January 4, 2022
MMS/DPH Call Summary and Q & A

On January 4, 2022, the Massachusetts Medical Society (MMS) held an informational call for members with the Massachusetts Department of Public Health (DPH). Larry Madoff, MD, Medical Director, Bureau of Infectious Disease and Laboratory Sciences, Catherine Brown, DVM, MSc, MPH, State Epidemiologist and State Public Health Veterinarian, and Kerin Milesky, Director of DPH’s Office of Preparedness and Emergency Management participated. DPH officials provided updates on the continuing COVID-19 surge including cases and hospitalizations, antigen testing and vaccination, variants, and therapeutics. DPH officials also responded to member questions asked during the call.

COVID-19 Case Update
Dr. Brown:

- Massachusetts is presently seeing very high case positivity rates. The seven day percent positivity rate today is just over 20%. It is important to note that the percent positivity is driven largely by who is being tested. Currently there is not a lot of screening testing being conducted at colleges and universities which can lower the case positivity rate. This makes it difficult to compare the current case positivity rate to other periods in the pandemic.

- The Centers for Disease Control and Prevention (CDC) has estimates of what the current proportion of cases are the Omicron variant in different parts of the country. Locally, colleagues at the Broad Institute have been working feverishly throughout the holiday season using an assay that's designed to determine whether a case is due to the Delta or the Omicron variant. It's not sequencing. It doesn't tell us much beyond if its Omicron versus Delta. The data from Broad Institute suggest that Massachusetts hit over 80% of our cases being Omicron just after Christmas, and we anticipate that it was closer to 90% by the time of the New Year. The rapid escalation in cases supports the presence of a high proportion of Omicron cases. Whether Omicron will completely replace Delta or whether there will be some balance between the two has important consequences when it comes to clinical care of patients.

- There are always other variants in circulation. The virus will continue to mutate, and new variants will continue to arise. Until there are enough cases of a particular new emerging variant, there is not sufficient data to know if it is/will be concerning. Some variants end up being successful like Delta and Omicron, and in other cases, they don't.

- There has been some evidence coming from South Africa and from parts of the United Kingdom (U.K.) that while Omicron surges are dramatic, they may not last as long as what has been seen previously. DPH hopes this will be the case here and that Massachusetts will peak with cases in the first part of January and then start down on the other side of the curve. This may happen, but it's not guaranteed by any means.
• There is increasing evidence that disease caused by Omicron is somewhat less severe overall than previous variants. There is also some recent evidence to suggest that the proportion of people in the hospital who have are actually hospitalized because of their COVID-19 is decreasing. So, while there may be people in the hospital for some reason and they may end up testing positive for COVID-19, the proportion of those that are actually being hospitalized because of COVID-19 is decreasing. That is potentially very good news and seemingly consistent with what we think we’re seeing with Omicron which is the slightly milder illness.

• Omicron certainly has shown the ability to evade immunity, both natural immunity and vaccine-induced immunity, but the vaccines, especially the booster doses seem to be mitigating the most severe impacts of infection even with the rapid spread with Omicron.

COVID-19 Vaccination Update
Dr. Madoff:

• Yesterday, the United States Food and Drug Administration (FDA) authorized booster doses for the 12 to 15-year-old age group and also recommended shortening the interval for booster dosing for the Pfizer-BioNTech vaccine to five months.

• Today, the CDC updated its recommendation shortening the interval for the Pfizer-BioNTech COVID-19 to 5 months after completing their Pfizer-BioNTech primary series. The booster interval recommendation for people who received the Johnson & Johnson vaccine (2 months) or the Moderna vaccine (6 months), has not changed.

• The 12 to 15-year-old booster dose recommendation still needs to be reviewed by the CDC’s Advisory Committee on Immunization Practices (ACIP).

• The CDC is recommending that moderately or severely immunocompromised 5–11-year-olds receive an additional primary dose of vaccine 28 days after their second shot. At this time, only the Pfizer-BioNTech COVID-19 vaccine is authorized and recommended for children aged 5-11.

• Massachusetts continues to vaccinate at a brisk pace including booster doses. Over 2.1 million booster doses have been administered and over 5.1 million individuals in the Commonwealth are fully vaccinated. That is damping down our serious illness and hospitalization rates. As Dr. Brown alluded to, while we’re seeing more COVID-19 patients in the hospital, we do think that many of those patients are admitted for something else and test positive for COVID-19 while admitted. Obviously, that has consequences for isolation in the hospital setting, but it is different than being admitted for COVID-19.

• DPH urges everyone who is eligible to get a booster dose. Boosting helps prevent Omicron infection. Over 90% of COVID-19 in the Commonwealth is due to Omicron. DPH has seen that reflected in some of our hospital testing data as well which is showing S gene target failure; a marker that is almost always due to Omicron. Identifying Omicron has implications for therapeutics.

COVID-19 Therapeutics Update
Dr. Madoff:

• This is an exciting time in that we have available therapeutics for the treatment of both late stage and now early mild-to-moderate COVID-19 in symptomatic individuals who are at risk of requiring hospitalization or severe outcomes. Those fall into two bundles: monoclonal antibodies and oral antivirals.

• Any viral test is acceptable for treatment of using either the monoclonals or the antivirals. Either an antigen test or a PCR test showing SARS-Cov-2 is adequate for recommending treatment when clinically indicated.
• Clinical guidelines that prioritize the use of the different products in different situations.

• Monoclonal Antibodies:
  o Unfortunately, with Omicron the monoclonal antibody options are more limited. Only sotrovimab is thought to be effective in treating COVID-19 caused by the Omicron variant. That is based on in vitro data. Just as we would use in vitro data to guide our antibiotic choices, we're using in vitro data here to guide our monoclonal antibody therapeutics, and those in vitro diagnostics indicate that only sotrovimab is likely to have activity in the treatment of COVID-19 caused by Omicron.
  o Another monoclonal antibody product Evusheld, the AstraZeneca combination product which is used for pre-exposure prophylaxis also appears to have in vitro activity against Omicron and we are continuing to recommend its use.
  o The Lilly product of bamlanivimab etesevimab product and the Regeneron product are unlikely to be beneficial in Omicron, and we are suggesting against its use except in the rare situation where you know that Omicron is not involved. As I mentioned there are some isolated situations in health care when we know that isolate is not an S gene target failure and where it might still be reasonable to use one of those monoclonal antibody products. Other than in that situation, sotrovimab is the only monoclonal antibody that we would use with COVID-19 caused by the Omicron variant.

• Remdesivir:
  o Remdesivir was approved by the FDA earlier in the pandemic for the treatment of hospitalized patients with moderate-to-severe COVID-19. Based on recent data, including a publication in the New England Journal of Medicine, we are recommending the use of remdesivir in outpatients with mild-to-moderate COVID-19 with similar indications essentially to the monoclonal antibodies. Where the recommendation for remdesivir differs is it went out to seven days, not 10 days as for the monoclonal antibodies. Otherwise, similar indications. Remdesivir needs to be given as a series of three intravenous infusions, three daily intravenous infusions of 200, 100, and 100 milligrams. Remdesivir is really highly effective, close to 90% effective in preventing severe COVID-19 outcomes and deaths. It is another option that's available to us realizing that there are logistical difficulties in administering an intravenous product over three days.

• Oral antivirals:
  o Paxlovid, which is the Pfizer product. Paxlovid looked in clinical trials to be quite highly effective (similar to the monoclonal antibodies or remdesivir in efficacy) but administered orally. The major limitation is availability. Supply is likely to be constrained at least through January. The other complexity with Paxlovid is the drug interactions. It is a boosted protease inhibitor. There is online guidance which spells out the drug-drug interactions. Because it's only given us a five day course, there are workarounds in many situations. For example, some drugs can be held safely for five days, but in other situations we aren't able to. For example, patients who are on Plavix is one area where there is drug-drug interaction that could be serious and something that we need to look for. I would urge you to look at the fact sheet for Paxlovid to see the numerous drug interaction profiles and contraindications.
  o Molnupiravir is the other oral antiviral that is currently available. This is Merck and Ridgeback’s oral therapeutic. It is similarly indicated for mild-to-moderate COVID-19 in patients at risk of progression to severe disease within five days of disease. This drug is a nucleoside analog, and it is reasonably safe to administer although there are cautions around possible mutagenicity of
this drug. It does interact with mammalian DNA. Certainly, it shouldn't be used in pregnancy and there's cautionary language about even using it in people who are anticipating on becoming pregnant. Molnupiravir is considerably less effective in the clinical trials (only about a 30% overall efficacy). However, it is still something that we can offer people to prevent serious illness ad it’s more available than Paxlovid at this point. It is meant to be used in patients who would be indicated for antiviral treatment, but for whom other antiviral treatments including monoclonal antibodies and Paxlovid aren’t available.

COVID-19 Hospitalization Update

Ms. Milesky:

- Massachusetts is experiencing a heightening of constraints among our acute care facilities across the Commonwealth. COVID-19 hospitalizations today jumped by 151 with overall COVID-19 hospitalizations just under 2,400. ICU hospitalizations jumped today by 39 to 441.
- The state is working to try and support our hospital systems including a deployment of the Massachusetts National Guard. This is a deployment of the non-medical branch of the guard. There are currently 360 guard personnel who have been positioned in both acute care hospitals, as well as in some state-run facilities and a contingent of guard members who have been deployed to EMS agencies to assist with facility transports. You may be aware that constraints at the EMS level have trickled into hospitals when transport can't be facilitated. DPH has had tremendously good positive feedback from both hospitals and EMS about this deployment. It is a 90-day deployment. They will be with the hospitals and the EMS agencies until mid-March. DPH is working closely with the hospital's, EMS agencies and the guard to be able to support the coordination of this effort.
- Elective procedure restrictions are in place. In addition, there has been a softening of the ICU staffing ratios to allow for redeployment of some staff within hospitals.
- Massachusetts is currently at Tier 4 of the hospital resurgence guidance, which means that we are meeting regularly to support load balancing across the state and working with hospitals on a daily basis to be able to identify where there might be either med-surg, community or tertiary care ICU beds for hospitals who need to send patients.
- Therapeutics allocation:
  - Both oral antivirals are being controlled by the federal government. Massachusetts receives a biweekly allocation. Demand far exceeds the supply. For the two oral antivirals, DPH is providing supplies to 17 community health centers across the Commonwealth, as well as our three contracted infusion sites and six hospital infusion sites.
  - DPH also has some small supplies of molnupiravir and sotrovimab, which is also in federal control. Sotrovimab is now the only monoclonal being provided to infusing healthcare providers now. Demand is also far exceeding supply.
  - DPH encourages providers to look at Remdesivir as a potential monoclonal antibody. Remdesivir is not currently in the federal allocation rather is available on the commercial market.

Responses to questions provided in advance of the call:

**Question: With hospitalizations continuing to rise, which populations are ending up in hospital and/or dying?**
Dr. Madoff: The population that is ending up in the hospital and in our intensive care units and on ventilators is the unvaccinated and huge over proportion to their percentage in the population. Being unvaccinated is a huge risk factor for hospitalization and serious outcomes, and that is who we are seeing in our hospitals.

Question: The current surge is resulting in healthcare workforce (HCW) challenges. The number of callouts/sick calls is crippling several system’s abilities to provide care. What can be done to help ensure enough HCW at every level to care for patients?

Dr. Madoff: The surge in hospitalizations has been throughout the Commonwealth, in all parts of the state, in all of our health care systems. We are well aware of that, and we are seeing a dramatic impact. As you know, state issued similar guidance to the CDC in terms of return to work for health care workers. It allows health care workers with COVID-19 to return to work after a five day isolation period. DPH had a strong recommendation in our acute care hospitals that health care workers be tested at, or after, day five prior to return to work. In our non-acute care health care settings, it is strongly recommended that health care workers be tested at least with an antigen test prior to return to work. That is, of course, to safeguard both our health care workers and our patients who are vulnerable populations who could be exposed. We recognize that using PPE in the health care environment protects both our patients and our staff. But it’s not 100% and it is layered on to all of the other safeguards that we put in place, including testing when health care workers return prior to the 10 day isolation period that we've required. Hopefully that shortening of the isolation requirement will help get at least some health care workers back. The state has also brought the National Guard in as well as other measures to try to improve our health care workforce.

Question: Can DPH walk us through the new 5 day CDC isolation guidance and recommendations?

Dr. Brown: The CDC put out their new guidance in a press release on December 28. Today, they put out clarifying guidance. We are still reviewing and figuring out exactly how we are going to implement the guidance in Massachusetts. Essentially, they have done one very good thing, which is to align the time frames for isolation and quarantine both to 10 days with an option to get out early at five days with masking. People with COVID-19 should isolate for 5 days and if they are asymptomatic or their symptoms are resolving (without fever for 24 hours), follow that by 5 days of wearing a mask when around others to minimize the risk of infecting people they encounter. Additionally, CDC is updating the recommended quarantine period for anyone in the general public who is exposed to COVID-19. For people who are unvaccinated or are more than six months out from their second mRNA dose (or more than 2 months after the J&J vaccine) and not yet boosted, CDC now recommends quarantine for 5 days followed by strict mask use for an additional 5 days. Individuals who have received their booster shot do not need to quarantine following an exposure but should wear a mask for 10 days after the exposure. For all those exposed, best practice would also include a COVID-19 test at day 5 after exposure. If symptoms occur, individuals should immediately quarantine until a negative test confirms symptoms are not attributable to COVID-19. If you cannot mask for the remaining five days of a 10-day isolation or quarantine period that you should isolate, or quarantine for that entire 10 days as opposed to doing masking. DPH will be putting out specific Massachusetts guidance on this very soon.

Question: What is the best use of at-home antigen testing and what do the results mean?

Dr. Madoff: That’s complicated and also complicated by the shortages of antigen tests. I think the most important message that I want to get out here today is that when someone tests positive on an antigen test, the positive test indicates the presence of SARS-CoV-2 and does not require additional testing to confirm it. A positive test is a positive test, and that we are urging people to act on the basis of that test,. Positive patients should isolate using the now shortened isolation guidance as put forth by CDC. I think how you interpret a
negative test depends on the clinical situation. Antigen tests are not as sensitive as a PCR. Certainly, if we have someone who we suspect to have COVID-19 and their antigen test is negative, that is a situation where we would follow an antigen test with a PCR. Antigen tests are useful in the healthcare setting for return to work. We've been using them in the school setting to help deconvolute the pooled testing and also for the test and stay program. We have the most experience with the BinaxNOW antigen test, but what we're seeing I think across the spectrum of rapid antigen tests is that a positive is likely to represent a true case and we should act accordingly.

Dr. Brown: I just wanted to add one thing about antigen tests. There was a press release from FDA talking about that there may be a loss of sensitivity in antigen tests at detecting Omicron. I want to put that a little bit in context. The FDA routinely tests EUA-approved tests, both PCR and antigen, as new variants emerge, and they have several different tiers of testing that they go through. The first set of tests that they did with antigen tests and Omicron suggested that there was no loss of sensitivity, and then the second round suggests that there was some loss of sensitivity. All of this is very preliminary, and I think we all need to remember that loss of sensitivity does not mean that it's not capable of detecting the variants. One of the things that has become increasingly clear is that when antigen tests are positive, that is strongly correlated with the ability of that person to actively transmit at that time. When antigen tests are not detecting virus either earlier in infection or late in infection when viral loads are going to be lower, that that likely correlates with decreased ability of that person to transmit. So, I think it's important that we maintain our confidence in the way antigen tests work with COVID-19. They are a really important tool in many settings, as Dr. Madoff mentioned, and I think they are going to become increasingly important and perhaps almost the primary way that testing gets done in the future. We need to continue to promote the use of antigen tests to the extent the supply allows.

Question: Does DPH have insight on the supply of at-home tests and where they should be prioritized? Should they be given to first responders or health care workers?

Ms. Milesky: I do acknowledge that the demand has made accessing the at-home tests a real challenge. We do work through our state cache, and we have some very, very small supplies of at-home tests. We really look to the BinaxNOW kit and provide them as our guidance dictates to community health centers, community hospitals, long-term care, and other facilities.

Responses to questions asked during the call:

Question: Could you comment on the current thinking or recommendations for switching brands of vaccine, the third, or even our fourth booster when that happens?

Dr. Madoff: The last iteration of booster recommendations from CDC, based on reasonable though limited data, is that either mRNA vaccine can be used to boost the other mRNA vaccine. Similarly, an mRNA vaccine can be used to boost a prior dose of Johnson & Johnson. I think the data support that adequately, and I think that it has continued to be borne out in experience as well is that there is some pretty similar effectiveness of either of the available vaccines for boosting. I would actually say that data looking at a second Johnson & Johnson vaccine also look very good.

Follow-up: I see many more physicians that I know who've had two Pfizer's are getting a Moderna. I'm not really aware of too many who have had two Moderna’s getting a Pfizer. Any thoughts about that?

Dr. Madoff: I don't. There was a suggestion in some of the studies that Moderna boosting had a slight increase in neutralizing antibody titers. Beyond that, I think that we, and the CDC, have not made a recommendation. Either mRNA vaccine is acceptable in that context.
**Question:** Does the Department of Public Health have a plan to update providers as we get more allocations of Paxlovid and Molnupiravir? I know that it's going to a few community health centers. Will only providers at those community health centers be able to prescribe it? I know a lot of it's changing all at once, but I wanted to know if there's plans to be a similar website like the antibody allocation website on DPH website.

**Ms. Milesky:** This is changing really quickly. Right now, we have both publicly available and private sites. The private closed sites or community health center sites have limited oral antivirals available for their patient panels. Our state contracted sites and the other infusion sites are open for referrals from providers. We are just getting that process underway. Please watch for some additional information.

**Question:** Is there a mechanism of action which is distinctly different from the antiviral being used right now for COVID-19 and the traditional antivirals such as Valtrex? Do we know if Valtrex would work?

**Dr. Madoff:** I'm not a virologist, but Valtrex is an antiviral that is specific to herpes viruses, DNA viruses, and it would be unlikely that it would be effective. It would be hard for me to believe that someone hasn't tried it, but it is not a class of antiviral that is likely to be effective against SARS-CoV-2, which is an RNA coronavirus.

**Question:** Do we know the percentage of Omicron versus Delta in the severe respiratory dependent cases? Does the type of variant affect the treatment course or timing? Do we know whether Omicron also leads to long COVID-19 syndromes? Does treatment change or prevent long COVID-19 symptoms?

**Dr. Madoff:** Omicron is so new that we are really still in anecdotal phases of understanding it. Laboratory data, which we have a little of, and looking at antibody effects there's good reason to support the use of sotrovimab. The antivirals appear to retain efficacy against Omicron. Evidence is accumulating that Omicron causes milder illness. It has become clearer with time that perhaps different constellations of symptoms are seen more commonly with Omicron than with Delta, and perhaps, the precursor variants and the Wuhan strain. There is evidence to support those differences. Clearly, Omicron has not been around long enough to understand an association with long COVID-19 and whether that differs. What I hear from my clinical colleagues, and you are probably more attuned to this than me, is that more of the severe cases and ICU cases that we are currently seeing are due to Delta, and I think that's consistent with Omicron causing milder illness. If this virus is like other viruses, there's going to be a spectrum of response and illness that's caused by it just as there is, for example, with influenza. Some certain strains of influenza tend to cause different ranges of illness, but there continues to be outliers in every spectrum. We will continue to see severe outcomes due to Omicron perhaps hopefully at a lower rate. I don't think we have nearly enough data to have much certainty yet with any of the questions that you asked.

**Question:** I know the CDC updated isolation guidelines just came out, but will the DPH be discussing the change with the Department of Elementary and Secondary Education (DESE)? It's pretty concerning that children are going to school day six and likely taking their masks off for lunch and not able to continue masking for those five of the 10 days.

**Dr. Brown:** We are definitely having ongoing conversations with both DESE and the Early Education and Child Care programs to go over all the details of how to implement very complicated guidance in different settings.

**Question:** I don't know if many of you are facing the same thing as my community healthcare clinic. A lot of people are questioning which are better masks. We hand out new surgical masks, but they're asking about K95 masks. I'm not aware of any formal guidance that have studied surgical masks versus K95, but I wanted to ask if you had any guidance to offer?
Dr. Madoff: We hear the same concerns from healthcare workers across the continuum of healthcare settings. DPH has issued guidance on PPE in healthcare settings, and the recommendations are for the use of a respirator in settings where there's either a suspect or known COVID-19 positive case that you're encountering. We also recommend eye protection in that setting, which can be either goggles or face shield. K95s kind of live in a Netherland They are generally thought to have somewhat better filtering characteristics than a regular face mask, but clearly, are not the same as a fit-tested N95 mask. We have not issued guidance on those specifically. We are constantly looking at data and evaluating that, but at this time, we are just recommending surgical mask and eye protection for general healthcare setting.