Using a Health Impact Assessment in a Food Desert

Cynthia Stone, DrPH, RN, Sandra Cummings, MSW, Stephen Clarke, PhD, MS, Susan Hancock, MPH, Andrea Homoya, MPH

Indiana University Richard M. Fairbanks School of Public Health at IUPUI
Marion County Public Health Department, Indianapolis, IN

Abstract

The Marion County Public Health Department and the Indiana University Richard M. Fairbanks School of Public Health conducted a health impact assessment of the potential development of a full-service grocery store within the Meadows community. The Meadows community is designated as a food desert by the U.S. Department of Agriculture. The true study questions: 1) is there reasonable access to healthy foods, i.e., a blend of fresh and frozen produce, low-fat dairy products, whole grains and low-fat meats within the Meadows community? 2) Do community residents believe they have reasonable access to healthy foods in their community? What is the current health status of the Meadows community population so it can be monitored? 3) is there a relationship between availability of healthy foods and health outcomes such as obesity, high blood pressure, and diabetes? and 4) is there a relationship between access to healthy foods and the consumption of healthy foods?

The food environment survey was done using the NEMS-S protocol. Findings showed that only 1 of the 16 convenience stores in the area had the majority of the healthy food options, with only 5 stores selling any fresh produce, all by the piece, while all stores stocked 100% fruit juice and diet sodas.

There is a relationship between access to healthy foods and the consumption of healthy foods was determined via results from a neighborhood survey distributed to neighborhood residents (n = 382). Exposure to healthy food items was not found to be significantly associated with the purchase of healthy food options.

Baseline Health Information

- **Mortality Data for Meadows and Marion County for 2008**

  - Source: Marion County Resident & Hospital Discharges, 2009

- **Cerebrovascular Disease**
- **Ischemic Heart Disease**
- **Diabetes**

- **Table: Hospitalization and ED rates for the Meadows and Marion County 2009**

  - Source: Marion County Resident & Hospital Discharges, 2009 (principal diagnosis); Marion County Emergency Department Discharge Data, 2009-2011 (pooled diagnosis)

- **Table: Mortality Data for Meadows and Marion County for 2008-2012**

  - Source: Marion County Resident & Hospital Discharges, 2008-2012 (principal diagnosis); Marion County Emergency Department Discharge Data, 2009-2011 (pooled diagnosis)

Results of the Neighborhood Survey

- **Total Sample Size n = 382**

  - **High Exposure**
  - **Low Exposure**
  - **Total**

  - **High Ice Cream**
  - **Low Ice Cream**
  - **Total**

- **Table: ODDS Ratio and 95% Confidence Interval (CI) of High Exposed**

  - Source: Marion County Public Health Department National Health and Nutrition Examination Survey (NHANES), 2009-2012 (adult household level). N = 12,777

- **Table: Average calculated cost for Meadows and Marion County Residents Heart Disease, Diabetes and Hypertension**

  - Source: Marion County Public Health Department National Health and Nutrition Examination Survey (NHANES), 2009-2012 (adult household level). N = 12,777

- **Table: Hospitalization and ED rates for the Meadows and Marion County 2009**

  - Source: Marion County Resident & Hospital Discharges, 2009; Marion County Emergency Department Discharge Data, 2009-2011 (pooled diagnosis)

- **Table: Mortality Data for Meadows and Marion County for 2008-2012**

  - Source: Marion County Resident & Hospital Discharges, 2008-2012 (principal diagnosis); Marion County Emergency Department Discharge Data, 2009-2011 (pooled diagnosis)

Priority Recommendations

- Seek out existing food sources and assist them to increase the healthy foods they offer.
- Provide nutrition and cooking education for various age groups and genders.
- Support increased transit to the area and sidewalk expansion.
- Share data with stakeholders and continue to support a TI or similar development measure.
- Negotiate with the new grocery store with the right “footprint” to meet the needs of the Meadows area will provide job training, cooking demonstrations and baking to further support intake of healthy foods.

Results of Nutrition Environment Measures Survey

- **A total of 11 convenience stores and grocery stores were located within 1 mile radius identified to be in the area.**
- **One store declined participation, making the samp size n = 10.**
- Of the 10 convenience stores surveyed, 6 were gas stations and 4 were other types of convenience stations (Family Dollar, Midway, etc.).
- Of the 10 stores, 63% (>3) sold apples and bananas, while 20% (>2) sold oranges.
- Only one store sold all additional fruits, which included grapes, cantaloupe, strawberries, watermelons, and pears.
- Only 1 store (30%) of stores surveyed sold any fresh vegetables.
- The following vegetables were available: carrots, tomatoes, sweet peppers, lettuce and cucumbers.
- None of the stores (>0) had fresh meat at the full price/hot crbh.
- Only 2 stores (>2) sold ice cream at all.
- Low-fat boiled eggs (46%) and/or low-fat milk (78%) were available at 40% of stores (n = 4).
- Low-fat yogurt (4%); cheese (3%); and/low-fat (9%) were available at 20% of stores (n = 4).
- Only 10% of stores (>0) had baked chips or 30% were priced below 50 cents.
- Only 2 (4%) of these (2%) changed their 50% for 10% price for more expensive than their regular assortment.
- All stores had diet soda and 10% of foods just available, though two of these (4%) changed them for 10% price for less healthy food (junk sweetened drinks will be added to the list).

Monitoring and Evaluation

- All steps of the HIA process were completed.
- The health of the Meadows residents was consistently poorer than the rest of the county.
- Input from the stakeholders was obtained for each step.
- It is too early to determine if the HIA information will help in getting a full service grocery store.
- The number of individuals treated in the HIA process was increased.

Conclusion

- Very few healthy food options exist in the Meadows.
- Only 76% of residents could do shopping outside of the area.
- Over 34% of residents could not be able to find or purchase the groceries they needed.
- Only 76% of residents could shop outside of the area and find the necessary groceries they needed.
- Only 76% of residents could shop outside of the area and purchase the healthy foods they needed.
- More than 50% of respondents would change shopping patterns if a grocery store was closer.

Acknowledgement:

Thank you to the Indiana Minority Health Coalition for their support to conduct this project.