



# Closing the Gap<sup>8</sup>

## Food Code

August 1998

Foodservice operators are, in the parlance of the food code, **Permit Holders**. They are singularly responsible for compliance with the prescriptive performance criteria spelled out in the food code. Building code, fire code, OSHA regulations and the Americans with Disabilities Act (ADA) are but some of the requirements that must be met by owners, operators - *Permit Holders*. Architects and engineers design buildings that comply with building, mechanical and fire codes as a matter of course. But the presence of exposed, potentially hazardous foods presents another layer of hazards. Food safety is a national concern promoted by both the federal government and academia. Food borne illness outbreaks are often splashed across the headlines of newspapers as permit holders are judged by the public, long before they go to court. Once in court, Permit Holders are held accountable for meeting the statutory requirements of the State's food code which more and more is modeled after the 1997 FDA Food Code.

First published as a draft in 1993 and again in 1995, the 1997 FDA Food Code is the model that the states are recommended to follow. Authored by the FDA, it is the culmination of nearly (5) years of statistical research and hundreds of public meetings with industry and academia. Some states have passed the code with minor clarifications and revisions, and others have totally re-written the document and made it their own states' code. None of the states revisions can dilute the minimum safety criteria contained in the model, but most (if not all) are adding to the code and, in some cases, making it more stringent. From state to state, section numbers, vocabulary, definitions, and the look of the actual statutory document will be very uniform, though interpretation will likely vary. *Of critical importance is the realization that the Permit Holders responsibility is not limited to what the authority having jurisdiction (inspector) demands.* If a local official looks the other way or does not specifically tell a Permit Holder that a piece of equipment can or cannot be used, that does not mean that if someone is injured and they sue the Permit Holder that the Permit Holder can defend themselves by saying the inspector said they didn't have to comply. To the contrary, the food code specifically requires that the Permit Holder accept responsibility for the codes prescriptive performance criteria.

## Industry trends towards danger

In 1996, the American consumer spent \$691B for food. 46% of this was for meals made outside of home. Of those meals prepared away from home, half was for take out and delivery type service (Time Magazine, April '98). 43% of all meals included at least one item made from scratch while in 1997 that number dropped to 38% (FMI). UKROP's, an upscale hybrid type grocer and food service operator, allocates 45% of their total retail floor space for 130 ready-made take-out items. In 1953, the average American family spent (2) hours to prepare dinner. A year later Betty Cronin invented the TV dinner and Ray Kroc started a franchise many said would never fly. Today, the average American family spends 15 minutes "preparing" dinner. The National Restaurant Association reports that the domestic foodservice market is growing at a rate of 3%, but the take out segment is growing at a 7% clip. Meanwhile FMI reports that 12% of all supermarket shoppers bought ready made food in 1996. That number almost doubled in 1997 when 22% of all shoppers bought ready made. Retailers are tired of hearing the term "home meal replacement" (HMR), but they are paying close attention to the 12%-15% margin on sales from Eatsie's compared with their usual 3-4% margins for groceries.

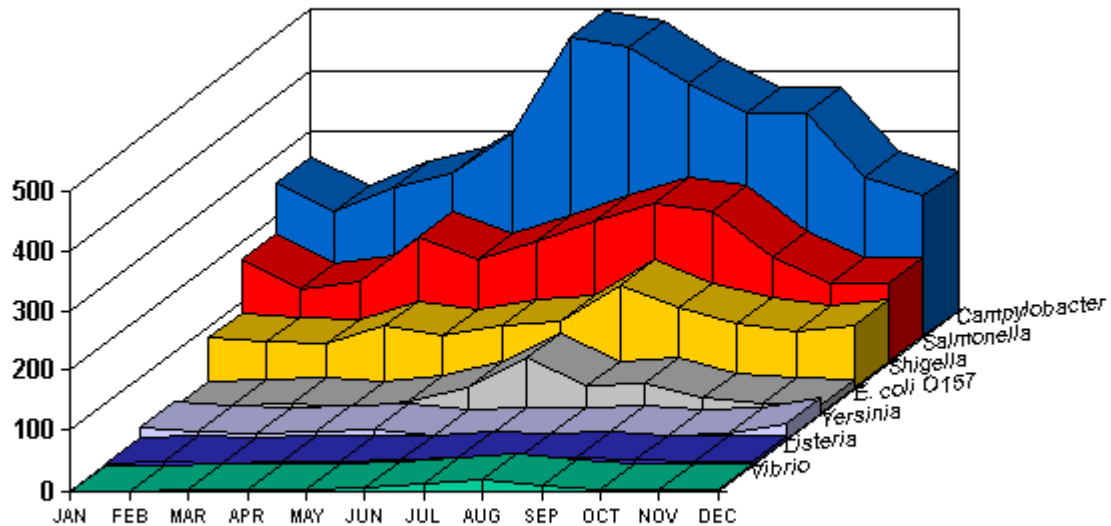


# Closing the Gap<sup>8</sup>

## The hazard evolves...

The above trends and statistics paint a picture worthy of analysis. It is plain to see that the length of time from when a take-out or ready-made meal or food item is cooked to when it is consumed is growing. The reason that the incidence of take-out and ready-made is increasing is due to the importance of convenience, the scarcity of time and the growth in dual family (disposable) income. The food code defines the danger zone as being between 140°F and 40°F (41°F for buffet and prep table). Pathogens multiply and become dangerous when contaminated foods are exposed to temperatures above 28°F and below 130°F for (4) or more hours. The smallest amount of cross contamination followed by temperature abuse can yield a very poisonous product. This usually occurs when a food item is cooked and then allowed to cool to danger zone temperatures by sitting out or, in some cases, by being put into refrigeration equipment that is not designed for a rapid pull down of temperatures. There are four pathogenic organisms that are of particular concern due to their statistical penchant for injuring and killing humans. They are; Salmonella typhi, Shigella spp., Escherichia coli O157:H7 (aka E. Coli), and Hepatitis A virus (very deadly). The cover of Time magazine for August '98 reads: *The Killer Germ: Ecoli, its turning up everywhere...* . E. Coli is transmitted by ingestion and is carried in feces. A tiny amount of feces that gets deposited (cross contaminated) onto a food item can grow to become critically dangerous for human consumption in a matter of hours. Given the opportunity of food, acid, time, temperature, oxygen and moisture (FATTOM) these organisms grow colonies with exponential fervor. Some of these organisms produce spores and others intoxicants, both of which remain dangerous even after cooking. These four "bugs" are by no means the end of the list of pathogenic and toxigenic hazards that can be associate with foods. The Centers For Disease Control recently published the below chart showing the incidence of outbreaks by month (1997) and by pathogen :

# Closing the Gap<sup>8</sup>



## Circumstantial contributions and consequences

Other contributory factors relate to changes in our farming and agricultural habits and processes. The development of feedlots and similar live animal production farms. Feedlot operators have strict, clean-room type procedures in place on their “farms” because their stock is so genetically and immunologically jacked up that if the wrong pathogen or bug were to get loose, they could lose their whole stock/flock. Such animal products are less likely to afford the immunological diversity afforded by a broader genre. With all of these changes and with the growth of our population, there has arisen a national concern for the integrity of our food supply. We assume that hazardous food products are kept at safe temperatures while in the food manufacturers possession and while in transit. The new time/temperature requirements of the model FDA Food Code allow for a small margin of error in the event that some colonies of organisms had the opportunity to get a head start while in possession of the manufacturer or an intermediate processor. ***The majority of foodborne illness outbreaks are caused by improper cooling.*** Since much of our raw food is cross contamination due to improper handwashing and fecal/oral contamination, improper cooling becomes a major problem. Similarly, an infectious food handler that reports to work must be sent home as the bugs they spread grow quickly on raw exposed food products. Finally, there are some new sources for our foods that give rise to concern. Regardless of your feelings about NAFTA, there is no dispute that our vegetables and fruits are less safe for our population than before NAFTA. Growers in Mexico and other foreign countries are known to use irrigation systems and practices that are dangerous to our population. These practices are illegal for U.S. growers. In 1997 in the USA, 40% of all fruits and 20% of all vegetables consumed came from foreign soil. The statistical likelihood of contracting a



# Closing the Gap<sup>8</sup>

foodborne illness has increased due to these changes in sources, habits and preference and due to some other evolutionary type factors. Finally and most important are the actual hygienic practices of the food handlers. Safe food can become dangerous very quickly in the hands of slovenly, uncaring or uninformed food handlers. Basic skills and disciplines like proper hand washing and utensil safety along with established procedures for exclusion of the sick and wound barriers are all important to running a safe program.

## ***Food, building, mechanical, fire...the harmony of safety***

Public safety is relative to the interaction between microbiology, physics, knowledge, habits, attitudes and money. Foodservice management, design, plan review, inspection, operation and maintenance all impact the overall safety of a food service program. If we assume that all Permit Holders use due diligence and intend to serve safe food, then the facility design, construction methods, equipment selection, installation and maintenance of each component is important to enable Permit Holders to meet their responsibilities to both the public and their shareholders. Some codes and regulations, whether they be health or building or mechanical codes, are uncoordinated and miss their intended safety targets. Their enforcement does little if anything to mitigate a real public safety hazard. Conversely, due to poor coordination, situations sometimes arise where the enforcement of a mechanical code creates a serious fire hazard or, the ability to comply with health code is denied due to poor HVAC design and installation. Clearly, collaboration and integration are needed in order to optimize foodservice facilities and performance.

The American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE) is working towards the integration of each of the construction specialties. There are (16) divisions to the construction contract that together make a building. The performance criteria contained in the new food code includes specific temperature(s), time(s) for foods. The environment that a food holding piece is installed in does affect the units ability maintain a given temperature. Effective, optimized food service design requires a cross divisional perspective, from division 1 thru div 16 of the construction contract. Successful foodservice facilities begin with effective planning for Div 11400, and *related* divisions. There is a need for a liaison to the other divisions to assure that specifications in other divisions enable the Permit Holder to meet the requirements of all public safety codes including the food code.

## **Training, education, habits**

The Education Foundation of the National Restaurant Association is without equal. They have done more to advance food safety, sanitation and hygienic knowledge than any other institution or agency. There is much to learn and they are a tremendous resource. Another good resource in the National Technical Information Service. Where the Education Foundation can provide the training, the network and the materials, the NTIS can provide the background and the actual codes. Beyond that there are many good books on microbiology and food safety, and many sites on the Internet with far more information than anyone of us could ever hope read. There is a consumer food safety advocacy group called Fight-Bac that seeks to educate consumers in the hopes they will change to safer food handling habits just as the International Food Safety Council advocates the ServeSafe food safety curriculum for commercial foodservice.



# Closing the Gap<sup>8</sup>

**In summary,**

the key to Public Safety lies at the convergence of coordinated design, good equipment, safe habits, the right tools and effective systems. Employees that are knowledgeable and trained and observe good examples and work in clean, well lit areas with the right tools, equipment and guidance can be expected to exhibit safe behaviors.. This is especially apparent when they expect personal pain if they fail, and personal benefit when they succeed. The FDA food code presents a daunting challenge to the food and food service industry in an time of near full employment with dwindling educational and skill levels among foodservice workers. Permit Holders need to understand their risks in order to plan for returns. Next month we look a bit deeper in the 1997 model FDA food code.

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