

## Supplementary Information

Table S1

*Average Residuals between the ORIs and the Actual Rates (Across All Counties; Standard Deviations in Parentheses.).*

Based on Rank Position of the Raw Rates		Years of ORIs				
STIs	Years of Model	2009	2010	2011	2012	2013
Chlamydia	2013					0.00 (609.88)
	2012				0.00 (588.00)	0.00 (598.58)
	2011			0.00 (643.06)	0.00 (605.04)	0.00 (640.53)
	2010		0.00 (693.89)	0.00 (686.91)	0.00 (623.24)	0.00 (681.52)
	2009	0.00 (638.64)	0.00 (694.28)	0.00 (712.26)	0.00 (641.30)	0.00 (680.68)
Gonorrhea	2013					0.00 (449.52)
	2012				0.00 (436.00)	0.00 (464.41)
	2011			0.00 (457.04)	0.00 (480.81)	0.00 (523.25)
	2010		0.00 (494.91)	0.00 (557.96)	0.00 (470.88)	0.00 (514.88)
	2009	0.00 (445.68)	0.00 (478.39)	0.00 (566.03)	0.00 (473.23)	0.00 (509.65)
HIV	2013					0.00 (156.09)
	2012				0.00 (159)	0.00 (172.21)
	2011			0 (193.31)	0.00 (240.86)	0.00 (273.72)
	2010		0 (171.20)	0 (230.86)	0.00 (173.85)	0.00 (173.11)
	2009	0 (180.33)	0 (182.72)	0 (241.83)	0.00 (176.76)	0.00 (176.80)
Based on Log-Transformed Values						
Chlamydia	2013					0.00 (0.46)
	2012				0.00 (0.46)	-0.01 (0.46)
	2011			0.01 (0.54)	-0.13 (0.48)	-0.16 (0.48)
	2010		0.00 (0.62)	0.04 (0.57)	0.07 (0.49)	0.04 (0.49)
	2009	0.01 (0.62)	0.04 (0.62)	0.12 (0.58)	0.13 (0.49)	0.14 (0.49)
Gonorrhea	2013					0.00 (0.69)
	2012				0 (0.74)	0.05 (0.71)
	2011			0.01 (0.82)	-0.21 (0.79)	-0.2 (0.77)
	2010		0.01 (0.92)	-0.19 (0.94)	-0.05 (0.79)	-0.03 (0.76)

	2009	0.00 (0.90)	0.01 (0.90)	-0.26 (0.95)	-0.14 (0.79)	-0.08 (0.76)
HIV	2013					0.02 (0.53)
	2012				0.03 (0.57)	0.07 (0.64)
	2011			0.03 (0.66)	-0.15 (0.76)	-0.15 (0.80)
	2010		-0.01 (0.58)	-0.22 (0.71)	-0.15 (0.61)	-0.10 (0.58)
	2009	0.01 (0.65)	-0.05 (0.61)	-0.38 (0.77)	-0.14 (0.61)	-0.09 (0.59)

*Note.* Residuals = rank of the actual rates – rank of the back-transformed ORIs (top panel) and residuals = log-transformed actual rates – ORIs on the log-scale (bottom panel).