

**Affidavit of Barry S. Levy, M.D., M.P.H., Regarding COVID-19 Infections in Congregate
Care Facilities of the Massachusetts Department of Children and Families (DCF)**

I, Barry S. Levy, M.D., M.P.H., state that the following is a true and accurate statement to the best of my knowledge and belief:

1. Education and Professional Credentials: I am a physician and epidemiologist. For more than 25 years, I have served as an Adjunct Professor of Public Health in the Department of Public Health and Community Medicine at Tufts University School of Medicine in Boston and an independent consultant in occupational and environmental health. I received a Bachelor of Science degree *summa cum laude* (with highest honors) from the Tufts College of Liberal Arts in 1966, a Master of Public Health degree from the Harvard School of Public Health in 1970, and a Doctor of Medicine degree from Cornell University Medical College in 1971. I have completed residencies in Internal Medicine at University Hospital and the Beth Israel Hospital in Boston and in Preventive Medicine at the Centers for Disease Control. I am Board-certified in both Internal Medicine and Preventive Medicine (Occupational Medicine). I am licensed to practice medicine in Massachusetts and Connecticut.
2. Prior Work History: I have previously served as a Medical Epidemiologist with the Centers for Disease Control, a tenured Professor of Family and Community Medicine at the University of Massachusetts Medical School, and a director of programs and projects in international health. I am a past president of the American Public Health Association and a recipient of the Sedgwick Memorial Medal, its highest award. I have also received four other major awards for career achievements. I am a member of the Massachusetts

Medical Society, the Massachusetts Public Health Association, and other professional organizations.

3. Publications: I have authored or co-authored more than 200 published journal articles and book chapters on many topics in medicine and public health, including, but not limited to, environmental and occupational health, infectious diseases, mental health, health risks to children and adolescents, and prudent measures for the prevention of illness, injury, and premature death. I have edited or co-edited 20 books, including seven editions of a leading textbook on environmental and occupational health and three editions of the book *Social Injustice and Public Health*.
4. The COVID-19 Pandemic: The first case of COVID-19 virus infection was diagnosed in Wuhan, China, on December 29, 2019. As of April 3, 2020, there were more than one million cases and more than 54,000 deaths worldwide, and more than 270,000 cases and more than 7,000 deaths in the United States.ⁱ The reported data both worldwide and for the United States are underestimates of the number of cases (given the limited number of tests available) and the number of deaths (with many deaths occurring outside of hospitals not being reported). As of April 4, 2020, Massachusetts had the fifth highest number of positive COVID-19 cases in the United States.ⁱⁱ
5. Transmission of COVID-19 Infection: Transmission of this virus occurs by touch contact with virus-contaminated surfacesⁱⁱⁱ and probably also by inhalation of virus-contaminated airborne droplets.^{iv} Both people with symptoms and those without symptoms can transmit this virus.^v The average period from time of infection until the appearance of symptoms (incubation period) for COVID-19 has been reported as approximately 5 days; almost all (97.5%) of those who develop symptoms do so within 11.5 days of infection.^{vi}

6. Individuals at Increased Risk of Serious COVID-19 Disease and Death: Although older people are at greatest risk of serious complications and death due to COVID-19 infection, younger people, including adolescents, are also at risk of serious complications and death due to this virus. Young people are experiencing severe disease.^{vii} Approximately 40% of hospitalized COVID-19 patients are under the age of 60,^{viii} and there have been deaths reported even in previously healthy individuals in their 20s and 30s. Data from South Korea, where testing is conducted for mild and severe cases,^{ix} suggest that individuals in their 20s have the highest prevalence of COVID-19 infection.^x In addition, people at increased risk of serious complications and death include those who have chronic medical conditions, such as asthma, undernutrition, and obesity -- conditions that are prevalent among many young children and adolescents -- and individuals whose immune system has been suppressed by disease or medications.
7. Prevention of COVID-19 Infection: There are no treatments that have been determined to be effective in treating COVID-19 disease. Medical care of COVID-19 patients is limited to non-specific measures that are designed to reduce symptoms and, for critically ill patients with severe pneumonia, inducing medical coma and placing them on mechanical ventilators for up to two weeks. Therefore, addressing COVID-19 infections highly depends on preventive measures, which, in the absence of a COVID-19 vaccine, focus on social distancing (of at least 6 feet), limitations on number of people in group gatherings or close contact, frequent handwashing, use of alcohol-based sanitizers on surfaces possibly contaminated with the virus, avoiding touching of the face, and, where appropriate, use of face masks or other materials to cover the nose and mouth. In addition, in order to reduce transmission of the virus, people with COVID-19 infections

must be quarantined and those who have been exposed to infected individuals must be isolated for 2 weeks. Proper quarantine and isolation procedures require the infected or exposed individual to be segregated in a separate location, not sharing common spaces or goods, and not coming into contact with other individuals who could then be exposed.

8. DCF Congregate Care Facilities: There are over 190 DCF-contracted congregate care facilities with over 1,400 youth residents statewide annually.^{xi, xii} These facilities include emergency shelters, STARR placements, group homes, residential schools, and short-term residential and other facilities. Each of these facilities employs its own staff who work in close contact with the youth. Youth often enter these facilities with medical, mental health, or developmental problems, often reflecting the neglect and abuse that they experienced before placement.^{xiii} Research has also documented the additional trauma and toxic stress endured by youth as a result of situational neglect or due to separation from their families.^{xiv} This results in poorer health outcomes later in life and adversely affects immune system functioning.^{xv}
9. Healthcare at These Facilities: Given their congregate setting, these youth often do not receive the same type of care they would if they were placed in a family setting. While youth reside in these facilities 24 hours a day, 7 days per week, prescribers and medical professionals are not present at all times. DCF congregate care facilities are generally not staffed by full-time medical and prescribing staff, but rather healthcare professionals visit these facilities for a few hours each week. In addition, the medical workforce overall is under great stress with insufficient staff to handle medical needs related to the pandemic, leading to triage decisions about staffing across the state.^{xvi}

10. COVID-19 in DCF Congregate Care Facilities: It is no longer a question of if COVID-19

outbreaks will occur in these facilities, but only questions of when and how many facilities and how many residents will be affected – and how many infections they will spread to others. To date, DCF has not reported COVID-19 positive status at any of its congregate care facilities. It is reasonable to anticipate what COVID-19 outbreaks might look like by drawing on published reports of COVID-19 outbreaks in other congregate care settings (which also presumably strive to take precautions), such as nursing homes, veterans' homes, correctional facilities, and other residential facilities. In such settings, the spread of infection has often caused devastating outbreaks with multiple deaths and additional patients with serious COVID-19 illness – and more spread of COVID-19 disease. (Information from outbreaks of influenza and tuberculosis – both of which are respiratory infections -- in correctional facilities is also informative.^{xvii, xviii}) Introduction of COVID-19 into a congregate care facility could occur from the significant number of infected staff members, new residents, or even visiting medical professionals – most likely someone who is infected, but not exhibiting symptoms of this infection. It would be difficult, if not impossible, for such an infected person to practice social distancing in a congregate care facility. In this scenario, the first case of COVID-19 at a congregate care facility would not be detected until that person developed symptoms – already having transmitted that infection for 2 to 14 days without knowing it.

11. Additional Challenges: The basic reproduction number (R_0) is a central concept in infectious disease epidemiology and indicates the transmissibility of a virus. Higher R_0 indicates that the virus is highly infectious, and, if current R_0 estimates for COVID-19 are accurate, a single infected person will spread the disease to an average of three other

people prior to detection. Research suggests that the R_0 for COVID-19 may be as high as 3.28, with a median of 2.79, which is much higher than the previous WHO estimate of 1.95.^{xix} Even after developing symptoms, newly infected youth in these facilities would not be able to easily self-isolate, given shared bedrooms, bathrooms, hallways, classrooms/living rooms, cafeterias, and recreational and other shared spaces, as well as the national shortage of personal protective equipment (PPE). Congregate care group homes across the state are a vivid example. As the Boston Globe reported yesterday, “despite efforts that have been described as ‘heroic’ by parents and administrators, COVID-19 has spread to staff and residents at some group homes, state officials said....On Friday, state officials said two residents living in group homes overseen by the Department of Developmental Services have died from the coronavirus. Sixty-seven residents and 71 employees have tested positive.”^{xx} Even hospitals^{xvi} and nursing homes,^{xxi} where staff are specifically trained and supervised with quality control measures, have difficulties maintaining the level of precautions needed to prevent the spread of infection.

12. Other Issues: Even if they could be isolated, this isolation in and of itself would likely have devastating effects for residents who are already suffering from mental health, developmental, and other health conditions. The ability to engage in stress-reducing and anxiety-reducing activities, such as independent exercise, outdoor time, and family connections, will also likely need to be reduced, given the priorities of staff for cleaning and other physical precautions. Stress and anxiety, without kinship contact, and worry about the ongoing pandemic’s impact on family could induce or exacerbate mental health problems. In these congregate care facilities, COVID-19 would rapidly infect multiple

residents, staff members, and others.^{xx} With no other place to go at this point, at least some newly infected individuals would likely be transferred to local hospital emergency departments that are already overburdened with seriously ill COVID-19 patients and will likely face shortages of ventilators and PPE.

13. Summary: Keeping adolescents in DCF congregate care facilities may increase the risk of COVID-19 outbreaks in these facilities, given the following considerations:
 - a. COVID-19 is a highly infectious virus that can be transmitted even when individuals do not have symptoms.
 - b. The average incubation period is approximately 5 days, but may be as high as 11 days.
 - c. There is a high risk of transmission of COVID-19 in residential facilities due to the structure and nature of these facilities.
 - d. Some adolescent residents in these facilities are at increased risk of serious consequences or death from COVID-19 infection because of chronic medical conditions, such as asthma, and prescribed medications that suppress their immune systems.
 - e. Outbreaks in residential facilities could create surges of cases of COVID-19 infection that would adversely affect local hospitals, which are already overburdened, and the communities where these facilities are located. Furthermore, the lack of sufficient medical personnel and life-saving medical equipment may result in less-than-optimal medical care being provided to any youth who contracts COVID-19.
 - f. The stress and anxiety for youth remaining in these facilities during the pandemic will also lead to poorer health outcomes, including increased mental health problems now and in the future.

14. Recommendation: Based on my education and training, my experience, my knowledge concerning COVID-19 and its transmission, and my understanding of the at-risk and highly vulnerable populations in DCF congregate care facilities, I recommend that a substantial number of residents currently in DCF congregate care facilities be released as soon as possible to the homes of their parents (if safe to do so), to homes of close relatives or others (kinship placements), or to foster homes, where their exposure to COVID-19 will be diminished. By doing so, the risk of COVID-19 outbreaks in these congregate care facilities would be substantially reduced; new COVID-19 infections among residents, staff members, and others at these facilities -- and their family members -- would be significantly decreased; and many associated adverse consequences would be prevented or minimized. Release of these residents would contribute to measures to “flatten the curve” (reduce the peak load of COVID-19 infections on local hospitals). Release of residents would also enable residents and staff members of DCF congregate care facilities to better practice social distancing inside these facilities and enable released individuals to practice social distancing (and, if appropriate, self-isolation) in the community. In summary, release of as many residents of these facilities as possible – as soon as possible -- would reduce the incidence of COVID-19 infection, illness, and death.

Signed this 5th day of April, 2020,



Barry S. Levy, M.D., M.P.H.*

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*This statement reflects my own observations and opinions, and not those of any institution or organization with which I am or have been affiliated, such as Tufts University School of Medicine, any department therein, or the American Public Health Association.

ⁱ CNN. Coronavirus pandemic. Available at: <https://www.cnn.com/world/live-news/coronavirus-pandemic-04-03-20-intl/index.html>. Accessed on April 3, 2020.

ⁱⁱ Kommenda N, Gutiérrez P, Adolphe J. Coronavirus map of the US: Latest cases state by state. The Guardian, citing to Johns Hopkins Center for Systems Science and Engineering (CSSE). Accessed on April 4, 2020. <https://www.theguardian.com/world/ng-interactive/2020/apr/04/coronavirus-map-us-latest-cases-state-by-state>

ⁱⁱⁱ Adhikari SP, Meng S, Wu Y-J, et al. Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: A scoping review. *Infect Dis Poverty*. 2020;9(1):29. Published 2020 Mar 17. doi:10.1186/s40249-020-00646-x

^{iv} van Doremalen N, Bushmaker T, Morris DH, et al. Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1 (Letter to the editor). *N Engl J Med*. 2020; 10.1056/NEJMc2004973. doi:10.1056/NEJMc2004973

^v Tong Z-D, Tang A, Li K-F, et al. Potential presymptomatic transmission of SARS-CoV-2, Zhejiang Province, China, 2020 [published online ahead of print, 2020 May 17]. *Emerg Infect Dis*. 2020;26(5):10.3201/eid2605.200198. doi:10.3201/eid2605.200198

^{vi} Lauer SA, Grantz KH, Bi Q, et al. The incubation period of coronavirus disease 2019 (COVID-19) from publicly reported confirmed cases: Estimation and application [published online ahead of print, 2020 Mar 10]. *Ann Intern Med*. 2020;10.7326/M20-0504. doi:10.7326/M20-0504

^{vii} WHO Director-General's opening remarks at the media briefing on COVID-19 - 3 March 2020 - World Health Organization, March 3, 2020.

^{viii} Belluck P. Younger adults make up big portion of coronavirus hospitalizations in U.S. *New York Times*, March 20, 2020.

^{ix} Zastrow M. South Korea is reporting intimate details of COVID-19 cases: Has it helped? (News) *Nature*, March 18, 2020. Available at: <https://www.nature.com/articles/d41586-020-00740-y>. Accessed on April 4, 2020.

^x Backhaus A. Coronavirus: Why it's so deadly in Italy: Demographics and why they are a warning to other countries March 13, 2020. Available at: <https://medium.com/@andreasbackhausab/coronavirus-why-its-so-deadly-in-italy-c4200a15a7bf>. Accessed on April 4, 2020.

^{xi} Children Awaiting Resolution and Disposition (CARD) Data, Excel spreadsheet Tab 5 ("Congregate Care) Jan 2020 (Noting the number of DCF slots in use as of Jan 2020 at each DCF contracted facility). <https://www.mass.gov/service-details/card-current-year-reports>.

^{xii} Massachusetts Department of Children and Families Quarterly Profile- Fiscal Year 2020, Quarter 2 (October 2019- December 2019) (the most recent publically accessible data from DCF) <https://www.mass.gov/doc/area-profile-fy2020-q2-0/download>

^{xiii} Lowenstein K. Shutting Down the Trauma to Prison Pipeline Early, Appropriate Care for Child-Welfare Involved Youth, 2018. Citizens for Juvenile Justice. <https://static1.squarespace.com/static/58ea378e414fb5fae5ba06c7/t/5b4761732b6a28f6ea5e94c1/1531404665230/FI+NAL+TraumaToPrisonReport.pdf>

^{xiv} Lowenstein K. Shutting Down the Trauma to Prison Pipeline Early, Appropriate Care for Child-Welfare Involved Youth, 2018. Citizens for Juvenile Justice. <https://static1.squarespace.com/static/58ea378e414fb5fae5ba06c7/t/5b4761732b6a28f6ea5e94c1/1531404665230/FI+NAL+TraumaToPrisonReport.pdf>

^{xv} Johnson WF, Huelsnitz CO, Carlson EA, et al., Childhood abuse and neglect and physical health in midlife: Prospective, longitudinal evidence. *Development and Psychopathology*. 2017; 29: 1935-1946, http://socialinteractionlab.psych.umn.edu/sites/socialinteractionlab.dl.umn.edu/files/2017_0/Johnson%20et%20al%20%28D%26P%2C%202017%29.pdf

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- ^{xviii} Awofeso N, Fennell M, Waliuzzaman Z, et al. Influenza outbreak in a correctional facility. *Aust N Z J Public Health.* 2001;25(5):443–446.
- ^{xix} Liu Y, Gayle A, Wilder-Smith A, et al. The reproductive number of COVID-19 is higher compared to SARS coronavirus. *J Travel Med.* 2020; 27(2):1-4.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7074654/pdf/taaa021.pdf>
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