



BEACON HILL  
VILLAGE

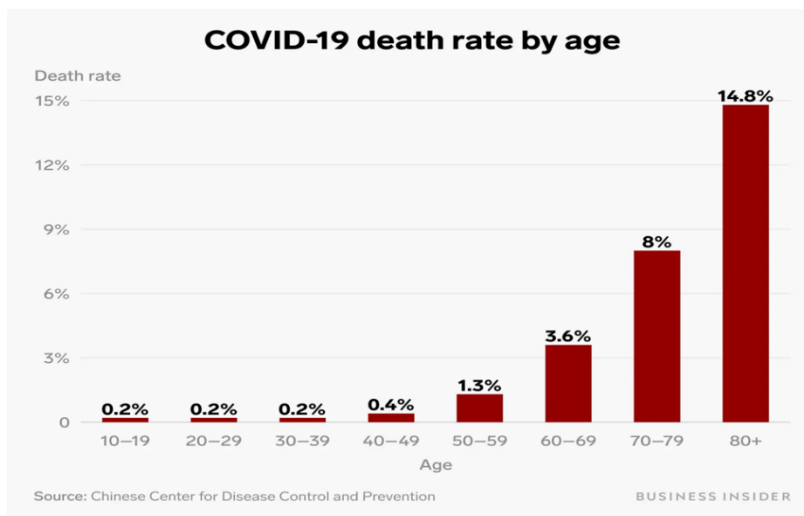
## FLATTENING THE CURVE, SOCIAL DISTANCING AND BEACON HILL VILLAGE

March 20, 2020

This explainer lays out in more detail why the Beacon Hill Village board made its recent extraordinary decision on March 15, 2020 to suspend nearly all our activities through April, 2020.<sup>1</sup> It is extraordinary because so much of what Beacon Hill Village does is dedicated to bringing our members together face-to-face with the richest calendar of events of any Village in the country. Since Beacon Hill Village opened in 2002, members have thronged to these events. Our affinity groups have powerfully supplemented our calendar offerings.

In this unsettling time, shouldn't we be doubling down on community? The answer is a resounding "YES"—but not face-to-face. BHV will continue the services it can—grocery shopping and transportation—and move the arrangement of most member services online. BHV is committed to keeping our community and our ties to each other strong by remaining a resource and becoming at the same time a catalyst for innovation.

All BHV members by now have heard about the coronavirus COVID-19. COVID-19 particularly threatens older persons—precisely BHV's demographic. (See figure below.) Especially vulnerable are older persons with any underlying health condition.<sup>2</sup> CDC has determined that Massachusetts is experiencing



at least moderate spread of COVID-19 and there is "likelihood of additional spread..." for which it recommends a battery of mitigation strategies.<sup>3</sup> CDC uses the term "mitigation strategies" "... when there is evidence of community transmission." This means when COVID-19 is no longer spreading because infected travelers from elsewhere are coming and spreading COVID-19 to local residents here. It is now mainly spreading between local residents.<sup>4</sup>

**CURRENT SITUATION.** The number of COVID-19 cases tells a sobering and rapidly changing story.

**Data for Massachusetts and the US.** The first Massachusetts COVID-19 case, confirmed on January 31, 2020, involved a University of Massachusetts Boston student who had returned to Boston after visiting Wuhan, China while the outbreak was starting there at the end of December, 2019.<sup>5</sup> At first the number

of cases, 328 with no deaths (as of March 19, 2020),<sup>6</sup> may not seem large compared to the 2020 Massachusetts population of around 6.95 million.<sup>7</sup> Yet the number of Massachusetts cases has grown appreciably in the slightly more than six weeks since the first case was reported. Data from the Massachusetts Department of Public Health make clear that the cases confirmed and awaiting CDC confirmation are predominantly in metropolitan Boston, i.e. in Suffolk, Middlesex and Norfolk counties.<sup>8</sup>

Just barely a week before the first Massachusetts case was reported, WHO reported the first US COVID case anywhere, on January 23, 2020.<sup>9</sup> There are now 10,442 confirmed cases today in the US and 150 deaths.<sup>10</sup> Thus, from a common starting point of a single COVID-19 case, in one extra week the US as a whole now has orders of magnitude more confirmed cases than Massachusetts.

Exponential case growth like this is a central concern of public health experts and a central feature of many epidemiological models. We do not currently know what the Massachusetts doubling time is—the time it takes for cases to rise from, say, 50 to 100.<sup>11</sup> Yet using confirmed cases to make any calculations about the number of cases or their doubling time is likely misleading. There is almost certainly a “shadow” of COVID-19 cases—more actual cases than reported cases, perhaps many more. This is just a matter of common sense: confirmed cases will, for many reasons, always lag behind, sometimes for a very long time, the actual number of cases in the field. This is especially so given the amazingly low level of COVID-19 testing there has been in, in Massachusetts and in the United States generally. Even if the Massachusetts “shadow” is quite small, it is likely not zero.<sup>12</sup>

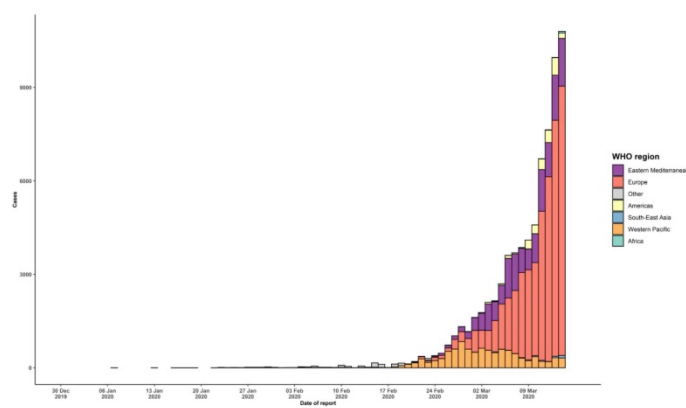
**Isn't this just a China problem?** No. Though the COVID-19 virus originated and originally spread almost exclusively in China, there are now more COVID-19 confirmed cases outside than within China, and it is beyond China where the numbers of confirmed cases and deaths are rising rapidly.

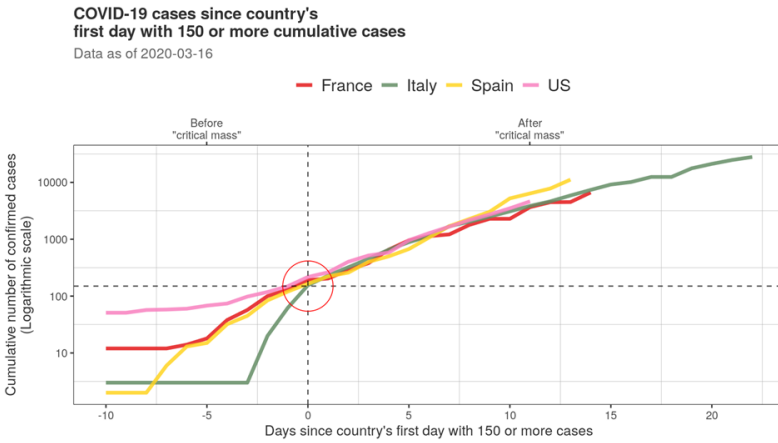
On January 21, 2020, about a month after the initial COVID-19 breakout in Wuhan, the UN World Health Organization reported 282 confirmed cases of COVID-19 virus (fewer than in Massachusetts today) and 6 dead. The cases were still overwhelmingly from Wuhan but there was already spread within China. There were also 4 reported cases outside China, all in adjacent countries, all traceable to travel in Wuhan. All 6 reported deaths had occurred in Wuhan.<sup>13</sup>

As of March 19, 2020, total COVID-19 cases have climbed astronomically. WHO is reporting 209,839 confirmed COVID-19 cases worldwide, an increase of 16,556 just over the previous day. There were 8,778 dead, an increase of 828 over the previous day. China still had the most confirmed cases, 81,174, and the most deaths, 3,242. But after extraordinary efforts, the China numbers seem to be levelling off. On March 19, there were only 58 new confirmed cases compared to the previous day, and 11 new deaths. Beyond China on March 19 there were just slightly under 120,000 confirmed cases outside China and 5,500 deaths.<sup>14</sup>

The speed of the spread outside China is dramatically captured in the figure shown to the right. Cases in orange are in Europe, where spread outside China has been most pronounced. Three weeks ago, the graph shows, cases in Europe were few, as they are now in Massachusetts. The spread of COVID-19 in Europe is particularly striking in terms of COVID-19's prospects in the United States. Western Europe has a level

Figure 2. Epidemic curve of confirmed COVID-19 cases reported outside of China (n=72 469), by date of report and WHO region through 15 March 2020





of economic and political development similar to that of the United States: both have established governments and regulatory capacity, sophisticated health care institutions and systems. Yet states in western Europe have some of the highest numbers of COVID-19 cases outside China. In Italy, the epicenter of COVID-19 incidence in Europe, the health care system has been overwhelmed by COVID-

19 cases requiring hospital care. It's a commonplace in much American COVID-19 reporting that what is happening in Italy "can't happen here." But on March 16, 2020 the Surgeon General of the United States warned that the United States is about two weeks behind where Italy is today.<sup>15</sup> Before he spoke he may well have seen a graph like the one above which shows that, beyond a critical mass of 150 cases, countries start following the same trajectory of exponential growth for COVID-19 cases.

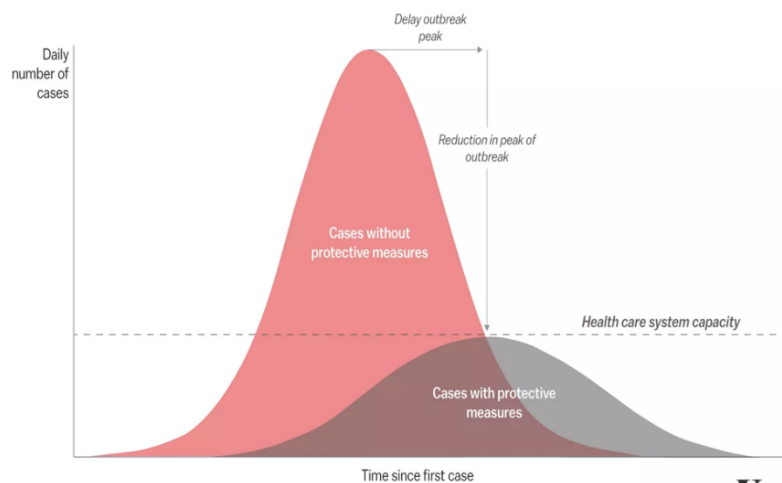
What can the United States do to avoid the fate of Italy? There is no COVID-19 vaccine now or soon.<sup>16</sup> To safeguard our health care system and its critical personnel,<sup>17</sup> as well to blunt potentially large economic and social impacts, our goal must be to "flatten the curve" of COVID-19's spread to keep cases to a level our health care system and its personnel can handle. And there is just one effective strategy to achieve that flattening: "social distancing."

**WHY "FLATTEN THE CURVE"?** Flattening the curve is the only way to avoid overwhelming the Massachusetts health care system. The CDC graph on this page shows what "flattening the curve" accomplishes in any epidemic; it is not based on data for COVID-19. There are two curves set within a standard grid measuring "time since the first case" horizontally and "daily number of cases" vertically. The red curve, labelled "Cases without protective measures," is a commonplace of epidemiology, with the standard steep S-shaped curve to the peak. In principle, it looks quite like the figure above of COVID-19 outbreaks outside China.

It's the gray curve, labelled "Cases with protective measures," that's interesting, especially the dotted line, under which the gray curve fits, labeled "Health care system capacity."

The red curve early on blasts through this line—not so far from what is happening in Italy right now. This line tells the story of the CDC figure: the goal of each jurisdiction must be to control the number of COVID-19 cases so that they will not blast through the line—will not, that is, require at any time more health care outputs than that jurisdiction's health care system can provide.

### Flattening the curve



Source: CDC

Vox

These outputs, of course, are already partially spoken for. Today's health care systems have not been designed to sit around waiting for large pandemics. Even in advanced countries like the United States, Japan or much of western Europe, these systems are already treating large numbers of patients, and there is only so much residual capacity. Some capacity can be freed up, of course, by delaying elective and non-emergency procedures and treatment, by shifting personnel among specialties, by more aggressive discharges from hospitals after treatment, even adding some facilities, etc. But the whole system cannot, realistically, be suddenly reserved for COVID-19 patients: there will be some irreducible need for non-postponable health care. Babies will continue to be born; accidents will still happen; the suddenly ill from non-COVID-19 causes will need treatment; the chronically ill will need ongoing treatment.

So some means must be found so that the sum of this continuing non-postponable non-COVID-19 demand for health care plus the new demand from COVID-19 cases will not "break the bank." And again, given that there is no vaccine, the only obvious resort here is reducing the speed by which the COVID-19 infection spreads and the number of cases grows.

**SOCIAL DISTANCING.** Enter "social distancing." At its simplest and most general, social distancing means avoiding exposure and avoiding exposing others. For a while after COVID-19 became a news staple, social distancing was largely discretionary for most people: if you had COVID-19 symptoms, self-quarantine for 14 days was in order; if you were older and/or suffered underlying health challenges, avoiding large crowds or public transportation was in order. The only real federal government effort was around traveling, to intercept travelers returning from COVID-19 hotspots, and to warn Americans about traveling to those hotspots.<sup>18</sup> Federal and state governments issued standard guidance around hand-washing, surface cleaning, and 6'-diameter contact zones for elders or those with underlying health issues. Massachusetts did urge schools to cancel any planned international travel.

For residents of Massachusetts, though, things have rapidly changed in just a few days. Governor Baker started the changes by declaring a state of emergency in Massachusetts on March 10. He concluded on March 15 when he closed bars and restaurants statewide, allowing only food takeout or delivery; capped at 25 the maximum allowable gathering in any confined public or private space; and closed public and private schools statewide between March 17 and April 6.<sup>19 20 21</sup> During this period, the CDC issued its guidance for Massachusetts<sup>22</sup> and President Trump declared a national emergency as of March 1, 2020.<sup>23</sup> Boston's Mayor Walsh took several parallel local actions.<sup>24 25 26 27 28 29</sup>

Nonetheless, Governor Baker has made quite clear that Massachusetts is not in a lockdown, as in the San Francisco area.<sup>30</sup> So, practically speaking, what's allowed and what's prohibited, what is urged but not required? We offer our current list in the Appendix.

**CONCLUDING WORDS.** There will be inevitable frustrations and fears while COVID-19 roils our lives. It is tempting to feel there is nothing one can do. We urge you to feel differently. By understanding why BHV is canceling its programs for now, by staying close to home, you are part of the solution to "flattening the curve."

This is a time for fundamentals. We all need to stay connected to the world, including the world we share in BHV. BHV will continue to bring you good information about what is going on, to help you keep you in touch with friends and events. We will be experimenting, too. Some experiments will fail, of course, but many will succeed. We will adapt, we will learn. So, in the end, we are "doubling down on community"—but a new electronic community. We are betting all BHV members will adapt best when every member feels involved--able to share in and to help shape that community.

## APPENDIX: SOME COVID-19 FUNDAMENTALS - March 22, 2020

BHV offers below some fundamentals. But let's start with a sound generalization from a local physician to a BHV member: "The whole idea is to keep out of situations where you might meet up with the virus. So anything out of your control (e.g., not your own home, car, etc.) puts you at risk." BHV offers some fundamentals, based on the reliable sources listed in the endnotes.

### 1. Everywhere

- Cover coughs and sneezes. (COVID-19 is especially transmitted by droplets from sneezing.)
- Handwash frequently – 20 seconds with hot soapy water.
- Don't touch your face with unwashed hands.
- Use wipes when available to clean your hands and surfaces others may have touched – handrails, grocery carts, elevator buttons, doorknobs, etc.
- Keep a 6' diameter around you except with intimates you know have not been exposed to COVID-19 and, realistically, who knows?

### 2. At home

- Stay at home as much as possible. That is the current CDC guidance for all Massachusetts residents 65 and over, and those of any age with complicating health conditions.
- Clean frequently touched surfaces often
- Physical intimacy is OK with your regular partner so long as you are both sure about COVID-19 exposure. A new partner may not be a good idea right now.<sup>31</sup>
- Be sure visitors or delivery people have followed precautions to avoid exposure or, for deliveries, have them ring the bell and leave it at the door.
- Limit groups to 10. But the 6' diameter guidance still applies. (Most downtown Boston residents do not have nearly this much space!)
- Have a "household plan of action" as recommended by CDC for elderly and at-risk Massachusetts residents," viz.
  - Have at least a 2-week supply of usual prescription and over-the-counter medications, food and other essentials. BHV continues its shopping services and we will be shortly supplying information about additional ways of getting groceries and prepared food delivered.
  - Keep a current list of important phone and e-mail contacts, including BHV (617-723-9713 and info@bhvillage.org), your doctor, your pharmacist, family and friends.
  - Keep up with important developments via trustworthy sites.

### 3. Away from home

- Observe the 6' rule wherever you are.
  - You can walk, bike, etc., freely outdoors. Join others in small groups.
  - You can shop for groceries and go to the drug store but avoid crowds.
  - You can pick up takeout orders as long as restaurants are open for business. It is a way we can support our local businesses.
- Ensure that any premises you visit have clear and clearly observed additional cleaning routines, offer hand sanitizers, etc. If they don't or you can't confirm, think twice.

#### 4. What you can't do

- Sit down in a restaurant or bar. All restaurants and bars are closed to on-premises services until at least April 6. Many remain open for takeout and delivery.
- Visit most hospitals, nursing homes, rest homes or assisted living facilities. Check with any particular facility before trying to visit.
- Go to any gathering of more than 25 in confined indoor or outdoor spaces through April 5. This includes gyms and health clubs, religious services and in Boston, all BPL locations.
- Go to the mall. Most mall owners have closed their locations.
- Most schools, colleges and many facilities like libraries and museums are closed. Some offer online services or virtual tours.

#### 5. What you should think at least twice about.

- Discretionary travel foreign or domestic by whatever means.
- Public transportation including cabs, Uber and Lyft. Bring your wipes and keep the 6' rule.
- Basically, leaving home if you are over 65 or otherwise at risk.

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## ENDNOTES

<sup>1</sup>See March 15, 2020 Letter of the Board to Members of Beacon Hill Village on BHV's website, [https://www.beaconhillvillage.org/content.aspx?page\\_id=722&club\\_id=332658&emtid=136415874126&mtid=97873015852&ht=0&sl=1529768347](https://www.beaconhillvillage.org/content.aspx?page_id=722&club_id=332658&emtid=136415874126&mtid=97873015852&ht=0&sl=1529768347) .

<sup>2</sup> CDC, *Implementation of Mitigation Strategies for Communities with Local COVID-19 Transmission* (March 12, 2020), Appendix A, p. 10, <https://www.cdc.gov/coronavirus/2019-ncov/downloads/community-mitigation-strategy.pdf> ; hereafter, CDC, *Mitigation Strategies*), lists ten very broad categories of such conditions including heart disease, lung disease, endocrine disorders like diabetes, and compromised immune system from chemotherapy, radiation or immunosuppressant drug treatment. All persons with such underlying conditions, not just elders, are at increased risk. Elders with such underlying conditions are at even greater risk.

<sup>3</sup> CDC, "CDC's recommendations for implementation of mitigation strategies for Massachusetts, based on current situation with COVID-19 transmission," (undated, but after March 10, 2020; hereafter, "CDC Recommendations for Massachusetts"), [https://www.cdc.gov/coronavirus/2019-ncov/downloads/MA\\_Community\\_Mitigation.pdf](https://www.cdc.gov/coronavirus/2019-ncov/downloads/MA_Community_Mitigation.pdf) . The quotation is from p. 1. CDC does not explicitly characterize the spread as moderate. CDC *Mitigation Strategies* outlines measures to forestall community transmission at three possible levels (which are apparently interpreted in the field): none to minimal; minimal to moderate; and substantial. The "CDC Recommendations for Massachusetts" detailed in the table *Community Mitigation Strategies for Massachusetts*, pp. 2-4, derive mainly from the first two categories but some recommendations even derive from substantial category--notably for workplaces, senior residential facilities and healthcare facilities. Confusingly, sometimes the measures called for do not have an obvious correlate in CDC's framework *Mitigation Strategies*, no small matter since some of these measures apply to the guidance category in the table most closely resembling BHV, "Every Community and Faith-Based Organization." See "CDC Recommendations for Massachusetts," p. 3.

<sup>4</sup> See CDC, *Mitigation Strategies*, p. 1.

<sup>5</sup> City of Boston, Boston Public Health Commission, February 1, 2020, <https://www.bhpc.org/onlinenewsroom/Blog/Lists/Posts/Post.aspx?ID+1283>.

<sup>6</sup> See Commonwealth of Massachusetts, Department of Public Health, "'Coronavirus Disease 2019 (COVID-19) Cases in MA as of March 19, 2020,'" <https://www.mass.gov/doc/covid-19-cases-in-massachusetts-as-of-march-19-2020-x-updated4pm/download>. Hereafter, MADPH, "Coronavirus Cases as of (date)," plus relevant URL. On March 20, the first Massachusetts death was reported, a Suffolk County man in his 80s with pre-existing health conditions. See <https://www.wgbh.org/news/local-news/2020/03/20/mass-records-first-confirmed-covid-19-death>.

<sup>7</sup> Massachusetts population estimate for 2020 by the Donahue Institute, University of Massachusetts, [http://pep.donahue-institute.org/downloads/2015/new/UMDI\\_LongTermPopulationProjectionsReport\\_2015%2004%20\\_29.pdf](http://pep.donahue-institute.org/downloads/2015/new/UMDI_LongTermPopulationProjectionsReport_2015%2004%20_29.pdf), Figure 2.1, p. 11.

<sup>8</sup> MADPH, "Coronavirus Cases as of March 19, 2020," p. 1, <https://www.mass.gov/doc/covid-19-cases-in-massachusetts-as-of-march-19-2020-x-updated4pm/download>.

<sup>9</sup> United Nations, World Health Organization (hereafter, WHO), *Situation Report #3*, Thursday, January 23, 2020, [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200123-sitrep-3-2019-ncov.pdf?sfvrsn=d6d23643\\_8](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200123-sitrep-3-2019-ncov.pdf?sfvrsn=d6d23643_8).

<sup>10</sup> See <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html> (accessed March 19, 2020). For anyone who likes to keep track of world COVID-19 data, it can be a mixed bag. For March 18, WHO reported only 3,536 US cases, though claiming its data is from "national authorities." WHO, *Situation Report #58*, March 18, 2020, [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200318-sitrep-58-covid-19.pdf?sfvrsn=20876712\\_2](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200318-sitrep-58-covid-19.pdf?sfvrsn=20876712_2). A widely praised and consulted site with data mapped to scale shows 13,159 US cases and 176 total deaths on March 19, 2020. Johns Hopkins Coronavirus Resource Center, <https://coronavirus.jhu.edu/map.html>, last updated 3-19-2020 (accessed March 19, 2020). The FAQ explains, "The [Johns Hopkins] website relies upon publicly available data from multiple sources that do not always agree. More frequent updates of the map often result in higher case numbers than may be available from other sources that are updated less frequently." <https://coronavirus.jhu.edu/map-faq.html> (accessed March 16, 2020).

<sup>11</sup> Early estimates of COVID-19 doubling time were startling enough. A study of the Wuhan case proliferation estimated actual cases doubled every 6.4 days. *The Lancet*, February 29, 2020,

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[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30260-9/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30260-9/fulltext) (accessed March 16, 2020).

This is a familiar rate to experts but a dizzying rate to ordinary people. More dizzying yet have been estimates of double this doubling rate, based on better data from several western European countries. See the video (in English) of the Instituto de Salud Global (Barcelona), “COVID-19: Doubling time of cases and deaths in European countries,” March 16, 2020, <https://www.isglobal.org/-/covid-19-doubling-times-of-cases-and-deaths-in-european-countries>.

<sup>12</sup> Using sophisticated estimating techniques, for example, a team headed by a Northeastern University expert estimated that, as against the 321 COVID-19 cases reported in Wuhan for a given date in late January, 2020--about a month after the initial COVID-19 breakout there--, the likely actual number of cases was 4,050, nearly 13 times as great. Matteo Chinazzi et al., “Preliminary Assessment of the International Spreading Risk Associated with the 2019 Novel Coronavirus (2019-nCoV) Outbreak in Wuhan City,” Laboratory for the Modeling of Biological and Socio-technical Systems, Northeastern University, January 21, 2020, p. 1 and p. 4, Table 2, [https://www.mobs-lab.org/uploads/6/7/8/7/6787877/wuhan\\_novel\\_coronavirus\\_jan21.pdf](https://www.mobs-lab.org/uploads/6/7/8/7/6787877/wuhan_novel_coronavirus_jan21.pdf) (accessed March 16, 2020). See a similar conclusion as to median number of unreported v. reported cases for Wuhan in the same time period, <https://www.imperial.ac.uk/media/imperial-college/medicine/sph/ide/gida-fellowships/Imperial-College-COVID19-update-epidemic-size-22-01-2020.pdf>.

<sup>13</sup> UN, WHO, *Novel Coronavirus (2019-nCoV) SITUATION REPORT – 1*, Tuesday, January 21, 2020, pp. 1-2, [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf?sfvrsn=20a99c10\\_4](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf?sfvrsn=20a99c10_4) [hereafter, WHO, *Situation Report #X* (date)].

<sup>14</sup> See WHO, *Situation Report #59*, March 20, 2020, [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200319-sitrep-59-covid-19.pdf?sfvrsn=c3dcdef9\\_2](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200319-sitrep-59-covid-19.pdf?sfvrsn=c3dcdef9_2).

The grisly crossing date in WHO data was March 16, 2020, when WHO reported there were more cases outside than inside China. WHO, *Situation Report #56*, March 16, 2020, [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200316-sitrep-56-covid-19.pdf?sfvrsn=9fda7db2\\_6](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200316-sitrep-56-covid-19.pdf?sfvrsn=9fda7db2_6).

<sup>15</sup> <https://www.pbs.org/newshour/health/surgeon-general-says-u-s-cases-are-at-the-point-where-italy-was-2-weeks-ago>. You can also watch the Surgeon General’s remarks via this link.

<sup>16</sup> Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases (NIAID), cautions that, despite extraordinarily rapid preparation (by the Cambridge, MA biotech firm Moderna) of a proposed vaccine from genetic information about COVID-19 provided by Chinese experts, there cannot be any such vaccine available for public use until proper evaluation, likely a 12-18 month process. On March 16, 2020, a Phase 1 clinical trial for Moderna’s proposed vaccine, began; NIAID is funding this Phase 1 trial. See <https://www.nih.gov/news-events/news-releases/nih-clinical-trial-investigational-vaccine-covid-19-begins>.

<sup>17</sup> Cf. *The New York Times*, March 15, 2020, [https://www.nytimes.com/2020/03/15/us/coronavirus-physicians-emergency-rooms.html?algo=top\\_conversion&fallback=false&imp\\_id=953043891&imp\\_id=806273515&action=click&module=trending&pgtype=Article&region=Footer](https://www.nytimes.com/2020/03/15/us/coronavirus-physicians-emergency-rooms.html?algo=top_conversion&fallback=false&imp_id=953043891&imp_id=806273515&action=click&module=trending&pgtype=Article&region=Footer).

<sup>18</sup> Cf. *Vox*, updated March 7, 2020 (accessed March 16, 2020), <https://www.vox.com/science-and-health/2020/3/6/21161234/coronavirus-covid-19-science-outbreak-ends-endemic-vaccine>.

<sup>19</sup> Commonwealth of Massachusetts, Executive Order. No. 591 (March 10, 2020), <https://www.mass.gov/executive-orders/no-591-declaration-of-a-state-of-emergency-to-respond-to-covid-19>; <https://www.mass.gov/news/governor-baker-declares-state-of-emergency-to-support-commonwealths-response-to-coronavirus>. As initial steps he substantially curtailed executive branch employee travel, said large gatherings should be canceled or held virtually, and urged symptomatic employees to stay home and high risk employees to consult with their supervisors about possible alternative work assignments. He urged private sector employers to do the same, including telework where appropriate. He announced impending Department of Public Health guidance largely banning most social visitors to long-term care facilities to protect their residents and employees. He promised prompt relief from state school attendance laws in anticipation of possible school closures and urged a ban on employee out-of-state travel. He also urged older adults, those with underlying health issues, and anyone who may reside with such a person, to avoid large crowds (including public transportation usage) and large events. The visitation rules were issued Wednesday, March 11, 2020, cf. <https://www.mass.gov/news/massachusetts-issues-policies-and-procedures-restricting-visitors-to-nursing-homes-and-rest>.



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<sup>20</sup> Further action to protect elders and the workers who supported them in various facilities or care situations was issued on Thursday, March 12. Cf. <https://www.mass.gov/news/massachusetts-issues-guidelines-to-assisted-living-facilities-community-based-providers-and>.

<sup>21</sup> See <https://www.mass.gov/doc/order-prohibiting-gatherings-of-more-than-250-people/download>. The order exempted any municipal legislative body, the Massachusetts legislature and the state judiciary.

<sup>22</sup> See Note 3, supra.

<sup>23</sup> <https://www.whitehouse.gov/presidential-actions/proclamation-declaring-national-emergency-concerning-novel-coronavirus-disease-covid-19-outbreak/>. The president's declaration, mainly to release aid money and shore up widely criticized federal efforts to spur sluggish COVID-19 testing, built on a public health emergency declared on January 31, 2020 declared by the Secretary of the U.S. Department of Health and Human Services.

<sup>24</sup> Mayor Walsh closed the city's public schools, effective March 17 through April 26. See <https://www.boston.gov/news/all-boston-public-schools-close-students-starting-tuesday-march-17>. The announcement was careful to emphasize there was no known there is no known public health risk facing the Boston Public Schools as a whole and that the closure was intended proactively to contain COVID-19 spread. However, the three campuses of the Eliot School (K-8) had been closed on March 11 when a member of the school community tested positive for COVID-19.

<sup>25</sup> On Sunday guidance was issued to minimize the spread of COVID-19 via the city's food establishments, including guidance about food self-service, about facility crowding and about facility ventilation. See <https://www.boston.gov/news/preventing-spread-coronavirus-food-service-establishments>.

<sup>26</sup> On Sunday, March 15, the mayor announced the Boston Public Health Commission was declaring a Boston public health emergency through April 27, 2020 which pointedly contemplated measures of isolation and quarantine as well as reinforcing guidance about handwashing and 6' of "social distancing." See <https://bphc.org/onlinenewsroom/Documents/Declaration%20of%20Public%20Health%20Emergency.pdf>. See also <https://bphc.org/onlinenewsroom/Blog/Lists/Posts/Post.aspx?ID=1288>. The latter also baldly states, "Residents should take measures to limit interactions with persons who are at higher risk for COVID-19."

<sup>27</sup> The mayor also announced measures requiring city restaurants, bars and nightclubs to reduce the seating capacity by 50%, to close by 11 pm, to follow the guidelines around social distancing, to prevent lines waiting outside, and to encourage food delivery and take-out. All beer gardens were closed. See <https://www.boston.gov/news/public-health-emergency-declared-boston-due-coronavirus>.

<sup>28</sup> Later that day, Governor Baker took further action statewide. He effectively overturned the Boston compromises about food and drink establishments by

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<sup>29</sup> See this March 15, 2020 order at <https://www.mass.gov/doc/march-15-2020-school-closure-order/download>.

<sup>30</sup> See <https://www.masslive.com/coronavirus/2020/03/coronavirus-in-massachusetts-gov-charlie-baker-said-he-has-no-plans-to-have-two-week-statewide-quarantine-while-addressing-covid-19-rumors.html>. Mayor Walsh has said there is no present plan for a Boston lockdown but he has acknowledged it could be a realistic option. <https://www.masslive.com/coronavirus/2020/03/coronavirus-shelter-in-place-order-in-boston-could-be-a-realistic-option-mayor-marty-walsh-says.html>. Governor Baker firmly reiterated his position on Friday, March 20, 2020: [https://www.masslive.com/coronavirus/2020/03/coronavirus-no-shelter-in-place-order-for-massachusetts-at-this-time-gov-charlie-baker-says.html?ath=b60aa9c190352ce4da004b3a7703e672&utm\\_source=mailing&utm\\_medium=email#cmpid=nsltr\\_stybutton](https://www.masslive.com/coronavirus/2020/03/coronavirus-no-shelter-in-place-order-for-massachusetts-at-this-time-gov-charlie-baker-says.html?ath=b60aa9c190352ce4da004b3a7703e672&utm_source=mailing&utm_medium=email#cmpid=nsltr_stybutton). Not everyone thinks the San Francisco area—say, compared to several European countries—has that much of a lockdown. See <https://sf.curbed.com/2020/3/17/21183123/san-francisco-lockdown-coronavirus-covid-19>.

<sup>31</sup> See <https://www.theguardian.com/world/2020/mar/18/can-i-have-sex-a-guide-to-intimacy-during-the-coronavirus-outbreak>.

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## NOTES ON GRAPHICS SOURCES

p. 1. Business Insider, March 12, 2020, <https://www.businessinsider.com/coronavirus-death-rate-by-age-countries-2020-3>.

p. 2 WHO, Situation Report #55, Sunday, March 15, 2020 (unpaginated), [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200315-sitrep-55-covid-19.pdf?sfvrsn=33daa5cb\\_6](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200315-sitrep-55-covid-19.pdf?sfvrsn=33daa5cb_6).

p. 3 Raw data is from Johns Hopkins Coronavirus Resource Center. Data processing and visualization is by Databrew LLC, [www.databrew.cc](http://www.databrew.cc). A version of this figure (in English), with more European countries (Switzerland and Germany) but coming to essentially the same conclusion, is in a video at IS Global/Instituto de Salud Global, Barcelona, <https://www.isglobal.org/-/covid-19-epidemiological-curves>, March 13, 2020. The video is well worth a look.

*Barbara and Steve Roop wrote this piece (including the appendix) and are responsible for any errors that have crept in. They appreciate comments on drafts from other members of BHV's COVID-19 Response Team.*