



RESEARCH ARTICLE

Mobilizing and Delivering Essential Meals to Children and Families Affected by School Closures During COVID-19 and Beyond

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ABSTRACT

BACKGROUND: The closure of schools in response to COVID-19 compromised access to essential meals for many students. The Emergency Meals-to-You program, a public/private partnership, was set up to address this challenge. More than 38.7 million meals were delivered between April and August 2020. This study explores lessons learned and identifies strategies for strengthening food access and security at schools and beyond.

METHODS: Qualitative research methods were used. This included interviews and focus groups with participants involved in setting up and delivering the Emergency Meals-to-You program. Data were thematically analyzed using key phrases, ideas, and concepts, and interpreted.

RESULTS: The program leveraged a multisectoral approach. Components relied on each other and included: schools, public/private partnership, eligibility, relationships, experience, centralized communication, food quality and branding, logistics, and transport. Strategies identified to strengthen food access focused on integration with emergency management structures, understanding food needs at the school level, building a fully procurable menu, and allowing distribution to be rapidly scaled.

CONCLUSIONS: The lessons identified and strategies recommended provide a framework for working across the emergency management spectrum (school to national level) to strengthen food access and availability for students and their families affected by a pandemic, disaster, or crisis situation.

Keywords: COVID-19; school closure; food access; education; rural.

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BACKGROUND

The initial response to slow the spread of COVID-19 resulted in wide-spread school closures from March 2020. This decision progressively expanded across the country with many schools ordered or recommended to close for the remainder of the academic year affecting around 55 million students in 124,000 US public and private schools.¹ Foodservice operators were often given less than 72 hours' notice between the announcement and when school closures were to begin.² This compromised access to essential meals, especially for the nearly 30 million children

who participate in the National School Lunch Program (NSLP) and the 15 million involved in the School Breakfast Program (SBP).^{2,3} The programs are offered and supported by the US Department of Agriculture (USDA). Administering agencies vary by jurisdiction with each working directly with local educational bodies to deliver the programs.²

The closures removed a safety net for many students as schools often act as a gateway to essential meals and other activities beyond education.^{4,5} In response, there were various programs put in-place across the country. For example, congress (PL 116-127) provided administrative flexibilities for USDA school-based

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nutrition programs and appropriations for expanded emergency nutrition assistance to eligible families impacted by school closures, known as Pandemic Electronic Benefits Transfer (P-EBT).^{2,6} The P-EBT allowed eligible school children to receive temporary emergency nutrition benefits loaded on EBT cards to purchase food.⁶ Another program, the study focus, Emergency Meals-to-You (eMTY) was funded by USDA to deliver meals to children in rural areas affected by COVID-19 school closures.

This commenced with USDA working with the Baylor Collaborative on Hunger and Poverty (BCHP) to expand the 2019 summer pilot of Meals-to-You. Meal programs in the summer are generally administered through sites that allow congregate feeding. This approach works well in condensed urban areas, however, in rural areas with low population densities many cannot access the available food programs. BCHP created the Meals-to-You pilot to help close this gap. The 3-year pilot was designed to service 20 school districts in east and west Texas, testing the effectiveness of shipping boxes of food to the homes of students eligible for free and reduced lunches in rural areas. During this pilot project, over 325,000 meals were provided to 4,000 children.⁷ Boxes were shipped weekly to rural areas where traditional summer meal sites were unavailable. BCHP was preparing for the second summer of this program, with plans to expand to New Mexico and Alaska, when the COVID-19 pandemic emerged.

On March 17, 2020, the USDA, BCHP, McLane Hunger Solutions, and PepsiCo's Food for Good announced eMTY, a public/private partnership to deliver meals to students in rural areas affected by COVID-19 school closures.⁷ This built on the Meals-to-You pilot by applying this nontraditional model to rapidly scale up food delivery. The eMTY leveraged existing relationships, and expanded where necessary, to deliver boxes containing 20 nutritious meals (10 breakfasts and 10 lunches) to cover what would

normally be received at school over a 2-week period.⁸ The original goal was to provide 1 million meals per week, however, as the program rolled out and capacity increased the target moved in May 2020 to 5 million.^{8,9} The result was more than 38.7 million meals delivered between April and August 2020 to around 270,000 children in rural communities in 43 states and Puerto Rico, and across 348 school districts.^{10,11}

To explore lessons learned and identify strategies for strengthening food access and security at schools and beyond, interviews and focus groups were conducted with those involved in designing and implementing eMTY. Developing an advanced understanding of the success of this program is vital because sustained access to nutritious food is required to provide school children and communities with the resilience required to overcome the health, societal, and economic consequences of pandemics, disasters, and other crisis.¹² Also, due to the nature of eMTY with delivery of shelf-stable boxes, the findings from this study are compatible with existing emergency management systems and translatable to high- and low-income resource settings around the world. Ultimately, we aimed to advance insight into planning and implementing rapid mobilization and delivery of meals to children affected by school closures.

METHODS

Participants

The focus of this study was to explore how eMTY was designed and implemented and identify strategies for improving food security. To achieve this interviews and focus groups were conducted with people involved in designing and implementing eMTY. Qualitative research methods were used to complete the project. Participants were selected through a purposive sampling strategy.¹³ This included recruiting based on roles in aiding the facilitation of the eMTY program. The number of participants from the focus

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Table 1. Demographics

Demographic	Focus Group	Interview	Total
Gender			
Male	8	7	15
Female	3	2	5
Sector			
Private sector	11	4	15
Government sector	-	2	2
Nonprofit	-	3	3
Role/discipline			
Project coordination/management	-	4	4
Food vendor	5	2	7
Logistics and packaging	6	-	6
Transport services	-	2	2
Emergency management	-	1	1

groups ranged from 3 to 5. Although the optimum size is 6 to 8 participants, focus groups can be effective with 3 to 14 participants, especially with experienced researchers.¹⁴ Smaller groups can also be a more efficient use of resources while providing valuable insight to the interpretation of an activity such as the development and delivery of eMTY.¹⁵ Focus group size was determined by availability of participants and people with an understanding of how eMTY was set-up and implemented.

There were 9 interviews and 3 focus groups from January to May 2021. One focus group had 5 participants and 2 were held with 3. Demographic details are provided in Table 1. All participants were over 21. Participants included project coordinator/management (BCHP and USDA), food vendors (Chartwells K12, Canteen, and General Mills), logistics and packaging (McLane Hunger Solutions and PepsiCo’s Food for Good), transport services (United Parcel Service), and emergency management (emergency management professional). Prior to eMTY, the organizations were involved in providing meals to schools and children.

Data Collection

The research team developed a series of structured and open-ended questions to guide the discussion and help understand the development and delivery of the eMTY program (Table 2). The questions related to the participants experience with eMTY, areas of success and program improvement. The principle of saturation was used to determine when data collection would conclude.^{16,17} This was achieved after the third focus group and eighth interview. The ninth interview was conducted to confirm saturation had been reached with no new information revealed.

Due to COVID-19 measures in-place and convenience, data were collected online using Zoom or Microsoft Teams depending on availability and suitability for the participant. The length of time for the interviews ranged from around 25 to 70 minutes with

Table 2. Sample Focus Group and Interview Questions

Number	Question
1.	How/when did your partnership with The Collaborative on Hunger and Poverty begin. For example: <ul style="list-style-type: none"> • What is your organization’s role within the program? • How was your organization recruited to assist with the emergency Meals to You program?
2.	How was the program initiated, coordinated, and implemented? For example: <ul style="list-style-type: none"> • Who was your point of contact at the Collaborative throughout the program? • Who was your project lead and what is their role within your organization? • Who did you liaise with on the ground? • Which organizations did you engage to help with delivery of the program? • Did you develop a plan or procedures/guidelines?
3.	How many schools and school districts did you reach? How was delivery coordinated?
4.	How did you keep track of deliveries and requests from the collaborative?
5.	What resources were required (budget, staff, transportation, communication, and infrastructure)?
6.	What immediate feedback did you receive (from school districts, families, or collaborative)?
7.	What were some unexpected or unintended outcomes (positive and negative)?
8.	How would you adjust if you were to reuse this program?
9.	Any additional comments?

most around 55 minutes. The 3 focus groups were around 40, 50, and 60 minutes, respectively. The overarching goal was to have enough data to explore lessons from eMTY. When this was achieved the interview or focus group concluded.

Data Analysis

The information from focus groups and interviews were transcribed and thematically analyzed by manually placing key phrases, ideas, and concepts into Microsoft Excel™ spreadsheets. The process included organizing data, data description, and classification followed by interpretation.¹³ The identification codes for participant quotes used the following format, interview number, and sector (either government, nonprofit, or private). For example, I1-N was interview participant 1 from the nonprofit sector. Two interviews, I5-P and I9-G were not recorded or transcribed due to technical difficulties with the online communication system. To mitigate this impact, 2 researchers who were involved in the interview took notes, which were used for analysis.

The analysis was undertaken independently by 1 researcher then reviewed by a second. The second researcher had completed post-graduate studies using qualitative research and published papers applying

this approach. There was a third researcher involved in focus groups and interviews who reviewed the data analysis results for reliability (eg, confirming/reviewing results).¹⁸ This approach to reliability is consistent with the qualitative concepts of dependability, confirmability, credibility, and transferability and reflects the open-ended nature of qualitative analysis and the explorative nature of this study.¹⁸⁻²⁰

Across the 3 researchers involved in the analysis there was consensual interpretation of the data.²¹ This included identification of common strategies for sustaining essential meals. The proposed strategies were then presented to the research team (in no priority order) to review possible actions and role for schools. To support this process and increase the likelihood of translation into practice, researchers with academic and emergency response qualifications, experience, and roles assisted in reviewing and developing the strategies and actions presented in the results section.

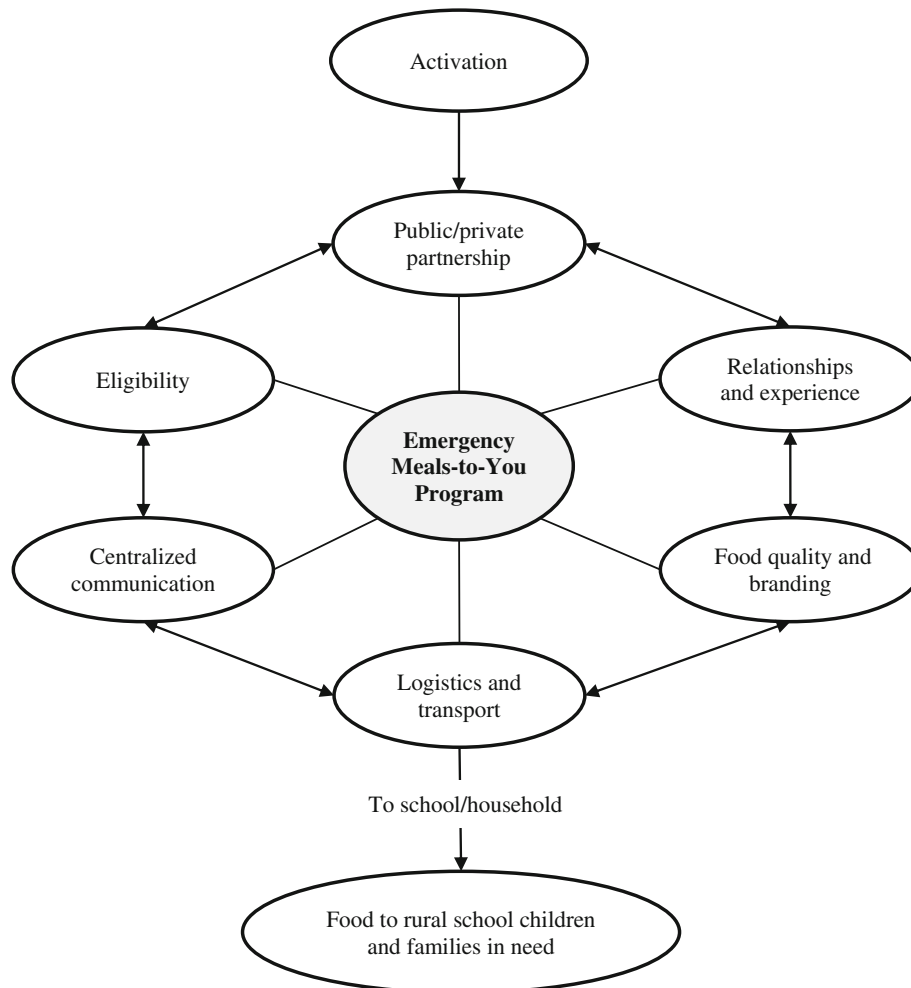
RESULTS

Participants described the eMTY delivery system characteristics, and recommended strategies for strengthening food access and resilience. A description of the program themes and components is provided in Figure 1. This included private/public partnerships, relationships and experience, eligibility, food quality and branding, centralized communication, logistics, and transportation. These themes are further described and interpreted in the following along with strategies for enhancing food access and security.

Activation

Initial conversations and planning began in early February 2020. The program was initiated by USDA and this resulted in “Baylor providing a proposal that we’re able to do up to million meals a week and that definitely because we did have quite a bit of success the previous year with the summer program (I7-G).” This was complemented by regular meetings with USDA

Figure 1. Description of the eMTY Program Components



officials, regional offices, state agencies, and many other stakeholders.

The Meals-to-You program provided a template for the program, which helped facilitate rapid ramp up. According to 1 participant "...we hit momentum...about week three or four on maximizing the production (I6-P)." This included 1 vendor increasing from 500,000 meals a month to 1 million meals a week. The first 2 vendors, McLane Global and PepsiCo's Food for Good were brought on in March to work on eMTY to help provide food. To complement these activities and efforts, Chartwells K12 began supplying food boxes in May 2020. The duration of box shipments to school children and families in need continued until August 31, 2020.

Public/Private Partnership

The program was a partnership between nonprofit, private, and government sectors. BCHP promoted the program to State agencies. The State agencies then promoted eMTY and approved school applications before sending to BCHP for action. The program was considered all-hands-on-deck with many positives for workers and organizations. One interview participant advised that "I think our people loved being engaged with something that felt like they were helping versus just kind of doing a job. So, the morale and the impact on our organization was great (I6-P)." Another participant advised "staff they knew the story, they really wanted it to be successful. They treated this package as if it was the most important package in the world. Get it to that kid so that kid would have a meal (I4-G)." The primary organizations involved included, USDA (government), BCHP (nonprofit), McLane Global (private sector), General Mills (private sector, supplier for McLane Global), PepsiCo's Food for Good (private sector), Chartwells K12 (private sector), Canteen (private sector, contracted by Chartwells K12), and United Parcel Service (private sector). A fundamental aspect of success was the ability for all vendors to rapidly increase staffing, provide training, and work across organizations and communities to deliver the meals.

Eligibility

School districts could participate if designated as rural by USDA. However, "there was two layers of eligibility. So, the school is eligible for, for participation in this program by nature of being eligible for the Federal Summer Food Service Program. And then, within that, the families that are eligible for free or reduced lunch within the National School Lunch Program are eligible to participate in this program (I2-N)." Also, this was a new process for many because prior to the pandemic "families and students may not have been eligible for free and reduced-price lunch,

but because of...employment loss...students might now be eligible (I3-N)." In these instances, registration and application processes had to be reopened to allow participation. Interested school districts applied first to their state agency, then the application was sent to BCHP. In cases where school districts had adequate staff but were closed, schools handled the application process for students. When schools were smaller or had less capacity to enroll, BCHP staff supported households applying.

Relationships and Experience

The eMTY was rapidly set up due to existing relationships among partnering organizations. For example, "We already had a lot of school districts that we were already in communication with, in Texas especially. Just because of our work over the last 10-12 years. So we were, our field staff for example that have those relationships were able to reach out and communicate with those school district administrators and personnel that they knew (I1-N)." The adaptive management and rapid implementation required for success build on this and the template from the summer Meals-to-You. This was complemented by trusted partnerships among nonprofits, private businesses, and government entities. For example, the program was a "...collaboration of resources, and that's what made this successful — well, there's a few things that made it successful, but to build on what (name removed) saying, it's collaboration of resources and collaboration of trusted partners (FG1-P)." In areas with existing BCHP and state agency relationships with school districts, the level of participation was highest. All vendors made note of the support their suppliers had for the program by their sense of urgency and prioritization for achieving the goal of eMTY.

Centralized Communication

A centralized communication channel was pivotal in the planning and operation of the program. This communication strategy was predominantly overseen by BCHP with Microsoft Teams to facilitate meetings, collaborate resources, and create a shared unified space to hold documents, lists, and contracts. However, for security purposes BCHP transitioned to password protected Box files for sensitive materials. Having an online communication channel allowed teams to be organized and effectively communicate remotely. The enrollment process was managed centrally online. This allowed shipping lists to be rapidly shared with vendors as new enrollments came in. The goal was to maximize program efficiency and effectiveness.

BCHP provided customer support for the program and regular updates to vendors and USDA. This was supplemented by some vendors having their own customer service teams. BCHP had field staff constantly

building and maintaining local relationships. This allowed school district personnel "...to reach out and communicate with school district administrators and personnel (I1-N)" and USDA liaised "through our regional offices and then the state agencies (I7-G)." To complement this, press releases were used to advertise and promote the program.

Food Quality and Branding

The vendors contracted for the program were complementary to each other and helped ensure branding and quality of foods. For example, 1 vendor was selected based on their knowledge of the summer Meals-to-You program, another due to their strong supply chain and the third managed dietary restrictions. Another strength of this program was "Being about to do two weeks at once and getting around the congregate rule. Those two things, if we were, since we were able to do that, right? So, being able to put two weeks together... we were able to serve twice as many kids (FG3-P)" compared to the summer Meals-to-You program. Participants reported feedback from families was positive with many indicating this was the most food they had ever had in the household. There were joint efforts to ensure children and families received nutritious, quality meals. During this time of need families "...were particularly pleased to get certain name-brand items in the boxes (FG3-P)" and "...loved seeing brand names because they've only been able to afford off brands (I3-N)." This was complemented by including healthy options with products that had graphics appealing to children.

Logistics and Transport

By engaging vendors with experience, the barriers to shipping and transportation were rapidly identified and overcome. The logistics and transport of goods to schools or households occurred at both macro and micro levels. A focus group identified a "logistics issue was, just by the nature of it, Emergency Meals to You goes to rural kids. So, we weren't hitting, you know, UPS's metro centers in Chicago and Dallas (FG3-P)." To overcome this, existing systems were used, and vendors were able to negotiate with shipping/transport companies to achieve the program goals. This combined with using companies familiar with logistics increased the program effectiveness. For example, "...logistics is our specialty. It's what we do. It wasn't that we had to learn the job. It's what we do - that. But the key thing here is this happened in a very unique environment (I4-G)."

Another challenge was local knowledge of the delivery drivers. Not everyone has a home address, and for this reason food boxes were often delivered for collection to the household's post office box.

This was supported by package tracking, which was vital because "you have to have it labeled right... to verify (I1-N)" the food is shipped and received by the intended household. This spectrum of coverage and knowledge (local to national) ensured food was provided to children and families in need at both the school and household level.

Strategies

The strategies identified by participants for enhancing food access and system resilience for school children were categorized into 14 areas (Table 3). Within each strategy presented, the sector identifying, possible actions for implementation along with relevance to schools (listed in no particular order) are presented. There were 3 strategies identified by participants from the government, nonprofit, and private sectors. These related to a fully procurable menu (strategy 1), documenting dietary needs (strategy 2), and providing shelf stable meals (strategy 14). There were another 2 strategies identified by 2 sectors and the other 9 by 1 sector. The strategies are the result of an interpretive process and therefore no priority has been given based on numerical value of sectors identifying a strategy. The authors of this paper interpreted 6 strategies with a role for schools to help strengthen food access and security. In addition, there were 3 partial, 3 limited, and 2 strategies with no specific action for schools.

An overarching theme across the strategies interpreted was a priority for understanding food needs at the school level (eg, dietary needs) and how distribution networks could be rapidly scaled. This was highlighted by a statement that "a lot of these kids rely on the schools for their nutrition and the schools shut down (I4)." To assist this process schools could, for example, "build a fully procurable menu, fully costed and USDA compliant ahead of time (FG2)." This could be complemented by a focus on shelf stable foods and maintaining a "...list of individuals and addresses for targeted deliveries(I9)." Future programs could focus on working with schools to "ship boxes of non-food items... anything found in a grocery store (toothbrush, paper towels, etc.) FG3." More broadly, there was a recommendation to capture regional strengths of vendors and shippers to develop a response plan that could be merged for nation-wide disasters.

DISCUSSION

In an unprecedented time of need for school children, the eMTY program worked with public/private partners to ensure children in rural areas affected by school closures had access to essential meals. The school closures, a strategy used in some areas in response to COVID-19, left households of children in some of the country's hardest hit communities

Table 3. Recommended Strategies for Sustaining Essential Meals

Strategy	Sector Identifying	Possible Action	School Role
1. Establishing a fully procurable and costed menu compliant with school needs and the USDA.	Government nonprofit private	Schools identify menu with focus on shelf stable foods. Share information with school district, USDA, and other partners. USDA or central organization to collate and monitor.	Yes
2. Understanding and documenting population served as part of school lunch programs, such as dietary needs, and sharing this with the local emergency management committee.	Government nonprofit private	Schools use student registration documents to estimate dietary and other meal needs. Ensure this is sharable (de-identified) and updated annually.	Yes
3. Identifying surge capacity in transportation and supplies at the local level.	Private	Schools could leverage existing transportation networks such as buses and drivers. USDA or a central organization could identify, approve, and coordinate across all levels.	Yes
4. Incorporating food access and security at schools to emergency operations center functions, activities, and exercises (local and district level).	Private	Schools could use their own site and align with emergency management system.	Yes
5. Tailoring communication strategies to suit the school community (email or text message).	Nonprofit	School tracks the most effective communication methods. USDA or designated organization could monitor and update to maintain preparedness.	Yes
6. Maintaining a list of individuals and addresses for targeted deliveries.	Government private	This could be maintained annually and shared as required with supporting organizations.	Yes
7. Expanding program to ship boxes of non-food items. For example, essentials found in a grocery store (toothbrush, paper towels, etc.).	Private	Schools could identify vulnerable students to provide an estimate of resource needs. USDA or a designated central organization could oversee and coordinate.	Partial
8. Pre-approving school districts to be part of the program.	Private	Schools should review their eligibility (or potential) with USDA.	Partial
9. Expanding program to support shelters used for displaced populations.	Government	School could be part of this if a designated shelter.	Partial
10. Creating central organization to communicate and liaise with schools and suppliers of food.	Private	USDA or a designated central organization would lead and communicate this with schools at local, district and regional levels.	Limited
11. Creating a heat map of distribution hubs based on social determinants of health and disaster risk.	Private	USDA and support organizations lead with engagement of schools as required.	Limited
12. Identifying and approving reserve vendors for emergency programs.	Private	School arrangements could be made within the community. USDA or a central organization could oversee and coordinate.	Limited
13. Capturing regional strengths of vendors and shippers to develop response plan. Merge for nation-wide disasters.	Nonprofit private	USDA or a designated central organization.	No
14. Supplying shelf-stable boxed meals to emergency responders.	Government nonprofit private	Recommend this across the entire emergency management spectrum.	No

scrambling for ways to replace much-needed meal resources.¹¹ The eMTY used the summer Meals-to-You pilot as a template and leveraged preexisting multisectoral relationships to rapidly scale up. An important aspect of eMTY was the focus on quality well-presented meals, a key element in addressing food insecurity and reducing childhood obesity.^{5,22} The Urban Institute found this type of program, based on Meals-to-You, has the same level of effectiveness as the NSLP in terms of reducing food insecurity.²³ Central to the success were schools and their interface with vendors, transport companies, families, and children. This combined with the use of shelf-stable boxed meals allowed nutritious, safe, and brand-named food to be delivered to households and schools.

While there were temporary policy changes during COVID-19, plans are urgently required that allow

schools to better navigate food access during an emergency.²⁴ School food programs are part of the safety net protecting children from food insecurity.²² For example, participation in breakfast and lunch programs decrease the risk of obesity, especially for those living in a food insecure household.²⁵ Also, school-based health centers deliver core public health services to underserved populations.²⁶ The findings highlight the importance of making this type of program (eMTY or something similar) permanent for rural school districts. This could be achieved by incorporating food access and security at schools into emergency operations center functions/activities (local and district level). An approach that could also centralize and widely distribute information about schools and districts offering meals during closures.³

To help schools strengthen food security, there needs to be efforts to ensure safety across the entire supply chain from farm to table.⁵ A child's immune system is still developing, reducing their ability to defend against pathogens. This is a concern because contamination with harmful pathogens such as *Salmonella spp.*, *Clostridium perfringens*, and *Campylobacter spp.* can cause food-borne illnesses, which may have life-long health effects.^{27,28} Chemicals stored and used at schools could easily be introduced through mishandling during the preparation, storage, and distribution phases, leading to residual exposures and potential adverse outcomes.²⁹ Hard, or sharp objects (eg, metal, glass, and plastic) in food can cause cuts to the mouth or throat, damage to teeth, gums intestines, or even cause suffocation.³⁰ To address this risk, local procurement, transport, storage, and handling must comply with the HACCP (Hazard Analysis Critical Control Points) system. HACCP practices are effective in driving food-safety performance.²⁸ A potential solution is the use of reputable vendors and/or food box delivery systems in a time of crisis and need, such as the vendors for the eMTY program.

Another challenge for rural schools in establishing and maintaining food safety standards is access to environmental health services.³¹ Professionals in this field monitor and address risks related to food safety, hazardous materials, housing, infectious diseases, drinking water supplies, vector-borne diseases, and other concerns that may compromise individual and community well-being.³² This lack of access, especially in rural areas, is a timely and urgent concern. For example, in Texas there are 254 counties³³ with 121 local health departments.³⁴ Such gaps in services and delivery potentially leaves most counties without the ability to provide the environmental health support required to help maintain safe practices in schools and across the entire supply chain cycle. To identify a way forward, research should be undertaken to understand environmental health system characteristics and needs of schools in rural areas.

Along with the collaboration of various agencies and organizations, the nontraditional approach of eMTY aided its effectiveness and ability to be rapidly scaled. To build on the program and this study, research is needed with school educators, emergency managers, and others involved in supporting delivering of food to schools. This would provide the opportunity to further explore and validate the strategies recommended by those who led the roll-out of eMTY. This could include applying a systematic process to identify, rank, and prioritize food access and security needs at the school, district, county, state, and national levels. Ultimately, doing so could provide a path forward for strengthening food access and security in rural, suburban, and urban settings.

Limitations

The research was influenced by the lead authors work and studies in emergency management and environmental health. To address this limitation, the project was conducted by a multidisciplinary research team with diverse experience, including active practice, study, and instruction within the emergency management and education sectors.

Self-selection bias was a limitation for this study. For example, local school representatives were not involved in the interviews and focus groups. This was recognized early on as a possible limitation by the research team. However, this study explored lessons from those involved in designing and implementing eMTY. To minimize this impact, many participants were involved in coordinating meal delivery to schools before the pandemic. Also, the goal of this study was to explore the eMTY program and identify possible strategies for sustaining essential meals before, during and after disasters.

The research was limited to food delivery during COVID-19. This situation was unique to other disaster situations due to the impact across the entire country at the same time. Due to the experience of the participants, researchers, and authors working and studying a variety of disasters the findings could be transferable to other situations such as hurricanes, floods, and tornadoes. However, caution should be taken in applying the results to these situations as the priority areas and needs may vary.

Access to the research participants due to competing work priorities and COVID-19 were limitations. Some participants had their workload increased due to COVID-19 supply challenges and in-person interviews and focus groups were not possible. To minimize this impact the study focused on questioning designed to ensure relevant data was collected within 60 minutes. Also, video interviews and focus groups were conducted where possible to enhance the personal connection and discussion during data collection.

Conclusion

School-based programs are vital to provide essential meals to children. These programs help ensure children can access nutritious food and improve their overall health and wellbeing. However, access was compromised due to school closures during the COVID-19 pandemic. The eMTY program leveraged a multisectoral approach to address this challenge. This collaboration of resources and partnerships across the private and public sectors, provided millions of meals to children who otherwise would not have had access while schools were closed. Components of this program were reliant on each other for success and included public/private partnership; eligibility; relationships and experience; centralized communication;

food quality and branding; and logistics and transport. Strategies identified to strengthen food access had an overarching focus on integration with emergency management structures, understanding food needs at the school level, building a fully procurable menu, and allowing distribution to be rapidly scaled. Lessons from eMTY provide a framework for working across the entire emergency management spectrum (school to national level) to sustainably strengthen food access and availability for students and their families during a pandemic or disaster.

IMPLICATIONS FOR SCHOOL HEALTH

School based food programs help ensure children can access nutritious food and improve their overall health and wellbeing. However, during holidays, pandemics or disaster situations, access can be comprised. Based on the lessons from the eMTY program, there is now a framework to help sustain essential meals in rural areas. At the school level, this could be achieved by:

- Establishing a fully procurable and costed menu compliant with school needs and the USDA.
- Understanding and documenting population served as part of school lunch programs, such as dietary needs, and sharing this with the local emergency management committee.
- Identifying surge capacity in transportation and supplies at the local level.
- Incorporating food access and security at schools to emergency operations center functions, activities, and exercises (local and district level).
- Tailoring communication strategies to the school community (eg, email or text message).
- Maintaining a list of individuals and addresses for targeted deliveries.

This would be complementary to P-EBT and other programs through a rural focus. Meal programs administered through sites that allow congregate feeding works well in condensed urban areas, however, in low population densities many cannot access the available food programs or stores. By implementing these recommendations, schools can begin working toward a framework that strengthens food access and availability for students and their families in rural areas affected by school closures.

Human Subjects Approval Statement

This study was determined by Baylor University to meet the exclusion criteria for institutional review board approval per 45 CFR 46.102(e) & (l).

Conflict of Interest

No conflicts of interest.

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