



Effective Use of Frameworks and Research to Advance Policy

An Analysis of Public Health Policy and Legal Issues Relevant to Mobile Food Vending

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Mobile food vending is a component of the food environment that has received little attention in the public health literature beyond concerns about food sanitation and hygiene issues. However, several features of mobile food vending make it an intriguing venue for food access.

We present key components of mobile vending regulation and provide examples from 12 US cities to illustrate the variation that can exist surrounding these regulations.

Using these regulatory features as a framework, we highlight existing examples of “healthy vending policies” to describe how mobile food vending can be used to increase access to nutritious food for vulnerable populations. (*Am J Public Health*. Published online ahead of print September 23, 2010: e1–e9. doi:10.2105/AJPH.2009.185892)

THERE IS A GROWING FOCUS

on the role of the food environment for the obesity epidemic.¹ In particular, there is a need for greater access to nutritious food and more limits on energy-dense food with low nutritional value. Greater relative availability of

nutritious food in local food stores is associated with greater intake of those foods.² Although there are some existing strategies to increase purchase of fruits and vegetables within grocery stores,³ access to stores with nutritious food remains an issue. Supermarkets are more likely to carry fresh produce,⁴ but they are less likely to be found in low-income neighborhoods and communities of color.^{5,6} There are a variety of factors that have historically been barriers to supermarket location in lower-income urban areas,^{7,8} and the rural poor appear to have even less access to supermarkets than do their metropolitan counterparts.⁹ Neighborhoods without supermarkets tend to have small corner stores or convenience markets that have limited inventories of nutritious food.¹⁰

Although public health scholars have given some attention to corner store interventions, mobile food vending has received little attention in the public health literature beyond concerns about food sanitation and hygiene issues.^{11,12} But several features of mobile food vending make it an intriguing venue for food access. Unlike a corner store, mobile food vendors sell a small range of

merchandise. Specialized vendors (e.g., vendors selling only fruit) can more easily ensure fresh merchandise because of rapid turnover. Because these vendors are mobile, they have the capacity to reach places that otherwise lack access to food establishments or food stores. Mobile food vendors have been found to converge around schools to sell foods to students after school.¹³ Mobile vendors appear to be a familiar phenomenon in urban as well as rural communities with large numbers of Latino immigrants,^{13–15} and understanding how to encourage the sale of nutritious food rather than energy-dense food would be valuable to these communities and others that have disproportionately high rates of obesity.¹⁶

The need for increased access to nutritious food and the unique features of mobile food vending lead to some compelling questions. Could mobile vendors contribute to the accessibility of nutritious food, particularly for underserved and vulnerable communities? Could a mobile cart or truck function like a supermarket produce aisle on wheels? We focused on how local government law and policy could support healthy mobile vending mainly because the

law has the advantages of broader application and permanence. Here, we present key components of mobile vending regulation by using examples from the municipal codes of the 10 most populous US cities to illustrate the variation that can exist surrounding these regulations. Then, using this framework of regulatory features, we describe how mobile food vending can be used to increase access to nutritious food for vulnerable urban populations, highlighting 2 cities from this list and discussing 2 additional noteworthy policy examples. We chose to limit our scope to mobile food vendors in urban settings because, even though the potential for mobile vending to increase nutritious food access in rural areas is also worth exploring, the unique characteristics of rural settings such as low population density and differences in local government authority warrant a separate examination that takes these features into account.

MOBILE FOOD VENDING IN URBAN HISTORY

Mobile food vending is a worldwide phenomenon. Common in Latin America and Asia, it is often



an opportunity for individuals to make a living with a small enterprise.¹⁷ Mobile vendors have also existed in the United States for many years, and records from New York City as early as 1691 show that street vendors (“hucksters”) were forbidden from selling until competing public markets had already been open for 2 hours. New York City vendors persisted despite a complete ban in 1707, and their growth was closely connected to immigration.¹⁸ In the 1800s, whereas indoor retail stores catered to middle- and upper-class customers, street vendors catered to poor, mostly foreign-born residents, and, for many immigrants with little English-speaking skills, the neighborhood pushcart business was an accessible way to earn a living.¹⁴ Vendors started to establish informal market areas, and street vending thrived in New York City in the 1880s through the 1920s, but was almost completely abolished in the 1930s when enclosed market buildings were built to “tidy up the streets” in preparation for the World’s Fair.¹⁹ It is interesting to note that in 1925, the majority of fruit and vegetable peddlers were Jewish immigrants (63%), and the rest were primarily Italian (32%).²⁰ Mobile food vending continues today, often in communities with many foreign-born residents, and municipal codes still focus on many of the same issues, such as competition with local businesses and prohibiting vendors from operating in “upscale” neighborhoods.

MOBILE VENDING REGULATION

Mobile vending regulations typically include a number of

standard requirements regarding food safety, permits and fees, vendor location, and traffic safety. With the exception of state retail food codes, mobile vending is typically regulated at the local (city or county) level. There is typically citywide regulation found in municipal codes, and a city’s overall approach to regulation of mobile food vending can range from restrictive to permissive. Municipal codes can also grant city agencies the authority to regulate mobile vending with a limited context, as in Kansas City, Missouri, and San Francisco, California, where park and recreation departments regulate mobile vending in parks.

We examined the municipal codes of a subset of US cities to compare mobile vending regulations. For ease of comparison we chose the 10 most populous cities ranked by 2007 estimates.²¹ Municipal codes were all available online, either hosted by the city’s own Web sites or via an online service that hosts city ordinances.^{22,23} Between October and December of 2008, we searched for all sections pertaining to mobile food vending to identify language relevant to the 4 major a priori domains listed in Table 1. These domains pertained to health and safety, permits and fees, location-based regulation, and whether there were any nutrition incentives. From the 10-city analysis we identified 2 cities, Chicago, Illinois, and New York, New York, that had nutrition incentives for mobile vending carts. We assessed healthy food policies for these cities plus 2 additional cities (Kansas City and San Francisco) that we identified

through our involvement in the National Policy and Legal Analysis Network as cities with a healthy mobile vending policy (Table 2). Highlighted in the following sections are examples of the variation in existing policy with respect to the 3 domains of health and safety, permits and fees, and location-based regulation. (Nutrition incentives, when present, are discussed in the subsequent section where components of healthy mobile vending policies are considered.)

Health and Safety Regulation

Municipal codes regarding mobile vending must comply with applicable state laws. Most states regulate the health and safety of mobile vending under their retail food codes, and state retail food codes often charge local agencies with carrying out the code’s provisions.^{94–97} State retail food codes are focused on protecting the public from food-borne illness, with provisions designed to prevent contamination and promote hygiene.^{98,99} To promote uniform food safety regulations, the US Food and Drug Administration developed a model Food Code for states to adopt,¹⁰⁰ under which mobile vending facilities are considered a type of food establishment and, therefore, subject to the code’s health and safety provisions.¹⁰¹

To further promote safe food handling practices, vendors are often required to operate from a commissary. A commissary is a centralized facility where vendors clean and store their vehicles as well as sanitize their equipment.¹⁰² The commissary may also serve as a common kitchen from which vendors can prepare their

food, as laws generally prohibit vendors from preparing food at home.¹⁰³ Local authorities (usually mandated by state law) may also require inspection of commissaries to ensure compliance with food-safety laws.¹⁰⁴

Permits and Fees

Local governments require vendors to obtain a license or permit. To obtain a permit, frequently the vending vehicle must pass inspection by the local health department or other designated authority. Municipalities charge a fee for vendor permits and amounts can vary greatly. In addition, local laws may cap the number of mobile vending permits allowed at any one time. For example, until recent legislation added new permits for fruit and vegetable vendors, New York City law had historically limited the total number of general permits for mobile food vendors at 3100.¹⁰⁵ Permits continue to be in great demand in New York City and there is a sizeable waiting list for prospective vendors.^{106,107}

Location

Local governments commonly restrict where mobile vendors may operate. Some cities have complex laws regulating vending street by street. For example, Philadelphia, Pennsylvania, code explicitly refers to the specific streets within the central part of the city where vendors are allowed to conduct business.¹⁰⁸ Others might have a designated area for vending or allow vending citywide but have certain restrictions. For example, Phoenix, Arizona; San Antonio, Texas; and San



TABLE 1—Comparison of Mobile Food Vending Laws in the 10 Most Populous US Cities: 2008

City	Health and Safety			Permits or Other Regulations			Location		Nutrition Regulation
	Are Vendors Required to Operate From a Commissary?	Are Vendors Subject to Inspection?	Fees for Mobile Vendor Permits or License	Other Special Regulations	Restriction on Duration of Vendor Stops	Hours When Vendors Are Allowed to Operate	Restrictions on Vendor Proximity to Schools		
Chicago, IL	Commissary or other licensed fixed food service establishment. ²⁴	Yes. Vendors must pass inspection before license will be issued. ²⁴	\$165 every 2 y for "peddlers" of fruits and vegetables ²⁵ , otherwise \$275, payable every 2 y. ²⁶	No.	No regulation.	7 AM to 5 PM for peddlers of fruits and vegetables. ²⁷ Otherwise, there is no restriction on hours.	No regulation.	Vendors selling only fruits and vegetables pay a reduced permit fee. ²⁸	
Dallas, TX	Yes. ²⁹	Yes. ³⁰	\$100 for most vendors, but \$465 for a mobile food preparation vehicle such as a "hot truck." ³¹	Vendors must provide a monthly itinerary indicating where they intend to operate ³² and must be able to provide proof of liability insurance. ³³	Vendors may not stop longer than 1 h in 1 place/d, or operate for a total of 3 h in 1 location within a 24-h period. ³¹	No regulation.	No regulation.	No.	
Houston, TX	Yes, and commissaries are required to keep servicing records for each mobile vendor. ³⁴	Yes. Vendors must pass inspection before receiving a permit, and then are subject to inspection without notice. ^{35,36}	\$200 for a permit, \$310 for a "medallion" to be placed on the vending vehicle, and a \$200 electronic monitoring systems fee for "unrestricted mobile food units." ³⁷	Vendors in the downtown district need permission from abutting store owners. ³⁸ A person certified in safe food handling must be on duty at all times. ³⁹	No regulation.	Vendors may designate a site for 24-h use. ⁴⁰	No regulation.	No.	
Los Angeles, CA	N/A	N/A	N/A	Vendors must establish a "special sidewalk vending district"; at present, no district exists. ⁴¹	N/A	N/A	N/A	N/A	
New York, NY	Yes. All vendors must operate from a commissary, depot, or other licensed facility. ⁴²	Yes. Vendors are not allowed to operate until they have passed inspection. ⁴³	Permits are valid for 2 y, ⁴⁴ \$50 if fresh fruits or vegetables or prepackaged food ⁴⁵ , \$100 if food is processed on site. ⁴⁶	Green Cart vendors only in underserved areas, ⁴⁷ and must have educational brochures. ⁴⁸	No regulation.	Varies by location. ⁴⁹	No regulation.	Green Cart vendors selling whole fruits and vegetables, ⁵⁰ Green Cart vendors have priority on permit waiting list. ⁵¹	
Philadelphia, PA	Yes. ⁵²	Yes. Vendors must submit to an official inspection ⁵³ and perform a self-inspection every 3 mo. ⁵⁴	\$125 annually for vendors on foot; otherwise \$300 annually for all other vehicles. ⁵⁵	No.	No regulation.	7 AM to 12 AM. ⁵⁶	No regulation.	No.	

Continued



TABLE 1—Continued

Phoenix, AZ	Yes. Vendors must report daily to a commissary. ⁵⁷	Yes. Vendors must be inspected at least every 6 mo under the Arizona Food Code. ⁵⁸	\$250 first-time license application fee, then \$30/y. ⁵⁹ There is also a 1-time fee for criminal investigation fingerprints. ⁶⁰	Vendors may not operate on any street abutting a public park within 150 ft of a lawfully established park concession. ⁶¹	Vendors may not stop for more than 1 h within an 8-h period on any public street or alley. ⁶²	6 AM to 2 AM on private property ⁶³ ; the later of 7 PM or sunset and before sunrise on public property. ⁶⁴	Vendors on private property may not operate within 300 ft of any school between 6 AM and 5 PM, ⁶⁵ or within 600 ft of any school, or between 7 am and 4:30 pm when located on public property. ⁶⁶	No.
San Antonio, TX	Yes. Vendors must operate from a commissary, unless they sell food that exempts them from this provision. ⁶⁷	Yes. Vendors are subject to routine unannounced inspections. ⁶⁸	\$48 to \$350 annually depending on the type of vehicle used and the type of food sold. ⁶⁹	Vendors may not sell within 300 ft of any food establishment unless they obtain permission from the owner. ⁷⁰	No regulation.	7 AM to 30 min after sunset in residential areas. 7 AM to 10 PM in June, July, and August. ⁷¹	Vendors may not sell within 300 ft of any school 1 h before, 1 h after, and during school hours. ⁷²	Vendors selling whole fruits or vegetables, fresh fish, or shrimp do not have to operate from a commissary. ⁷³
San Diego, CA	Yes. ⁷⁴	Yes. ⁷⁴	\$164 to \$427 annually depending on the type of vehicle used and the type of food sold. ⁷⁵	Units propelled by "muscular power either human or animal" cannot be used to sell perishable food. ⁷⁶	Restrictions on duration of time vendors are allowed to stop varies by location. ⁷⁷	9 AM to 8 PM. ⁷⁸	Vendors may not operate within 500 ft of any public school between 7 AM and 4 PM on regular school days. ⁷⁹	Vendors may sell farm produce from the farm property without paying a permit fee. ⁸⁰
San Jose, CA	Yes, or other approved facility. ⁸¹	Yes. ⁸²	\$418 for an "approved location" vendor permit; \$149 for all other vendors, plus \$45 for an ID card. ⁸³	Vendors operating from a designated "approved location" must have liability insurance. ⁸⁴	Except for "approved location" (stationary) vendors, vendors may not stop in 1 place for longer than 15 min in a 2-h period. ⁸⁵	10 AM to 7 PM or sunset; vendors at construction or industrial sites are exempt from this regulation. ⁸⁶ Approved location vendors may operate from 6 AM until 7 PM or sunset. ⁸⁷	Vendors may not operate within 500 ft of any school property. ⁸⁸	No.



TABLE 2—Examples of Existing Healthy Vending Policies Enacted Within US City Ordinances by City Agencies: 2008

Type of Policy	City	Health or Nutrition Regulation for “Healthy Vendor”	Permits or Fees for “Healthy Vendor”	Location for “Healthy Vendor”
City ordinance	New York, NY	“Green Carts” program applies only to vendors selling whole, unprocessed fruits and vegetables. ⁴⁷	Increased city’s overall number of permits to include 1000 designated Green Carts. Reduced fee for Green Carts vendors. ⁸⁹	Special permit prioritizes selling in underserved boroughs. ⁴⁷
City ordinance	Chicago, IL	Vendors selling fruits and vegetables eligible for a permit at a reduced cost. ⁹⁰	Reduced fee of \$165 every 2 y, otherwise \$275 every 2 y. ⁹¹	Not specified.
City agency policy	San Francisco, CA, Parks and Recreation Department	Favorable products: grown or produced locally, are organic, minimally processed, have no genetic modification, no unnecessary antibiotics, no added growth hormones, and meet animal welfare or fair trade policies. ⁹²	\$1000 per mo. ⁹²	City parks. ⁹²
City agency policy	Kansas City, MO, Parks and Recreation Department	Food guidelines (per serving): <ul style="list-style-type: none"> • ≤5 g of total fat • ≤30 g carbohydrate Beverage guidelines: <ul style="list-style-type: none"> • water • milk (1% or skim, any flavor) • 50% or more fruit or vegetable juice with no sweeteners • ≤50 calories per 12 oz⁹³ 	“Healthier” vendors: <ul style="list-style-type: none"> • ≥50% items meeting guidelines • 50% reduced permit (\$250/year) “Healthiest” <ul style="list-style-type: none"> • vendors ≥75% items meeting guidelines • Full permit (\$500), though have roaming privileges.⁹³ 	“Healthier” vendors are limited to 1 city park. “Healthiest” vendors have roaming permit for 3 city parks. ⁹³

Diego, California, restrict vendors from locating near schools based approximately on school hours, whereas San Jose, California, prohibits vending near schools irrespective of the time of day.

Local regulations also attempt to prevent vendors from competing with restaurants or other businesses. For instance, in some places, vendors must obtain written permission from any abutting business owners to locate near them.¹⁰⁹ Local laws may also prohibit vendors from locating in close proximity to certain stationary businesses altogether, such as Chicago’s prohibition of vendors within 1000 feet of the Maxwell Street Market.¹¹⁰ The process in Los Angeles, California, is

particularly prohibitive for legal mobile food vending. First, Los Angeles law requires vendors to obtain the consent of at least 20% of the business owners and residents in the area before the city will begin the bureaucratic process of establishing a “special sidewalk vending district.”¹¹¹ The law then requires vendors to get written permission from the property owner or tenant closest to where the vendor intends to locate,¹¹² and a petition of 20% of the nearby residents and business owners can ultimately close the vending district.¹¹³

Another common regulation is to require vendors to move after a designated interval of time. In San Jose, some mobile

vendors are prohibited from remaining in the same location for more than 15 minutes in a 2-hour period.¹¹⁴ This type of regulation may discourage mobile vending as constantly moving makes it more difficult for vendors to draw on regular customers or operate efficiently.

Vendors must also comply with local and state vehicle or traffic safety regulations. These regulations are generally aimed at preventing interference with flow of traffic and ensuring pedestrian safety. For example, San Diego’s code prohibits vendors from locating or operating in any manner that would “interfere with the free use of the public right-of-way.”¹¹⁵

COMPONENTS OF A HEALTHY VENDING POLICY

Using the regulatory components of health and nutrition regulation, permits and fees, and location regulation, we describe how local government can utilize mobile food vending to increase access to nutritious food.

Health and Nutrition Regulation

Health departments already play an important role in the regulation of mobile food vending because of their duty to ensure food safety. As an additional step toward increasing access to nutritious food, health departments



could evaluate mobile vendors for compliance with nutritional standards. Health departments could confer special “healthy food vendor” status to vendors who meet nutritional standards, thus creating a category of vendors who are eligible for other regulatory incentives. There are a variety of approaches that health departments could take to define key terms. One step would be to reserve designation of “healthy food vendor” status to vendors carrying a threshold percentage of food items that meet the Food and Drug Administration’s Nutrition Labeling criteria for designation as a “healthy” food. Per serving, qualifying food items would need to be low in fat (3 g or less) and saturated fat (1 g or less), contain limited amounts of sodium and cholesterol, and provide 10% of the daily value for vitamin A, vitamin C, iron, calcium, protein, or fiber.^{116,117}

Alternatively, health departments could limit “healthy food vendor” status to vendors who sell exclusively fresh produce. Because fresh, uncut produce is exempt from regulation under many state food retail codes, this is a relatively easy legal intervention for some localities. For example, New York City passed Local Law 9 in March of 2008, amending the existing municipal code to create 1000 additional mobile vending permits for “Green Carts.”¹¹⁸ A Green Cart is one selling exclusively whole, uncut, and unprocessed produce. There has been a high demand for obtaining permits as a Green Cart,¹¹⁹ and Green Cart vendors also have priority on the city’s overall waiting list for vendor permits (Table 2).¹⁰⁴

The parks and recreation departments in Kansas City and San Francisco are both encouraging the sale of “healthy foods” though using different criteria. Kansas City’s Department of Parks and Recreation has a policy that allows vendors to sell in the city’s parks, provided that their food complies with explicitly defined nutrition guidelines.⁹³ Vendors with at least 50% of their foods meeting these guidelines are deemed “healthier” vendors, and vendors with at least 75% of foods meeting these guidelines are considered “healthiest.” Vendors meeting these criteria qualify for reduced fees and are allowed to sell in more areas.⁹³

San Francisco’s Parks and Recreation Department recently released a request for proposals soliciting specialty food carts with an interest in selling within the city’s public parks.⁹² This request for proposals for specialty food pushcarts focuses on “health,” but does not specifically require food to be nutrient-rich or low in calories or fat. The request for proposals states that the department will “view favorably menus that incorporate healthy, sustainably grown food and beverages.” Priority foods are those that are grown or produced locally, are organic, are minimally processed, have no genetic modification, have no unnecessary antibiotics, have no added growth hormones, and meet animal welfare or fair trade policies.⁹²

Permits and Fees

Cities often set a limit on the total number of permits for vendors that are allowed at any given time. This is presumably to prevent saturation from mobile vendors.

One approach toward a healthy vending policy would be to disproportionately increase the number of permits allowed for vendors that sell nutritious foods. This approach was taken under the New York City Green Carts program.

Another potential healthy vendor policy is for local government to subsidize, waive, or reduce permit fees that a prospective vendor would pay if the food that they sell meets nutritional requirements. In Chicago, vendors that sell only fruits and vegetables pay a reduced permit fee of \$160 instead of \$475 every 2 years.²⁸ Kansas City vendors selling in parks who qualify as being “healthier” vendors (with at least 50% of food meeting nutritional guidelines) are given a 50% discount on their vending permit (a savings of \$250).⁹³

Location Regulation

Another approach is to modify restrictions on where vendors are allowed to operate to give “healthy foods vendors” a geographic advantage over other vendors selling less nutritious items. Kansas City vendors selling in parks who qualify as being “healthiest” vendors are given a special “roaming” permit that allows them to sell in 3 parks instead of just 1 park.⁹³ It is also possible to translate this same principle of geographic advantage to increase sale of nutritious food near schools.

To address racial, ethnic, or economic disparities in access to nutritious food, a local government can also create incentives for “healthy foods vendors” to locate in neighborhoods most in need of increased access to fresh produce and other nutritious food. The

Green Carts Program in New York City seeks to address the disparity in access to healthful food by designating a greater number of Green Cart permits in neighborhoods with historically low access to fresh fruits and vegetables (Figure 1).¹²⁰

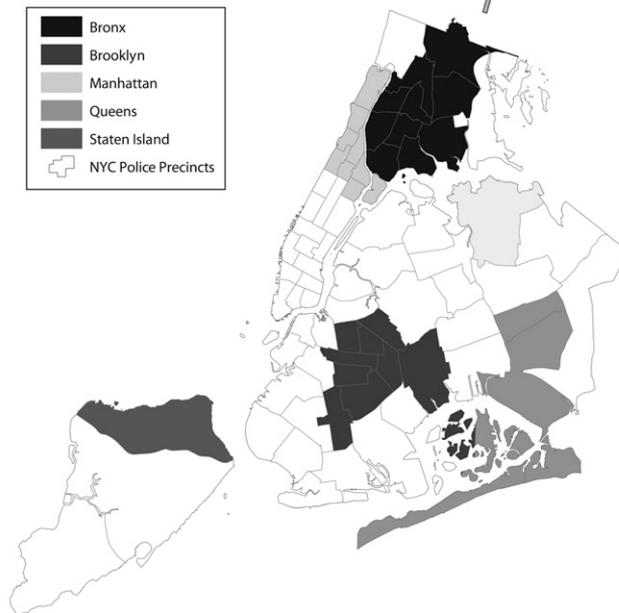
CHALLENGES

Healthy mobile vending policies face several potential challenges. First, such policies require sufficient infrastructure for enforcement. Increasing the number of available permits for an existing type of vendor necessitates increased capacity to administer these permits and resources to enforce the new policy. Additionally, the presence of “healthy foods vendors” creates the need for regulation and enforcement of nutritional quality beyond current regulations, which are focused solely on food safety and hygiene. But even though additional infrastructure requires an investment of resources, a healthy vending policy has the potential to create new job opportunities that would in turn generate tax revenue.

A second challenge is that the presence of extra permits or incentives for certain types of mobile vendors may create resentment from other vendors who do not have the same privileges and also can create fears of competition from nearby store owners who may have nutritious items on their shelves.^{121,122} Additionally, some vendors are undocumented immigrants who are earning a living by conducting a business with relatively low overhead costs. For these vendors, increased attention



NYC Green Cart



Note. Shaded areas correspond to designated areas for allowed “Green Carts.” Numbers correspond to police precincts.
 Source. New York City Department of Health and Mental Hygiene Web site¹²⁰; used with permission.

FIGURE 1—Map of designated areas for New York City’s specially permitted Green Carts that sell fresh produce in underserved areas: 2008.

food among low-income communities and communities of color. An ideal healthy vending policy would attract vendors to provide services within these communities. However, if permits come with fees that are prohibitively steep, or if the food deemed “healthy” is too expensive (or unfamiliar) to vendors or customers, a healthy vending policy may be unsuccessful in optimally targeting the communities most in need of increased access to healthy food.

WHERE TO GO FROM HERE

As healthy vending initiatives such as the New York City Green Carts Program develop, research is needed to evaluate the effects of these natural policy experiments. Specifically, we need to understand at a population level whether these policies actually result in increased access to healthier foods, and whether they lead to improved dietary intake. Feasibility and sustainability of such programs also need to be documented and understood. Vulnerable populations that experience a higher prevalence of obesity, such as low-income and ethnic minority communities, are a particular research priority area. In light of the current obesity epidemic among youths and the fact that students appear to make purchases at vendors after school,¹³ addressing the relationship of mobile food vending specifically to youths should also be a priority.

Additionally, there is a need to study not only consumer acceptability of mobile-vended nutritious food, but also how competitive these food items can be when compared with less-nutritious

options. Previous research with vending machines showed that reductions in price of low-fat items in vending machines led to their increased sale compared with high-fat options.¹²³ Similar experimental work looking at the sale of nutritious items in close proximity to less-nutritious options would be valuable.

Legal Community

This article serves as the groundwork for exploring the role, benefits, and practical limitations of using mobile food vending regulation to improve access to nutritious food. More work is needed to examine the balance between fully realizing the positive potential of mobile food vendors and not creating undue burdens for municipalities, regulatory agencies, or vendors themselves.

There is also a need for technical expertise and guidance from the legal community to create the tools needed to translate desired changes into local policy. In recent movements such as the increasing adoption of soda-free school districts, public health lawyers have been instrumental by providing model ordinances with exemplar language that can be used by local governments to implement the desired health-promoting policy.

Community Action, Leadership, and Political Will

Finally, it is not enough to propose novel ways to regulate mobile vending and hope that local governments take up the cause. Obtaining the support and political will to enact new policies is critical. Advocates may need buy-in from a range of constituents, including

on their mobile vending business may be unwelcome.

A third challenge is the inherent difficulty in establishing a meaningful definition of “healthy food” and determining whether this definition will lead to the consumption of foods with a higher nutritional value. The guidelines in the Kansas City Parks and Recreation Department regulations include very strict definitions regarding calories and fat. New York City’s Green Carts program clearly limits itself to nutritious food by

focusing only on produce. San Francisco’s Department of Parks and Recreation defines “healthy food” with a focus on sustainability. Although this supports a more sustainable food system, this approach does not ensure that the foods sold would be any lower in fat or calories than standard fast food.

A final challenge lies in whether a healthy vending policy actually increases access for populations in need of improved access to nutritious foods. There is a strong need for increased access to nutritious



the business community, law enforcement, or health department officials, to get a healthy mobile vending policy successfully supported by local governance bodies. For example, advocates with the Healthy Eating Active Communities collaborative in Santa Ana and in South Los Angeles, California, have worked with vendors and city officials alike to understand and convey the needs of vendors to have incentives for selling nutritious foods. Garnering the support of a diverse group of interested parties will create the political climate necessary to enact innovative healthy mobile vending policies as part of an overall strategy to improve access to nutritious food in vulnerable communities. ■

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Contributors

J.M. Tester originated the study and led the writing. S.A. Stevens led the legal analysis and contributed significantly to the writing. I.H. Yen and B.L. Laraia assisted with the study and analyses.

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References

1. Story M, Kaphingst KM, Robinson-O'Brien R, Glanz K. Creating healthy food and eating environments: policy and environmental approaches. *Annu Rev Public Health*. 2008;29(1):253–272.
2. Cheadle A, Psaty BM, Curry S, et al. Community-level comparisons between the grocery store environment and individual dietary practices. *Prev Med*. 1991;20(2):250–261.
3. Glanz K, Yaroch AL. Strategies for increasing fruit and vegetable intake in grocery stores and communities: policy, pricing, and environmental change. *Prev Med*. 2004;39(supp 2):S75–S80.
4. Sallis JF, Nader PR, Rupp JW, Atkins CJ, Wilson WC. San Diego surveyed for heart-healthy foods and exercise facilities. *Public Health Rep*. 1986;101(2):216–219.
5. Powell LM, Slater S, Mirtcheva D, Bao Y, Chaloupka FJ. Food store availability and neighborhood characteristics in the United States. *Prev Med*. 2007;44(3):189–195.
6. Morland K, Wing S, Diez-Roux A, Poole C. Neighborhood characteristics associated with the location of food stores and food service places. *Am J Prev Med*. 2002;22(1):23–29.
7. Nayga RM Jr, Weinberg Z. Supermarket access in the inner cities. *J Retailing Consum Serv*. 1999;6(3):141–145.
8. Pothukuchi K. Attracting supermarkets to inner-city neighborhoods: economic development outside the box. *Econ Dev Q*. 2005;19(3):232–244.
9. Kaufman PR. Rural poor have less access to supermarkets, large grocery stores. *Rural Dev Perspect*. 1999;13(3):19–26.
10. Gittelsohn J, Franceschini MC, Rasooly IR, et al. Understanding the food environment in a low-income urban setting: implications for food store

- interventions. *J Hunger Environ Nutr*. 2008;2(2,3):33–50.
11. Burt BM, Volel C, Finkel M. Safety of vendor-prepared foods: evaluation of 10 processing mobile food vendors in Manhattan. *Public Health Rep*. 2003;118(5):470–476.
12. Lues JF, Rasephei MR, Venter P, Theron MM. Assessing food safety and associated food handling practices in street food vending. *Int J Environ Health Res*. 2006;16(5):319–328.
13. Tester JM, Yen IH, Laraia B. Mobile food vending and the after-school food environment. *Am J Prev Med*. 2010;38(1):70–73.
14. Taylor D, Fishell V, Derstine J. Street foods in America - a true melting pot. In: Simopoulos A, Bhat R, eds. *Street Foods: World Review of Nutrition and Dietetics*. Basel, Switzerland: Karger; 2000:25–44.
15. Cupers K. Tactics of mobility: the spatial politics of street vending in Los Angeles. Paper presented at: Urbanism & Urbanization Conference: A New Modernity—Approaches Theories, and Designs; August 31, 2006; University Iuav of Venice, Venice, Italy. Available at: http://www.iuav.it/Didattica1/SCUOLA-DI-/DOTTORATI-/urbanistic/eventi/U-U_2006_papers_collection.pdf. Accessed July 28, 2010.
16. Hedley AA, Ogdan CL, Johnson CL, Carroll MD, Curtin LR, Flegal KM. Prevalence of overweight and obesity among US children, adolescents, and adults, 1999–2002. *JAMA*. 2004;291(23):2847–2850.
17. Simopoulos A, Bhat R, eds. *Street Foods: World Review of Nutrition and Dietetics*. Basel, Switzerland: Karger; 2000.
18. Wright R. Hawkers and walkers in early America. In: Ward D, Zunz O, eds. *Landscape of Modernity*. New York, NY: Russell Sage Foundation; 1992:233–234.
19. Bluestone D. The pushcart evil. In: Ward D, Zunz O, eds. *Landscape of Modernity*. New York, NY: Russell Sage Foundation; 1992.
20. French E. Push cart markets in New York City (US Dept of Agriculture, Agricultural Economics Bureau and the Port of New York Authority, March 1925). In: Ward D, Zunz O, eds. *Landscape of Modernity*. New York, NY: Russell Sage Foundation; 1992:34–35.
21. Annual estimates of the population for incorporated places over 100,000, ranked by July 1, 2007 population: April

- 1, 2000 to July 1, 2007 (SUB-EST2007-01). Washington, DC: Population Division, United States Census Bureau; July 10, 2008.
22. American Legal Publishing Corporation [search engine]. Available at: <http://www.amlegal.com>.
23. Municipal Code Corporation [search engine]. Available at: <http://www.municode.com>.
24. IL Admin Code tit 77, §750.1550 (2009).
25. Chicago, IL Code §4-8-030(b) (2008).
26. Chicago, IL Code §4-5-010(31) (2008).
27. Chicago, IL Code §4-244-120 (2008).
28. Chicago, IL Code §§ 4-244-020, 4-5-010(66) (2008).
29. Dallas, TX Code §17-8.2(g)(1) (2008).
30. Dallas, TX Code §17-8.2(c)(1)(B) (2008).
31. Dallas, TX Code §17-8.2(h)(2)(F)(iv) (2008).
32. Dallas, TX Code §17-8.2(h)(2)(B) (2008).
33. City of Dallas. Requirements for mobile food vendors. Available at: <http://www.dallascityhall.com/pdf/ehs/MobileFoodVendorRequirements.pdf>. Accessed July 28, 2010.
34. Houston, TX Code, art II, div 1, §20-22(e)(1),(4) (2008).
35. Houston, TX Code, art XI, div 2, §40-269(b) (2008).
36. City of Houston, Mobile Food Service Units, §VIII. Available at: <http://www.houstontx.gov/health/Food/MOBILEREQ.html>. Accessed July 28, 2010.
37. Houston, TX Code, art II, div 2, §20-37 (2008).
38. Houston, TX Code, art XI, div 2, §40-263(3) (2008).
39. City of Houston, Mobile Food Service Units, §XIV. Available at: <http://www.houstontx.gov/health/Food/MOBILEREQ.html>. Accessed July 28, 2010.
40. Houston, TX Code, art XI, div 2, §40-263(2) (2008).
41. City of Los Angeles, Community Development Department. Sidewalk vending program. Available at: <http://>



- www.lacity.org/cdd/bus_side.html. Accessed July 28, 2010.
42. New York, NY, tit 24, Health Code §89.05(a)(2) (2008).
43. New York, NY, tit 24, Health Code §89.5(a) (2008).
44. New York, NY, Code §17-307(e) (2008).
45. New York, NY, Code §17-08(c)(1) (2008).
46. New York, NY, Code §17-308(c)(2) (2008).
47. New York, NY, Code §17-307(b)(4) (2008).
48. New York City Dept of Health and Mental Hygiene. *Eat Street Smart*. 2008. Available at: <http://www.nyc.gov/html/doh/downloads/pdf/cdp/greencarts-brochure-online.pdf>. Accessed July 27, 2010.
49. New York, NY, Code §17-315(l) (2008).
50. New York, NY, Code §17-307(b)(4) (2008).
51. New York, NY, Code §17-307(b)(4)(e) (2008).
52. Philadelphia Dept of Public Health. Food safety for mobile food vendors: preparing and servicing safe food from mobile food vending units in Philadelphia. Available at: <http://www.fsis.usda.gov/OPPDE/islgrs/Retail/FY01/Philadelphia/VendorBrochure.pdf>. Accessed July 28, 2010.
53. Philadelphia, PA Health Code §6-301(3)(a) (2009).
54. Philadelphia, PA Health Code §6-301(8)(b) (2009).
55. Philadelphia, PA Code §9-203(3)(b) (2009).
56. Philadelphia, PA Code §9-205(8)(l) (2009).
57. Maricopa County Environmental Health Code ch VIII, §3, reg (5)(e) (2007).
58. AZ Food Code §8-401.10 (2000). Available at: <http://www.azdhs.gov/phs/oeh/rs/pdf/fc2000.pdf>. Accessed July 28, 2010.
59. Phoenix, AZ Code art XIV, §10-162(A) to (B) (2009).
60. Phoenix, AZ Code art XIV, §10-162(F) (2009).
61. Phoenix, AZ Code art II, §31-24(5) (2009).
62. Phoenix, AZ Code art II §31-24(1) (2009).
63. Phoenix, AZ Code art XIV, §10-166(B)(2) (2009).
64. Phoenix, AZ Code art II, §31-24.1(c) (2009).
65. Phoenix, AZ Code art XIV, §10-166(B)(3) (2009).
66. Phoenix, AZ Code art II, §31-24(2) (2009).
67. San Antonio, TX Code art IV, §13-64(2) (2009).
68. San Antonio, TX Code art IV, §13-62(j) (2009).
69. San Antonio, TX Code art IV, §13-62(d) (2009).
70. San Antonio, TX Code art IV, §3-63(a)(10) (2009).
71. San Antonio, TX Code art IV, §13-63(12) (2009).
72. San Antonio, TX Code art IV, §13-63(9) (2009).
73. San Diego, CA Code §§42.0130 & 42.0161(m) (2009).
74. San Diego, CA Code §42.0103 (2009).
75. San Diego County Code §8 65.104 & 65.106(a)(7)-(9) (2009).
76. San Diego, CA Code §§42.0101.2 (2009).
77. County of San Diego, Dept of Environmental Health. Construction and operational guide for mobile food facilities and mobile support units. Available at: http://www.sdcounty.ca.gov/deh/food/pdf/publications_plancheckmff.pdf. Accessed July 28, 2010.
78. San Diego, CA Code §33.1410 (2009).
79. San Diego, CA Code §54.0122(g) (2009).
80. San Diego, CA Code §42.0126 (2009).
81. CA Health & Safety Code §114295 (West 2009).
82. CA Health & Safety Code §§113715, 113725 (West 2009).
83. San Jose, CA Resolution 74981 (2009).
84. San Jose, CA Code §6.54.270 (2009).
85. San Jose, CA Code §6.54.240(1) (2009).
86. San Jose, CA Code §6.54.205 (2009).
87. San Jose, CA Code §6.54.260(R) (2009).
88. San Jose, CA Code §6.54.240(2) (2009).
89. New York, NY Code §17-307(b)(4)(e) (2008).
90. Chicago, IL Code §§4-5-010(66) (2008).
91. Chicago, IL Code §§4-5-010(31) & (66) (2008).
92. City and County of San Francisco and San Francisco Recreation and Park Commission. Request for proposals for the operation of specialty food pushcarts at various park locations citywide. Available at: http://sf-recpark.org/ftp/uploadedfiles/wcm_recpark/RFP/PushcartRFPFinal.pdf. Accessed July 27, 2010.
93. Kansas City Parks and Recreation Vending Policy. Available at: <http://www.kcmo.org/idc/groups/parksandrec/documents/parksrecreation/012710.pdf>. Accessed July 27, 2010.
94. CA Health & Safety Code §113713 (West 2009).
95. TX Health & Safety Code Ann §§437.002-437.0055 (Vernon 2009).
96. 25 TX Admin Code §§22.9.162(83) & 229.171(a)(1) (2010).
97. AZ Food Code §1-201.10(B)(69) (2000).
98. AZ Food Code §3-202.11 (2000).
99. CA Uniform Retail Food Facility Law §114265(h) (2010).
100. FDA Model Food Code, Preface §3 (2005).
101. FDA Model Food Code §1-201.10(B) (2005).
102. NY Admin Code §17-306(a) (2008).
103. San Diego, CA Code §42.0101 (2009).
104. Houston, TX Code §20-22(f)(1) (2009).
105. New York, NY Code §17-307(b)(4)(e) (2008).
106. Jacobo F. Street vendors face long wait for permits. *The Bronx Beat*. April 19, 2008. Available at: https://cranberry.cc.columbia.edu/cs/ContentServer?childpage=Bronxbeat08%2FJRN_Content_C%2FRW1StoryDetailLayout2&c=JRN_Content_C&p=1175373931411&page=JRN%2FRW1Wrapper&cid=1175374630808&site=Bronxbeat08. Accessed July 27, 2010.
107. New York City Dept of Health and Mental Hygiene. Mobile food vendor permit waiting list instructions. Available at: <http://home2.nyc.gov/html/doh/html/permit/permit1.shtml>. Accessed August 24, 2009.
108. Philadelphia, PA Code §9-204(8) (2009).
109. Houston, TX Code §40-263(3) (2008).
110. Chicago, IL Code §4-244-147 (2008).
111. Los Angeles, CA Code §42(m)(2)(B) (2008).
112. Los Angeles, CA Code §42(m)(7) (2008).
113. Los Angeles, CA Code §42(m)(12) (E) (2008).
114. San Jose, CA Code §6.54.240(1) (2009).
115. San Diego Code §42.0166(c) (2009).
116. *Nutritional Labeling: General Guidelines*. Crookston, MN: Agricultural Utilization Research Institute; 1996. Available at: <http://www.auri.org/research-article.php?raid=43>. Accessed July 27, 2010.
117. 21 CFR 101.65(d)(2) (2008).
118. New York City, NY. Local Law 9, 2008. Amendment to Municipal Code §17-306. Available at: <http://webdocs.nycouncil.info/textfiles/Int%200665-2007.htm>. Accessed April 2, 2009.
119. New York City Dept of Health and Mental Hygiene. NYC green carts program. Available at: http://www.nyc.gov/html/doh/html/cdp/cdp_pan_green_carts.shtml. Accessed April 21, 2009.
120. New York City Dept of Health and Mental Hygiene. NYC green carts program areas. Available at: http://www.nyc.gov/html/doh/downloads/pdf/cdp/green_carts_areas.pdf. Accessed April 1, 2009.
121. Collins G. Customers prove there's a market for fresh produce. *New York Times*. June 11, 2009;A:24.
122. Levi S. Green cart proposal takes on Harlem health. *Columbia Spectator*. November 30, 2008. Available at: <http://www.columbiaspectator.com/2008/02/01/green-cart-proposal-takes-harlem-health>. Accessed July 27, 2010.
123. French SA. Pricing effects on food choices. *J Nutr*. 2003;133(3):841S-843S.