

January 11, 2021

**Open Letter to School and Elected Officials**

*To:*

School Officials  
Elected Officials  
School Board Members  
State Policy Makers

*From:*

Tammy K. Clark, OSHA-PPE, OHS & EHS Professional  
Kristen M. Kelly, MS-OSH, Sr. IH  
James Neuenschwander, MD  
Patricia Neuenschwander, MSN, RN, CPNP-PC  
Allison R. Lucas, ESQ

RE: **MDHHS Reveals That its Order Mandating Facial Coverings for Students Lacks Scientific Support**

The Michigan Department of Health and Human Services [“MDHHS”] has, for over three months, mandated facial coverings for children. The undersigned are a group of educated professionals and have a vested interest in ensuring that the public policy regarding mask-wearing in the classroom is evidence-based.<sup>1</sup> Our concerns follow.

MDHHS first mandated that students cover their airway in an [order dated October 9, 2020](#). This order required that children as young as two wear facial coverings during school-provided transportation and that children as young as four wear facial coverings while in common areas. The same order mandated that all children over the age of five wear facial coverings while in the classroom or other indoor settings. MDHHS has issued approximately [five orders](#) regarding facial coverings for students. The most current [MDHHS order](#) that expires on January 15, 2021, continues the facial covering requirements.

**Freedom of Information Act Requests**

Two Freedom of Information Act [“FOIA”] Requests were issued to MDHHS requesting (1) all published studies; (2) showing that mask-wearing was safe; (3) and effective; (4) in children aged two to twelve; and (5) that MDHHS relied upon when mandating that children cover their airway.<sup>2</sup>

MDHHS provided the same response for both requests and made assurances that “[t]o the best of [MDHHS]’s knowledge, information, and belief, these are all the records in the possession of the Department falling within the scope of your request.”<sup>3</sup> Therefore, according to the

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<sup>1</sup> The authors’ credentials appear in Appendix A.

<sup>2</sup> Copies of the requests appear in Appendix B.

<sup>3</sup> A copy of MDHHS’s complete response to the FOIA requests appears in Appendices C and D.

MDHSS's admission, the provided sources are the sole scientific basis for its mandate that children wear face coverings for hours each day.

### **MDHHS's Orders Lack Scientific Support**

Michigan's FOIA requires that MDHHS provide all responsive documents falling within the scope of the request—meaning, *all* efficacy and safety studies it relied upon to mandate mask-wearing for children aged two to twelve. Pursuant to this requirement, MDHHS certified that it supplied all responsive documents.

Even being held to this standard, MDHHS produced a mere two references that considered the effectiveness of facial coverings, when worn by children, to limit the spread of COVID-19. One of these two documents was an article that included only twelve children aged 11-17 years, conducted in a laboratory setting, utilized medical masks, and none of the children had coronavirus.<sup>4</sup> The other was a retrospective cohort study of 124 families engaged in other protective measures aside from mask-wearing, such as disinfection and social distancing.<sup>5</sup> These two references are the only sources provided by MDHHS in response to the FOIA request that considered mask use in children; thus, they are the sole scientific evidence MDHHS relied upon to mandate facial coverings for children as a means to limit transmission of COVID-19. Therefore, MDHHS's facial covering mandate for children lacks adequate scientific support and abuses MDHHS emergency powers.

More disturbing, MDHHS was required to produce all the safety studies it relied upon to mandate facial coverings for children, and it failed to provide *any*. MDHHS's failure to produce a single safety study is proof that it issued the orders without concern for basic child well-being. In the total absence of demonstrated safety, MDHHS has mandated, for nearly three months, that children cover their airway for hours a day. MDHHS lacks the authority to target children with unsafe and unscientific orders.

To be clear, the FOIA request focuses on children aged 12 and under; however, MDHHS's response does not support that mask-use for any person under the age of 18 is safe or effective.

A complete list of the references supplied by MDHHS pursuant to the FOIA requests appears in Appendices E-H, along with links to each source. We strongly encourage you to review these references used by MDHHS to support its mask mandate for children. You will likely reach the conclusion we've deduced: none of the provided sources substantiate universal facial coverings for children.

### **MDHHS's Orders Ignore Potential Harms of Facial Coverings**

MDHHS has not only failed to provide any scientific evidence that mask-wearing in children is safe or effective in limiting the spread of COVID-19, but its orders ignore the potential and known detrimental effects of mask-wearing for this population. Many professionals have

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<sup>4</sup> [Respiratory virus shedding in exhaled breath and efficacy of face masks](#)

<sup>5</sup> [Reduction of secondary transmission of SARS-CoV-2 in households by face mask use, disinfection and social distancing: a cohort study in Beijing, China](#)

voiced concern regarding the damaging effects of covering a person's airway. You can find a few of these concerns in this [Open Letter dated July 27, 2020](#) (i.e., that mask-wearing increases risk of infection and likelihood of transmission; harbors fomites, hinders communication; limits oxygen exchange, and causes headaches). However, many more resources have become available over the last several months. The following list is not exhaustive; but it provides just a few examples of the potential and known harms of mask wearing.

1. [Corona children studies "Co-Ki": First results of a Germany-wide registry on mouth and nose covering \(mask\) in children](#) (a preprint that has not completed peer review finding that "impairments caused by wearing the mask were reported by 68% of the parents.).
2. [Adverse Effects of Prolonged Mask Use among Healthcare Professionals during COVID-19](#) (concluding that prolonged mask wearing in adults caused headaches, rash, acne, skin breakdown, and impaired cognition in a majority of people surveyed).
3. [Face masks for the public during the covid-19 crisis](#) (outlining the often-ignored potential side effects of mask wearing).
4. [The Netherlands has recalled 600,000 coronavirus face masks it imported from China after discovering they were faulty](#) (explaining that masks shipped from overseas failed to meet safety standards).
5. [Masks problematic for asthmatic, autistic, deaf and hard of hearing: health advocates](#) (informing that universal mask mandates make life difficult for those with disabilities).
6. [Consensus of Chinese experts on protection of skin and mucous membrane barrier for health-care workers fighting against coronavirus disease 2019](#) (finding that healthcare workers were vulnerable to skin and mucosa barrier breakdown due to frequent cleansing and long-term use of personal protective equipment such as masks).
7. [Effects of mask-wearing on the inhalability and deposition of airborne SARS-CoV-2 aerosols in human upper airway](#) (noting that masks with low filtration efficiencies may do more harm than protection).
8. [Effectiveness of Adding a Mask Recommendation to Other Public Health Measures to Prevent SARS-CoV-2 Infection in Danish Mask Wearers](#) (the only randomized, controlled trial conducted to date to assess the impact of masks on transmission of COVID-19 found "a recommendation to wear a surgical mask when outside the home among others did not reduce, at conventional levels of statistical significance, incident of [COVID-19] infection compared with no mask recommendation.").

## **MDHHS Has Forfeited its Duty to Protect Children**

No parent desires their children to be scientific guinea pigs. Parents have sacrificed their children's well-being for the greater good, believing that public health officials were issuing evidenced-based mandates. Parents across Michigan have, regretfully, witnessed the detrimental effects masks have had on children. Now, MDHHS has revealed that it targeted children with unscientific, unsafe, ineffective, and illegal COVID-19 orders. Michigan citizens no longer have the bliss of ignorance. In good conscience, parents may no longer blindly entrust MDHHS with the duty to keep their children safe. **School and elected officials are no longer afforded the luxury of relying on MDHHS to create or shape school policy that protects individual students and the school community.**

State health officials do not have the unilateral authority to dictate unscientific and harmful universal prophylactic medical interventions for children. Mask-wearing in children clearly has the potential to cause harm; thus, mask mandates should be based upon clear and scientific evidence demonstrating that the benefit of masking-wearing in children outweighs the harm. Currently, this science does not exist. Reason, logic, and science must finally prevail over MDHHS's mask mandate. **You must now fulfill your nondelegable duty to make logical and informed policies regarding facial coverings for children by scrutinizing the available information and reaching an educated and evidence-based decision.**

Therefore, we challenge you to utilize reason, logic, and science when developing mask-wearing policies from this date forth and refuse to allow MDHHS to exert undue and uninformed influence over your decision-making process regarding facial coverings.

Sincerely,

Tammy K. Clark, OSHA-PPE, OHS & EHS Professional  
Kristen M. Kelly, MS-OSH, Sr. IH  
James Neuenschwander, MD  
Patricia Neuenschwander, MSN, RN, CPNP-PC  
Allison R. Lucas, ESQ

## APPENDIX A

### *Authors' Education and Background*

#### **Tammy K. Clark, OSHA-PPE, OHS & EHS Professional**

Tammy is an Environmental Health and Safety Compliance Specialist and holds a Bachelor of Science degree in Business Administration with a Concentration in Construction Health and Safety. She is an expert on PPE, including facial coverings. Tammy is an environmental health, safety, and compliance consulting firm owner and has 20 years of professional experience in Occupational and Environmental Safety, Health, and Compliance. Tammy is a highly desired public speaker on PPE issues, OSHA compliance, respirator protection programs, health hazards, and mask-wearing as it pertains to viral protection. She has served as an expert witness in injury, safety, compliance, and regulatory litigation cases since 2017 and is an authorized Occupational Safety Health Administration [“OSHA”] construction and general industry instructor. Tammy has acted in the capacity of a Health and Safety Director for local and national firms over the past ten years and has performed hundreds of site, project, and workplace hazard and risk analyses for various businesses in a variety of industries. Additionally, Tammy has performed hundreds of workplace PPE process selection projects, employee medical evaluations, and employee training on PPE selection, use, and disposal.

#### **Kristen M. Kelly, MS-OSH, Sr. IH**

Kristen is a United States Air Force Veteran and retired Senior Industrial Hygienist with 18 years' experience. An Industrial hygienist analyzes, identifies, and measures workplace hazards or stressors that can cause sickness, impaired health, or significant discomfort in workers through chemical, physical, ergonomic, or biological exposures. Kristen has a Master of Science and Bachelor of Science degrees in Occupational Safety and Health. She is a high-demand public speaker on health hazards, health hazard controls, PPE, and respirator protection. She has managed twenty-four Industrial Hygiene programs for approximately 76,000 employees.

Additionally, Kristen managed and implemented the Occupational Safety and Health Administration's Respiratory Protection Program against Chemical, Biological, Viral, DECON, and Pandemic response. She has over thirty certificates related to her field and received recognition with various honors. Kristen is a subject matter expert on respiratory protection, such as face masks. This expertise includes the hazards that a face mask or facial covering can cause in the human body. Occupational Safety and Health experts are the most credentialed subject matter experts on Respiratory Protection and related PPE, such as a respirator device or a face mask (also referred to as a facial covering).

#### **James Neuenschwander, MD**

“Dr. Neu” has been a practicing physician since 1988 and is the founder and physician at Bio Energy Medical Center, a multidisciplinary and integrative medical practice. He graduated Magna Cum Laude from the University of Michigan in 1981, in the honors program, with a Bachelor of Science Degree in cellular and molecular biology. Dr. Neu received a medical degree from the University of Michigan in 1985. He is board-certified in Emergency Medicine, Integrative and Holistic Medicine, and Anti-Aging and Regenerative Medicine. Dr. Neu is a Fellow of the American Academy of Anti-Aging Medicine and a member several professional organizations. He is a member of the Medical Academy Pediatric Special Needs since its founding, a Fellow of

the organization since 2014, and currently a faculty and executive board member of the organization. Dr. Neu has over three decades of experience in integrative medicine and over 25 years in emergency medicine. Finally, Dr. Neu has lectured nationally and internationally on a broad range of topics.

**Patricia Neuenschwander, MSN, RN, CPNP-PC**

“Tricia” is a board-certified pediatric nurse practitioner and has been a registered nurse for 25 years. She is the co-founder, co-owner, and CEO of Creating Brighter Futures, a Pediatric Developmental Disabilities Treatment Center. Patricia obtained her Bachelor of Science in Nursing, graduating Summa Cum Laude from Regis University in 2006. She later graduated Summa Cum Laude from Wayne State University in 2014 from the pediatric nurse practitioner program in primary care.

**Allison R. Lucas, ESQ**

Allison is an experienced health law attorney, published legal author, and knowledgeable researcher. Before attending law school, she worked for a decade in hospital laboratories and operating rooms in some of the country's largest level I trauma hospitals. Allison has worked at the National Institutes of Health, the nation's leading medical research agency. As an attorney, Allison has considerable experience working for state and national health-related nonprofit organizations. She has worked for a New York-based law firm where she was involved with multi-million-dollar healthcare and class action litigation.

**APPENDIX B**

*Request No. H008513-111120*

*Request No. H008797-120720*

FOIA Request about a month ago  
H008513-111120  
A copy of all published studies that studied the safety and effectiveness of facial coverings for children aged 2-5 and relied upon by MDHHS to mandate facial coverings for this age group. Because MDHHS is currently mandating that children aged 2-5 wear facial coverings, I request that MDHHS expedite this FOIA request.  
**Status :** Grant  
 [Attorney Allison Lucas](#)

**MDHHS Public Records Center**

**FOIA Request Menu**

- Home
- FAQs
- Submit a Request
- My Request Center

**FAQs**

FOIA Request 23 days ago  
H008797-120720  
IR#106 A copy of all published studies that studied the safety and effectiveness of facial coverings for children aged 6-12 and relied upon by MDHHS to mandate facial coverings for this age group. Because MDHHS is currently mandating that children aged 6-12 wear facial coverings, I request that MDHHS expedite this FOIA request. I request that you email me the response, as I am unable to open attachments from the online portal.  
**Status :** Grant  
 [Attorney Allison Lucas](#)

## APPENDIX C

### MDHHS Response to Request H008513-111120

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**From:** MDHHS FOIA Records Center  
**Sent:** Thursday, November 19, 2020 10:26 AM  
**To:** [REDACTED]  
**Subject:** MDHHS FOIA Request :: H008513-111120

RE: Public Records Request, Reference # H008513-111120

Dear Attorney Lucas,

This notice is issued in response to your request, legally received by the Michigan Department of Health and Human Services (Department) on November 12, 2020, requesting information under the Freedom of Information Act (FOIA), MCL 15.231 *et seq.*

Your request is granted. Please see below:

70% is an estimated average of the efficacy of masks based on several studies (below). However, efficacy of masks does depend on the type of mask (number of layers, type of fabric, etc). Most non-medical-grade masks fall between 60-80% reduction.

This one looks at viral particle transmission with different types of face masks but not specifically the virus that causes COVID-19:

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7108646/>

These studies are specifically about COVID:

- <https://gh.bmj.com/content/5/5/e002794>

- [https://www.researchgate.net/publication/342198360\\_Association\\_of\\_country-wide\\_coronavirus\\_mortality\\_with\\_demographics\\_testing\\_lockdowns\\_and\\_public\\_wearing\\_of\\_masks\\_Update\\_June\\_15\\_2020](https://www.researchgate.net/publication/342198360_Association_of_country-wide_coronavirus_mortality_with_demographics_testing_lockdowns_and_public_wearing_of_masks_Update_June_15_2020)

- <https://www.preprints.org/manuscript/202004.0203/v2>

- Collection of Studies Footnoted by CDC: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html#recent-studies>

This study provides strong anecdotal evidence of mask wearing preventing transmission:

- [https://www.cdc.gov/mmwr/volumes/69/wr/mm6928e2.htm?s\\_cid=mm6928e2\\_e&deliveryName=USCDC\\_921-DM32906](https://www.cdc.gov/mmwr/volumes/69/wr/mm6928e2.htm?s_cid=mm6928e2_e&deliveryName=USCDC_921-DM32906)

We've additionally provided this answer to questions in the past:

The mask mandate is now in effect under the public health authority of MDHHS following an October 9 epidemic order. MDHHS' Director Robert Gordon released an op-ed that will help address many of your concerns: [https://www.michigan.gov/mdhhs/0,5885,7-339-73970\\_71692-541432--,00.html](https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692-541432--,00.html). Director Gordon links to 4 scientific studies that inform the efficacy of masks:

- <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa1502/5917573?searchresult=1>

- <https://www.medrxiv.org/content/10.1101/2020.05.27.20115139v6>

- [https://www.nber.org/papers/w27891?utm\\_campaign=ntwh&utm\\_medium=email&utm\\_source=ntwg5](https://www.nber.org/papers/w27891?utm_campaign=ntwh&utm_medium=email&utm_source=ntwg5)

- <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2020.00818>

The Department has identified and included the responsive information falling within the scope of your request. To the best of the Department's knowledge, information, and belief, these are all the records in the possession of the Department falling within the scope of your request. There is no fee for the request as search and retrieval were minimal, falling below the Department's threshold for processing fees.

The Department's FOIA policies and procedures are available at [Policies and Procedures](#).

Sincerely,

Ruth O'Connor

Bureau of Legal Affairs



**APPENDIX D**  
*MDHHS Response to Request H008797-120720*

**From:** MDHHS FOIA Records Center  
**Sent:** Monday, December 28, 2020 1:08 PM  
**To:** [REDACTED]  
**Subject:** MDHHS FOIA Request :: H008797-120720

RE: Public Records Request, Reference # H008797-120720  
Dear Attorney Lucas,

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This notice is issued in response to your request, legally received by the Michigan Department of Health and Human Services (Department) on December 08, 2020, requesting information under the Freedom of Information Act (FOIA), MCL 15.231 *et seq.*

Your request is granted. Here are the studies:

This one looks at viral particle transmission with different types of face masks but not specifically the virus that causes COVID-19:

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7108646/>

These studies are specifically about COVID:

- <https://gh.bmj.com/content/5/5/e002794>

- [https://www.researchgate.net/publication/342198360\\_Association\\_of\\_country-wide\\_coronavirus\\_mortality\\_with\\_demographics\\_testing\\_lockdowns\\_and\\_public\\_wearing\\_of\\_masks\\_Update\\_June\\_15\\_2020](https://www.researchgate.net/publication/342198360_Association_of_country-wide_coronavirus_mortality_with_demographics_testing_lockdowns_and_public_wearing_of_masks_Update_June_15_2020)

- <https://www.preprints.org/manuscript/202004.0203/v2>

- Collection of Studies Footnoted by CDC: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html#recent-studies>  
[c.gov/mmwr/volumes/69/wr/mm6928e2.htm?s\\_cid=mm6928e2\\_e&deliveryName=USC DC\\_921-DM32906](https://www.cdc.gov/mmwr/volumes/69/wr/mm6928e2.htm?s_cid=mm6928e2_e&deliveryName=USC_DC_921-DM32906)

We've additionally provided this answer to questions in the past:

The mask mandate is now in effect under the public health authority of MDHHS following an October 9 epidemic order. MDHHS' Director Robert Gordon released an op-ed that will help address many of your concerns: [https://www.michigan.gov/mdhhs/0,5885,7-339-73970\\_71692-541432--,00.html](https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692-541432--,00.html). Director Gordon links to 4 scientific studies that inform the efficacy of masks:

- <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa1502/5917573?searchresult=1>

- <https://www.medrxiv.org/content/10.1101/2020.05.27.20115139v6>

[https://www.nber.org/papers/w27891?utm\\_campaign=ntwh&utm\\_medium=email&utm\\_source=ntwg5](https://www.nber.org/papers/w27891?utm_campaign=ntwh&utm_medium=email&utm_source=ntwg5)

- <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2020.00818>

The Department has identified and included the responsive information falling within the scope of your request. To the best of the Department's knowledge, information, and belief, these are all the records in the possession of the Department falling within the scope of your request. There is no fee for the request as search and retrieval were minimal, falling below the Department's threshold for processing fees.

The Department's FOIA policies and procedures are available at [Policies and Procedures](#).

Sincerely,  
Ruth O'Connor  
Bureau of Legal Affairs

## APPENDIX E

### *List of Sources Supplied by MDHHS in Response to Requests H008513-111120 & H008797-120720*

1. Testing the Efficacy of Homemade Masks: Would They Protect in an Influenza Pandemic?
2. Reduction of secondary transmission of SARS-CoV-2 in households by face mask use, disinfection and social distancing: a cohort study in Beijing, China
3. Association of country-wide coronavirus mortality with demographics, testing, lockdowns, and public wearing of masks (Update June 15, 2020).
4. Face Masks Against COVID-19: An Evidence Review
5. Absence of Apparent Transmission of SARS-CoV-2 from Two Stylists After Exposure at a Hair Salon with a Universal Face Covering Policy — Springfield, Missouri, May 2020
6. Collection of studies footnoted by CDC (as listed on the [CDC website on October 9, 2020](#))
  - 1) Rothe C, Schunk M, Sothmann P, et al. Transmission of 2019-nCoV Infection from an Asymptomatic Contact in Germany.
  - 2) Zou L, Ruan F, Huang M, et al. SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients.
  - 3) Pan X, Chen D, Xia Y, et al. Asymptomatic cases in a family cluster with SARS-CoV-2 infection.
  - 4) Bai Y, Yao L, Wei T, et al. Presumed Asymptomatic Carrier Transmission of COVID-19.
  - 5) Kimball A HK, Arons M, et al. Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-Term Care Skilled Nursing Facility — King County, Washington, March 2020.
  - 6) Wei WE LZ, Chiew CJ, Yong SE, Toh MP, Lee VJ. Presymptomatic Transmission of SARS-CoV-2 — Singapore, January 23–March 16, 2020.
  - 7) Li R, Pei S, Chen B, et al. Substantial undocumented infection facilitates the rapid dissemination of novel coronavirus (SARS-CoV2).
  - 8) Furukawa NW, Brooks JT, Sobel J. Evidence Supporting Transmission of Severe Acute Respiratory Syndrome Coronavirus 2 While Presymptomatic or Asymptomatic [published online ahead of print, 2020 May 4].

- 9) Oran DP, Topol Prevalence of Asymptomatic SARS-CoV-2 Infection: A Narrative Review [published online ahead of print, 2020 Jun 3].
  - 10) National Academies of Sciences, Engineering, and Medicine. 2020. Rapid Expert Consultation on the Possibility of Bioaerosol Spread of SARS-CoV-2 for the COVID-19 Pandemic (April 1, 2020).
  - 11) Schwartz KL, Murti M, Finkelstein M, et al. Lack of COVID-19 transmission on an international flight.
  - 12) Anfinrud P, Stadnytskyi V, Bax CE, Bax A. Visualizing Speech-Generated Oral Fluid Droplets with Laser Light Scattering.
  - 13) Davies A, Thompson KA, Giri K, Kafatos G, Walker J, Bennett A. Testing the efficacy of homemade masks: would they protect in an influenza pandemic?
  - 14) Konda A, Prakash A, Moss GA, Schmoldt M, Grant GD, Guha S. Aerosol Filtration Efficiency of Common Fabrics Used in Respiratory Cloth Masks.
  - 15) Aydin O, Emon B, Saif MTA. Performance of fabrics for home-made masks against spread of respiratory infection through droplets: a quantitative mechanistic study.
  - 16) Ma QX, Shan H, Zhang HL, Li GM, Yang RM, Chen JM. Potential utilities of mask-wearing and instant hand hygiene for fighting SARS-CoV-2.
  - 17) Leung, N.H.L., Chu, D.K.W., Shiu, E.Y.C. et al. Respiratory virus shedding in exhaled breath and efficacy of face masks.
  - 18) Johnson DF, Druce JD, Birch C, Grayson ML. A quantitative assessment of the efficacy of surgical and N95 masks to filter influenza virus in patients with acute influenza infection.
  - 19) Green CF, Davidson CS, Panlilio AL, et al. Effectiveness of selected surgical masks in arresting vegetative cells and endospores when worn by simulated contagious patients.
7. MDHHS Director Robert Gordon's undated Op-Ed issued on or around October 12, 2020.  
This Op-Ed cited to the following four sources:
- 1) Coronavirus Disease 2019 (COVID-19) Transmission in the United States Before Versus After Relaxation of Statewide Social Distancing Measures
  - 2) Causal Impact of Masks, Policies, Behavior on Early Covid-19 Pandemic in the U.S.
  - 3) Community Use Of Face Masks And COVID-19: Evidence From A Natural Experiment Of State Mandates In The US
  - 4) Face Masks, Public Policies and Slowing the Spread of COVID-19: Evidence from Canada

## APPENDIX F

### Summary Table for Sources Supplied by MDHHS in Response to Requests H008513-111120 & H008797-120720

| Subject Matter  | Did Not Examine Mask Use | Type of Mask   | Main Subjects |        |                   |               |                 |
|---|--------------------------|--|---------------|--------|-------------------|---------------|-----------------|
|   |                          |  | No Humans     | Adults | Adults & Children | Children < 13 | Population-Wide |
| Did not examine mask use in any context   | 12                       | N/A  |               |        |                   |               |                 |
| Examined efficacy in lab setting  |                          | Cloth Mask   | 3             | 1      |                   |               |                 |
|   |                          | Medical Mask   | 1             | 1      | 1**               |               |                 |
| Examined efficacy outside lab setting   |                          | Cloth masks with other measures (i.e., handwashing, disinfection, social distancing, contact tracing, quarantine, etc. |               |        | 1*                |               |                 |
|   |                          | Cloth mask with no other measures  |               |        |                   |               |                 |
|   |                          | Medical mask   |               |        |                   |               |                 |
|   |                          | Type of mask not specified   |               | 1      |                   |               |                 |
| Reviewed state/country-wide data regarding use of mask in general population with other measures (i.e., lockdowns & social distancing orders) |                          |  |               |        |                   | 6             |                 |
| Examined Safety of Mask Wearing   |                          |  |               |        |                   |               |                 |

\* Retrospective cohort study of 124 families.

\*\*5% of participants were aged 11-7 and none were infected with coronavirus at the time of the study.

## APPENDIX G

### *Sources Added to CDC Webpage after October 9, 2020*

On October 9, 2020, the CDC webpage cited by MDHHS included 19 footnoted citations. Additional citations have since been added and were not included in the previous summary because MDHHS could not have relied upon the sources that were later added to the webpage when issuing the October 9, 2020 order. However, MDHHS may have relied upon these eight sources for subsequent orders; therefore, a complete list of sources appearing on the aforementioned [CDC webpage as of December 30, 2020](#), appears below.

1. Mueller AV, Eden MJ, Oakes JM, et al. Quantitative Method for Comparative Assessment of Particle Removal Efficiency of Fabric Masks as Alternatives to Standard Surgical Masks for PPE (July 2020).
2. Anindita M, Das K.COVID-19 Pandemic: Is Cloth Mask Really Protect Public From SARS-CoV-2? (The way of handling to get Results) (May 2020).
3. Lustig SR, Biswakarma JJH, Rana D, et al. Effectiveness of Common Fabrics to Block Aqueous Aerosols of Virus-like Nanoparticles (May 2020).
4. Sousa-Pinto B, Fonte AP, Lopes AA, et al.Face masks for community use: An awareness call to the differences in materials (August 2020).
5. Chughtai AA, Seale H, Macintyre CR. Effectiveness of Cloth Masks for Protection Against Severe Acute Respiratory Syndrome Coronavirus 2 (July 2020).
6. Bagheri MH, Khalaj I, Azizi A, et al. Filtration Efficiency, Breathability, and Reusability of Improvised Materials for Face Masks (July 2020) PREPRINT.
7. Gandhi M, Beyrer C, Goosby E. Masks Do More Than Protect Others During COVID-19: Reducing the Inoculum of SARS-CoV-2 to Protect the Wearer.
8. Wang H, Wang Q, Lin YL, Kilinc-Balci FS, Price A, Chu L, Chu MC. Household materials selection for homemade cloth face coverings and their filtration efficiency enhancement with triboelectric charging.

**APPENDIX H**

*Summary Table for Sources Added to CDC Webpage after October 9, 2020*

| Subject Matter                        | Type of Mask   | Main Subjects |       |                   |               |     |
|---------------------------------------|--|---------------|-------|-------------------|---------------|-----|
|                                       |  | No Humans     | Adult | Adults & Children | Children < 13 | N/A |
| Examined efficacy in lab setting      | Cloth Mask   | 4             | 1     |                   |               |     |
|                                       | Medical Mask   |               |       |                   |               |     |
| Examined efficacy outside lab setting | Cloth masks with other measures (i.e., handwashing, disinfection, social distancing, contact tracing, quarantine, etc. |               |       |                   |               |     |
|                                       | Cloth mask with no other measures  |               |       |                   |               |     |
|                                       | Medical mask   |               |       |                   |               |     |
|                                       | Type of mask not specified   |               |       |                   |               |     |
| Reviewed available literature         |  |               |       |                   | 3             |     |
| Examined Safety of Mask Wearing       |  |               |       |                   |               |     |

## APPENDIX I

### *MDHHS's References Suggest Facial Coverings in Children is Harmful*

It is critical that you review each source provided by MDHHS to support its facial covering mandate. In light of MDHHS's revelation that it has issued nonscientific and potentially harmful orders, it is now vital that parents and school and elected officials educate themselves and make informed decisions independent of state government.

Having said that, we felt it essential to highlight findings in several of the sources relied upon by MDHHS to mandate facial coverings for children. We do not intend to "cherry-pick" information from these sources supplied by MDHHS. Instead, we highlight that the references cited by MDHHS (1) do not support a universal facial covering mandate for children; and (2) suggest that a universal facial covering mandate for children can increase the risk of transmission of viruses such as COVID-19.

[An Evidence Review of Face Masks Against COVID-19](#) (that is not peer-reviewed) warned that,

[o]ne issue that impacts both school and work usage is that over a full day's use masks may become wet, or dirty. A study of mask use in health care settings found that "respiratory pathogens on the outer surface of the used medical masks may result in self contamination," and noted that "the risk is higher with longer duration of mask use (>6h) and with higher rates of clinical contact." The health implications of this are not well understood, nor whether similar results would be found outside health-care settings. Further research is needed to clarify these issues. (internal citations omitted).

The same [narrative review](#) stated that "[o]verall, direct evidence of the efficacy of mask use is supportive, but inconclusive". It also noted that regarding the use of masks, there are "no randomized controlled trials, only one observational trial, and unclear evidence from other respiratory illnesses.

[Testing the Efficacy of Homemade Masks: Would They Protect in an Influenza Pandemic?](#) concluded that

[a] protective mask may reduce the likelihood of infection, but it will not eliminate the risk, particularly when a disease has more than 1 route of transmission. Thus any mask, no matter how efficient at filtration or how good the seal, will have minimal effect if it is not used in conjunction with other preventative measures, such as isolation of infected cases, immunization, good respiratory etiquette, and regular hand hygiene. An improvised face mask should be viewed as the last possible alternative if a supply of commercial face masks is not available, irrespective of the disease against which it may be required for protection. Improvised homemade face masks

may be used to help protect those who could potentially, for example, be at occupational risk from close or frequent contact with symptomatic patients. However, these masks would provide the wearers little protection from microorganisms from others persons who are infected with respiratory diseases. As a result, we would not recommend the use of homemade face masks as a method of reducing transmission of infection from aerosols.

[COVID-19 Pandemic: Is Cloth Mask Really Protect Public From SARS-CoV-2? \(The way of handling to get Results\) \(May 2020\)](#) offered the following proper mask donning and doffing procedure and mask handling protocol that children as young as two to five years old are incapable of understanding or adhering to (grammatical errors belong to the author):

- Always wash hands before wearing a mask.
- Mask should be secured with ties or ear loops.
- The anterior of the mask should not be touched and not to be put it anywhere, others can touch.
- One should not be pulling up or putting down the mask while in outside.
- One of the biggest mistakes is sometimes people pull them under their noses or completely off their faces.
- Individual should be alert not to touch eyes, nose or mouth at the time of removing cloth mask and immediately wash hands just after removal.

In [Effectiveness of Cloth Masks for Protection Against Severe Acute Respiratory Syndrome Coronavirus 2 \(July 2020\)](#) the authors warned that

The general public should be educated about mask use because cloth masks may give users a false sense of protection because of their limited protection against acquiring infection. Correctly putting on and taking off cloth masks improves protection. Taking a mask off is a high-risk process because pathogens may be present on the outer surface of the mask and may result in self-contamination during removal.

More research on cloth masks is needed to inform their use as an alternative to surgical masks/respirators in the event of shortage or high-demand situations. To our knowledge, only 1 randomized controlled trial (4) has been conducted to examine the efficacy of cloth masks in health-care settings, and the results do not favor use of cloth masks. More randomized controlled trials should be conducted in community settings to test the efficacy of cloth masks against respiratory infections. According to the US Institute of Medicine, National Academy of Sciences, more research on the engineering design of cloth masks to enhance their filtration and fit



is needed. Moreover, various methods for decontaminating cloth masks should be tested.

The authors in [Household materials selection for homemade cloth face coverings and their filtration efficiency enhancement with triboelectric charging](#) advised that “[t]he general public should be aware of the risks of self-contamination during removal and reuse of cloth face coverings.” Even the brightest six-year-old is unable to comprehend or avoid these risks.

In [Effectiveness of Common Fabrics to Block Aqueous Aerosols of Virus-like Nanoparticles](#), the authors concluded with the warning that

[i]t is critical that the materials’ edges conform snugly to the face to prevent aerosol from entering gaps between the face and mask. The mask must not enable viral imbibition by the lips, tongue, and saliva. Ideally, the mask does not contact the lips, or there is at least one hydrophobic layer fabric in contact with the face, so aerosol trapped from the exterior does not wick through the mask and become transported by the mouth. Because aerosol transport through a mask is predicated on forced convection air flux, it is recommended that individuals wearing masks reduce inhalation intensity when placed in contact with an unsafe aerosol.

The authors in [Aerosol Filtration Efficiency of Common Fabrics Used in Respiratory Cloth Masks](#) concluded by noting that

it is important to note that openings and gaps (such as those between the mask edge and the facial contours) can degrade the performance. Our findings indicate that leakages around the mask area can degrade efficiencies by ~50% or more, pointing out the importance of “fit”. Opportunities for future studies include cloth mask design for better “fit” and the role of factors such as humidity (arising from exhalation) and the role of repeated use and washing of cloth masks.

In [Performance of Fabrics for Home-Made Masks Against the Spread of Respiratory Infections Through Droplets: A Quantitative Mechanistic Study](#), the authors explained that fabrics used in homemade masks “can retain the viruses” and the authors in [Potential utilities of mask-wearing and instant hand hygiene for fighting SARS-CoV-2](#) opined that “other types of homemade masks, especially those made of cloth alone, may be unable to block the virus and thus confer no protection against the virus.”

Finally, [Face Masks, Public Policies And Slowing The Spread Of Covid-19: Evidence From Canada](#) concluded by acknowledging “the absence of large-scale randomized controlled trials or other direct evidence on mask effectiveness in preventing the spread of COVID-19. . . .”