School and preparedness officials' perspectives on social distancing practices to reduce influenza transmission during a pandemic: Considerations to guide future work

Laura J. Faherty[a,b,*], Heather L. Schwartz[c], Faruque Ahmed[d], Yenlik Zheteyeva[d], Amra Uzicanin[d], Lori Uscher-Pines[c]

[a] RAND Corporation, Boston, MA, United States of America
[b] Boston University School of Medicine, United States of America
[c] RAND Corporation, Arlington, VA, United States of America
[d] Division of Global Migration and Quarantine, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, GA, United States of America

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ABSTRACT

The objective of this qualitative study was to explore the perspectives of school and preparedness officials on the feasibility of implementing a range of social distancing practices to reduce influenza transmission during a pandemic. In the summer of 2017, we conducted 36 focus groups by teleconference and webinar lasting 90 min with school and preparedness stakeholders from across the United States. We identified and characterized 11 themes arising from the focus group protocol's domains as well as unanticipated emergent themes. These themes were: the need for effective stakeholder communication, the importance of partnering for buy-in, the role of social distancing in heightening anxiety, ensuring student safety, how practices work in combination, challenges with enforcement, lack of funding for school nurses, differing views about schools' role in protecting public health, the need for education and community engagement to ensure consistent implementation, the need for collaborative decision-making, and tension between standardizing public health guidance and adapting to local contexts. Addressing several crosscutting considerations can increase the likelihood that social distancing practices will be feasible and acceptable to school stakeholders.

1. Introduction

Social distancing refers to actions to reduce the number and duration of contacts and increase the physical distance between individuals to slow the spread of a communicable disease (Qualls et al., 2017). Separate from hand hygiene and use of personal protective equipment such as facemasks, social distancing practices include actions that create more space between students in classrooms and hallways; canceling activities that bring students into close contact (e.g., assemblies, field trips), and others. Social distancing practices implemented in the early phases of influenza pandemics can buy critical time to develop vaccines and relieve pressure on overburdened healthcare and public health systems. Schools represent important settings for social distancing, as practices that promote social distancing may protect vulnerable children and limit secondary transmission to adults in their households and communities. Schools also represent a challenging setting for social distancing, as multiple stakeholders with different needs (e.g., teachers, administrators, parents, students, public health departments, state and local governmental agencies) are involved. In addition, schools may be under-resourced, with many competing priorities. Research and guidance on social distancing in US schools have focused on school closure (Qualls et al., 2017). While pre-emptive coordinated school closures have proven effective in slowing influenza transmission and may be recommended as a community mitigation measure during pandemics, the feasibility, acceptability, and effectiveness of other, potentially less disruptive, social distancing practices need to be assessed (Jackson et al., 2014; Jackson et al., 2013).

As part of a project examining the feasibility and acceptability of social distancing practices in US K-12 schools (i.e., kindergarten through 12th grade, or the end of secondary school) during a severe pandemic to decrease influenza spread before many students become ill, we conducted focus groups with education and public health

Table 1
Categories of focus group participants in a study of social distancing practices in US schools, conducted by teleconconference in the summer of 2017 (N = 158).

Categories of participants	N
Superintendents	27
Principals	18
Teachers	12
School nurses	15
State school nurse consultants	8
District transportation directors	3
State health pandemic planners	12
School safety representatives	9
Other (e.g., district director of technology, district school health coordinator)	54

stakeholders from across the US. In this article, we present perspectives of school and preparedness officials on the feasibility of implementing a range of social distancing practices.

2. Methods

2.1. Participants

In the summer of 2017, we conducted focus groups with education and public health officials via webinar. Participants were an intentionally heterogenous sample, representing all 10 US Health and Human Services (HHS) regions (Health Quality O, 2017) and both primary and secondary school settings. Table 1 shows the participant categories.

We assembled a purposive sample of participants by searching professional association websites (Appendix 1) and Lexis Nexis and conducting snowball sampling with focus group attendees. On professional association websites, we searched for member lists, conference attendees, and association leaders. In Lexis Nexis, we identified school leaders who were quoted in the media about emergency preparedness.

2.2. Focus groups

Six moderators trained in qualitative methods conducted 36 focus groups using a semi-structured protocol. Using a limited list of potential practices from the literature as a starting point (Uscher-Pines et al., 2018), participants were asked to brainstorm additional practices that could be implemented in K-12 schools and discuss barriers to and facilitators of implementation (Table 2). Focus groups considered two categories of practices: those that could be implemented within a normal school schedule ("within-school practices") and those that would be implemented through an altered school schedule ("reduced-schedule practices"). Without specific prompting, participants frequently described issues that apply across social distancing measures. Because this manuscript focuses on broad implementation considerations relevant to public health, barriers to and facilitators of specific practices are out of scope for this manuscript.

Participants were contacted via e-mail and offered a $50 gift card as an incentive. Focus groups were recorded and transcribed after informed consent was obtained. RAND's Institutional Review Board approved this study.

2.3. Analysis

Standard qualitative analysis techniques, consisting of both inductive and deductive approaches (Braun and Clarke, 2014), were used to identify and characterize instances of themes arising from the domains covered in focus group protocols as well as unanticipated themes that emerged. Two coders read each transcript and independently marked themes with codes. To ensure coders interpreted the data similarly, we (1) developed descriptive and precise codebooks giving

Table 2
Within-school and reduced-schedule practices discussed by focus group participants in a study of social distancing practices in US schools, conducted by teleconconference in the summer of 2017.

Within-school practices
Classroom
Rearrange desks to increase space
Limit group work
Institute home room stay
Restrict student movement in class
Separate classes into smaller groups and repurpose other spaces in the school
Move class outdoors
Hallway and bathroom
Restrict hall movement
Limit bathroom use
Limit congestion during arrival and dismissal
Staffer class start and dismissal times to reduce load in the hall
Schoolyard and recess
Segregate recess area by class
Stagger recess times
Shorten or cancel recess
Encourage solo physical activity
Cafeteria
Shut down cafeteria; eat in class
Segregate cafeteria by class
Shorten and stagger meal times
Other
Cancel field trips
Cancel assemblies
Limit non-essential staff and visitors
Educate students and families to maintain distance
Restrict use of congregation spaces
Reduce congestion in health office
Cancel classes with high rates of mixing
Cancel cross-school transfer for special programs

Reduced-schedule practices
Short school week
Short school day
Dismissal of one grade
Dismissal of one class

clear meaning to each code; (2) performed pre-analysis intercoder agreement checks in which all coders read the same text, coded independently, and discussed areas of disagreement; and (3) performed regular supervisory reviews of the analysis. We identified crosscutting themes that applied to multiple school practices in two ways: 1) participants specifically noted that an issue or challenge applied to a broad range of practices, and 2) the same issue or challenge was mentioned in the context of three or more practices. We used Dedoose qualitative research software for data handling, coding, and thematic analyses.

3. Results

A total of 158 individuals participated in 36 focus groups, ranging in size from 2 to 7, with a median of 4 participants.

Participants highlighted many common considerations around the practical implementation of social distancing practices shown in Table 2. From these, we identified 11 themes, grouped into five categories related to communication, protecting students, requirements for additional resources, the role of schools in a public health emergency, and decision-making (Table 3). They represent both barriers to implementation as well as potential facilitators, such as resources needed to effectively communicate about or enforce a practice.

3.1. Communicating with diverse stakeholder groups to secure buy-in

Theme 1. "Communication is huge": Transparent and effective communication with all stakeholders is critical.

Table 3

Themes arising from focus group discussions in a study of social distancing practices in US schools, grouped by broad category.

Communicating with diverse stakeholder groups to secure buy-in
Theme 1: "Communication is huge": Transparent and effective communication with all stakeholders is critical.
Theme 2: "We would have a lot of convincing to do": Schools must partner with parents and teachers to obtain necessary buy-in.

Mitigating adverse impacts on students
Theme 3: Social distancing practices can have negative impacts on mental health, social development, and students receiving special services.
Theme 4: Ensuring student safety is critical.
Theme 5: Consider the impact of combining different practices.

Additional resource requirements
Theme 6: Enforcement is challenging and requires additional resources.
Theme 7: Lack of funding for school nurses hinders schools' ability to implement social distancing measures.

Role of schools in a public health emergency
Theme 8: It is challenging to reconcile different views about the role of schools in protecting public health.
Theme 9: Strong partnerships across the education and public health sectors are needed to ensure behaviors continue beyond school settings.

Decision-making
Theme 10: Decisions regarding social distancing should be made collaboratively.
Theme 11: There is tension between standardization of public health guidance and flexibility to adapt to local contexts.

The need for transparent and effective communication with various stakeholders came up repeatedly during focus groups. Each of the social distancing practices requires efficient communication mechanisms to families, students, and staff, especially for last-minute decisions such as canceling an assembly or field trip.

One participant described direct experience communicating with parents and offered some lessons learned:

We went through air quality issues here in the beginning of the year, and although it's not a pandemic, it was something that we had to communicate with the…community almost daily…You just have to be very transparent and…overcommunicate, because in a time of crisis like we went through, with the mold in our schools, we talked with our parents every single day via e-mail or via a recorded message or community meeting. And I think that helped to keep it under control because…the parents were informed. They felt like they understood the situation, [and] they had control over the situation.

Participants warned that schools and districts should assess their ability to consistently reach all the necessary stakeholders before implementing social distancing practices. For example, some districts struggle to maintain current contact information for the parents and guardians of certain populations of students (e.g., homeless, those who move frequently) and may not communicate in the full range of languages spoken in the community.

Theme 2. "We would have a lot of convincing to do": Schools must partner with parents and teachers to obtain necessary buy-in.

A common theme in focus group discussions was the importance of (and challenges with) parental buy-in for many social distancing practices. One participant warned that parents will claim government overreach with social distancing in an influenza pandemic, as many do with mandatory vaccinations in routine times. She summarized the sentiment as "Who are you to tell me to force my kids to get immunized?"

Participants suggested carefully explaining the larger decision-making context so parents understand that it is not just their school or district that is singled out for special treatment.

Participants representing schools called for clear talking points from public health officials that they could use to communicate with parents. They asked for sample letters using Centers for Disease Control and Prevention (CDC)-approved language to be sent home to parents explaining the rationale behind the practices. A participant said that what is needed for parental buy-in is "how to communicate the severity to the general public and to our students and our parents so that they would be willing to tolerate a less than ideal learning environment, because every single one of [these practices] is a less than ideal learning environment."

However, an unintended consequence of transparent communication with parents might be mass absences. As one participant warned:

[If] we're instituting social distancing practices…I would have mass… absences because parents would say, 'Well, if you're instituting these procedures, then my kid must be at risk of infection, and it would be better to just keep my kid at home.' We would have a lot of convincing to do [to explain why school was still in session].

Teacher buy-in was another common topic among focus group participants. As the burden of implementing many of these social distancing practices falls on teachers, participants explained that teachers must understand the rationale for them and endorse their importance. A participant summarized the issue as follows: "Whenever there is a restriction in student learning…that's pretty difficult to persuade teachers, especially those that don't understand infectious diseases, that these changes in classroom practice are really worth it." The stipulations of collective bargaining agreements that outline teacher work rules (in districts with teacher unions) came up frequently. Participants mentioned that labor unions could contest practices, such as shorter lunch periods or cancellation of recess, that cut into duty-free time (i.e., protected time during the day when teachers are not responsible for students). The desire to ensure strong labor relations was a real concern among participants.

3.2. Mitigating adverse impacts on students

Theme 3. Social distancing practices can have negative impacts on mental health, social development, and students receiving special services.

Several participants raised the issue of the impact of these social distancing practices on the anxiety levels of students (and staff), and particularly their potential to cause distress and even panic. Some of the practices aimed at limiting socializing (e.g., restricting hallway movement, encouraging solo physical activity) could lead to discipline problems or distress, depression, and feelings of isolation, and they run counter to schools' deliberate efforts to support the social, emotional, and behavioral health of their students. Participants also highlighted the importance of assessing the impact of social distancing measures, particularly those resulting in fewer instructional hours, on children with special needs and with individualized education programs.

Theme 4. Ensuring student safety is critical.

Student safety was another concern expressed by focus group participants, both general physical safety (e.g., preventing unauthorized visitors when classes are held outdoors) and meeting the needs of students with chronic medical conditions (e.g., administration of routine medications when the school nurse must also manage cases of influenza within the school).

Theme 5. Consider the impact of combining different practices.

Many social distancing practices that were discussed would likely be implemented in combination rather than in isolation. Therefore, participants noted the importance of considering the impact of a "suite," or combination, of practices. For example, while canceling recess or restricting movement during class might be perceived as feasible in isolation, implementing them together in a layered fashion would be problematic, since both limit students' opportunity for physical activity. In addition, separating students into smaller groups and restricting use of congregation spaces at the same time may not be feasible because both put demands on limited physical space within the school.

3.3. Additional resource requirements

Theme 6. Enforcement is challenging and requires additional resources.

To reduce disease transmission effectively, practices must be enforced. Schools should consider whether to use "carrot and/or stick" approaches, determine who will be tasked with enforcement, and weigh the resulting burden on staff. While some participants were optimistic that teaching students why practices are needed would help with adherence, others felt less certain that it would, especially among the youngest students or among adolescents with a strong desire to congregate with friends between classes or before and after school. Participants also repeatedly made a related point about the need for extra staff to implement most social distancing practices (e.g., additional staff would be required to enforce a rule about students remaining three feet apart and walking single file through the hall, and to be stationed near a bathroom to ensure that students were not congregating inside). It was noted that the burden may fall on temporary staff such as student teachers and substitutes, who may not be as familiar with the operation and culture of a particular school. Some participants suggested that waivers of requirements for certified teachers and temporary waivers of required background checks could increase the number of temporary staff during a crisis.

Theme 7. Lack of funding for school nurses hinders schools' ability to implement social distancing measures.

Several participants shared their concern about the lack of funding for school nurses. Underfunding often requires school nurses to work part-time or cover several schools simultaneously. Incomplete coverage affects schools' ability to conduct drills to practice these social distancing measures. One participant explained that school districts and public health departments need funding to maintain strong relationships and open lines of communication and to drill for a public health emergency. She explained, "As money dwindles, you have less opportunity to even exercise together, to keep your relationships fresh."

3.4. Role of schools in a public health emergency

Theme 8. It is challenging to reconcile different views about the role of schools in protecting public health.

Opinions vary about the proper role of schools in protecting public health, and this lack of alignment has implications for the acceptability and feasibility of social distancing (and other public health measures) in schools. On one hand, a participant said, "Schools have to be considered more than just an educational facility." For example, they provide meals to children who might otherwise not get them, and, as this participant explained, "There's an expectation of what a school represents to those families, and part of it is…full day care…maintaining safety and security of their children while they, themselves, are at work."

In contrast, other participants argued that schools have a primary mission: education. As one participant explained, "What I have to always remind my friends in public health is that the job of schools is to educate students. And absolutely, we can only educate those students that are healthy, I realize that. But we have to keep in mind that, you know, these aren't public health institutions. These are schools, and schools have to do the work of schools, and that is creating a safe learning space for students." This tension regarding the role of schools creates challenges in determining how to implement health and safety protection practices in an influenza pandemic that will affect educational quality.

Theme 9. Strong partnerships across the education and public health sectors are needed to ensure behaviors continue beyond school settings.

The need for strong partnerships across the education and public health sectors extends to a final consideration that participants framed as a recommendation. Schools should not bear sole responsibility for implementing social distancing. Participants argued that the community at large should be promoting social distancing in a manner consistent with what schools are expected to do. Participants felt that public health departments and CDC should support the same relevant practices outside of schools (at home and in the community) to reduce the spread of disease during an influenza pandemic.

3.5. Decision-making

Theme 10. Decisions regarding social distancing should be made collaboratively.

Another theme that applies not only to social distancing measures in schools, but to any public health policy that impacts people's daily lives, is determining who should make the decision to act. As noted above, it is important that the selection and implementation of practices not appear arbitrary to families and school staff. To that end, participants called for a firm recommendation from CDC or state/local public health departments for schools to point to in justifying decisions, and to clearly establish thresholds for action in advance, to increase the likelihood of acceptance.

Focus group participants warned that the decision to implement social distancing practices should not be perceived as the principal's or even school district administrators' alone. Rather, as one participant said:

> If we needed to inform the school community, [it would help] if we have that catchphrase that says, "As per recommendation from the CDC and the Department of Health," because then it's kind of like we're sharing that responsibility. We know it's best practice, but when we cancel a field trip and parents are…up in arms because their child is going to die if they don't get to that Broadway show… and we say, "You know what, it wasn't just our decision. We're doing this because the CDC and the Department of Health is recommending that we do this…," parents become a little bit more understanding because they realize we're not making the rules arbitrarily.

Theme 11. There is tension between standardization of public health guidance and flexibility to adapt to local contexts.

Focus group participants had conflicting opinions about a challenging issue in public health preparedness: finding an optimal balance between uniformity of policies versus allowing schools and districts the flexibility to adapt policies to local contexts. Some participants commented that certain social distancing practices will be more feasible in some locations than others. They cited rural vs. urban school districts, weather, and socio-demographics of the student population as factors that affect feasibility. For instance, urban school districts or those in regions with very cold temperatures may not be able to move classes outdoors, while schools in very rural areas may not be able to alter their schedules to, for example, have only some students attend in the morning and others in the afternoon, because of travel time on buses and fuel costs. It was suggested that CDC provide a "menu of options" that schools can select from and tailor to their local environments, as practices are most feasible when the decision to implement them is made at the local level.

However, participants also voiced the opposing view—that different policies and practices across schools within a district or across districts confuse families and staff. First, some families with students in multiple schools may have difficulty keeping track of the different policies. Second, the lack of alignment contributes to the perception that decisions about these social distancing practices are arbitrary rather than evidence-based.

4. Discussion

This study represents the first large-scale effort to assess the feasibility and acceptability of social distancing strategies in US schools and identify crosscutting themes relevant to implementation in US schools. It builds on previous qualitative field investigations in the 2009 H1N1 pandemic, which found that school closures were considered acceptable and feasible for most parents and caregivers, despite the fact that parents had to miss work and children did not receive free or reduced-cost school lunches as a result (*MMWR Morb. Mortal. Wkly Rep.*, 2010; Gift et al., 2010; Borse et al., 2011; Chen et al., 2011; Mizumoto et al., 2013; SteelFisher et al., 2012).

In 2017, CDC issued guidance on community mitigation strategies during an influenza pandemic, updating its 2007 interim guidance (Qualls et al., 2017; Centers for Disease Control and Prevention, 2007). The guidance emphasizes that preemptive coordinated school closures may be recommended during severe, very severe, or extreme influenza pandemics. The 2017 guidance also mentions other social distancing practices such as increasing distance between people to at least three feet (e.g., by dividing classes into smaller groups, rearranging desks, creating opportunities for distance learning), but it acknowledges that the evidence base for their effectiveness remains limited (Qualls et al., 2017). Indeed, a key direction for future research on social distancing measures other than school closure relates to their effectiveness in reducing transmission in K-12 schools. Feasibility of implementation is an important factor in prioritizing which social distancing measures warrant further study. Research conducted as part of our larger study will present results on the feasibility of and barriers to each individual school practice identified in the literature so that effectiveness studies can follow.

With regard to implementation, the 2017 guidance lists multiple factors to consider when implementing nonpharmaceutical interventions during an influenza pandemic. While these factors were not specific to schools, several overlapped with the themes identified by our focus groups: community engagement in the planning and implementation of measures, consideration of the feasibility of the practices, activation triggers, layering, and promoting public understanding through effective communication (Qualls et al., 2017). A decision framework published after the 2009 H1N1 pandemic emphasized the importance of making decisions collaboratively and communicating openly with regard to nonpharmaceutical strategies to mitigate an influenza pandemic (Barrios et al., 2012), which was reiterated by the participants in our focus groups. This study added cross-cutting considerations specific to school settings, including challenges in reconciling different views about the role of schools in protecting public health, concerns about student safety, and lack of funding for school nurses.

This study had several limitations. First, we did not include the perspective of parents. While parents are a critical stakeholder group to engage in future work, this study focused on the perspectives of those making the decisions to implement social distancing measures and tasked with enforcing them. In addition, although we achieved thematic saturation, these results represent the perspectives of those who participated and cannot be generalized. Despite these limitations, we found five groups of themes that could enhance the feasibility and acceptability of social distancing practices in US schools during an influenza pandemic: transparent communication, mitigating adverse impacts on students, addressing additional resource requirements,

defining clear roles for schools and public health departments, and collaborative decision-making. Given the complexity of public health emergencies such as influenza in the school setting, each of these considerations must be proactively and simultaneously emphasized as part of a multipronged social distancing strategy.

If social distancing practices are determined to be effective following further evaluation, addressing the crosscutting considerations described in this paper can increase the likelihood that these practices will be feasible and acceptable to school stakeholders.

Disclaimer

The findings and conclusions in this study are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Financial disclosure

The authors have no financial relationships relevant to this work.

Conflicts of interest

The authors declare that they have no conflicts of interest.

Human participant compliance statement

Ethical approval for this research was obtained from the RAND Corporation's Human Subjects Protection Committee on October 6, 2016 (Decision No. 2016-0770).

Author contributions

Faherty: conceptualized the manuscript, participated in data collection and analysis, drafted the manuscript, revised manuscript.

Schwartz: designed the study, led data collection and analysis, revised manuscript.

Ahmed: supported study design, data collection and analysis, revised manuscript.

Zheteyeva: supported study design, data collection and analysis, revised manuscript.

Uzicanin: supported study design, data collection and analysis, revised manuscript.

Uscher-Pines: designed the study, conceptualized the manuscript, led data collection and analysis, revised manuscript.

Appendix 1. Professional association websites reviewed to assemble a purposive sample of participants for focus groups conducted in the summer of 2017

- National Association of School Superintendents
- American Association of School Administrators
- National Association of Elementary School Principals

- National Association of Secondary School Principals
- National Science Teachers Association
- National School Board Association
- National Association of School Nurses
- National Board for Certification of School Nurses
- American School Health Association
- National Association of School Safety and Law Enforcement Officials
- National School Safety Center
- International Association for K-12 Online Learning
- Center for Digital Learning
- US National Distance Learning Association
- State-specific school administrator associations
- State-specific educator associations
- State-specific school health associations
- State-specific school safety officers' associations

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