1 Modeling reactive attention among congressional witnesses during the COVID-19 pandemic

2 Abstract

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attention, but others are not.

Although often considered dichotomous drivers of congressional agenda activity, indicators and 3 focusing events may exist on a continuum if indicators are capable of culminating in a singular 4 event that focuses attention. Identifying this culmination point could help explain how 5 anticipatory, indicator-driven threats such as COVID-19 can dominate policy agendas in a manner 6 similar to a focusing event. This paper investigates whether the culmination point can be identified 7 by quantifying anticipatory and reactive attention of congressional committee witnesses towards 8 an indicator-driven threat. The findings demonstrate that peaks in congressional witness numbers 9 during the COVID-19 pandemic coincided with a transition from anticipatory to reactive attention, 10 which was associated with rapid increases in unemployment. This demonstrates that a transition 11 from anticipatory to reactive attention could mark the culmination point of an indicator-driven 12 event such as COVID-19, and explain how and why some indicators are capable of focusing 13

Introduction

- 16 Can indicators focus attention? This study contributes to agenda-setting research by examining the culmination of COVID-19 indicators into a singular event that dominated the U.S. policy agenda, with the goal of further conceptualizing the continuity, rather than the dichotomy, of indicators and focusing events. By assessing whether U.S. congressional committee witnesses are anticipating a future threat or reacting to an existing problem, the following study demonstrates that the culmination point of the pandemic, identified as a peak in congressional witnesses, is marked by a transition from anticipatory to reactive attention towards the threat.
- COVID-19 highlights the importance of understanding the connection between indicators and 23 focusing events because it lacks many characteristics of a focusing event (Birkland 1997; DeLeo 24 et al. 2021). As defined by Birkland, a potential focusing event is "an event that is sudden, 25 26 relatively rare, can be reasonably defined as harmful or revealing the possibility of potentially greater future harms, inflicts harms or suggests potential harms that are or could be concentrated 27 on a definable geographical area or community of interest, and that is known to policy makers and 28 the public virtually simultaneously" (Birkland 1997, p.22). COVID-19 has caused widespread 29 harm worldwide, amounting to more than 230 million cases and 4.7 million deaths as of September 30 31 2021 (Johns Hopkins University 2021), and captured the attention of media and policy makers on a global scale. However, the harms of the disease have not been concentrated in a particular 32 geographic area, and the event--a disease outbreak in a foreign location--was not rare. In late 2019 33 and early 2020, for instance, an Ebola outbreak in the Democratic Republic of the Congo was 34 35 ongoing and present on both U.S. institutional and media agendas (S.Hrg. 116-259) (Dahir 2019; McNeil Jr. 2019; WHO 2019a). Whether the COVID-19 outbreak was sudden and known to policy 36 makers and the public simultaneously is also questionable: after the first public announcement of 37 the outbreak on January 5 2020 (WHO 2020b), more than two months passed before the event was 38 39 declared a public health emergency globally and in the U.S. (HHS Press Office 2020; WHO 40 2020c).
- Combined, these observations suggest that COVID-19 was harmful but neither sudden nor rare, 41 42 thus complicating the classification of the pandemic as a potential focusing event. This has already been highlighted by DeLeo et al., who argue that only one aspect of COVID-19--its ability to 43 reveal harm--aligns with focusing event theory (DeLeo et al. 2021). The challenge of categorizing 44 COVID-19 as a focusing event, the authors explain, lies in the blurry overlap between the 45 suddenness of focusing events and the accumulation of indicators over time. In the literature, 46 47 focusing events and indicators are often conceptualized as dichotomous phenomena, but the pandemic and other emerging diseases demonstrate that rapid indicator accumulation can have the 48 agenda-setting power often associated with sharp, sudden focusing events (DeLeo 2017; DeLeo et 49 50 al. 2021). Based on these findings, DeLeo et al. posit that these drivers of agenda change may 51 align along a continuum, and propose a new event typology that incorporates both the rate of indicator accumulation and the duration of an event's effects. This typology allows COVID-19 to 52

- be classified as a rapid accumulation, long-duration event, which helps distinguish the potential
- focal power of the pandemic from other events in the emerging disease domain, such as the 2003
- 55 SARS outbreak and avian influenza (DeLeo et al. 2021).
- The findings of DeLeo et al. demonstrate that further work is necessary to unravel the indicator-
- 57 focusing event continuum. To take the next step in this research, this study dives deeper into
- attention dynamics and mobilization during the pandemic, with the goal of understanding whether
- 59 the focal power of COVID-19 derives from the culmination of indicators into a singular event, and
- 60 how this culmination point can be quantifiably identified.

Focusing events and the "anticipatory" emerging disease policy domain

- When applying focusing event theory to the study of public policy, an important consideration is
- 63 the capacity of a policy domain to contain potential focusing events. Instead of selecting events
- 64 that are known to have been focal, domains must first be evaluated as candidates for studying
- 65 focusing events (Birkland 1997). This distinction is important because focusing event theory does
- not explain why an event is focal because of what the event is, but what effect the event has on the
- 67 policy process.

- In other words, to evaluate the focal power of a potential focusing event, the theory does not
- 69 examine the attributes of an event in isolation. Rather, the theory examines how event attributes
- affect policy participants, since it is their responses to the event shaped by institutions, resources,
- belief systems and other factors that influence the policy agenda. As Birkland explains, "[a]
- disaster is only a disaster if it affects human populations in some way" (Birkland 1997, p.31). An
- 73 earthquake in the sparsely populated Aleutian Islands, for instance, is likely to have less focal
- 74 power than an earthquake in a densely populated region such as southern California (Birkland
- 75 1997). The more people affected by an event, the more media and policy maker attention the event
- attracts, and thus the more likely the event is to increase agenda activity. In the same way, rare and
- harmful events are likely to attract greater attention and exert more focal power.
- 78 The ability of an event to capture attention affects its capacity to mobilize policy participants, who
- 79 work strategically to expand or contain conflict. In turn, these mobilization efforts, referred to by
- 80 Birkland as "political" attributes, affect agenda dynamics. For example, an event affecting a policy
- 81 community dominated by scientific and technical experts, as is the case in the earthquake domain,
- 82 is likely to prompt mobilization that is substantively different to that of a policy domain lacking a
- 83 dominant professional community, such as the hurricane domain (Birkland 1997). In the latter,
- agenda change is primarily driven by disaster victims, whose testimony focuses on disaster relief
- 85 rather than mitigation, and therefore has a more negative, critical tone. The ability of a potential
- 86 focusing event to influence agenda activity is therefore a function of the nature of policy
- participants within the domain.
- 88 This implies that not all policy domains are equal in their capacity to react to potential focusing
- 89 events. One domain that may lack such capacity is the emerging disease domain, which

encompasses infectious diseases that have recently appeared or are rapidly increasing in a population, such as COVID-19, Zika, influenza and Ebola (NIAID 2018). Due to the nature of these outbreaks, which take time to spread across communities and countries, the emerging disease domain is inherently anticipatory and tends to be driven by disease indicators rather than sudden and surprising events. The anticipatory and indicator-driven quality of this domain has been previously highlighted by Birkland:

In 2005, for example, the problem of the H5N1 strain of bird flu influenza gained worldwide attention, and its transmission to humans in Turkey and Europe in early 2006 has increased concern about pandemic flu, and in particular about the possibility of its transmission from person to person rather than from birds to people. But a global flu pandemic is a different kind of disaster from the type described in this book because it can be anticipated before the pandemic occurs (Birkland 2006, p.7).

More recently, this line of research has been advanced by DeLeo, who demonstrates that emerging diseases and other anticipatory problems can forewarn policy makers through indicator accumulation, allowing legislation to be developed "prior to the full emergence of a culminating event" (DeLeo 2017, p.24).

Anticipatory problems pose an interesting challenge for focusing event theory because they demonstrate that agenda and policy change can precede an event. Events that focus attention, either in the form of potential focusing events or rapid accumulation events, are important aspects of the policy process because they can signal policy failure, and thus open windows of opportunity for issues to gain agenda access. For events more classically associated with focusing event theory, such as earthquakes and oil spills, policy failure is revealed at the same time as event onset because the event and its related harms are concentrated in both time and space. But for anticipatory, indicator-driven problems such as emerging disease outbreaks, the revelation of policy failure is more ambiguous because the event has either not yet taken place, or not yet culminated in a crisis. As a result, in anticipatory policy domains, harmful events and policy failure are often matters of probability and speculation. Indeed, probability is a hallmark of decision-making in the public health sector, with critical implications for responses to emerging disease threats (Mushlin 2020).

This suggests that in the emerging disease domain, agenda activity might not be driven by the same event attributes and political factors as more archetypal focusing event domains, such as those containing earthquakes, hurricanes or oil spills. In these domains, factors such as event unpredictability and harmfulness increase agenda activity by providing pro-change policy participants with an opportunity to challenge the status quo; in response, pro-status quo groups may mobilize to defend existing policies. By comparison, policy participants within "anticipatory domains" are capable of speculation and proactive mobilization, utilizing persuasive strategies such as analogies and past experiences to expand conflict and increase agenda activity before a possible future event occurs (DeLeo 2017).

- The ability of witnesses to mobilize before an event takes place raises questions about the role of
- focusing events in anticipatory domains. If, for instance, the emerging disease domain contains
- events that can be anticipated, does it follow that the domain's policy agenda is immune to the
- influence of focusing events? And likewise, is an anticipated emerging disease event such as
- 131 COVID-19 incapable of acting as a focusing event?

Rationale and objectives

- To answer the questions above, this study aims to investigate the focal power of an anticipated
- event by measuring witness attention towards the threat. Since agenda activity is a function of the
- nature and behavior of policy participants towards an event, measuring attention rather than event
- indicators, and thus separating the event from the attention it attracts, is key to examining an
- event's focal power. Furthermore, the ability of an anticipated event to focus attention might be
- tied to the existence of a culmination point: the moment when a problem is no longer anticipated
- and is instead perceived to be actively causing harm.
- The existence of a culmination point has already been discussed in the literature, but has not yet
- been clearly defined or measured. When examining anticipatory problems, DeLeo describes how
- indicator accumulation can be wielded as evidence of a larger, future culminating event (DeLeo
- 2017, 2017). Likewise, Kingdon explains that "conditions must deteriorate to crisis proportions
- before the subject achieves enough visibility to become an active agenda item" (Kingdon 2014,
- p.95), and Neuman emphasizes the need "to understand what in the nature of an event or issue
- pushes it over the threshold" (Neuman 1990, p.174). Birkland also discusses how foreign threats
- might be less important for domestic policy making, but can influence agenda change by elevating
- awareness of the seriousness of a threat and mobilizing policy entrepreneurs (Birkland 1997).
- 149 Combined, these observations suggest that there might be a substantive, measurable difference
- between attention before and after an event culminates and gains visibility. More specifically, it
- might be possible to categorize attention as either anticipatory (before crisis) or reactive (during
- crisis). If quantified, these attention categories could provide a tool for pinpointing the moment at
- which a threat gains sufficient visibility to access the policy agenda, and thereby provide further
- insight into drivers of attention dynamics.
- Accordingly, to examine the impact of COVID-19 on the emerging disease policy agenda, the
- objectives of this study are to (1) examine whether the mobilization of emerging disease witnesses
- during the COVID-19 pandemic is associated with a transition from anticipatory to reactive
- attention, and (2) model the relationship between reactive attention and event and political factors.
- 159 If a clear transition from anticipatory to reactive attention takes place and coincides with peaks in
- agenda activity, this could mark the culmination point of the event. In turn, this point could be
- used to identify which event and political factors are associated with the ability of an indicator-
- driven event to access the policy agenda.

Methods

This study combines qualitative analysis of witness testimony with quantitative analysis of agenda change. Qualitative analysis examines witness testimony to distinguish between anticipatory and reactive attention and identify the existence of a professional policy community. Quantitative analysis utilizes congressional committee meetings as the unit of analysis to examine the emerging disease domain between January 2018 and December 2020, which encompasses two years before and one year after the COVID-19 outbreak was first reported. Expanding the study of agenda dynamics to two years before the outbreak started helps distinguish post-event agenda activity from pre-event agenda activity, and thus isolate the influence of the event on policy participants. Although this timeframe is shorter than previous studies (Birkland 1997; DeLeo et al. 2021; O'Donovan 2017), this research seeks to investigate changes in attention as the event unfolds rather than the broader trends of agenda dynamics and policy change, for which longer timeframes are necessary. Additionally, although the damage and harms inflicted by COVID-19 surpass the realm of public health (Evans, Lindauer, and Farrell 2020; Pfefferbaum and North 2020; Polyakova et al. 2020; Viscusi 2020; WHO 2020a), restricting research to a single policy domain allows the effect of a specific event on agenda dynamics to be isolated and quantified.

Conceptual framework

Figure 1 displays a conceptual framework that will be used to investigate the type of attention exhibited by witnesses, and is based on the following assumptions. In terms of event factors, emerging disease deaths (a) and cases (b) in the U.S. occurred at different rates throughout the study period. Thus, reactive attention towards increasing numbers of emerging disease deaths and cases is expected to vary between congressional committee meetings. Likewise, during 2020, the pandemic also prompted states across the country to implement movement restrictions, including mandatory stay-at-home orders, which caused increases in unemployment (c) at different points in time. Reactive attention towards these health and economic indicators may have been further enhanced by a number of events in the inequality domain (d) that took place during 2020, such as George Floyd's murder and police brutality protests. These events helped highlight the disproportionate burden of the pandemic on different groups and communities, and subsequently prompted the mobilization of inequality witnesses (e). In terms of political factors, witnesses who do not normally participate in the emerging disease domain (i.e. do not belong to the professional policy community) likely mobilized and exhibited a different type of reaction to witnesses associated with the professional emerging disease policy community. For instance, witnesses from outside the professional policy community may have reacted to the variety of harms caused by the pandemic, events in the inequality domain, and the implementation of large disaster relief policies such as the Coronavirus Aid, Relief, and Economic Security (CARES) Act. In contrast, professional emerging disease policy witnesses may have mobilized before the pandemic, and may thus be more likely to exhibit anticipatory attention. Previous studies have also demonstrated that presidential approval ratings can affect the behavior of congressional committee leaders (Lovett,

Bevan, and Baumgartner 2015). Consequently, the party affiliation of committee leaders (g) may influence the types of witnesses invited to hearings, and thus affect the proportion of witnesses exhibiting either anticipatory or reactive attention. Lastly, variation in unemployment and emerging disease deaths and cases varied between states. Depending on the state affiliations of committee members, this between-state variation may also have differentially influenced the types of witnesses invited to present testimony at congressional meetings, and the proportion of witnesses exhibiting either anticipatory or reactive attention (h, i, j).

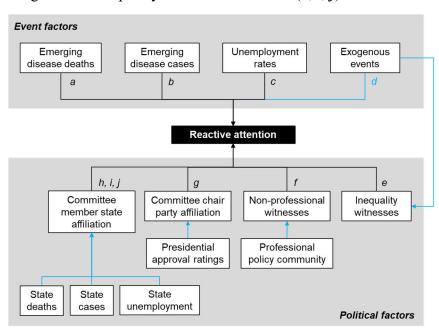


Figure 1: Conceptual framework of factors affecting variation in reactive attention. Blue lines denote relationships that are beyond the scope of this study, and therefore were not investigated.

Variables

Based on this conceptual framework, variables were created to assess potential drivers of reactive attention. Similar to Birkland's original work, variables are separated into event and political factors to assess the role of event indicators and committee and witness attributes on changes in reactive attention (**Table 1**). The main variable of interest, reactive attention, is measured as the proportion of congressional witnesses in the emerging disease domain exhibiting reactive attention per meeting, described in more detail below. To identify emerging disease witnesses, congressional committee meeting transcripts were obtained from the Congressional Record (https://www.congress.gov/) and ProQuest. Witness testimony was systematically selected by searching for congressional committee meetings containing at least one emerging disease keyword (**Table 2**) and selecting every fifth hearing for analysis. Duplicate, unpublished and untranscribed meetings were excluded. Since the dependent variable encompasses the proportion of emerging disease witnesses exhibiting reactive attention, meetings in which no witnesses mentioned an emerging disease keyword were also excluded. This yielded 82 meetings for analysis of witness

testimony. For each of these meetings, witnesses in the emerging disease domain were identified by their use of at least one emerging disease keyword in their oral testimony (**Table 2**). In total, 224 witness oral testimonies were identified for further analysis. Since congressional committee meetings impose time limits on witness testimony, data collection was restricted to oral testimony to capture each witness's prioritized arguments and narrative strategies, as described in previous studies (Birkland 1997).

Variable	Description (unit)	Source					
Dependent variable	Dependent variable						
Reactive attention	Proportion of emerging disease witnesses exhibiting reactive attention (%).	Congressional Record (https://www.congress.gov/)					
Event variables							
U.S. deaths	Number of new U.S. deaths attributed to emerging diseases.	(CDC 2021b; Johns Hopkins University 2021)					
U.S. cases	Number of new U.S. cases attributed to emerging diseases.	(CDC 2021a; Johns Hopkins University 2021)					
Unemployment	Monthly U.S. civilian unemployment rate, seasonally adjusted (%).	(U.S. Bureau of Labor Statistics n.d.)					
Political variables							
Inequality witnesses	Proportion of emerging disease witnesses mentioning an inequality keyword (Table 2).	Congressional Record (https://www.congress.gov/)					
Non-professional witnesses	Proportion of emerging disease witnesses that do not belong to the professional emerging disease policy community (%).	Congressional Record (https://www.congress.gov/)					
Republican chairs	Party affiliation of committee meeting chair.	Congressional Record (https://www.congress.gov/)					
Committee member state affiliation	Proportion of committee members representing one of the top five U.S. states for COVID-19 deaths (%).	Congressional Record (https://www.congress.gov/)					

Committee member state affiliation	Proportion of committee members representing one of the top five U.S. states for unemployment (%).	· ·
Committee member state affiliation	Proportion of committee members representing a state that implemented mandatory stay-at-home orders for all (%).	`

Table 1: Data description, units and sources.

Witness type	Keywords
Emerging disease	"sars", "covid", "coronavirus", "ebola", "zika", or "influenza"
Inequality	"racism", "civil unrest", "social justice", "inequality", "inequity", "people of color", "minority", "minorities", "diversity", "black", "brown", "African American", "Indian", "Latino", "underserved" or "racial"

Table 2: Keywords used to identify emerging disease and inequality witnesses.

Measuring reactive attention

To measure reactive attention, emerging disease witnesses were categorized by their reference to a biological threat that either *has not yet culminated* in a crisis in the U.S. (anticipatory attention) or *has culminated* as a crisis in the U.S. (reactive attention). The proportion of witnesses exhibiting reactive attention was then calculated from the sum of all witnesses exhibiting either anticipatory or reactive attention. Of note, attention coding encompassed all biological threats rather than emerging diseases alone, because witnesses often grouped naturally occurring infectious diseases with man-made biological weapons.

Examples of anticipatory and reactive statements are provided in **Table 3**. As described by DeLeo, anticipatory problems are predicted to occur in the future and "tend to be marked by an acute degree of uncertainty" (DeLeo 2017, p.40). Hence, testimony coded as anticipatory attention was characterized by statements related to preparedness, warnings, or speculation about potential future risks or events. In contrast, the power of focusing events derives from their objective attributes, such as the damage or injury caused by the event (Birkland 1997). Although it is possible for events to focus attention by highlighting potentially greater future harms, such as large-scale nuclear accidents, focusing event theory indicates that focal power stems from the existence of an event, meaning that the harms of an event are no longer speculatory (Birkland 1997). Accordingly,

statements coded as reactive attention were characterized by references to existing, present-day harms in the U.S.

Importantly, coding for anticipatory and reactive attention specifically identified whether an event represented a crisis for the U.S. rather than globally. This distinction was made because the emerging disease domain includes events that frequently arise in foreign locations and take time to spread geographically. Hence, there is a perceivable difference between an existing harm in the U.S. versus an existing harm in a foreign location. While the former indicates that the threat has arrived and is actively affecting the U.S., the latter could be used to describe a possible, anticipated threat to the U.S.

Since potential focusing events can focus attention by affecting people within the same community or geographic area, coding based on the perception of the threat's location - and thus the communities at risk - may also provide insight into the influence of foreign events on domestic policy making (Birkland 1997). Additionally, as highlighted by DeLeo *et al.*, "[p]olicy process theory emphasizes that all problems, including disasters, are to some extent socially constructed" (DeLeo et al. 2021, p.17). Although beyond the scope of this study, it is therefore possible that measuring attention towards a threat such as COVID-19 in the U.S. could reveal how witnesses in this domain perceive and construct stories of harm arising from foreign events, with important implications for understanding mobilization and issue expansion in response to emerging disease threats (Birkland 1997; Pierce et al. 2014; Schneider and Ingram 1993).

Reactive attention
"We are at a pivotal moment in our
democracy. The urgency to restore a
functional legislature increases with every
moment."
Lorelei Kelly, Georgetown University
April 30, 2020
"I would like to talk about some of the
problems facing the Black communities in our
country and what the COVID-19 pandemic
has done to amplify the economic disparities
in Black communities. The coronavirus is
deadliest for the Black population, both in a
health situation and an economic outcome."
Samuel Scott, American Business
Immigration Coalition
June 3, 2020

"CDC and our U.S. Government partners have implemented an aggressive multi-layered strategy to slow the introduction of this virus into the United States to buy time so that our scientist could learn how this virus behaves, to prepare our Nation's public health system and health care system for the possibility of a global pandemic"

"With regard to the immediate needs of the [Departments of Transportation], the COVID-19 pandemic has had an unprecedented impact on our economy, the American people, and the construction industry."

Robert Lanham, Williams Brothers Construction July 1, 2020

Stephen Redd, CDC

March 11, 2020

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Table 3: Examples of witness statements coded as anticipatory or reactive attention.

Identifying different witness types

In addition to reactive attention, witnesses that mobilized in response to events in the inequality domain, such as police brutality and racial justice protests were quantified. To identify these witnesses, the testimony of emerging disease witnesses was analyzed for the presence of at least one inequality keyword (**Table 2**). The total number of inequality witnesses was subsequently counted and expressed as a proportion of total emerging disease witnesses per meeting.

Similar to the earthquake domain that features in Birkland's earlier work, the emerging disease domain contains a professional policy community. Hence, the proportion of emerging disease witnesses associated with the professional emerging disease policy community was quantified. Witnesses within this professional community include public health professionals and physicians who discuss hospital and public health capacity, as well as scientists specializing in infectious diseases, vaccine development and public health. Professional emerging disease witnesses also included officials from government agencies such as the U.S. Agency for International Development (USAID), Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), Department of Health and Human Services (HHS) and Food and Drug Administration (FDA), as well as agencies such as the Federal Emergency Management Agency (FEMA), which respond to hazards ranging from infectious disease outbreaks to natural disasters to terrorist attacks. Members of the animal agriculture or wildlife field also appeared in the emerging disease domain to discuss zoonotic disease threats, as well as transboundary diseases such as avian influence and African swine fever, which threaten livestock production and trade. Of note, professional witnesses frequently grouped naturally occurring infectious diseases with man-made threats such as anthrax; accordingly, the professional emerging disease policy community also includes witnesses associated with homeland security and protection against biological weapons. The size and influence of this professional policy community is reflected by the existence of several laws and legislatively mandated programs related to emerging disease

- threats, such as the Pandemic and All-Hazards Preparedness Act (PAHPA), the Project Bioshield 295 Act of 2004 and the Department of Homeland Security's BioWatch Program (DeLeo 2017). 296
- To create the "non-professional witness" variable, members of the professional emerging disease 297 policy community were identified by their use of an emerging disease keyword (Table 2) and their 298 299 association with at least one of the following criteria: 1) their position as scientists, academic researchers or other professionals specializing in infectious diseases, public or global health, or 300 301 vaccinations and medical countermeasures; 2) their employment in government agencies such as 302 the NIH, CDC and USAID, or organizations associated with all-hazards preparedness; 3) their role in animal agriculture or wildlife groups; or 4) their position or role in homeland security and 303 biological weapons defense. Witnesses that did not meet these criteria, but still mentioned an 304 emerging disease keyword, were coded "non-professional witnesses". The total number of non-305 professional witnesses was subsequently counted and expressed as a proportion of total emerging 306 307 disease witnesses per meeting.

Analysis and software

- 309 For descriptive analysis, ordinary least squares (OLS) regressions and multivariate fixed effects
- regression models were performed using R statistical software (version 3.6.2) with RStudio editor. 310
- Akaike information criterion (AIC) was used to facilitate the selection of best-fit models. Graphics 311
- were created using the tidyverse v1.2.1 (Wickham et al. 2019) and ggplot2 v3.3.2 (Wickham 2016) 312
- packages, and keywords for emerging disease and inequality witnesses were identified using the 313
- tidytext v0.3.1 package (Silge and Robinson 2016). 314

Results

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Witness mobilization and the transition from anticipatory to reactive attention

- Between January 2018 and December 2020, emerging disease witnesses averaged a total of 2.7 317
- 318 (SD, 1.4) witnesses per congressional committee meeting (Figure 2A) and 6.1 (SD, 10.1)
- witnesses per month (Figure 2B). Witness numbers remained relatively consistent until June and 319
- July 2020, approximately 6 months after the COVID-19 outbreak was first announced by the 320
- WHO, and three months after a public health emergency was declared in the U.S. and globally 321
- (HHS Press Office 2020; WHO 2020b, 2020c). In these months, the total number of witnesses 322
- increased to highs of 49 and 52, respectively, and marked a transition from anticipatory to reactive 323
- attention (Figure 2C). The total number of witnesses exhibiting reactive attention peaked at 43
- 324
- and 41 in June and July 2020; in comparison, the number of anticipatory witnesses reached a high 325
- of only 11 witnesses in July 2020 (Figure 2D). An OLS regression (Table 4) revealed a significant 326
- association (p = 0.002) between the total number of emerging disease witnesses and the proportion 327
- of witnesses exhibiting reactive attention per meeting. Combined, these findings demonstrate that 328
- increases in witness numbers in the emerging disease domain during the pandemic were associated 329
- with a transition from anticipatory to reactive attention, thus addressing Objective 1. 330

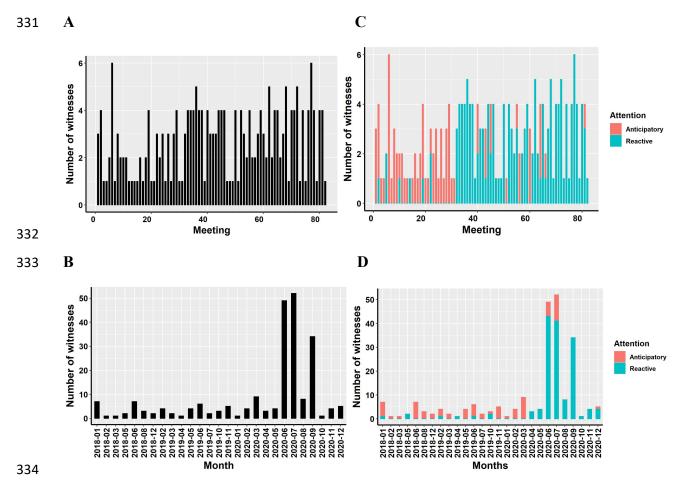


Figure 2: Number of emerging disease witnesses per meeting (A) and month (B), and the number of witnesses exhibiting anticipatory or reactive attention per meeting (C) and per month (D). Data represent 82 congressional committee meetings and 224 witnesses between January 2018-December 2020.

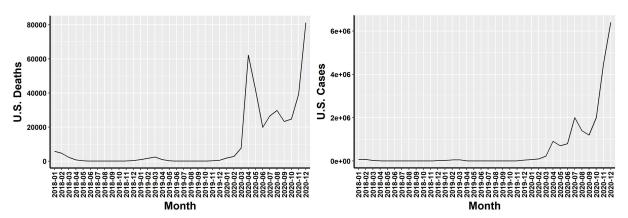
OLS regression Formula: emerging disease witnesses ~ reactive attention						
Variable	Estimate	SE	p value	Adjusted R ²	AIC	
Reactive attention	1.041	0.320	0.002 **	0.106	284.398	

Table 4: Association between total number of emerging disease witnesses and proportion of witnesses exhibiting reactive attention per meeting (n=82). **p < 0.01, two-tailed.

Descriptive results: event factors

Cases and deaths caused by emerging diseases - including COVID-19, severe acute respiratory syndrome (SARS), Ebola virus, Zika and influenza - were used as a measure of the disease's harmfulness and scope over time. Between January 2018 and December 2020, no SARS or Ebola cases or deaths were reported in the U.S. In 2018, only 222 Zika virus disease cases were reported in U.S. states and territories throughout the entire year, and none were reported in 2019 or 2020 (WHO 2019b). Accordingly, the majority of emerging disease deaths (**Figure 3A**) and cases (**Figure 3B**) were caused by influenza and COVID-19. In 2018, emerging disease cases in the U.S. increased at a rate of 12,761 cases per month, and 17,146 cases per month in 2019. Meanwhile, emerging disease deaths in the U.S. in 2018 increased at a rate of 794 deaths per month, and 589 per month in 2019.

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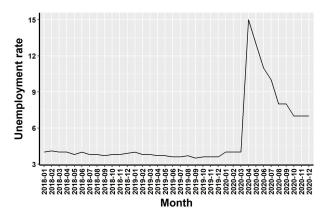


Figure 3: Descriptive analysis of event variables. Health and economic indicators of damage were measured as (A) confirmed cases of emerging diseases, (B) deaths caused by emerging diseases, and (C) unemployment rates in the U.S. between January 2018-December 2020.

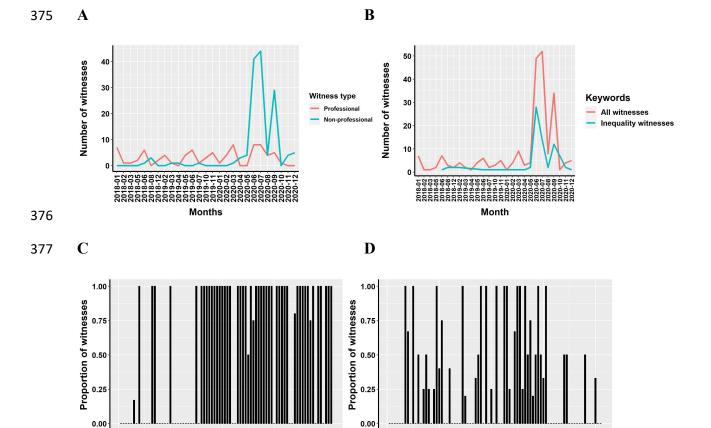
In 2020, the number of cases and deaths increased substantially: cases increased at a rate of 1.8 million cases per month, and deaths increased at a rate of 32,629 per month. The majority of this increase can be attributed to COVID-19. The highest monthly totals of COVID-19 deaths were seen in April 2020 (60,800 deaths) and December 2020 (81,000 deaths), while COVID-19 cases reached monthly highs of 4.5 million and 6.4 million in November and December 2020. In comparison, the highest monthly totals of influenza deaths and cases were substantially lower, reaching 5,775 deaths in January 2018 and 98,617 cases in February 2020.

For economic indicators of damage during the pandemic, national unemployment rates were used for the study. Between January 2018 and December 2019, unemployment averaged 3.8% per month, and then increased to 14.8% in April 2020, before dropping to 6.7% in December 2020 (**Figure 3C**).

Descriptive results: political factors

Meeting

For political factors, the proportion of non-professional witnesses, inequality witnesses, the state affiliations of committee members and the party affiliation of committee chairs were measured.



Meeting

Figure 4: Descriptive analysis of political variables. Total number of (A) professional and non-professional witnesses and (B) inequality witnesses in the emerging disease domain per month between January 2018 and December 2020. Also presented as the proportion of (C) non-professional witnesses and (D) inequality witnesses in the emerging disease domain per meeting.

The proportion of non-professional witnesses—defined as witnesses who do not normally participate in the emerging disease policy domain--was calculated to assess whether mobilization differed before and after the event. Before the COVID-19 outbreak was first reported by the WHO in January 2020, agenda activity in the emerging disease domain was dominated by witnesses from the professional emerging disease policy community, such as government officials representing the CDC, NIH, HHS and USAID, as well as public health experts, scientists and vaccine/medical countermeasure developers.

As the COVID-19 event unfolded in 2020, the number of professional emerging disease witnesses remained similar to the previous two years. However, the number of non-professional witnesses increased substantially during 2020 (**Figure 4A and C**). This mobilization included a variety of witness types, such as public citizens, restaurant owners, airline workers and members of educational associations, manufacturing groups and food bank representatives, who reacted to problems such as school and business closures and disruption to global trade, travel and tourism.

As demonstrated by their oral testimonies, these non-professional witnesses also mobilized in response to a number of large disaster relief policies enacted during the pandemic. On March 6 2020, more than one week before the first stay-at-home orders were implemented in U.S. states and territories (Moreland et al. 2020), Congress enacted the Coronavirus Preparedness and Response Supplemental Appropriations Act 2020 to provide \$8.3 billion in emergency appropriations to combat COVID-19 (H.R. 6074). A couple of weeks later on March 18, the Families First Coronavirus Response Act (H.R. 6201) was passed, and was soon followed by the Coronavirus Aid, Relief, and Economic Security (CARES) Act (H.R. 748) on March 27. Combined, these laws totaled more than \$2 trillion in disaster relief funding. As described by DeLeo et al., although these laws demonstrate that COVID-19 opened a policy window, this legislation "was intended to mitigate the effects of the pandemic on public health, the economy, and education in near real time" rather than amend existing policies to reduce the risk of future, similar crises (DeLeo et al. 2021, p.14). This led to the mobilization of witnesses advocating for continued disaster relief, and witnesses representing financial groups involved with the implementation of initiatives such as the Paycheck Protection Program. Examples of professional and non-professional testimony are provided in Table 5.

Professional witness testimony	Non-professional witness testimony		
"I would like to focus my remarks on the importance of preparedness against pandemic influenza and the critical role played by the	"We must ensure that the pandemic does not set back the critical policy goal of promoting credit and prosperity in America's minority		

Biomedical Advanced Research and Development Authority, BARDA, and its industry partners."

Brent MacGregor, Alliance for Biosecurity January 23, 2018

"The commission asserts that the U.S. Government has to end this cycle of crisis and then complacency. We need to replace it with a doctrine that can guarantee continuous prevention, protection, and resilience. In that spirit, we commend the release of the National Biodefense Strategy last fall and the Global Health Security Strategy this year."

Julie L. Gerberding, Center for Strategic and International Studies

November 20, 2019

"Even after the COVID-19 outbreak is over, emerging outbreaks will still be a continuing concern. The Federal research space needs to evolve toward a more rapid approach to meet this threat."

Tara Kirk Sell, Johns Hopkins Center for Health Security

March 5, 2020

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communities."

James Sills, Independent Community Bankers of America

June 3, 2020

"We also work with school districts and other organizations in feeding, pre-COVID, about 60,000 people each week. Now, at the onset of the COVID-19 crisis that number moved to 120,000 people a week."

Eric Cooper, Antonio Food Bank July 21, 2020

"[T]he economic crisis spawned by COVID-19 has forced the cancellation of virtually all normal U.S. textile production outside of some PPE production... If this persists the goal of making the U.S. self-sufficient in PPE production will be unattainable due to the collapse of key parts of the domestic textile manufacturing."

Kimberly Glas, National Council of Textile Organizations

July 23, 2020

Table 5: Examples of testimony from witnesses coded as professional or non-professional participants in the emerging disease domain.

The proportion of emerging disease witnesses that mentioned an inequality keyword (**Table 2**) was assessed to evaluate the influence of events that occurred in the inequality domain in 2020, such as George Floyd's murder and protests against police brutality and racism in multiple states and countries. Between January 2018 and December 2020, the number of inequality witnesses increased at an average rate of 2 witnesses per month. The greatest increase was seen in 2020, at an average rate of 6 witnesses per month. The number of these witnesses reached a total monthly high of 28 in June 2020 (**Figure 4B and D**), which represents 60% of total witnesses and coincides with the largest number of witnesses exhibiting reactive attention in the same month (**Figure 2D**). This demonstrates that a substantial proportion of agenda change during the study period can be attributed to spillover from inequality events. Combined with the increase in non-professional

emerging disease witnesses, this indicates that there was a substantive difference between anticipatory and reactive witness testimony.

During 2020, the number of COVID-19 deaths varied across states. To assess the possible influence of this variation on committee members attention towards the event, and thereby the witnesses invited to provide testimony, the top five states for COVID-19 deaths were identified (**Supplemental Table 1**), and the proportion of committee members representing these states (**Figure 5A**) was calculated. Likewise, across the study period, unemployment rates per month varied across states (**Supplemental Table 2**), and the top five states for unemployment were calculated to examine the possible influence of this variation on witness attention (**Figure 5B**).

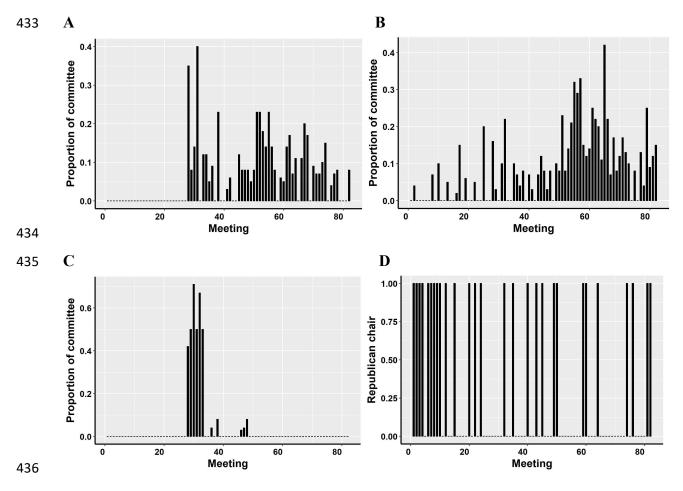


Figure 5: Descriptive analysis of political variables. Proportion of committee members per meeting representing (A) one of the top five states for COVID-19 deaths, (B) one of the top five states for unemployment and (C) a state that implemented mandatory stay-at-home orders per meeting between January 2018 and December 2020. (D) Distribution of Republican committee chairs for each meeting during the study period.

Between March and April 2020, movement restrictions were implemented across multiple states to reduce person-to-person interactions, and thereby decrease the risk of disease transmission,

which occurs via exposure to respiratory droplets or airborne particles (CDC 2020b, 2020c; Moreland et al. 2020). Since states and territories had the authority to enact their own laws and policies, restrictions ranged across states from mandatory stay-at-home orders to advisory mitigation policies, and the proportion of committee members representing states that implemented mandatory stay-at-home orders to all inhabitants varied across congressional meetings (Figure 5C). Lastly, due to the influence of presidential approval ratings on congressional committee leaders (Lovett, Bevan, and Baumgartner 2015), which may have varied throughout the study period, the proportion of Republican committee chairs was quantified (Figure 5D).

Modeling reactive attention

To assess the relationship between reactive attention and event and political factors, OLS regression models were first used to identify event and political factors that were significantly associated with reactive attention (p < 0.05), and then combine these factors in multivariate fixed effect regression models (**Table 6**). Since the study period included two years before the COVID-19 outbreak began, an additional dichotomous variable assessing the presence (1) or absence (0) of COVID-19 was added to control for the lack of pandemic-associated indicators in 2018 and 2019.

Based on the results of OLS regressions with a single independent variable, event and political factors that were selected for testing in multivariate models included US deaths, US cases, unemployment rates, the proportion of committee members representing the top five states for unemployment, Republican committee chairs, the proportion of non-professional witnesses, and the dichotomous COVID-19 variable.

Fixed effects model							
Variable	Estimate	SE	p value	Adjusted R ²	AIC	Overall <i>p</i> value	
OLS regression f	OLS regression formula: reactive attention ~ [variable]						
US deaths	0.125	0.050	0.014 *	0.061	105.760	-	
US cases	0.002	0.001	0.012 **	0.065	105.426	-	
Unemployment	0.103	0.012	<0.001 ***	0.486	56.304	-	
Inequality witnesses	0.067	0.136	0.623	-0.009	111.709	-	

Committee members, top 5 states for deaths	0.876	0.609	0.154	0.013	109.862	-
Committee members, top 5 states for unemployment	1.442	0.534	0.009 **	0.072	104.818	-
Committee members, stay- home states	-0.441	0.349	0.209	0.007	110.330	-
Republican chairs	-0.256	0.105	0.017 *	0.058	106.070	-
Non- professional witnesses	0.588	0.085	<0.001 ***	0.367	73.423	-
COVID-19 presence	0.616	0.090	<0.001 ***	0.360	74.310	-
Multivariate forn	nula: reactiv	e attention	n ~ [variable 1]	+ [variable 2]	+ [varia	able n]
US deaths	-0.048	0.055	0.381	0.541	52.782	<0.001 ***
US cases	0.002	0.001	0.067			
Unemployment	0.086	0.022	<0.001 ***			
Committee members, top 5 states for unemployment	-0.341	0.431	0.432			
Republican chairs	-0.150	0.082	0.071			
Non- professional witnesses	0.177	0.100	0.082			

COVID-19 presence	0.007	0.137	0.961			
Final OLS regression formula: reactive attention ~ unemployment						
Unemployment	0.103	0.012	<0.001 ***	0.486	56.304	-

Table 6: Fixed effect regression models assessing the relationship between the dependent variable, the proportion of witnesses exhibiting reactive attention, and event and political factors. *p < 0.05, **p < 0.01, ***p < 0.001.

When combined together in a multivariate regression model, only one variable, unemployment, retained its significant association with reactive attention. Thus, the following final model for reactive attention was developed:

Reactive attention
$$\sim$$
 -0.189 + (0.103) unemployment

Based on this model, a 1% increase in unemployment was associated with a 10.3% increase in the proportion of witnesses exhibiting reactive attention.

Discussion

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By analyzing congressional committee meetings before and after the COVID-19 outbreak was first announced in January 2020, this study demonstrates that peak mobilization of witnesses in the emerging disease domain was associated with a transition from anticipatory to reactive attention. Although COVID-19 took time to spread across and between countries, and hence was neither a sudden or unpredictable threat to the U.S., the rapidity of this change in attention and mobilization suggests that there was a point at which the event "culminated" and reached a tipping point of visibility to dominate and expand the emerging disease policy agenda. This is reflected by substantive differences between anticipatory and reactive testimony, with anticipatory testimony marked by uncertainty and speculation, and reactive testimony describing existing damage in the present tense. The difference between anticipatory and reactive attention is useful for policy process research because it separates the perception of an ambiguous future threat from a problem that is actively inflicting harm, and thus how the accumulation of indicators can transform into "something that is conceptualized by policymakers and the public as a singular event" (DeLeo et al. 2021, p.18). This measurable transition suggests that despite their anticipatory, predictable nature, emerging disease events are capable of rapidly focusing attention if they encompass a culmination point, at which point the threat becomes perceived as an active, present-day problem.

By assessing the relationship between event and political factors, this study shows that the culmination point of COVID-19 was not associated with disease indicators, but by rapid increases

in unemployment rates. Although the proportion of non-professional emerging disease witnesses did not maintain its significant relationship with reactive attention in the multivariate model, the association between unemployment and reactive attention can be explained, at least in part, by the mobilization of non-professional witnesses. In alignment with theories of issue expansion (Schattschneider 1960), the majority of witnesses that mobilized during peak months of the study period were not part of the professional emerging disease policy community. Before the transition from anticipatory to reactive attention and spike in witness numbers, congressional committee meetings were dominated by professional emerging disease witnesses such as public health experts, scientists and government officials from agencies such as the CDC and HHS, who advocated for preparedness against a likely disease outbreak. In contrast, after the transition to reactive attention, debates expanded to include non-professional witnesses, such as members of the hospitality industry, educational associations, manufacturing groups and food bank representatives, who mobilized in response to problems such as business and school closures, travel and trade disruption, and support for large disaster relief policies enacted during the pandemic.

This is not to say that witnesses exhibiting reactive attention mobilized solely in response to economic damage of the pandemic; reactive testimony also frequently included references to health indicators of damage. Rather, these findings raise important questions about the definition of "an event", and thus which indicators are measured to assess an event's potential focal power, as well as whether an event is classified as sudden, unpredictable or rare. When defined by health indicators of damage, sizable changes in the number of COVID-19 deaths and cases took place over several months, meaning that the arrival of the U.S. was not unpredictable or sudden. Furthermore, an ongoing Ebola outbreak in the Democratic Republic of the Congo suggests that the emergence of an infectious disease in a foreign location was not rare. Using these indicators, DeLeo et al. classify COVID-19 as a "rapid-accumulation" event, rather than a classical focusing event (DeLeo et al. 2021).

In contrast, this study shows that economic indicators of damage increased more rapidly over a period of weeks. A substantial proportion of economic damage can be attributed to movement restrictions and business closures implemented by multiple states, the scope and duration of which were unprecedented for the U.S. Prior to 2020, the only infectious disease outbreak that has prompted comparable measures in close proximity to the U.S. was the 2009 swine influenza pandemic, which was first detected in Veracruz, Mexico. Despite the pandemic status of this disease, this outbreak prompted school closures, social distancing measures and public gathering restrictions in a single country, Mexico (CDC 2009a, 2009b). In the U.S., despite the presence of cases in the country, swine influenza mitigation policies were limited to advisory travel warnings and guidance for public gatherings, and thus did not lead to the same economic damage as COVID-19 (CDC 2010).

Other emerging disease outbreaks have occurred since then, such as Ebola outbreaks in 2014 and 2018, but these also failed to trigger public health responses in the U.S. (Aruna 2019; CDC 2020a). This suggests that the movement restrictions and business closures enforced during 2020 were rare in terms of not just their scope, but also their implementation in the U.S., and may thus have signaled the failure of U.S. disease preparedness and control policies. Hence, the rareness and ability to rapidly inflict economic harm may have allowed the 2020 movement restrictions to act as an independent event within the pandemic, and exerted a separate effect on congressional attention and agenda activity. Again, this is not to say that health indicators of damage did not attract attention, but the results of this study suggest that the focal power of COVID-19 derives from unexpected and rapid increases in unemployment rates, rather than the accumulation of deaths and cases.

In summary, the findings of this study indicate that rather than using event indicators to determine an event's potential focal power, measuring anticipatory and reactive attention to pinpoint the culmination point of an anticipatory event can help uncover which indicators have the capacity to focus attention. This, in turn, may also help improve how events are defined, identified and characterized in policy process research. As a global pandemic that took several months to escalate and has persisted for almost 2 years, COVID-19 does not meet the criteria of a potential focusing event. However, as an infectious disease that triggered unprecedented business closures and movement restrictions in the U.S. within a matter of weeks, the definition of COVID-19 aligns more closely with focusing event theory. The distinction between these two "events" suggests that the presence of a culmination point could distinguish an indicator-driven event that possesses focal power from an indicator-driven problem that is never perceived as a singular event, and thus improve the conceptualization of an indicator-focusing event continuum.

Limitations

Several limitations of this study are worth noting. First, between March and June 2020, congressional hearings underwent a major change as movement restrictions led to members of Congress working remotely. During this time a number of hearings were not published, and this missing data may exaggerate the rapid rise in witness numbers and reactive attention that took place during these months. Second, this study only examines a single event. To test whether an anticipatory-reactive transition is indeed associated with a culmination point during an event, this approach should be evaluated across multiple events and, ideally, multiple policy domains, as performed in other studies (Birkland 1997; DeLeo 2017; DeLeo et al. 2021; O'Donovan 2017). Finally, the method used to distinguish between anticipatory and reactive attention warrants further analysis to examine the viability of identifying whether an event is perceived as a crisis for the U.S. The goal of this coding approach was to adhere to focusing event theory, which connects the focal power of an event with its capacity to inflict harm on a specific community or geographic area (Birkland 1997). However, the utility of this approach may vary across different policy domains, depending on the sensitivity of policy participants in the domain to foreign events. For

- example, domains related to financial markets or trade and manufacturing may react more strongly
- 570 to early indicators of a foreign threat. Furthermore, the potential focal power of COVID-19 may
- 571 fundamentally alter the sensitivity of the emerging disease policy domain to future infectious
- 572 disease outbreaks occurring anywhere in the world.

Conclusion

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- The findings of this study demonstrate that the anticipatory nature of the emerging disease policy
- domain does not prevent events from focusing the attention of policy participants and dominating
- the congressional agenda. Instead, this study shows that anticipatory, indicator-driven events can
- 577 focus attention if the event reaches a culmination point, which is marked by a transition from
- anticipatory to reactive attention. Further research exploring the association between reactive
- attention and different event characteristics, such as the severity of damage, type of damage, and
- rareness and speed of indicator accumulation, could help elucidate the difference between an event
- and a non-event: how and why some indicators culminate in a singular event, but others do not.

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Supplemental information

Month	1st	2nd	3rd	4th	5th
January 2020	-	-	-	-	-
February 2020	-	-	-	-	-
March 2020	NY	LA	NJ	WA	MI

April 2020	NY	NJ	СТ	MA	MI
May 2020	NJ	MA	CT	RI	DC
June 2020	MA	GA	NJ	RI	MS
July 2020	AZ	GA	MS	SC	TX
August 2020	GA	MS	LA	FL	SC
September 2020	GA	GU	AR	MS	FL
October 2020	ND	GA	SD	MT	AR
November 2020	SD	ND	GA	NM	MT
December 2020	SD	RI	ND	IA	ОН

Supplemental Table 1: Top five U.S. states and territories for COVID-19 deaths per month in 2020, calculated per 100,000 people.

Month	2018	2019	2020
January	VI, PR, AK, DC, WV	PR, VI, AK, DC, MS	PR, AK, MS, LA, DC
February	PR, VI, AK, DC, WV	PR, VI, AK, DC, MS	PR, AK, MS, LA, DC
March	PR, VI, AK, DC, WV	PR, VI, AK, DC, MS	NV, LA, NM, AZ, DC
April	PR, VI, AK, DC, WV	PR, AK, VI, DC, MS	NV, MI, HI, RI, OH
May	PR, VI, AK, DC, WV	PR, AK, VI, DC, MS	NV, HI, MI, CA, MA
June	VI, PR, AK, DC, WV	PR, VI, AK, DC, MS	AL, GU, AK, AZ, AR
July	VI, PR, AK, DC, WV	PR, VI, AK, MS, DC	MA, NY, NV, NJ, CA

August	PR, VI, AK, DC, WV	PR, AK, VI, MS, DC	NV, RI, HI, NY, VI
September	PR, VI, AK, DC, WV	PR, AK, VI, MS, DC	GU, HI, VI, NV, CA
October	PR, VI, AK, DC, WV	PR, AK, VI, MS, DC	HI, NV, VI, NY, LA
November	PR, AK, VI, DC, WV	PR, AK, MS, DC, VI	VI, NJ HI, NV, PR
December	PR, VI, AK, DC, WV	PR, AK, GU, MS, DC	GU, HI, NV, PR, CA

Supplemental Table 2: Top five U.S. states and territories for unemployment rates per month between 2018 and 2020.