MEMORANDUM

TO: The UCLA COVID-19 Behind Bars Project

FROM: It's Getting Hot in Here

DATE: October 25, 2020

RE: COVID-19 Scorecard Evaluation of the US Incarceration System

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Executive Summary

This policy recommendation utilizes a scorecard to evaluate the response of states' prisons to COVID-19 and provide transparency about the data as it relates to sanitation, containment, transmission, testing, and vulnerability and equity.

Background

COVID-19 has perpetuated existing vulnerabilities within the U.S. incarceration system in the last nine months. The consequences of concentrating a large number of people in a small space has been brought to light as the virus has run rampant through prisons. The pandemic has not only highlighted the need for extreme sanitary and containment measures, but also has revealed the health disparities burdening different races, ethnicities, socioeconomic statuses, and health conditions in prisons (1, 2). Little data outlines the demographics within the incarceration system, which makes evaluation of this vein difficult. The lack of data should not discourage future collection, especially in a time when the public is calling for the recognition of disparities within all facets of society. Vulnerable individuals are defined as those who are part of a marginalized community and, or, have a pre-existing condition. The recommended policy is that state prison systems should be evaluated for their response to COVID-19, their recognition of the virus' effect on marginalized communities, and the health conditions of their inmates before the pandemic began and given a score reflective of this evaluation. Three main sections comprise the scorecard and they are as follows: Sanitation, Containment, and Transmission; Testing; and Addressing Vulnerability and Promoting Equity. Using this scorecard, the state incarceration systems of Arkansas and Pennsylvania are compared on a dashboard visualizing the incongruencies between state responses and transparency (3).

Recommendations

- Utilize a scorecard to evaluate a state's response to COVID-19 in their prisons (Appendix 1)
- Demand states and prisons to recognize the inmates and staff who have an increased vulnerability to COVID-19 and follow-up on the statuses of those who have been tested
- Develop a supervised learning framework to augment data availability for states with limited reporting on their efforts toward sanitation, containment, and testing of COVID-19
- Provide data and policy transparency so policymakers can acquire the resources to consistently make informed decisions towards improving prison conditions
- Pressure states and prisons to regularly collect and analyze demographic and health data about their prison population, inclusive of inmates and staff, regardless of a pandemic

Analysis

Despite the importance of invoking these recommendations, it may create implementation issues when requiring manual labor to collect data from multiple sources. This team could be hired by the state, hired by the individual prisons, or contracted through a company; thus, adding additional costs for the state and

prisons. Depending upon the current employees of the institution, this may increase the employment rate within a state. In terms of political feasibility, the evaluation by the scorecard could result in public outcry as the states lack transparency regarding the specifications. Nevertheless, this would create public support for the allocation of funds toward the collection and analysis of demographic and health data of prison populations, as well as sanitation, transmission, containment, and testing. While the short-term cost would be rather high to procure the COVID-19 tests, sanitation products, and other necessary prevention measures, this cost would be less than the long-term cost of providing treatment for all of the inmates and staff who could contract the virus (4). With this scorecard, states will be heavily encouraged to provide data related to their prison facilities. This will help reduce the amount of missing values in the current data sets, and give health officials and prisons real numbers to visualize the current conditions in the facilities. If many prisons begin to refine their data around the scorecard, other states will likely feel pressure to follow suit, which may facilitate more standardized data reports. Currently, since a lot of data related to prison populations and conditions are either difficult to access or are not reported, it is difficult to gauge current conditions and measure any improvements. When the scorecard was used to evaluate the prison systems for Arkansas and Pennsylvania, there were significant discrepancies in the COVID-19 response score and the Transparency score between the states that were displayed onto the dashboard (4).

Alternatives

An alternative policy would be to create a standardized database, through the state or federal government, to which all states' Department of Corrections would be required to report their qualitative and quantitative data. This allows for state prisons to be evaluated more precisely as the data is in one place; thus, removing the step of searching for all of the different data as is required in the policy recommendation. This may create jobs as manual labor is required for the data collection, processing, and publishing in each state. Implementation issues could still arise with a standardized database; however, modern data science techniques - namely supervised machine learning - may present a solution. We used a gradient boosting machine (XGBoost) to predict the proportion of inmates in each state who have tested positive based on census and political data for all 50 states. The out-of-sample root mean squared error (RMSE) was approximately 0.27, with reference to a target variable scaled from 0 - 1. While this result may be improved with a larger data set, it indicates the potential for data science techniques to provide estimates of data when transparency may be lacking.

Conclusion

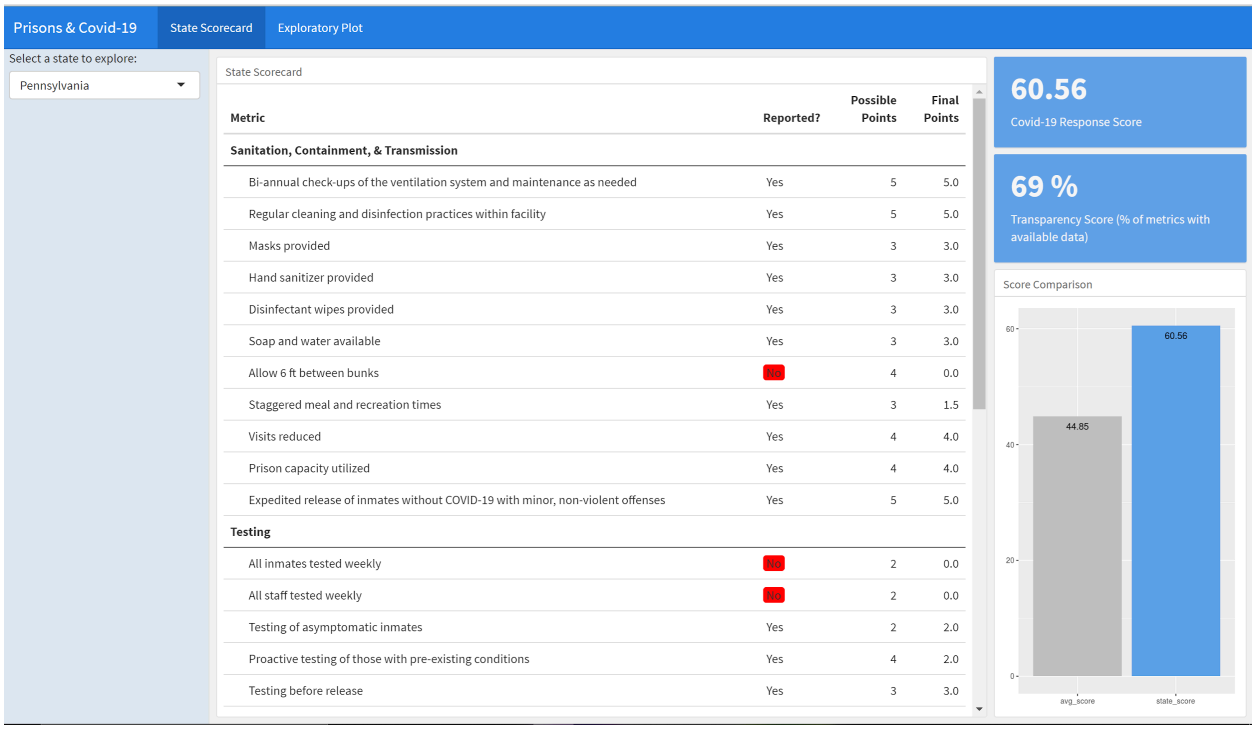
The scorecard was created based upon suggested guidelines for social distancing, guidelines for sanitation best practices, and the evidence of the effects of COVID-19 on health conditions by the Centers for Disease Control and Prevention (CDC) (2). The points were also allocated based upon data and analyses on the CDC's website. When determining if a state has, or has not, earned points for a specific area that was based upon the effectiveness of reporting, not the availability of the data, For example, when evaluating hand sanitizer availability in a state's prisons, it was strictly assessed based upon if the state provided hand sanitizer, not the amount of hand sanitizer that was provided. Providing data that is easily accessible and understandable to the general public, inmates, staff, and all levels of government is incredibly valuable, but specifically for friends and families of the prison population as they are particular stakeholders in this case.

Appendices 1 thru 5
Appendix 1

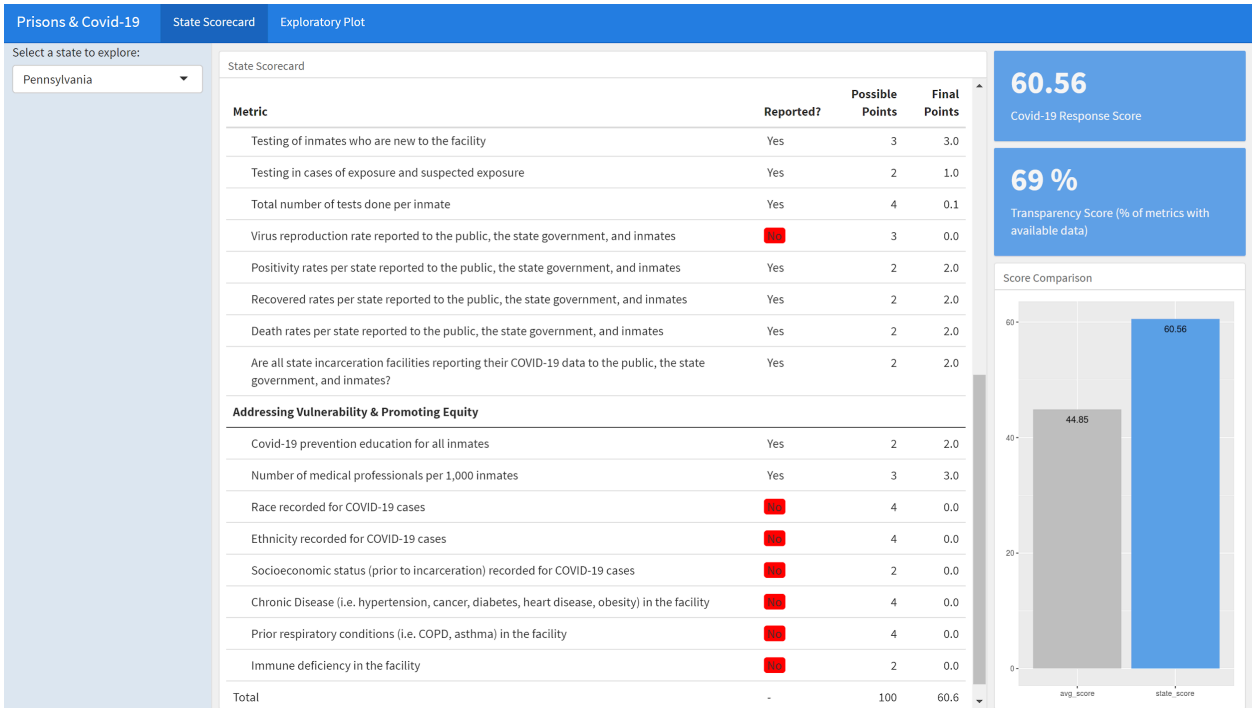
State DOC COVID-19 Data Evaluation			
	Factor	**Reported (Y/N)**	**Weighted Score (x/y)**
Sanitation, Containment, & Transmission	Bi-annual check-ups of the ventilation system and maintenance as needed		x/5
	Regular cleaning and disinfection practices within the facility		x/5
	Masks provided		x/3
	Hand sanitizer provided		x/3
	Disinfectant wipes provided		x/3
	Soap and water available		x/3
	Allow 6 ft between bunks		x/4
	Staggered meal and recreation times		x/3
	Visits reduced		x/4
	Prison capacity minimized		x/4
	Expedited release of inmates without COVID-19 with minor, non-violent offenses		x/5
Testing	All inmates tested weekly		x/2
	All staff tested weekly		x/2
	Testing of asymptomatic inmates		x/2
	Proactive testing of those with pre-existing conditions		x/4
	Testing before release		x/3
	Testing of inmates who are new to the facility		x/3
	Testing in cases of exposure and suspected exposure		x/2

	Total number of tests done per week		x/4
	Virus reproduction rate reported to the public, the state government, and inmates		x/3
	Positivity rates per state reported to the public, the state government, and inmates		x/2
	Recovered rates per state reported to the public, the state government, and inmates		x/2
	Death rates per state reported to the public, the state government, and inmates		x/2
	Are all state incarceration facilities reporting their COVID-19 data to the public, the state government, and inmates?		x/2
Addressing Vulnerability & Promoting Equity Score	Covid-19 prevention education for all inmates		x/2
	Number of medical professionals per 1,000 inmates		x/3
	Race recorded for COVID-19 cases		x/4
	Ethnicity recorded for COVID-19 cases		x/4
	Socioeconomic status (prior to incarceration) recorded for COVID-19 cases		x/2
	Chronic Disease (i.e. hypertension, cancer, diabetes, heart disease, obesity) in the facility		x/4
	Prior respiratory conditions (i.e. COPD, asthma) in the facility		x/4
	Immune deficiency in the facility		x/2
		Total	**x/100**

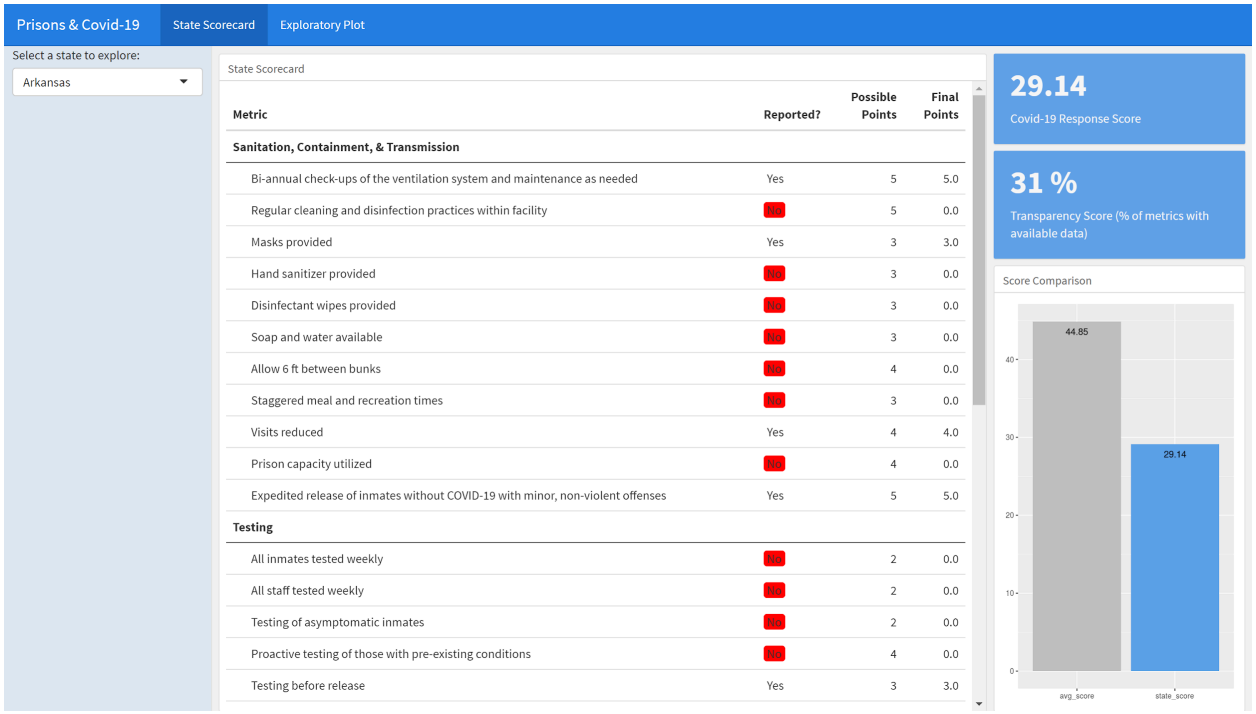
Appendix 2



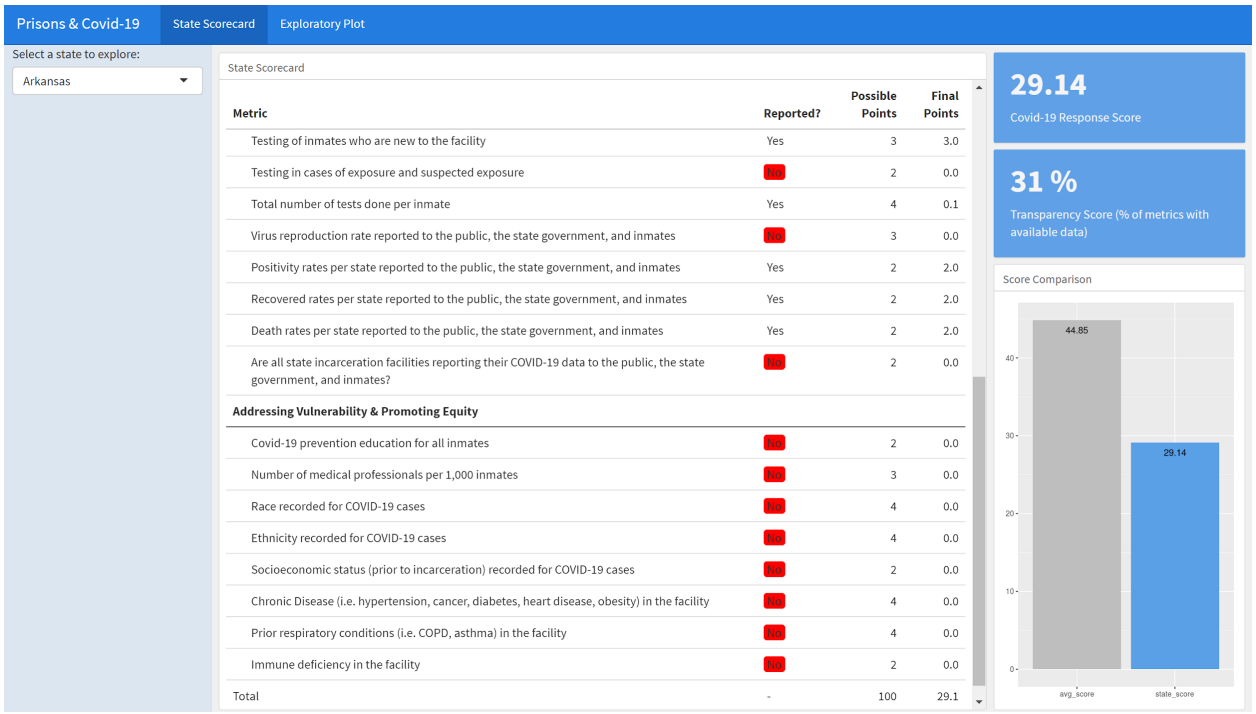
Appendix 3



Appendix 4



Appendix 5



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