

Banquet Menu Assessment: Exposure Investigation Exercise

Purpose

Students will:

- Identify sources of Food Borne Illness and their prevention
- Become aware of Nutritional Value of Food
- Learn to evaluate food for prevention and nutritional values
- Formulate Hypotheses based on collected information

Overview

Students are presented with the Banquet Menu from the Scenario Banquet. First Students are asked to evaluate the foods offered for the possibility of food borne illness risk and how to prevent each risk. Then students are asked to evaluate the same foods for their nutritional value. Students are asked to formulate and substantiate hypotheses on Risky and Nutritional Foods.

Time

3 two hour block class periods with team homework in between; the first session is to start the students in preparing for the illness and prevention analysis, the second is to prepare for the nutrition analysis, and the third is to present and discuss their findings. This experience should involve time in and out of the classroom to collect, organize, and create the Team Presentations.

Key Concepts

This section emphasizes preparation for the collection and analysis of information, estimation of risk, and the presentation of data using a spreadsheet table. In addition, data are collected and synthesized to formulate and substantiate hypotheses or predictions as to which will be the most risky and the most nutritional foods.

Skills

Students will:

- Work in teams
- Utilize research tools for nutrition analysis
- Formulate hypotheses
- Practice public speaking to present their work.

Materials

Computer access to spreadsheet software such as Excel would be useful, but not essential since tables can be created and used. A transparency projector or slide or LCD projector for presentation of transparencies, slides or computerized PowerPoint presentation.

Facilitator Preparation

You will need to divide the students into groups or teams. Knowledge of and facilitating access to the computerized software with training will optimize this session. Prior knowledge of the Food/Foodborne Illness Primer, as well as other modules, will prepare you for the range of issues addressed in this section.

Prior to data collection, the facilitators should meet with each group to evaluate their progress in collecting information and deciding on formulating a spreadsheet as well as formulating and substantiating hypotheses. If formal presentations are made, facilitators should encourage the groups to practice their presentations before and keep to the time limits.

Background

As part of the evaluation of the Banquet Outbreak, a Banquet Menu is provided. Certain foods are more likely to pose a risk of food borne illness due to issues of source, contamination, storage and human handling. Certain procedures have been developed, in particular the Hazard Assessment and Critical Control Points methodology (HACCP), by Public Health Authorities to prevent foodborne illness. HACCP identifies processes with increased risk for food contamination during food collection, storage, transport, and preparation to prevent foodborne illness.

In addition, food can be evaluated for its nutritional value. Food nutrition analysis evaluates the different food groups as well as the nutritional value. Well balanced diets include a mixture of food groups, as well as decreased fat content. Quantity of food is also an important concept. Finally, nutritional value of food should vary according to the nutritional requirements of the individual, taking into account issues such as age, gender, exercise, and family history of health risks.

Problem Set -Up:

As the Public Health Consultants you have been asked to evaluate the Banquet Menus associated with the possible outbreak of foodborne disease. In addition to the actual food, you are given information concerning the source, storage and handling of the particular food.

1. Evaluate the food in the menu for its potential risk of causing food borne illness. Then you will provide possible prevention strategies for each food to prevent food borne illness.
2. Evaluate the same foods from the point of view of its nutritional value.
3. Formulate and substantiate hypotheses as to which is the Riskiest Food on the menu and why, as well as which is the most Nutritional Food on the menu and why.
4. Finally you will summarize these data in a Table and present these data.

Students will work together in groups to collect information on the issues posed, develop a data table (spreadsheet) to summarize their findings, formulate hypotheses and present these answers.

1. Each group needs to collect information concerning the risks and prevention of foodborne illness, and then the nutritional content of each food listed on the menu.
2. Create a Table using a spreadsheet to summarize these data.
3. Identify the foods at greatest risk for foodborne illness, why they are at greatest risk, and how to prevent this risk?
4. Identify the foods with greatest nutritional value and why?
5. Formulate and substantiate Hypotheses as to which is the most Risky Food for foodborne illness on the menu and which is the most Nutritional food on the Menu.
6. Each group will present these data and be prepared to discuss them with their colleagues.

Additional Activities:

- Students can be asked to write paragraphs to describe and substantiate their hypotheses.
- Class discussion on the sources of the foodborne illness and on possible solutions for prevention
- A guest speaker can be brought in to the classroom to discuss foodborne illness and prevention and/or nutrition.

Follow-up Activities:

- Class field trip to local Restaurant with analysis of Menu from both the foodborne Illness and Nutrition points of view
- Team development of a Healthy Banquet Menu from both the foodborne Illness and Nutrition points of view
- Students can create Educational Materials (brochures, videos, fact sheets, posters) on Food Safety and Nutrition issues

Student Assessment

Give the following components to each student team as a guide:

- ❖ Seek data on the risk of foodborne illness, its prevention, and its nutritional value for each food listed on the menu
- ❖ Formulate written hypotheses as to the most Risky and the Most Nutritional Foods
- ❖ Design a spreadsheet to collect and calculate the data
- ❖ Collect the data and record on the spread sheet
- ❖ Decide if the results are consistent or not with the hypotheses, and why
- ❖ Present the data and results
- ❖ Each group member should take part in the Presentation, even if it is just to read or explain one piece of the presentation
- ❖ Each group member should answer at least one question from the audience at the end of their Group presentation.

Assign points for the following components of the Team Project:

- ❖ Were the original hypotheses clearly formulated?
- ❖ Was the spreadsheet appropriately constructed?
- ❖ Were data collected by all members of the Team?
- ❖ Were data entered appropriately into the spreadsheet?
- ❖ Were proper science terms used?
- ❖ Was each group member actively involved in the presentation?

- ❖ Did the group report their sources?
- ❖ Could the group members answer questions from the audience about the facts and defend their point of view?

	Food	Source	Storage	Handling/Other Comments	Possible Hazard	Prevention Strategy
Appetizers						
	Carrot Sticks	California	Room temperature	Cut with same knife as raw chicken	Cross-contamination of harmful bacteria	Separate food prep items
	Omelet	Free Range Chicken Farm	Refrigeration	Stored next to raw fruits & vegetables	Harmful Bacterial contamination from eggshell; cross contamination of vegetables	Hygiene and prep.; appropriate cooking temp
	Raw Oysters	Gulf of Mexico	Ice & refrigeration	Very fresh & taste delicious	Source...Norwalk virus and marine toxins even in cooked	People at risk should not eat; cook; reliable source
Main Course						
	Steak	USDA inspected	Refrigeration	Served according to client request including rare	Cross contamination of other foods; harmful bacteria; parasites	Cooking temp
	Chicken with cream sauce	Free Range Chicken Farm	Refrigeration	Cooked to appropriate temperature	Possible cross contamination of other foods when raw, harmful bacteria in cream sauce	Hygiene, prep, and cooking temp
	Shellfish Gumbo Soup	Gulf of Mexico	Frozen		Source, Norwalk virus and marine toxins even in	Reliable source

Exposure Investigation Exercise Key

					cooked	
	Rice	China	Room Temperature	Heating lamp used to keep warm	left out under ideal conditions for harmful bacterial growth	Cooking, 2hr rule
	Salad	Organic Farms	Refrigeration	Unwashed	Harmful bacteria	Washing, bleach?
Desert						
	Whipped Cream Truffle	Wisconsin Farms	Room temperature	Unrefrigerated for 7 hours prior to serving	Unrefrigerated conditions ideal for harmful bacterial growth	Refrigerate prior to serving
	Raspberries	Guatemala	Refrigeration	Rinsed in water	Parasites	Source, bleach?
Other						
	Bread	Baked on ship	Room temperature	Stale	Mold	Discard at first sign of mold
	Local juices	Local country bottling plant	Bottled drinks	Unpasteurized	Harmful bacteria	Purchase pasteurized juices
	Water & Ice	Ship	Pitchers with ice on tables	Regular chlorination check of water supply No ice scoop	Viruses and harmful bacteria	Handling and chlorination

	Food	Source	Food group(s)	Recommended Number of servings/day	Fat Content (Hi/Med/Lo)	Other comments
Appetizers						
	Carrot Sticks	California	Vegetable	3-5	Lo	
	Omelet	Free Range Chicken Farm	Dairy	2-3	Med	
	Raw Oysters	Gulf of Mexico	Meat	2-3	Med	
Main Course						
	Steak	USDA inspected	Meat	2-3	Med	
	Chicken with cream sauce	Free Range Chicken Farm	Meat & dairy	2-3	Med	
	Shellfish Gumbo Soup	Gulf of Mexico	Meat	2-3	Med	
	Rice	China	Grain	6-11	Lo	
	Salad	Organic Farms	Vegetables	3-5	Lo	
Desert						
	Whipped Cream Truffle	Wisconsin Farms	Sweets	Use sparingly	Hi	
	Raspberries	Guatemala	Fruits	2-4	Lo	
Other						
	Bread	Baked on ship	Grain	6-11	Lo	
	Local juices	Local country bottling plant	Fruit	2-4	Lo	
	Water & Ice	Ship	NA			