Presentation: Comparing Quality and Safety of Foods Sold in Low vs High Income Neighborhoods

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Introduction:

The risk of getting foodborne illness resulting from consumption of foods that are of inferior quality is a major public health concern. Retail foods available in areas with higher food insecurity and low socioeconomic status (SES) are known to be of lesser quality than high SES areas. These retail foods may contain higher levels of disease causing microorganisms, including bacteria that are resistant to antibiotics.

Purpose:

The purpose of our research was to evaluate the microbiological quality of foods available at retail outlets in low SES and high SES areas in Memphis-Shelby County area in Tennessee and to determine if antibiotic microbes were widespread in different foods.

Methods:

We utilized gene sequencing and conventional microbiological laboratory methods to evaluate the food quality and safety.

Results:

Foods from low SES areas were found to contain higher bacterial counts and a differential microbial community (with an abundance of generic E. coli) as compared to food items obtained from high SES areas. The overall microbial diversity, prevalence of antibiotic drug-resistant pathogens in food products sold by retail outlets located in food desert/low-income neighborhoods differed significantly from supermarkets located in high-income locations within the Memphis metropolitan area.

Significance:

Our results indicate the disparity in microbiological quality of foods available to populations in low-SES neighborhoods exposing them to an elevated risk of contracting a foodborne illness.