

THE COVID-19 EPIDEMIC CURVE FOR COLORADO AND DENVER

Prepared by the COVID-19 Modeling Group

Colorado Department of Public Health and Environment: Kristen Marshall; Colorado School of Public Health: Andrea Buchwald, Elizabeth Carlton, Debashis Ghosh, Richard Lindrooth, Jonathan Samet; Tatiane Santos; University of Colorado School of Medicine: Kathryn Colborn

(March 24, 2020 - updated 3/26/2020 to include no SD)

For Contact: Jon.Samet@CUAnschutz.edu

Table showing estimated timing of the peak number of infections and peak number of hospitalizations as well as the cumulative number of deaths, non-ICU and ICU hospitalizations. Model assumes social distancing begins March 17 **and remains in place indefinitely**. Estimates are generated for $R_0 = 3$ and $R_0 = 4$.

	Peak Infections		Peak non-ICU hospitalizations***		Peak ICU hospitalizations		Cumulative deaths**		Cumulative non-ICU hospitalizations		Cumulative ICU bed need***	
	Num.*	Date	Num.*	Date	Num*	Date	As of 6/1/2020	As of 1/1/2021	As of 6/1/2020	As of 1/1/2021	As of 6/1/2020	As of 1/1/2021
RO = 3												
0% SD	705,298	5/20/2020	44,139	5/27/2020	11,551	6/2/2020	22,941	33,759	185,875	255,409	37,594	67,518
40% SD	283,962	7/8/2020	19,040	7/16/2020	5,632	7/24/2020	1,578	26,324	23,714	199,455	4,713	52,687
50% SD	154,202	8/16/2020	10,518	8/23/2020	3,259	9/2/2020	758	20,460	9,949	157,517	2,073	41,280
60% SD	39,114	11/19/2020	2,703	11/27/2020	878	12/8/2020	379	6,639	4,216	56,669	937	14,129
RO = 4												
0% SD	933,281	4/18/2020	55,811	4/25/2020	13,812	4/30/2020	33,283	35,169	263,069	266,076	63,884	70,338
40% SD	530,045	5/3/2020	34,243	5/10/2020	9,396	5/17/2020	26,013	31,631	209,120	239,312	47,192	63,263
50% SD	384,088	5/11/2020	25,400	5/19/2020	7,279	5/26/2020	19,880	28,824	162,719	218,083	35,847	57,650
60% SD	222,249	5/23/2020	15,039	5/31/2020	4,548	6/9/2020	11,514	23,621	99,427	178,798	21,833	47,254

*Number of infections and non-ICU hospitalizations at the peak date indicated.

**We assume 50% of cases in the ICU die which is consistent with Ferguson et al and roughly the mortality of ARDs cases, generally. Additionally, we assume that once available ICU beds are full, all cases requiring ICU in excess of availability result in deaths. Cumulative death estimate assumes the number of available beds in the ICU is 709 which is 50% of current total ICU beds until 4/21/2020. We assume there are 1,709 available beds 4/22 (corresponding with an addition of 1,000 beds) and 4,291 available beds as of 6/21/2020 (5000 total available beds).

***Peak and cumulative ICU hospitalizations is the estimated number of needed ICU beds. These may be in excess of capacity at peak times.