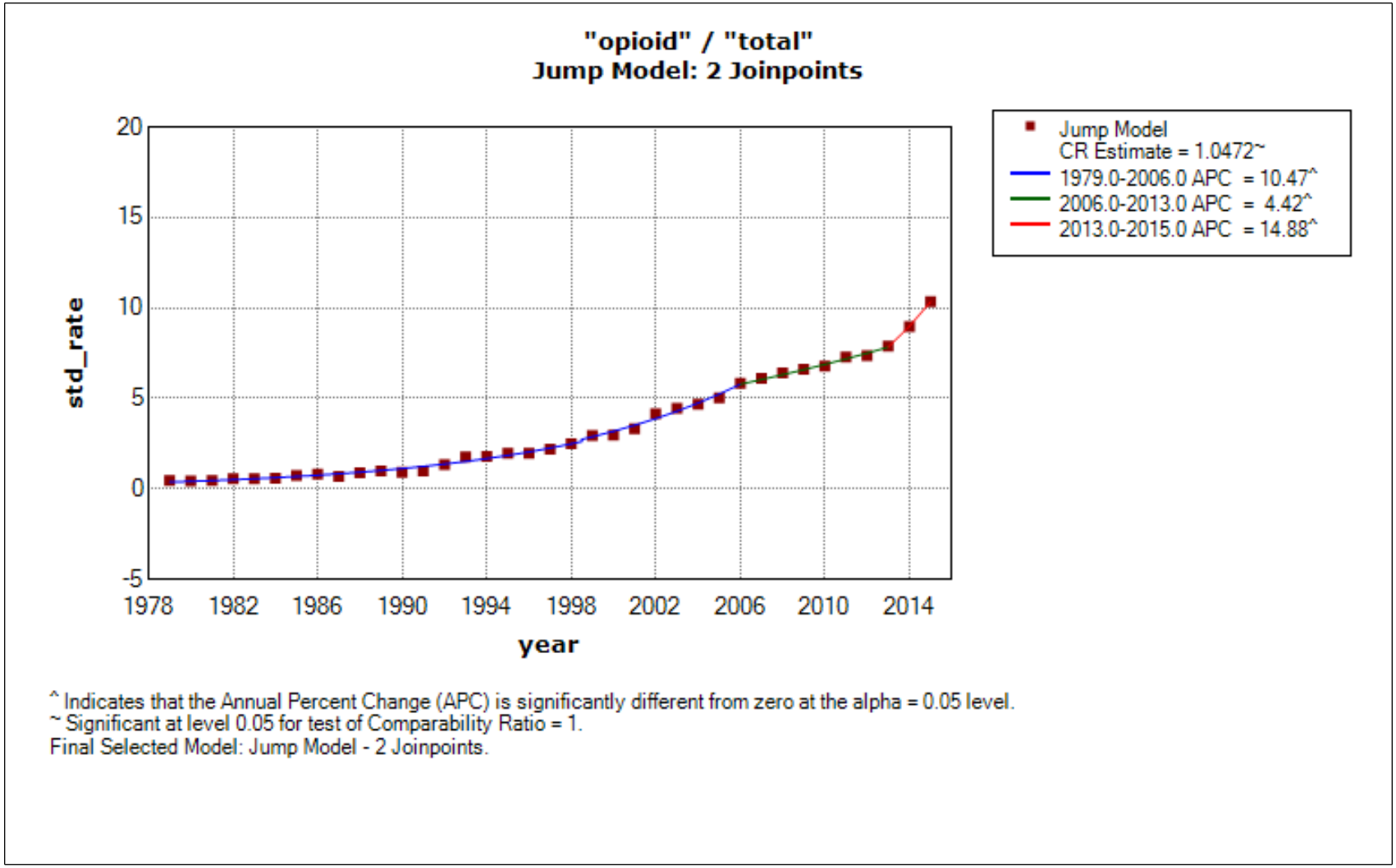
"opioid" / "black", Jump Model: 2 Joinpoints continued...

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#1	0 Joinpoint(s)	5 Joinpoint(s) *	10	25	10000	0.0001000	0.0100000
Jump Model	#2	1 Joinpoint(s)	5 Joinpoint(s) *	8	25	10000	0.0001000	0.0125000
Jump Model	#3	2 Joinpoint(s) *	5 Joinpoint(s)	6	25	10000	0.4262000	0.0166667
Jump Model	#4	2 Joinpoint(s) *	4 Joinpoint(s)	4	27	10000	0.6439000	0.0166667
Jump Model	#5	2 Joinpoint(s) *	3 Joinpoint(s)	2	29	10000	0.6625000	0.0166667
Final Selected Model: Jump Model - 2 Joinpoint(s)								

* Final Selected Model

~ Significance level for individual test

"opioid" / "total"
Jump Model: 2 Joinpoints



^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
~ Significant at level 0.05 for test of Comparability Ratio = 1.
Final Selected Model: Jump Model - 2 Joinpoints.

"opioid" / "total", Jump Model: 2 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1979	0.45593	0.01460	0.37593		10.46882^
1980	0.42643	0.01409	0.41529		10.46882^
1981	0.45958	0.01456	0.45876		10.46882^
1982	0.56734	0.01590	0.50679		10.46882^
1983	0.55075	0.01558	0.55985		10.46882^
1984	0.59644	0.01608	0.61846		10.46882^
1985	0.73857	0.01780	0.68320		10.46882^
1986	0.82411	0.01868	0.75472		10.46882^
1987	0.69936	0.01721	0.83373		10.46882^
1988	0.88028	0.01918	0.92102		10.46882^
1989	0.99788	0.02034	1.01744		10.46882^
1990	0.90655	0.01915	1.12395		10.46882^
1991	0.99572	0.01999	1.24161		10.46882^
1992	1.34521	0.02310	1.37160		10.46882^
1993	1.76252	0.02626	1.51519		10.46882^
1994	1.79642	0.02638	1.67381		10.46882^
1995	1.96053	0.02736	1.84904		10.46882^
1996	1.96613	0.02724	2.04261		10.46882^
1997	2.18640	0.02855	2.25644		10.46882^

"opioid" / "total", Jump Model: 2 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1998	2.49597	0.03038	2.49267		10.46882^
1999			2.61990		10.46882^
1999			2.74343	Jump Point	10.46882^
1999	2.94391	0.03283	2.88346		10.46882^
2000	2.97492	0.03247	3.18532		10.46882^
2001	3.32341	0.03413	3.51879		10.46882^
2002	4.13969	0.03796	3.88717		10.46882^
2003	4.45562	0.03924	4.29411		10.46882^
2004	4.68551	0.04006	4.74365		10.46882^
2005	5.02397	0.04129	5.24025		10.46882^
2006	5.84217	0.04435	5.78884	Joinpoint 1	
2007	6.11372	0.04524	6.04480		4.42148^
2008	6.40701	0.04617	6.31207		4.42148^
2009	6.62095	0.04682	6.59115		4.42148^
2010	6.79291	0.04736	6.88258		4.42148^
2011	7.29823	0.04903	7.18689		4.42148^
2012	7.36840	0.04917	7.50466		4.42148^
2013	7.88283	0.05067	7.83648	Joinpoint 2	
2014	8.98364	0.05407	9.00286		14.88404^

"opioid" / "total", Jump Model: 2 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
2015	10.35244	0.05802	10.34285		14.88404^

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Model Statistics							
Cohort	Number of Joinpoints	Number of Observations	Number of Parameters	Degrees of Freedom	Sum of Squared Errors	Mean Squared Error	Autocorrelation Parameter
Jump Model	2	37	6	31	712.53698	22.98506	Uncorrelated

Jump Model							
Cohort	Jump Location	Jump Value ~	SE	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|

~ Comparability Ratio = exp(Jump Value)

Comparability Ratio							
Cohort	Jump Location	Comparability Ratio ~ (CR)	Standard Error of CR	Lower CI	Upper CI	Test Statistic *	P-Value *

~ Ratio of dependent variable before jump to after jump. CR is input to Comparability Ratio model and estimated by Jump Model (Comparability Ratio = exp (Jump Value)).

* t-distribution and Prob > |t| used for Jump Model. Normal (z) distribution and Prob > |z| used for CR model.

Estimated Joinpoints				
Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	2006	2004	2008
Jump Model	2	2013	2011	2013

"opioid" / "total", Jump Model: 2 Joinpoints continued...

Estimated Regression Coefficients (Beta)					
Standard Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-198.013692	4.259850	-46.483727	0.000000
Jump Model	Slope 1	0.099563	0.002132	46.699344	0.000000
Jump Model	Slope 2 - Slope 1	-0.056298	0.008643	-6.513736	0.000000
Jump Model	Slope 3 - Slope 2	0.095488	0.041943	2.276617	0.030371

- The statistic could not be calculated.

General Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-198.013692	4.259850	-46.483727	0.000000
Jump Model	Intercept 2	-85.080198	16.832332	-5.054570	0.000022
Jump Model	Intercept 3	-277.297180	82.793458	-3.349264	0.002260
Jump Model	Slope 1	0.099563	0.002132	46.699344	0.000000
Jump Model	Slope 2	0.043265	0.008376	5.165467	0.000016
Jump Model	Slope 3	0.138753	0.041098	3.376148	0.002107

- The statistic could not be calculated.

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	18.146320	18.146320	-0.009082		0.000000	0.000000	0.000000	
Jump Model	Intercept 2	-0.009082	-0.009082	0.000005		0.000000	0.000000	0.000000	
Jump Model	Intercept 3	0.000000	0.000000	0.000000		283.327385	-0.140985	0.000000	
Jump Model	Slope 1	0.000000	0.000000	0.000000		-0.140985	0.000070	0.000000	
Jump Model	Slope 2	0.000000	0.000000	0.000000		0.000000	0.000000	6854.756720	
Jump Model	Slope 3	0.000000	0.000000	0.000000		0.000000	0.000000	-3.402648	

Correlation Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	1.000000	-0.999995	0.000000		0.000000	0.000000	0.000000	

"opioid" / "total", Jump Model: 2 Joinpoints continued...

Correlation Matrix

Cohort	Parameter	Intercept 1	Intercept 2	Intercept 3	Intercept 4	Slope 1	Slope 2	Slope 3	Slope 4
Jump Model	Intercept 2	-0.999995	1.000000	0.000000		0.000000	0.000000	0.000000	
Jump Model	Intercept 3	0.000000	0.000000	1.000000		-1.000000	0.000000	0.000000	
Jump Model	Slope 1	0.000000	0.000000	-1.000000		1.000000	0.000000	0.000000	
Jump Model	Slope 2	0.000000	0.000000	0.000000		0.000000	1.000000	-1.000000	
Jump Model	Slope 3	0.000000	0.000000	0.000000		0.000000	-1.000000	1.000000	

Estimated Joinpoints

Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	2006	2004	2008
Jump Model	2	2013	2011	2013

Annual Percent Change (APC)

Cohort	Segment	Lower EndPoint	Upper Endpoint	APC	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|
Jump Model	1	1979	2006	10.469^	9.988	10.952	46.699	0.000
Jump Model	2	2006	2013	4.421^	2.648	6.226	5.165	0.000
Jump Model	3	2013	2015	14.884^	5.622	24.958	3.376	0.002

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

- The statistic could not be calculated.

Average Annual Percent Change (AAPC)

Cohort	Range	Lower EndPoint	Upper Endpoint	AAPC	Lower CI	Upper CI	Test Statistic *	P-Value *
Jump Model	Full Range	1979	2015	9.504^	8.814	10.199	28.124	0.000

^ Indicates that the AAPC is significantly different from zero at the alpha = 0.05 level. Parametric method used to calculate CIs.
* If the AAPC is within one segment, the t-distribution is used. Otherwise, the normal (z) distribution is used.

- The statistic could not be calculated.

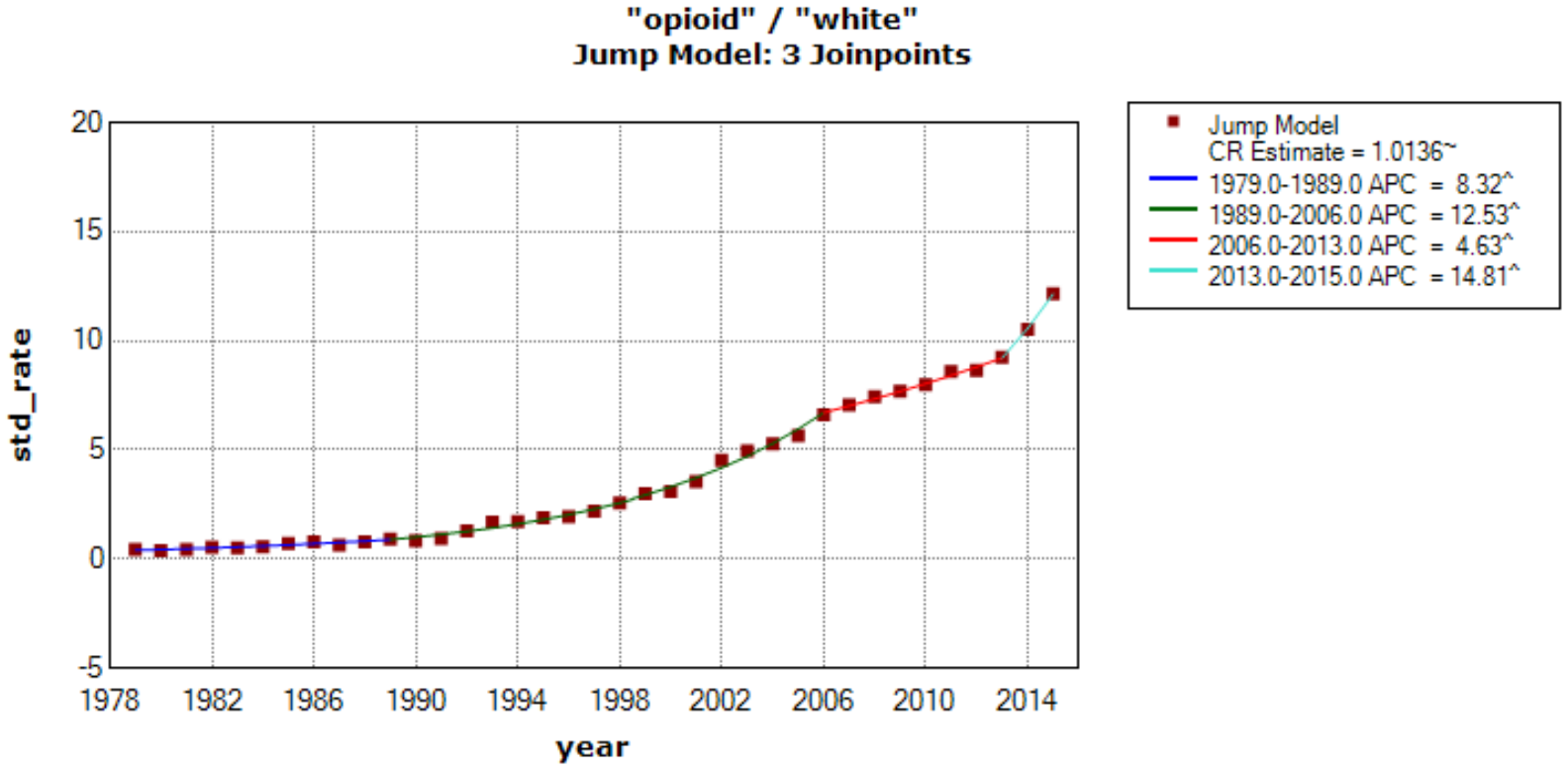
"opioid" / "total", Jump Model: 2 Joinpoints continued...

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#1	0 Joinpoint(s)	5 Joinpoint(s) *	10	25	10000	0.0001000	0.0100000
Jump Model	#2	1 Joinpoint(s)	5 Joinpoint(s) *	8	25	10000	0.0004000	0.0125000
Jump Model	#3	2 Joinpoint(s) *	5 Joinpoint(s)	6	25	10000	0.0367000	0.0166667
Jump Model	#4	2 Joinpoint(s) *	4 Joinpoint(s)	4	27	10000	0.0763000	0.0166667
Jump Model	#5	2 Joinpoint(s) *	3 Joinpoint(s)	2	29	10000	0.4261000	0.0166667
Final Selected Model: Jump Model - 2 Joinpoint(s)								

* Final Selected Model

~ Significance level for individual test

"opioid" / "white"
Jump Model: 3 Joinpoints



^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.
~ Significant at level 0.05 for test of Comparability Ratio = 1.
Final Selected Model: Jump Model - 3 Joinpoints.

"opioid" / "white", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1979	0.44008	0.01532	0.40023		8.32320^
1980	0.39744	0.01454	0.43355		8.32320^
1981	0.43468	0.01511	0.46963		8.32320^
1982	0.52596	0.01638	0.50872		8.32320^
1983	0.52330	0.01624	0.55106		8.32320^
1984	0.56502	0.01678	0.59693		8.32320^
1985	0.71289	0.01877	0.64661		8.32320^
1986	0.79446	0.01975	0.70043		8.32320^
1987	0.64725	0.01780	0.75873		8.32320^
1988	0.79832	0.01970	0.82188		8.32320^
1989	0.91177	0.02103	0.89028	Joinpoint 1	
1990	0.84872	0.02006	1.00180		12.52562^
1991	0.93488	0.02097	1.12728		12.52562^
1992	1.28901	0.02455	1.26848		12.52562^
1993	1.69095	0.02800	1.42736		12.52562^
1994	1.71163	0.02805	1.60615		12.52562^
1995	1.88016	0.02924	1.80733		12.52562^
1996	1.95227	0.02969	2.03371		12.52562^
1997	2.20044	0.03142	2.28844		12.52562^

"opioid" / "white", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points

X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
1998	2.56444	0.03384	2.57508		12.52562^
1999			2.73160		12.52562^
1999			2.76874	Jump Point	12.52562^
1999	3.00772	0.03654	2.93703		12.52562^
2000	3.10459	0.03679	3.30491		12.52562^
2001	3.55662	0.03925	3.71887		12.52562^
2002	4.51861	0.04418	4.18468		12.52562^
2003	4.94388	0.04616	4.70884		12.52562^
2004	5.27808	0.04760	5.29865		12.52562^
2005	5.66381	0.04919	5.96234		12.52562^
2006	6.60067	0.05303	6.70916	Joinpoint 2	
2007	7.05551	0.05479	7.01990		4.63164^
2008	7.44834	0.05627	7.34504		4.63164^
2009	7.68840	0.05713	7.68523		4.63164^
2010	7.99604	0.05835	8.04118		4.63164^
2011	8.58749	0.06053	8.41362		4.63164^
2012	8.64186	0.06072	8.80331		4.63164^
2013	9.24048	0.06270	9.21105	Joinpoint 3	
2014	10.51858	0.06700	10.57565		14.81480^

"opioid" / "white", Jump Model: 3 Joinpoints continued...

Observed and Modeled Data Points					
X Value	Observed Y Value	Standard Error	Modeleded Y Value	JP Location	APC
2015	12.17096	0.07224	12.14241		14.81480^

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

Model Statistics							
Cohort	Number of Joinpoints	Number of Observations	Number of Parameters	Degrees of Freedom	Sum of Squared Errors	Mean Squared Error	Autocorrelation Parameter
Jump Model	3	37	8	29	558.31750	19.25233	Uncorrelated

Jump Model							
Cohort	Jump Location	Jump Value ~	SE	Lower CI	Upper CI	Test Statistic (t)	Prob > |t|

~ Comparability Ratio = exp(Jump Value)

Comparability Ratio							
Cohort	Jump Location	Comparability Ratio ~ (CR)	Standard Error of CR	Lower CI	Upper CI	Test Statistic *	P-Value *

~ Ratio of dependent variable before jump to after jump. CR is input to Comparability Ratio model and estimated by Jump Model (Comparability Ratio = exp (Jump Value)).

* t-distribution and Prob > |t| used for Jump Model. Normal (z) distribution and Prob > |z| used for CR model.

Estimated Joinpoints				
Cohort	Joinpoint	Estimate	Lower CI	Upper CI
Jump Model	1	1989	1981	2007
Jump Model	2	2006	2004	2010
Jump Model	3	2013	2011	2013

"opioid" / "white", Jump Model: 3 Joinpoints continued...

Estimated Regression Coefficients (Beta)					
Standard Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-159.135028	30.265741	-5.257926	0.000017
Jump Model	Slope 1	0.079949	0.015253	5.241455	0.000018
Jump Model	Slope 2 - Slope 1	0.038062	0.015642	2.433274	0.022145
Jump Model	Slope 3 - Slope 2	-0.072735	0.008801	-8.264068	0.000000
Jump Model	Slope 4 - Slope 3	0.092874	0.040811	2.275719	0.031341

- The statistic could not be calculated.

General Parameterization					
Cohort	**Parameter**	**Param Estimate**	**Standard Error**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	Intercept 1	-159.135028	30.265741	-5.257926	0.000017
Jump Model	Intercept 2	-234.839518	6.932653	-33.874408	0.000000
Jump Model	Intercept 3	-88.933246	16.257901	-5.470155	0.000010
Jump Model	Intercept 4	-275.889496	80.583737	-3.423637	0.002058
Jump Model	Slope 1	0.079949	0.015253	5.241455	0.000018
Jump Model	Slope 2	0.118011	0.003466	34.045356	0.000000
Jump Model	Slope 3	0.045276	0.008090	5.596489	0.000007
Jump Model	Slope 4	0.138150	0.040001	3.453656	0.001908

- The statistic could not be calculated.

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	916.015070	916.015070	-0.461650	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-0.461650	-0.461650	0.000233	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	0.000000	48.061679	-0.024030	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	0.000000	-0.024030	0.000012	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	0.000000	264.319352	-0.131527	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	0.000000	-0.131527	0.000065	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6493.738703

"opioid" / "white", Jump Model: 3 Joinpoints continued...

Covariance Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-3.223442

Correlation Matrix									
Cohort	**Parameter**	**Intercept 1**	**Intercept 2**	**Intercept 3**	**Intercept 4**	**Slope 1**	**Slope 2**	**Slope 3**	**Slope 4**
Jump Model	Intercept 1	1.000000	-0.999999	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 2	-0.999999	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 3	0.000000	0.000000	1.000000	-0.999998	0.000000	0.000000	0.000000	0.000000
Jump Model	Intercept 4	0.000000	0.000000	-0.999998	1.000000	0.000000	0.000000	0.000000	0.000000
Jump Model	Slope 1	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000	0.000000	0.000000
Jump Model	Slope 2	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000	0.000000	0.000000
Jump Model	Slope 3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-1.000000
Jump Model	Slope 4	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-1.000000	1.000000

Estimated Joinpoints				
Cohort	**Joinpoint**	**Estimate**	**Lower CI**	**Upper CI**
Jump Model	1	1989	1981	2007
Jump Model	2	2006	2004	2010
Jump Model	3	2013	2011	2013

Annual Percent Change (APC)								
Cohort	**Segment**	**Lower EndPoint**	**Upper Endpoint**	**APC**	**Lower CI**	**Upper CI**	**Test Statistic (t)**	**Prob > |t|**
Jump Model	1	1979	1989	8.323^	4.980	11.773	5.241	0.000
Jump Model	2	1989	2006	12.526^	11.727	13.330	34.045	0.000
Jump Model	3	2006	2013	4.632^	2.906	6.386	5.596	0.000
Jump Model	4	2013	2015	14.815^	5.752	24.654	3.454	0.002

^ Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level.

- The statistic could not be calculated.

"opioid" / "white", Jump Model: 3 Joinpoints continued...

Average Annual Percent Change (AAPC)								
Cohort	**Range**	**Lower EndPoint**	**Upper Endpoint**	**AAPC**	**Lower CI**	**Upper CI**	**Test Statistic ***	**P-Value ***
Jump Model	Full Range	1979	2015	9.901^	8.767	11.048	17.828	0.000

^ Indicates that the AAPC is significantly different from zero at the alpha = 0.05 level. Parametric method used to calculate CIs.
* If the AAPC is within one segment, the t-distribution is used. Otherwise, the normal (z) distribution is used.

- The statistic could not be calculated.

Test for Number of Joinpoints								
Cohort	**Test Number**	**Null Hypothesis**	**Alternate Hypothesis**	**Number Degrees of Freedom**	**Denominator Degrees of Freedom**	**Number of Permutations**	**P-Value**	**Significance Level ~**
Jump Model	#1	0 Joinpoint(s)	5 Joinpoint(s) *	10	25	10000	0.0001000	0.0100000
Jump Model	#2	1 Joinpoint(s)	5 Joinpoint(s) *	8	25	10000	0.0002000	0.0125000
Jump Model	#3	2 Joinpoint(s)	5 Joinpoint(s) *	6	25	10000	0.0085000	0.0166667
Jump Model	#4	3 Joinpoint(s) *	5 Joinpoint(s)	4	25	10000	0.0739000	0.0250000
Jump Model	#5	3 Joinpoint(s) *	4 Joinpoint(s)	2	27	10000	0.1210000	0.0250000
Final Selected Model: Jump Model - 3 Joinpoint(s)								

* Final Selected Model

~ Significance level for individual test