COVID-19 Variants & Vaccine implications, and Reinfection in Israel
COVID-19 Literature Review
Prepared by Eliana Burlotos, The Ohio State University
February 5, 2021

Title: Demographic Characteristics of Persons Vaccinated During the First Month of the COVID-19 Vaccination Program – United States, December 14, 2020- January 14, 2021
Source: CDC MMWR
Publication Date: February 5, 2021
Link: https://www.cdc.gov/mmwr/volumes/70/wr/mm7005e1.htm?s_cid=mm7005e1_w
Study Location: United States
Sample Size: 12,537,841 COVID-19 vaccine recipients
Summary: In December 2020, two COVID-19 vaccines, Pfizer-BioNTech and Moderna, were authorized for emergency use in the United States. This review analyzes data from the first month of the US COVID-19 vaccination program. The Advisory Committee on Immunization Practices prioritized vaccination of health care workers and residents and staff members of long-term care facilities during the first phase of the vaccination program. From December 14, 2020 - January 14, 2021, 13,000,000 persons received ≥ 1 dose of the vaccine. Of vaccine recipients, data on sex were reported for 97%, age for 99.9%, and race/ethnicity for 51.9% of recipients. The demographics of those vaccinated include the following: 63% were women, 55% were 50 years or older, and 60.4% were non-Hispanic white. Among those vaccinated that reported race/ethnicity, 11.5% were Hispanic/Latino, 6% Asian, 5.4% Black, and 2% American Indian/Alaska Native, and 0.3% non-Hispanic Native Hawaiian or other Pacific Islander. 14.4% reported as multiple or other race/ethnicity.

Key Findings Relevant to Ohio’s Response: To ensure rapid detection of potential disparities in COVID-19 vaccination, a better reporting of race and ethnicity data for vaccine recipients is needed. Non-Hispanic Black, non-Hispanic American Indian/Alaska Native, and Hispanic persons are at higher risk for COVID-19 infection and severe adverse health outcomes, yet they only make up a small percentage of the vaccine recipients during the first month of the COVID-19 Vaccination Program.

Source: CDC MMWR
Publication Date: January 22, 2021
Link: https://www.cdc.gov/mmwr/volumes/70/wr/mm7003e2.htm?s_cid=mm7003e2_e
Study Period: December 29, 2020 – January 12, 2021
Study Location: United States
Sample Size: N/A
Summary: A new variant of SARS-CoV-2, B.1.1.7, has been detected in 12 US states as of January 12, 2021. The B.1.1.7 variant is the dominate circulating SARS-CoV-2 variant in England. 76 total cases of B.1.1.7 have been detected in the US as of January 12, 2021. To illustrate the B.1.1.7 variants effect on the US pandemic trajectory, a two-variant compartmental model was developed. The model indicated that B.1.1.7 variant will experience exponential growth in the beginning of 2021 in the US and become the predominant variant in March. The B.1.1.7 has a mutation in the S protein, affecting the conformation of receptor-binding domain. In addition, to this mutation, this variant possesses 13 other defining mutations, with numerous mutations occurring in the S protein. Among these mutations are a deletion at positions 69 and 70 that is hypothesized to increase transmissibility. In the UK, regions with a higher proportion of B.1.1.7 sequences had faster epidemic growth than did other areas, and a higher proportion of contacts were infected by index patients with B.1.1.7 infections than by index patients with other variant infections.
Key Findings Relevant to Ohio's Response: Because of the B.1.1.7 variant, higher vaccination coverage is needed for protection. Limiting the spread of the B.1.1.7 is critical. Increased compliance with public health strategies will allow for more time for vaccination efforts to achieve higher population-level immunity.

COVID-19 Literature Review
Prepared by Elena McGoey, The Ohio State University
February 3, 2021

Title: Covid-19: Sore throat, fatigue, and myalgia are more common with new UK variant
Source: LitCovid (BMJ)
Publication: January 31, 2021
Study Period: November 15, 2020-January 16, 2021
Study Location: England
Sample Size: N/a
Summary: This commentary discusses data from UK reports on the B.1.1.7 SARS-CoV-2 strain. Reports have found that people infected with the new UK variant of COVID-19 are more likely to experience cough, sore throat, fatigue, and myalgia and less likely to experience a loss of sense of smell or taste than people infected with other COVID-19 variants. There has been no evidence of any difference between variants in gastrointestinal symptoms, shortness of breath, or headaches. Data that the UK variant is more likely to cause symptoms of upper respiratory tract infection can help explain why B.1.1.7 is thought to be more transmissible.

Key findings most relevant to Ohio’s response: It is crucial to educate the public to be aware of even mild cold-like symptoms and to self-isolate even when symptoms are mild to prevent indefinite lockdowns and restrictions. Healthcare systems within Ohio should update the symptoms list for COVID-19 and provide information distinguishing between symptoms for the original Wuhan strain and the new UK variant.

Title: Covid-19: New UK variant may be linked to increased death rate, early data indicate
Source: LitCovid (BMJ)
Publication: January 28, 2021
Study Period: N/a
Study Location: United Kingdom
Sample Size: N/a, multiple analyses reported
Summary: Several studies and analyses within the UK are providing data that the new UK variant of SARS-CoV-2 may have an increased case fatality rate than the original variant, but further analysis is needed. An analysis from the London School of Hygiene and Tropical Medicine showed that the relative death hazard for those infected with the UK variant in comparison to those infected with the original variant was 1.35. A study done by Imperial College London found mean case fatality rate ratios of 1.36 (using a case-control weighting method) and 1.29 (using a standardized case fatality rate method) in those infected with the UK variant compared to those infected with the original variant. NERVTAG analysis reported a mortality hazard ratio of 1.91, and Public Health England analysis reported a death risk ratio of 1.65. NERVTAG stated that the absolute
risk of death per infection “remains low,” and the mortality risk for the UK variant increases steeply with age, with more “trivial” increases in risk for younger age groups.

**Key findings most relevant to Ohio’s response:** The increased mortality rate of the B.1.1.7 variant in comparison to the original variant seems to most dramatically affect older age groups. As available vaccines have shown efficacy against the B.1.1.7 variant, vaccination of older age groups should remain a high priority during vaccine rollouts to not only protect older age groups from the original variant but also acting as a preventative measure against potentially massive impacts of the UK variant on our elderly population.

**Title:** Neutralization of SARS-CoV-2 lineage B.1.1.7 pseudovirus by BNT162b2 vaccine-elicited human sera  
**Source:** Science  
**Publication:** January 29, 2021  
**Link:** https://science.sciencemag.org/content/early/2021/01/28/science.abg6105  
**Study Period:** N/a  
**Study Location:** Germany  
**Sample Size:** 40 participants  
**Summary:** This study aimed to determine efficacy of the mRNA-based COVID-19 vaccine BNT162b2 (BioNTech, Pzifer vaccine) against the new UK SARS-CoV-2 variant B.1.1.7. 40 participants who had previously received the Pzifer vaccine were tested for neutralization of either the original Wuhan SARS-CoV-2 variant or the B.1.1.7 pseudotype. The participants’ immune sera showed statistically slightly reduced neutralizing titers against the B.1.1.7 lineage when compared to the Wuhan strain for the younger adult group, but the neutralizing titer levels were still largely preserved. Titer levels were not significantly different between variants in the older adult group of participants. Based on data measuring antibody correlates for influenza vaccines, the 20% reduced titer for the B.1.1.7 variant found in this study does not indicate a significant change in the body’s neutralization activity, which makes the BNT162b2-mediated protection likely against the UK variant as well.

**Key findings most relevant to Ohio’s response:** The results of this study are encouraging and reassuring for those who want to receive or have received the Pzifer vaccination in the US. The state of Ohio can distribute this data to increase confidence in the COVID-19 vaccines in the public, since this information about efficacy of existing vaccines against new variants can help convince a higher percentage of the public to receive the vaccine (addressing the growing issue of eligible members of the public declining vaccination).
### Title
Neutralization of SARS-CoV-2 spike 69/70 deletion, E484K, and N501Y variants by BNT162b2 vaccine-elicited sera

### Source
bioRxiv

### Publication Date
Pre-print

### Link
https://www.biorxiv.org/content/10.1101/2021.01.27.427998v1

### Study Period
January 2021

### Study Location
University of Texas

### Sample Size
20 samples human serum

### Summary
This study (pre-print) evaluated the efficacy of the Pfizer COVID vaccine against three new COVID viral variants. The first variant had a mutation found in the South Africa virus (N501Y), the second had a mutation found in the U.K. virus (delta69/70+N501Y+D614G) and the third had mutations found in both (E484K+N501Y+D614G). The Pfizer-BioNTech vaccine was found to neutralize all strains tested. Though the neutralization against the virus with the three mutations found in the South African variant (E484K+N501Y+D614G) was slightly lower than the other two, the small differences in neutralization are unlikely to lead to a significant reduction in vaccine effectiveness.

### Key Findings Relevant to Ohio's Response
With the COVID virus rapidly evolving, policymakers need to understand which vaccines are effective against which strains before distributing the vaccines to the public. The information from this pre-print, though not peer reviewed yet, gives some insight as to how the Pfizer-BioNTech vaccine performs.

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### Title
SARS-CoV-2 Vaccines and the Growing Threat of Viral Variants

### Source
JAMA

### Publication Date
01/28/2021

### Link
https://ir.novavax.com/node/15506/pdf

### Study Period
n/a
Study Location | UK
---|---
Sample Size | 15,000+ participants
Summary | Following the UK Phase 3 trial of the Novavax COVID vaccine, further analysis (pre-print) was performed on the data to determine the effectiveness of the vaccine against the UK and South African viral variants. Over 50% of the COVID-19 cases in the UK trial were attributable to the now dominant UK variant. Based on the PCR performed on the 56 out of 62 COVID positive cases, the efficacy of the vaccine was 95.6% against the original strain and 85.6% against the UK strain. In the South African Phase 2b trial, 92.6% of cases could be attributed to the now dominant South African variant, and 60% efficacy was observed against this strain. Novavax expects to continue developing newer constructs for booster bivalent vaccines designed to target the new strains.

Key Findings Relevant to Ohio’s Response | With the COVID virus rapidly evolving, policymakers need to understand which vaccines are effective against which strains before distributing the vaccines to the public. The information from this pre-print, though not peer reviewed yet, give some insight as to how the Novavax vaccine performs.

Title | mRNA-1273 vaccine induces neutralizing antibodies against spike mutants from global SARS-CoV-2 variants
Source | bioRxiv
Publication Date | 01/25/2021
Link | https://www.biorxiv.org/content/10.1101/2021.01.25.427948v1.full.pdf+html
Study Period | n/a
Study Location | Cambridge, MA
Sample Size | Serum from 8 participants
Summary | This study (pre-print) evaluates the efficacy of the Moderna vaccine against SARS-CoV-2 variants containing mutations found in the UK and South African strain. The variants tested were the original Wuhan-Hu-1 isolate, the D614G variant, the B.1.351 variant (South Africa), the B.1.1.7 variant (UK), and prior variants (20E, 20A.EU2, D614G-N439K, and mink cluster 5 variant). Both single and combination mutations were tested. It was found that neutralization of
the B.1.1.7 variant was comparable to that of the D614G virus. However, there was a 6.4-fold reduction in neutralization when the full set of mutations found in the B.1.351 strain was tested. However, the neutralizing titers still remained above those found to be protective in prior studies.

Key Findings Relevant to Ohio’s Response

With the COVID virus rapidly evolving, policymakers need to understand which vaccines are effective against which strains before distributing the vaccines to the public. The information from this pre-print, though not peer reviewed yet, give some insight as to how the Moderna vaccine performs.
**Title:** Novavax offers first evidence that COVID vaccines protect people against variants  
**Source:** Nature  
**Publication Date:** 01/29/21  
**Link:** https://www.nature.com/articles/d41586-021-00268-9  
**Study Period:** December 2020  
**Study Location:** United Kingdom and South Africa  
**Sample Size:** 5900  
**Summary:** A study by the biotech firm, Novavax, has revealed an 85% effectiveness of their current Covid-19 vaccine against the UK SARS-CoV-2 variant (B.1.17.) but only a 50% effectiveness against the South African variant (501Y.V2). However, when analysts excluded HIV positive patients from the study, the vaccine appeared to be 60% effective against 501Y.V2. The trials did not provide evidence that vaccination with the current shot results in milder cases when infected with variants. However, outside studies have correlated milder cases with vaccination, and researchers from the Novavax study believe the same will hold true regarding the South African variant. Another important finding was that individuals with antibodies against previous strains were not protected from the 501Y.V2. Nevertheless, officials emphasize that evidence of partial efficacy of the current vaccine against 501Y.V2 is still extremely important.

**Key Findings Relevant to Ohio’s Response:** Findings presented in this article emphasize the importance of continued vaccination with the current shot, as it evokes a degree of immunity against new strains as well as old ones. However, the decreased immunity against 501Y.V2 reveals the need for continued social distancing, mask-wearing, and other public health protocol even after vaccination. Likewise, those who have already been infected must continue complying with public health recommendations, as their antibodies are likely less effective against emerging strains.

**Title:** Covid-19: What have we learnt about the new variant in the UK?  
**Source:** thebmj  
**Publication Date:** 12/23/20  
**Link:** https://www.bmj.com/content/371/bmj.m4944  
**Study Period:** N/A  
**Study Location:** United Kingdom  
**Sample Size:** N/A  
**Summary:** According to the UK’s New and Emerging Respiratory Virus Threats Advisory Group, the nation’s new SARS-CoV-2 variant, known as B.1.1.7., is significantly more infectious than past strains. Moreover, experts deduced that transmission is 71% higher with B.1.1.7. and evokes a higher viral load within those infected. B.1.1.7. was first recognized in September of 2020, but epidemiologists claim the gravity of such a development only grew clear in December. The new variant contains 14 mutations, including many amino acid changes and 3 deletions, culminating in a higher overall transmissibility among humans. However, specialists hold that PCR testing still has high potential to detect B.1.1.7., and it is unlikely to deem vaccines ineffective. A notable change evoked from B.1.1.7. is the heightened risk children face, exemplified through the shift in age distribution of the virus in England. Children under the age of 15 were infected more prominently than adults, but researchers say this difference is not drastic. So far, the UK government has not declared changes in PPE protocol in response to this new variant. Although it emerged in the UK, B.1.17. has now traveled to numerous other nations including Australia, Denmark, Italy, and Iceland. In response, over 40 countries have halted travel to the UK, and mail services to Europe have been suspended.

**Key Findings Relevant to Ohio’s Response:** The spread of B.1.1.7. indicates the need for reduced travel. Ohio residents should be advised to continue refraining from travel in general, especially international travel. Ohio policy-makers should also consider the need for any changes in PPE recommendations, as studies have shown evidence for the increased transmissibility of B.1.17.
Title: Israeli who recovered from COVID-19 reinfected with South African strain
Source: The Times of Israel
Publication Date: January 31, 2021 / February 1, 2021
Study Period: n/a
Study Location: Israel
Sample Size: n/a
Summary: Ziv Yaffe is a 57-year-old Israeli man. He originally tested positive for COVID-19 in August of 2020 in his home country of Israel. He was symptomatic – had “all the symptoms” and felt “very ill.” Yaffe traveled to Turkey in January of 2021. He returned to Israel on January 16th. By January 23rd he had a runny nose but felt “fine.” Yaffe decided to get a COVID-19 test again, as he was participating in follow-up research at the Assaf Harofeh Medical Center. The test was positive for COVID-19. Further testing showed that Yaffe was positive for the South African mutation of COVID-19. Professor Shai Efrati, head of research and development at the medical center, said “It is the first time that we have a full record, of infection, recovery, reinfection, and that the antibodies that he had protected him from the mutation.” A possible explanation for not having any symptoms this time may be due to “antibodies from the original virus that protected against the disease when infected with the strain.” “He had the virus, but he wasn't sick,” Efrati said. “His wife, daughters and grandchildren also lived with him - but none of them were infected.” According to Efrati: “This is a case from which a lot can be learned. The antibodies he developed in August protected him from developing a disease.” “This means that the antibodies that developed from the original virus he had provided protection against disease even when infected with the South African mutation.” Yaffe’s case is the second time the South African variant has been brought into Israel from Turkey. All previous patients with the South African mutation, first discovered in South Africa in December, were people who came back to the country from South Africa, Ethiopia, or Dubai. Dr. Sharon Alroy-Preis, the head of public health services at the Health Ministry, said that there were preliminary indications the coronavirus vaccines may prove less effective in shielding against the South African variant. Pfizer and BioNTech, whose vaccines are being used in Israel’s world-leading vaccine drive, have said that early tests suggest their immunization would be protective against the variants from South Africa and Britain. Their study found that the antibodies were able to neutralize all the sets of mutations tested. It noted that the effect was “slightly lower” against three mutations in the variant found in South Africa, including E484K. But the firms said that it was “unlikely to lead to a significant reduction in the effectiveness of the vaccine.” The Health Ministry has confirmed that 3 more cases of the South African coronavirus variant have been found in Israel, bringing the total number of infections from the strain to 30. The British variant is spreading wildly in Israel. Daily infections continue to remain in the thousands, despite Israel’s strict restrictions and vaccination campaign.
Johnson & Johnson has announced that a one-dose vaccine is being developed by its vaccine division, Janssen Pharmaceuticals. The vaccine has shown to be 66% protective against moderate to severe COVID-19 infection and 85% effective in protecting against severe infections in a multi-country study. No hospitalizations or deaths have occurred among people who have received the vaccine. Overall efficacy varies geographically, particularly in South Africa with the presence of a new variant. J&J is in the process of applying to the FDA for emergency use authorization. The vaccine will likely start to be used in the United States in early March. J&J is not expected to be able to supply substantial doses until April.

The Pfizer and Moderna vaccines are made using messenger RNA, a technology that delivers a bit of genetic code to cells. The J&J vaccine uses a different approach: a viral vectored vaccine. A harmless adenovirus has been engineered to carry the SARS-2 spike protein and to introduce the spike to the immune system, prompting it to recognize SARS-2 and protect against it. J&J used this same approach to make an Ebola vaccine that has been authorized for use by the European Medicines Agency. J&J’s vaccine has been tested in people 18 and older.

The Pfizer vaccine showed efficacy of 95% while the Moderna vaccine was 94.1% effective at preventing symptomatic Covid-19, after the second dose. Much of J&J’s trial data generated in South Africa involved people who were infected with the variant first seen in South Africa, called B.1.351. The J&J one-dose vaccine was shown to be 66% protective against moderate to severe infections overall from 28 days after injection. The vaccine was 72% protective in the United States, 66% protective in South America, and 57% protective in South Africa. The vaccine was shown to be 85% protective against severe disease, with no differences across 8 countries or 3 regions. J&J is also testing a two-dose regimen, with the two shots given eight weeks apart. The results from that 30,000-person trial are not expected until May.

All the vaccines are reactogenic, meaning they trigger side effects. Both the Pfizer and Moderna vaccines appear, on rare occasions, to trigger anaphylaxis. The most recent data from the CDC suggest that anaphylaxis occurs at a rate of about 2.1 cases per one million doses given of the Moderna vaccine, and 6.2 cases per million doses of the Pfizer. To date the J&J vaccine has not been associated with anaphylactic reactions. The 2 mRNA vaccines require an elaborate cold chain, while J&J’s does not. This means that it can be given anywhere and stored for at least 3 months in a regular refrigerator.
Contents:

SARS-CoV-2 Transmission Research and Transmission Information  |  Real World Effect of Mass Vaccination
  1. Healthline: COVID-19 Cases Dropping in Groups with High Vaccination Rate
  3. New York Times: Israel’s Early Vaccine Data Offers Hope

Clinical and Economic Equity Disparity and Equity Remediation  |  The Latest on Pandemic-Related Food Insecurity
  1. JAMA: Association Between Receipt of Unemployment Insurance and Food Insecurity Among People Who Lost Employment During the COVID-19 Pandemic in the United States
  2. The Conversation: What is food insecurity?

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SARS-CoV-2 Transmission Research and Transmission Information  |  Real World Effect of Mass Vaccination

Healthline: COVID-19 Cases Dropping in Groups with High Vaccination Rate (2/2/2021)

Data from populations with high vaccination rates reveal that vaccines have significant public health benefits. In a recent memo, officials from the Los Angeles Fire Department (LAFD) noted that the daily number of LAFD staff cases had fallen from about 20 to less than 5. The department credits the fall to its thorough vaccination campaign, which began in late December. Though infections in the broader US population have fallen in recent weeks, experts suggest the decline results from non-pharmaceutical interventions, not the vaccine rollout, which has only reached 9.6% of the US population. In contrast, Israel has achieved 57.6% vaccination and started to see infections drop on a population-wide scale. Recent data including 400,000 individuals revealed that the positivity rate dropped 33% in the 14 days after vaccination. An Israeli health fund reported a 60% decrease in infections 13 to 21 days after vaccination.


Recent data from the United Kingdom suggest that the country’s rapid vaccine rollout has positive population-wide effects. The UK has vaccinated 15% of its population, a greater portion than the United States. Though Public Health England has not published official data yet, within fourteen days of receiving a vaccine, hospitalizations and cases fall markedly. Moreover, the UK’s cases have fallen in
recent weeks, though the country has been in lockdown. And comparisons between vaccinated and unvaccinated populations are vulnerable to confounding because most of those vaccinated in the UK are older, a more cautious demographic. Nonetheless, prime minister Boris Johnson has formed a plan for lifting the country’s lockdown when adequate immunization offers a check against cases. Experts remain cautious, however, and suggest that countries must ease out of restrictions to avoid offsetting vaccination’s positive effect.


Population-wide data from Israel reveal that vaccines will be useful in controlling infections on a large scale. The first data showed a 33% fall in infections in a vaccinated population against an unvaccinated. Though the 33% drop sounds like less than 95% efficacy predicted, experts say that this result was in line with Pfizer’s trials. Data from 430,000 individuals who received two doses showed even more encouraging results: the infection rate was 0.014%, and another study of 130,000 showed it to be 0.01%, a fall of 60% from the baseline. These findings are preliminary, and experts say they may be vulnerable to confounding, especially as Israel imposed a national lockdown to combat its third wave. Still, they provide strong encouragement for vaccine campaigns worldwide.

**Clinical and Economic Equity Disparity and Equity Remediation | The Latest on Pandemic-Related Food Insecurity**

**JAMA:** [Association Between Receipt of Unemployment Insurance and Food Insecurity Among People Who Lost Employment During the COVID-19 Pandemic in the United States](https://www.jama.com/fullarticle/2775417) (1/29/2021)

A survey revealed that unemployment insurance and federal supplements led to decreased food insecurity among those laid off during the pandemic. The authors evaluated a cohort of 2,319 adults from low to middle-income families, 1,119 of whom had lost work during the pandemic. 39.1% of the cohort reported eating less due to financial reasons during at least one of the study’s fifteen 2-week waves. Food insecurity was most severe during the pandemic’s first wave in April. The authors found that unemployment insurance led to a 35% relative reduction in food insecurity. Though SNAP benefits did not affect food insecurity, the authors found that the CARES Act $600 supplement led to a more significant decrease than unemployment insurance on its own. The researchers’ assessment of demographic information found that low-income families were significantly more likely to face food insecurity than wealthier ones; the authors suggest a connection between structural inequality and food insecurity. Based on these data, the authors propose that federal programs are critical to maintaining a basic standard of living during the pandemic.

**The Conversation:** [What is food insecurity?](https://theconversation.com/what-is-food-insecurity-132202) (2/2/2021)

Food insecurity has risen sharply during the COVID-19 pandemic and has revealed critical issues in the United States’ food system. Over the past several years, scholarly interest in the concept of food insecurity, which measures a household’s access to food rather than physiological hunger, has grown markedly. Food insecurity fell year on year until 2020 when food bank use hit record levels, and an estimated 17 million more Americans have suffered from food insecurity than in 2019. According to the authors, this crisis exposes a fundamental issue of health equity; low-income people of color often
live in areas swamped with low-nutrient foods. Comprehensive anti-poverty programs are needed to address this broad issue and the acute crisis of the COVID-19 pandemic. Benefits like SNAP must be expanded, not curtailed

Related Articles | Please find annotations for all related articles on the main resource hub, linked here

Today: SNAP expansion and worker safety: How Biden's executive orders affect the food world (1/28/2021)

Recent executive orders aim to address pandemic food insecurity. One will raise maximum SNAP benefits. Another increases the cap for food benefits provided while schools and daycares are closed.

NBC: Hidden hunger: Elderly hunger is on the rise during Covid (1/17/2021)

In New York City, food insecurity among the elderly has doubled during the pandemic from one in ten to one in five, as wider food insecurity has soared.

USN: How Connecticut Schools Have Gotten Lunch to Kids Who Need It (2/2/2021)

Robust communication as well as a grab-and-go distribution at convenient locations, not just schools, allowed Connecticut to effectively distribute free school lunches while schools were closed.

WGBG: Food Insecurity: It's Only The Surface Of A Sea Of Inequality (1/21/2021)

Although 2021 brings record food insecurity in Massachusetts—experts suggest 14.2% of the population will be food insecure this year—long-standing inequities along race and class lines are important structural factors behind the pandemic’s food crisis.

Please visit the Massachusetts CTC Contact Tracing and COVID-19 Research Hub for more annotated resources on COVID-19 or to find annotations for all the related resources: https://docs.google.com/document/d/1rTXsqHqmoXlqqPtVkqMZCFzhFkl4f9cclsMuqChs7xY/edit?usp=sharing