

Nourishing Underserved Populations Despite Scarcer Resources: Adaptations of an Urban Safety Net Hospital During the COVID-19 Pandemic

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A safety-net hospital in Boston, Massachusetts, made adaptations to its Nourishing Our Community Program to accommodate restrictions brought on by the COVID-19 pandemic to continue providing food and education to patients. While participation in programs decreased overall, some of the adaptations made, including virtual classes and food pantry home delivery, were well received and are planned to be maintained after the pandemic subsides. By making adjustments to operational procedures, the Nourishing Our Community Program continued to reach its underserved population despite pandemic challenges. (*Am J Public Health*. 2021;111:663–666. <https://doi.org/10.2105/AJPH.2020.306132>)

This article describes the adaptations made by Boston Medical Center's Nourishing Our Community Program (NOCP) in response to COVID-19 and the mandated social isolation requirements. These operational changes were made in order to continue to provide access to food and nutrition education.

INTERVENTION

To improve its population's health, a large urban hospital established the NOCP, a three-pronged approach to combat food insecurity. This award-winning program comprises (1) fresh produce from the rooftop farm, (2) culturally and nutritionally appropriate food from the food pantry, and (3) culinary and nutrition education from the teaching kitchen.¹ Because of the changing safety regulations and community needs brought on by the COVID-19 pandemic,

the NOCP adapted programming to continue providing access to healthy food and nutrition education, critical resources needed to combat food insecurity augmented by the virus. Changes made included extending resources to staff and the general community, altering food distribution channels, and transitioning to virtual education.

PLACE AND TIME

The hospital is located in the center of Boston, Massachusetts, and is the largest safety-net hospital in the Northeast. This article describes the changes made at the onset of the COVID-19 pandemic in March through August 2020.

PERSON

The hospital serves a racially diverse community (47% non-Hispanic White or

other, 23% Black, 20% Latino, 10% Asian) experiencing disproportionately high rates of poverty, with 72% of patients classified as underserved and 33% speaking English as a second language.² Research suggests that this demographic may be disproportionately affected by COVID-19.³ The Centers for Disease Control and Prevention reports that non-Hispanic Blacks, Hispanics and Latinos, and American Indians/Alaska Natives experience hospitalization and death from COVID-19 at more than four times the rate of their non-Hispanic White counterparts.⁴ In addition, high levels of poverty are associated with more severe symptoms and complications of COVID-19.⁵ This higher risk may be because most low-wage jobs cannot be performed at home, leading to lost wages, unemployment, or continued work with increased risk of disease exposure.⁶

PURPOSE

The purpose of this intervention was to adapt the NOCP to continue providing essential food and nutrition resources to its vulnerable patient population, staff, and the greater community during the COVID-19 pandemic.

IMPLEMENTATION

This section describes the adaptations made by each department of the NOCP.

The Rooftop Farm

In previous years, the farm was maintained by a full-time farmer, part-time assistant, and a variety of staff and patient volunteers. In response to COVID-19, the farm pivoted from rotating volunteers to utilizing two part-time paid interns trained for autonomy and required to follow social distancing protocols. All farm events were canceled, including camp, tours, and farmers market. A series of videos were offered

virtually to assist home gardeners, and the farmer cotaught a weekly teaching kitchen class virtually from the farm. As restrictions on hospital patients, visitors, and in-person staff led to decreased hospital food sales, produce distribution shifted away from the hospital cafeteria and more toward the food pantry.

The Food Pantry

Operations were redesigned to accommodate the community's evolving needs and reduce disease spread (Table 1). The patient prescription-only model was expanded to include hospital staff (438 families), walk-ins (66 families), and general community members (62 families). Hours of operation were extended, waiting room capacity was capped at eight (previously 25), and curbside pickup was offered (Table 1). Home deliveries were provided to patients suffering from or recovering from COVID-19 infections (50 families) and those whose immigration status caused unease (eight families per week).

Deliveries were made by medical student volunteers and the hospital's postal department. Additional deliveries were coordinated through specific clinics, including obstetrics and gynecology, the Grow Clinic (serving pediatric patients with impaired growth), and the pediatric mobile vaccine program (another response to COVID-19).

The Teaching Kitchen

Classes were shifted to an entirely remote model, including both live and prerecorded formats, and were offered free to patients, staff, and the general community. Weekly Instagram Stories entitled "Thursdays in My Home Kitchen" were launched to reach the wider community. Recipes continued to focus on limiting total calories, emphasizing lean and plant-based protein sources, and using whole-food ingredients. Meal ideas centered around staple foods provided by the food pantry and non-perishable foods to help families reduce trips to the grocery store. Services were

TABLE 1— Daily Operations Compared With COVID-19 Response in the Therapeutic Food Pantry in Boston, MA, Between the Months of March 2019 and August 2020

The Food Pantry		
	Before COVID-19	Response to COVID-19
Recruitment and participation	Prescription-based enrollment for patients	Prescriptions and walk-ins for patients, staff, and general community members Services were marketed through employee communication networks, newsletters, and by providers
Staffing	Four staff members and two or three volunteers per day	Four staff members but volunteers prohibited
Hours of operation	10:00 AM–4:00 PM	Flexible 8:00 AM–5:00 PM
	Monday–Friday	Monday–Friday
Workflow	25-person waiting room	Maximum eight-person waiting room
	Serve two recipients at a time	Serve one recipient at a time
	Patients pick up biweekly (twice a month)	Patients can pick up, curbside pickup, or receive home delivery biweekly (twice a month)
Procurement of resources	Order weekly from the Greater Boston Food Bank	Order biweekly from the Greater Boston Food Bank
	Receive donations from private donors	Receive produce donations
	Produce grown from the rooftop farm	Produce grown from the rooftop farm
	Bring in 15,000 pounds of food per week	Bring in 10,000 pounds of food a week

TABLE 2— Number of Families Accessing the Food Pantry in Boston, MA, Per Month Between the Months of March 2019 and August 2020

Food Pantry - Families Served	2019	2020	% Change
March			
Total	2002	1445	-28
Pickup type			
In-person and curbside pickup	2002	1436	
Home delivery	0	9	
April			
Total	2005	1003	-50
Pickup type			
In-person and curbside pickup	2005	819	
Home delivery	0	184	
May			
Total	2071	996	-52
Pickup type			
In-person and curbside pickup	2071	811	
Home delivery	0	185	
June			
Total	1906	1016	-47
Pickup type			
In-person and curbside pickup	1906	863	
Home delivery	0	153	
July			
Total	2123	1191	-44
Pickup type			
In-person and curbside pickup	2123	1074	
Home delivery	0	117	
August			
Total	2166	1223	-44
Pickup type			
In-person and curbside pickup	2166	1132	
Home delivery	0	91	
Average families served	2046	1146	-44

Note. This table shows the number of families accessing the therapeutic food pantry in the months of March–August 2019 and 2020, and the total average during these months.

marketed through digital and printed newsletters and social media.

EVALUATION

Information was gathered through interviews with program managers and senior directors. Third-party services,

including VCita and Survey Monkey, were used to assess participation rates and obtain quality improvement feedback. Surveys were delivered through the teaching kitchen staff and were a combination of multiple-choice and open-ended questions to assess both qualitative and quantitative data. When

applicable, collected data were compared with 2019 data (Tables 1 and 2).

The Rooftop Farm

Although the growing season started later, there was no significant change in food volume compared with previous years. Operations were not significantly affected, but community exposure was dramatically decreased.

The Food Pantry

Year over year comparisons revealed that, on average, families served per month decreased by 44% (Table 2). Though fewer families were served, pounds of food per family increased from 15 to 22 pounds to help families extend time before next food acquisition, thereby increasing social distancing capability (Table 1). In addition, services were extended to staff, walk-in patients, and walk-in community members resulting in a greater variety of recipients served compared with the previous year. As operational strategies evolved, home deliveries increased from nine in March to 185 in May. However, after the surge ended, delivery numbers decreased and were continued primarily by the hospital's postal service. No additional funding was needed to support this intervention.

The Teaching Kitchen

Compared with the previous year, the number of classes offered decreased initially from an average of 28 per month to an average of seven per month during April and May. However, as classes were redesigned to accommodate the virtual format, the number per month steadily increased to 17 by August. Participation rates increased from an average of eight

participants to an average of 15 participants per class. Participants reported preferring remote learning for convenience factors (including child-care and transportation) and found the home-cook atmosphere more relatable in an informal quality improvement survey. However, only about 40% of participants reported cooking along with the instructor as opposed to in-person classes where almost everyone participates in cooking. Reasons cited for not cooking along included not having a specific ingredient(s) and tuning in to watch while on a break at work.

Overall, home deliveries, curbside pickup, and virtual teaching have helped overcome the challenges presented by social distancing requirements.

ADVERSE EFFECTS

Patients receiving home deliveries were unable to swap out foods for preferred items as they were required to accept the full delivery to help prevent disease spread. The transition to remote learning limited participation to those with access to the Internet and a device. The decrease in hands-on learning offered on the farm and in teaching kitchen may affect the overall impact of these experiences.

SUSTAINABILITY

The described operational changes will continue until COVID-19 is resolved. However, home deliveries for vulnerable patients executed by the hospital's postal service and remote learning will be continued long after because of the positive impact they have had on community members. No significant changes in the budget are necessary to maintain these changes.

PUBLIC HEALTH SIGNIFICANCE

Continuing to provide nutritious food and education is crucial to supporting underserved communities, especially given the disproportionate way they are affected by COVID-19. Strong partnerships with private and industry donors have supported NOCP and are critical in its continued success. Adaptations to ensure continued operation during the pandemic were feasible and did not require additional funding. We welcome other hospitals that wish to observe our services to start their programs. *AJPH*

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CONTRIBUTORS

All authors contributed to the design and implementation of the programs, to the analysis of the results, and to the writing of the article.

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CONFLICTS OF INTEREST

C. M. Apovian reports receiving personal fees from Nutrisystem, Zafgen, Sanofi-Aventis, Orexigen, EnteroMedics, GI Dynamics, Scientific Intake, Gelesis, Novo Nordisk, SetPoint Health, Xeno Biosciences, Rhythm Pharmaceuticals, Eisai, and Takeda outside of the funded work. C. M. Apovian reports receiving grant funding from Aspire Bariatrics, GI Dynamics, Orexigen, Takeda, the Vela Foundation, Gelesis, Energesis, Coherence Lab, and Novo Nordisk outside of the funded work. C. M. Apovian reports past equity interest in ScienceSmart LLC.

HUMAN PARTICIPANT PROTECTION

Data presented are not human participant research.

REFERENCES

1. Musicus AA, Vercammen KA, Fulay AP, et al. Implementation of a rooftop farm integrated with a teaching kitchen and preventive food pantry in a hospital setting. *Am J Public Health*. 2019;109(8):1119–1121. <https://doi.org/10.2105/AJPH.2019.305116>
2. Boston CHNA-CHIP Collaborative. 2019 community health needs assessment. September 13, 2019. Available at: <http://www.bostonchna.org/PDF/BostonCHNA%20FINAL%20091319.pdf>. Accessed August 6, 2020.
3. Yancy CW. COVID-19 and African Americans. *JAMA*. 2020;323(19):1891–1892. <https://doi.org/10.1001/jama.2020.6548>
4. Centers for Disease Control and Prevention. People at increased risk and other people who need to take extra precautions. September 11, 2020. Available at: https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-increased-risk.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fneed-extra-precautions%2Fpeople-at-higher-risk.html. Accessed November 6, 2020.
5. Dorn AV, Cooney RE, Sabin ML. COVID-19 exacerbating inequalities in the US. *Lancet*. 2020;395(10232):1243–1244. [https://doi.org/10.1016/S0140-6736\(20\)30893-X](https://doi.org/10.1016/S0140-6736(20)30893-X)
6. Feeding America. The impact of the coronavirus on food insecurity. 2020. Available at: https://www.feedingamerica.org/sites/default/files/2020-04/Brief_Impact%20of%20Covid%20on%20Food%20Insecurity%204.22%20%28002%29.pdf. Accessed August 6, 2020.