# Impact of non-pharmaceutical interventions on documented cases of COVID-19

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# Supplementary Material

## A. Descriptives

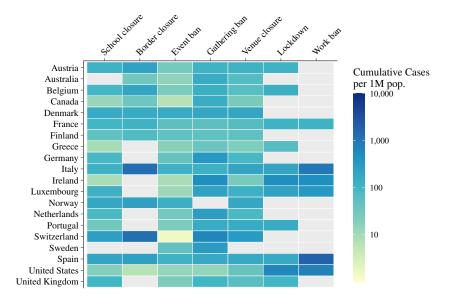
#### A.1. Timing of non-pharmaceutical interventions

In the main paper, we report the absolute cumulative number of cases until countries have implemented non-pharmaceutical interventions (NPIs). It is our impression that the timing of the response rather depends on the absolute number of cases, especially in the early phase of the epidemic. As a comparison, Fig. 1 shows the cumulative number of cases relative to a country's population<sup>3</sup> at the moment NPIs were implemented. To summarize the temporal order of NPIs, Fig. 2 depicts the temporal rank at which NPIs were implemented across n = 20 countries. Most countries implemented event bans first, followed by school closures, gatherings bans, border closures, and venue closures. In contrast, lockdowns and work bans have never been implemented first and many countries have not even implemented these NPIs.

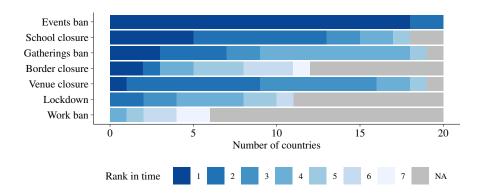
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<sup>&</sup>lt;sup>3</sup>The size of the population is obtained from the World Bank Database: https://data.worldbank.org/indicator/SP.POP.1564.TO.



**Fig. 1** Heatmap showing the cumulative number of documented COVID-19 cases relative to the population size of each country until a non-pharmaceutical intervention (NPI) is implemented. By reporting the relative cumulative number of cases, the heatmap highlights the ordering of NPIs within countries. If an NPI is not implemented by a country, it is colored gray.



**Fig. 2** Temporal order of non-pharmaceutical interventions (NPIs) by rank of implementation. Shown is the number of n = 20 countries for each time rank of the NPI. The ordering of NPIs is determined by the number of countries that have implemented the corresponding NPI first. Gray bars refer to the number of countries that have not implemented an NPI. In total, a rank can appear more than n = 20 times if a country implemented two NPIs at the same time, so that the rank is shared by the two NPIs.

### A.2. Time delay between different non-pharmaceutical interventions

NPIs have been implemented at different times, where some countries have implemented more than one NPI at the same time. The latter raises concerns that it may not be possible to distinguish the individual effects of NPIs on documented COVID-19 case numbers. For that reason, we first looked at the average (Tbl. 1) and median (Tbl. 1) time delay between NPIs. Although there are NPIs that have been implemented close in time, on average, there is a certain time delay between the implementation of NPIs and, thus, it should be possible to distinguish their effects.

	School closure	Border closure	Event ban	Gathering ban	Venue closure	Lockdown	Work ban
School closure	_	4.5	3.3	4.0	1.7	5.2	10.5
Border closure	4.5	_	7.5	5.3	4.6	6.8	9.2
Event ban	3.3	7.5	_	7.5	4.1	7.6	12.5
Gathering ban	4.0	5.3	7.5	_	3.5	2.5	8.5
Venue closure	1.7	4.6	4.1	3.5		4.2	9.7
Lockdown	5.2	6.8	7.6	2.5	4.2	_	4.7
Work ban	10.5	9.2	12.5	8.5	9.7	4.7	_

Table 1: Mean absolute time difference (in days) between the implementation of different NPIs across n = 20 countries.

	School closure	Border closure	Event ban	Gathering ban	Venue closure	Lockdown	Work ban
School closure	_	3.0	2.5	2.0	2.0	2.0	14.0
Border closure	3.0	_	4.0	3.0	3.0	2.5	8.5
Event ban 2.5	4.0	_	7.0	3.0	7.0	15.0	
Gathering ban	2.0	3.0	7.0	_	3.0	0.0	9.0
Venue closure	2.0	3.0	3.0	3.0	_	3.0	12.0
Lockdown	2.0	2.5	7.0	0.0	3.0	_	1.0
Work ban	14.0	8.5	15.0	9.0	12.0	1.0	_

Table 2: Median absolute time difference (in days) between the implementation of different NPIs across n = 20 countries.

# A.3. Temporal development of the number of new cases by country

Fig. 3 shows the temporal development of the documented number of new cases by country and indicates the respective timing of NPIs. Weekends are marked because, for many countries, fewer new cases are documented over the weekend.

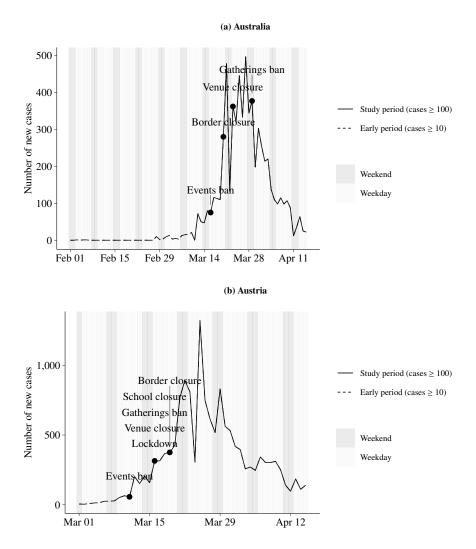


Fig. 3 Temporal development of the observed (documented) number of new cases by country (n=20). The points at which non-pharmaceutical interventions (NPIs) were implemented are annotated. The solid line refers to the study period, starting from a cumulative case count of 100. To show the timing of NPIs potentially implemented before that period, the dashed line refers to the early period, starting from a cumulative case count of 10.

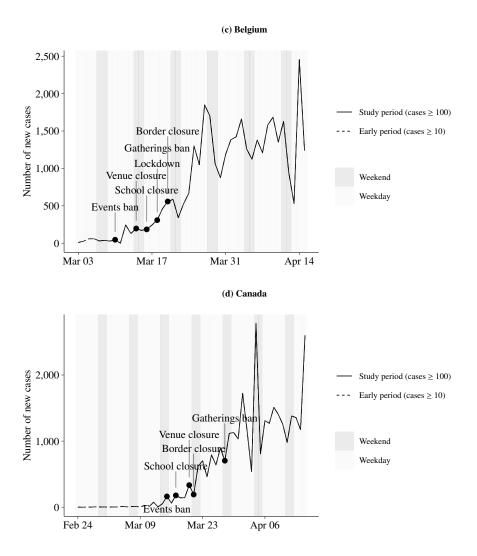


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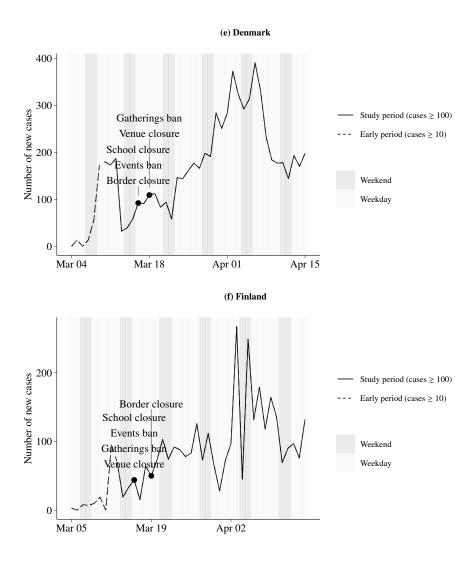


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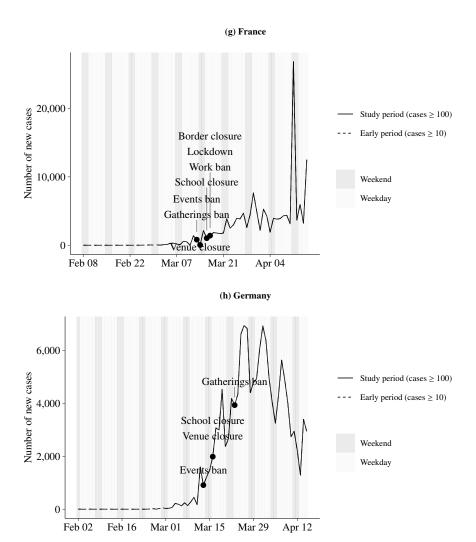


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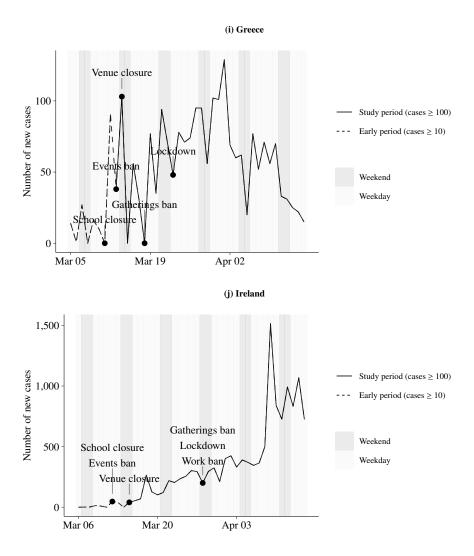


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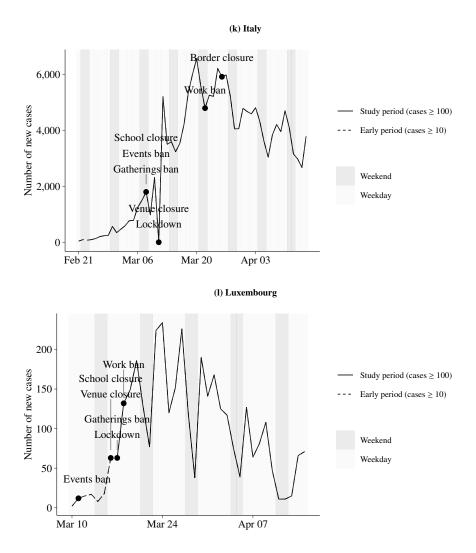


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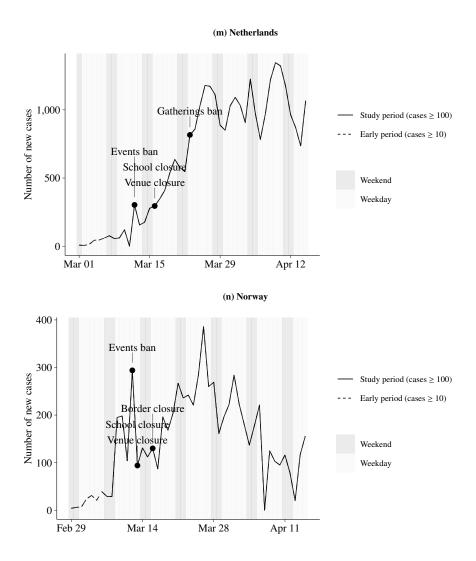


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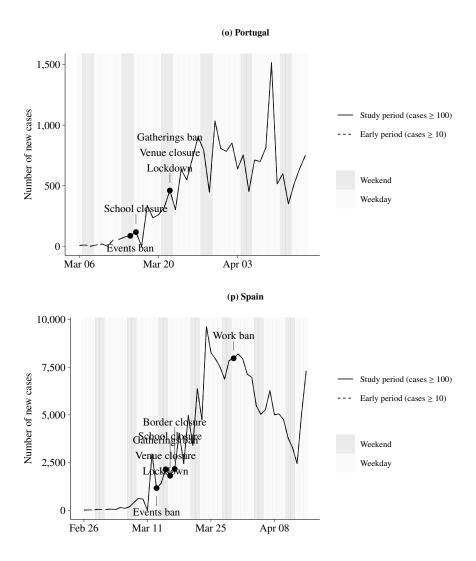


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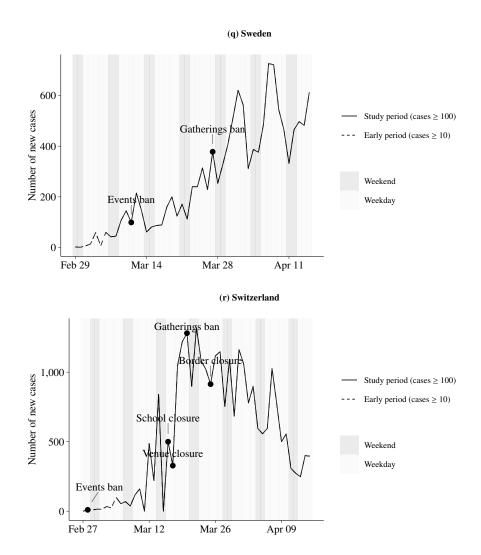


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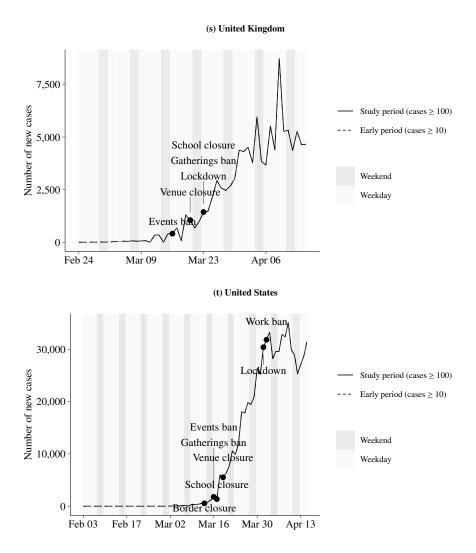


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#### **B.** Model specification

Let  $C_{r,d}$  denote the number of documented cases in country r at day d. Then  $N_{r,d} = C_{r,d+1} - C_{r,d}$  refers to the number of new cases in country r from day d to the next day d+1. We model the number of new cases to follow a negative binomial distribution (NB), i.e.,

$$N_{rd} \sim \text{NB}(\mu_{rd}, \sigma_{rd}^2)$$
 (1)

with mean  $\mu_{r,d}$ , variance  $\sigma_{r,d}^2 = \mu_{r,d} (1 + \frac{\mu_{r,d}}{\phi})$ , and an overdispersion parameter  $\phi$ . The mean is related to the log of the expected rate of new cases ,  $\eta_{r,d} := \log E\left(\frac{N_{r,d}}{C_{r,t}}\right)$ , via

$$\mu_{r,d} = C_{r,d} \exp(\eta_{r,d}), \text{ i.e., } \log \mu_{r,d} = \log C_{r,d} + \eta_{r,d}$$
 (2)

The log-rate is related to the NPIs, the day of the week, and the country via

$$\eta_{r,d} = \alpha_r + \gamma_{w(d)} + \sum_{m=1}^{M} f_{\theta_m}(T_{r,d}^m)$$
(3)

Here  $\alpha_r$  is a country-specific effect reflecting the growth in the number of cases for country r in the absence of any NPI,  $\gamma_{w(d)}$  are dummies for each day of the week,  $f_{\theta_m}$  is a time-delayed response function, and  $T^m_{r,d}$  is the number of days since measure (NPI) m took effect in country r.

We model the time-delayed response function via a step function

$$f_{\theta_m}(t) = \begin{cases} 0, & \text{if } t < t_0, \\ \theta_m, & \text{if } t \ge t_0, \end{cases}$$

$$\tag{4}$$

so that NPIs can only influence new cases with a delay of  $t_0$ . We set  $t_0 = 7$  days, as detailed above. Both the choice of the influence function and the time delay are varied as part of the sensitivity analysis.

### C. Parameter estimation

The model parameters are estimated with a Bayesian approach. Specifically, Markov chain Monte Carlo (MCMC) sampling is used as implemented by the Hamiltonian Monte Carlo algorithm with the No-U-Turn Sampler (NUTS) from Stan 2.19.2<sup>1</sup>. If not stated otherwise, we report posterior means and credible intervals based on the 2.5% and 97.5% quantile of the posterior samples.

Each model is estimated with 4 Markov chains and 2,000 iterations of which the first 1,000 iterations are discarded as part of the warm-up. Estimation power is evaluated via the ratio of the effective sample size  $(\hat{n}_{eff}/N)$ , and convergence of the Markov chains is assessed with the Gelman-Rubin convergence  $(\hat{R})$ . Further checks pertain to the detection of influential observations and correlations between the parameters of interest

During estimation, a combination of informative and weakly informative priors is used, except for the effect of NPIs which are restricted to be non-positive based on the assumption that NPIs cannot increase the number of new cases. Prior choices are mostly informed by prior choice recommendations from the Stan Development Team<sup>2</sup>.

Effect	Parameter	Prior
Fixed intercept	α	Student-t ( $\nu = 7, \mu = 0, \sigma = 10$ )
Varying intercept	$\alpha_r$	Normal $(0, \sigma_{\alpha})$
	$\sigma_{lpha}$	Student-t <sup>+</sup> ( $\nu = 4, \mu = 0, \sigma = 1$ )
Weekday	$\gamma_w$	Student-t ( $\nu = 7, \mu = 0, \sigma = 2.5$ )
NPIs	$\theta_m$	Student-t <sup>-</sup> ( $\nu = 7, \mu = 0, \sigma = 2.5$ )
Overdispersion	$\phi$	$\phi = (\frac{1}{\xi})^2$ , where $\xi \sim \text{Normal}^+(\mu = 0, \sigma = 1)$

Table 3: Prior choices for model parameters.

#### **D.** Estimation results

#### D.1. Estimated model parameters

Tbl. 4 presents posterior means and credible intervals for all model parameters. See the main paper for a discussion of the effects of NPIs. Here we discuss some of the additional model parameters.

The ratio of the effective sample size  $(\hat{n}_{eff}/N)$  and the Gelman-Rubin convergence diagnostic  $(\hat{R})$  indicates good estimation power. It further suggests that the Markov chains converged.

There is a country-specific variation in the intercept parameter  $(\alpha_r)$ , reflecting differences in the rate of new cases – i.e., spread of the disease – in the absence of any NPI. Sweden is among the countries with lowest estimated rate and the US and France among the countries with highest estimated rate. This coincides well with the different observed severity of the epidemic in these countries.

The estimated weekday effects are relative to Monday. More cases are documented during the week, especially on Thursday. There is a strong weekend effect as indicated by the negative sign of the estimate for Saturday and Sunday.

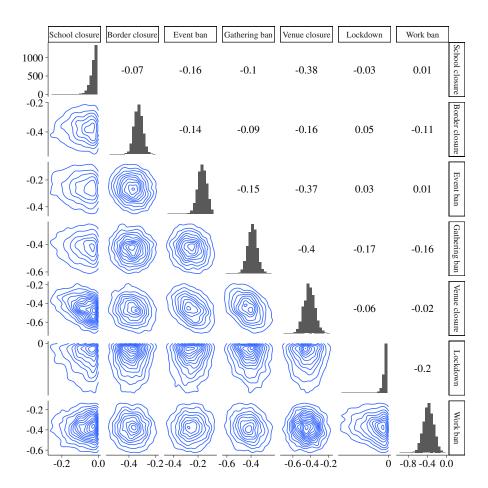
The overdispersion parameter  $(\phi)$  can be rather precisely estimated to be in the magnitude of 2, i.e. we are far away from the case of no overdispersion  $(\phi = \infty)$ . This coincides with the empirical observation of rather unsmooth trajectories in each country (Section A.3).

		Mean	Lower CrI	Upper CrI	$\hat{n}_{\mathrm{eff}}/N$	Ŕ
α	Intercept	-1.32	-1.53	-1.09	0.19	1.00
$\alpha_1$	Australia	-0.46	-0.74	-0.19	0.38	1.00
$\alpha_2$	Austria	-0.03	-0.28	0.23	0.37	1.00
$\alpha_3$	Belgium	0.28	0.03	0.53	0.31	1.00
$\alpha_4$	Canada	0.25	-0.01	0.52	0.40	1.00
$\alpha_5$	Denmark	-0.09	-0.35	0.18	0.36	1.00
$\alpha_6$	Finland	-0.01	-0.27	0.26	0.40	1.00
$\alpha_7$	France	0.52	0.26	0.80	0.34	1.00
$\alpha_8$	Germany	-0.14	-0.39	0.10	0.35	1.00
$\alpha_9$	Greece	-0.42	-0.70	-0.15	0.44	1.00
$\alpha_{10}$	Ireland	0.27	-0.01	0.56	0.41	1.00
$\alpha_{11}$	Italy	-0.02	-0.26	0.23	0.34	1.00
$\alpha_{12}$	Luxembourg	0.07	-0.23	0.37	0.45	1.00
$\alpha_{13}$	Netherlands	-0.14	-0.39	0.11	0.35	1.00
$\alpha_{14}$	Norway	-0.38	-0.66	-0.11	0.38	1.00
$\alpha_{15}$	Portugal	0.02	-0.25	0.29	0.37	1.00
$\alpha_{16}$	Spain	0.30	0.05	0.55	0.32	1.00
$\alpha_{17}$	Sweden	-0.49	-0.75	-0.22	0.36	1.00
$\alpha_{18}$	Switzerland	-0.12	-0.37	0.15	0.41	1.00
$\alpha_{19}$	United Kingdom	0.06	-0.19	0.30	0.36	1.00
$\alpha_{20}$	United States	0.53	0.28	0.80	0.31	1.00
$\sigma_{lpha}$	Country SD	0.34	0.23	0.49	0.55	1.00
$\gamma_1$	Tuesday	-0.01	-0.19	0.17	0.36	1.00
$\gamma_2$	Wednesday	0.01	-0.17	0.20	0.34	1.00
$\gamma_3$	Thursday	0.30	0.12	0.49	0.43	1.00
$\gamma_4$	Friday	0.09	-0.10	0.27	0.37	1.00
$\gamma_5$	Saturday	-0.03	-0.21	0.15	0.38	1.00
$\gamma_6$	Sunday	-0.16	-0.35	0.02	0.35	1.00
$\theta_1$	School closure	-0.09	-0.26	0.00	0.83	1.00
$\theta_2$	Border closure	-0.38	-0.54	-0.21	0.53	1.00
$\theta_3$	Event ban	-0.26	-0.43	-0.09	0.82	1.00
$\theta_4$	Gathering ban	-0.42	-0.60	-0.23	0.65	1.00
$\theta_5$	Venue closure	-0.44	-0.66	-0.22	0.61	1.00
$\theta_6$	Lockdown	-0.05	-0.16	0.00	0.91	1.00
$\theta_7$	Work ban	-0.38	-0.58	-0.17	0.74	1.00
φ	Overdispersion	2.09	1.88	2.29	1.18	1.00

Table 4: Estimation results for the main analysis. The ratio  $\hat{n}_{eff}/N$  is the effective sample size  $(\hat{n}_{eff})$  divided by the total sample size (N). Generally, ratios above 0.5 correspond to high, between 0.1 and 0.5 to medium and below 0.1 to low estimation power<sup>3</sup>.  $\hat{R}$  is the Gelman-Rubin convergence diagnostic<sup>4</sup>. Generally, good convergence is indicated by  $\hat{R}$  being close to 1.00, while bad convergence is indicated by values above 1.10<sup>5</sup>.

#### D.2. Checking for correlations between parameters

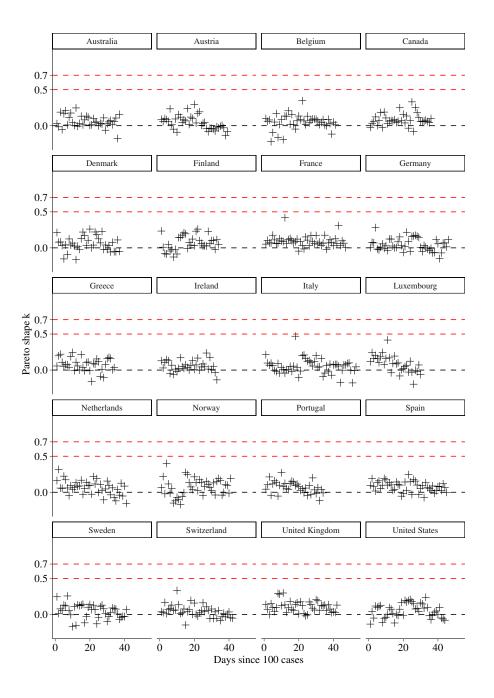
A similar timing could make it difficult to distinguish the individual effects of NPIs. To investigate this issue, Fig. 4 depicts the pairwise bivariate posterior distributions of the parameters of the NPIs. We observe a tendency towards negative correlations, reflecting the difficulty to distinguish the effects of two NPIs if they are often introduced close in time. In particular, it seems to be somewhat difficult to distinguish between the effects of gathering bans and venue closures (r = -0.40), which were often implemented close in time (see Tbl. 1-2). In contrast, there seems to be no problem in distinguishing the effects of venue closures and work bans (r = -0.02), which were on average relatively far away.



**Fig. 4** Bivariate posterior distributions visualized by contour plots (lower diagonal matrix) from the MCMC sample for the parameters of non-pharmaceutical interventions (NPIs). Pearson's r is shown in the upper diagonal matrix, and the marginal distribution is depicted as a histogram on the diagonal of the matrix.

# D.3. Checking for influential observations

Influential observations can affect parameter estimates. To check for influential observations, Fig. 5 shows the tail shape parameter k from approximate leave-one-out (LOO) cross-validation using Pareto smoothed importance sampling  $^6$ . None of our observations seem to be highly influential.



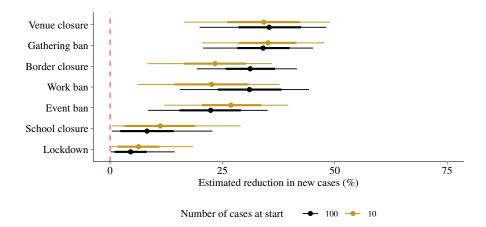
**Fig. 5** Model diagnostics based on influential observations. Shown is the tail shape parameter k of the generalized Pareto distribution from approximate leave-one-out (LOO) cross-validation using Pareto smoothed importance sampling for each observation by country and time. Values below 0.5 indicate that the observation is not influential; values between 0.5 and 0.7 indicate that the observation might be influential but the model is usually still robust; values above 0.7 indicate the observation is influential and that the model may not be robust  $^6$ .

#### E. Sensitivity analysis

The sensitivity of our results is analyzed as follows. (1) The preprocessing is changed such that we start our analysis from a cumulative case number of 10 (Section E.1). (2) The time delay with which NPIs can affect the rate of new cases is varied. Here we repeat the analysis with a delay (i.e., a lag) of  $t_0 = 5$  days and  $t_0 = 9$  days (Section E.2). (3) Also considered is the case whereby NPIs only become gradually effective. Specifically, the effect of NPIs is modeled with a first-order spline, where NPIs have a linearly increasing effect between  $t_0$  and  $t_1$ , and a constant effect after  $t_1$  (Section E.3). (4) The assumption that NPIs can only reduce the number of new cases is relaxed. That is, the effect is unbounded and NPIs can lead to a potential increase in the number of new cases (Section E.4).

#### E.1. Analysis starting with data from 10 cases onward

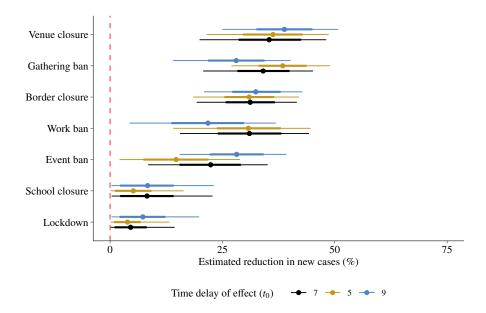
In our main analysis, we excluded observations with fewer than 100 cumulative cases. The reason is that countries needed time to set up their documentation practices. Fig. 6 compares the estimates for NPIs from our main analysis with estimates from the same model where only observations with fewer than 10 cases were excluded. Overall, estimated posterior means for all NPIs remain fairly similar. The relative effectiveness changes slightly, with border closures and work bans becoming on average less effective than event bans.



**Fig. 6** Estimated reduction (posterior mean as dots with 80% and 95% credible interval as thick and thin lines, respectively) in the number of new cases (in %) for each non-pharmaceutical intervention (NPI) by varying the number of cases at start. Compared are 100 (main analysis) and 10 cases at the start of the analysis.

## E.2. Comparison of other time delays to after which NPIs become effective

In our main analysis, we assumed a time delay of  $t_0 = 7$  days between the moment when an NPI becomes effective and the moment when it can influence the rate of new cases. To check sensitivity w.r.t. this choice, we repeat the analysis with a time delay of  $t_0 = 5$  days and  $t_0 = 9$  days. The estimation results are detailed in Fig. 7, confirming that, overall, the effects remain qualitatively similar. The effects of work and gathering bans are reduced for a longer time delay, while the effect of event bans is increased.



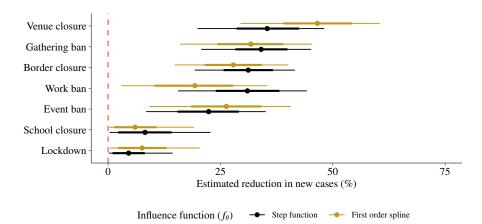
**Fig. 7** Estimated reduction (posterior mean as dots with 80% and 95% credible interval as thick and thin lines, respectively) in the number of new cases (in %) for each non-pharmaceutical intervention (NPI) by varying the time delay of effects ( $t_0$ ). Compared are 7 (main analysis), 5, and 9 days of delay until NPIs are assumed to have an effect.

### E.3. Comparison of influence functions

In our main analysis, we assumed a constant effectiveness for each NPI after a time delay of  $t_0 = 7$  days. We now consider the case where NPIs become gradually effective. Specifically, we consider an alternative influence function, i.e., a first-order spline. Here the NPI has a linearly increasing effect between day  $t_0 = 5$  and  $t_1 = 12$ , followed by a constant effect after day  $t_1 = 12$ . The resulting specification of the influence function is

$$f_{\theta}^{FOS}(t) = \begin{cases} 0, & \text{if } t \le t_0, \\ \theta\left(\frac{t - t_0}{t_1 - t_0}\right), & \text{if } t_0 \le t \le t_1, \\ \theta, & \text{if } t > t_1. \end{cases}$$
 (5)

Overall, Fig. 8 shows that the parameter estimates for the NPIs remain qualitatively similar. The effect of venue closures is increased, while the effect of work bans is reduced.



**Fig. 8** Estimated reduction (posterior mean as dots with 80% and 95% credible interval as thick and thin lines, respectively) in the number of new cases (in %) for each non-pharmaceutical intervention (NPI) by influence function ( $f_{\theta}$ ). Compared is a step function with a constant effect after a delay of  $t_0 = 7$  days (main analysis) and a first-order spline with a linearly increasing effect between day  $t_0 = 5$  and  $t_1 = 12$ , followed by a constant effect after day  $t_1 = 12$ .

# E.4. Relaxing the assumption that non-pharmaceutical interventions cannot increase the number of new cases

In our main analysis, we assumed that the effect of NPIs is non-positive and their implementation will not lead to an increase in the number of new cases (i.e.,  $\theta_m$  has an upper bound at 0). Now, this assumption is relaxed by allowing NPIs to increase the number of new cases (i.e.,  $\theta_m$  is unbounded). In Fig. 9, the estimates between the bounded and unbounded specification of our model are compared. NPIs that lead to a clear reduction in the bounded model also lead to a reduction in the unbounded model and the effect sizes are almost equal. Thus, overall, the relative ranking among NPIs appears similar. For school closures and lockdowns, the range of credible effects is large and includes positive or even negative effects.

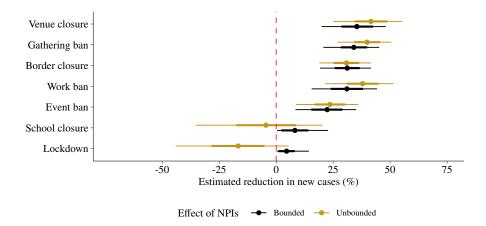


Fig. 9 Estimated reduction (posterior mean as dots with 80% and 95% credible interval as thick and thin lines, respectively) in the number of new cases (in %) for each non-pharmaceutical intervention (NPI) for the two cases where the parameters  $\theta_m$  were bounded to have non-positive effects so that NPIs can only reduce the number of new cases (main analysis), or unbounded to have all possible effects, i.e., including a possible increase in the number of new cases.

# F. Model comparison

The sensitivity analyses of Section E involve several variants of the model used in the main analysis while keeping the number of parameters and the data used fixed. It is hence of interest to perform a formal comparison. Based on the so-called ELPD (a metric for model comparison in Bayesian analysis  $^6$ ), a first-order spline and a delay of  $t_0 = 9$  days are favored (see Tbl. 5).

Influence function $(f_{\theta})$	Time delay $(t_0, t_1)$	ELPD	SE	Δ ELPD	ΔSE
First order spline	$t_0 = 5, t_1 = 12$	-5728.43	49.90	0.00	0.00
Step function	$t_0 = 9$	-5751.56	49.40	-23.13	4.11
Step function	$t_0 = 7$	-5767.20	48.96	-38.77	6.48
Step function	$t_0 = 5$	-5791.65	48.74	-63.22	10.96

Table 5: Model comparison regarding influence function and time delay based on leave-one-out cross-validated expected log pointwise predictive density, ELPD for short  $^6$ . SE is the standard error of the ELPD,  $\Delta$  ELPD is the absolute difference in the ELPD between the first and all other models, and  $\Delta$  SE is the standard error in the difference.

# G. Number of new cases if non-pharmaceutical interventions would not have been implemented

We illustrate the effectiveness of non-pharmaceutical interventions (NPIs) on the number of new COVID-19 cases. For this purpose, we take the mean estimate of the corresponding NPI and predict the number of new cases if the NPI would not have been implemented. Formally, the predicted number of new cases without NPI m' is computed as

$$\eta_{r,d}^{-m'} = \alpha_r + \gamma_{w(d)} + \sum_{m \neq m'}^{M} \theta_m(T_{r,d}^m),$$
(6)

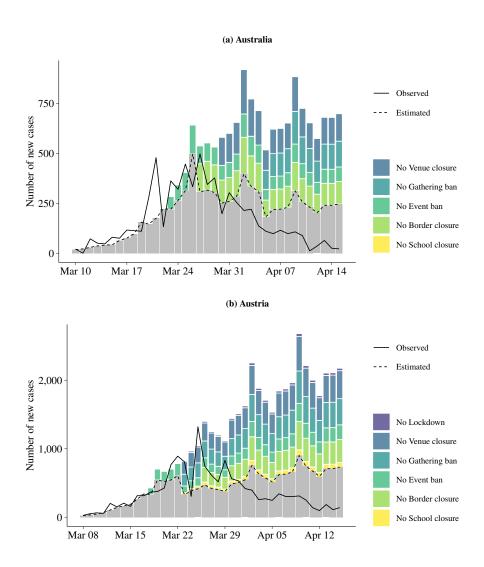
$$\mu_{r,d}^{-m'} = C_{r,d} \exp\left(\eta_{r,d}^{-m'}\right),\tag{7}$$

where  $\mu_{r,d}^{-m'}$  is the average number of new cases without measure m' and  $C_{r,d}$  is the documented cumulative number of cases (starting from 100 cases). Note that this is contrary to a counterfactual analysis where the cumulative number of cases would need to be updated based on the predicted number of new cases. Instead, we chose the observed cumulative number of cases in each step to illustrate model fit and effectiveness of NPIs.

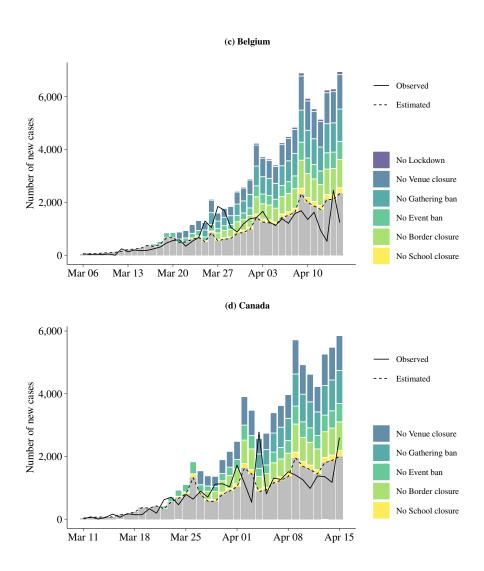
Fig. 10 shows the hypothetical predictions for all countries, thereby illustrating the estimated effectiveness of NPIs by our model. Overall, this exercise demonstrates that countries have potentially averted a large number of cases by implementing NPIs. More effective NPIs, e.g., venue closures, exhibit a higher relative reduction. But also less effective NPIs, e.g., event bans, can accumulate to a large overall effect when they are implemented early.

To assess the model fit, Fig. 10 also compares the estimated number of new cases (when the country implemented all its NPIs) to the observed (documented) number of new cases. For most countries, our model fits the observed number of cases reasonably well when considering that, for some countries, the observed time series is subject to variability. By specification, our model is not designed to fit this strong variability as it only adapts to country-specific differences in the constant background rate, weekday effects, and common effects from the implementation of NPIs. As a result, our model does not overfit to noise and the time series of the estimated number of new cases appear more steady.

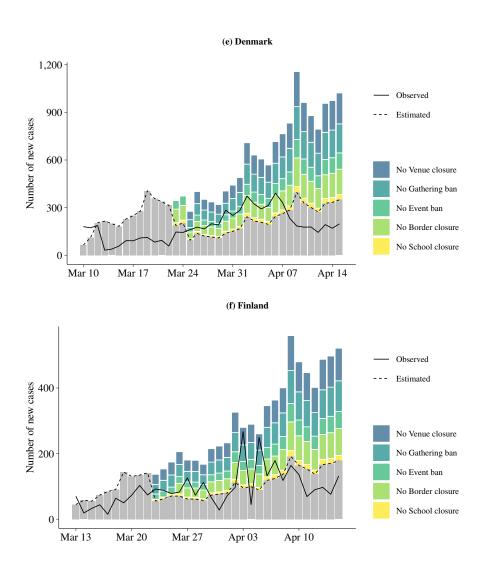
In some countries, for instance Australia, Austria, and Germany, we observe that the actual documented number of cases is lower than the prediction of our model towards the end of the study period. These countries seem to have been more effective in reducing transmission rates than predicted by our model. This may point to country-specific, synergistic effects across different NPIs, suggesting a larger impact than implied by our estimates.



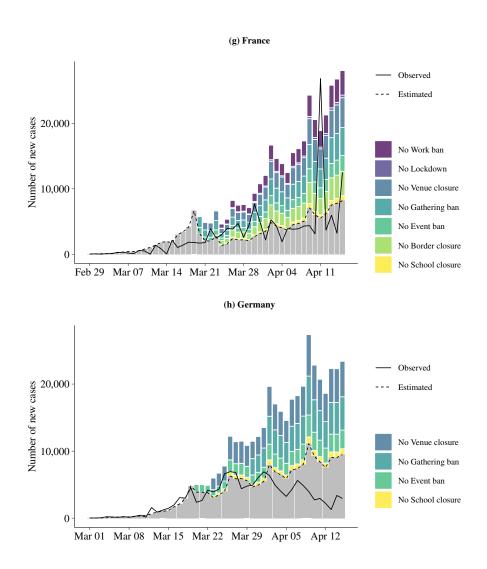
**Fig. 10** Hypothetical number of daily new cases if non-pharmaceutical interventions (NPIs) were not implemented. The stacked bars illustrate how the mean estimated number of new cases would have changed if NPIs were *not* enforced. The solid line refers to the observed (documented) and the dashed line to the estimated number of new cases. The NPIs are shown for the time period in which they were implemented while considering that their effect is subject to a time delay of 7 days.



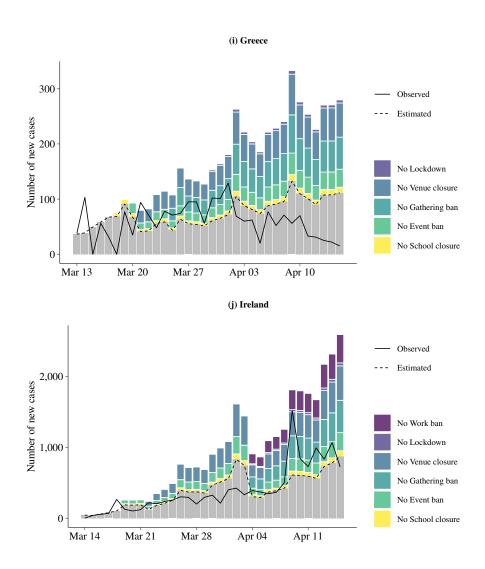
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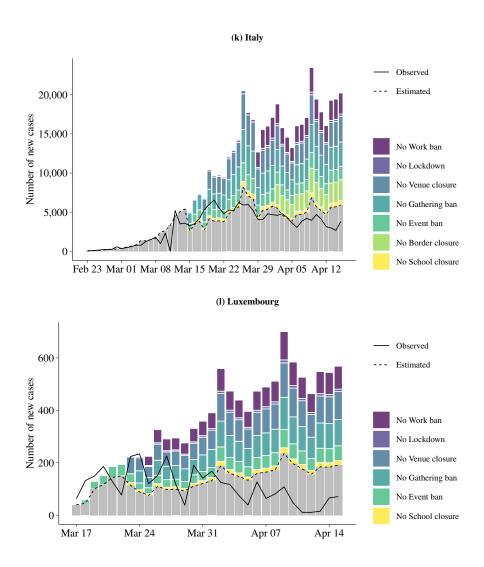
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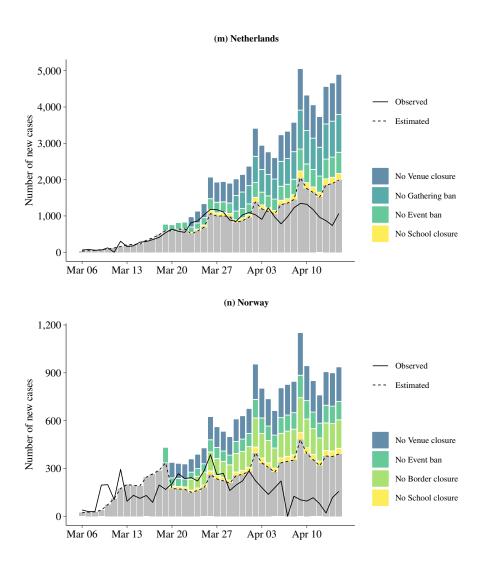
**Fig. 10** Hypothetical number of daily new cases if non-pharmaceutical interventions (NPIs) were not implemented. The stacked bars illustrate how the mean estimated number of new cases would have changed if NPIs were *not* enforced. The solid line refers to the observed (documented) and the dashed line to the estimated number of new cases. The NPIs are shown for the time period in which they were implemented while considering that their effect is subject to a time delay of 7 days.



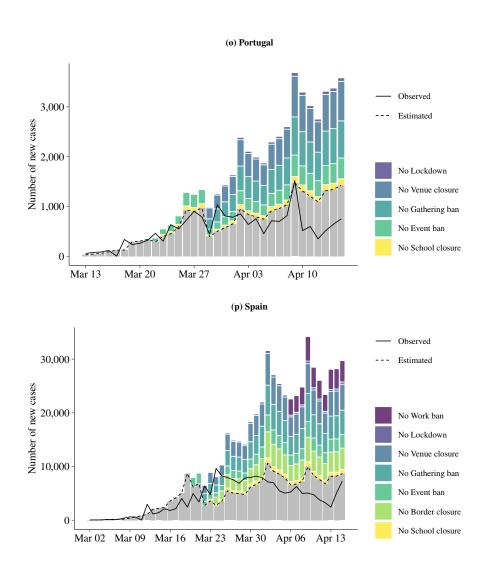
**Fig. 10** Hypothetical number of daily new cases if non-pharmaceutical interventions (NPIs) were not implemented. The stacked bars illustrate how the mean estimated number of new cases would have changed if NPIs were *not* enforced. The solid line refers to the observed (documented) and the dashed line to the estimated number of new cases. The NPIs are shown for the time period in which they were implemented while considering that their effect is subject to a time delay of 7 days.



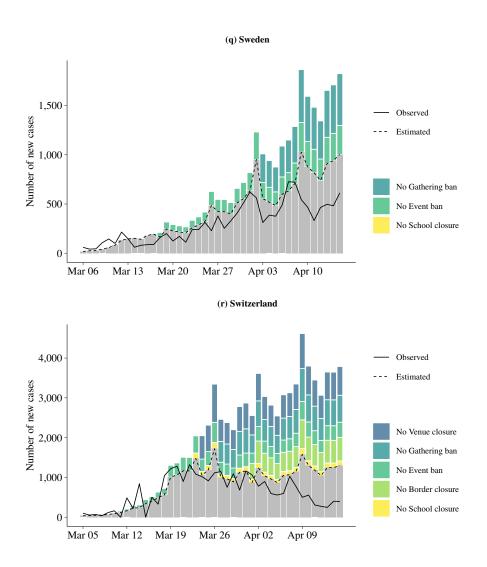
**Fig. 10** Hypothetical number of daily new cases if non-pharmaceutical interventions (NPIs) were not implemented. The stacked bars illustrate how the mean estimated number of new cases would have changed if NPIs were *not* enforced. The solid line refers to the observed (documented) and the dashed line to the estimated number of new cases. The NPIs are shown for the time period in which they were implemented while considering that their effect is subject to a time delay of 7 days.



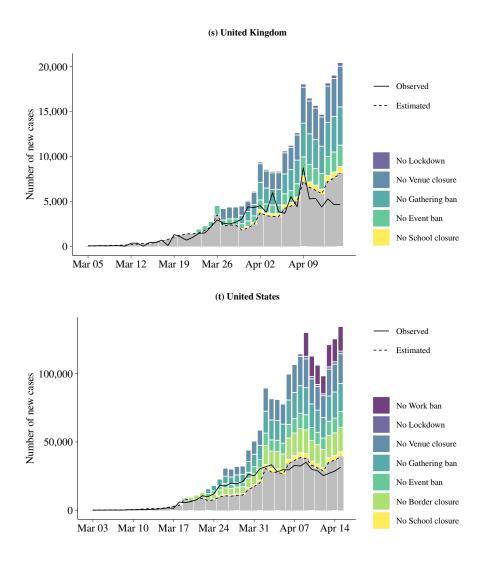
**Fig. 10** Hypothetical number of daily new cases if non-pharmaceutical interventions (NPIs) were not implemented. The stacked bars illustrate how the mean estimated number of new cases would have changed if NPIs were *not* enforced. The solid line refers to the observed (documented) and the dashed line to the estimated number of new cases. The NPIs are shown for the time period in which they were implemented while considering that their effect is subject to a time delay of 7 days.



**Fig. 10** Hypothetical number of daily new cases if non-pharmaceutical interventions (NPIs) were not implemented. The stacked bars illustrate how the mean estimated number of new cases would have changed if NPIs were *not* enforced. The solid line refers to the observed (documented) and the dashed line to the estimated number of new cases. The NPIs are shown for the time period in which they were implemented while considering that their effect is subject to a time delay of 7 days.



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## H. Data on non-pharmaceutical interventions

## H.1. Data collection

Data on non-pharmaceutical interventions (NPIs) have been collected systematically in six steps.

- 1. Granular information on NPIs have been gathered from government resources and news outlets by our team.
- 2. After collecting data for the first few countries, NPIs have been classified into seven categories: (1) school closures, (2) border closures, (3) public event bans, (4) gathering bans, (5) venue closures (e.g., shops, bars, restaurants, and other recreational activities), (6) lockdowns prohibiting public movements without valid reason, and (7) work bans on non-essential business activities. The resulting classification has later been cross-checked against the encoding from the Imperial College COVID-19 Response Team<sup>7</sup> and the "Coronavirus Government Response Tracker" from the University of Oxford<sup>7</sup>.
- 3. The date of NPIs has been referred to as the first day a measure went into effect. For instance, if a country banned events with more than 5,000 people on March 1 and events with more than 1,000 people on March 5, then March 1 has been chosen as the date of event bans.
- 4. NPIs for countries that subsequently followed in the data collection have been encoded accordingly.
- 5. The date of NPIs has been collected for each country or region. For countries that are less centrally managed, regional dates have been aggregated to the national level by choosing the first date after which two thirds of regions have implemented an NPI.
- 6. Local residents and/or native speakers have been recruited from each country in order to check our encoding. The reason for this is that countries have often used different legal terms to refer to the same NPI. Also, checking with local residents has helped to determine, for instance, whether the NPI was actually enforced or just recommended.

## H.2. Data Sources

In Tbl. 6, we provide sources of our data on NPIs at a national level. For less centrally managed countries, the aggregated (national level) date of the NPI is shown and the regional sources are displayed in Tbl. 7 (United States), Tbl. 8 (Germany), Tbl. 9 (Spain), Tbl. 10 (Canada), Tbl. 11 (Australia), and Tbl. 12 (Italy). Note that border closures is defined as a national closure of borders and is thus only considered at a national level.

In the following, we want to highlight some encoding decisions that were subject to internal discussions.

 $<sup>^{7} \</sup>verb|https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker$ 

- School closure in New South Wales (Australia): Schools have remained technically open but attendance dropped below 5%. Therefore, schools have been encoded as closed.
- Border closure in the US: The US has not stopped flights with all countries but closed their land borders and has suspended travel from a huge number of Asian and European countries. Hence, US borders have been encoded as closed.
- Border closure in Germany: Germany has not closed its borders with Belgium and the Netherlands, therefore not all land borders have been closed and we have decided to encode them as open.
- School closure in Sweden: Only upper secondary schools (16+ y/o) and universities are studying from home, while other schools are still open. Thus, Swedish schools have been encoded encoded as open.

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Country	NPI	Date effective	Source
	Event ban	2020-03-16	Date derived by aggregation, see Tab. 11
	Gathering ban	2020-04-01	Date derived by aggregation, see Tab. 11
Australia	Border closure	2020-03-20	https://www.pm.gov.au/media/border-restrictions
	Venue closure	2020-03-23	Date derived by aggregation, see Tab. 11
	Event ban	2020-03-11	https://www.bundeskanzleramt.gv.at/bundeskanzleramt/nachrichten-der-
Austria	Gathering ban	2020-03-16	bundesregierung/2020/weitere-massnahmen-gegen-ausbreitung-des-coronavirus.html https://www.reuters.com/article/us-health-coronavirus-austria/austria-imposes-major-restrictions-on-movement-over-coronavirus-idUSKBN2120D8
	School closure	2020-03-16	https://www.reuters.com/article/us-health-coronavirus-austria/austria-closing-schools-over-coronavirus-as-border-checks-take-effect-idUSKBN20Y2YC
	Border closure	2020-03-19	https://www.reuters.com/article/us-health-coronavirus-austria/coronavirus-
	Venue closure	2020-03-16	<pre>infections-top-2000-in-austria-more-border-controls-imposed-idUSKBN2160WK https://www.bundeskanzleramt.gv.at/bundeskanzleramt/nachrichten-der-</pre>
			<pre>bundesregierung/2020/bundesregierung-praesentiert-aktuelle-beschluesse-zum- coronavirus.html</pre>
	Lockdown	2020-03-16	https://www.sozialministerium.at/Informationen-zum-Coronavirus/CoronavirusAktuelle-Ma%C3%9Fnahmen.html
	Event ban	2020-03-10	https://www.info-coronavirus.be/en/news/protect-yourself-and-protect-the-others/
Belgium	Gathering ban	2020-03-18	https://de.reuters.com/article/health-coronavirus-belgium-lockdown-idUSB5N28S003
	School closure	2020-03-16	https://www.info-coronavirus.be/en/2020/03/12/phase-2-maintained-transition-to-the-federal-phase-and-additional-measures/
	Border closure	2020-03-20	https://www.politico.eu/article/belgium-closes-borders-for-non-essential- travel/
	Venue closure	2020-03-14	https://www.info-coronavirus.be/en/2020/03/12/phase-2-maintained-transition-to-the-federal-phase-and-additional-measures/
	Lockdown	2020-03-18	https://de.reuters.com/article/health-coronavirus-belgium-lockdown-idUSB5N28S003
	Event ban	2020-03-12	Date derived by aggregation, see Tab. 10
	Gathering ban	2020-03-27	Date derived by aggregation, see Tab. 10
Canada	School closure	2020-03-15	Date derived by aggregation, see Tab. 10

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	Border closure  Venue closure	2020-03-21 2020-03-17	https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/canadas-reponse.html?topic=tilelink Date derived by aggregation, see Tab. 10
	Event ban Gathering ban	2020-03-16 2020-03-18	https://www.regeringen.dk/nyheder/pressemoede-11-marts-i-spejlsalen/ https://www.reuters.com/article/us-health-coronavirus-denmark/denmark-bans-
Denmark	Guinering bun	2020 03 10	crowds-of-over-10-people-to-curb-coronavirus-idUSKBN2143KG
	School closure	2020-03-16	https://www.regeringen.dk/nyheder/pressemoede-11-marts-i-spejlsalen/
	Border closure	2020-03-16	https://www.oresunddirekt.dk/en/news/danish-borders-closed-due-to-coronavirus-covid-19
	Venue closure	2020-03-18	https://www.reuters.com/article/us-health-coronavirus-denmark/denmark-bans-crowds-of-over-10-people-to-curb-coronavirus-idUSKBN2143KG
	Event ban	2020-03-16	https://valtioneuvosto.fi/en/article/-/asset_publisher/10616/hallitus-totesi-suomen-olevan-poikkeusoloissa-koronavirustilanteen-vuoksi
Finland	Gathering ban	2020-03-16	https://valtioneuvosto.fi/en/article/-/asset_publisher/10616/hallitus-totesi-suomen-olevan-poikkeusoloissa-koronavirustilanteen-vuoksi
	School closure	2020-03-16	https://valtioneuvosto.fi/en/article/-/asset_publisher/10616/hallitus-totesi-suomen-olevan-poikkeusoloissa-koronavirustilanteen-vuoksi
	Border closure	2020-03-19	https://valtioneuvosto.fi/en/article/-/asset_publisher/1410869/suomen- rajaliikennetta-aletaan-rajoittaa-elakkeella-olevia-rajavartijoita-ja- poliiseja-voidaan-kutsua-toihin
	Venue closure	2020-03-16	https://valtioneuvosto.fi/en/article/-/asset_publisher/10616/hallitus-totesi-suomen-olevan-poikkeusoloissa-koronavirustilanteen-vuoksi
	Event ban	2020-03-13	https://www.bbc.com/news/world-europe-51892477
	Gathering ban	2020-03-13	https://www.bbc.com/news/world-europe-51892477
	School closure	2020-03-16	https://www.bbc.com/news/world-europe-51892477
France	Border closure	2020-03-17	https://www.gouvernement.fr/info-coronavirus
	Venue closure	2020-03-14	https://www.gouvernement.fr/partage/11444-declaration-de-m-edouard-philippe-premier-ministre-sur-le-covid-19
	Lockdown	2020-03-17	https://www.gouvernement.fr/info-coronavirus
	Work ban	2020-03-17	https://www.gouvernement.fr/info-coronavirus
	Event ban	2020-03-11	Date derived by aggregation, see Tab. 8
	Gathering ban	2020-03-23	Date derived by aggregation, see Tab. 8
Germany	School closure	2020-03-17	Date derived by aggregation, see Tab. 8

	Venue closure	2020-03-16	Date derived by aggregation, see Tab. 8
	Event ban	2020-03-13	https://www.reuters.com/article/us-health-coronavirus-greece-measures/greece- to-shut-shops-quarantine-all-arrivals-from-abroad-idUSKBN2131SF
Greece	Gathering ban	2020-03-18	https://www.reuters.com/article/us-health-coronavirus-greece-curfew/greece- imposes-lockdown-after-coronavirus-infections-jump-idUSKBN2190Z1
	School closure	2020-03-11	https://www.reuters.com/article/us-health-coronavirus-greece-education/greece-shuts-schools-universities-to-halt-coronavirus-spread-idUSKBN20X28V
	Venue closure	2020-03-14	https://www.cnn.gr/news/ellada/story/211153/koronoios-poia-katastimata- kleinoyn-poia-menoyn-anoikta-lista
	Lockdown	2020-03-23	https://www.reuters.com/article/us-health-coronavirus-greece-curfew/greece-imposes-lockdown-after-coronavirus-infections-jump-idUSKBN2190Z1
	Event ban	2020-03-12	https://www.gov.ie/en/press-release/96eb4c-statement-from-the-national-public-health-emergency-team/
Ireland	Gathering ban	2020-03-28	https://www.gov.ie/en/publication/539d23-stay-at-home-the-latest-public-health-measures-to-prevent-the-spread/
	School closure	2020-03-12	https://www.gov.ie/en/press-release/96eb4c-statement-from-the-national-public-health-emergency-team/
	Venue closure	2020-03-15	https://www.gov.ie/en/press-release/20fc58-all-pubs-advised-to-close-until-march-29/
	Lockdown	2020-03-28	https://www.gov.ie/en/publication/539d23-stay-at-home-the-latest-public-health-measures-to-prevent-the-spread/
	Work ban	2020-03-28	https://www.gov.ie/en/publication/539d23-stay-at-home-the-latest-public-health-measures-to-prevent-the-spread/
	Event ban	2020-03-01	Date derived by aggregation, see Tab. 12
	Gathering ban	2020-03-01	Date derived by aggregation, see Tab. 12
	School closure	2020-03-01	Date derived by aggregation, see Tab. 12
Italy	Border closure	2020-03-26	https://www.gazzettaufficiale.it/showNewsDetail?id=2553&backTo=archivio&anno=2020&provenienza=archivio
	Venue closure	2020-03-11	Date derived by aggregation, see Tab. 12
	Lockdown	2020-03-11	Date derived by aggregation, see Tab. 12
	Work ban	2020-03-22	Date derived by aggregation, see Tab. 12
	Event ban	2020-03-11	https://gouvernement.lu/fr/actualites/toutes_actualites/communiques/2020/03-mars/11-conseil-gouvernement.html

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	Gathering ban	2020-03-17	https://coronavirus.gouvernement.lu/en/communications-officielles.gouvernement% 2Ben%2Bactualites%2Btoutes_actualites%2Bcommuniques%2B2020%2B03-mars%2B17- declaration-premier-chd.html
	School closure	2020-03-16	https://coronavirus.gouvernement.lu/en/communications-officielles.gouvernement% 2Ben%2Bactualites%2Btoutes_actualites%2Bcommuniques%2B2020%2B03-mars%2B12-cdg- extraordinaire-coronavirus.html
	Venue closure	2020-03-16	https://coronavirus.gouvernement.lu/en/communications-officielles.gouvernement% 2Ben%2Bactualites%2Btoutes_actualites%2Bcommuniques%2B2020%2B03-mars%2B15- nouvelles-mesures-coronavirus.html
	Lockdown	2020-03-17	https://coronavirus.gouvernement.lu/en/communications-officielles.gouvernement% 2Ben%2Bactualites%2Btoutes_actualites%2Bcommuniques%2B2O2O%2BO3-mars%2B17- declaration-premier-chd.html
	Work ban	2020-03-18	http://www.legilux.lu/eli/etat/leg/rgd/2020/03/18/a165/jo
N. d. 1. 1	Event ban	2020-03-12	https://www.government.nl/latest/news/2020/03/12/new-measures-to-stop-spread-of-coronavirus-in-the-netherlands
Netherlands	Gathering ban	2020-03-23	https://www.rijksoverheid.nl/actueel/nieuws/2020/03/24/aanvullende-maatregelen-23-maart
	School closure	2020-03-16	https://www.government.nl/latest/news/2020/03/15/additional-measures-in-schools-the-hospitality-sector-and-sport
	Venue closure	2020-03-16	https://www.government.nl/latest/news/2020/03/15/additional-measures-in- schools-the-hospitality-sector-and-sport
Norway	Event ban	2020-03-12	https://www.fhi.no/nettpub/coronavirus/rad-og-informasjon-til-andre-sektorer-og-yrkesgrupper/anbefalinger-vedstore-arrangementer-knyttet-til-koronasmitte-i-norge/
	School closure	2020-03-13	https://www.regjeringen.no/en/aktuelt/coronavirus-measures-to-continue/id2694682/
	Border closure	2020-03-16	https://www.regjeringen.no/no/aktuelt/innforer-strengere-grensekontroll/id2693624/
	Venue closure	2020-03-13	https://www.regjeringen.no/en/aktuelt/coronavirus-measures-to-continue/id2694682/
	Event ban	2020-03-15	https://dre.pt/web/guest/home/-/dre/130277342/details/maximized
Portugal	Gathering ban	2020-03-22	https://dre.pt/web/guest/legislacao-consolidada/-/lc/130473378/202004042116/73800717/diploma/indice

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	School closure	2020-03-16	https://www.portugal.gov.pt/pt/gc22/comunicacao/comunicado?i=suspensao-de-todas-as-atividades-letivas-e-nao-letivas-com-presenca-de-estudantes-em-todas
	Venue closure	2020-03-22	as-instituicoes-de-ensino-superior https://dre.pt/web/guest/legislacao-consolidada/-/lc/130473378/202004042116/ 73800717/diploma/indice
	Lockdown	2020-03-22	https://dre.pt/web/guest/legislacao-consolidada/-/lc/130473378/202004042116/73800717/diploma/indice
	Event ban	2020-03-13	Date derived by aggregation, see Tab. 9
	Gathering ban	2020-03-15	Date derived by aggregation, see Tab. 9
	School closure	2020-03-16	Date derived by aggregation, see Tab. 9
Spain	Border closure	2020-03-17	https://english.elpais.com/society/2020-03-16/spain-closes-its-borders-to-contain-coronavirus.html
	Venue closure	2020-03-15	Date derived by aggregation, see Tab. 9
	Lockdown	2020-03-15	Date derived by aggregation, see Tab. 9
	Work ban	2020-03-30	Date derived by aggregation, see Tab. 9
Sweden	Event ban	2020-03-11	https://www.government.se/articles/2020/03/ordinance-on-a-prohibition-against-holding-public-gatherings-and-events/
	Gathering ban	2020-03-27	https://www.dailymail.co.uk/news/article-8160653/Sweden-bans-gatherings-50-people-threatens-people-six-month-jail-terms.html
	Event ban	2020-02-28	https://www.admin.ch/gov/it/pagina-iniziale/documentazione/comunicati-stampa.msg-id-78289.html
Switzerland	Gathering ban	2020-03-20	https://www.admin.ch/gov/it/pagina-iniziale/documentazione/comunicati-stampa/comunicati-stampa-consiglio-federale.msg-id-78513.html
	School closure	2020-03-16	https://www.admin.ch/gov/it/pagina-iniziale/documentazione/comunicati-stampa/comunicati-stampa-consiglio-federale.html?dyn_startDate=01.01.2015
	Border closure	2020-03-25	https://www.bag.admin.ch/bag/it/home/krankheiten/ausbrueche-epidemien-pandemienaktuelle-ausbrueche-epidemien/novel-cov/massnahmen-des-bundes.html
	Venue closure	2020-03-17	https://www.admin.ch/gov/it/pagina-iniziale/documentazione/comunicati-stampa/comunicati-stampa-consiglio-federale.html?dyn_startDate=01.01.2015
	Event ban	2020-03-16	https://www.gov.uk/guidance/covid-19-guidance-for-mass-gatherings
United Kingdom	Gathering ban	2020-03-23	https://www.gov.uk/government/speeches/pm-address-to-the-nation-on-coronavirus 23-march-2020
-	School closure	2020-03-23	https://www.gov.uk/government/speeches/pm-statement-on-coronavirus-22-march-2020

	Venue closure	2020-03-20	https://www.wsj.com/articles/u-k-escalates-measures-to-fight-coronavirus- 11584741690
	Lockdown	2020-03-23	https://www.gov.uk/government/speeches/pm-address-to-the-nation-on-coronavirus-23-march-2020
	Event ban	2020-03-16	Date derived by aggregation, see Tab. 7
	Gathering ban	2020-03-16	Date derived by aggregation, see Tab. 7
	School closure	2020-03-18	Date derived by aggregation, see Tab. 7
United States of	Border closure	2020-03-13	https://www.theguardian.com/world/2020/mar/11/coronavirus-outbreak-us-trump-
America			latest#maincontent
	Venue closure	2020-03-27	Date derived by aggregation, see Tab. 7
	Lockdown	2020-04-04	Date derived by aggregation, see Tab. 7
	Work ban	2020-03-27	Date derived by aggregation, see Tab. 7

Table 6: Sources for policies in Switzerland, Austria, Belgium, Denmark, Finland, France, United Kingdom, Greece, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, United States of America, Germany, Italy, Spain, Canada, and Australia

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NPI	Date	# Effective	Region	Source
Event ban	2020-03-11	3 out of 51	District of Columbia	https://wjla.com/news/coronavirus/dc-health-postponing-cancelling-events-1000-people-through-march
Event ban	2020-03-11	3 out of 51	Kentucky	https://governor.ky.gov/covid19
Event ban	2020-03-11	3 out of 51	Rhode Island	https://www.ri.gov/press/view/37892
Event ban	2020-03-12	18 out of 51	California	https://thehill.com/policy/healthcare/487179-california-governor-calls-for-cancellations-of-large-events
Event ban	2020-03-12	18 out of 51	Connecticut	https://portal.ct.gov/-/media/Office-of-the-Governor/Executive-Orders/Lamont- Executive-Orders/Executive-Order-No-7.pdf?la=en
Event ban	2020-03-12	18 out of 51	Florida	$\label{local-community/miami-dade/article} https://www.miamiherald.com/news/local-community/miami-dade/article 241133076. \\ html$
Event ban	2020-03-12	18 out of 51	Indiana	https://www.cdc.gov/coronavirus/2019-ncov/community/large-events/mass-gatherings-ready-for-covid-19.html
Event ban	2020-03-12	18 out of 51	Maryland	https://governor.maryland.gov/2020/03/12/governor-hogan-announces-major- actions-to-protect-public-health-limit-spread-of-covid-19-pandemic/
Event ban	2020-03-12	18 out of 51	Mississippi	https://www.coronavirus.ms.gov/2019-11/msdh-has-issued-enhanced-protective-recommendations
Event ban	2020-03-12	18 out of 51	New Jersey	https://www.nj.gov/governor/news/news/562020/approved/20200312a.shtml
Event ban	2020-03-12	18 out of 51	New Mexico	https://www.governor.state.nm.us/2020/03/12/health-secretary-issues-public- health-order-suspending-mass-gatherings-in-new-mexico/
Event ban	2020-03-12	18 out of 51	New York	https://www.governor.ny.gov/news/no-2021-continuing-temporary-suspension-and-modification-laws-relating-disaster-emergency
Event ban	2020-03-12	18 out of 51	Ohio	https://coronavirus.ohio.gov/wps/wcm/connect/gov/b815ab52-a571-4e65-9077-32468779671a/ODH+Order+to+Limit+and+Prohibit+Mass+Gatherings%2C+3.12.20.pdf? MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIKONOJOOOQO9DDDDM300Cb815ab52-a571-4e65-9077-32468779671a-n5828iN
Event ban	2020-03-12	18 out of 51	Oregon	https://www.oregon.gov/osp/programs/sfm/Pages/Event_Cancellations.aspx
Event ban	2020-03-12	18 out of 51	Pennsylvania	https://lancasteronline.com/news/health/gov-tom-wolf-cancel-large-events-with-more-than-250-people/article_1a6f027c-648e-11ea-aa2f-c787d0825889.html
Event ban	2020-03-12	18 out of 51	Utah	https://kutv.com/news/local/live-blog-closures-event-cancellations-more-in- utah-due-to-coronavirus
Event ban	2020-03-12	18 out of 51	Virginia	https://www.governor.virginia.gov/newsroom/all-releases/2020/march/headline-853537-en.html

Event ban	2020-03-12	18 out of 51	West Virginia	https://governor.wv.gov/News/press-releases/2020/Pages/COVID-UPDATE- GovJustice-announces-State-employee-travel-ban,-basketball-tournament- cancellation-among-latest-precautions.aspx
Event ban	2020-03-13	25 out of 51	Arizona	https://www.fox10phoenix.com/news/arizona-governor-says-schools-mass-gatherings-events-of-50-or-more-canceled-amid-covid-19-spread
Event ban	2020-03-13	25 out of 51	Louisiana	https://gov.louisiana.gov/index.cfm/communication/viewcampaign/2548?&uid= hgdtfgl%3Dn7&nowrap=1
Event ban	2020-03-13	25 out of 51	Massachusetts	https://www.mass.gov/news/governor-baker-issues-order-limiting-large- gatherings-in-the-commonwealth
Event ban	2020-03-13	25 out of 51	Michigan	https://www.michigan.gov/whitmer/0,9309,7-387-90499_90705-521595,00.html
Event ban	2020-03-13	25 out of 51	Minnesota	https://apnews.com/24d6d0c93ded9e8a5c2712df0a045854
Event ban	2020-03-13	25 out of 51	Tennessee	https://www.tn.gov/governor/news/2020/3/13/governor-lee-issues-guidance-for-mass-gatheringsschools-and-state-workforce.html
Event ban	2020-03-13	25 out of 51	Washington	https://www.governor.wa.gov/news-media/inslee-announces-statewide-school- closures-expansion-limits-large-gatherings
Event ban	2020-03-14	26 out of 51	North Carolina	https://files.nc.gov/governor/documents/files/E0117-COVID-19-Prohibiting-Mass- Gathering-and-K12-School-Closure.pdf
NPI impleme	nted in two thirds o	f the regions by 2	020-03-16	
Event ban	2020-03-16	51 out of 51	Alabama	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Alaska	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Arkansas	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Colorado	https://northglenn-thorntonsentinel.com/stories/colorado-events-of-50-people-no-sit-down-restaurants-bars,296332
Event ban	2020-03-16	51 out of 51	Delaware	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Georgia	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Hawaii	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Idaho	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-us-death-toll-rises-cases-testing/5053816002/

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Gathering ban	2020-03-11	1 out of 51	Kentucky	https://governor.ky.gov/covid19
NPI	Date	# Effective	Region	Source
				us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Wyoming	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Event ban	2020-03-16	51 out of 51	Wisconsin	https://content.govdelivery.com/accounts/WIGOV/bulletins/2817964
Event ban	2020-03-16	51 out of 51	Vermont	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-us-death-toll-rises-cases-testing/5053816002/
2. one oun	2020 00 10	21 041 01 31	20.40	us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Texas	us-death-toll-rises-cases-testing/5053816002/ https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Event ban	2020-03-16	51 out of 51	South Dakota	us-death-toll-rises-cases-testing/5053816002/ https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Event ban	2020-03-16	51 out of 51	South Carolina	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Oklahoma	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	North Dakota	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	New Hampshire	https://www.governor.nh.gov/news-media/press-2020/20200316-covid-10-businesses.htm
Event ban	2020-03-16	51 out of 51	Nevada	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-us-death-toll-rises-cases-testing/5053816002/
				us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Nebraska	us-death-toll-rises-cases-testing/5053816002/ https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Event ban	2020-03-16	51 out of 51	Montana	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Event ban	2020-03-16	51 out of 51	Missouri	https://governor.mo.gov/press-releases/archive/governor-parsons-statement-regarding-cdc-recommendations-mass-gatherings-and
Event ban	2020-03-16	51 out of 51	Maine	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Kansas	https://govstatus.egov.com/coronavirus
				us-death-toll-rises-cases-testing/5053816002/
Event ban	2020-03-16	51 out of 51	Iowa	update-pritzker-bans-gatherings-of-50-or-more-12-new-illinois-cases-announced/article_c5fa6e55-70f4-583b-aea9-09ce2315eb16.html https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Event ban	2020-03-16	51 out of 51	Illinois	https://herald-review.com/news/state-and-regional/govt-and-politics/monday-

Gathering ban	2020-03-13	2 out of 51	Arizona	https://www.fox10phoenix.com/news/arizona-governor-says-schools-mass-gatherings-events-of-50-or-more-canceled-amid-covid-19-spread
NPI implement	ted in two thirds o	f the regions by 20	020-03-16	gatherings events of 50 of more cancered amid covid is spread
Gathering ban	2020-03-16	51 out of 51	Alabama	https://governor.alabama.gov/assets/2020/03/Amended-Statewide-Social- Distancing-SHO-Order-3.27.2020-FINAL.pdf
Gathering ban	2020-03-16	51 out of 51	Alaska	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Arkansas	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	California	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Colorado	https://northglenn-thorntonsentinel.com/stories/colorado-events-of-50-people- no-sit-down-restaurants-bars,296332
Gathering ban	2020-03-16	51 out of 51	Connecticut	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Delaware	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	District of Columbia	https://dc.gov/release/mayor\OT1\textquoterights-order-2020-048-prohibition-
Gathering ban	2020-03-16	51 out of 51	Florida	mass-gatherings-during-public-health-emergency https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Gathering ban	2020-03-16	51 out of 51	Georgia	us-death-toll-rises-cases-testing/5053816002/ https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Gathering ban	2020-03-16	51 out of 51	Hawaii	us-death-toll-rises-cases-testing/5053816002/ https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Gathering ban	2020-03-16	51 out of 51	Idaho	us-death-toll-rises-cases-testing/5053816002/ https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Gathering ban	2020-03-16	51 out of 51	Illinois	us-death-toll-rises-cases-testing/5053816002/ https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Gathering ban	2020-03-16	51 out of 51	Indiana	us-death-toll-rises-cases-testing/5053816002/ https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Gathering ban	2020-03-16	51 out of 51	Iowa	us-death-toll-rises-cases-testing/5053816002/ https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
Gathering ban	2020-03-16	51 out of 51	Kansas	us-death-toll-rises-cases-testing/5053816002/ https://govstatus.egov.com/coronavirus
Gathering ban	2020-03-16	51 out of 51	Louisiana	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-us-death-toll-rises-cases-testing/5053816002/

Gathering ban	2020-03-16	51 out of 51	Maine	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Maryland	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates- us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Massachusetts	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Michigan	https://www.michigan.gov/whitmer/0,9309,7-387-90499_90705-521890,00.html
Gathering ban	2020-03-16	51 out of 51	Minnesota	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Mississippi	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Missouri	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Montana	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Nebraska	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Nevada	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	New Hampshire	https://www.governor.nh.gov/news-media/press-2020/20200316-covid-10-businesses.
	2020 02 16			htm
Gathering ban	2020-03-16	51 out of 51	New Jersey	https://www.governor.nh.gov/news-media/press-2020/20200315-emergency-order-
				1.html
Gathering ban	2020-03-16	51 out of 51	New Mexico	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
	2020 02 16			us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	New York	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
	2020 02 16			us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	North Carolina	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
	2020 02 16			us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	North Dakota	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
	2020 02 16		011	us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Ohio	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
	2020 02 15	51 . 651	011.1	us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Oklahoma	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/

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Gathering ban	2020-03-16	51 out of 51	Oregon	https://www.kptv.com/news/covidin-oregon-governor-cancels-gatherings-of-more-
				$\verb than/article_8e9  a a fec-67 d 2-11 ea-a f7 f-2 bad 23 d 52 443. \\ \verb html  fermion for the state of the s$
Gathering ban	2020-03-16	51 out of 51	Pennsylvania	https://www.governor.pa.gov/newsroom/gov-wolf-puts-statewide-covid-19-
				$\verb mitigation-efforts-in-effect-stresses-need-for-every-pennsylvanian-to-take- $
				action-to-stop-the-spread/
Gathering ban	2020-03-16	51 out of 51	Rhode Island	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	South Carolina	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	South Dakota	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Tennessee	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Texas	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Utah	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Vermont	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Virginia	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
_			-	us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Washington	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
			-	us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	West Virginia	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
Gathering ban	2020-03-16	51 out of 51	Wisconsin	https://content.govdelivery.com/accounts/WIGOV/bulletins/2817964
Gathering ban	2020-03-16	51 out of 51	Wyoming	https://eu.usatoday.com/story/news/health/2020/03/16/coronavirus-live-updates-
				us-death-toll-rises-cases-testing/5053816002/
NPI	Date	# Effective	Region	Source
School closure	2020-03-12	1 out of 51	New Mexico	https://www.governor.state.nm.us/2020/03/12/new-mexico-schools-to-temporarily-
			- 1-11 - 1-1-1	close/
School closure	2020-03-13	4 out of 51	Washington	https://www.governor.wa.gov/news-media/inslee-announces-statewide-school-
	_0_0 00 10			closures-expansion-limits-large-gatherings
School closure	2020-03-13	4 out of 51	West Virginia	https://governor.wv.gov/News/press-releases/2020/Pages/COVID19-UPDATE-Gov
Sensor Closure	2020 00 10	. 04. 01 51	···cs: ···giiiu	Justice-announces-closure-of-West-Virginia-schools.aspx
				substice announces crosure or west virginia schools.aspx

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School closure	2020-03-13	4 out of 51	Wisconsin	https://content.govdelivery.com/accounts/WIGOV/bulletins/281127d
School closure	2020-03-15	5 out of 51	Montana	http://opi.mt.gov/COVID-19-Information
School closure	2020-03-16	29 out of 51	Alaska	https://www.aljazeera.com/news/2020/03/emergencies-closures-states-handling-
				coronavirus-200317213356419.html
School closure	2020-03-16	29 out of 51	Arizona	https://www.azed.gov/finance/2020/03/16/school-closures-from-march-16-2020-
				through-march-27-2020/
School closure	2020-03-16	29 out of 51	Delaware	https://www.abc27.com/news/list-states-that-have-closed-all-schools-due-to-
				coronavirus/
School closure	2020-03-16	29 out of 51	District of Columbia	https://dcps.dc.gov/coronavirus
School closure	2020-03-16	29 out of 51	Florida	http://www.fldoe.org/newsroom/latest-news/florida-department-of-education-
				announces-additional-guidance-for-the-2019-20-school-year.stml
School closure	2020-03-16	29 out of 51	Hawaii	https://www.aljazeera.com/news/2020/03/emergencies-closures-states-handling-
				coronavirus-200317213356419.html
School closure	2020-03-16	29 out of 51	Illinois	https://www.chicagotribune.com/coronavirus/ct-cb-coronavirus-illinois-schools-
				closed-cps-parents-need-to-know-20200317-zrcim5cpcfcgnerkboyx7esg5y-story.html
School closure	2020-03-16	29 out of 51	Kentucky	https://governor.ky.gov/covid19
School closure	2020-03-16	29 out of 51	Louisiana	https://www.fox61.com/article/news/health/coronavirus/connecticut-coronavirus-
				updates-march-12/520-ddfcc84c-1521-4354-907b-d53e2642bee9
School closure	2020-03-16	29 out of 51	Maine	https://www.pressherald.com/2020/03/14/scarborough-closes-schools-through-at-
a	2020 02 16	20 0.71		least-march-20/
School closure	2020-03-16	29 out of 51	Maryland	https://fox8.com/news/list-states-that-have-closed-all-schools-due-to-
0 1 1 1	2020 02 16	20 . 651	36.11	coronavirus/
School closure	2020-03-16	29 out of 51	Michigan	https://www.michigan.gov/whitmer/0,9309,7-387-90499_90705-521890,00.html
School closure	2020-03-16	29 out of 51 29 out of 51	Nevada	http://www.doe.nv.gov
School closure	2020-03-16	29 out of 51	New Hampshire	https://www.governor.nh.gov/news-media/press-2020/20200315-emergency-order- 1.html
School closure	2020-03-16	29 out of 51	New York	1.ntml https://www.governor.ny.gov/news/governor-cuomo-signs-executive-order-closing-
School closure	2020-03-10	29 Out 01 31	New Tork	schools-statewide-two-weeks
School closure	2020-03-16	29 out of 51	North Carolina	https://www.dpi.nc.gov/news/press-releases/2020/03/16/state-board-issues-
School closure	2020-03-10	29 Out 01 31	North Caronna	guidance-personnel-facility-matters-covid-19-closure
School closure	2020-03-16	29 out of 51	North Dakota	https://www.nd.gov/dpi/school-closure-frequently-asked-questions
School closure	2020-03-16	29 out of 51	Pennsylvania	https://www.governor.pa.gov/newsroom/governor-wolf-announces-closure-of-
Belloof closure	2020 03 10	2) out of 51	1 Chinsy i vania	pennsylvania-schools/
School closure	2020-03-16	29 out of 51	South Carolina	https://thehill.com/homenews/state-watch/487708-south-carolina-closes-schools-
	_520 05 10	_, out 0. D1		amid-outbreak
School closure	2020-03-16	29 out of 51	South Dakota	https://www.nd.gov/dpi/executive-orders-education
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	School closure	2020-03-16	29 out of 51	Tennessee	https://www.tn.gov/governor/news/2020/3/16/governor-lee-issues-statement-
	0.1 1.1	2020 02 16	20 . 651	T.T. 1	regarding-statewide-school-closure.html
	School closure	2020-03-16	29 out of 51	Utah	https://www.schools.utah.gov/File/b27ab22a-d14f-4e12-b247-f95becea39d3
	School closure	2020-03-16	29 out of 51	Virginia	https://www.governor.virginia.gov/newsroom/all-releases/2020/march/headline-
		2020 02 16	20 0.51		854442-en.html
	School closure	2020-03-16	29 out of 51	Wyoming	https://www.ktvq.com/wyoming-governor-directs-schools-to-close
			of the regions by 2		
	School closure	2020-03-17	38 out of 51	Arkansas	https://www.abc27.com/news/list-states-that-have-closed-all-schools-due-to-coronavirus/
	School closure	2020-03-17	38 out of 51	California	https://www.abc27.com/news/list-states-that-have-closed-all-schools-due-to- coronavirus/
	School closure	2020-03-17	38 out of 51	Connecticut	https://patch.com/connecticut/guilford/coronavirus-ct-gov-closes-all-schools- state-has-now-26-cases
	School closure	2020-03-17	38 out of 51	Massachusetts	https://fox8.com/news/list-states-that-have-closed-all-schools-due-to-coronavirus/
	School closure	2020-03-17	38 out of 51	Missouri	https://www.abc27.com/news/list-states-that-have-closed-all-schools-due-to-coronavirus/
53	School closure	2020-03-17	38 out of 51	Ohio	https://coronavirus.ohio.gov/wps/wcm/connect/gov/aeadbec1-574d-4a42-9ca4-4487b7a67a4f/Director%27s+Order+-+K-12+Schools+O3.14.20.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIKONOJOOOQO9DDDDM3000-aeadbec1-574d-4a42-9ca4-4487b7a67a4f-n5827Z4
	School closure	2020-03-17	38 out of 51	Oklahoma	https://sde.ok.gov/newsblog/2020-03-16/emergency-state-board-meeting-expected-close-schools-until-april-6
	School closure	2020-03-17	38 out of 51	Oregon	https://www.oregon.gov/newsroom/Pages/NewsDetail.aspx?newsid=36203
	School closure	2020-03-17	38 out of 51	Rhode Island	https://www.ride.ri.gov/InsideRIDE/AdditionalInformation/Covid19.aspx
	School closure	2020-03-18	46 out of 51	Alabama	https://www.aljazeera.com/news/2020/03/emergencies-closures-states-handling- coronavirus-200317213356419.html
	School closure	2020-03-18	46 out of 51	Georgia	https://www.gpb.org/blogs/education-matters/2020/03/16/gov-kemp-orders-all-k-12-georgia-schools-close-until-end-of-march
	School closure	2020-03-18	46 out of 51	Idaho	https://www.idahostatesman.com/news/coronavirus/article241291676.html
	School closure	2020-03-18	46 out of 51	Kansas	https://www.washingtonpost.com/education/2020/03/17/kansas-is-first-state-
					close-schools-rest-school-year-amid-coronavirus-crisis-california-could-be- next/
	School closure	2020-03-18	46 out of 51	Minnesota	https://mn.gov/governor/assets/E0%2020-02%20Final_tcm1055-423084.pdf
	School closure	2020-03-18	46 out of 51	Nebraska	https://www.education.ne.gov/publichealth/known-school-closures/
	School closure	2020-03-18	46 out of 51	New Jersey	https://www.nj.gov/governor/news/news/562020/approved/20200316c.shtml
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School closure	2020-03-18	46 out of 51	Vermont	https://governor.vermont.gov/press-release/gov-scott-orders-orderly-closure- vermont-prek-12-schools-week
School closure	2020-03-19	49 out of 51	Indiana	https://www.abc27.com/news/list-states-that-have-closed-all-schools-due-to- coronavirus/
School closure	2020-03-19	49 out of 51	Mississippi	https://www.wlox.com/2020/03/19/gov-tate-reeves-give-update-plans-mississippi- schools/
School closure	2020-03-19	49 out of 51	Texas	https://www.dallasnews.com/news/public-health/2020/03/19/gov-abbott-announces- temporary-statewide-school-restaurant-gym-closures/
School closure	2020-03-23	50 out of 51	Colorado	https://www.denverpost.com/2020/03/11/colorado-schools-closed-coronavirus/
NPI	Date	# Effective	Region	Source
Venue closure	2020-03-15	3 out of 51	District of Columbia	https://www.washingtonian.com/2020/03/16/mayor-closes-dc-bars-and-restaurants-
				for-dine-in-service/
Venue closure	2020-03-15	3 out of 51	Ohio	https://governor.ohio.gov/wps/portal/gov/governor/media/news-and-media/dewine-
				orders-ohio-bars-restaurants-to-close
Venue closure	2020-03-15	3 out of 51	Pennsylvania	https://www.governor.pa.gov/newsroom/wolf-administration-orders-restaurants-
				and-bars-to-close-dine-in-service-in-mitigation-counties-to-stop-spread-of-
				covid-19/
Venue closure	2020-03-16	18 out of 51	California	https://www.latimes.com/business/story/2020-03-15/coronavirus-close-los-
	2020 02 16	10 051		angeles-restaurants
Venue closure	2020-03-16	18 out of 51	Connecticut	https://www.courant.com/news/connecticut/hc-news-coronavirus-update-0316-
*** 1	2020 02 16	10 . 651	D 1	20200316-ukhf6fmwh5cvtaob3yiavyzm5q-story.html
Venue closure	2020-03-16	18 out of 51	Delaware	https://coronavirus.delaware.gov/wp-content/uploads/sites/177/2020/03/
*** 1	2020 02 16	10 . 651	**** ·	coronavirus_govdec_rest_bars-1.pdf
Venue closure	2020-03-16	18 out of 51	Illinois	https://time.com/5803539/united-states-coronavirus-bars-restaurants/
Venue closure	2020-03-16	18 out of 51	Indiana	https://www.wndu.com/content/news/Indiana-governor-closes-restaurants-bars-to-
*** 1	2020 02 16	10 . 651	77 . 1	dine-in-customers-568830011.html
Venue closure	2020-03-16	18 out of 51	Kentucky	https://governor.ky.gov/covid19
Venue closure	2020-03-16	18 out of 51	Louisiana	https://eu.thenewsstar.com/story/news/2020/03/16/louisiana-coronavirus-cases-
*** 1	2020 02 16	10 . 651		rise-114-legislature-resume-work/5057909002/
Venue closure	2020-03-16	18 out of 51	Maryland	https://governor.maryland.gov/2020/03/19/governor-hogan-announces-further-
	2020 02 16	10 051	2011	actions-to-slow-the-spread-of-covid-19-relaunches-maryland-unites-initiative/
Venue closure	2020-03-16	18 out of 51	Michigan	https://www.usnews.com/news/best-states/michigan/articles/2020-03-16/michigan-
*** 1	2020 02 15	10 . 651	N. T. 1.	governor-closes-restaurants-to-dine-in-customers
Venue closure	2020-03-16	18 out of 51	New Hampshire	https://www.governor.nh.gov/news-media/press-2020/20200316-covid-10-businesses.
				htm

Venue closure Venue closure	2020-03-16 2020-03-16	18 out of 51 18 out of 51	New Jersey New York	https://www.nj.gov/governor/news/news/562020/approved/20200316a.shtml https://www.politico.com/states/new-york/albany/story/2020/03/16/new-york-new-
				jersey-connecticut-closing-bars-restaurants-indefinitely-starting-monday-night- 1267159
Venue closure	2020-03-16	18 out of 51	Oregon	https://www.oregon.gov/newsroom/Pages/NewsDetail.aspx?newsid=36192
Venue closure	2020-03-16	18 out of 51	Rhode Island	https://www.ri.gov/press/view/37924
Venue closure	2020-03-16	18 out of 51	Washington	https://www.governor.wa.gov/news-media/inslee-announces-statewide-shutdown-restaurants-bars-and-expanded-social-gathering-limits
Venue closure	2020-03-17	28 out of 51	Colorado	https://www.eater.com/2020/3/15/21180761/coronavirus-restaurants-bars-closed-new-york-la-chicago
Venue closure	2020-03-17	28 out of 51	Iowa	https://governor.iowa.gov/press-release/gov-reynolds-issues-a-state-of-public- health-disaster-emergency
Venue closure	2020-03-17	28 out of 51	Massachusetts	https://www.mass.gov/news/baker-polito-administration-announces-emergency-actions-to-address-covid-19
Venue closure	2020-03-17	28 out of 51	Nevada	https://nvhealthresponse.nv.gov/wp-content/uploads/2020/03/NV-Health-Reponse- COVID19-Risk-Management-Initiative.pdf
Venue closure	2020-03-17	28 out of 51	North Carolina	https://www.newsobserver.com/news/coronavirus/article241245211.html
Venue closure	2020-03-17	28 out of 51	South Carolina	https://governor.sc.gov/sites/default/files/Documents/Executive-Orders/
Venue closure	2020-03-17	28 out of 51	Vermont	https://governor.vermont.gov/press-release/governor-phil-scott-announces-new-guidance-covid-19-community-mitigation-measures
Venue closure	2020-03-17	28 out of 51	Wisconsin	https://madison.com/ct/news/local/govt-and-politics/gov-tony-evers-orders-bars-restaurants-to-be-closed-across-wisconsin-for-in-house-dining/article_40abef70-b51e-5756-962f-801f0387eed6.html
Venue closure	2020-03-18	31 out of 51	Maine	https://www.maine.gov/governor/mills/news/governor-mills-takes-further-steps- respond-covid-19-protect-health-and-safety-maine-people
Venue closure	2020-03-18	31 out of 51	Utah	https://governor.utah.gov/2020/03/18/state-orders-restaurants-bars-to-suspend-dine-in-services-to-slow-spread-of-covid-19/
NPI implement	ed in two thirds o	f the regions by 20	020-03-19	
Venue closure	2020-03-19	36 out of 51	Arizona	https://azgovernor.gov/governor/news/2020/03/governor-ducey-announces-latest-covid-19-actions
Venue closure	2020-03-19	36 out of 51	Hawaii	https://www.hawaiinewsnow.com/2020/03/19/city-orders-restaurants-bars-night- clubs-close-dine-in-services-days/
Venue closure	2020-03-19	36 out of 51	Nebraska	https://www.3newsnow.com/news/coronavirus/directed-health-measures-released-by-governor-ricketts-office
Venue closure	2020-03-19	36 out of 51	New Mexico	https://www.governor.state.nm.us/2020/03/18/new-mexico-to-order-additional-closures-to-limit-spread-of-covid-19/

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NPI	Date	# Effective	Region	Source
		210400101		home-order-in-ongoing-effort-to-combat-covid-19/
Venue closure	2020-03-30	51 out of 51	Kansas	https://governor.kansas.gov/governor-kelly-issues-temporary-statewide-stay-
Venue closure	2020-03-27	50 out of 51	Alabama	https://governor.alabama.gov/assets/2020/03/Amended-Statewide-Social- Distancing-SHO-Order-3.27.2020-FINAL.pdf
				close-in-counties-affected-by-covid-19/
Venue closure	2020-03-25	49 out of 51	Oklahoma	https://kfor.com/news/local/gov-stitt-orders-all-non-essential-businesses-to-
Venue closure	2020-03-25	49 out of 51	Idaho	https://coronavirus.idaho.gov/essential-services/
Venue closure	2020-03-24	47 out of 51	Virginia	https://www.governor.virginia.gov/newsroom/all-releases/2020/march/headline-855292-en.html
			**	response/
Venue closure	2020-03-24	47 out of 51	Mississippi	<pre>in-georgia-enact-restrictions-as-virus-spreads https://www.jacksonfreepress.com/documents/2020/mar/24/mississippis-covid-19-</pre>
Venue closure	2020-03-24	47 out of 51	Georgia	https://www.usnews.com/news/best-states/georgia/articles/2020-03-23/counties-
venue ciosure	2020-03-24	4/ Out 01 31	Aiaska	https://gov.alaska.gov/wp-content/uploads/sites/2/03232020-SOA-COVID-19-Health-Mandate-009.pdf
Venue closure	2020-03-24	47 out of 51	Alaska	regulations.html
	<del>-</del>	2 222 22 01		mandating-alternative-business-models-for-restaurants-and-gymslifts-alcohol-
Venue closure	2020-03-23	43 out of 51	Tennessee	https://www.tn.gov/governor/news/2020/3/22/govbill-lee-signs-executive-order-
Venue closure	2020-03-23	43 out of 51	Missouri	https://governor.mo.gov/press-releases/archive/governor-parson-signs-executive-order-20-05-allowing-sale-unprepared-foods
., ,	2020 02 22	10 . 651	3.6'	closure-order/
Venue closure	2020-03-20	41 out of 51	Wyoming	https://health.wyo.gov/governor-and-state-health-officer-issue-public-spaces-
Tonac crosure	2020 03 20	71 Out 01 31	South Dukota	patrons-provides-additional-guidance-k-12-schools
Venue closure	2020-03-20	41 out of 51	South Dakota	patrons-provides-additional-guidance-k-12-schools https://www.governor.nd.gov/news/burgum-orders-bars-restaurants-closed-site-
Venue closure	2020-03-20	41 out of 51	North Dakota	https://www.governor.nd.gov/news/burgum-orders-bars-restaurants-closed-site-patrons-provides-additional-guidance-k-12-schools
				risks-to-curtail-spread-of-covid-19
Tonac crosure	2020 03 20	71 Out 01 31	1.10munu	and-alcoholic-beverage-businesses-and-other-activities-that-pose-enhanced-
Venue closure	2020-03-20	41 out of 51	Montana	<pre>bars-c/ https://news.mt.gov/governor-bullock-announces-closure-of-dine-in-food-service-</pre>
Venue closure	2020-03-20	41 out of 51	Arkansas	https://www.nwaonline.com/news/2020/mar/20/governor-orders-gyms-restaurants-
				temporary-statewide-school-restaurant-gym-closures/
Venue closure	2020-03-19	36 out of 51	Texas	

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Lockdown	2020-01-04	1 out of 51	Nevada	https://www.fox5vegas.com/coronavirus/nevada-gov-sisolak-issues-stay-at-home-
				directive-through-april-30/article_6b11e83c-7430-11ea-abe6-0f026faccbed.html
Lockdown	2020-03-19	2 out of 51	California	https://www.gov.ca.gov/2020/03/19/governor-gavin-newsom-issues-stay-at-home-
				order/
Lockdown	2020-03-21	4 out of 51	Illinois	https://www2.illinois.gov/Pages/news-item.aspx?ReleaseID=21288
Lockdown	2020-03-21	4 out of 51	New Jersey	https://www.nj.gov/governor/news/news/562020/approved/20200320j.shtml
Lockdown	2020-03-22	5 out of 51	New York	https://patch.com/new-york/new-york-city/new-yorks-stay-home-order-goes-effect
Lockdown	2020-03-23	11 out of 51	Connecticut	https://portal.ct.gov/Office-of-the-Governor/News/Press-Releases/2020/03-2020/
				Governor-Lamont-Releases-Guidance-to-Businesses-on-Order-Asking-Connecticut-to-
				Stay-Safe-Stay-Home
Lockdown	2020-03-23	11 out of 51	Louisiana	https://gov.louisiana.gov/assets/Proclamations/2020/JBE-33-2020.pdf
Lockdown	2020-03-23	11 out of 51	New Mexico	https://www.governor.state.nm.us/2020/03/23/state-enacts-further-restrictions-
T 11	2020 02 22	11 . 651	01.	to-stop-spread-including-stay-at-home-instruction/
Lockdown	2020-03-23	11 out of 51	Ohio	https://coronavirus.ohio.gov/static/DirectorsOrderStayAtHome.pdf
Lockdown	2020-03-23	11 out of 51	Oregon	https://www.oregon.gov/newsroom/Pages/NewsDetail.aspx?newsid=36240
Lockdown	2020-03-23	11 out of 51	Washington	https://www.governor.wa.gov/news-media/inslee-announces-stay-home-stay-
Lockdown	2020-03-24	16 out of 51	Delaware	healthy%C2%A0order
Lockdowii	2020-03-24	10 out 01 31	Delaware	https://governor.delaware.gov/wp-content/uploads/sites/24/2020/03/Fifth- Modification-to-State-of-Emergency-03222020.pdf
Lockdown	2020-03-24	16 out of 51	Massachusetts	https://www.mass.gov/news/dph-public-health-advisory-stay-at-home-advisory
Lockdown	2020-03-24	16 out of 51	Michigan	https://www.mass.gov/news/dpn-public-health-advisory-stay-at-home-advisory https://www.michigan.gov/coronavirus/0,9753,7-406-98178_98455-521682,00.html
Lockdown	2020-03-24	16 out of 51	Vermont	https://governor.vermont.gov/sites/scott/files/documents/ADDENDUM%206%20T0%
Lockdowii	2020-03-24	10 out 01 31	vermont	20EXECUTIVE%200RDER%2001-20.pdf
Lockdown	2020-03-24	16 out of 51	West Virginia	https://governor.wv.gov/News/press-releases/2020/Pages/COVID-19-UPDATE-Gov
Lockdown	2020 03 21	10 041 01 21	west viiginiu	Justice-issues-Stay-at-Home-order-for-all-West-Virginians.aspx
Lockdown	2020-03-25	20 out of 51	Hawaii	https://governor.hawaii.gov/newsroom/latest-news/office-of-the-governor-news-
				release-governor-ige-issues-statewide-order-to-stay-at-home-work-from-home-to-
				fight-covid-19/
Lockdown	2020-03-25	20 out of 51	Idaho	https://www.idahostatesman.com/news/coronavirus/article241479406.html
Lockdown	2020-03-25	20 out of 51	Indiana	https://www.in.gov/gov/3232.htm
Lockdown	2020-03-25	20 out of 51	Wisconsin	https://content.govdelivery.com/accounts/WIGOV/bulletins/282deef
Lockdown	2020-03-26	22 out of 51	Colorado	https://bloximages.newyork1.vip.townnews.com/coloradopolitics.com/content/tncms/
				assets/v3/editorial/1/5c/15c0d646-6efd-11ea-9f44-936924cd21a7/5e7bfea00dc56.
				pdf.pdf
Lockdown	2020-03-26	22 out of 51	New Hampshire	https://www.governor.nh.gov/news-media/emergency-orders/documents/emergency-
				order-17-1.pdf

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Lockdown	2020-03-27	24 out of 51	Minnesota	https://mn.gov/governor/assets/3a.%20E0%2020-20%20FINAL%20SIGNED%20Filed_ tcm1055-425020.pdf
Lockdown	2020-03-27	24 out of 51	Utah	https://coronavirus.utah.gov/full-text-governors-stay-home-stay-safe-directive/
Lockdown	2020-03-28	27 out of 51	Alaska	https://gov.alaska.gov/home/covid19-healthmandates/
Lockdown	2020-03-28	27 out of 51	Montana	https://news.mt.gov/governor-bullock-issues-stay-at-home-directive-to-slow-the-spread-of-covid-19
Lockdown	2020-03-28	27 out of 51	Rhode Island	http://www.governor.ri.gov/documents/orders/Executive-Order-20-13.pdf
Lockdown	2020-03-30	32 out of 51	District of Columbia	https://coronavirus.dc.gov/release/mayor-bowser-issues-stay-home-order
Lockdown	2020-03-30	32 out of 51	Kansas	https://governor.kansas.gov/wp-content/uploads/2020/03/E020-16.pdf
Lockdown	2020-03-30	32 out of 51	Maryland	https://www.youtube.com/watch?v=8TPx6pxBCyM
Lockdown	2020-03-30	32 out of 51	North Carolina	https://files.nc.gov/governor/documents/files/E0121-Stay-at-Home-Order-3.pdf
Lockdown	2020-03-30	32 out of 51	Virginia	https://www.governor.virginia.gov/newsroom/all-releases/2020/march/headline-855702-en.html
Lockdown	2020-03-31	33 out of 51	Arizona	https://azgovernor.gov/governor/news/2020/03/stay-home-stay-healthy-stay-connected
NPI implemen	nted in two thirds o	f the regions by 20	020-04-01	
Lockdown	2020-04-01	36 out of 51	Florida	https://eu.floridatoday.com/story/news/2020/04/01/coronavirus-florida-stay-
				home-order-what-means-explanation-what-essential-non-essential-desantis/5104936002/
Lockdown	2020-04-01	36 out of 51	Pennsylvania	https://www.nytimes.com/interactive/2020/us/coronavirus-stay-at-home-order.html
Lockdown	2020-04-01	36 out of 51	Tennessee	https://publications.tnsosfiles.com/pub/execorders/exec-orders-lee22.pdf
Lockdown	2020-04-02	39 out of 51	Georgia	https://gov.georgia.gov/document/2020-executive-order/04022001/download
Lockdown	2020-04-02	39 out of 51	Maine	https://www.maine.gov/governor/mills/news/governor-mills-issues-stay-healthy-home-mandate-2020-03-31
Lockdown	2020-04-03	40 out of 51	Mississippi	https://thehill.com/homenews/state-watch/490674-mississippi-governor-issues-stay-at-home-order
Lockdown	2020-04-04	41 out of 51	Alabama	https://governor.alabama.gov/newsroom/2020/04/governor-ivey-issues-stay-at- home-order/
Lockdown	2020-04-06	42 out of 51	Missouri	https://governor.mo.gov/priorities/stay-home-order
Lockdown	2020-04-07	43 out of 51	South Carolina	http://abcnews4.com/news/local/gov-mcmaster-orders-stay-at-home-order-for-south-carolina
NPI	Date	# Effective	Region	Source
Work ban	2020-03-19	2 out of 51	California	https://www.gov.ca.gov/2020/03/19/governor-gavin-newsom-issues-stay-at-home-order/

Work ban	2020-03-19	2 out of 51	Pennsylvania	https://www.governor.pa.gov/newsroom/all-non-life-sustaining-businesses-in-pennsylvania-to-close-physical-locations-as-of-8-pm-today-to-slow-spread-of-covid-19/
Work ban	2020-03-21	4 out of 51	Illinois	https://www.nytimes.com/2020/03/21/world/coronavirus-news.html
Work ban	2020-03-21	4 out of 51	New Jersey	https://www.nj.gov/governor/news/news/562020/approved/20200320j.shtml
Work ban	2020-03-22	5 out of 51	New York	https://www.governor.ny.gov/news/no-2028-continuing-temporary-suspension-and-modification-laws-relating-disaster-emergency
Work ban	2020-03-23	12 out of 51	Connecticut	https://portal.ct.gov/Office-of-the-Governor/News/Press-Releases/2020/03- 2020/Governor-Lamont-Signs-Executive-Order-Asking-Connecticut-Businesses-and- Residents-Stay-Safe
Work ban	2020-03-23	12 out of 51	Maryland	https://governor.maryland.gov/2020/03/23/governor-hogan-announces-closure-of-all-non-essential-businesses-175-million-relief-package-for-workers-and-small-businesses-affected-by-covid-19/
Work ban	2020-03-23	12 out of 51	Massachusetts	https://www.mass.gov/news/governor-charlie-baker-orders-all-non-essential- businesses-to-cease-in-person-operation
Work ban	2020-03-23	12 out of 51	New Mexico	https://www.governor.state.nm.us/2020/03/23/state-enacts-further-restrictions- to-stop-spread-including-stay-at-home-instruction/
Work ban	2020-03-23	12 out of 51	Ohio	https://coronavirus.ohio.gov/static/DirectorsOrderStayAtHome.pdf
Work ban	2020-03-23	12 out of 51	Oregon	https://govstatus.egov.com/or-covid-19
Work ban	2020-03-23	12 out of 51	Washington	https://www.governor.wa.gov/news-media/inslee-announces-stay-home-stay- healthy%C2%AOorder
Work ban	2020-03-24	16 out of 51	Delaware	https://governor.delaware.gov/wp-content/uploads/sites/24/2020/03/Fourth-Modification-to-State-of-Emergency-03222020.pdf
Work ban	2020-03-24	16 out of 51	Michigan	https://www.michigan.gov/coronavirus/0,9753,7-406-98178_98455-521682,00.html
Work ban	2020-03-24	16 out of 51	Vermont	https://governor.vermont.gov/sites/scott/files/documents/ADDENDUM%206%20T0% 20EXECUTIVE%200RDER%2001-20.pdf
Work ban	2020-03-24	16 out of 51	West Virginia	https://governor.wv.gov/News/press-releases/2020/Pages/COVID-19-UPDATE-Gov Justice-issues-Stay-at-Home-order-for-all-West-Virginians.aspx
Work ban	2020-03-25	21 out of 51	Hawaii	https://governor.hawaii.gov/newsroom/latest-news/office-of-the-governor-news-release-governor-ige-issues-statewide-order-to-stay-at-home-work-from-home-to-fight-covid-19/
Work ban	2020-03-25	21 out of 51	Idaho	https://www.idahostatesman.com/news/coronavirus/article241479406.html
Work ban	2020-03-25	21 out of 51	Indiana	https://www.in.gov/gov/3232.htm
Work ban	2020-03-25	21 out of 51	Oklahoma	https://www.sos.ok.gov/documents/executive/1919.pdf
Work ban	2020-03-25	21 out of 51	Wisconsin	https://content.govdelivery.com/accounts/WIGOV/bulletins/282deef

Work ban	2020-03-26	24 out of 51	Colorado	https://bloximages.newyork1.vip.townnews.com/coloradopolitics.com/content/tncms/assets/v3/editorial/1/5c/15c0d646-6efd-11ea-9f44-936924cd21a7/5e7bfea00dc56.pdf.pdf
Work ban	2020-03-26	24 out of 51	Kentucky	https://governor.ky.gov/attachments/20200325_Executive-Order_2020-257_Healthy-at-Home.pdf
Work ban	2020-03-26	24 out of 51	New Hampshire	https://www.governor.nh.gov/news-media/emergency-orders/documents/emergency-order-17-1.pdf
Work ban	2020-03-27	26 out of 51	Minnesota	https://mn.gov/governor/assets/3a.%20E0%2020-20%20FINAL%20SIGNED%20Filed_ tcm1055-425020.pdf
Work ban	2020-03-28	28 out of 51	Alaska	https://gov.alaska.gov/home/covid19-healthmandates/
Work ban	2020-03-28	28 out of 51	Montana	https://news.mt.gov/governor-bullock-issues-stay-at-home-directive-to-slow-the-spread-of-covid-19
Work ban	2020-03-30	32 out of 51	District of Columbia	https://coronavirus.dc.gov/release/mayor-bowser-issues-stay-home-order
Work ban	2020-03-30	32 out of 51	Kansas	https://governor.kansas.gov/governor-kelly-issues-temporary-statewide-stay- home-order-in-ongoing-effort-to-combat-covid-19/
Work ban	2020-03-30	32 out of 51	North Carolina	https://files.nc.gov/governor/documents/files/E0121-Stay-at-Home-Order-3.pdf
Work ban	2020-03-30	32 out of 51	Rhode Island	http://www.governor.ri.gov/documents/orders/Executive-Order-20-13.pdf
Work ban	2020-04-01	33 out of 51	Tennessee	https://publications.tnsosfiles.com/pub/execorders/exec-orders-lee22.pdf
NPI impleme	ented in two thirds o	$\overline{f}$ the regions by $\overline{20}$	020-04-02	
Work ban	2020-04-07	35 out of 51	South Carolina	http://abcnews4.com/news/local/gov-mcmaster-orders-stay-at-home-order-for-south-carolina

Table 7: Sources for policies implemented across different US States

NPI	Date	# Effective	Region	Source
Event ban	2020-03-09	1 out of 16	Bavaria	https://www.br.de/nachrichten/bayern/coronavirus-bayern-will-
				grossveranstaltungen-verbieten, RslNyZO
Event ban	2020-03-10	2 out of 16	North Rhine- Westphalia	https://www1.wdr.de/nachrichten/themen/coronavirus/veranstaltungen-corona-
				virus-absage-nrw-100.html
Event ban	2020-03-11	7 out of 16	Baden- Wuerttemberg	https://bnn.de/lokales/karlsruhe/baden-wuerttemberg-will-grosse-
				veranstaltungen-wegen-des-coronavirus-untersagen-lassen
Event ban	2020-03-11	7 out of 16	Berlin	https://www.t-online.de/nachrichten/panorama/id_87498882/coronavirus-in-diesen-
				$\verb bundeslaendern-sind-grossveranstaltungen-verboten.html $
Event ban	2020-03-11	7 out of 16	Hamburg	https://www.t-online.de/nachrichten/panorama/id_87498882/coronavirus-in-diesen-
				${\tt bundes laendern-sind-grossver} an {\tt staltungen-verboten.html}$
Event ban	2020-03-11	7 out of 16	Lower Saxony	https://www.t-online.de/nachrichten/panorama/id_87498882/coronavirus-in-diesen-
				$\verb bundeslaendern-sind-grossveranstaltungen-verboten.html $
Event ban	2020-03-11	7 out of 16	Schleswig- Holstein	https://www.ndr.de/nachrichten/schleswig-holstein/Details-zur-Absage-von-
				Grossveranstaltungen-,pk214.html
Event ban	2020-03-12	9 out of 16	Bremen	https://www.t-online.de/nachrichten/panorama/id_87498882/coronavirus-in-diesen-
				$\verb bundeslaendern-sind-grossveranstaltungen-verboten.html $
Event ban	2020-03-12	9 out of 16	Thuringia	https://www.mdr.de/thueringen/coronavirus-veranstaltungen-massnahmen-
				teilnehmer-100.html
NPI implement		f the regions by 20	020-03-13	
Event ban	2020-03-13	16 out of 16	Brandenburg	https://twitter.com/StM_Klose/status/1238028608469336070
Event ban	2020-03-13	16 out of 16	Hesse	https://twitter.com/StM_Klose/status/1238028608469336070
Event ban	2020-03-13	16 out of 16	Mecklenburg-	https://twitter.com/StM_Klose/status/1238028608469336070
			Vorpommern	
Event ban	2020-03-13	16 out of 16	Rhineland- Palatinate	https://twitter.com/StM_Klose/status/1238028608469336070
Event ban	2020-03-13	16 out of 16	Saarland	https://twitter.com/StM_Klose/status/1238028608469336070
Event ban	2020-03-13	16 out of 16	Saxony	https://twitter.com/StM_Klose/status/1238028608469336070
Event ban	2020-03-13	16 out of 16	Saxony- Anhalt	https://twitter.com/StM_Klose/status/1238028608469336070
NPI	Date	# Effective	Region	Source
Gathering ban	2020-03-14	1 out of 16	Berlin	https://www.reuters.com/article/us-health-coronavirus-germany/berlin-joins-
-				cologne-in-closing-bars-clubs-as-germany-toughens-coronavirus-response-

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<b>IPI</b>	Date	# Effective	Region	Source
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Sathering ban	2020-03-23	16 out of 16	Thuringia	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlinie 1733416
Sathering ban			Schleswig- Holstein	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlinie 1733416
Sathering ban	2020-03-23 2020-03-23	16 out of 16 16 out of 16	Saxony- Anhalt	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlinie 1733416
C			·	1733416
Sathering ban	2020-03-23	16 out of 16	Saxony	1733416 https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlinie
Sathering ban	2020-03-23	16 out of 16	Saarland	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlinie
Sathering ban	2020-03-23	16 out of 16	Rhineland- Palatinate	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlinie
Sathering ban	2020-03-23	16 out of 16	North Rhine- Westphalia	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlini 1733416
			Vorpommern	1733416
Sathering ban	2020-03-23	16 out of 16	Mecklenburg-	1733416 https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlini
Sathering ban	2020-03-23	16 out of 16	Lower Saxony	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlini
Sathering ban	2020-03-23	16 out of 16	Hesse	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlini 1733416
Sathering ban	2020-03-23	16 out of 16	Hamburg	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlini 1733416
S-41	2020 02 22	16f 16	IIh	1733416
Sathering ban	2020-03-23	16 out of 16	Bremen	1733416 https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlini
Sathering ban	2020-03-23	16 out of 16	Brandenburg	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlini
Gathering ban	2020-03-23	16 out of 16	Baden- Wuerttemberg	https://www.bundesregierung.de/breg-de/themen/coronavirus/faqs-neue-leitlini 1733416
		f the regions by 20		
				says-lets-get-through-this-as-shops-bars-and-churches-shut-idUSKBN213178

School closure 2020-03-16 13 out of 16 Bavaria

 $\label{lem:https://www.spiegel.de/international/germany/the-shutdown-begins-across-germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76$ 

Venue closure	2020-03-14	2 out of 16	Berlin	https://www.reuters.com/article/us-health-coronavirus-germany/berlin-joins-cologne-in-closing-bars-clubs-as-germany-toughens-coronavirus-response-
NPI	Date	# Effective	Region	Source
School closure	2020-03-18	16 out of 16	Brandenburg	https://www.spiegel.de/international/germany/the-shutdown-begins-across-germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
	,		·· <b>0</b>	germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
chool closure	2020-03-17	15 out of 16	Thuringia	germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76 https://www.spiegel.de/international/germany/the-shutdown-begins-across-
chool closure	2020-03-17	15 out of 16	Baden- Wuerttemberg	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
	2020 02 15	15	D 1 W	germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
chool closure	2020-03-16	13 out of 16	Schleswig- Holstein	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
	2-4 44 -0			germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
School closure	2020-03-16	13 out of 16	Saxony- Anhalt	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
choof closure	2020-05-10	13 Out 01 10	Saxony	educational-and-daycare-facilities-a-e9c13296-002b-484b-88bc-e14ea295ff10
chool closure	2020-03-16	13 out of 16	Cavany	germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76 https://www.spiegel.de/international/germany/germany-states-move-to-close-
chool closure	2020-03-16	13 out of 16	Saarland	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
				germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
chool closure	2020-03-16	13 out of 16	Rhineland- Palatinate	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
				germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
chool closure	2020-03-16	13 out of 16	North Rhine- Westphalia	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
			Vorpommern	germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
School closure	2020-03-16	13 out of 16	Mecklenburg-	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
			· ·· · · · · · · · · · · · · · · · · ·	germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
School closure	2020-03-16	13 out of 16	Lower Saxony	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
school closule	2020-03-10	15 041 01 10	110350	germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
School closure	2020-03-16	13 out of 16	Hesse	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
school closure	2020-03-10	13 Out 01 10	riamburg	https://www.spiegel.de/international/germany/the-shutdown-begins-across- germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
School closure	2020-03-16	13 out of 16	Hamburg	germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76
chool closure	2020-03-16	13 out of 16	Bremen	https://www.spiegel.de/international/germany/the-shutdown-begins-across-
			_	germany-a-3c541d1d-1d42-4672-9fdc-af6c3247df76

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Lockdown	2020-03-21	1 out of 16	Bavaria	https://www.corona-katastrophenschutz.bayern.de/
NPI	Date	# Effective	Region	Source
Venue closure	2020-03-16	16 out of 16	Thuringia	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-laender-1731000
				https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-laender-1731000
Venue closure	2020-03-16	16 out of 16	Schleswig- Holstein	laender-1731000
Venue closure	2020-03-16	16 out of 16	Saxony- Anhalt	laender-1731000 https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-
Venue closure	2020-03-16	16 out of 16	Saxony	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-
Venue closure	2020-03-16	16 out of 16	Rhineland- Palatinate	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-laender-1731000
Venue closure	2020-03-16	16 out of 16	North Rhine- Westphalia	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-laender-1731000
			Vorpommern	laender-1731000
Venue closure	2020-03-16	16 out of 16	Mecklenburg-	laender-1731000 https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-
Venue closure	2020-03-16	16 out of 16	Lower Saxony	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-
Venue closure	2020-03-16	16 out of 16	Hesse	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-laender-1731000
			C	laender-1731000
Venue closure	2020-03-16	16 out of 16	Hamburg	laender-1731000 https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-
Venue closure	2020-03-16	16 out of 16	Bremen	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-
Venue closure	2020-03-16	16 out of 16	Brandenburg	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-laender-1731000
<b>5</b> 7 1	2020 02 16	16 . 616	D 1.1	laender-1731000
Venue closure	2020-03-16	16 out of 16	Bavaria	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-
Venue closure	2020-03-16	16 out of 16	Baden- Wuerttemberg	https://www.bundesregierung.de/breg-de/themen/coronavirus/leitlinien-bund-laender-1731000
	ted in two thirds o			
				cologne-in-closing-bars-clubs-as-germany-toughens-coronavirus-response- idUSKBN2110LS

NPI	Date	# Effective	Region	Source	
Work ban	NPI impleme	nted in no region			

Table 8: Sources for policies implemented across different German regions

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NPI	Date	# Effective	Region	Source
Event ban	2020-03-10	2 out of 17	Community of Madrid	https://www.eldiario.es/sociedad/Sanidad-consejo-ministros-medidas_0_ 1004400105.html
Event ban	2020-03-10	2 out of 17	La Rioja	https://www.eldiario.es/sociedad/Sanidad-consejo-ministros-medidas_0_ 1004400105.html
Event ban	2020-03-12	3 out of 17	Catalonia	https://www.catalannews.com/society-science/item/catalonia-bans-events-of-over-1000-people-in-efforts-to-control-coronavirus
NPI impleme	ented in two thirds o	of the regions by 2	<u></u>	
Event ban	2020-03-13	17 out of 17	Andalusia	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana- la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Event ban	2020-03-13	17 out of 17	Aragon	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana- la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Event ban	2020-03-13	17 out of 17	Asturias	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana- la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Event ban	2020-03-13	17 out of 17	Balearic Islands	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana- la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Event ban	2020-03-13	17 out of 17	Basque Country	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana- la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Event ban	2020-03-13	17 out of 17	Canary Islands	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana- la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Event ban	2020-03-13	17 out of 17	Cantabria	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana- la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Event ban	2020-03-13	17 out of 17	Castille and Leon	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana- la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Event ban	2020-03-13	17 out of 17	Castille- La Mancha	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana- la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html

2020-03-15

2020-03-15

2020-03-15

2020-03-15

2020-03-15

2020-03-15

17 out of 17

Balearic Islands

Basque Country

Canary Islands

Castille and Leon

Castille- La Mancha

Cantabria

Gathering ban

Gathering ban

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Event ban	2020-03-13	17 out of 17	Extremadura	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana-
Event our	2020 03 13	17 041 01 17	Daromadara	la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios-
				cerrados.html
Event ban	2020-03-13	17 out of 17	Galicia	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana-
				la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios-
-	2020 02 12	4.5		cerrados.html
Event ban	2020-03-13	17 out of 17	Navarre	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana-
				la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Et b	2020-03-13	17£ 17	Danian af Manaia	
Event ban	2020-03-13	17 out of 17	Region of Murcia	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana-
				la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios- cerrados.html
Event ban	2020-03-13	17 out of 17	Volencian Community	
Eveni ban	2020-03-13	17 Out 01 17	Valencian Community	https://elpais.com/sociedad/2020-03-12/el-gobierno-extiende-a-toda-espana-la-recomendacion-de-cancelar-clases-y-celebrar-eventos-masivos-en-espacios-
				•
				cerrados.html
NPI	Date	# Effective	Region	•
<del></del>	Date ted in two thirds o			cerrados.html
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NPI implemen	ted in two thirds o	f the regions by 20	020-03-15	cerrados.html  Source
NPI implemen	ted in two thirds o	f the regions by 20	020-03-15	cerrados.html  Source  https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
NPI implement	ted in two thirds of 2020-03-15	f the regions by 20 17 out of 17	020-03-15	cerrados.html  Source  https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html

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https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

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https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

Gathering ban	2020-03-15	17 out of 17	Catalonia	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
				coronavirus.html
Gathering ban	2020-03-15	17 out of 17	Community of Madrid	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
				coronavirus.html
Gathering ban	2020-03-15	17 out of 17	Extremadura	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
				coronavirus.html
Gathering ban	2020-03-15	17 out of 17	Galicia	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
				coronavirus.html
Gathering ban	2020-03-15	17 out of 17	La Rioja	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
				coronavirus.html
Gathering ban	2020-03-15	17 out of 17	Navarre	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
				coronavirus.html
Gathering ban	2020-03-15	17 out of 17	Region of Murcia	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
				coronavirus.html
Gathering ban	2020-03-15	17 out of 17	Valencian Community	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
				coronavirus.html
NPI	Date	# Effective	Region	Source
School closure	2020-03-11	2 out of 17	Community of Madrid	https://english.elpais.com/society/2020-03-09/madrid-basque-city-close-schools-
School closure	2020-03-11	2 out of 17	Community of Madrid	https://english.elpais.com/society/2020-03-09/madrid-basque-city-close-schools-as-coronavirus-continues-spread-in-spain.html
School closure School closure	2020-03-11 2020-03-11	2 out of 17 2 out of 17	Community of Madrid  La Rioja	
			•	as-coronavirus-continues-spread-in-spain.html
			•	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region-
School closure	2020-03-11	2 out of 17	La Rioja	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads
School closure	2020-03-11	2 out of 17	La Rioja	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
School closure School closure	2020-03-11 2020-03-13	2 out of 17 6 out of 17	La Rioja  Basque Country	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure School closure	2020-03-11 2020-03-13	2 out of 17 6 out of 17	La Rioja  Basque Country	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
School closure School closure School closure	2020-03-11 2020-03-13 2020-03-13	2 out of 17 6 out of 17 6 out of 17 6 out of 17	La Rioja  Basque Country  Canary Islands	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure School closure School closure	2020-03-11 2020-03-13 2020-03-13	2 out of 17 6 out of 17 6 out of 17	La Rioja  Basque Country  Canary Islands	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
School closure School closure School closure School closure School closure	2020-03-11 2020-03-13 2020-03-13 2020-03-13 2020-03-13	2 out of 17 6 out of 17 6 out of 17 6 out of 17 6 out of 17	La Rioja  Basque Country  Canary Islands  Catalonia  Galicia	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure School closure School closure School closure School closure	2020-03-11 2020-03-13 2020-03-13 2020-03-13 2020-03-13	2 out of 17 6 out of 17 $\bar{f}$ the regions by 20	La Rioja  Basque Country  Canary Islands  Catalonia  Galicia	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure School closure School closure School closure School closure	2020-03-11 2020-03-13 2020-03-13 2020-03-13 2020-03-13	2 out of 17 6 out of 17 6 out of 17 6 out of 17 6 out of 17	La Rioja  Basque Country  Canary Islands  Catalonia  Galicia	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure School closure School closure School closure School closure - NPI implement School closure	2020-03-11 2020-03-13 2020-03-13 2020-03-13 2020-03-13 ted in two thirds of 2020-03-16	2 out of 17 6 out of 17 <i>f the regions by</i> 20 17 out of 17	La Rioja  Basque Country  Canary Islands  Catalonia  Galicia	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure School closure School closure School closure School closure	2020-03-11 2020-03-13 2020-03-13 2020-03-13 2020-03-13	2 out of 17 6 out of 17 $\bar{f}$ the regions by 20	La Rioja  Basque Country  Canary Islands  Catalonia  Galicia	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure School closure School closure School closure School closure - NPI implement School closure	2020-03-11 2020-03-13 2020-03-13 2020-03-13 2020-03-13 ted in two thirds of 2020-03-16	2 out of 17 6 out of 17 <i>f the regions by</i> 20 17 out of 17	La Rioja  Basque Country  Canary Islands  Catalonia  Galicia $\overline{020003}.\overline{16}$ Andalusia	as-coronavirus-continues-spread-in-spain.html https://www.thestar.com.my/news/world/2020/03/10/spain039s-la-rioja-region- orders-schools-shutdown-as-coronavirus-spreads https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html

School closure	2020-03-16	17 out of 17	Asturias	https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
				murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure	2020-03-16	17 out of 17	Balearic Islands	https://english.elpais.com/society/2020-03-12/basque-country-galicia-and- murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure	2020-03-16	17 out of 17	Cantabria	https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
				murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure	2020-03-16	17 out of 17	Castille and Leon	https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
				murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure	2020-03-16	17 out of 17	Castille- La Mancha	https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
				murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure	2020-03-16	17 out of 17	Extremadura	https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
				murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure	2020-03-16	17 out of 17	Navarre	https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
				murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure	2020-03-16	17 out of 17	Region of Murcia	https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
				murcia-close-schools-in-bid-to-slow-coronavirus.html
School closure	2020-03-16	17 out of 17	Valencian Community	https://english.elpais.com/society/2020-03-12/basque-country-galicia-and-
				murcia-close-schools-in-bid-to-slow-coronavirus.html
NPI	Date	# Effective	Region	Source
NPI Venue closure	<b>Date</b> 2020-03-13	# Effective 4 out of 17	Region Cantabria	Source
				Source https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-
Venue closure	2020-03-13	4 out of 17	Cantabria	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html
Venue closure Venue closure	2020-03-13 2020-03-13	4 out of 17 4 out of 17	Cantabria Castille and Leon	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929
Venue closure Venue closure	2020-03-13 2020-03-13	4 out of 17 4 out of 17	Cantabria Castille and Leon	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929 https://elpais.com/espana/catalunya/2020-03-13/cataluna-cierra-pistas-de-esqui-
Venue closure Venue closure Venue closure	2020-03-13 2020-03-13 2020-03-13	4 out of 17 4 out of 17 4 out of 17	Cantabria Castille and Leon Catalonia	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929 https://elpais.com/espana/catalunya/2020-03-13/cataluna-cierra-pistas-de-esqui-discotecas-y-areas-comerciales-que-no-sean-de-alimentacion.html https://www.nytimes.com/aponline/2020/03/14/world/europe/ap-eu-virus-outbreak-spain.html
Venue closure Venue closure Venue closure	2020-03-13 2020-03-13 2020-03-13	4 out of 17 4 out of 17 4 out of 17	Cantabria Castille and Leon Catalonia	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929 https://elpais.com/espana/catalunya/2020-03-13/cataluna-cierra-pistas-de-esquidiscotecas-y-areas-comerciales-que-no-sean-de-alimentacion.html https://www.nytimes.com/aponline/2020/03/14/world/europe/ap-eu-virus-outbreak-
Venue closure Venue closure Venue closure Venue closure	2020-03-13 2020-03-13 2020-03-13 2020-03-13	4 out of 17	Cantabria Castille and Leon Catalonia Galicia	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929 https://elpais.com/espana/catalunya/2020-03-13/cataluna-cierra-pistas-de-esqui-discotecas-y-areas-comerciales-que-no-sean-de-alimentacion.html https://www.nytimes.com/aponline/2020/03/14/world/europe/ap-eu-virus-outbreak-spain.html
Venue closure Venue closure Venue closure Venue closure Venue closure Venue closure	2020-03-13 2020-03-13 2020-03-13 2020-03-14 2020-03-14	4 out of 17 4 out of 17 4 out of 17 4 out of 17 7 out of 17 7 out of 17	Cantabria Castille and Leon Catalonia Galicia Asturias Community of Madrid	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929 https://elpais.com/espana/catalunya/2020-03-13/cataluna-cierra-pistas-de-esquidiscotecas-y-areas-comerciales-que-no-sean-de-alimentacion.html https://www.nytimes.com/aponline/2020/03/14/world/europe/ap-eu-virus-outbreak-spain.html https://cadenaser.com/emisora/2020/03/13/ser_gijon/1584138177_171951.html https://english.elpais.com/society/2020-03-13/madrid-orders-restaurants-and-bars-to-close-from-saturday-onward-to-slow-coronavirus-spread.html
Venue closure Venue closure Venue closure Venue closure Venue closure	2020-03-13 2020-03-13 2020-03-13 2020-03-14	4 out of 17 7 out of 17	Cantabria Castille and Leon Catalonia Galicia Asturias	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929 https://elpais.com/espana/catalunya/2020-03-13/cataluna-cierra-pistas-de-esquidiscotecas-y-areas-comerciales-que-no-sean-de-alimentacion.html https://www.nytimes.com/aponline/2020/03/14/world/europe/ap-eu-virus-outbreak-spain.html https://cadenaser.com/emisora/2020/03/13/ser_gijon/1584138177_171951.html https://english.elpais.com/society/2020-03-13/madrid-orders-restaurants-and-bars-to-close-from-saturday-onward-to-slow-coronavirus-spread.html https://english.elpais.com/society/2020-03-13/madrid-orders-restaurants-and-
Venue closure	2020-03-13 2020-03-13 2020-03-13 2020-03-14 2020-03-14 2020-03-14	4 out of 17 4 out of 17 4 out of 17 4 out of 17 7 out of 17 7 out of 17 7 out of 17	Cantabria Castille and Leon Catalonia Galicia Asturias Community of Madrid Valencian Community	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929 https://elpais.com/espana/catalunya/2020-03-13/cataluna-cierra-pistas-de-esquidiscotecas-y-areas-comerciales-que-no-sean-de-alimentacion.html https://www.nytimes.com/aponline/2020/03/14/world/europe/ap-eu-virus-outbreak-spain.html https://cadenaser.com/emisora/2020/03/13/ser_gijon/1584138177_171951.html https://english.elpais.com/society/2020-03-13/madrid-orders-restaurants-and-bars-to-close-from-saturday-onward-to-slow-coronavirus-spread.html
Venue closure	2020-03-13 2020-03-13 2020-03-13 2020-03-13 2020-03-14 2020-03-14 2020-03-14	4 out of 17 4 out of 17 4 out of 17 4 out of 17 7 out of 17 7 out of 17 7 out of 17 7 out of 17	Cantabria Castille and Leon Catalonia Galicia Asturias Community of Madrid Valencian Community	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929 https://elpais.com/espana/catalunya/2020-03-13/cataluna-cierra-pistas-de-esquidiscotecas-y-areas-comerciales-que-no-sean-de-alimentacion.html https://www.nytimes.com/aponline/2020/03/14/world/europe/ap-eu-virus-outbreak-spain.html https://cadenaser.com/emisora/2020/03/13/ser_gijon/1584138177_171951.html https://english.elpais.com/society/2020-03-13/madrid-orders-restaurants-and-bars-to-close-from-saturday-onward-to-slow-coronavirus-spread.html https://english.elpais.com/society/2020-03-13/madrid-orders-restaurants-and-bars-to-close-from-saturday-onward-to-slow-coronavirus-spread.html
Venue closure	2020-03-13 2020-03-13 2020-03-13 2020-03-14 2020-03-14 2020-03-14	4 out of 17 4 out of 17 4 out of 17 4 out of 17 7 out of 17 7 out of 17 7 out of 17	Cantabria Castille and Leon Catalonia Galicia Asturias Community of Madrid Valencian Community	Source  https://www.eldiario.es/cantabria/ultima-hora/Cantabria-hosteleria-superficies-edificios-actividades_0_1005450439.html https://twitter.com/FranciscoIgea/status/1238571610468220929 https://elpais.com/espana/catalunya/2020-03-13/cataluna-cierra-pistas-de-esquidiscotecas-y-areas-comerciales-que-no-sean-de-alimentacion.html https://www.nytimes.com/aponline/2020/03/14/world/europe/ap-eu-virus-outbreak-spain.html https://cadenaser.com/emisora/2020/03/13/ser_gijon/1584138177_171951.html https://english.elpais.com/society/2020-03-13/madrid-orders-restaurants-and-bars-to-close-from-saturday-onward-to-slow-coronavirus-spread.html https://english.elpais.com/society/2020-03-13/madrid-orders-restaurants-and-

coronavirus.html

Venue closure

Venue closure

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2020-03-15

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Aragon

Balearic Islands

Basque Country

Canary Islands

Extremadura

Castille- La Mancha

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Venue closure	2020-03-15	17 out of 17	La Rioja	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to- coronavirus.html
Venue closure	2020-03-15	17 out of 17	Navarre	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Venue closure	2020-03-15	17 out of 17	Region of Murcia	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
NPI	Date	# Effective	Region	Source
NPI implemen	ted in two thirds o	of the regions by 2	020-03-15	
Lockdown	2020-03-15	17 out of 17	Andalusia	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdown	2020-03-15	17 out of 17	Aragon	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdown	2020-03-15	17 out of 17	Asturias	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdown	2020-03-15	17 out of 17	Balearic Islands	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdown	2020-03-15	17 out of 17	Basque Country	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdown	2020-03-15	17 out of 17	Canary Islands	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdown	2020-03-15	17 out of 17	Cantabria	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html

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https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

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https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-

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Lockdown	2020-03-15	17 out of 17	Valencian Community	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
			C	coronavirus.html
Lockdown	2020-03-15	17 out of 17	Region of Murcia	coronavirus.html https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
Lockdown	2020-03-15	17 out of 17	Navarre	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
Lockdown	2020-03-15	17 out of 17	La Rioja	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdown	2020-03-15	17 out of 17	Galicia	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdown	2020-03-15	17 out of 17	Extremadura	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
			,	coronavirus.html
Lockdown	2020-03-15	17 out of 17	Community of Madrid	coronavirus.html https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
Lockdown	2020-03-15	17 out of 17	Catalonia	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-
Lockdown	2020-03-15	17 out of 17	Castille- La Mancha	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdowii	2020-03-13	17 Out 01 17	Castille and Leon	https://www.cnbc.com/2020/03/14/spain-declares-state-of-emergency-due-to-coronavirus.html
Lockdown	2020-03-15	17 out of 17	Castille and Leon	https://www.arks.com/0000/02/14//arsin_darlangs_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_attack_af_amangan_arks_af_aman_arks_af_af_af_af_af_af_af_af_af_af_af_af_af_

NPI	Date	# Effective	Region	Source
NPI implement				
Work ban	2020-03-30	17 out of 17	Andalusia	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Aragon	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Asturias	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Balearic Islands	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Basque Country	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Canary Islands	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html

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Work ban	2020-03-30	17 out of 17	Cantabria	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
				trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Castille and Leon	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
				trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Castille- La Mancha	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
				trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Catalonia	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
				trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Community of Madrid	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
			•	trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Extremadura	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
				trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Galicia	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
				trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	La Rioja	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
				trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Navarre	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
				trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Region of Murcia	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
Work buil	2020 03 30	17 out 01 17	region of warein	trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
Work ban	2020-03-30	17 out of 17	Valencian Community	https://elpais.com/espana/2020-03-28/el-gobierno-amplia-el-confinamiento-los-
WOIR Oull	2020 03-30	17 041 01 17	varencian community	trabajadores-de-actividades-no-esenciales-deberan-quedarse-en-casa.html
				trabajadores de actividades no esenciares deberan-quedarse-en-casa.numi

Table 9: Sources for policies implemented across different Spanish regions

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NPI	Date	# Effective	Region		Source
Event ban	2020-03-12	3 out of 12	Alberta		https://www.alberta.ca/release.cfm?xID=6980324A5B1B0-BC2C-40A8-A6AD9E30E3189425
Event ban	2020-03-12	3 out of 12	British Columbia		https://news.gov.bc.ca/releases/2020HLTH0077-000484
Event ban	2020-03-12	3 out of 12	New Brunswick		https://www2.gnb.ca/content/gnb/en/news/news_release.2020.03.0114.html
Event ban	2020-03-13	6 out of 12	Manitoba		https://news.gov.mb.ca/news/index.html?item=46933&posted=2020-03-13
Event ban	2020-03-13	6 out of 12	Newfoundland a Labrador	and	https://www.gov.nl.ca/releases/2020/tcii/0313n04/
Event ban	2020-03-13	6 out of 12	Ontario		https://news.ontario.ca/mtc/en/2020/03/statement-from-minister-elliott-and-minister-macleod-on-the-2019-novel-coronavirus-covid-19-1.html
Event ban	2020-03-14	7 out of 12	Quebec		http://www.fil-information.gouv.qc.ca/Pages/Article.aspx?lang=en&motsCles= Covid&listeThe=&listeReg=&listeDiff=&type=&dateDebut=2019-09-28&dateFin=2020- 03-28&afficherResultats=oui&Page=5&idArticle=2803149905
NPI implemen	ted in two thirds o	of the regions by 20	020-03-15		
Event ban	2020-03-15	8 out of 12	Nova Scotia		https://novascotia.ca/news/release/?id=20200315002
Event ban	2020-03-16	11 out of 12	Prince Edward Island		https://www.princeedwardisland.ca/en/news/premier-announces-initial-financial-support-declares-public-health-emergency
Event ban	2020-03-16	11 out of 12	Saskatchewan		https://www.saskatchewan.ca/government/news-and-media/2020/march/13/further-measures-for-covid-19
Event ban	2020-03-16	11 out of 12	Yukon		https://yukon.ca/en/news/chief-medical-officer-health-recommends-broad-new-measures-yukon
Event ban	2020-03-22	12 out of 12	Northwest Territories		https://www.hss.gov.nt.ca/en/newsroom/all-gatherings-are-advised-cancel-effective-immediately
NPI	Date	# Effective	Region		Source
Gathering ban	2020-03-16	1 out of 12	Prince Edward Island		https://www.princeedwardisland.ca/en/news/premier-announces-initial-financial-support-declares-public-health-emergency
Gathering ban	2020-03-19	2 out of 12	New Brunswick		https://www2.gnb.ca/content/gnb/en/news/news_release.2020.03.0139.html
Gathering ban	2020-03-20	3 out of 12	Saskatchewan		https://www.saskatchewan.ca/government/news-and-media/2020/march/20/covid-19-update-march-20
Gathering ban	2020-03-21	4 out of 12	Quebec		http://www.fil-information.gouv.qc.ca/Pages/Article.aspx?lang=en&motsCles=Covid&listeThe=&listeReg=&listeDiff=&type=&dateDebut=2019-09-28&dateFin=2020-03-28&afficherResultats=oui&Page=2&idArticle=2803211636
Gathering ban Gathering ban	2020-03-22 2020-03-22	6 out of 12 6 out of 12	Nova Scotia Yukon		https://dailyhive.com/vancouver/nova-scotia-coronavirus-state-of-emergency https://yukon.ca/en/news/yukons-chief-medical-officer-health-provides-update-covid-19-0

NPI	Date	# Effective	Region		Source
School closure	2020-03-23	12 out of 12	Manitoba		https://news.gov.mb.ca/news/index.html?item=46936&posted=2020-03-14
School closure	2020-03-18	11 out of 12	Yukon		https://yukon.ca/en/news/chief-medical-officer-health-declares-public-health-emergency
	2020 02 10		***		closures
School closure	2020-03-17	10 out of 12	Prince Edward Island		https://www.princeedwardisland.ca/en/news/province-announces-covid-19-related-
School closure	2020-03-17	10 out of 12	Nova Scotia		https://novascotia.ca/news/release/?id=20200315002
School closure	2020-03-17	10 out of 12	British Columbia		https://news.gov.bc.ca/releases/2020EMBC0014-000552
NPI implement	ed in two thirds o	f the regions by 20	<u> 5</u> 20-03-17		
School closure	2020-03-16	7 out of 12	Saskatchewan		https://www.saskatchewan.ca/government/news-and-media/2020/march/16/class-suspensions
6.1 1.1	2020 02 15	7 . 610	0 1 4 1		minister-romano-on-the-2019-novel-coronavirus-covid-19.html
School closure	2020-03-16	7 out of 12	Ontario		https://news.ontario.ca/maesd/en/2020/03/statement-from-minister-elliott-and-
School closure	2020-03-16	7 out of 12	Northwest Territories		https://cabinradio.ca/32133/news/education/nwt-tells-schools-to-close-until-after-easter-daycares-unaffected/
C-l1 -1	2020 02 16	7 12	Labrador		14-15-16-16-16-16-16-16-16-16-16-16-16-16-16-
School closure	2020-03-16	7 out of 12	Newfoundland	and	https://www.gov.nl.ca/releases/2020/eecd/0316n04/
School closure	2020-03-15	3 out of 12	Alberta		https://www.alberta.ca/release.cfm?xID=69818C355F188-C2A3-F5C6-875A2A33929D5C05
					03-28&afficherResultats=oui&Page=6&idArticle=2803137507
School closure	2020-03-14	2 Out 01 12	Quebec		Covid&listeThe=&listeReg=&listeDiff=&type=&dateDebut=2019-09-28&dateFin=2020-
School closure	2020-03-13	2 out of 12	Ouebec		http://www.fil-information.gouv.qc.ca/Pages/Article.aspx?lang=en&motsCles=
School closure	2020-03-13	1 out of 12	New Brunswick		https://www2.gnb.ca/content/gnb/en/news/news_release.2020.03.0117.html
NPI	Date	# Effective	Region		Source
<i>g</i>					officer-strengthen-response-covid-19-pandemic
Gathering ban	2020-04-11	11 out of 12	Northwest Territories		https://www.gov.nt.ca/en/newsroom/two-new-orders-nwt-chief-public-health-
Gathering ban	2020-04-01	10 out of 12	Manitoba		https://news.gov.mb.ca/news/index.html?item=47337&posted=2020-03-30
Gathering ban	2020-03-31	9 out of 12	Newfoundland a Labrador	and	https://www.gov.nl.ca/covid-19/faqs/
Gathering ban	2020-03-28	8 out of 12	Ontario		https://globalnews.ca/news/6746181/ontario-ban-gatherings/
		f the regions by 20			
					hinshaw-1.5512445
Gathering ban	2020-03-27	7 out of 12	Alberta		https://www.cbc.ca/news/canada/edmonton/alberta-covid-19-coronavirus-deena-

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Venue closure	2020-03-15	1 out of 12	Ouchas	http://www.fil.information.news.co./Demo/Anticle.com/2long-com/matical
venue ciosure	2020-03-13	1 Out 01 12	Quebec	http://www.fil-information.gouv.qc.ca/Pages/Article.aspx?lang=en&motsCles= Covid&listeThe=&listeReg=&listeDiff=&type=&dateDebut=2019-09-28&dateFin=2020-
				03-28&afficherResultats=oui&Page=5&idArticle=2803159403
Venue closure	2020-03-16	2 out of 12	Ontario	https://news.ontario.ca/mohltc/en/2020/03/enhanced-measures-to-protect-
venue crosure	2020 05 10	2 out of 12	Ontario	ontarians-from-covid-19.html
Venue closure	2020-03-17	6 out of 12	Alberta	https://www.alberta.ca/release.cfm?xID=69828242A5FFC-D75A-C83E-690D8028C0C4E09F
Venue closure	2020-03-17	6 out of 12	British Columbia	https://news.gov.bc.ca/releases/2020EMBC0014-000552
Venue closure	2020-03-17	6 out of 12	New Brunswick	https://www2.gnb.ca/content/gnb/en/news/news_release.2020.03.0127.html
Venue closure	2020-03-17	6 out of 12	Prince Edward Island	https://www.princeedwardisland.ca/en/news/chief-public-health-officer-urges-
				islanders-work-together-reduce-spread-covid-19
Venue closure	2020-03-19	7 out of 12	Nova Scotia	https://novascotia.ca/news/release/?id=20200317005
NPI implement	ed in two thirds o	$\overline{f}$ the regions by $\overline{20}$	020-03-20	
Venue closure	2020-03-20	8 out of 12	Saskatchewan	https://www.saskatchewan.ca/government/news-and-media/2020/march/20/covid-19-
				update-march-20
Venue closure	2020-03-22	9 out of 12	Northwest Territories	https://www.hss.gov.nt.ca/en/newsroom/all-gatherings-are-advised-cancel-
				effective-immediately
Venue closure	2020-03-23	10 out of 12	Newfoundland and	https://www.gov.nl.ca/covid-19/
			Labrador	
Venue closure	2020-03-25	11 out of 12	Yukon	https://yukon.ca/en/news/yukons-chief-medical-officer-health-provides-update-
	2020 04 04	10 010		covid-19-0
Venue closure	2020-04-01	12 out of 12	Manitoba	https://news.gov.mb.ca/news/index.html?item=47337&posted=2020-03-30
NPI	Date	# Effective	Region	Source
Lockdown	2020-03-29	1 out of 12	New Brunswick	https://www2.gnb.ca/content/gnb/en/news/news_release.2020.03.0164.html
Lockdown	2020-03-30	2 out of 12	Ontario	https://news.ontario.ca/mohltc/en/2020/03/statement-from-the-chief-medical-
				officer-of-health.html
Two-thirds quo	ta not reached; N	PI not implement	ed on national level	
NPI	Date	# Effective	Region	Source
Work ban	2020-03-24	1 out of 12	Ontario	https://news.ontario.ca/opo/en/2020/03/ontario-closing-at-risk-workplaces-to-
				<pre>protect-health-and-safety.html</pre>
Work ban	2020-03-27	2 out of 12	Prince Edward Island	https://www.princeedwardisland.ca/en/news/prince-edward-island-extends-
				closures-for-schools-daycares-non-essential-services
Work ban	2020-04-01	_ 3 out of 12 _	_ Manitoba	https://news.gov.mb.ca/news/index.html?item=47337&posted=2020-03-30
Two-thirds quo	ta not reached; N	PI not implement	ed on national level	

Table 10: Sources for policies implemented across different Canadian regions

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NPI	Date	# Effective	Region	Source
NPI implement	ed in two thirds o	f the regions by 2	020-03-16	
Event ban	2020-03-16	8 out of 8	Western Australia	https://www.watoday.com.au/politics/federal/effective-ban-on-non-essential-
				mass-gatherings-of-500-people-20200313-p549u5.html
Event ban	2020-03-16	8 out of 8	Northern Territory	https://www.watoday.com.au/politics/federal/effective-ban-on-non-essential-
				mass-gatherings-of-500-people-20200313-p549u5.html
Event ban	2020-03-16	8 out of 8	South Australia	https://www.watoday.com.au/politics/federal/effective-ban-on-non-essential-
				mass-gatherings-of-500-people-20200313-p549u5.html
Event ban	2020-03-16	8 out of 8	Queensland	https://www.watoday.com.au/politics/federal/effective-ban-on-non-essential-
				mass-gatherings-of-500-people-20200313-p549u5.html
Event ban	2020-03-16	8 out of 8	New South Wales	https://www.watoday.com.au/politics/federal/effective-ban-on-non-essential-
				mass-gatherings-of-500-people-20200313-p549u5.html
Event ban	2020-03-16	8 out of 8	Victoria	https://www.watoday.com.au/politics/federal/effective-ban-on-non-essential-
				mass-gatherings-of-500-people-20200313-p549u5.html
Event ban	2020-03-16	8 out of 8	Tasmania	https://www.watoday.com.au/politics/federal/effective-ban-on-non-essential-
				mass-gatherings-of-500-people-20200313-p549u5.html
Event ban	2020-03-16	8 out of 8	Australian Capital	https://www.watoday.com.au/politics/federal/effective-ban-on-non-essential-
			Territory	mass-gatherings-of-500-people-20200313-p549u5.html
NPI	Date	# Effective	Region	Source
Gathering ban	2020-03-23	1 out of 8	Northern Territory	https://coronavirus.nt.gov.au/updates
Gathering ban	2020-03-28	2 out of 8	South Australia	https://www.sa.gov.au/data/assets/pdf_file/0003/605055/Emergency-Management-
C				GatheringsCOVID-19-Direction-2020_FINAL.pdf
NPI implement	ed in two thirds o	$\overline{f}$ the regions $\overline{b}$ y $\overline{2}$	020-03-29	
Gathering ban	2020-03-29	7 out of 8	Queensland	https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-
				health-alert/how-to-protect-yourself-and-others-from-coronavirus-covid-
				19/limits-on-public-gatherings-for-coronavirus-covid-19
Gathering ban	2020-03-29	7 out of 8	New South Wales	https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-
				health-alert/how-to-protect-yourself-and-others-from-coronavirus-covid-
				19/limits-on-public-gatherings-for-coronavirus-covid-19
Gathering ban	2020-03-29	7 out of 8	Victoria	https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-
				health-alert/how-to-protect-yourself-and-others-from-coronavirus-covid-
				19/limits-on-public-gatherings-for-coronavirus-covid-19

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Gathering ban	2020-03-29	7 out of 8	Tasmania	https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/how-to-protect-yourself-and-others-from-coronavirus-covid-
Gathering ban	2020-03-29	7 out of 8	Australian Capital Territory	19/limits-on-public-gatherings-for-coronavirus-covid-19 https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/how-to-protect-yourself-and-others-from-coronavirus-covid-19/limits-on-public-gatherings-for-coronavirus-covid-19
Gathering ban	2020-04-01	8 out of 8	Western Australia	https://ww2.health.wa.gov.au/~/media/Files/Corporate/general%20documents/ Infectious%20diseases/PDF/Coronavirus/COVID19-Agency-Advisory-14-2020.pdf
NPI	Date	# Effective	Region	Source
School closure	2020-03-16	1 out of 8	New South Wales	https://www.abc.net.au/news/2020-03-23/coronavirus-parents-told-to-keep- children-home-from-school/12079524
School closure	2020-03-23	3 out of 8	Victoria	https://www.theguardian.com/world/2020/mar/22/victoria-nsw-lockdowns-scott- morrison-coronavirus-national-cabinet
School closure School closure	2020-03-23 2020-03-23	3 out of 8 3 out of 8	Victoria  Australian Capital Territory	https://www.theguardian.com/world/2020/mar/22/victoria-nsw-lockdowns-scott-
			Australian Capital	https://www.theguardian.com/world/2020/mar/22/victoria-nsw-lockdowns-scott-morrison-coronavirus-national-cabinet https://www.theguardian.com/world/2020/mar/22/victoria-nsw-lockdowns-scott-

NPI	Date	# Effective	Region	Source
NPI implemen	ted in two thirds o	of the regions by 2	020-03-23	· <del>-</del>
Venue closure	2020-03-23	8 out of 8	Western Australia	https://www.theguardian.com/world/live/2020/mar/22/coronavirus-updates-live- australia-nsw-victoria-qld-tasmania-cases-government-stimulus-latest-update- news
Venue closure	2020-03-23	8 out of 8	Northern Territory	https://www.theguardian.com/world/live/2020/mar/22/coronavirus-updates-live- australia-nsw-victoria-qld-tasmania-cases-government-stimulus-latest-update- news
Venue closure	2020-03-23	8 out of 8	South Australia	https://www.theguardian.com/world/live/2020/mar/22/coronavirus-updates-live- australia-nsw-victoria-qld-tasmania-cases-government-stimulus-latest-update- news
Venue closure	2020-03-23	8 out of 8	Queensland	https://www.theguardian.com/world/live/2020/mar/22/coronavirus-updates-live- australia-nsw-victoria-qld-tasmania-cases-government-stimulus-latest-update- news

Lockdown	2020-04-02	5 out of 8	Queensland		https://www.health.qld.gov.au/system-governance/legislation/cho-public-health-
Lockdown	2020-03-31	4 out of 8	Tasmania		http://www.premier.tas.gov.au/releases/keeping_tasmanians_safe_and_secure_stay_home,_save_lives
Lockdown Lockdown	2020-03-31 2020-03-31	4 out of 8 4 out of 8	New South Wales Victoria		https://www.legislation.nsw.gov.au/_emergency/Public%20Health%20(COVID-19%20Restrictions%20on%20Gathering%20and%20Movement)%20Order%20200.pdf https://www.vic.gov.au/coronavirusresponse
Lockdown	2020-03-29	1 out of 8	Australian Territory	Capital	https://www.covid19.act.gov.au/news-articles/latest-federal-government-announcement
NPI	Date	# Effective	Region		Source
			Territory		australia-nsw-victoria-qld-tasmania-cases-government-stimulus-latest-update-news
Venue closure	2020-03-23	8 out of 8	Australian	Capital	australia-nsw-victoria-qld-tasmania-cases-government-stimulus-latest-update- news https://www.theguardian.com/world/live/2020/mar/22/coronavirus-updates-live-
Venue closure	2020-03-23	8 out of 8	Tasmania		news https://www.theguardian.com/world/live/2020/mar/22/coronavirus-updates-live-
Venue closure	2020-03-23	8 out of 8	Victoria		news https://www.theguardian.com/world/live/2020/mar/22/coronavirus-updates-live-australia-nsw-victoria-qld-tasmania-cases-government-stimulus-latest-update-
Venue closure	2020-03-23	8 out of 8	New South Wales		https://www.theguardian.com/world/live/2020/mar/22/coronavirus-updates-live-australia-nsw-victoria-qld-tasmania-cases-government-stimulus-latest-update-

Table 11: Sources for policies implemented across different Australian regions

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NPI	Date	# Effective	Region	Source
Event ban	2020-03-01	1 out of 2	North	https://www.gazzettaufficiale.it/showNewsDetail?id=2490&backTo=archivio&anr 2020&provenienza=archivio
NPI implement	ted in two thirds o	of the regions by 2	020-03-08	
Event ban	2020-03-08	2 out of 2	South	https://www.gazzettaufficiale.it/showNewsDetail?id=2513&backTo=archivio&ann 2020&provenienza=archivio
NPI	Date	# Effective	Region	Source
Gathering ban	2020-03-01	1 out of 2	North	https://www.gazzettaufficiale.it/showNewsDetail?id=2490&backTo=archivio&ann 2020&provenienza=archivio
NPI implement	ted in two thirds o	of the regions by 2	020-03-08	· <del>· -</del>
Gathering ban	2020-03-08	2 out of 2	South	https://www.gazzettaufficiale.it/showNewsDetail?id=2513&backTo=archivio&ann 2020&provenienza=archivio
NPI	Date	# Effective	Region	Source
School closure	2020-03-01	1 out of 2	North	https://www.gazzettaufficiale.it/showNewsDetail?id=2490&backTo=archivio&ann 2020&provenienza=archivio
NPI implement	ted in two thirds o	of the regions by 2	020-03-08	=
School closure	2020-03-08	2 out of 2	South	https://www.gazzettaufficiale.it/showNewsDetail?id=2513&backTo=archivio&ann 2020&provenienza=archivio
NPI	Date	# Effective	Region	Source
	Date ted in two thirds of 2020-03-11			Source  https://www.gazzettaufficiale.it/showNewsDetail?id=2532&backTo=archivio&ann
NPI implement	ted in two thirds o	of the regions by 2	020-03-11	Source
NPI implement Venue closure	ted in two thirds of 2020-03-11	of the regions by 2 2 out of 2	020-03-11 North	Source  https://www.gazzettaufficiale.it/showNewsDetail?id=2532&backTo=archivio&ann 2020&provenienza=archivio https://www.gazzettaufficiale.it/showNewsDetail?id=2532&backTo=archivio&ann
NPI implement Venue closure Venue closure	2020-03-11 2020-03-11 2020-03-11	f the regions by 2 2 out of 2 2 out of 2 # Effective	North South Region	Source  https://www.gazzettaufficiale.it/showNewsDetail?id=2532&backTo=archivio&ann 2020&provenienza=archivio https://www.gazzettaufficiale.it/showNewsDetail?id=2532&backTo=archivio&ann 2020&provenienza=archivio
NPI implement Venue closure Venue closure	2020-03-11	f the regions by 2 2 out of 2 2 out of 2 # Effective	North South Region	Source  https://www.gazzettaufficiale.it/showNewsDetail?id=2532&backTo=archivio&ann 2020&provenienza=archivio https://www.gazzettaufficiale.it/showNewsDetail?id=2532&backTo=archivio&ann 2020&provenienza=archivio

NPI	Date	# Effective	Region	Source			
NPI implemented in two thirds of the regions by 2020-03-22							
Work ban	2020-03-22	2 out of 2	North	https://www.gazzettaufficiale.it/showNewsDetail?id=2545&backTo=archivio&anno=			
				2020&provenienza=archivio			
Work ban	2020-03-22	2 out of 2	South	https://www.gazzettaufficiale.it/showNewsDetail?id=2545&backTo=archivio&anno=			
				2020&provenienza=archivio			

Table 12: Sources for policies implemented across different Italian regions

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