Simulating Four Possible Policy Reversals and How They Might Affect the Nation's Health

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December 2016 (revised January 2017)

Much has been said and written about the various possible consequences of change under a new Administration, based on positions taken by Mr. Trump and his cabinet appointments. The Trump campaign promised us a return to the past, and a major break in policy does seem likely in a number of areas—including areas that could affect the nation's health and well-being.

The ReThink Health Dynamics Model ("the model") is a simulation tool that has been used previously for analyzing initiatives that could improve health system performance, but can also be used to look at what might happen if trends started to move in the opposite direction. Here I use a version of the model representing the entire US population. I have reviewed published commentary and analysis from the past several months and identified four areas of possible reversal that can be simulated within the model, as follows:

1. Health Insurance: It is likely that, over the next few years, the Affordable Care Act (ACA) will be dismantled in whole or in part, and millions will lose insurance eligibility (Chait 2016, Pear et al. 2016, Waldman 2016).

2. Economy: Trade restrictions, mass deportation of undocumented immigrants, deregulation of the financial sector, and ballooning deficits and interest rates may hamper economic growth and potentially lead to a lengthy recession extending into the 2020s (Thompson 2016, White 2016, Zandi et al. 2016).

3. Environment: Climate change aside, the quality of our air and water may be threatened in the next several years by hindrance of EPA regulatory enforcement, abandonment of the Clean Power Plan, and support of fracking and coal rather than clean energy (Koronowski 2016, Varinsky 2016).

4. Crime: A "tough on crime" approach—including stop-and-frisk tactics, encouragement of police gun use, and abandonment of proven community policing methods—could backfire, raising tensions and fear within minority communities and eroding their critical

support in reporting and mitigating crime ([Lopez 2016](#), [Mast 2016](#)). Also, implicit tolerance of hate crimes may lead to their rapid growth ([Okeowo 2016](#)).

I created scenarios in the model based on these four areas of reversal, resulting in adverse changes relative to the base run in four different population percentages; see Table 1. In each reversal scenario, it is assumed that the new policy approach remains in place for 12 years starting January 2017, ramping up initially over a period of three years, and then remaining in place through the end of the simulation in January 2029. The 3-year ramp seems a reasonable approximation for major policy changes that take time to be fully formulated, reviewed, enacted, and implemented. The specific scenario assumptions and their main impacts on the corresponding population percentages are as follows:

a. "ACA repeal": By 2020, [insurance eligibility fractions for economically advantaged and disadvantaged subpopulations](#) are assumed to be back to where they were prior to implementation of the ACA. Consequently, by 2021, the overall uninsured percentage is at 14.8% compared with the base run's 7.7%; and by 2029, it has risen to 16.6% compared with the base run's 8.1%.

b. "Economy worse": By 2020, [economic factors affecting the disadvantaged percentage](#) are assumed to be back to where they were at the depth of the Great Recession in 2010. By 2021, the disadvantaged percentage is at 35.8% compared with the base run's 32.5%; and by 2029, it has risen to 37.2% compared with the base run's 33.4%.

c. "Environment worse": By 2020, the [prevalence fractions of toxic environment for advantaged and disadvantaged subpopulations](#) are assumed to be back up to where they were in 2000. This represents significant backsliding but not all the way back to the even higher pollution rates seen prior to passage of the [Clean Air Act Amendments of 1977 and 1990](#) and the [Clean Water Act of 1972 and its subsequent strengthening](#). By 2021, the overall toxic environment percentage is at 23.0% compared with the base run's 12.0%.

d. "Crime worse": By 2020, the [prevalence fractions of high crime for advantaged and disadvantaged subpopulations](#) are assumed to be back up to where they were in 2000. This represents significant backsliding but not all the way back to the [even higher](#)

criminal victimization rates of the early 1990s, or the late 1970s. By 2021, the overall high crime area percentage is at 33.9% compared with the base run's 19.6%.

e. "All 4 worse": The assumptions of the four reversal scenarios are combined.

These adverse changes in insurance, disadvantage, environment, and crime wend their way through the model's dynamic structure influencing mortality, morbidity, worker productivity, and healthcare costs. Table 2 shows simulated cumulative impacts relative to the base run (starting January 2017) for January 2021, January 2025, and January 2029. A summary of these results is as follows:

a. Deaths: Each of the four individual reversal scenarios causes an increase in mortality relative to the base run, with economic recession being the most harmful, but with worsened crime and environment also increasing deaths substantially.[1] Through January 2029, the combined reversal scenario *increases deaths by 988,000, or 2.7%*, relative to the base run.

b. Person-years of severe chronic illness: The ACA repeal and economic recession scenarios cause substantial increases in morbidity, because they reduce access to quality health care. In contrast, worsened environment and worsened crime have little net effect on morbidity, because they do at least as much to increase premature death—and thus to eliminate extended years of illness—as they do to cause additional illness. Through January 2029, the combined reversal scenario *increases person-years of severe chronic illness by 19.1 million, or 3.7%*, relative to the base run.

c. Productive value: All four individual reversal scenarios cause reduction in the productive value of the workforce, with economic recession being by far the most harmful. Through

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[1] The ACA repeal scenario leads to a relatively modest increase of deaths through January 2029 (72,000, or 0.2%), despite the fact that it significantly increases person-years of chronic illness (4.55 million, or 0.9%). The more than 20 million people who lose insurance under this scenario are all under 65 years of age, and although they are becoming sicker through the 2020s, most are not yet sick enough to die. From 2025 to 2029, the loss of insurance results in an average 13,000 more deaths per year. This number is comparable to an Urban Institute estimate of 27,000 excess deaths from uninsurance in 2006, pre-ACA, when about 40 million Americans were uninsured. If 20 million of those 40 million became uninsured again, this estimate would suggest 13,500 excess deaths per year.

January 2029, the combined reversal scenario ***reduces productive value by nearly \$3.2 trillion, or 3.9%***, relative to the base run.

d. Healthcare costs: The ACA repeal and economic recession scenarios both lead to more limited access to routine preventive and chronic care. This reduces cost on net, even though it leaves people in poorer health and leads to more urgent visits. The worsened environment and crime scenarios, in contrast, cause more urgent visits without any reduction in routine health care utilization, and so they generate some increase in costs. Through January 2029, the combined reversal scenario ***reduces healthcare costs by \$369 billion, or 1.0%, relative to the base run, but does so only because it reduces access to needed preventive and chronic care***.

The simulation results presented here suggest that certain possible policy reversals under a President Trump would likely hurt many people—inhibiting access to health care, increasing mortality and morbidity, and reducing worker productivity. The exact outcomes are not certain, of course, because of inevitable uncertainties about the magnitude and timing of policy changes. But the purpose here was to quantify what plausibly might happen, not to make a prediction. Moreover, this was not a sweeping analysis of all health-related policy—for example, it did not touch upon pharmaceutical drug pricing—and it is not to deny that perhaps some of Mr. Trump's policies could be helpful. It was rather meant to focus attention on particular ways in which past gains could be eroded, and to quantify the likely impact of those reversals by using a simulation model well suited for such analysis. One would hope that simulation results like these might cause our government's leaders to rethink their policy approaches so that the adverse scenarios do not in fact come to pass.

Table 1. Simulated Impacts of Policy Reversals on 4 Corresponding Population Percentages

	2000	2010	2017	2021	2025	2029
			Uninsured %			
Base	11.8%	15.2%	11.6%	7.7%	7.9%	8.1%
ACA repeal				**14.8%**	**16.0%**	**16.6%**
Economy worse				8.2%	8.4%	8.7%
Environment worse				7.8%	7.9%	8.2%
Crime worse				7.8%	7.9%	8.2%
All 4 worse				15.7%	17.3%	18.1%
			Disadvantaged %			
Base	29.6%	33.9%	33.4%	32.5%	32.9%	33.4%
ACA repeal				32.6%	33.0%	33.6%
Economy worse				**35.8%**	**36.6%**	**37.2%**
Environment worse				32.6%	32.9%	33.4%
Crime worse				32.6%	33.0%	33.5%
All 4 worse				35.9%	36.9%	37.6%
			Toxic Environment %			
Base	22.9%	11.0%	12.0%	12.0%	12.0%	12.0%
ACA repeal				12.0%	12.0%	12.0%
Economy worse				12.1%	12.1%	12.1%
Environment worse				**23.0%**	**23.0%**	**23.0%**
Crime worse				12.0%	12.0%	12.0%
All 4 worse				23.1%	23.1%	23.1%
			High Crime Area %			
Base	33.6%	24.4%	19.7%	19.6%	19.6%	19.7%
ACA repeal				19.6%	19.6%	19.7%
Economy worse				20.0%	20.1%	20.2%
Environment worse				19.6%	19.6%	19.7%
Crime worse				**33.9%**	**34.0%**	**34.0%**
All 4 worse				34.3%	34.4%	34.5%

Table 2. Simulated Impacts of Policy Reversals on 4 Cumulative Health-Related Metrics

	VALUE			CHANGE VS BASE			% CHANGE VS BASE		
	2021	**2025**	**2029**	**2021**	**2025**	**2029**	**2021**	**2025**	**2029**
Deaths (Thou.)									
Base	11,490	23,910	37,246						
ACA repeal	11,492	23,930	37,319	1	20	72	0.0%	0.1%	0.2%
Economy worse	11,531	24,090	37,606	40	180	360	0.4%	0.8%	1.0%
Environment worse	11,539	24,051	37,502	49	141	255	0.4%	0.6%	0.7%
Crime worse	11,551	24,076	37,534	60	166	288	0.5%	0.7%	0.8%
All 4 worse	11,643	24,424	38,235	153	514	988	1.3%	2.1%	2.7%
Years of severe chronic illness (Thou.)									
Base	163,880	335,318	515,555						
ACA repeal	164,004	336,754	520,107	124	1,436	4,552	0.1%	0.4%	0.9%
Economy worse	165,812	343,056	529,978	1,932	7,738	14,423	1.2%	2.3%	2.8%
Environment worse	163,850	335,247	515,601	-30	-71	46	0.0%	0.0%	0.0%
Crime worse	163,835	335,149	515,378	-45	-169	-177	0.0%	-0.1%	0.0%
All 4 worse	165,888	344,376	534,665	2,008	9,058	19,110	1.2%	2.7%	3.7%
Productive value ($Bill.)									
Base	26,771	54,219	82,169						
ACA repeal	26,765	54,180	82,065	-5	-39	-104	0.0%	-0.1%	-0.1%
Economy worse	26,338	52,597	79,244	-433	-1,623	-2,925	-1.6%	-3.0%	-3.6%
Environment worse	26,768	54,204	82,132	-3	-16	-37	0.0%	0.0%	0.0%
Crime worse	26,767	54,193	82,104	-4	-26	-65	0.0%	0.0%	-0.1%
All 4 worse	26,325	52,502	78,997	-445	-1,718	-3,172	-1.7%	-3.2%	-3.9%
Healthcare costs ($Bill.)									
Base	10,646	22,470	35,557						
ACA repeal	10,579	22,261	35,194	-67	-209	-363	-0.6%	-0.9%	-1.0%
Economy worse	10,615	22,372	35,378	-32	-98	-178	-0.3%	-0.4%	-0.5%
Environment worse	10,668	22,531	35,661	22	61	104	0.2%	0.3%	0.3%
Crime worse	10,677	22,564	35,728	31	94	171	0.3%	0.4%	0.5%
All 4 worse	10,592	22,267	35,188	-55	-203	-369	-0.5%	-0.9%	-1.0%