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Mask Mandates, On-Premises Dining, and COVID-19

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Evidence-based prevention strategies can reduce the transmission of SARS-CoV-2, the virus that causes COVID-19. Consistent and correct use of masks can prevent SARS-CoV-2 transmission, which predominantly occurs through inhalation and other exposure to respiratory droplets from infected persons. Mask use is particularly important because presymptomatic and asymptomatic spread is responsible for nearly 60% of COVID-19 cases.[1,2] Universal and proper masking results in substantial community benefits.[2] To better leverage the prevention benefit of masks on community transmission, many states require that people wear a mask in public. As of March 1, 2021, 36 states and the District of Columbia had a mask mandate in effect.

Indoor venues such as restaurants, where physical distancing (≥6 ft) is difficult to maintain and consistent use of masks is not possible, can increase the risk of transmission.[2,3] Between March and April 2020, 49 states and the District of Columbia prohibited on-premises dining at restaurants. However, by mid-June 2020, on-premises dining was allowed by all states and the District of Columbia.[4] As of March 1, 2021, all states allow on-premises restaurant dining. In a recent report, the CDC evaluated the association between state-issued mask mandates and allowing any on-premises restaurant dining and COVID-19 cases and deaths between March 1 and December 31, 2020.[4] State-issued mask mandates were associated with decreases in daily COVID-19 case growth rates and death growth rates within 20 days of implementation, ranging from 0.5 percentage points to 1.9 percentage points (eFigure in the Supplement).

Meanwhile, allowing on-premises restaurant dining was associated with increases in daily COVID-19 case growth rates 41 to 100 days after implementation and increases in daily death growth rates 61 to 100 days after implementation, ranging from 0.9 percentage points to 3.0 percentage points. Because the percentage point decreases (for mask mandates) and increases (for on-premises dining) refer to changes in *daily* growth rates, changes over time amplify exponentially and these measures could result in averting a substantial number of COVID-19 cases and deaths. An earlier study that examined mask mandates in 15 states and the District of Columbia between April 8 and May 15, 2020, estimated that reductions in daily case growth rates of the same magnitude were associated with more than 200 000

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COVID-19 cases averted.[5] However, these investigations[4,5] did not consider mask use and SARS-CoV-2 transmission in other indoor venues such as bars.

Although closing restaurants for on-premises dining can limit potential exposure to SARS-CoV-2, such orders could also have an adverse influence on the economy, the food services industry, and food service industry employees. Restaurants can continue to operate by limiting food service to drive-through, delivery, takeout, and curbside pickup to reduce the risk of COVID-19 spread.[6] For restaurants that continue to provide on-premises dining, several strategies can reduce risk of exposure for employees and customers and thus slow community COVID-19 spread. Such strategies include having staff stay home when appropriate, requiring mask use, providing adequate ventilation or outdoor dining, promoting frequent hand hygiene and cleaning, and making modifications that promote physical distancing.[2,6]

Restaurants can educate employees on the importance of staying home if they have tested positive for SARS-CoV-2, are showing COVID-19 symptoms, or have recently had close contact with a person with SARS-CoV-2 infection or COVID-19.[6] Restaurants also can develop policies such as flexible sick leave to encourage employees who have symptoms to stay at home without concern about loss of income or position.[6]

The CDC recommends universal and proper mask use for restaurant employees and for customers when they are not actively eating or drinking and when physical distancing is difficult to maintain.[6] Restaurants should require proper use of masks among staff.[2] Previous research found that reopening nonessential businesses (ie, indoor dining at restaurants in particular) resulted in excess COVID-19 cases and deaths.[7] However, in states that implemented a statewide mask mandate before reopening restaurants for indoor dining, the increased risk of cases was attenuated by up to 90% and deaths by 80%.[7] After 8 weeks, in states that reopened restaurants without a mask mandate, excess cases were 643.1 per 100 000 compared with 62.9 per 100 000 in states with a mask mandate. Similarly, excess deaths were 31.7 per 100 000 in states without a mask mandate compared with 6.1 per 100 000 in states with a mask mandate. This finding suggests that adopting prevention measures such as mask mandates could help counteract the anticipated growth in COVID-19 cases and deaths as restaurants open for on-premises dining.[7]

On March 8, 2021, the CDC issued the first set of guidance for people who are fully vaccinated that covers visits between people from different households. As more information becomes available regarding COVID-19 vaccines and as the proportion of the population fully vaccinated increases, updated guidance will cover additional guidance for preventive behaviors and community settings.

Restaurants can increase air ventilation and encourage frequent hand hygiene and cleaning of frequently touched surfaces to help prevent transmission of SARS-CoV-2.[6] Although most SARS-CoV-2 transmission occurs through respiratory droplets from close person-to-person exposures, there are reports of COVID-19 cases due to presumed airborne transmission in indoor spaces with inadequate ventilation.[8] Restaurants can ensure that ventilation systems operate properly, increase the delivery of clean air, and make outdoor

seating available. Adequate ventilation decreases the risk of SARS-CoV-2 transmission by reducing the concentration of small droplets and particles carrying infectious virus in the air.[2] Restaurants can require proper hand hygiene, including handwashing with soap and water among staff, and can provide alcohol-based hand sanitizer for customers. Handwashing mechanically removes pathogens, and laboratory data demonstrate that hand sanitizers that contain at least 60% alcohol inactivate SARS-CoV-2.[9] Additionally, restaurants should appropriately clean surfaces, especially frequently touched surfaces (eg, door handles, cash registers) and shared objects (eg, payment terminals, tables). More frequent cleaning could prevent indirect transmission of virus that might occur when someone touches a contaminated surface and then touches their mouth, nose, or eyes.[6] Restaurants should also eliminate self-serve food and drink options and avoid sharing of reusable items, especially those difficult to clean, such as menus and condiments, by instead using disposable or digital menus and single-serving condiment packages.[6]

Restaurants could implement several measures to promote and encourage physical distancing and thus lower the risk for their staff and patrons of acquiring or transmitting SARS-CoV-2. These measures include modifying layouts to ensure that all customer groups remain at least 6 ft apart, limiting capacity to allow for physical distancing, and prioritizing outdoor seating as much as possible.[6] Procedure modifications include discouraging crowded waiting areas and changing restaurant layouts.[6] Physical guides and signage can also help promote and ensure physical distancing among staff and customers.[6]

Community leaders, members, and businesses all have critical roles in reducing SARS-CoV-2 transmission and ending the pandemic. Reducing community transmission can ease burden on health systems and protect people who have increased risk of severe illness or death. Policies that require universal mask use and restricting on-premises dining, particularly in areas of high community transmission, have the potential to reduce community transmission levels and deaths, especially when implemented with other effective public health strategies. These efforts are especially important with the emergence of several highly transmissible SARS-CoV-2 variants.[10] Layered prevention strategies (ie, combining universal and proper mask use, physical distancing, hand hygiene, testing, complying with isolation and quarantine, and avoiding crowded and poorly ventilated spaces) continue to be critical. The goal is to control the COVID-19 pandemic as quickly as possible, to save lives, to help people get back to school and work safely, and to return to the many things they enjoy, such as eating at restaurants. These prevention practices done well by everyone, together with the vaccine scale-up, can help end this pandemic.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

REFERENCES

1. Johansson MA, Quandelacy TM, Kada S, et al. SARS-CoV-2 transmission from people without COVID-19 symptoms. JAMA Netw Open. 2021;4(1): e2035057. doi:10.1001/jamanetworkopen.2020.35057 [PubMed: 33410879]

2. Honein MA, Christie A, Rose DA, et al. ; CDC COVID-19 Response Team. Summary of guidance for public health strategies to address high levels of community transmission of SARS-CoV-2 and related deaths, December 2020. MMWR Morb Mortal Wkly Rep 2020;69(49):1860–1867. doi:10.15585/mmwr.mm6949e2 [PubMed: 33301434]

3. Fisher KA, Tenforde MW, Feldstein LR, et al. ; IVY Network Investigators; CDC COVID-19 Response Team. Community and close contact exposures associated with COVID-19 among symptomatic adults ≥18 years in 11 outpatient health care facilities—United States, July 2020. MMWR Morb Mortal Wkly Rep. 2020;69(36):1258–1264. doi:10.15585/mmwr.mm6936a5 [PubMed: 32915165]

4. Guy GP Jr, Lee FC, Sunshine G, et al. Association of state-issued mask mandates and allowing on-premises restaurant dining with county-level COVID-19 case and death growth rates—United States, March 1–December 31, 2020. MMWR Morb Mortal Wkly Rep. 2021;70(10);350–354. doi:10.15585/mmwr.mm7010e3 [PubMed: 33705364]

5. Lyu W, Wehby GL. Community use of face masks and COVID-19: evidence from a natural experiment of state mandates in the US. Health Aff (Millwood) 2020;39(8):1419–1425. doi:10.1377/hlthaff.2020.00818 [PubMed: 32543923]

6. Centers for Disease Control and Prevention. COVID-19: what to do if you are sick. Updated March 17, 2021. Accessed March 25, 2021. https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/steps-when-sick.html

7. Kaufman BG, Whitaker R, Mahendraratnam N, Smith VA, McClellan MB. Comparing associations of state reopening strategies with COVID-19 burden. J Gen Intern Med. 2020;35(12):3627–3634. doi:10.1007/s11606-020-06277-0 [PubMed: 33021717]

8. Centers for Disease Control and Prevention. Science brief: SARS-CoV-2 and potential airborne transmission. Updated October 5, 2020. Accessed March 25, 2021. https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-sars-cov-2.html

9. Kratzel A, Todt D, V'kovski P, et al. Inactivation of severe acute respiratory syndrome coronavirus 2 by WHO-recommended hand rub formulations and alcohols. Emerg Infect Dis. 2020;26(7):1592–1595. doi:10.3201/eid2607.200915 [PubMed: 32284092]

10. Centers for Disease Control and Prevention. COVID-19: variants of the virus that causes COVID-19. Updated February 17, 2021. Accessed March 25, 2021. https://www.cdc.gov/coronavirus/2019-ncov/variants/index.html