

Study Protocol: School Practices to Promote Social Distancing in K-12 Schools

Study Aims

Social distancing interventions that aim to increase the space between people and decrease the frequency of contacts are powerful tools in pandemic response. In the first wave of an influenza pandemic, community mitigation strategies such as social distancing are likely to be our only defense, helping to buy critical time to develop pharmaceutical interventions and relieving pressure on over-burdened healthcare and public health systems. Because schools are socially dense environments, school practices that promote social distancing are critical to protect large numbers of vulnerable children as well as limit secondary transmission to adults within their households and communities.

Despite the potential impact of school practices on disease transmission, research on school practices to promote social distancing in K-12 schools has focused almost exclusively on prolonged school closure, with very little attention paid to the feasibility and acceptability of other more sustainable and potentially less costly, interventions. Because of the secondary impacts of school closure and challenges with compliance with social distancing outside of school, there is a need to explore the feasibility of additional school practices in K-12 schools that are less disruptive and costly for society, and as such can be implemented for longer duration. A variety of measures have been identified in the literature including but not limited to: (1) reducing class sizes; (2) reconfiguring classrooms so that there is more space between desks; (3) home room stay; (4) reducing or eliminating congregation of students in common areas such as the cafeteria or hallway; and (5) shortening the school day or week; (6) distance learning/instruction (e.g., via television, radio, or Internet) so that students can remain at home for part or all of the school day. However, while there is a need to experiment with novel school practices, very little research has assessed the feasibility, acceptability, and effectiveness of these interventions. This is concerning because K-12 schools are likely to face a range of (currently undocumented) barriers in implementing any of these measures.

RAND aims to support CDC in assessing the feasibility of school practices to promote social distancing beyond sustained school closure in K-12 schools. We will complete a large qualitative study of the feasibility of various school practices in K-12 schools to provide a foundation for future CDC research on the effectiveness of such measures in curbing the transmission of respiratory infections in school settings.

Methods

Task 1: Kick-Off Meeting

The project kick-off meeting occurred on 9/29/2016. The deliverable, which was meeting minutes, was distributed on 10/3/2016.

Task 2: Study Protocol

This study protocol draft and its revision comprise the two deliverables for task 2.

Task 3: Background Research

In this task, we will conduct a review of state and local policies regarding school-based prevention and control of infectious disease and a review of the research literature. We will also review state and local policies regarding distance learning and review literature on the implementation of distance learning. Each of the reviews (3.1-3.4) will be summarized as a single report that includes references and web links. These reports will be submitted to CDC within two months of contract award. Dr. Schwartz will lead this task.

3.1. Review of state and local policies about prevention and control in K-12 schools of

infectious disease. Via Internet searches and targeted outreach, we will first collect each state-level public K-12 school policy as laid out in its official infectious disease or influenza pandemic plan, if it exists, regarding the prevention and control of infectious disease. We anticipate visiting each state's education agency (SEA) and department of health websites to determine if there is a plan that describes a statewide policy. Where there is no online information about such a state policy, we will contact state departments of health and/or SEAs to inquire if such a policy exists. We will collect and tabulate the relevant state-level policies regarding social distancing and other means to prevent and control the spread of infectious disease.

In addition to the state-level reviews, we will also sample and conduct local-level searches within each of the ten HHS regions. Specifically, we will scan three local education agencies (LEA) per HHS region: 1 large urban LEA, 1 mid-size LEA, and 1 rural LEA. We will select these LEAs by drawing upon all the LEAs in a given HHS region from smallest to largest enrollment. We will then label the districts in the smallest third of districts as rural, the middle as mid-size and the largest as urban. We will then select 1 LEA per size category at random, and then further select so that the rural, mid-size, and urban LEAs are in three different states. We will determine whether the district itself and/or the city/county health department have a management plan related to infectious disease spread in schools. We anticipate these policies will typically be contained in school districts' all-hazards emergency management plans and/or city or county health agency plans. If these plans are not posted online, we will contact district personnel such as Coordinators of Health Services or Assistant Superintendents overseeing school district operations. We anticipate that small, rural school districts will be less likely to have emergency plans posted to their website. We propose to contact a randomly-selected LEA in each of the three district size categories until we find a LEA with an infectious disease plan (contacting up to 4 LEAs per size category per HHS region). The deliverable from this task will include 2 tables documenting each state's and each sampled LEA's

social distancing in K-12 schools policy (if there is one).

3.2. Review of published literature on school practices (other than sustained school closure) to promote social distancing. Using well-documented methods regarding inclusion and exclusion criteria, search terms, and databases consulted, we will first search peer-reviewed published literature in health and education policy and emergency planning journals and databases to identify and review the full set of domestic and international literature about school practices to promote social distancing other than prolonged school closure. As we have done in the past, we anticipate consulting the following nine databases: Education Abstracts, ERIC, JSTOR, PsycINFO, PubMed, Social Science Abstracts, Sociological Abstracts, Web of Science, and WorldCat. In consultation with a RAND librarian, two study team members will each independently conduct an initial scan and sort of the titles and abstracts for all records. Then once a study is deemed eligible by both coders because it was published within our time frame and topically relevant, each reader will do a full-text review and extract the following information: (a) characteristics of populations and schools studied; (b) type of school practice used; (c) effects of such practice (if studied); and (d) research design used for documented effects to determine strength of evidence. We will also conduct a review of the grey literature, searching for online and printed reports from education school safety contracts and centers as well as from expert recommendations and media mentions about practices to promote social distancing.

3.3. Review of state and local policies about distance learning. In all states and the same localities sampled in Task 3.1, we will specifically identify, review, and summarize policies pertaining to distance learning and instruction, with a focus on continuity of learning and blended learning. We will document whether states and localities explicitly allow/disallow various types of distance learning as a part of K-12 instruction and under what circumstances. Similar to Task 3.1, the deliverable will include two tables documenting each state's/LEA's distance learning policies.

3.4. Review of distance learning implementation studies. We will also conduct a review of published literature on the *implementation* of distance learning. This review will focus on lessons learned, barriers to, and ideal conditions for implementing distance learning, as opposed to the effects of, for example, virtual schools on student test scores. We anticipate consulting the same nine databases as described in Task 3.2, and employing similar methods of scanning documents. We will also conduct an extensive search of the gray literature, looking at, for example, federally funded Regional Education Labs for distance learning-related studies, state-level reports, evaluation contractor reports not published in peer-reviewed journals about distance learning. The deliverable will include the landscape of distance learning options, prevalence of distance learning by type, and conditions and requirements of distance learning for children in grades K-12.

Task 4: Key Informant Interviews

To obtain detailed data on distance learning, we will conduct 9 semi-structured interviews with distance learning experts. Interviews will cover the following topics: different models of distance learning and their strengths and limitations, implementation of distance learning, facilitators of distance learning, barriers to distance learning, and considerations for using distance learning in a public health emergency.

We will identify potential interview participants through targeted literature review and snowball sampling. For example, we will conduct Lexis Nexis searches to identify distance learning leaders as well as experts who have been quoted on this topic. We will also contact distance learning organizations and ask for nominations.

We plan to recruit experts in distance learning and users of distance learning (e.g., principal of a virtual school, representative of a school district that accredits online learning options). With all of our interviews, we will sample for maximum variation along several dimensions including 1) type of distance learning (e.g., blended learning, online learning); 2) geographic location; and 3) experience with distance learning (e.g., successfully implemented distance learning, attempted distance learning and decided not to pursue it in the future). All participants will be invited via email to participate in a 60-minute phone call, and will be offered a \$50 Amazon gift code at the time of informed consent in appreciation of their time. The gift code will be emailed to participants immediately following each interview unless they decline during consent. We will present the final list of potential participants to the CDC for its approval, to be received two months from contract award.

RAND will conduct interviews by phone to secure the highest participation rates. Two RAND staff (a researcher and administrative assistant/project manager who will take notes) will conduct each interview. All interviews will be recorded with participant permission and transcribed by RAND staff. De-identified transcripts will be provided to CDC no later than four months from contract award. Standard qualitative analysis techniques will be used to identify and characterize instances of themes arising from the various domains covered in interview protocols as well any unanticipated themes that emerge. Themes will be identified using indicators of salience (e.g., number of participants that mention a particular topic). Two coders will read transcripts and independently mark themes with developed codes. To ensure different coders are interpreting the literature as similarly as possible, we will: (1) develop descriptive and precise codebooks that give clear meanings to the use of different codes; (2) perform intercoder agreement checks prior to analyses where all analysts read the same text, code independently, and discuss areas of disagreement; and (3) perform supervisory reviews of the analysis at regular time intervals and issue course corrections if necessary. Dedoose qualitative research software will be used to facilitate data handling, coding, and thematic analyses. The results of our analysis will be included in a summary report. RAND will deliver the report within four weeks after the completion of the interviews and four months from contract award. Dr. Uscher-Pines will lead this task with the full study team supporting.

Task 5: Qualitative Field Study (Focus Groups)

RAND will design and implement a qualitative field study consisting of focus group discussions with senior educators in each of the ten HHS regions. The focus groups will allow for facilitated discussions of findings from the policy and literature reviews and interviews. Focus groups are better suited to explore variations in perspectives based on stakeholder backgrounds. In the case of a topic such as school practices to promote social distancing in K-12 schools, where there is uncertainty surrounding the availability, feasibility, and effectiveness of various alternative instructional strategies that increase space between students or reduce time spent in-school, focus groups are ideal for: exploring disparate or conflicting viewpoints, allowing for facilitated debate and resolution, generating new ideas and exploring their potential, and examining trends in findings such as common

perspectives within stakeholder groups.

Focus group protocol and questionnaire development. In consultation with the CDC, RAND will develop a focus group protocol consisting of goals, objectives, and discussion techniques as well as questionnaires. Following approval, RAND will deliver a bi-weekly status report on the implementation of the field study, including unexpected problems that may arise and planned resolutions (months 5-11 following contract award).

Identification of participants and recruitment. Within each of the ten HHS regions, RAND will work with the steering committee to identify potential participants. For each region, we anticipate first choosing two states (chosen at random) on which to concentrate recruitment efforts, and we will identify and recruit the following types of individuals:

- State education agency officials in charge of school health services
- State health officials in charge of statewide pandemic planning
- Chief Operating Officer or Assistant Superintendent from at least one rural and one urban district
- State chapter representative from the National Association of School Nurses and a state health association representative
- Representative from a school principal association
- Representative from a teacher association
- Representative from school safety organizations/law enforcement (e.g., <http://www.wssso.us/>)
- Chapter representative from National Distance Learning Association (e.g., <https://www.usdla.org/>)

We will identify potential participants through steering committee recommendations as well as snowball sampling in a phased approach that starts with authority figures or organizations with the broadest scope (e.g., start with state education agency officials and ask for recommendations for urban and rural districts with varying socioeconomic levels, and then move to the next level such as local education agency). When possible, we will work with national organizations/associations and ask for their help in tapping into standing committees or workgroups with members from across the U.S. In those cases, we will invite workgroups to participate, directing each participant to the appropriate focus group based on his/her region. We will provide \$50 gift codes as an incentive for participation. Following each focus group, participants will be emailed a gift code that they can redeem on Amazon.com. Gift codes will not be emailed to participants who decline and/or indicate that they cannot receive an incentive during the consent process (e.g., in cases where a participant's employer do not permit it).

Focus group conduct and data collection. Following the receipt of OMB approval, RAND will convene 3-4 focus groups (32 individuals total) in each of the 10 HHS regions. Participants will be drawn from the groups mentioned above, as well as any other group determined to be important based on CDC steering committee recommendations or the literature review and interviews (Tasks 3 and 4). RAND staff will moderate each focus group, which will be carried out via webinar. To aid scheduling, in each region we will offer several group meeting times that participants can choose from; however, we will have at least one focus group per region that focuses on middle and high school and one on elementary schools since the logistical, policy, and practical barriers are likely to differ by grade level.

Qualitative research standards suggest that at least two focus groups are required for each characteristic under study. As such, holding multiple focus groups per region will allow us to compare perspectives by region as well as by grade level (upper grades vs. lower grades).

RAND moderators (Drs. Uscher-Pines, Schwarz, Faherty, and Augustine) have experience conducting focus groups on public health, preparedness, and education policy topics as well as knowledge regarding how to maximize audience participation and maintain a conversational, non-directive style. Dr. Uscher-Pines will also provide refresher training on best practices for focus group moderation to ensure consistency in style across moderators. She will orient staff to the focus group protocol as well as describe how to formulate questions, follow leads, note silences and non-verbal cues, and identify potential problems. She will also discuss ways to encourage participation, the art of probing, and methods for opening and closing meetings. All focus groups will be recorded and a RAND project manager will assist in taking notes. De-identified transcripts of the sessions will be provided to CDC within twelve months from contract award.

Data analysis and reporting. Focus group recordings, notes, and transcripts will be analyzed in a similar process to the interview transcripts as described in Task 4. For any ranking or prioritization exercises, we will analyze the results by grade level and region and across all grade levels and regions. As indicated by principles for successful priority setting, final decisions about the most promising social distancing strategies will be carried out transparently and based not only on focus group results but also input from the CDC steering committee as well as the policy and literature reviews and interviews.

All focus group data will be organized and compiled into a database using Dedoose qualitative research software. RAND will deliver a draft field study report to CDC eleven months from contract award that will contain study results of common themes and key findings and recommendations for each of the ten HHS regions separately and also as a national whole. RAND will integrate CDC comments and deliver a final field study report approved by the CDC steering committee twelve months from contract award along with the focus group transcripts. Dr. Uscher-Pines will lead this task.

Project Deliverables and Timeline

| Task | Deliverable | Due Date: Within Months After Award | Date |
|-------------|--|--|-------------|
| 1.1 | Kick off conference call with CDC | .5 | 9-29-16 |
| 2.1 | Draft study Protocol | 1 | 10-14-16 |
| 2.2 | Final study protocol | 1.5 | 10-28-16 |
| 2.3 | IRB approval | 2 | 11-21-16 |
| 2.4 | OMB submitted | 2 | 11-25-16 |
| 3.1 | Summary report for each of four background reviews | 2 | 11-28-16 |
| 4.1 | Approved interview questionnaire | 2 | 11-28-16 |
| 4.2 | Approved list of interview participants | 3 | 12-14-16 |
| 4.3 | Key informant interviews summary report | 4 | 2-27-17 |
| 4.4 | Interview transcripts | 4 | 2-27-17 |
| 5.1 | Protocol for field study and list of participants | 4.5 | 5-30-17 |
| 5.2 | Begin focus groups-Swift OMB Process | 6.5 | 4-1-17 |
| | Begin focus groups- Slow OMB Process | 9 | 6-19-17 |
| 5.3 | Draft of field study report | 11 | 8-21-17 |
| 5.4 | Focus group transcripts | 12 | 9-18-17 |
| 5.5 | Database from field study | 12 | 9-18-17 |
| 5.6 | Detailed field study report approved by steering committee | 12 | 9-18-17 |