

# Evaluating Challenges to Increasing Healthy Food on the Navajo Nation: Supply chain and Consumer Determinants

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## Abstract

The Navajo Nation, situated in rural and arid Arizona, New Mexico and Utah, has about 250,000 members living on 27,000 square miles.<sup>1</sup> Over half of Navajo residents live below the poverty line, 42% are unemployed,<sup>2</sup> 18,000 households lack electricity<sup>3</sup>, and about 20% do not have home plumbing.<sup>3</sup> Navajo face a double burden of high rates of chronic disease while having the highest prevalence of food insecurity reported for a US population.<sup>4</sup> To reverse these public health challenges, the food environment must provide opportunities for healthy eating at affordable prices.

Convenience stores are the food outlets closest to Navajo communities, yet they have few healthy options. Little is known about the challenges to supplying healthy food on the Navajo Nation.

Designed to complement and inform a Centers for Disease Control and Prevention (CDC) Racial and Ethnic Approaches to Community Health (REACH) grant, the goal of this dissertation is to use mixed methods to inform and evaluate changes to the food environment on the Navajo Nation.

The following specific aims will be met: 1) identify supply chain factors limiting fresh produce in Navajo small stores; 2) determine consumer perspectives on purchasing healthy foods from small stores on Navajo Nation; and 3) evaluate REACH efforts to increase fresh produce and traditional foods at small stores on Navajo Nation. This mixed-methods study uses interviews and intercept surveys to inform REACH interventions. Store environment assessments will document change in food availability and affordability over a one-year period.

## Specific Aim 1:

### Identify supply chain factors limiting fresh produce in Navajo small stores

#### Background:

A common public health intervention focused in small stores is increasing the availability of healthy foods.<sup>5</sup> However, few studies have documented the food system challenges underlying that lack of availability<sup>6</sup> and none within small stores on the Navajo Nation. Formative research with a small sample of Navajo store-owners identified many challenges faced in working with suppliers and distributors to source healthy foods including limited offerings of suppliers.<sup>7</sup> This study objective fills an unmet need necessary for understanding and changing the food environment.

#### Methods:

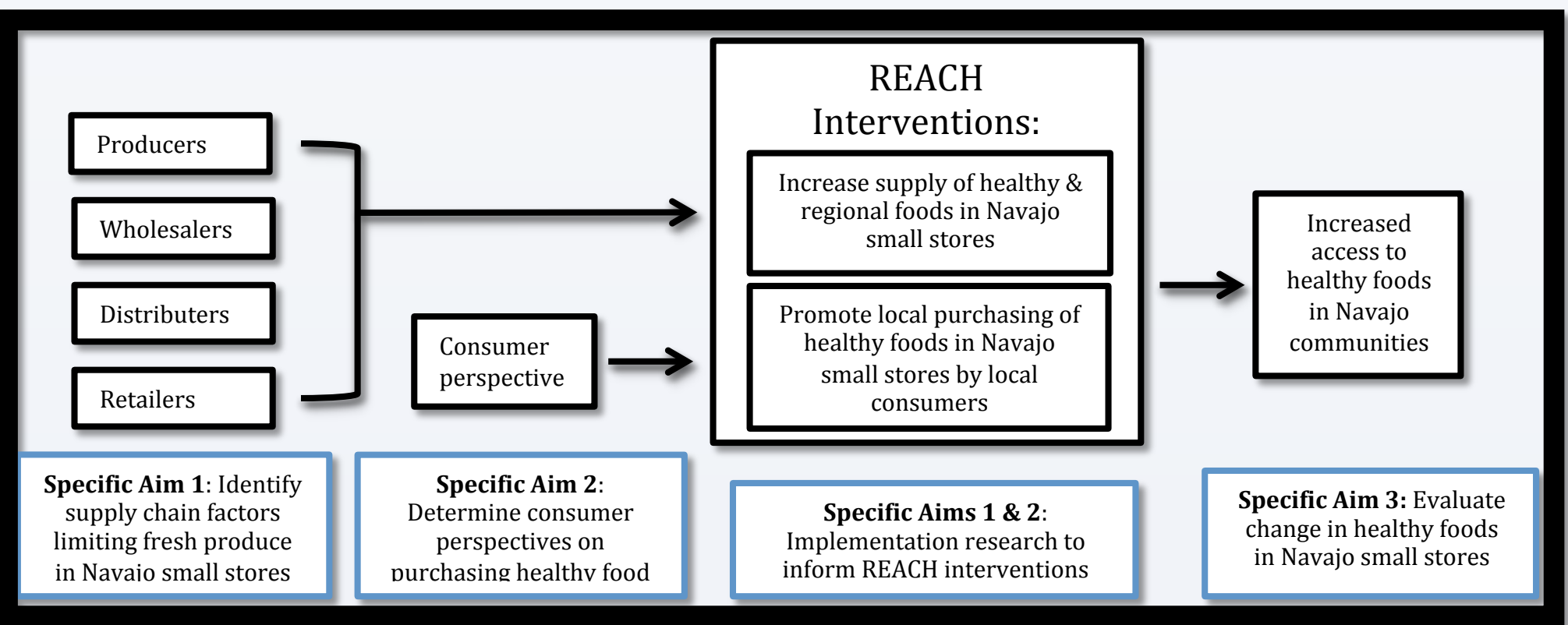
Semi-structured interviews will be conducted with individuals at various nodes of the food supply chain. Navajo food producers, small store-owners, wholesalers and distributors will be interviewed. A different interview guide will be developed for each sector. With approval from participants, interviews will be recorded for eventual transcription. The statistical software package NVivo will be used to determine codes and themes and draw conclusions. A summary of findings will be written for paper one of the dissertation.

#### Limitations:

There is the potential that players throughout the supply chain may be unwilling to be interviewed. Prior experience conducting store owner and manager interviews on Navajo Nation indicates there is interest in providing a healthier food system for residents. Introducing this project as a collaboration among all partners and providing flexibility with interview logistics will help overcome challenges.



## Dissertation Overview



## Specific Aim 2:

### Determine consumer perspectives on purchasing healthy foods from small stores on Navajo Nation

#### Background:

A community food assessment we conducted with 250 people on the eastern side of the Navajo Nation revealed that a majority of participants feel the healthy food they want to eat is unavailable close to home.<sup>8</sup> More than half traveled over one hour for their food shopping.<sup>8</sup> Additionally, formative research conducted with a small sample of store owners in Navajo documented willingness to supply healthy options if the demand existed.<sup>7</sup>



However, no research has been done to understand the food preferences and attitudes towards purchasing healthy food at small stores on the Navajo Nation.

Completion of this objective will provide an avenue through which shoppers can have a collective voice into the future of product availability. It will give the REACH project critical information for tailoring store intervention strategies and understanding impact of interventions on shoppers.

#### Methods:

Approximately 20 store shopper intercept surveys will be conducted at each of a representative number of small foods stores on the Navajo Nation before and approximately one year after store interventions are in place. Participants will be 18 or older, one of the primary shoppers in his/her household and provided a \$5 coupon to the local store. Variables such as: time of the month, day of week and time of day as well as seasonality will be factored into the data collection plan. Additional surveys will be conducted until saturation is reached, or no new information emerges.

We will assess where individuals usually buy their groceries, how far they live from the small store, what they tend to buy at that store, and what it would take for them to buy more of their groceries at the store.<sup>9</sup> Intercept surveys will be conducted only at stores where owner approval is granted. Survey responses will be entered into EpiInfo and descriptive statistics (means and frequencies) will be calculated. Responses to open ended questions will be managed in NVivo and summarized into themes. Documentation of consumer perspectives will serve as data for paper two of the dissertation.

#### Limitations:

Store intercept surveys may prove challenging if individuals do not want to participate and if there are low volumes of individuals coming to the stores. If this is the case, surveys will be conducted at the Chapter Houses or community events where local residents gather.

## Specific Aim 3:

### Evaluate REACH efforts to increase fresh produce and traditional foods at small stores on Navajo Nation

#### Background:

In 2013, a collaboration between the Navajo Division of Health and the CDC documented food offerings at 83 grocery and convenience stores on the Navajo Nation and in border towns. It was found that healthy offerings, specifically fresh, high quality fruits and vegetables were limited at Navajo convenience stores. Additionally, compared to border town stores, Reservation stores charge more for products.<sup>7</sup>

#### Methods:

In order to understand how successful the REACH initiatives were in increasing healthy food options at small stores, a store product inventory will be done at all Navajo convenience stores before and approximately one year after the intervention period. A Navajo Nation food environment survey tool was designed based on the Navajo NEMS tool used for the 2013 study with a focus on identifying fresh and frozen fruits and vegetables and Navajo traditional foods, per recommendation from Navajo partners.

Participatory evaluation methods will be used to identify and measure “success” from a local/indigenous perspective.<sup>10</sup> Members of the Dine Food Sovereignty Alliance, a local coalition of advocates for increasing access to fresh and traditional foods on Navajo Nation, have a keen interest in the REACH interventions succeeding while maintaining a focus on indigenous research and evaluation methods. Guiding principles for this participatory evaluation include: respect for all partners and cultural traditions, valuing local knowledge and experience and operating with an understanding of shared learning and humility.<sup>11</sup>

#### Limitations:

The potential exists that store owners or managers will not want inventory surveys done in their stores. This was rarely the case during the CDC/Division of Health study and we have already found a high degree of willingness from store owners to engage with our initiatives. The participatory evaluation process could prove challenging due to many and strong perspectives among coalition members. Despite this, the process is critical to long term sustainability of these efforts.

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