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Personal Hygiene

Description
The organisation shall have processes and procedures in place to ensure the implementation of employee and visitor personal hygiene practices. Such practices shall result in the sanitary handling and delivery of safe and quality products to customer. The Codex Alimentarius Commission’s recommendation on personal hygiene shall be followed.

Competencies
The individual will:

- describe the principles and reasons for effective personal hygiene (i.e. hand washing, personal cleanliness, illness, injury, personal behavior, and visitor control).
- explain how to access regulations and customer requirements governing effective personal hygiene (i.e. hand washing, personal cleanliness, illness, injury, personal behavior, and visitor control).
- explain when to apply proper hand washing techniques.
- identify employees with symptoms of illness (i.e. fever, vomiting, diarrhea, sore throat) so they can ensure that ill individuals who might pose a risk to food safety are not allowed to work with food.
- design a system for employees and visitors to notify the organization of any symptoms of illness and injury that may preclude them from working in direct contact with food.
- operate a system for employees and visitors to notify the organization of any symptoms of illness and injury that may preclude them from working in direct contact with food.
- design a system to enforce procedures in relation to illness and injury, personal cleanliness, personal behaviour which could result in the contamination of food and food safety provision for visitors.
- operate a system to enforce procedures in relation to illness and injury, personal cleanliness, personal behaviour which could result in the contamination of food and food safety provision for visitors.
One might wonder what's personal hygiene got to do with safety of food, but I think you're sitting in a room of experts who know fully well on an individual as well as a professional level how important personal or individual hygiene can be impacted or will impact on your integrity of your product.

Going back to some basic information that we should know, what does [inaudible] say or dictate about before level one aspect of personal hygiene? The organization shall have processes and procedures in place to ensure the implementation of employee and visitor personal hygiene practices. And these practices will or shall result in sanitary handling and delivery of safe and quality products to customers. You will also follow the recommended Codex Alimentarius Commission on personal hygiene. So this the tenet with which our next presentation is going to talk about.
So we’ll briefly touch upon the reasons of the worker hygiene. What are the Codex general hygiene principles on health status? Illness and injuries, personal cleanliness, personal behavior, and the visitor control.

All right. Why is personal hygiene important? What is it so important for an employee? It’s now a well-established and well-known fact that many of the recent food-borne illnesses that we’ve seen are caused by infected food handlers. Many as you can recall a very similar instance, not just in India but elsewhere globally, where workers have been implicated in large outbreaks. Even as close to home in Lansing, Michigan, where I come from, a very popular Italian restaurant had one of the largest outbreaks we have seen I think in our history of Michigan state where an infected worker infected with Norovirus threw up in a wash basin and subsequently lettuce was washed in the same basin. And about 300-400 people who dined that week were infected. That’s how critical it is, and this restaurant had all the necessary certifications and knew exactly what they needed to do.

Therefore, one has to keep in mind as you’re setting up processing plants in emerging markets to take into consideration that your employees are well-trained in the basic fundamental tenets of personal hygiene. Some of the common examples of the microbial pathogens that are transmitted by infected food workers are Norovirus, [inaudible], e. coli [inaudible]. And one again can ask, so what if my employee is infected? You know, I can send them home. I can keep them for three days. I don’t want to stall what I am doing. No sir. You cannot.

Contaminations spread very, very, very easily. All it requires is a microgram of fecal material lodged under your fingernail. I wish I had a slide that showed about the pyramid amplification effect of that small of material. It is humongous which is why we emphasize on this aspect of personal hygiene. Now yet again, you know, we found coming from emerging markets as we do we proudly say we are somewhat made of lead and iron. You know, nothing can affect us. Sure. You, me, and these people here can survive an outbreak or a contamination of this...
type. But not the population workers, infants, small children, elderly people, populations compromised with the immune deficiencies disorders, pregnant women. We cannot take that risk. Therefore, one has to be aware in your designing of the systems and operations to take into consideration procedures in place to prevent your employees from spreading contamination.

It’s not an easy task. There are several implementation sheets, and you have to go back to the drawing board. The fundamental thing that one has to remember is to build awareness constantly. There’s a huge turnover of employees that go through our markets and our plants here. Building awareness is critical. Along with it goes very accurate and good training. Once you take care of both aspects, then one has to make sure your facilities that you’re providing for your employees are appealing, they’re comfortable, they’re dignified. Again, we come from cultures where separation between genders comes into play in terms of toilet facilities. Even a field or even in a processing plant. So that’s where the cultural sensitivity comes into play. Thirdly, you have to have accurate documentation procedures in place in order to have an effective personal hygiene system. Lastly, you have to incentivize your employees. Why is this important? And if you do follow these rules and regulations and procedures, give them some kind of prize system. Tell them what the benefits are for following through this. Again, going back to the roots of what we do and where we come from in our betas, in our, in our tenets of villages. The cleanliness have been emphasized by our forefathers and, and our ancestors. Personal hygiene is not a new concept for us here. What we practice at home, do we practice at our manufacturing plants? Do we practice it at public places? No.

All right. Moving on to what, what type of facilities you provide. What type of education you provide. And how important training is as you go forward in implementing your personal hygiene procedures. This slide shows some of the more fancy sophisticated facilities that are available in the U.S. and European marketplaces. You find these little quarter toilets that are placed in what I think is a spinach field I believe. And then you have the mobile toilets parked on the side of the fields. That picture down below shows a very, very sophisticated hand washing system. And I believe the next slide show is a good sanitation facility, a hand washing system with proper signage and so on and so forth.

All right. What does Codex food hygiene principles say about health status? People who are known or suspected to be suffering from, or they are carrying of a disease [inaudible] that is likely to be transmitted through food should not be allowed to enter any food handling area if there’s a high likelihood of them contaminating...
[inaudible] food products. Any person so affected should immediately report illness or symptoms of illness to their management. If necessary, but is warranted, medical examination of a food handler should be carried out immediately, and suitable actions should be taken. Should be taken.

All right. What does Codex food hygiene principles say about health status? People who are known or suspected to be suffering from, or they are carrying of a disease [inaudible] that is likely to be transmitted through food should not be allowed to enter any food handling area if there's a high likelihood of them contaminating [inaudible] food products. Any person so affected should immediately report illness or symptoms of illness to their management. If necessary, but is warranted, medical examination of a food handler should be carried out immediately, and suitable actions should be taken. Should be taken.

Some of the common conditions and symptoms that one might experience in the countries we live are jaundice, diarrhea, vomiting, fever, sore throats. And visibly infected conditions are things that ooze out of pus, so on and so forth, should be your first indication that something is going wrong with your employees. So as a good food safety manager you should be adept in detecting these symptoms and take suitable actions when you're confronted with an employee exhibiting these symptoms.
**Important Practices**

- A person who has diarrhea or is a carrier of a communicable disease that can be transmitted is prohibited from working with food.
- That person must be excluded from working in receiving, inspection, washing, or any other processing areas.

Again to reiterate. This is a simple one-on-one for personal hygiene. A person who has diarrhea or is a carrier of a communicable disease that is transmitted through food has to be prevented from working with food. And that person should be removed from all food handling areas including the receiving, inspection, washing, or any other processing area. By the way, the logo that we have on this particular slide is actually an accepted international logo. Just like we have traffic signs on roads, stop signs go, this is now an accepted food safety sign. This was devised by the International Association of Food Protection.

**Many Food borne Illness Outbreaks are Caused by Infected Food Handlers: Common Symptoms**

- **Escherichia coli** - diarrhea, vomiting, mild fever
- **Salmonella enteritidis** - abdominal cramps, headache, fever, nausea, diarrhea
- **Listeria monocytogenes** - flu-like, meningitis, encephalitis, spontaneous abortion
- **Campylobacter jejuni** - diarrhea, vomiting, headache, fever, muscle pain
- **Norwalk virus (norovirus)** - nausea, diarrhea, headache, mild fever

All right. To take you back to some basic microbiology classes we had to look at what are the common food-borne illnesses that we see. And again, many of these are your ABC's for food safety management [inaudible]. *E. coli*. Escherichia coli. What are the symptoms? Diarrhea, vomiting, fever. Salmonella enteritidis. Abdominal cramps, headache, fever. [Inaudible] fever, nausea, diarrhea. We see diarrhea features a lot. So it’s very simple. If your employee comes and tells you I have a stomach, upset stomach, let him go home. Let him take that one week off, treat him with the right medication, advise him to seek medical help. Let him go. It’s not worth keeping that employee in your factory for a week risking contamination to the food, and then eventually you’re in violation. Some of the other common FBI's that we see are [inaudible], [inaudible], and Norovirus. The one that I referenced to at this place in Michigan was the Norovirus.

And this is another common sense practice that you have to follow. Any type of abrasion or open skin abrasions can be a source of pathogens, unless you treat it appropriately. You have to wash the infected area, apply a bandage. And then you put a barrier such as a glove or a plastic sheet that prevents direct contamination of the person with the food and vice versa.

**Treatment of Cuts and Lesions**

- Cuts and open skin lesions can be a source of pathogens and must be treated appropriately.
  - Wash the affected area
  - Apply a bandage, and then
  - Cover with a barrier (e.g. glove)
Now coming to the next important Codex hygiene principle is personal cleanliness. Employees, especially food handlers, should maintain a very high degree of personal cleanliness. And wear appropriate. Wear suitable protective clothing, head covering, and footwear. Very frequently you see in manufacturing plants employees walk around with lab coats that look like jackets, and perhaps a bouffant to cover your hair. And sometimes you have to wear your hairnet across your head as well. And appropriate footwear should be in place that can be removed when the employee exits the building after the day shift is over. Cuts and wounds where personnel are permitted to continue working should be covered by suitable waterproof dressings. I have a funny anecdote about this. Recently in New York, and I forget which food company manufactured this. But a customer who went and bought a burger somewhere found a blue Bandaid in their burger. Now, taking all of this into account you have to remember any of these dressings that you put on the employee could eventually become a physical hazard and end up in your food supply. So it’s a delicate balance to maintain. But keep those things in mind as you go through designing and operating a good personal hygiene system.

Sanitary facilities. And it’s already been reiterated by Kevin here. The workers must have access to clean toilets and adequate hand washing facilities. He had a very good discussion as to what the ratio of the hand washing facilities per person should be. And the same goes for the toilet. I think these should probably use simple subtropic methodology if you will to see. If you have 50 employees or 100 employees, look at their breaks times and then decide on the number of stations you should put depending on the type of processes you’re often handling in the plant. But clearly they should not be an adequate number of toilets or hand washing stations. Otherwise you might have a fantastic, perfect system in place, but you will not be able to enforce it if you don’t provide adequate facilities. That plan should also provide suitable changing facilities as well as a suitable lockable storage facilities for the individual to feel comfortable to leave their personal belongings when they don on your factory mandated clothes.
More on to personal cleanliness. Personnel should always wash their hands when personal cleanliness may affect food safety. Again, personal cleanliness 101. And this is something we know right from the start as a child till to our old age that you wash your hands before you handle food. You apply it at home. You apply it at your factory. You apply it at other places at the start of food handling activities. Immediately after using the toilet, and any time you use, you handle raw food or any contaminated material which could result in contamination of other food items, those employees should also avoid handling ready-to-eat food where appropriate.

So what's an important practice in order to ensure those good. Particularly good hygiene practices are followed? Whenever personnel change from a non-food contact or cleaning operation to a food contact operation, the individual must replace gloves or wash hands thoroughly before reaching the food contact operation. Wearing gloves does not make you impervious to contamination.

One of the common things that we face when we do our training in the U.S. or elsewhere, in India or China, our participants usually ask, why are you spending so much time on hand washing? We know hand washing is important and we’ll take care of it. But seriously, if hand washing is implemented in the way it should, it would solve a lot of problems. I’ve only highlighted a few things that, that are important when you wash your hands. Before you start work. Any time you take a break. Any time you take a smoke break. After you blow your nose or touching face or hair. After restroom use. After breaks. After handling dirty or raw materials. After performing maintenance on equipment. After picking up objects from the floor.
The permutation combination is tremendous.

All right. What's proper hand washing? Simple, right? Just stick your hand under the water, use soap, you should be done. No. You have a protocol for that as well.

Wet your hands with clean running water and apply soap. Use warm water if it's available, going back to what Kevin actually said. There are places where it requires ambient temperature, specific temperature which your water should be for washing your hands. Rub your hands to make a strong lather. Scrub all surfaces. Get into the crevices between your fingers, your fingernails. Scrub very thoroughly. Rinse very well under running water. Dry your hands. There's a lot of debate about drying methods in the U.S. as well. The most recent mandate is you dry your hands using single-use paper towels. You don't use the same towel hanging by the side of the hand washing station. It defeats the purpose of installing it in a hand washing station if you re-use cotton towels. But even use of an air dryer is now debated, as you all know, and can be a potential source of contamination. So wherever possible please provide paper towels, disposable paper towels at the hand washing stations. And use the paper towel to turn off your faucet. Otherwise, you'll be recontaminating your hands.
This is another example of a field hand washing sanitation. This is also what we recommend. If you noticed there are seconds ticking here as I’m talking. When the second mark reaches 20 that it how long it takes for you to lather and wash your hands. Normally when we train people we’ll say sing two rounds of the Happy Birthday song or your ABC’s. And when we train here sometimes they hum the National Anthem in your head, and that’s how long you should actually spend. There you go. You washed your hands perfect.

Many times after you've done your training with your employees, things are not reinforced or reiterated. You cannot take it for granted that your employees are going to follow these procedures effectively. And proper signage and proper postings are also very important. Bear in mind you have to put the signage also in the local languages where you have got your hand washing facilities. This is a good example of a hand washing facility we found in a, in a manufacturing plant that leaves very little room for doubt. Because you have a [inaudible] and clear, succinct, statements of how long you should spend hand washing and how you should.

Another thing that we do in our training programs is we do a representation for our participants to show how much hand washing is important. Unfortunately we can’t do it today, but we put this on slides to show in reality what actually happens. Now, this particular picture demonstrates a person imprinting their fingers on an Agar plate and allowing the Agar plate to be upgraded overnight for X number of days.
All right. On the top left-hand corner that person who did not wash their hands, when they imprinted their fingers on the Agar plate that’s the bacterial growth. This is real, huh? We did this and we took those pictures. On the top right-hand corner is the bacterial growth of someone who rinsed their hands under running water. Not much of a difference, right? On the bottom left-hand corner this is the individual who washed his hands for 20 seconds using soap and water. Did it clear your microorganisms? Lastly, that individual washed in soap for 20 seconds and he used [inaudible]. That appears to be your correct procedure. It’s very dramatic when you see this up front how much bacteria that grows out of your hands if given the right opportunity.

So for your pleasure of hand washing there are several choices available in the market. You have soap, antiseptics, hand sanitizers, skin protectant, and lastly gloves also can be used as another barrier.

This standard soap actually uses detergent action. Again, this is something we learned from our physics class and chemistry class. Just a detergent action that helps remove some physical [inaudible] such as the microorganisms from the skin. Sometimes soap formulations can be coupled with a chemical antiseptic to increase the effectiveness. So it’s up to you. Up to your company choice. But use something that is recommended or required by the client that you’re working with normally.
Antiseptics

- Alcohol - used in concentrations of 62-72%
- Iodine and iodophors – special formulations
- Chlorhexidine gluconate – washing uses
- Chloroxylenol – skin formulations at 0.3-2.5%
- Triclosan – often used in handwashing formulations

Antiseptics have roughly about 62-70% alcohol in concentration. Some of the common formulation used by [inaudible] in market inspectors, and I'm not sure about that. But that's something that's very commonly seen in the antiseptics that we work with. You can also use the iodine [inaudible] four based or Clorox. And they're all based on formulations for your antiseptics if you will. But fundamentally all of these formulations work at the same capacity.

Hand Sanitizers

- Use alcohol to kill microorganisms without water
- Usually contain a moisturizing component to counteract drying effect
- Most effective when used following hand washing with soap
- ARE NOT A SUBSTITUTE FOR PROPER HANDWASHING

Thirdly, hand sanitizers are available these days. Hand sanitizers are primarily dipped in an alcohol distilled microorganisms. Again, it's extremely drying and I think it's available even in the Indian market. I've seen a lot of people buy small portable hand sanitizers by the bottle, but it's extremely drying. It's constantly a moisturizing component to counteracting drying effect. But hand sanitizers are effective only to be used in a couple ways. You know, washing your hands in soap and water. This doesn't mean you can't avoid hand washing. It's not a substitute for proper hand washing.

Skin Protectants

- Includes creams and lotions to provide a protective barrier over the skin
- Helps to prevent skin shedding, which may lead to increased microorganism-shedding from skin
- Most effective when used in conjunction with handwashing with soap

As I mentioned there are also skin protectants. They're primarily skin moisturizing creams or lotions to give you a protective barrier. We all know that we shed skin normally during the course of our life, and that could be another source of microorganisms. And if you wash, rinse your hands with soap and water and use an antiseptic after that, and a hand sanitizer. And finally putting a skin protectant would be your ultimate hand protection that you can offer.
Disposable Gloves Must be Used Correctly to Ensure Handling Hygiene and Safety

Gloves

- Gloves must NOT be used in place of proper handwashing
- Be just as aware of what you touch
- Wash hands thoroughly before and after wearing gloves

Codex GHPs – Personal Behaviour

- People engaged in food handling activities should refrain from behaviour which could result in contamination of food, for example:
  - Smoking
  - Spitting
  - Chewing or eating
  - Sneezing or coughing over unprotected food

All right. Some glove technology to spend our time on. Again, one might think what is the big deal about wearing a pair of gloves? Gloves are gloves. It’s not to be so. Gloves can be another source of contamination if you don’t have the proper size given to your employees, and if you don’t use it properly. The gloves also carry a small coating powder normally. And those powder particles can fall into your food product. And [inaudible] processing can be another source of contamination. So a good pair of gloves should fit very tight and snugly, like a second skin. And that picture demonstrates the elasticity or stretching nature of the glove. And that’s how tight your gloves should be in order to be effective when you can handle it in your food processing plants.

Once again, gloves cannot be used in place of proper hand washing. Just because you’ve got a pair of gloves doesn’t mean you’re introduced to other contamination. You might forget that you’ve got gloves on if you touch your hair or may contaminate yourself very many times, just as you would do with a pair of hands. So wash your hands thoroughly before you don the gloves and after you take the gloves off. And remember, gloves can be only that much protection and it can protect your food only that much. It is your personal behavior that contributes and controls the extent with which your personal hygiene can be effectively implemented.

Moving on to personal behavior. People engage in food handling activities should refrain from behavior that could result in contamination of food such as coffee, spitting, tobacco chewing, smoking, so on and so forth. Again, these are very basic information that we all know. But believe me this does happen as all of you can attest to in your personal experiences. So you have to make this a part of your training to gently coax your employees to refrain from these habits as they work with food and food products.
Important Practices

- Tobacco in any form must not be used in rooms where food or food ingredients are processed, handled or stored.

Codex GHPs – Personal Behaviour

- Personal effects such as jewellery, watches, pins or other items should not be worn or brought into food handling areas if they pose a threat to the safety and suitability of food.

- Note: This practice is important to prevent the incidence of physical hazards in foods.
- Common rule of thumb in food processing establishments is “No metal above the waist.”

Jewelry Can Be a Physical Hazard

Tobacco in any form must not be used in the use of food or food ingredients of [inaudible], handles, [inaudible]. This is another logo that has been standardized by the IFB.

One of the other common contaminations that we've seen, I think Kevin alluded to, physical, chemical, microbiological contaminations that can take place in a processing plant, when employees come in wearing personal affects such as jewelry or pins or bangles or, or any sort of accessory that they have on their person, that could become a potential physical hazard. Therefore, these items should not be worn in any area where you handle food. The common rule of thumb in food processing establishments is no metal above the waist. In keeping some cultural things in context, in the Western world a wedding ring is allowed. People don't remove that. And again, here, especially for women workers coming from certain religious sects, they have a different marital symbol, so you have to make that allowance to allow them to wear that particular piece of jewelry. But other than that make it very strict and mandatory that no other jewelry is allowed.

This is a a picture that we took, I want to say four years ago when did a site visit in Maharashtra in a tomato processing plant. They did everything very well. They had proper head coverings. They were wearing gloves. They were disposing them in a timely frequent basis. They had a good washing facility. But all of them wore jewelry in a crop processing plant. That's a big no-no.
Okay. Moving on to fingernails. Food employees should keep their fingernails trimmed, filed, maintained, and periodically checked for debris or dirt that collect under those nails. Even your food particles as you work in your plant. Just because you wear gloves doesn't mean your fingernails should not be trimmed. And at the same time if your women employees, or sometimes men, who might have a leaning towards fingernail polish, you should make a mandatory thing to stipulate that they cannot wear fingernail polish unless they're wearing gloves.

This is another good demonstration of what set of personal hygiene rules you have to display in your plant when you're designing a proper system in place. And this particular set of rules actually applies even for your visitor, controlled in some ways where when they present into a plant you have to make. You have to make sure even the visitor is using the highest code of personal hygiene just as your employees would.

That takes us to the last point in our presentation. Visitors are not exempt from, from these very same rules that you subject your employees to. More often than not, there's a given great deal of latitude and forget that they would bring a whole source of contamination to the processing plant. So you have to make that mandatory. Keep sufficient and adequate and appropriate [inaudible] in place. Disposable hairnets. Lab coats that they can wear and gloves as needed. Safety goggles, again if it is required. This particular picture was taken just last month. I made this in a dairy processing plant and a water processing plant in Rwanda. So we put this up to show that this is universal. We teach this everywhere we go. And even as experts that [inaudible] we were subjected to the same protective wear that one has, one subjects your employees to.
Can you go back to that last slide? Is that one [inaudible] handed them off. [inaudible]? And is [inaudible] mainly a source of contamination?

Absolutely.

And managers and visitors are the main culprits.

Oh, yes.

Absolutely. You’re absolutely right.

Not put something like that, but leaving it on our site? But [inaudible] a customer and call? And he’s run, run. Walking, touching. What will we do about this?

I’m glad you said that. In our [inaudible] this picture was taken when I was [inaudible]. She was calling for our van to come, so I took this as an opportunity.

But she's standing around, all around.

You’re absolutely right. They do not confiscate your cellphones. They do take your cameras for obviously reasons. But you’re right. That. That's a constant battle we do. And a lot of times we find managers and supervisors violating the Continental Post in all these five or six, you know, aspects that we've been talking about. You know, discipline starts from your parents. We say, you know, practice stops from top down. So unless you all as managers set an example it’s difficult to enforce.

No. My question is different. Even most of the workers are getting cellphones. And as employees is it practical or possible to confiscate the cellphones in the work areas for four hours [inaudible]?

Yes.

Yes.

Is it a very difficult aspect?

Yes.

And why didn't we discuss in [inaudible]?

Yeah.

[Inaudible]. As you were talking about it comes two times.

Yes.

Once we are allowed it can be simple.

Indeed.

And at the same time it's almost impossible to confiscate cellphones.

Maybe I can answer that one. We’ve been talking about. If you look at those diagrams we’re looking at...
moving towards fully sophisticated [inaudible]. Yeah? All of the tables are recognized standards. Inspections on personal hygiene. Very strong on personal hygiene. And I think all of them have got the fact that there are adequate facilities for staff to store their personal effects completely away from the production area. And the point of view sufficient storage space to allow to store their.

>> Lockable facilities.

>> Lockable facilities, yeah. So.

>> Lockable locker facilities.

>> Yeah. So they should be able. They should be able to bring their phones in, but they should leave them in their lockers completely away from the production area. Thus the fact that I also can give you some experiences. Many years ago the worst person to take a visitor around is the factory owner.

>> Yes.

>> Because they think they're exempt from personal hygiene. And if you've got that problem as a food safety manager you have a real problem. Because when you go around and you meet, the owners are coming into your factories in the future. If your company owner is there and they walk into the factory with a watch or earrings, you'll have a problem. They've got. He's got to. Got to come from this [inaudible]. Come from this [inaudible].

>> And the schedule. Many people alone can be used in a [inaudible].

Okay. I said there are many people alone can be used a [inaudible] on occasion. And other methods are hard to use. Maybe that's in fact [inaudible]. Well my, my [inaudible].

>> That’s really take into concentration the cultural facilities.

>> But what is [inaudible]?

>> Because. I mean those are the risks one has to take. And if one can make that mandatory, one will. But this is a tried and tested system where employees would refuse to advocate something that is very closely related to their sentiments.

>> [Inaudible] have their own for some [inaudible].

>> Which is why I said take into your constant context and allow that one piece that most employees feel very close to get attached to. And make that a concession. More power to you if you can actually convince your employees to advocate for better personal effects. But we have seen more often than not in any culture we work with you have to make those concessions. And I'm sure you'll see that in, in terms of pathogen contamination from hair. And there
are certain aspects of people that we work with. You cannot make that mandatory to have, you know, no facial hair. So you have to put some permissions in place and as well as make allowances in place. After all this is a balancing act. If all of us were able to follow this 100% I don't think we would have any of the [inaudible].

>> One more.

>> One would think that you would want to have bottled water available for such facilities. But it may not be practical every time. But your microbiological testing labs should make a good baseline test to see if the water source for your factory for hand washing is at least microscopically, and to some extent microscopically clean [inaudible]. To my best knowledge I don't know of any particular attributes for limits on the specs of your water for cleansing stations.

>> Yes. Yes, that's right. [Inaudible]. But even this one problem [inaudible].

>> Indeed.

>> Yeah.

>> It's counter-effective then, and counter-productive in that case. Absolutely. I agree with you. One would think that in a manufacturing plant the provision of water would. The potable water would meet those specifications. And for hand washing stations, absolutely. Your water should be of that level that allows you to cleanse yourself before you go back to your food handling areas.

>> Okay. We'll actually talk about that after Catherine Bergen.

>> [Inaudible].
Sample assessment questions

1. Good personal hygiene will
   a) install a good work ethic.
   b) produce high quality products.
   c) produce safe products.
   d) reduce the risk of unsafe products.

2. What critical aspects are required for an effective personal hygiene system in a manufacturing facility?
   a) Hair restraints, medical records, and control of illness, injury, personal health histories, and visitors.
   b) Hand hygiene, personal health history, visitor health records, visitor illness, and visitor injury.
   c) Hand washing, personal cleanliness, and control of illness, injury, personal behavior, and visitors.
   d) Hand washing, personal health records, facility cleanliness, employee injury and illness, and visitor health history.

3. Food workers must wash their hands after all of the activities described below except
   a) going to the bathroom.
   b) handling ready-to-eat foods.
   c) smoking, eating and handling trash and refuse.
   d) starting work.

4. An employee who is diagnosed with an illness from Salmonella Typhi shall be excluded from working with foods
   a) for one month after diagnosis.
   b) for one week after use of antibiotics.
   c) until a physician has provided proof that the person is clear of the disease.
   d) until all symptoms and signs of the disease are gone.

5. Protective clothing is used to protect the
   a) food handler from injury.
   b) food handlers’ personal clothing.
   c) hearing of the food handler.
   d) product from contamination.

Answer key on next page.
Answer key for sample assessment questions

1. Good personal hygiene will
   a) instill a good work ethic.
   b) produce high quality products.
   c) produce safe products.
   d) reduce the risk of unsafe products.*

2. What critical aspects are required for an effective personal hygiene system in a manufacturing facility?
   a) Hair restraints, medical records, and control of illness, injury, personal health histories, and visitors.
   b) Hand hygiene, personal health history, visitor health records, visitor illness, and visitor injury.
   c) Hand washing, personal cleanliness, and control of illness, injury, personal behavior, and visitors.*
   d) Hand washing, personal health records, facility cleanliness, employee injury and illness, and visitor health history.

3. Food workers must wash their hands after all of the activities described below except
   a) going to the bathroom.
   b) handling ready-to-eat foods.*
   c) smoking, eating and handling trash and refuse.
   d) starting work.

4. An employee who is diagnosed with an illness from *Salmonella* Typhi shall be excluded from working with foods
   a) for one month after diagnosis.
   b) for one week after use of antibiotics.
   c) until a physician has provided proof that the person is clear of the disease.*
   d) until all symptoms and signs of the disease are gone.

5. Protective clothing is used to protect the
   a) food handler from injury.
   b) food handlers’ personal clothing.
   c) hearing of the food handler.
   d) product from contamination.*