

A decorative background featuring a network diagram with nodes and lines. The nodes are represented by circles of varying sizes and colors (blue, grey, white), connected by thin grey lines. Some nodes are highlighted with a blue outline. The network is spread across the top, bottom, and sides of the slide.

Relationship Between Excess Deaths and Other Variables During the Early Stages of the COVID-19 Pandemic


Update #2



Aim

To understand which variables describing community characteristics (infrastructure, health care system, built environment) elucidate COVID-19 excess deaths

Through multilevel modeling

- Counties, metropolitan statistical areas (MSA)
 - Counties, states
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Variables of Interest

Health System	Uninsured adults Primary care physicians
Built Environment	Prop of greenery Prop of crosswalks Prop of single lane roads
Infrastructure	Broadband access Home ownership

Refining Variables

	Variable	VIF
10	excess_deaths	1.839492
8	primary_phys	6.571918
1	prop_crosswalk	7.982240
4	prop_sidewalk	9.263479
2	prop_not_single_family_house	9.638809
7	uninsured_adults	9.664127
5	prop_dilapidated_building	12.146883
3	prop_single_lane	74.734673
9	home_ownership	102.542790
6	broadband	114.353898
0	prop_green	171.289530

	Variable	VIF
0	excess_deaths	1.727730
7	HIV_prev	2.695113
5	mental_hlth	3.383972
2	prop_not_single_family_house	3.793891
1	prop_crosswalk	4.050008
4	primary_phys	5.551803
3	uninsured_adults	6.469558
6	prevent_hosp_stay	6.547296

Selected Variables

Healthcare	Uninsured adults Primary care physicians Mental health providers Preventable hospital stays HIV prevalence
Built Environment	Prop of crosswalks Prop of areas not composed of single family houses

Fixed Effect Multilevel Model @ County Level

		0	1
0	prop_crosswalk	64993.972619	
1	prop_not_single_family_house	-888.686696	
2	uninsured_adults	-771.544531	
3	primary_phys	10640.128086	
4	mental_hlth	7335.507364	
5	prevent_hosp_stay	0.068350	
6	HIV_prev	0.071435	
7	Lancaster	36.112764	
8	Sierra	253.770646	
9	Clay	111.276379	
10	Stone	341.835364	
11	Jasper	213.668390	
12	Henry	1.847737	
13	Saguache	930.622816	



Next Steps

- ◎ Continue revising current model
 - ◎ Models for county, MSA and county, state
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