TOWN OF MEDFIELD
MEETING
NOTICE

Posted:

Town Clerk

Posted in accordance with the provisions of MGL Chapter 39 Section 23A, as amended

Due to the COVID-19 emergency, this meeting will take place remotely. Members of the public who wish to view or listen to the meeting may do so by joining via the web, or a conference call.

1. To join online, use this link:
   a. https://zoom.us/j/91434226365?pwd=aDNKaTBoTFhyZUNFTFdwVVVlN0Q5Zz09
   b. Enter Password: 954607

2. To join through a conference call, dial 929-436-2866 or 312-626-6799 or 253-215-8782 or 301-715-8592 or 346-248-7799 or 669-900-6833
   a. Enter the Webinar ID: 914 3422 6365
   b. Enter the password: 954607

Board of Health Revised
Board or Committee

PLACE OF MEETING	DAY, DATE, AND TIME
Remote Meeting held on Zoom	Monday, July 27, 2020 at 7:30 pm

Agenda (Subject to Change)

Call to Order

Update on School Building Reopening with Superintendent Marsden

COVID-19 Status Update/Operations

Briefing note: School Reopening and Physical Distance

Prepared by Stephen Resch for Board of Health discussion 7/23/2020

Disclaimer Note from Stephen Resch:

This is not a statement of the collective Board of Health. It is my 'working document' on this issue. The opinions in it are those of just one Board member at the current point in time. The 'fact' statements I put forth are subject to correction (I may have made mistakes in my reading of the evidence) or revision (the evidence base is growing daily). The 'opinion' statements I have made here should also be considered tentative. They are also subject to change as new information emerges, and through deliberation with other Board members, school staff, students, parents, and other stakeholders in our community who have a different sets of technical expertise, and experience than me which I look forward to learning from.

By training I am a decision scientist. My work focusses on conducting analysis to inform--and hopefully improve-- clinical and public health policy decisions, maximizing health and social outcomes in situations where there are multiple competing objectives, various feasibility constraints, and data uncertainties. So, my approach to this issue is one that focuses on public health impact broadly; not only COVID19 risk to students, school staff, and Medfield residents, but also other health/social/economic tradeoffs associated with different models of school reopening.

Summary of key conclusions

1. 3' physical distance between children with face coverings is probably a reasonable minimum standard for Medfield at current low level of community transmission in Norfolk County (<10 cases per 100K population reported daily) and when combined with other measures (masks, hand washing, sanitizing surfaces, ventilation/air quality)
2. A 6' minimum would be marginally safer from a covid transmission risk standpoint, but has substantial negative (health and non-health) trade-offs if it necessitates a hybrid model.
3. Schools should use all feasible strategies (e.g. repurposing large common areas as classroom space)-- short of moving to a hybrid model-- to increase the minimum physical distance (toward the 6' benchmark) between children with face coverings indoors.
4. The physical distance between adults and students should be at least 6'
5. The physical distance between any 2 unmasked persons should be at >10' distance when indoors (this pertains to mask breaks), unless a physical divider (e.g. plexiglass) is present (e.g. during meals). The duration of mask breaks and meals should be reasonably short.
6. If DESE or School Committee decides on 6' minimum—requiring some remote learning for some students -- a solution for Medfield that prioritizes full in-person for at least K-5 (or at very least K-3) and restricts hybrid model to older students has lower health risk and substantial educational and social/economic benefit.

Highlight of key facts influencing guidance

1. Risk is a function of community incidence rate, child age, proximity, exposure time, features of indoor air quality and circulation, and use of face covering
2. Risk of transmission from children under age 10 is half the rate for persons older than 10
3. Risk diminishes exponentially with increased distance
4. Breathing respiratory droplets of an infected person is the main mechanism of COVID transmission (~90% of transmission), compared to transmission from contaminated surfaces.
5. Community incidence rate in Medfield and Norfolk county is currently very low
6. Risk of serious COVID illness, conditional on infection, is greater for adults
7. Risk indoors is far higher than outdoors
8. Risk is greater in indoor spaces and when ventilation/air quality is poor
9. For an infected person, wearing a face covering does reduce the risk of transmitting to others
10. For an uninfected person, wearing a face covering may reduce the risk of being infected
11. At any given time, it is not possible to know exactly who is or is not infected with COVID
12. In-person education is more effective than remote models, especially for younger students
13. In-person education is an important factor in enabling parents to work, especially for younger students

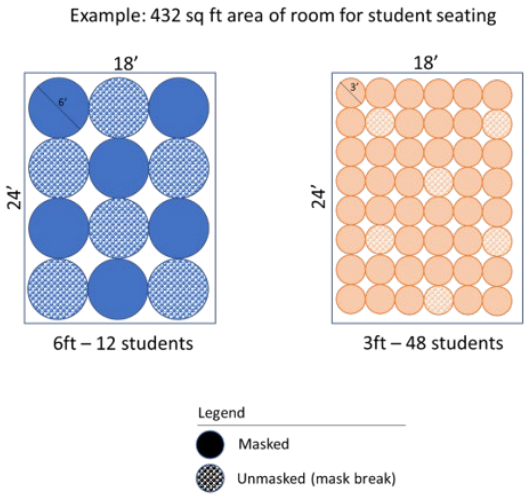
PHYSICAL DISTANCE

On the minimum standard for physical distance, my reading of the scientific evidence to date (from schools in other countries with higher levels of community spread that is currently present in Medfield that implemented a 1 meter rule and also evidence from day care settings), is that **3' is a reasonable minimum** where masks are in near-constant use and where community incidence rate is low and indoor ventilation is good (and where frequent handwashing/sanitizer, and routine disinfection are being practiced). However, given the uncertainties of the science, plus uncertainties about the level of compliance with other precautions (proper use of face coverings, etc), a larger physical distance benchmark (e.g 6') would be better. Notably, the US CDC and the Harvard Healthy Buildings guidance and even DESE all say 6' is preferable. The studies behind this show that it is a continuum with diminishing returns, so 3' is much better than 2', 4' is better than 3', 5' is a somewhat better than 4', and 6' is a little bit better than 5'. Most of the safety benefits are achieved at 3', but there appears to be some additional benefit of greater distancing, where possible.

These physical distance guidelines do not mean that two people can never come within that minimum buffer zone (whether its 3 or 6 ft). Incidental breaches of that buffer zone between people is OK if brief and infrequent. Transmission risk comes from "close contact" --- e.g. for contact tracing purposes, this is defined as within <6ft for more than 10min. If two people wearing masks in a well-ventilated area are within <3ft of each other for a 15 seconds in passing that's not too risky.

One notable advantage of 6' vs 3' is that it makes "Mask Breaks" less risky, and would perhaps enable more frequent or longer duration mask breaks. In the stylized example below, I am assuming that kids taking mask break should be 12' apart. In a 6' spaced class with 12 students, 50% could take mask break at one time. In a 3' spaced class, only 12.5% (6/48) could take a mask break simultaneously, so over the

course of day, students would have less mask-free time. (I don't know what the specific guidance will be on mask breaks, but this basic logic would still be true: more physical distance enables more mask-free time).



Lastly, with K-3 (kids under 10) the transmission risk to adults is lower (by half), so a nuanced guidance could allow smaller minimum physical distance for that age group, but require more physical distance for 4th grade and up. Something to consider.

FOCUSSING IN ON RISK *TO TEACHERS/STAFF*

One final thought on physical distance and risk to teachers/staff. We know that children are at very low risk of having serious health complications from COVID, but the same is not true for all teachers. I would definitely strive to identify the especially high-risk teachers (e.g. with underlying health issues) and try to assign them to lower risk situations (remote learning support, or giving them the less dense/better ventilated classrooms.

Also, from a teacher-risk standpoint, the first-order concern on physical distance is **how far the teacher is from the kids**, *not how much space is between the kids*. So I would definitely advocate teachers keeping a 6' distance from kids (even if kids are 3' ft apart from each other). That should be pretty easy to achieve in any classroom. From a teacher risk standpoint, arguing that space between students should be larger is not so compelling. Yes, its true that if kids are closer together, COVID is more likely to transmit between them, and if COVID spreads between kids it does ultimately increase risk to teachers (and other adults). However, adults can substantially protect themselves by staying 6ft away from kids (and doing all the other safety precautions).

Overall risk to school staff is a function of a lot more than just physical distance. Classroom transmission risk is a function of the following (in approximately* this order— *I am asking some expert colleagues at work to vet my ranking):

- Baseline community incidence level (#1 factor for sure)
- Amount of mixing of kids between classrooms (recess, bus, community)
- Total number of kids in a class
- Child age (<10, 10+)
- Ventilation/air quality,
- Physical distance
- PPE/handwashing
- Sanitizing surfaces

MASK BREAKS and MEALS and OUTDOORS

A larger physical distance than 6' ---probably at least 10'—should be minimum between 2 people not wearing face coverings. Also the duration of the breaks should not be longer than necessary. I would suggest not more than a total of 90 minutes time unmasked indoors over the course of a day. I would suggest mask breaks only for those present in the building for more than 2 hours. Persons who can do mask breaks outside (staff) should do that. Accommodations should be made for people with special needs (can't wear face coverings, but the bar should be set HIGH for this --- e.g. a relevant documented medical diagnosis – possibly with some greater flexibility/allowance given for younger kids PK-1).

During meals where children are eating and near other children eating indoors, even a 6' distance is really not ideal. The distance could be increased to 10' by staggering the group of students eating. An alternative would be to use a plexiglass barrier, and keep mealtime short. Eating outside would be a good idea to consider as well.

Outdoors risk is much lower. One could consider a shorter physical distance standard when outside, or consider allowing face coverings to be removed if persons are at 6'+ distance.

VENTILATION/ AIR QUALITY

Where ventilation/air filtration is good (frequent air changes/large fraction of well filtered or outdoor air) and humidity is controlled, transmission risk is reduced. If you can assure a high level of air quality, then the marginal benefit of increasing physical distance is not as large. If schools were to assess the ventilation and air quality in each room of the school system, they may be able to determine whether a minimum of 6ft is more or less important. For example, if you have MERV13 or higher filtration on HVAC and an adequate rate of air flow, or the ability to let in ample outside air, and the ability to keep humidity in the 40-60% range, then a physical distance of 3' would not be creating much added risk compared to 6'. In contrast, in a "stuffy" room (no windows, inadequate HVAC), a 6' minimum physical distance would be important. By identifying "problem" rooms, they could potentially mitigate with portable air filtrations and dehumidification systems. In a classroom occupied with students, CO_2 less than 1000 ppm indicates an adequately ventilated room (that's something they could monitor).

Question for school department:
Are there building specific problem areas in terms of space or air quality that need mitigation?

ASSESSMENT OF PHYSICAL SPACE

School department determined that after considering alternative classroom spaces like gyms, cafeterias, park&rec, a physical distance of 3ft is possible in all buildings, and 4ft is possible in most if not all. However, not all students would fits with 5ft 6ft rule. Its worth looking at the figures on Page 3. The relationship between the physical distance rule and the number of kids that fit in a room is not linear. Because of geometry, seemingly small increases in physical distance rule greatly reduce the number of students that fit in a given space.

Questions for school department:
I wonder how close the schools can get to meeting the 6ft benchmark. At 5ft or 6ft, how many kids don't fit (by building)? What is the most physical distance (in each building) that is feasible with all kids present? I'd love to know these data, because it has implications for alternative hybrid models that prioritize younger kids being in-person.

Also, I am very interested to know how many students are expected to need to be in-person all the time for reasons of being in-region teachers' kids, or having special needs, as well as how many students have health issues that require more intense COVID risk protection (eg immunocompromised)

Overall, in my opinion, from what I have reviewed, I would be personally be comfortable teaching in a school that had only a 3' physical distance, *if* community incidence rate remains low (<10 new cases per 100K population per day in Medfield and <25 new cases per 100K per day in Norfolk), the incidence of COVID cases among students in my building remained very low, the ventilation/air quality situation was very good, and if the implementation of all other safety protocols around masks, movement/transfers, etc achieved very high compliance. That said, I would still strive to stay at a >6ft distance from my students. And, each additional foot of physical distance between students, up to 6', undoubtedly provides an additional incremental risk reduction, and allows a little 'buffer' for imperfect compliance with other safety protocols.

BASELINE RISK (COMMUNITY SPREAD)

A really important consideration when assessing risk associated with physical distance, besides compliance with other safety protocols around masks and ventilation, is the baseline risk level --- the case incidence in the community. In Medfield, and Norfolk country (at least right now), this is LOW. Norfolk County (population 707,000) is reporting about 30 new cases a day (4.6 new cases per 100K population daily). Harvard Global Health Institute (HGHI) defined color coded risk levels, and Norfolk is in the middle of the "yellow zone" of 1-10 new cases per 100K. Medfield is right now actually in the "green zone" of less than 1 case per 100K population daily (or for a small town of 13,000 like Medfield, you can think of it as less than 1 new cases reported every 7.6 days). HGHI recommends all schools open for communities in green zone, and recommends prioritizing younger grades for opening for communities in yellow zone. My point here is that right now, the underlying risk is low enough for reopening. In fact, even if the case rate of Norfolk was 6 times higher (10-25 daily cases per 100K pop), HGHI still recommends having schools opened for K-8 (document attached).

ALTERNATIVE HYBRID MODELS

If there is a situation where school department is required to (or decide to) adopt a physical distance standard which cannot fit all students in the buildings, then I think the best approach is to prioritize full-time in-person model for at least K-5 (or K-3 at very least), and K-8 if possible, and then do a hybrid model with some remote learning for older ages. **I would strongly advocate allocating whatever building space is needed to achieve full-time in person K-5 (or very least K-3), and then based on what space is left, develop a hybrid plan for the older age kids**.

This is why:

- Younger kids are much harder to teach remotely (not my area of expertise, but I am pretty sure this must be true)
- Younger kids probably benefit most from in-person school not only in terms of education, but also *socialization* since they are still learning basic social skills, and also cannot leave their house independently to see friends outside of school, or use online ways to socialize with friends.
- It is harder for parents to support the remote learning of younger kids
- Younger kids pose less risk to teachers' health, since less likely to transmit COVID.
- Younger kids are the ones that parents need 'day care' for so they can go to work.
- Younger kids rely most heavily on the school system to catch issues like domestic abuse.
- Younger kids do not mix or change classrooms nearly as much as older kids. Therefore, if there IS a COVID case in a class, the number of others potentially exposed will be smaller, and it will be much easier to contact trace and mitigate.
- Older kids already have devices and tools like Google Classroom, infrastructure/tech skills for remote learning.
- Teachers of middle/high school have more tech support staff and more experience using technology in teaching (e.g. Google Classroom / ASPEN), so better situated to take that on.

Another advantage of this approach is that a smaller portion of the total teaching staff has to deal with adapting to a hybrid/remote teaching.

END