How We Keep You Safe

Summary of COVID Risk Assessments & Safety Protocols

Introduction

Recently, we suspended in-person Sunday worship services for the month of January 2022. This was driven by three factors. First, a clear COVID-19 upsurge started after Christmas and quickly resulted in community spread throughout Connecticut (CT) that was unlike any previous wave or upsurge. This upsurge was driven by a new COVID strain, Omicron, that clearly was more transmissible than previous strains. Further, this strain resulted in cold/flu-like symptoms similar, especially within fully vaccinated (and boosted) people who were having breakthrough cases at a higher rate than with previous strains.

Second, this upsurge was exacerbated by the lack of testing resources needed to discriminate between cold/flu and COVID-19 symptoms, which created stress for families trying to decide whether than should attend or refrain from attending in-person services. As the upsurge continued unbated through the first half of January, it became clear that that the Omicron strain was less deadly than pervious strains. However, Omicron was so contagious that the number of new cases per day (on a 7-day average basis) was 3.5 times higher than previous upsurge peaks, resulting in CT healthcare resources being overwhelmed with hospitalizations that were higher than any previous upsurge peak and comparable peak daily deaths.

Third, we had a handful of individuals that are instrumental to efforts required to hold in-person services that had illness within their families or were sick themselves. Because it was almost impossible to get tested in early to mid-January, these individuals, out of an abundance of caution, were required to refrain from performing their duties.

Therefore, our COVID Response Team (CRT) conferred with Pastor Michael and made the difficult decision to suspend in-person services to allow the team some time to evaluate the risks associated with this new COVID strain and re-evaluate our existing protocols. It was felt this was appropriate, despite having safely navigated our way through previous upsurges, while continuing to hold in-person services.

The team also established criteria, the satisfaction of which served as a prerequisite for resuming in-person services. This included re-evaluation and refinement of protocols, as appropriate, improved access to COVID testing, development and distribution of awareness and education materials, and two successive weeks of significant reductions in two key statistical metrics (i.e., new cases per day and positivity rate).

In late January, the CRT and Pastor Michael decided that these criteria had been satisfied and that only minor changes in protocols were recommended to further protect our church family and community in the face of the highly contagious Omicron strain. Improved awareness and education materials were developed and are being made available to our church family through various communication channels, including *The Messenger*, a *Life of the Church* letter, and postings on our website and social media.

This document is provided for those who may want to better understand how we are keeping our church family safe and why we are recommending changes a few changes in our protocols. The remainder of the document provides some insight into the following ways that the CRT is helping to keep you safe while worshiping together in-person: 1) vigilant risk monitoring using local, statewide, and national COVID statistics and trends, 2) quantitative risk assessments using modeling and simulation tools developed by the Massachusetts Institute of Technology (MIT), 3) social distancing encouraged by church configuration, 4) enhanced ventilation and purification, 5) appropriate mask protocols, 6) pre-registration and attendance monitoring, and 7) clear self-assessment/quarantine/isolation protocols. Each of these will be discussed, in respective sections, along with brief concluding remarks.

Risk Monitoring Using Statistical Trending

The CRT is a demographically and organizationally representative team of nine members. The team has met at least monthly throughout the last 22 months. The team often meets weekly as necessary to monitor evolving risks and revised federal or state guidance. Throughout the pandemic, the CRT Chair has monitored relevant news and evolving COVID statistics and trends that may indicate that CRT re-evaluation and discussion of protocols is appropriate, including relaxation of protocols when prudent.

The following set of five COVID statistics has served as the focus of weekly monitoring: 1) new cases, 2) number of tests, 3) positivity rate, 4) number of hospitalizations, and 5) number of deaths. All of these metrics are tabulated on a daily basis by various government and news media analysts. A 7-day rolling average is used for trending to mitigate issues with the timing of statistical reports provided by various healthcare data sources (e.g., no data on weekends with three days of data reported on Mondays).

A standard set of trending plots used by the CRT are shown on a CT-wide basis in Figures 1 (new cases, hospitalizations, tests, and deaths) and Figure 2 (positivity rate). Similar trending plots on a national basis and a local basis (i.e., Litchfield and New Haven counties) are also used to help assess evolving risks of new surges in community spread. None of these metrics are perfect, but taken as a whole, these local, state, and federal statistics have proven quite useful in assessing the need for CRT re-evaluation and discussion.

In retrospect, it is clear that the new Omicron strain was a very contagious strain, unlike previous strains despite the high number of fully vaccinated people in CT. The latest peak in new cases is 3.5 times the previous peak of almost a year ago. Yet, daily hospitalizations and deaths were comparable to the previous peak. So, while Omicron is less deadly, the shear number of cases with severe outcome was comparable and sufficient to overwhelm local healthcare resources. The two metrics used by CRT as a pre-requisite for resuming in-person services (i.e., new cases and positivity rate) have been trending down significantly for over two weeks. Hospitalizations has also been trending down for two weeks, despite being a lagging indicator. Daily deaths, which significantly lags all other metrics, does not appear to have peaked by the end of January. However, it is about half of the original peak at the beginning of the pandemic and comparable to the peak a year ago, when WUMC was able to safely hold in-person services.

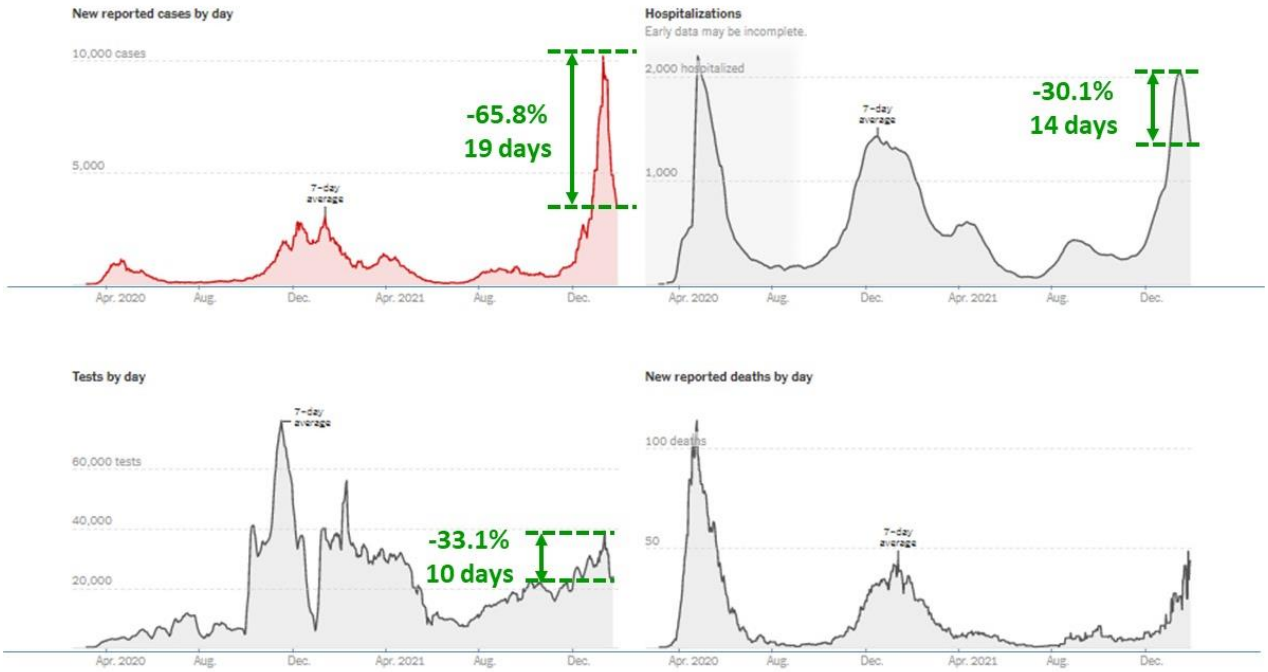

Figure 1 – CT Statewide COVID Metrics (New Cases, Tests, Hospitalizations, and Deaths)

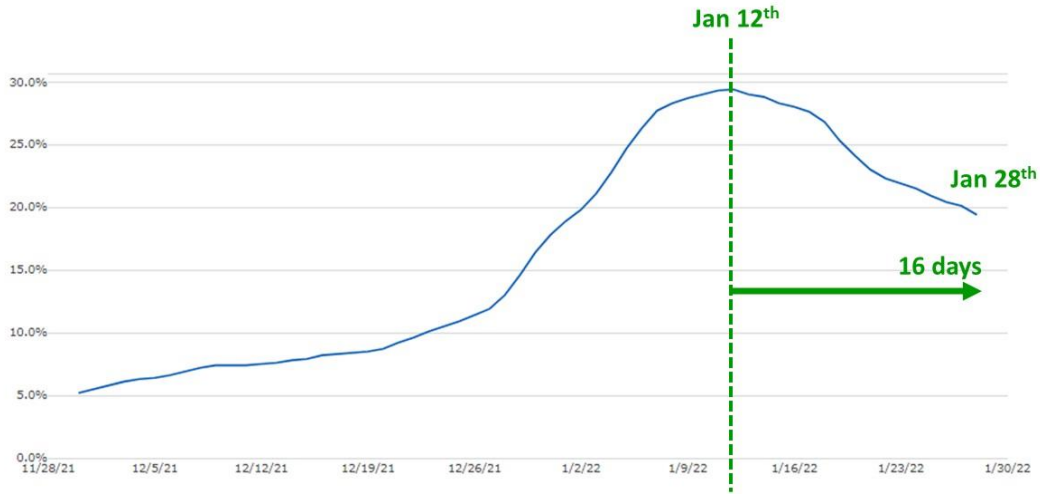

Figure 2 – CT Statewide COVID Metric (Positivity Rate)

Quantitative Risk Assessments Using MIT Modeling Tools

The CRT has conducted quantitative risk sensitivity analyses, using a modeling tool developed by the Massachusetts Institute of Technology. This tool calculates the duration of time that a given number of people can safely occupy a room as a function of COVID strain, room dimensions, number of people, activity (e.g., resting, speaking, singing), air ventilation/filtering/purification, and type of mask. This tool can be accessed at https://indoor-covid-safety.herokuapp.com/. A list of publications that provide the scientific and engineering foundation behind this tool is also available on this website.

In 2020, this tool was used to assess a safe max capacity for in-person services and the benefits of implementing enhanced ventilation. In 2021, it was used to establish a safe capacity for in-person meetings and Fellowship Hour in our Fellowship Hall. Recently, this tool has been applied once again to assess the relative risk of Omicron versus previous COVID strains, re-evaluate max capacities for the sanctuary, Fellowship Hall, and the Assembly Room, and assess the benefits of enhanced ventilation/purification and different styles of masks in the presences of the highly contagious Omicron.

The following are the primary general conclusions reached through these risk sensitivity analyses:

- Omicron cuts the margin of safety in terms of safe occupancy duration by 30-50% compared to Delta
- Comparison of mask efficacies with Omicron
  - Surgical masks provide a 2-to-1 margin of safety compared to cloth masks
  - N/KN-95 masks increase margins of safety by about a factor of 4 compared to surgical masks
- Assessment of enhanced ventilation and air filtration
  - Enhance ventilation improves the margins of safety
  - HEPA filtering with reasonable exchange rate is comparable to enhanced ventilation and would allow us to close windows in winter time
- Risk Assessment of mask-less Worship Team with Omicron
  - Pastor and liturgists/speakers without masks pose little risk to the congregation or worship team
- Risk Assessment of singing with Omicron
  - Singing by congregation with surgical masks poses little risk
  - 3 worship team singers without masks pose little risk when using enhanced ventilation
  - A full choir wearing surgical masks poses little risk to the congregation
  - Safety of choir when singing without masks is dependent on diligent pre-screening and self-assessment/quarantine/isolation and a requirement to be fully vaccinated/boosted

Sample results from the MIT modeling tool are provide in Table 1, showing safe duration of occupancy as a function of attendees for in-person services in the Sanctuary and meetings in Fellowship Hall and the Assembly Room. These results are based on the use of the following conservative assumptions: 1) Omicron strain (most contagious), 2) attendees greater than 64 years old (higher risk than younger age groups), and 3) no enhanced ventilation or air purification (worst-case scenario).

Relative to in-person worship services, our existing max capacity of 75 attendees remains safe if well-fitted surgical masks are worn, providing a 1.5x factor of safety relative to a one-hour service. The use of enhanced ventilation and/or enhanced air purification would increase this factor of safety. If N/KN-95 masks were worn, the max capacity could be increased to 100 attendees with a 5X factor of safety as long as proper social distancing can be maintained. The bottom line is that both in-person worship services and meetings can be safely held (even without enhanced ventilation or purification during winter months) if attendees wear appropriate masks and abide by occupancy and duration limitations as shown in Table 1.

Table 1 – Sensitivity Analyses of Number of People and Safe Duration of Occupancy

Room	Sanctuary		Fellowship Hall		Assembly Room	
Mask	Surgical	N/KN-95	Surgical	N/KN-95	Surgical	N/KN-95
2	3 days	> 14 days	44 hrs	11 days	10 hrs	2 days
5	20 days	5 days	11 hrs	3 days	3 hrs	15 hrs
10	9 hrs	2 days	5 hrs	29 hrs	2 hrs	7 hrs
25	4 hrs	20 hrs	2 hrs	11 hrs	N/A	3 hrs
50	2 hrs	10 hrs	80 mins	6 hrs	N/A	N/A
75	1.5 hrs	7 hrs	60 min	4 hrs	N/A	N/A
100	82 mins	5 hrs	N/A	3 hrs	N/A	N/A

Social Distancing Encouraged by Church Configuration

Early in the pandemic, we enforced much more stringent social distancing requirements, including one-way flow of ingress/egress and every third pew seating. As we have learned more about COVID-19, these have been relaxed to free flow seating, as long as attendees respect 6-ft social distancing between family units, except for brief interactions. We originally discouraged members from different family units from sitting together.

Last fall, we went to every second pew seating, which provides 5.5-ft social distancing, and allowed singles from different families to occupy the same 'half' pew, allowing proper side-to-side social distancing. The distance between the worship team and the nearest members of the congregation is at least 15 feet.

Enhanced Ventilation and Air Purification

We have employed enhanced ventilation in the sanctuary since resuming in-person, indoor services in October 2020. This includes bringing fresh air into the sanctuary both at the front (near the choir loft) and the rear of the church on the lefthand side and exhausting air out exterior windows on the righthand side of the sanctuary near the organ and first and last pews.

We have also implemented an 'air curtain' between the worship team (i.e., pastor, liturgist, and choir) and the congregation. This air curtain involves fresh air entering the sanctuary near the choir and exiting the sanctuary near the organ and first pew. Air curtain flow is further promoted by a fan near the bottom of the

chancel area in the middle of the sanctuary that pushes air to the exhaust fans near the organ and first pew on the righthand side of the sanctuary. This efficacy of this air curtain was verified through flow visualization tests, using a fog machine placed in the choir area.

We have recently constructed prototype air purification devices (see Figure 3) that can be placed near the choir and organ to allow us to quit exhausting warm air outdoors during cold weather, while still providing similar increases in factors of safety enabled by the air curtain. These prototype air purification devices remain to be verified by flow visualization tests prior to their use in this manner.

Finally, the ceiling fans in the rear of the church are used to encourage mixing of fresh air throughout the sanctuary. The ceiling fans at the front of the sanctuary are left off so as to not disrupt the air curtain.

Figure 3 – Prototype Air Purification Device

Mask Protocols

Ever since returning to in-person, indoor worship services in the fall of 2020, we have maintained the requirement that members of the congregation wear a mask despite the relaxation of these requirements elsewhere in 2021. This was out of an abundance of caution. Further, it allowed us to maintain an inclusive open-door invitation without requiring vaccinations or proof of vaccination, while complying with continued CT guidelines for unvaccinated people to wear masks indoors while gathering in public places.

With the onset of the Omicron upsurge, our quantitative risk sensitivity studies indicated that we needed to refine this protocol to require a multi-layer surgical or N/KN-95 mask. Cloth masks are no longer acceptable unless they are used over a surgical mask to ensure better fit of the surgical mask. We strongly encourage all who can wear a N/KN-95 mask to do so during the remainder of these winter months to further reduce their own personal risks. Both surgical and N/KN-95 masks are being made available to attendees for free, if needed, at the entrance/check-in area outside the sanctuary.

Pre-Registration and Attendance Monitoring

We have requested attendees to pre-register for in-person worship services/events using our online webpage or by calling the church office for those who lack internet access. The process takes less than a minute and is beneficial in ensuring social distancing, especially for larger numbers of attendees via assigned seating, to better protect you and your family. It also allows you to go through the COVID checklist and reflect, before entering the building, on whether you or a family member has had symptoms for which you should refrain from attending in-person for this particular event. Finally, it reduces the workload of our greeters as they ensure we have contact info for all attendees in the event that contact tracing becomes necessary.

Our online pre-registration website can be reached either from our home page at https://woodburyumc.net/ or directly at https://rsvp.church/r/CqMXUVqE. This website provides upcoming events for the next 30 days. Each event is shown with the date, time, and number of spaces remaining available. You simply click on the event; enter your name, the number of people in your group, and your contact info; click the checkbox acknowledging the intent to comply with WUMC COVID protocols; and click submit. You will receive a confirmation e-mail.

A list of all pre-registrants is provided to event greeters, so they only have to check off those who actually attended and ask if there is any update relative to pre-registered attendees health and COVID status.

Self-Assessment/Quarantine/Isolation Protocols

The most effective way to minimize the risk of COVID spread within our church family is for each potential attendee to self-assess one's situation and refrain from attending events in-person if exhibiting symptoms or having been in close contact with someone exhibiting symptoms. The CRT has updated its self-assessment/quarantine/isolation protocols in light of the similarity between cold/flu and COVID symptoms, especially for those who are fully vaccinated (and boosted) and yet become infected with Omicron.

Also, the CRT fully evaluated updated guidelines recently issued by the federal Centers for Disease Control and Prevention (CDC). The new CDC guidelines provide some flexibility in quarantine/isolation protocols, depending on whether a person has been fully vaccinated and boosted (if eligible) and their evolving symptoms. While this flexibility is important for helping healthcare providers and companies mitigate staffing shortfalls, it created significant confusion in the public and also resulted in increased risks when people return to work or in-person indoor gatherings before satisfying the original specified quarantine/isolations durations.

WUMC recently 'published' updated self-assessment/quarantine/isolation protocols in the form of a decisions table, as shown in Figure 4 on the next page. A comparable decision flowchart is also provided in Figure 5 for those who prefer this format. In these figures, close-contact exposure is defined as spending 15 minutes or more cumulative time over a 24-hour period within 6-ft of a person who has been diagnosed with COVID or is symptomatic and remains untested (regardless of whether masked or unmasked).

Due to the similarity in symptoms and recent difficulty in getting tested, a person with any cold, flu and/or COVID symptom (i.e., symptomatic) should refrain from attending WUMC worship services, events or meetings until receiving a negative result from an appropriate COVID test to prove otherwise. Acceptable test type(s) are shown for symptomatic or asymptomatic people in the decision table/flowchart.

Put simply, if you or a family member have been ill, please stay home and continue to enjoy our services online at www.woodburyumc.net or our YouTube channel at http://www.youtube.com/channel/UCN-kkokTCbVE9urwgP_AEcw until you or a close contact can be adequately tested. For the sake of simplicity and out of an abundance of caution, WUMC has decided to adhere to the original CDC 14-day quarantine (close-contact) and 10-day isolation (symptomatic or test positive) guidelines. The 14-day quarantine period is based on the COVID incubation period for exhibiting symptoms, if any. The 10-day isolation period is based on the typical duration of time that a COVID patient remain contagious. Note that these timeframes can vary by COVID strain, severity of illness and symptoms, vaccination status, and time elapsed since last vaccine. The new CDC guidelines attempts to provide additional decision criteria to take these things into account. The decision tables and flowcharts associated with these new guidelines (not shown herein) become overly complicated and result in increased risk. While more flexible protocols may be beneficial to healthcare facilities and private business, they are confusing and unnecessary for a church whose primary focus is the safety of its church family and surrounding community.

Concluding Remarks

This COVID pandemic has not been easy. We've had to be creative, thoughtful, and resilient. Our most important goal is to create conditions to worship together safely. Rest assured that our WUMC CRT continues to be vigilant in assessing risk and modifying protocols accordingly. As a result of the recent Omicron-drive upsurge, the CRT has re-evaluated risk and safety protocols to ensure your safety. With the relative minor change that requires that attendees wear a surgical mask, we can safely resume worshiping in-person with at least 75 people, which is our current self-imposed max capacity to ensure social distancing between family units.

We can use your help by pre-registering, wearing appropriate masks, maintaining social distancing, and being diligent about self-assessment and refraining from attending church in-person per our protocols.

What to Do:

IF YOU:	THEN:
Had **Close Contact** with **Symptomatic Person**	**GET COVID TESTED:** **WHEN?** • 5 days after had exposure or • Upon becoming symptomatic **WHICH TEST?** • If asymptomatic: Then PCR test required • If symptomatic: Either PCR or Rapid Antigen test **Refrain from attending church worship events** (quarantine) for **14 days or** until you have **a negative test result** (or your close contact tests negative), & you **are symptom free**.
Are Symptomatic	**Refrain from attending worship and church events** for **10 days or until receiving a negative COVID test** (PCR or Rapid Antigen test) and you are **symptom free**.
Test Positive	Refrain from attending church worship & events for 10 days (isolate). Report positive test to WUMC's CRT Chair (Mark Davis)

Figure 4 – Decision Table for Those Who Are Symptomatic or Have Been in Close Contact with Someone Who Is Symptomatic

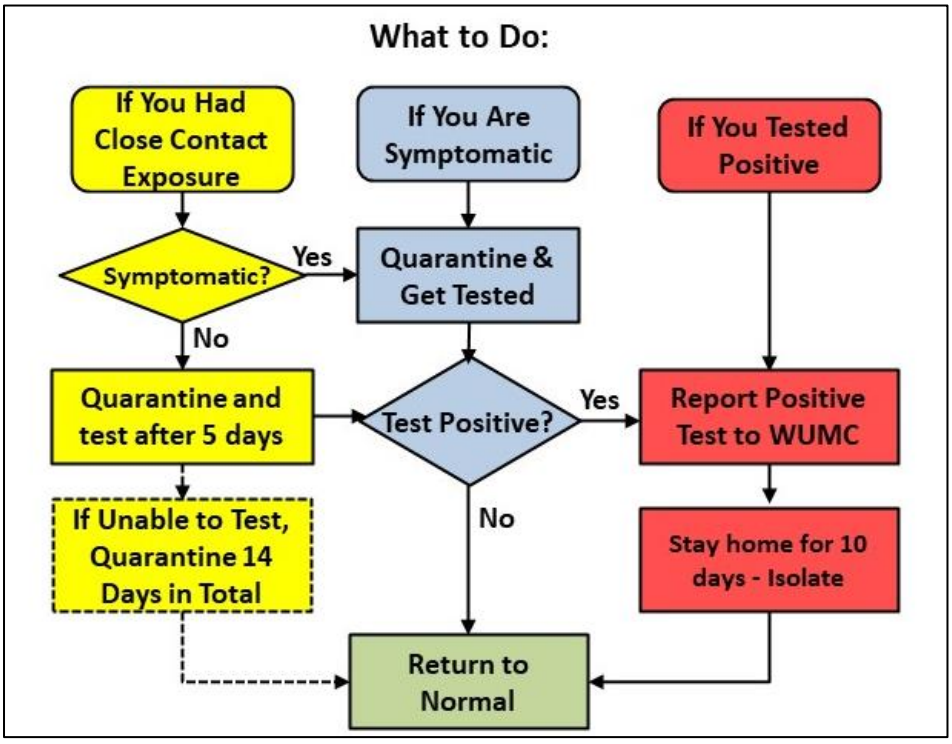

Figure 5 – Decision Flowchart for Those Who Are Symptomatic or Have Been in Close Contact with Someone Who Is Symptomatic