



NSTA Web Seminar:

Teaching Science Concepts and Inquiry with Food

**Teaching Food Safety Using Oral Culture
Communication Methods**

Presented by Alan Tart, FDA

Wednesday, April 1, 2009



Teaching Food Safety Using Oral Culture Communication Methods



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- **At the conclusion of this presentation, participants should be able to:**
 - **Discuss various food worker training and behavior modification research studies and theories and how they can be applied to your classroom**
 - **Contrast oral culture learning principles from print culture learning principles and apply them to be more effective at communicating and teaching**
 - **Identify current FDA initiatives to develop educational materials and methods that are more effective at teaching the importance of food safety to food workers**



Presentation Objectives



Retention Vs. Behavior Modification





- **Retention (noun) - memory:** the ability to remember things
- **Behavior modification (noun) - changing somebody's behavior:** psychological treatment that attempts to change somebody's behavior by rewarding new and desirable responses and making accustomed undesirable ones less attractive



Passive vs Active Learning

STUDIES SHOW THAT OVER A PERIOD OF 3 DAYS, THE RETENTION OF LEARNING IS AS FOLLOWS:

10% OF WHAT WE READ



20% OF WHAT WE HEAR



30% OF WHAT WE SEE



50% OF WHAT WE SEE AND HEAR



70% OF WHAT WE SAY



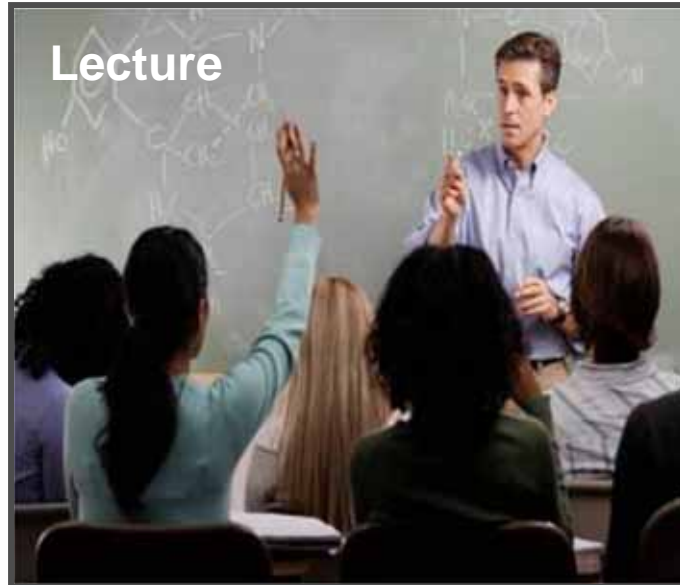
90% OF WHAT WE SAY AS WE DO



ADULTS CAN LEARN BY READING, LISTENING, AND WATCHING, BUT THEY WILL LEARN BETTER IF THEY ARE ACTIVELY INVOLVED IN THE LEARNING PROCESS.



Lecture



Field Trips



Self-directed research



Lab (Hands-on Activities)



Activity 1 – Use a clip art to indicate the teaching methods used in your classroom



Current Research Applicable to Food Safety





- Time Pressure
- Structural environments, equipment, and resources
- Management and coworker emphasis on food safety
- Worker characteristics
- Negative consequences for those who do not prepare food safely
- **Food safety education and training**
- Restaurant procedures
- Glove and sanitizer use

(Green and Selman, 2005)



Factors Affecting the Ability of Food Workers to Prepare Food Safely

- **Food workers view their business as low risk**
(Clayton et al., 2002)
 - **Even food workers who receive food safety training often do not carry out the proper food safety behaviors**
- **Behavior is motivated by values and interpretations of situations and events** (Burke, 1990)
- **Some research has shown that workers are more likely to implement safe practices if they understand the importance of implementing those practices** (Clayton et al., 2002)





- **Research suggests that real-life examples get food workers and managers' attention and help them learn (Beegle, 2004)**
- **Change efforts based on incentive and threat rarely succeed in the long run (Rock & Schwartz, 2006)**





- **How do we get food workers (or students) to remember what we teach about food safety and implement the proper practices and procedures on a consistent basis to ensure that food served or sold is safe and secure?**





Activity 2

We will now pause for
two questions.

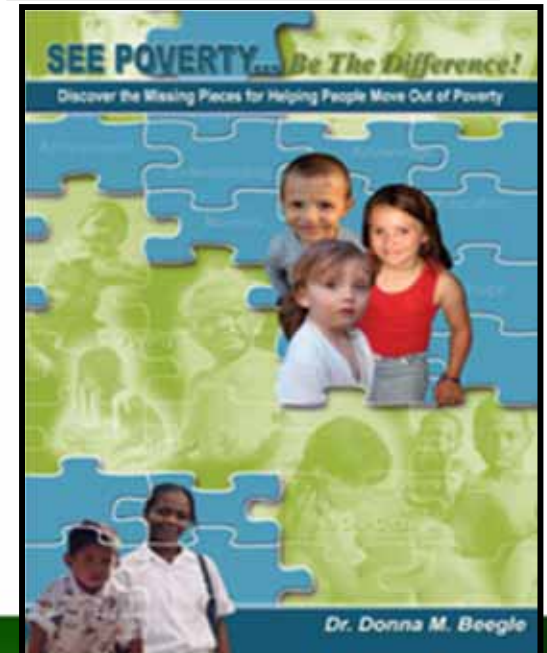




Oral Culture Versus Print Culture Communication Styles



- **Dr. Donna Beegle, 2004**
- **Oregon Environmental Health Specialist Network (EHS-Net) Communication Study**
- **Conclusion: Front line food workers are predominantly oral culture learners**



Oral versus Print Culture Learners

- You are most comfortable focusing on one idea at a time
- You believe a plan is essential and your goal is to stay on task
- It is important to think abstractly about situations and analyze them carefully, detail by detail and apply in multiple contexts
- You like things in order: first this, and then that; step 1, then step 2, etc.
- You approach tasks by breaking them into parts
- You sort and categorize information
- Time is crucial and you are rigid about it
- You do not show emotions or tell stories or are careful about doing so unless you really know the person
- When you need information, you look for a book or article on it



Print Culture Communication Styles - Regulators

- Relationships are more important than anything
- Telling the same stories over and over helps you in your understanding
- Sharing your personal experiences and stories is your way of connecting with others
- You are comfortable jumping from subject to subject
- You like to focus on lots of ideas at once
- It is normal to show emotions/feelings
- You are very physical and expect physical responses
- You focus on what is going on around you right now
- You focus on the big picture, not the gory details
- When you need information, you ask those around you
- You learn best when you can practice the learning in your environment



Oral Culture Communication Styles – Food workers



You have just been diagnosed with pheochromocytoma. To learn more about the disease, which would you be more inclined to do?



- A) Research the disease on the internet or articles**
- B) Talk to a family member or friend who has the disease**
- C) Both A and B**





Application of Oral Culture Communication Methods to Teaching Food Safety





- **Presented in print or verbally in unfamiliar abstract language**
- **Presented by someone of power and/or someone who does not understand what it is like to work in a foodservice establishment**
- **Good behavior is often not modeled or made a priority in restaurant environment**



Most Food Safety Education In Use Today (Beegle, 2004)




- The language and examples for explaining why the behavior is necessary is often not familiar or related to their personal experiences
- Examples: PowerPoint lecture, manuals, pamphlets, posters that describe how to do something but not why, training provided by a health inspector or health department




**Most Food Safety Education In Use
Today (Beegle, 2004)**

Lavado de manos para empleados de alimentos

¿CUÁNDO?

 Justo antes de tocar alimentos

 Después de:

- entrar al baño
- toser, estornudar o usar el pañuelo
- tocar carnes, aves, huevos, pescados o mariscos crudos
- hablar por teléfono
- tocarse, peinarse o rascarse la nariz o el cuerpo
- comer
- fumar
- tocar utensilios sucios
- hacer tareas de limpieza

¿CÓMO?

1



Usar agua tibia y jabón de un dispensador.

2



Frotar vigorosamente hasta el codo por 15 segundos. Limpiar debajo de las uñas, entre los dedos, brazos y prótesis.

3



Enjuagar con agua corriente, limpia y tibia.

4



Secar con papel toalla o 30 segundos de aire caliente.

5



Cerrar el grifo con el papel toalla.



Example of Common Educational Material In Use Today



- **Stories and sayings with vivid examples to allow food workers to “feel” the impact of a behavior**
- **Role models who show and model appropriate behavior in supportive ways**
- **Information provided by people with which the food workers have a relationship and who use familiar words and examples the food workers can relate to**



Recommendations for Communicating Food Safety Concepts



- **Verbal information that is provided often and repeated regularly**
- **Eye contact**
- **Simple worker signs as reminders**
- **Focus on the big picture, not the gory details**
- **Allow for two-way communication**
- **Demonstrating concepts and have them demonstrated back to you**



Recommendations for Communicating Food Safety Concepts



- **IAFP Food Safety Icons - 2003**



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IAFP Food Safety Icons



Which of the following is an example of an application of oral culture communication style of learning?



- A) Asking the class if anyone has ever had foodborne illness and asking them to share the experience**
- B) Using a real life story to explain the detrimental effects of not washing hands before preparing food**
- C) Having a discussion with a restaurant manager about the importance of being a role model**
- D) Show students how to properly wash their hands and have them demonstrate proper handwashing back to you**



Activity 4 – Poll Question



- A) Asking the class if anyone has ever had foodborne illness and asking them to share the experience**
- B) Using a real life story to explain the detrimental effects of not washing hands before preparing food**
- C) Having a discussion with a restaurant manager about the importance of being a role model**
- D) Show students how to properly wash their hands and have them demonstrate proper handwashing back to you**



Poll Question Results



Atlanta Federal Executive Board Leadership Government Project - Background





Collaboration



Core Project Team Members

- **Alan Tart, FDA**
- **Charlie Appleby, EPA**
- **Gracy Danois, EPA**
- **Bryan Myers, EPA**
- **Alan Newman, EPA**
- **Susan Parks, EPA**





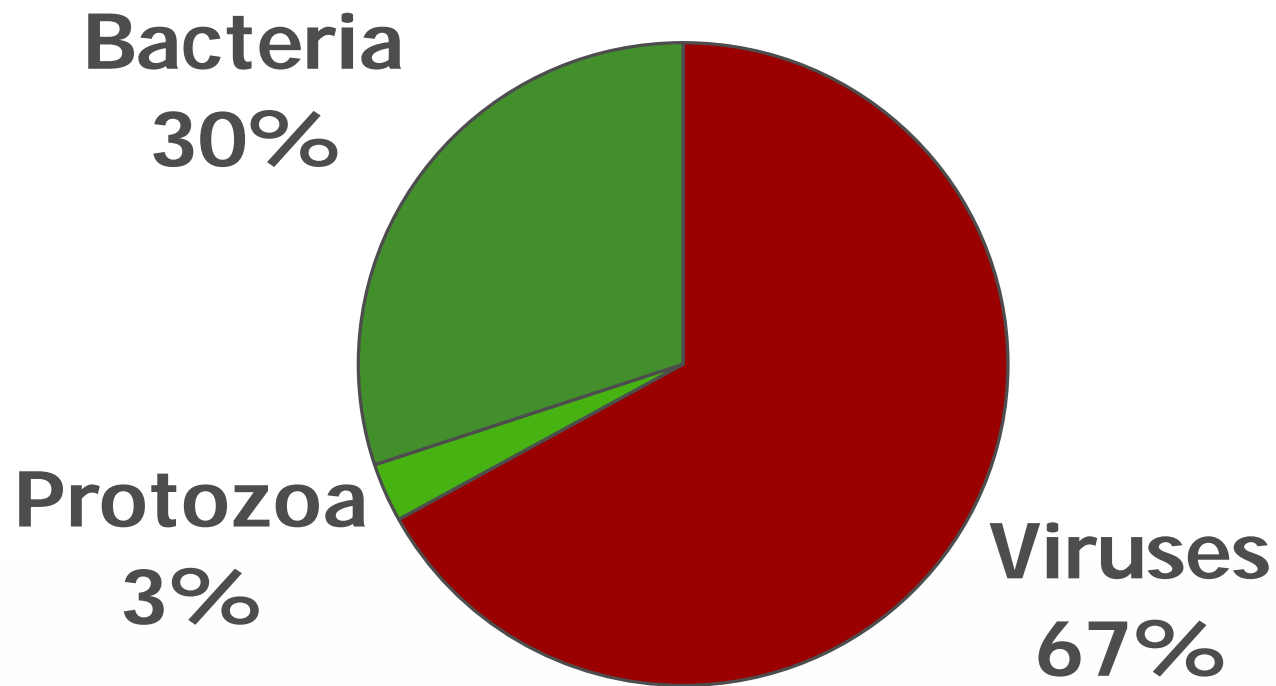
- **Emerging research shows that many, if not most, of the existing training materials and posters, as well as the methods used for training, may not be effective in modifying behavior of food workers**
- **There is a need to design materials and training that are more effective at changing behavior than what is in use today**



- **Increase effectiveness of food safety training/ educational materials related to personal hygiene and employee health**
- **Collect and develop educational materials that incorporate oral culture learning principles**
- **Provide recommendations to FDA that will further enhance educational efforts**



Project Purpose



Mead et al., 1999



**Percentage of Foodborne Illness
Attributable to Various Pathogens**



- **1,000,000,000,000 - # of norovirus particles you start with in 1 ml of feces if you are sick***
 - **10,000,000,000 - # of virus particles left after properly washing your hands (2 log reduction) (Ayliffe et al., 1978)**
 - **1,000,000,000 - # of virus particles transferred from an ungloved hand to food (10%) (Montville, 2001)**
- **In contrast, it takes 1-10 virus particles to make you sick***

*Teunis & Moe, 2008



Poopy Fingers



- Infections from noroviruses could be drastically reduced if 3 interdependent control measures are implemented:
 - Not working when ill
 - No bare hand contact with RTE food
 - Proper handwashing
- Hand sanitizers are ineffective



- **You are teaching a unit on viruses. Viruses impact humans both positively and negatively. Using the information provided in this presentation, explain how you could incorporate a discussion of food safety into this lesson to demonstrate the negative impact of viruses on foodborne illness in this country.**



Activity 5 - One Volunteer (Raise your hand)



Oral Culture Project - Methods





- **Phase 1 (Mar – Jun 08)**
 - Planning, Research Review, Acquisition of Funding, Assemble Auxiliary Team Members/Experts
- **Phase 2 (Jun – Aug 08)**
 - Tool Collection and Development
- **Phase 3 (Aug – Sep 08)**
 - Focus groups
- **Phase 4 (Sep – Oct 08)**
 - Formulate recommendations to FDA



Project Timeline



Team Member Experts

- **Dr. Donna Beegle, Researcher/Lecturer/CEO, Communication Across Barriers**
- **Dr. Laura Green-Brown, Behavioral Scientist, CDC**
- **Etti Gomez, Owner/Trainer, Buena Vista Consulting**
- **JoAnn Pittman, Public Affairs Specialist, FDA**
- **Nikki Haslett, Photographer**
- **Carol Williamson, Graphic Artist, UGA**



- **Objective: Tool Collection and Development**
- **Outcomes: 11 tools included 10 test tools and one typical tool in use today**
 - We chose 3 tools that were created by other organizations, but that incorporated oral learner techniques
 - Additionally, we developed 7 tools of our own
- **When possible the tools were translated to Spanish to be more effective for the audience**



Phase 2 (Jun – Aug 08)

- **6 Latin American restaurants located throughout the metro Atlanta area**
- **~75 restaurant workers + ~10 managers/owners participated in the focus groups**



Phase 3: Focus Groups



NTA WEB SEMINARS



Food Worker Focus Groups



- **Was the tool effective in conveying the importance of proper food handling practices?**
- **Did the tool encourage you to change food handling practices at home and/or work?**
- **Would the tool be beneficial to you if it were displayed or made available at work?**
- **Was the tool applicable to you, your family, or job performed?**



Evaluation Form



Activity 6

We will now pause for
two questions.



Educational Materials Developed and Focus Groups Results





- **Evaluation Forms**
 - Questions ranked 1 – 5, with 5 being most favorable
 - Average range for all tools was 4.4 – 5.0



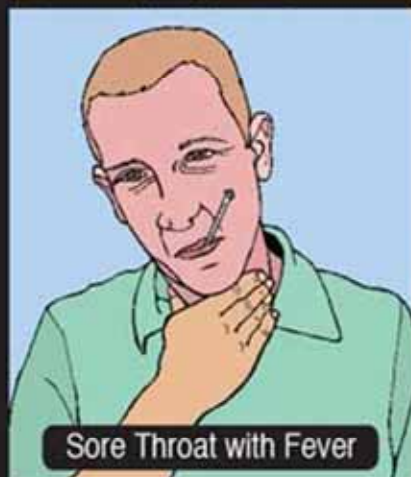
Results

- **Bacteria Bites Business from the UK Food Standards Agency**
- **“Dude, Wash Your Hands” YouTube Video**



Videos

Would you want these people in your kitchen?

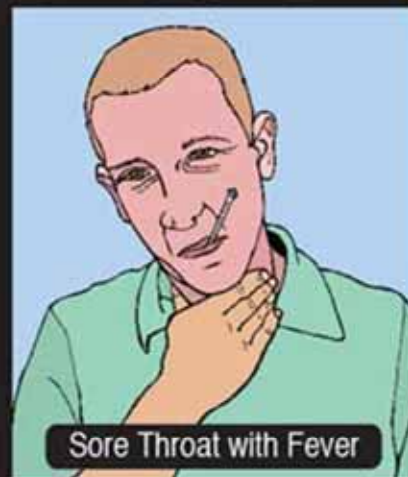


Then why would you go to work sick?

**Protect People Everywhere...
Stay Home When You Are Sick.**



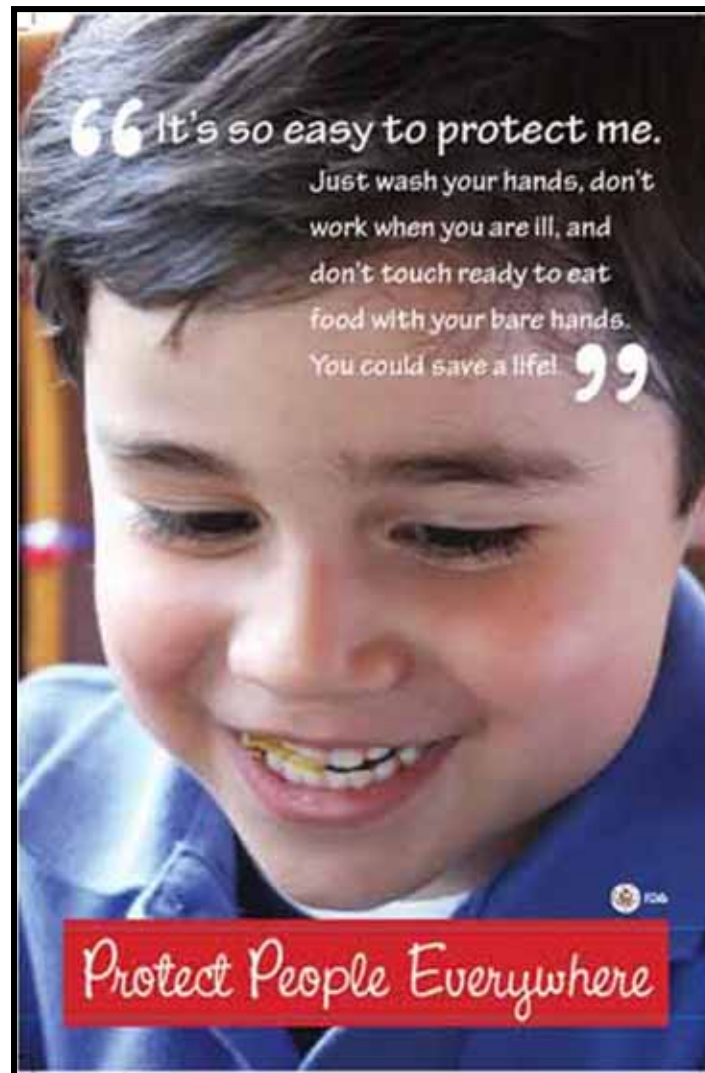
Would you want these people in your kitchen?



Then why would you go to work sick?

**Protect People Everywhere...
Stay Home When You Are Sick.**





“It's so easy to protect me.

Just wash your hands, don't
work when you are ill, and
don't touch ready to eat
food with your bare hands.

You could save a life! ”

Protect People Everywhere

I Should Have Stayed Home



I woke up feeling awful. I had diarrhea and was sick at the same time.



All I wanted to do was go back to bed, but with bills piling up, I couldn't afford to stay home.



I got to work and punched in. I am sure I looked as bad as I felt. I knew I shouldn't be here.



Orders were stacking up, so I immediately began to prepare burgers. I didn't put on gloves because everyone knows they slow you down.



Carlos was having a great time with his family. This was his favorite restaurant.



When the food came, he dug right in and finished his burger and part of his sister's.



Later, Carlos doubled over with a stomach ache. He was so sick. He ended up being taken to the emergency room.



I found out 33 other people got ill from me handling their food when I was sick. The Health Department closed the restaurant.

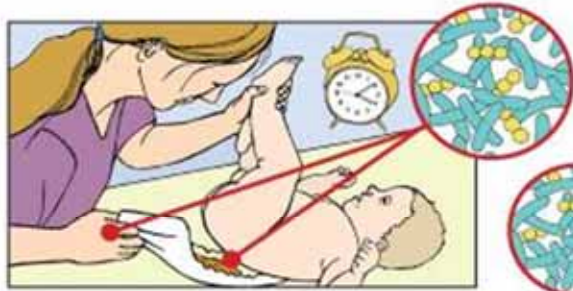


I should have done what I knew was right and stayed home. I could have prevented all of this. Because the restaurant was closed for while, I lost income. I was also embarrassed.

Protect People Everywhere. Wash your hands, don't touch ready-to-eat food with your bare hands, and stay home if you are sick.



A Foodborne Illness Outbreak That Could Have Been Prevented



My baby Manuel had fever and diarrhea and I was up all night caring for him. The next morning I was scheduled to work.



I called my boss to get the day off, and he said that they were understaffed and really busy.



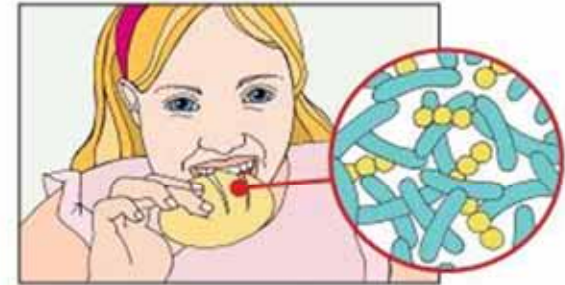
I had to go to work or risk losing my job.



I really wish I could have stayed home with Manuel. I worried about him the whole time I was working.



Mary was enjoying lunch with her Dad.



The bread tasted good, but Mary had no idea what else she was eating.



The next day, people that I served complained about being sick with vomiting and diarrhea.



Mary, who had a weak immune system, became very sick.



A few days later, Mary was on life support. 64 people became sick with diarrhea and vomiting. The restaurant closed and I lost my job.



I did not mean to make anyone sick. Now, because of the germs on my hands, someone may die.

Protect People Everywhere. Wash your hands thoroughly and at the proper times. Don't touch ready-to-eat food with your bare hands.



My Name Is Mariela and My Story Could Change Your Life



I will never forget that day. I felt sick in the middle of the night, but I had to go to work the next day.



I remember thinking that I should stay home, but I started feeling a little better. I didn't know the germs from my sickness were still on my hands.



At work, I picked up the chips with my bare hands. I don't remember whether I washed my hands or not. I was in a hurry.



The restaurant got so busy. There was a family in my section. They were celebrating their son's 4th birthday. I even remember his name: Jose Antonio. He had the most beautiful smile.



I remember his mom telling him to go easy on the chips, but he just smiled and kept eating. I went home less than an hour later because I felt sick again. I was sick for 2 days after that.



While I was at home sick, reports started coming into the health department from all over. In all, over 20 people got sick from eating at our restaurant. They determined that I served all of the people that were sick. I hurt people. I even made that cute little birthday boy sick. I would never want to make anyone sick.



If I could do it over again, I would have never gone to work that day. I wish I had paid attention when I first felt sick. Having a child myself, I can't get little Jose Antonio out of my mind. He suffered because of me.



I feel sad that people got sick because of me. All I had to do to protect them was go home.

Protect People Everywhere: Never Touch Ready To Eat Food with Your Bare Hands, Always Wash Your Hands Properly, and Never Work When You Are Sick.



Don't Let What Happened to Me, Happen to You



My name is David. One day, while at work, I started feeling sick and ran for the bathroom. I didn't even make it to the toilet the first time.



I felt better, so I returned to finish my shift. I needed the money. An order came in for a salad. I forgot to wash my hands or wear gloves.



I did not know I had germs on my hands. I passed my germs to the tomatoes . . .



. . . and to the cucumbers . . .



. . . and to the entire salad . . .



. . . and to a little girl named Ashlynn who ate the salad that I prepared.



The next day, Ashlynn got so sick with stomach cramps and vomiting. In fact, dozens of people got sick because I continued to prepare food that day.



Ashlynn could have been my sister or daughter. I would never intentionally make anyone sick. I could have prevented this from happening. I know now that I must never work when I am sick. I must always wash my hands properly and never touch ready to eat foods with my bare hands.

**You don't want this to happen to you.
Protect People Everywhere.**





Glo Germ

Lavado de manos para empleados de alimentos

¿CUÁNDO?

- Justo antes de tocar alimentos
- Después de:
 - entrar al baño
 - tosar, estornudar o usar el pañuelo
 - tocar carnes, aves, huevos, pescados o mariscos crudos
 - hablar por teléfono
 - tocarse, peinarse o rascarse la nariz o el cuerpo
 - comer
 - fumar
 - tocar utensilios sucios
 - hacer tareas de limpieza

¿CÓMO?

- 

1. Wet your hands and wrists with water.
- 

2. Rub your hands together for 15 seconds. Cover all surfaces of the hands, between the fingers, thumbs and wrists.
- 

3. Rinse your hands with water, keeping them flat.
- 

4. Dry your hands with a paper towel for 15 seconds.
- 

5. Turn off the faucet using a paper towel.

Don't Let What Happened to Me, Happen to You



My name is David. One day, while at work, I noticed the long line and ran for the bathroom. I didn't even make it to the toilet the first time.



That night, as I prepared to feed my girls, I realized the money for underwear was for a toilet. I forgot to wash my hands or wash my bowl.



I did not know I had germs on my hands. I passed my germs to the children.



and to the children.



and to the entire salad.



and to a little girl named Adeline who ate the salad that I prepared.



and to a little girl named Adeline who ate the salad that I prepared.



and to a little girl named Adeline who ate the salad that I prepared.



The next day, I felt like I was going to be sick. I was sick with stomach ache and vomiting. In fact, I was sick for 3 days. I got sick because I continued to prepare food that day.



and to a little girl named Adeline who ate the salad that I prepared.



and to a little girl named Adeline who ate the salad that I prepared.



and to a little girl named Adeline who ate the salad that I prepared.

**You don't want this to happen to you.
Protect People Everywhere.**



- Need to have both. One shows how to do things right; the others show the cause and effect
- Fewer words, more pictures is better for both



Comparison: Study Tools vs. "How to" tools in use today

- **I am a student in your class. Like many kids, I do not wash my hands as often or as thoroughly as I should.**
- **This behavior is reinforced by the fact that for years I have been led to believe that hand sanitizers can take the place of handwashing.**
- **Using oral culture learning principles, explain to me the importance of handwashing in an effort to change my behavior.**



Activity 7 (Role Play) – One Volunteer (Raise your hand)



Recommendations and Current Activities





- **Major Recommendations to FDA:**
 - Design protocol for tool implementation and penetration
 - Assess/enhance existing educational materials
 - Apply educational model to address other risk factors
 - Collaborate with industry, trade organizations, and state/local regulatory jurisdictions in developing materials
 - Test long term effectiveness



Project Recommendations

- **FY '09 - Established Industry Outreach Workgroup**
 - **Developing educational materials for prevention of cross contamination and proper hot/cold holding and cooling**
 - **Stakeholder involvement**
 - **Grants and contracts**
 - **Presentation at state, regional, and national food safety conferences**
- **FY '10 – Test for Long-term Effectiveness**





What are some examples of some things you can do to enhance your teaching technique using oral culture learner principles?

1)

2)



Activity 8 – Two Volunteers



QUESTIONS?

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