



DATA NOTE

# Dataset: percent of population covered by local government mask orders in the US [version 1; peer review: 2 approved]

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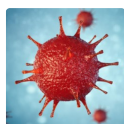
**Abstract**

We present a dataset covering the extent of local mask orders between April and August 2020, in states which did not have statewide orders (and hence 100% coverage). We obtained data from national and regional newspaper and broadcaster web-based articles, and city and county web pages. The information that we abstracted included: city or county of ordinance, date that the ordinance took effect, and the population of the city or county. In 14 states, city or county governments issued mask-wearing orders, and from our dataset it can be seen that the median population covered in the states was 37.5%; the coverage ranged from 1.6% (New Hampshire) to 77.1% (Arizona). The dataset can be accessed from:

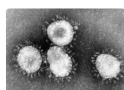
<https://doi.org/10.7939/DVN/A9C1UU>

**Keywords**

COVID-19, Mask orders, Local government, Cities, Counties



This article is included in the [Disease Outbreaks](#) gateway.



This article is included in the [Coronavirus](#) collection.

**Open Peer Review**

Reviewer Status  

Invited Reviewers

1 2

<b>version 1</b>		
22 Oct 2020	report	report

1. **Mayvis Rebeira**, University of Toronto, Toronto, Canada
2. **Jonathan Harris**, National Association of Counties, Washington, USA

Any reports and responses or comments on the article can be found at the end of the article.

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**Author roles:** **Jacobs P:** Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Resources, Software, Supervision, Validation, Visualization, Writing – Original Draft Preparation, Writing – Review & Editing; **Ohinmaa A:** Data Curation, Formal Analysis, Methodology, Visualization, Writing – Original Draft Preparation, Writing – Review & Editing

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### Introduction

By August 9, 2020, governors in 35 US states had issued statewide mandates for persons to wear COVID-19 protective face masks<sup>1</sup>. These mandates ensured that the entire state populations were covered, although population adherences to the mandates were not complete<sup>1</sup>. In 15 of the remaining 16 states, until September 9, some local governments (county or municipal) had also issued mandates for persons to wear masks. Mask wearing in public has become a bulwark against COVID-19, and it is desirable to determine the population proportions in the states that are only covered by local ordinances. We present a dataset that provides this information.

### Methods

Starting with the 14 states with only local mandates (see Figure 1), we searched for lists of counties and towns or cities that introduced mask orders effective September 9 or earlier. We conducted a Google search for each state with the combined

terms “State name” (e.g., Florida), “COVID-19”, “mask” or “face mask”, and “county order” or “city order;” Usually, we found at least one article with a mention of counties or cities with face masks. In some states the list was large; in those states we searched for internet articles with complete lists; we found lists for Arizona<sup>a</sup>, Florida<sup>b</sup>, South Carolina<sup>c</sup>, Tennessee<sup>d</sup>, and Wisconsin<sup>e</sup>. We then searched Google for newspaper or broadcast sites that

<sup>a</sup> Source: <https://floridapolitics.com/archives/342364-beyond-the-veil-what-face-mask-requirements-are-in-place-in-florida>

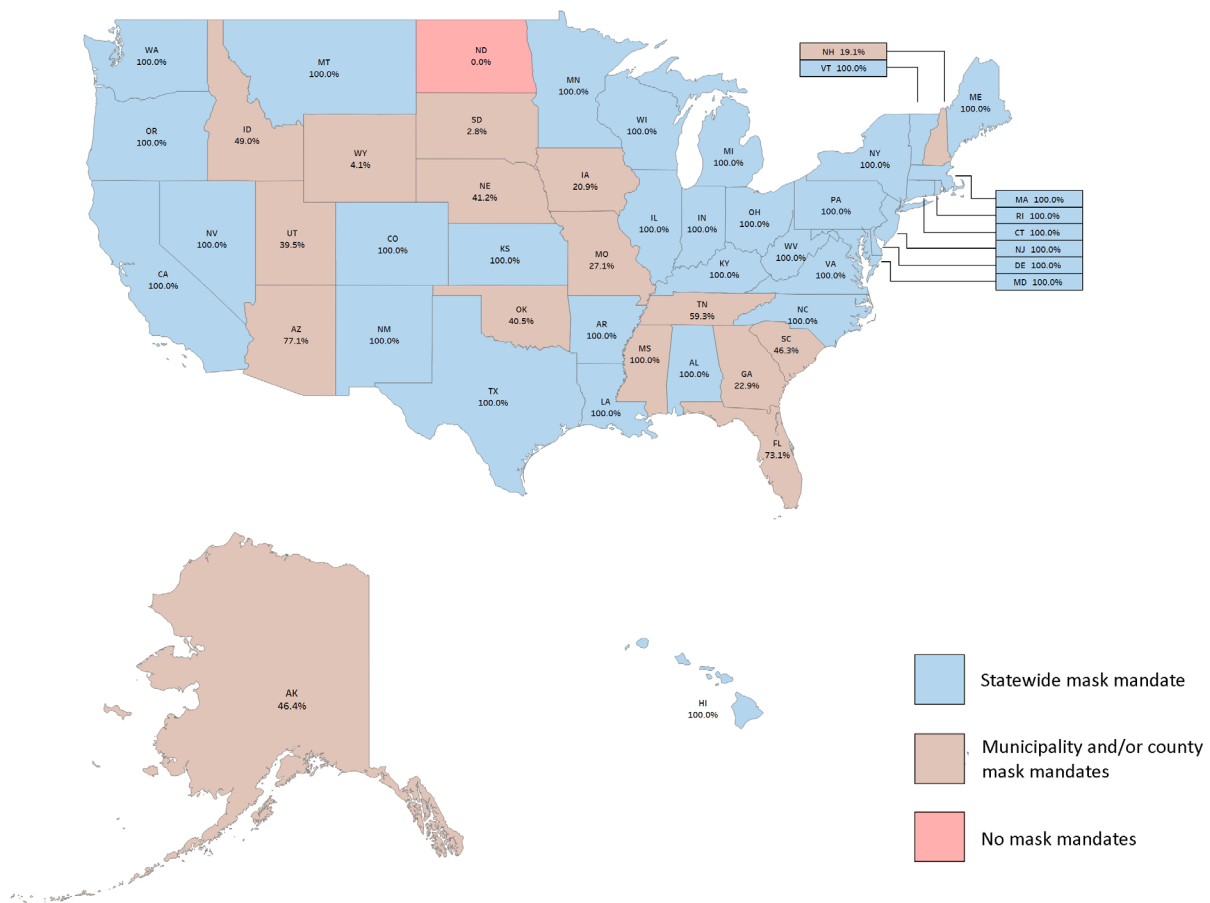
<sup>b</sup> Source: <https://www.tennessean.com/story/news/2020/07/06/does-your-tennessee-county-require-face-masks-worn-public/5387850002/>

<sup>c</sup> Sources: <https://ktar.com/story/3298944/heres-where-arizona-cities-stand-on-requiring-face-masks/>; <https://www.fox6now.com/news/list-wisconsin-cities-with-mask-mandates>

<sup>d</sup> Source: <https://www.thestate.com/news/coronavirus/article244628692.html>

<sup>e</sup> Source: <https://www.wistv.com/2020/07/08/full-list-face-mask-ordinances-place-across-sc/>

## Population Affected by Mask Mandates in the US (September 9, 2020)



**Figure 1. Number of local governments issuing mask mandates.** The number of mandates ordered by separate city or county governments in each of 14 states which did not have a central mandate. Blue indicates cities ordering a mandate, brown indicates counties and black indicates a tribal council.

covered the mask order for each county or city using “State name” (e.g., South Carolina), “city name” (e.g., Columbia”), or “county name” (e.g., “Richland County”), “COVID-19”, and “mask order”. We also searched for the ordinances on the city, town, or county government web pages.

We collected the following data: the state and city or county name; the date each order became effective; the 2019 population of each relevant city or town<sup>2</sup> and county<sup>3</sup>. We used these populations as estimates of the number of people in each area who were under mask orders. If both city or town and county had issued mask orders, we used only the county population as our measure of the number of people covered.

### Dataset description

In the accompanying Excel file (*Underlying data*), in the column ‘NAME’ we list the counties, cities and towns with mask orders. We identify cities or towns with an “M” (municipality) and counties with a “C.” We also show the date that each order came into effect. We embed the internet address of the related newspaper or broadcast article in the “Date in effect” column. We also record the population of each city, county and state. If both a city and its county had a mask order, we used the county population as our indicator of coverage. We recorded the city population in a separate column.

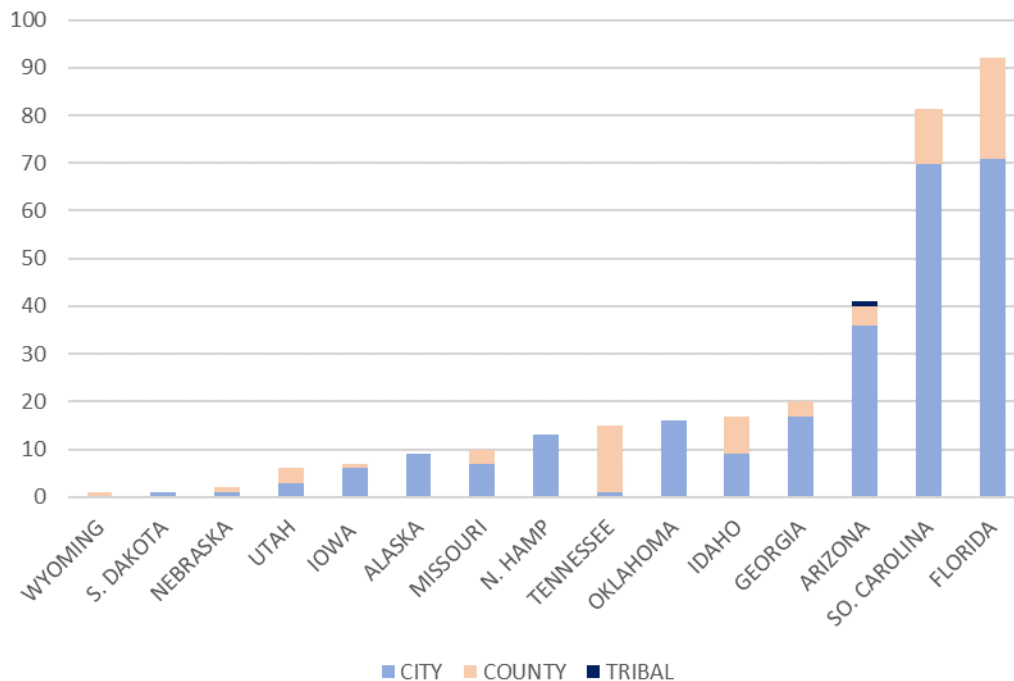
Data on the number of ordinances for cities and counties in each relevant state is shown in [Figure 2](#). Counties took the initiative in Wyoming, Nebraska, Utah, and Tennessee. In states with

more orders, including Arizona, South Carolina and Florida, cities took the initiative. In Arizona there was also an order from a Tribal Council. In [Figure 1](#), we show the country map, identifying states with statewide orders (blue), local government only orders (brown), and no orders (light red). In this figure, we also present the percent of each state’s population that was covered by mask orders. For the states with statewide orders, coverage is complete (100%). One state, North Dakota, did not have any orders up until our cutoff date of September 9 (in South Dakota, one city, Brookings, enacted an order on September 9). In [Figure 3](#), we show the ranking of states by percent population covered, for states with only local mandates.

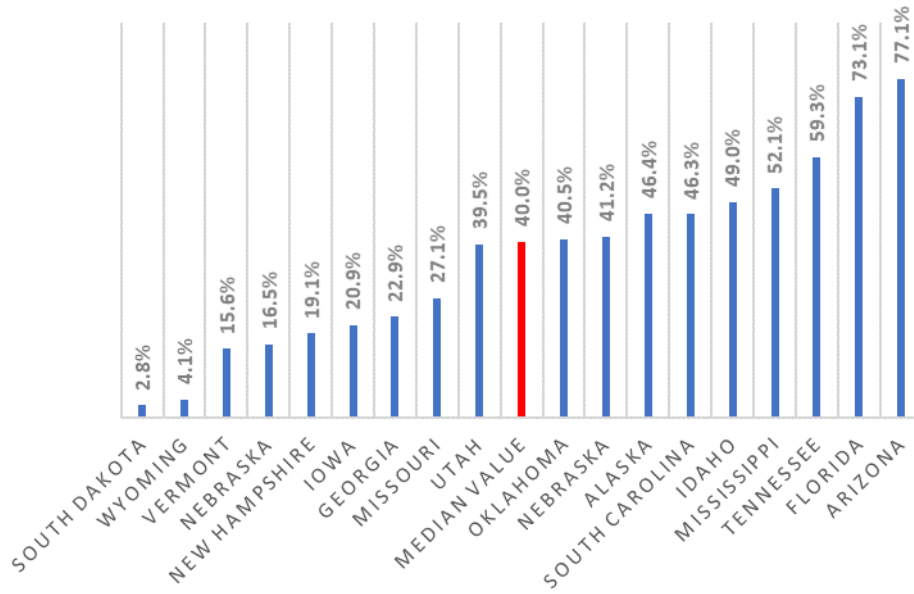
### Summary

Our dataset shows the population coverage for mask mandates in states where local governments took policy initiatives. Coverage in these states varied widely and is an important component of any analysis of COVID-19 prevention policies.

There is little nationwide information available on the degree of coverage in states with local mandates. There is no central body that collects and organizes this data and makes it publicly available. This dataset addresses that deficiency. However, there are limitations in collecting this information. Firstly, mask order enactment dates keep changing and local governments keep adding or terminating enactments as the local COVID-19 situation changes. Secondly, news bureaus do not always provide the current situation. Finally, data on county and city orders are not always kept in a central place for public information.



**Figure 2. Percent of population by US state under mask orders.** The figure shows the percent of each state’s population that was under a local or statewide mask order by September 9, 2020.



**Figure 3. Proportion of state populations covered by local mask orders.** The average coverage for all 14 states, which have only local coverage, is 37.5%.

**Data availability**

University of Alberta Library Dataverse: Mask Orders: Local Government, <https://doi.org/10.7939/DVN/A9C1UU><sup>4</sup>.

Database contains detailed collected data for 15 states with local orders and more general data for 34 states with statewide orders:

• **Part 1. Detailed data**

- A. State
- B. Location
- C. Location’s designation: Municipality or County
- D. Date order became in effect + source data (embedded)
- E. Population that is contributed to the state population measure

- F. Actual population (some double counting)
- G. Blank

• **Part 2 State-level data**

- H. State
- I. State population
- J. Population under mask orders in state
- K. Per cent of population under mask orders in state
- L. Number of municipalities with orders
- M. Number of counties with orders.

Data are available under the terms of the **Creative Commons Zero “No rights reserved” data waiver** (CC0 1.0 Public domain dedication).

**References**

1. Jacobs P, Ohinmaa AP: **The enforcement of statewide mask wearing mandates to prevent COVID-19 in the US: an overview [version 1; peer review: awaiting peer review]**. *F1000Res.* 2020; 9: 1100. [Publisher Full Text](#)
2. United States Census Bureau: **City and Town Population Totals: 2010-2019**. [Reference Source](#)
3. United States Census Bureau: **County Population Totals: 2010-2019**. [Reference Source](#)
4. Jacobs P: **Mask Orders: Local Government**. UAL Dataverse, V1, UNF: 6: EcojgiWVb/t8xWj7xvF7A== [fileUNF]. 2020. <http://www.doi.org/10.7939/DVN/A9C1UU>

# Open Peer Review

Current Peer Review Status:  

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Version 1

Reviewer Report 08 February 2021

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**Jonathan Harris**

National Association of Counties, Washington, DC, USA

In this report, the authors created a new, useful dataset on mask mandates across the country and the share of the population these mandates cover in each state. Since no centralized database is available for these policies, the researchers used sound methodology to create the dataset through targeted Google searched.

The authors covered the primary limitations of their methodology, including (1) the difficulty it will be to keep this dataset updated with ever-shifting policies, (2) having to rely on news outlets for information and (3) the lack of a centralized database for this information. On the other hand, this dataset will be easy to check, since it is all publicly available.

**Is the rationale for creating the dataset(s) clearly described?**

Yes

**Are the protocols appropriate and is the work technically sound?**

Yes

**Are sufficient details of methods and materials provided to allow replication by others?**

Yes

**Are the datasets clearly presented in a useable and accessible format?**

Yes

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** County government and related areas

**I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.**

Reviewer Report 04 January 2021

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### **Mayvis Rebeira**

Canadian Health Economics Centre, University of Toronto, Toronto, ON, Canada

The dataset provides information on the proportion of the population covered by mask mandates in states where local governments had taken policy initiatives. The period of the data collection is between April and August 2020. Data was obtained from national and regional newspaper and broadcaster web-based articles, and city and county web pages.

The data includes two parts: Part 1 contains municipal/county data and date the mask order was in effect and the population. The source data does not seem easily accessible here. Part 2 contains data on states where there was state-wide enactment of masks and the number of counties/municipality with local ordinances.

Based on these data, the authors found that in 14 states, city or county governments issued mask-wearing orders, and from the dataset, the authors conclude that the median population covered by mask enactments in the states was 37.5% and the coverage ranged widely from 1.6% in New Hampshire to 77.1% in Arizona.

The method used to derive the dataset from public sources is explained including the search terms.

The authors noted several important limitations to the dataset including the fact that mask order enactment dates keep changing and local governments keep adding or terminating enactments. Further, the authors rely on publicly available sources for the information as not all news bureaus may have provided such information. As such there may be data that is missing and further validation and update of the dataset may need to be conducted at a later stage when used to analyze COVID-19 policies. Since the data is publicly available, the verification of data can be conducted and further additional data can be added as more publicly information on mask ordinances become available publicly.

#### **Is the rationale for creating the dataset(s) clearly described?**

Yes

#### **Are the protocols appropriate and is the work technically sound?**

Yes

#### **Are sufficient details of methods and materials provided to allow replication by others?**

Yes

#### **Are the datasets clearly presented in a useable and accessible format?**

Yes

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** Health Economics, Econometrics, Disease Risk Factor, Health Policy

**I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.**

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