

Approved 3-15-89
Date

MINUTES OF THE SENATE COMMITTEE ON PUBLIC HEALTH AND WELFARE

The meeting was called to order by SENATOR ROY M. EHRLICH at
Chairperson

10:00 a.m./~~p.m.~~ on February 27, 1989 in room 526-S of the Capitol.

All members were present except:

Committee staff present:

Emalene Correll, Legislative Research
Bill Wolff, Legislative Research
Norman Furse, Revisors Office
Clarene Wilms, Committee Secretary

Conferees appearing before the committee:

Senator Gerald "Jerry" Karr
George Puckett, Executive Director, Kansas Restaurant Association
Melvin Brose, Dairy Commissioner, Board of Agriculture
Harold Roberts, Associate Professor, Dairy Foods Technology, Kansas State University
Jeff Ryan, Corporate Manager, Mid America Dairy
Written testimony, International Ice Cream Association
Steve Paige, Director, Bureau of Food, Drug and Lodging, KDHE
Ron Hein, Kansas Association for Marriage and Family Therapy
Candyce S. Russell, Ph.D., Professor, Human Development and Family Studies
Kansas State University
Charles Romig, Ph.D., Assistant Professor, Counseling and School Psychology
Program, College of Education, Wichita State University

Senator Gerald "Jerry" Karr appeared before the committee in support of SB-196 suggesting a possible change in KSA 65-702a, relating to preparation and sale of ice cream in food service establishments. The proposed change would allow local restaurants to prepare and serve home made ice cream along with their other dessert products. (Attachment 1)

George Puckett, Kansas Restaurant Association, appeared before the committee and presented written testimony, stating his organization's support for SB-196. He further stated that homemade specialty ice creams should be allowed to be prepared in Kansas foodservice operations, providing: #1) that customary sanitation requirements are strictly adhered to as required by the KDHE and #2) the preparation of the ice cream mix is made in compliance with the requirements as set forth in the proposed measure. (Attachment 2)

Melvin Brose, Dairy Commissioner, appeared in opposition of SB-196 stating his concerns. (Attachment 3) Kansas, as well as surrounding states, has adopted the Code of Federal Regulations which provisions require the entire mix to be pasteurized prior to freezing. This regulation aids in maintaining the safety of the final product. The bill specifies eggs to be "cooked", not pasteurized. Eggs are a potential source of salmonella. Also, this bill would require a \$70.00 rather than \$40.00 license and inspections would have to be monthly rather than 2 - 4 times each year.

Harold Roberts, Dairy Food Technology, KSU, testified on SB-196 stating opposition and voicing concern about the safety and welfare of the people of Kansas. He stated the law specifies that if ingredients are added, they must be pasteurized except for flavoring. The Code of Federal Regulations deals with pasteurization of ingredients used for ice cream. Most homemade ice cream is made with eggs. He made reference to micro-biological contamination of foods. (Attachment 4)

Senator Vidricksen asked whether or not SB-196 had been discussed with Dr. Marian Spears, Hotel and Management School, KSU, stating she was a

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON PUBLIC HEALTH AND WELFARE,

room 526-S Statehouse, at 10:00 a.m./~~p.m.~~ on February 27, 1989

strong supporter of this bill. Mr. Roberts replied that he had not done so but that his main concern was for the public.

Dr. Jeff Ryan, Mid America Dairy told the committee that he was responsible for overseeing development and overseeing quality assurance programs. These programs are designed to protect public health and provide consumers with a high quality product at a reasonable price. He further stated that their product must be safe for human consumption and must pose no threat to public health. He also stated he felt this bill was questionable since the Code of Federal Regulations requirements would not be met. He further stated that any negative publicity will affect us all.

Written testimony was presented by the International Ice Cream Association which had presented testimony on HB-2293 stating their opposition because they believed it demonstrated a lack of concern for food safety and the public health by providing a mechanism for the improper handling of food ingredients in an environment ill-suited for the preparation of safe and wholesome frozen desserts. (Attachment 5)

Stephen N. Paige, Bureau of Food, Drug and Lodging, KDHE, stated that his organization recommended close adherence to the Pasteurized Milk Ordinance as a means of providing the greatest assurance for the public's health. (Attachment 6)

Ron Hein appeared before the committee requesting that SB-258 be held over and an interium study requested.

Ron Hein presented testimony in support of SB-257 stating his group had been in discussion with the Kansas Association of Professional Psychologists concerning rewording some of the language concerning this act and would, in the next few days, return with compromise language. (Attachment 7)

Candyce Russell, Ph.D., KSU, appeared before the committee testifying in support of SB-257, concerning credentialing for Marriage and Family Therapists. (Attachment 8)

Charles Romig began testimony but due to lack of time his appearance was carried over to the 4 p.m. meeting.

Written testimony was submitted by Keith R. Landis, Christian Science Committee on Publication for Kansas on SB-258. (Attachment 9) Mr. Landis stated it surely was not the intent of the bill's sponsors to include Christian Science practitioners in its provisions and requested the amendment proposed in his testimony.

Written testimony on SB-258 was presented by Richard Morrissey. Mr. Morrissey stated that following the 1988 review of the Marriage and Family Therapists application, the Secretary of KDHE did make recommendations on actions to consider addressing sexual exploitation. (Attachment 10)

The chairman announced that the committee would meet at 4 p.m. this afternoon in room 527-S to continue hearings on SB-257.

The meeting adjourned at 11:00 a.m. and will convene at 4 p.m.

SENATE
PUBLIC HEALTH AND WELFARE COMMITTEE

DATE February 27, 1989 - 10 am meeting

(PLEASE PRINT)
NAME AND ADDRESS

ORGANIZATION

<u>Ken Baker - Topeka</u>	<u>Ks. Assoc of Prof. Psychologists</u>
<u>Mary Ann Japel - Topeka</u>	<u>BSRPB</u>
<u>Allen J. Jumper - Topeka</u>	<u>A.P.A.</u>
<u>KEITH R LANDIS</u>	<u>CHRISTIAN SCIENCE COMMITTEE</u>
<u>Candice Nanyish - Topeka</u>	<u>ON PUBLICATION FOR KANSAS</u>
<u>David C. Podchiffen - Topeka</u>	<u>Kansas</u>
<u>Deb Kuntall</u>	<u>Psychological Assn</u>
<u>Imogene Langdon - Topeka</u>	<u>Kansas Psychol. Assn</u>
<u>Jeanette A Baruchan - Topeka</u>	<u>Washington U. - Social Work student</u>
<u>HAROLD Roberts - Manhattan</u>	<u>" " " "</u>
<u>GEORGE PUCKETT - WICHITA</u>	<u>KANSAS STATE Univ.</u>
<u>Ruth Wilkin</u>	<u>KSA KS RESTAURANT ASSN.</u>
<u>Elizabeth E. Taylor</u>	<u>League of Women Voters</u>
<u>ABIGAIL V. HIGGINS</u>	<u>Asso of local Health Dept</u>
<u>Kenneth M. Wilke</u>	<u>Alcohol + Drug Counselors</u>
<u>LARRY D. WOODSON</u>	<u>KSBA</u>
<u>Steve Payne</u>	<u>Ks State Board of Agriculture</u>
<u>Melvin Brose</u>	<u>Ks Bd of Ag.</u>
<u>Dr. Forrest J. Rinn</u>	<u>KDHE</u>
	<u>Ks Bd of Ag</u>
	<u>Mid-America DAPTmen</u>

STATE OF KANSAS

GERALD "JERRY" KARR
SENATOR, SEVENTEENTH DISTRICT
CHASE, LYON, MARION, MORRIS,
OSAGE COUNTIES
R. R. 2, BOX 101
EMPORIA, KANSAS 66801



TOPEKA

SENATE CHAMBER

COMMITTEE ASSIGNMENTS

MEMBER: AGRICULTURE
ASSESSMENT AND TAXATION
FINANCIAL INSTITUTIONS AND
INSURANCE
ECONOMIC DEVELOPMENT
EDUCATION
JOINT COMMITTEE ON ADMINISTRATIVE
RULES AND REGULATIONS
LEGISLATIVE EDUCATIONAL PLANNING
COMMITTEE

DATE: February 27, 1989
TESTIMONY: Senate Public Health & Welfare Committee
FROM: Senator Gerald "Jerry" Karr
SUBJECT: SB 196 (An act concerning food service establishments)

I appreciate the opportunity to appear before the Public Health and Welfare Committee to suggest a possible change in KSA 65-720a, the act relating to the preparation and sale of ice cream in food service establishments.

It was brought to my attention last fall that rules and regulations had developed that make it impossible for a restaurant to serve the general public a gourmet frozen dessert, more commonly known as home made ice cream. This proposed change will allow for the sale of home made ice cream so long as the mixture is cooked and all dairy products are pastuerized within limits already established by the state.

Hopefully, this change will allow local restaurants to prepare and serve home made ice cream along with their other dessert products. Compliance with existing quality standards should ensure a safe product to consumers.

If there are any questions, I would be glad to answer them. Unfortunately, I am unable to supply samples of home made ice cream to the Committee members, although that might add to the quality aspect of this bill.

Thank you, Mr. Chairman.

SPAW
2-27-89
Attachment 1



KANSAS RESTAURANT ASSOCIATION

359 SOUTH HYDRAULIC • P.O. BOX 235 • WICHITA, KANSAS 67201 • (316) 267-8383

MY NAME IS GEORGE PUCKETT, AND I REPRESENT THE KANSAS RESTAURANT ASSOCIATION, A STATEWIDE GROUP OF APPROXIMATELY 950 KANSAS FOODSERVICE AND HOSPITALITY INDUSTRY BUSINESSES.

THE KANSAS RESTAURANT ASSOCIATION SUPPORTS SB 196, AND BELIEVES THAT HOMEMADE SPECIALTY ICE CREAMS SHOULD BE ALLOWED TO BE PREPARED IN KANSAS FOODSERVICE OPERATIONS, PROVIDING: #1) THAT CUSTOMARY SANITATION REQUIREMENTS ARE STRICTLY ADHERED TO AS REQUIRED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT; AND, #2) THE PREPARATION OF THE ICE CREAM MIX IS MADE IN COMPLIANCE WITH THE REQUIREMENTS AS SET FORTH IN THE PROPOSED MEASURE.

A RESTAURATEUR RECENTLY CONTACTED THE KRA HEADQUARTERS IN SUPPORT OF SB 196 AND STATED, "WHY SHOULDN'T I BE ALLOWED TO MAKE MY OWN SPECIALTY ICE CREAM, AS LONG AS I ADHERE TO THE STRICT SANITATION AND HEALTH REQUIREMENTS SET FORTH IN THIS MEASURE?... AFTER ALL, NO ONE QUESTIONS MY ABILITY TO PREPARE OTHER SENSITIVE DISHES SUCH AS COLE SLAW OR POTATO SALAD,... COMBINING MAYONNAISE AND OTHER DELICATE INGREDIENTS REQUIRING EXTRA CARE TO ASSURE QUALITY, FRESHNESS, AND SAFETY FOR MY CUSTOMERS." I PERSONALLY BELIEVE THE OPERATOR HAS A VALID POINT.

THE KANSAS RESTAURANT ASSOCIATION REQUESTS THE COMMITTEE'S SUPPORT OF SB 196. KRA CONTENDS THAT KANSAS FOODSERVICE OPERATIONS, WHO SO DESIRE, SHOULD BE GIVEN THE ADDITIONAL MARKETING OPPORTUNITY OF PROMOTING KANSAS TOURISM, AND HOPEFULLY INCREASING BUSINESS, THROUGH PREPARATION OF HOMEMADE SPECIALTY ICE CREAMS. I REITERATE THAT KRA SUPPORTS THIS MEASURE PROVIDING THE REQUIRED PREPARATION AND SANITATION REQUIREMENTS AS SET FORTH IN SB 196 ARE STRICTLY ENFORCED.

...Promoting Excellence in the Foodservice and Hospitality Industry Since 1933"

S P H W
2-27-89
Attachment 2

HOUSE COMMITTEE ON AGRICULTURE AND SMALL BUSINESS

Good morning Mister Chairman and members of the Senate Committee on Health and Welfare. My name is Melvin Brose, Dairy Commissioner of the Board of Agriculture.

There are a couple of concerns that I wish to raise relative to S.B. 196

One of the primary objectives in dairy inspection is to insure the quality and safety of dairy products in accordance with existing laws and regulations and thus insure a wholesome product is consumed by the public.

Kansas adopted by reference the Code of Federal Register which requires the entire mix to be pasteurized prior to freezing. A survey of surrounding states shows that all of these states have also adopted this regulation. I believe that the requirement that all ingredients be pasteurized at the last possible point in the manufacturing process aids in maintaining the safety of the final product by avoiding the possibility of mishandling, abuse or cross contamination of the product.

Pasteurization is a process of heating a product to a defined temperature and for a prescribed time which kills harmful pathogens. The bill, as written, allows for the mix to be cooked as apposed to pasteurization. It does state that all dairy products used in the mixture be pasteurized. Eggs are not considered a dairy product but eggs are a potential source of salmonella.

SP41460
2-27-89
Attachment 3

If the mixture is cooked, what does that entail? A definition of cooked would be necessary.

Under the present laws for Kansas a restaurant that serves a softserve ice cream or milk are required to purchase a \$40.00 license. Dairy inspectors inspect the restaurant 2 - 4 times per year for bacteria and coliform standards. This law would classify the restaurants that formulate their own mix as a manufacturer, requiring a \$70.00 license fee and a sampling of product once a month. If a number of restaurants license as manufacturers this would increase the work load of the Dairy Inspection Department.

As a manufacturer, other regulations are required to be followed; equipment standards and building standards, which are in our present laws.

For health reasons. the Board of Agriculture feels that the requirements to pasteurize the final mix and have the product maintained under conditions that best serve the public concerns.

While we acknowledge the consumers perception of "home made ice cream" as being superior, we wish to maintain a safe uniform, quality product and protect the health of the consumer.

Thank you. We will attempt to answer any questions that you may have.

HOMEMADE ICE CREAM
Senate Bill 196
February 27, 1989

Submitted by:

Harold Roberts
Associate Professor
Dairy Foods Technology
Kansas State University
Manhattan, Kansas

I am here to express my concern about the safety and welfare of the people of Kansas. Surveys show that food safety is the most important concern of the consumer. Food safety should have a priority over what profit or gain is made by making any food product.

The dairy industry has laws and regulations to protect the health and safety of the consumer. The dairy industry is the most regulated industry of any food segment in the world and dairy products are the oldest regulated food product. One part of the regulations established is pasteurization. The primary purpose of pasteurizing milk and milk products (including ice cream mix) is to kill pathogenic microorganisms. The Code of Federal Regulations defines a pasteurized mix as one in which every particle of the mix has been heated in properly operated equipment to the temperatures and time specified. These factors are: a minimum of 155° F for a minimum of 30 minutes or 175° F for a minimum of 25 seconds. This code also lists the ingredients permitted and the minimum amount of each.

These laws are not there to protect the producer or the processor but to protect the public. We have the best preventative measure available in the food industry and we still are not 100 percent safe. Evidence of this was the 1985 Salmonella typhimurium outbreak in Melrose, Illinois involving Hillfarm Dairy, one of the most modern plants in the Midwest, processing 1.5 million pounds per day. Over 16,000 people were stricken in 6 states with 4 known deaths. In the same year, 84 people died, mostly unborn and newborn babies. In these cases, the mothers consumed soft Mexican style cheese that was contaminated with Listeria monocytogenes caused by poor sanitation and mixing raw and pasteurized milk. About 15 years ago a cheese plant in northeast Kansas closed because people became ill eating cheese contaminated with Salmonella organisms. I can name several others cases. So while the dairy industry is not perfect, we are still producing the best and safest product available.

The law states that if ingredients are added, they must be pasteurized except for flavoring. Most homemade ice cream is made with eggs. As reported by the Journal of Food Protection, February, 1988, New England and the Middle Atlantic area

SP/4W
2-27-89
Attachment 4

experienced a fivefold increase in the reported isolation rate of Salmonella enteritidis between 1976 and 1985. Fourteen Salmonella enteritidis outbreaks have been reported from the Northeast between October 1, 1986 to January, 1988. At least six of these were connected to either eggs or foods which contained raw or undercooked eggs. An outbreak of Salmonella food poisoning occurred in Ontario, Canada in 1984. A total of 249 persons were affected resulting in 2 deaths. Isolation of Salmonella typhimurium from Spanish cream dessert was suspected as the source. Raw egg whites were added to a hot mixture of egg yolks and thickening agent resulting in an incubation of the material. They also proved that most of the prepared dessert had been left unrefrigerated for several hours prior to serving. Therefore, poor preparation and hold procedures had been used with respect to this food product. The Journal of the American Medical Association reported that in every outbreak of Salmonella enteritidis associated with eggs, the product was raw or undercooked and time temperature abuses or other food safety violations were present. A bulletin put out by the United States Department of Agriculture and Food and Drug Administration in September, 1988 reported that Food Service Institutions should avoid serving raw eggs and foods containing raw eggs. They also stated that "Products such as home-made ice cream, home-made eggnog, and home-made mayonnaise should also be avoided but commercial forms of these products are safe to serve since they are made with pasteurized eggs. The Egg Nutrition Center reported that people who are at high risk for infection should not consume raw or undercooked animal products, including eggs. This group includes the elderly, infants, pregnant women, and people with suppressed immune systems.

With the above information, I am concern about this proposed bill and therefore have several questions I feel should be answered. These are:

1. What is cooked?
2. If cooked replaces pasteurization, why are you recommending or requiring pasteurized dairy products if it is going to be cooked? I do not recommend this.
3. How is the mix cooled? How long will this mix be stored before freezing? Incubation for pathogens is 40 to 140°F.
4. What controls do you have to guarantee that this product will be cooked to proper temperature?
5. What ingredients are added to this mix?
6. What type of eggs are going to be used? Fresh, frozen, or pasteurized?
7. Where are the eggs coming from? Commercial operation or farm?

8. Would this open the door for other requests for changes such as ice milk, sherbet, yogurt, or egg nog?
9. If a food service establishment can produce an "unpasteurized" frozen dessert then why can't Zarda, Jackson, and Steffen's? THEY WOULD NOT TAKE THE CHANCE.
10. Who is going to control this regulation? How many restaurants are there in Kansas? NOTE: There are 71 restaurants in Manhattan and this does not include the University, country club, nursing homes, hospitals, day care centers, etc.
11. Who is going to pay for the control of this new product?
12. Is the safety of the public in Kansas worth the slight benefit you gain by changing our present regulations?
13. Would this product meet state standards for composition?

It is reported that: "Of the foodborne microbial disease outbreaks reported to the Centers for Disease Control over a five-year period, 77% were traced to foodservice establishments, 20% to homes, and 3% to food processing plants. This is, 97% of all reported foodborne bacterial illness results from mishandling food in either foodservice establishments or homes."

The public demands a safe dairy product; I think what the public wants us to do is to make every effort to insure a safe product is available. We owe it to the people of Kansas to have the safest product possible.

A Perspective on Food Safety Concerns

Written and Edited by
Lois D. McBean, M.S. R.D.

(A reprint from the January-February 1987 Dairy Council Digest)

The United States food supply not only is safer than it ever has been, but it also is the safest worldwide (1-3). The improved nutritional status and increased lifespan of Americans may be attributed in part to the safety of our food supply, in addition to its abundance, variety, availability, and wholesomeness. Significant advances made in protecting our food supply, along with the United States' stringent and high food safety standards, are evidenced by the safety record of milk and fluid milk products, for example. Today, these foods are associated with less than 1% of all disease outbreaks due to infected foods and contaminated water as compared with 25% of such reported outbreaks in 1938 (4).

Despite this progress, incidences of rare, but often highly publicized food-related illnesses do occur (1-3). Recent contamination of milk, cheese, watermelons, and other foods has heightened our awareness of food safety issues (5). In addition, technological advances in food processing with increased use of chemicals and food additives have led some consumers to question the safety of our food supply (6). The increased health consciousness of the U.S. population, and scientists' ability to detect contaminants at extremely low levels, often in parts per billion, have contributed to recent concerns about food safety (1,7). Controversy about food safety, while certainly not new, also stems from misconceptions about safety and food safety issues (1,7-11a). Safety means absence of risk or hazard (7,9). Because risk cannot be totally absent, food safety can never be absolute (7,9,11a). Consumers may delude themselves by seeking absolute food safety when such is impossible (10, 11a). While food safety cannot be guaranteed, much can and has been done to achieve a realistically high degree of relative safety of our food supply (10).

Not only consumers, but food producers and processors, food technologists, regulatory agencies, and health professionals are concerned about food safety. Consumers, however, differ from most other groups in their perceptions of major food safety issues (8,12,13). Research studies reveal that consumers identify the use of chemicals in producing, processing, and preserving food as a

major concern (6,12-14). In contrast, food safety authorities rank microbiological contamination at the top of the list of food-related hazards (3,8,11b,13,15). In fact, the Food and Drug Administration (FDA) has shifted its major focus away from relatively low risk chemical additives to disease-causing microbes in food (16). Nearly all food-related chemicals tested by the FDA to date have a margin of safety of 1,000 or more (16). On the other hand, isolated incidences of microbiological contamination of food recently have led to considerable illness and even death (8,16).

This *Digest* reviews food safety concerns, specifically microbiological contamination and to a lesser extent the presence of intentional (e.g., food colors) and unintentional (e.g., mycotoxins, pesticide residues) additives in food. While microbiological contamination is the most frequent cause of food-related illnesses, these generally are mild and unreported. Moreover, almost all food poisoning incidents can be prevented by properly handling food in the home or at foodservice establishments (17). As succinctly stated by Hall (7), "all that really matters in food safety can be reduced to three words -variety, sanitation, and moderation." By consuming a nutritionally balanced diet made up of a variety of foods in moderation that have been prepared and stored following established sanitation practices and under proper temperatures, the risk of foodborne illness can be greatly minimized (7,18).

MICROBIOLOGICAL CONTAMINATION OF FOODS

Much of the recent attention focused on foodborne microbial diseases can be attributed to the improved means of detecting bacteria, the complexity of the food supply, and the greater concentration of the food industry (10). The latter makes it possible for one small mishap in a food plant to affect millions of people.

Certainly not all bacteria are harmful. Consider, for example, the important role of microorganisms both within the body and in the production of foods such as cheese

and yogurt. Pathogenic bacteria, however, are responsible for the majority of food-related outbreaks in the United States (19). The adverse effects of bacteria can result from their presence in food (e.g., *Salmonella* infection) or through the release of preformed toxins (e.g., staphylococcal food poisoning or botulism) (11b,11c). Opportunity for microbial contamination exists not only during the processing, transporting, and marketing of food, but most often during the preparation and handling of food in the home or at foodservice establishments (10,11c). A wide variety of foods, in particular foods of animal origin (e.g., meats, fish and shellfish, poultry), are implicated in foodborne microbial incidences (3). Furthermore, the symptoms of foodborne disease may range from temporary discomfort with prompt recovery (e.g., *Clostridium perfringens* poisoning) to more severe and even fatal conditions (e.g., botulism) (11b,11c,17). Individuals most susceptible to the ill effects of microbial contamination of food include the very young, the elderly, and the chronically ill (11b). In genetically predisposed individuals, chronic diseases such as arthritis may be triggered by foodborne bacteria (20).

The incidence of foodborne microbial disease in the United States is unknown (10,11c,17,21). However, from 400 reported cases/year to as many as five million outbreaks/year are cited (3,10,22,23). Diarrhea of foodborne origin is even more prevalent, accounting for as many as 81 million cases/year (24). The economic impact also is staggering with costs ranging from one to 10 billion dollars annually due to medical care and lost earnings (3,10).

Specific Pathogenic Bacteria

A number of different types of microorganisms may cause foodborne illness. Those responsible for most reported outbreaks in the United States include *Staphylococcus aureus*, *Salmonella* species, *Clostridium perfringens* and *Clostridium botulinum* (21,25). Furthermore, as a result of advances in detection methods, several newly emerging foodborne pathogens have received attention such as *Campylobacter jejuni*, *Yersinia enterocolitica*, *Listeria monocytogenes*, and pathogenic strains of *Escherichia coli* (11c, 21,26,27).

Staphylococcus aureus, a ubiquitous organism often found on the skin and in nasal passages of most people, is responsible for 20 to 40% of reported foodborne illness/year (11c,25). The illness is caused not by the bacterium itself, but by one of several enterotoxins that are produced when this pathogen is allowed to multiply in foods (11c). Foods of animal origin such as meats and dairy products most often are involved in staphylococcal outbreaks (11c,20,25). Symptoms of nausea, vomiting, diarrhea, and abdominal cramping may occur suddenly within one to six hours (average two to three hours) after consuming a food containing staphylococcal enterotoxin (11c,20,25). Recovery, however, is rapid (one to two

days) and *Staphylococcus*-related illnesses rarely are fatal (11c,25). Although the bacteria can be destroyed by a sufficiently high temperature, this is not true for its toxins. It is important therefore to avoid contamination with this bacteria by maintaining personal cleanliness and adhering to recognized sanitation procedures in the handling of foods (25). Keeping foods at the proper temperature [i.e., <4.4°C (40°F) or >60°C (140°F)] inhibits growth or destroys this bacterium (25). In contrast, leaving susceptible foods at room temperature encourages this bacterium to multiply and to produce toxins (25).

Another leading cause of foodborne illness in the United States is *Salmonella* (11c,26,28). This microorganism, of which there are more than 2,000 different serotypes, is found in most animals (20,25,26). Raw meat and poultry are the most important source of *Salmonella*, although other foods such as eggs, raw milk, and fish and shellfish also have been implicated in recorded outbreaks (20,28). The most common serotype associated with salmonellosis, the disease caused by *Salmonella* bacteria, is *Salmonella typhimurium* (20). In general, the symptoms of salmonellosis include diarrhea, abdominal cramps, vomiting, and fever usually within 24 hours after consuming the contaminated food (20,25,26). The illness tends to be of short duration with a low mortality rate (26). Symptoms, however, may be more severe for the very young, the elderly, and those already weakened by disease (11c, 25). Also, serious chronic diseases such as rheumatoid disorders may occur as a sequelae of *Salmonella* infection (20,26).

Within the past few years, some isolated outbreaks associated with drug-resistant strains of *Salmonella* have made newspaper headlines and created considerable concern (27-31). In 1985, a particular strain of *S. typhimurium* which displays rare resistance to certain antibiotics and a plasmid profile not seen before 1984 was associated with the largest reported food-related outbreak of salmonellosis in U.S. history (20,25,27-31). Over 16,000 culture-confirmed cases of salmonellosis in six states were recorded, all involving persons who had consumed two brands of 2% lowfat milk processed at a single dairy in Chicago, Illinois (25,27-31). This "Great Salmonella Outbreak" triggered an intensive investigation involving federal, state, and local regulatory authorities as well as dairy industry officials (25,31). Postpasteurization contamination of milk was suspected in this case (27). Because *Salmonella* is very heat sensitive, it usually is readily destroyed by normal cooking of food and proper pasteurization of milk (11c, 26). In fact, most outbreaks of salmonellosis can be traced to mistakes in food handling, either in foodservice establishments or in the home (11c).

Clostridium perfringens often is called the "cafeteria germ" because most foodborne outbreaks caused by this organism are associated with the foodservice industry (e.g., restaurants, institutions) or situations in which large quantities of food are prepared and served (11c,19,25). This organism is a common cause of foodborne microbial

illness with relatively mild symptoms such as diarrhea, abdominal cramps, shivering, and headache (11c,19). Both onset of symptoms (8 to 24 hours) and recovery (12 to 24 hours) are rapid (11c,25). Because *Clostridium perfringens* is widely distributed in nature, it can contaminate a large variety of foods under the right conditions. Foods of animal origin (e.g., meat, poultry) when improperly cooked or stored, as well as dried mixes when rehydrated and stored at inadequate temperatures, are most commonly involved in outbreaks of *C. perfringens* poisoning (11c,19,25).

In contrast to illness associated with *C. perfringens* which, in general, are common but mild, *Clostridium botulinum* can produce a neurotoxin that causes botulism, a very serious, even fatal disease (11c,19). Botulism traditionally has been associated with contaminated canned foods (11c,19,26). Recently, however, other foods such as potato salad, sauteed onions, and chopped garlic have been implicated in botulinum food poisoning (26,27). Symptoms of botulism appear within 12 to 36 hours after consuming the contaminated food and generally involve the nervous system. Dizziness, blurred vision, respiratory failure, and other neurological disorders may occur, followed by death if a suitable antitoxin is not administered (11c,25,26). Heating canned foods at a temperature high enough to kill *C. botulinum* spores or keeping foods under refrigeration helps prevent botulism (25).

In adults, botulism typically results from intake of the preformed toxin in contaminated food. However, in the mid-1970's, a condition called infant botulism was described in which the neurotoxin was produced in infants' intestinal tract following multiplication of *C. botulinum* (26). Now infant botulism in an adult has been verified (32,33). In this case, the toxin was produced *in vivo* rather than consumed *per se* (32,33). The presumed agent of infant botulism is a food source that contains *C. botulinum* spores but lacks the preformed toxin (32). Individuals with gastric achlorhydria or an altered intestinal flora may be particularly susceptible to this type of botulism (32). The discovery of infant botulism has led to concern that the spectrum of botulism may be expanding (33).

Although *Campylobacter jejuni* was isolated from animals over 80 years ago, only within the last decade has this pathogen been recognized as a cause of foodborne disease in humans (19,21,27). Nearly all outbreaks of *Campylobacter* illness, in particular acute gastroenteritis, are associated with raw or inadequately cooked foods of animal origin (19,21). Raw milk, for example, recently has been identified as the vehicle for *Campylobacter* outbreaks in over 250 persons in Kansas (34), as well as 39% of 38 individuals who attended a banquet in Wisconsin (35), and 88% of 25 college students at a weekend retreat in Oregon (36). In addition to raw milk, other foods such as undercooked chicken, processed turkey, raw clams, and raw hamburger, as well as unchlorinated water have been implicated in outbreaks of *Campylobacter* enteritis (10,19,21). In general, the symptoms of

Campylobacter infection resemble those of other foodborne illnesses and include nausea, malaise, abdominal cramps, headache, diarrhea, and sometimes fever (10,21). Other common symptoms of this foodborne disease include urinary tract infections and reactive arthritis (10). Because *Campylobacter jejuni* is a slow growing bacterium, the onset of symptoms is delayed, occurring generally three to five days after intake of the contaminated food (27). Most patients recover in less than one week and death is rare (10,21). Although this organism is associated with many foods of animal origin, thorough cooking of foods, especially meat and poultry, pasteurization of milk, and proper handling of food are practical means of eliminating the possibility of contamination with this bacterium (21).

Another new bacteria in the news is *Yersinia enterocolitica* (11c,21). Although recognized as a human pathogen since 1939, it was not until 1976 when isolated outbreaks of yersiniosis, the disease caused by *Yersinia enterocolitica*, increased our awareness of this organism (21). Foods implicated in recent incidences of foodborne illness caused by *Yersinia enterocolitica* include chocolate milk, reconstituted dry milk, pasteurized milk and tofu (11c,26). The usual explanation for these outbreaks is postprocessing (e.g., postpasteurization of milk) contamination with *Yersinia enterocolitica* (26,27,37). Symptoms of infection from this organism include diarrhea, fever, headache, and severe abdominal pain which mimics acute appendicitis (21). Unfortunately, the appendicitis-like symptoms have led to some unnecessary appendectomies (21,27). Infection with *Yersinia enterocolitica* also can trigger arthritis, myocarditis, and other disorders (21,27). *Yersinia enterocolitica* has been isolated from a wide variety of animals, foods, and water sources (26,37). Moreover, it is one of only a few species of foodborne bacteria that grow under refrigeration (11c,21,27,37). This means that cold storage, a traditional means of preventing the growth of many food poisoning bacteria, is ineffective in controlling the growth of *Yersinia enterocolitica* in foods (21,37). Therefore, other measures such as sufficient heat treatment (e.g., proper pasteurization of milk) must be taken to inactivate this pathogen (21). The good news is that the strains of *Yersinia enterocolitica* primarily associated with human illness are not prevalent in foods (21). This helps explain why there are relatively few human outbreaks of yersiniosis in the United States (21,26).

Recent food-related outbreaks associated with *Listeria monocytogenes* have brought this pathogen to the attention of both health professionals and the public, although the microorganism has been recognized for over 50 years (21,27,38,39). The first documented report of foodborne illness caused by *Listeria monocytogenes* in North America occurred in 1981 in the maritime provinces of Canada and was linked to commercially prepared coleslaw (21,37-39). In 1983, a specific brand of pasteurized whole or 2% milk was implicated in an outbreak of listeriosis (i.e., a non-contagious infection caused by the

rium, *Listeria monocytogenes*) in Massachusetts that involved 42 adults and 7 infants (40-42). This was followed in 1985 by contamination of a soft Mexican-type cheese in California that caused several hundred recorded cases of listeriosis, mostly among Hispanics (27,38,39,42). More recently, *Listeria monocytogenes* has been isolated from other varieties of domestic and imported soft cheeses such as Brie (27). These sporadic outbreaks, however, are rare, especially in relation to the widespread distribution of *Listeria monocytogenes* in the environment (21,27,41). But this does not mean that listeriosis is not cause for concern.

Most healthy people can overcome infection by *Listeria monocytogenes* by virtue of cell-mediated immunity (41). For these individuals, transient, mild flu-like symptoms such as fever, headache, or vomiting may occur (41). In contrast, newborns, pregnant women, and individuals with compromised immune systems (e.g., patients undergoing chemotherapy for cancer treatment) are particularly susceptible to listeriosis (21,38,39,41,42). In these persons, the manifestations of listeriosis may be severe and include meningitis, abortion, and perinatal septicemia (i.e., the infant is born alive but dies shortly after birth) (21,26). The onset of symptoms may occur four days to three weeks after consuming the contaminated food (39). The mortality rate in susceptible individuals with listeriosis is 30 to 40% (21,38-40,42). *Listeria monocytogenes* grows and multiplies under refrigeration (37,39). Optimal growth occurs at 30-37°C, although the organism can grow at temperatures as low as 3°C to as high as 45°C (39). Also, this organism tends to grow best under neutral or alkaline conditions. *Listeria monocytogenes*, however, is heat sensitive (26). While there is some academic debate about whether this organism can survive pasteurization (39), recent studies (43,44) have found that under normal operating conditions pasteurization of milk in compliance with the Grade A Pasteurized Milk Ordinance (4) (i.e., 72°C or 161°F for 15 seconds) is sufficient to destroy *Listeria monocytogenes*. In the recent isolated incidences involving *Listeria*-contaminated milk and cheese products, current evidence suggests that the pasteurization process itself was adequate, but that contamination occurred following pasteurization (27,38-40). Industry and government agencies are working to prevent postpasteurization contamination of milk and to learn more about *Listeria monocytogenes*, including the minimum amount of *Listeria monocytogenes* which must be consumed to elicit illness in humans, the incidence rate of listeriosis, and whether or not different strains of this bacterium vary in their virulence (39).

Escherichia coli is a common inhabitant of the intestinal tract of humans and animals (26). While this microorganism long has been considered harmless, certain strains of *E. coli* now are being recognized as pathogenic. Moreover, food has been identified as a vehicle for transmission of these organisms (21,26,45). Since 1982, a few sporadic food-associated outbreaks of gastroenteritis

linked to *E. coli* O157:H7 have occurred (21). Consumption of a ground beef sandwich prepared at restaurants belonging to the same chain was associated epidemiologically with two outbreaks of gastroenteritis in Oregon and Michigan in 1982 (21). In these outbreaks, *E. coli* O157:H7 was linked with a clinically distinctive disorder characterized by severe abdominal cramps and bloody diarrhea (21,26). *E. coli* O157:H7 also has been associated with hemolytic uremic syndrome, a leading cause of acute renal failure in children (21). Because of the severity of illnesses associated with *E. coli* O157:H7, appropriate measures need to be taken to prevent contamination of foods with this organism (21). Unfortunately, little is known about the source and prevalence of *E. coli* O157:H7. However, thoroughly cooking meat and avoiding recontamination should protect against illnesses caused by pathogenic strains of *E. coli* (26).

Control and Prevention of Foodborne Bacterial Illnesses

Of the foodborne microbial disease outbreaks reported to the Centers for Disease Control over a five-year period, 77% were traced to foodservice establishments, 20% to homes, and 3% to food processing plants (26). That is, 97% of all reported foodborne bacterial illness results from mishandling food in either foodservice establishments or homes (26). To lower the incidence of foodborne disease, it is important therefore to educate food handlers and consumers about proper handling of food, sanitation procedures, and personal hygiene (3,11c,26).

A number of government agencies at the federal, state and local level are involved in maintaining the safety of our food supply (19,46). Meat, for example, is regulated by the Food Safety and Inspection Service, a United States Department of Agriculture (USDA) agency that inspects all meat and poultry slaughtered in the United States (23). Microbiological monitoring and surveillance of plants and products are a primary concern of this agency. The FDA, on the other hand, is responsible for protecting the safety, sanitation, and nutritional quality of all other foods in interstate commerce (46,47). This agency accomplishes its mission through inspections and surveillance of various segments of the food industry, sample analyses of food, and when necessary enforcement actions such as seizures or plant recalls and prosecutions (11c). The FDA has established regulations and voluntary guidelines for protecting the safety of the food supply. This agency works cooperatively with state and local authorities and provides the general public with information and educational programs to reduce exposure to foodborne microbial contamination (46,47). The general public in turn has a role in reporting an illness suspected to be food-related to public health authorities (11c). Regulatory agencies then can investigate suspected outbreaks, interpret the findings, and disseminate the information to prevent further occurrences (3,48).

Of all the food industries, the dairy industry is considered to be the most regulated (19). The FDA has the

responsibility under the Food, Drug and Cosmetic Act and the Public Health Service Act to assure the public that the nation's milk supply is uniformly safe and wholesome. Milk sanitation laws and regulations followed by most state and local authorities are based almost exclusively on the Public Health Service/FDA's Grade A Pasteurized Milk Ordinance (4,23). Microbiological criteria for most dairy foods are specified in this document (4,23).

To ensure the microbiological safety of dairy foods, three measures are necessary: (i) pasteurization or more severe heat treatment, (ii) prevention of postpasteurization contamination, and (iii) end-product testing for microorganisms and toxins in certain products (23). Proper pasteurization of milk is the primary factor responsible for milk safety (6,49). About 1% of all milk consumed in the United States is unpasteurized or raw, and yet raw milk accounts for about 95% of all outbreaks of milkborne illness reported over the past 30 years (31,49). As mentioned above, a number of foodborne diseases are associated with raw milk consumption, notably salmonellosis and campylobacteriosis (34-36). Despite the claims of raw milk advocates, there is no scientific evidence that raw milk is nutritionally superior to pasteurized milk or that it has unique health benefits (49). The recent outbreak of a newly recognized chronic diarrhea syndrome associated with raw milk intake emphasizes the hazards posed by this food (50,51).

Increased attention now is being given to protecting milk and other dairy foods after pasteurization (52,53). As a result of the recent sporadic outbreaks associated with pasteurized milk and milk products, the FDA, in cooperation with state public health and regulatory agencies and the dairy industry, has intensified its inspection and micro-biological surveillance of various types of dairy processing plants, other dairy operations and products (52,53). These actions are intended to minimize the risk of postpasteurization contamination of milk associated with equipment failure or operator error (53). In most of the recent foodborne incidents involving pasteurized milk and other dairy foods, postpasteurization contamination of milk is suspected because the pasteurization process itself was effective in killing most microbial pathogens (27,38-40,53). The FDA also has initiated more intensive training programs for federal and state dairy inspectors as well as educational programs for dairy industry personnel (52,53). The FDA recognizes that pasteurized milk is one of the safest foods consumed in the United States (52). However, this government agency, as well as the dairy industry is concerned about the recent sporadic milk-related disease outbreaks and is taking steps to minimize the likelihood of future occurrences (52,53).

OTHER FOOD SAFETY CONCERNS

In contrast to the established data on food safety which reveal micro-biological contamination to be the greatest threat, the general public perceives intentional and unin-

tentional additives in food as major food safety issues (2,8).

Intentional Additives

Approximately 2,800 food additives are used to maintain or increase foods nutritional value, preserve freshness (e.g., antioxidants, antimicrobial agents), make food taste (e.g., sugar, salt) or look (e.g., colors) better, and aid in its processing and/or preparation (2,5,6,54). Without food additives, it would be impossible for food to be safely produced in massive quantities and transported nationwide or worldwide as is done in the 20th century (6,54). Despite consumers' concerns about the safety of food additives, food additives are extensively studied and regulated (1,2,6,11d). Moreover, most food additives have a large margin of safety (16).

The FDA regulates food additives through the Federal Food, Drug and Cosmetic Act. Passage of the Food Additives Amendment in 1958 and the Color Additives Amendment in 1960 makes it necessary for the food industry to demonstrate the safety of a new food additive before approval by the FDA (54). This means that the manufacturer bears the responsibility for conducting scientific tests to establish the safety of a new food additive. Before 1958, it was the FDA's task to prove that an additive was either safe or dangerous. The hundreds of additives used in foods before the 1958 amendment were placed on the FDA's GRAS (generally recognized as safe) list (54). Many of these additives subsequently have been reviewed by the FDA and either have been approved for continued use, recommended for further study, or banned (6). As part of the 1958 Food Additives Amendment, the Delaney Clause prohibits the use of any additive that causes cancer in man or animals, regardless of the amount required to cause the disease. Because of advances in technology, liberalization of the "zero risk" standard of the Delaney Clause has been proposed so that the health benefits of an additive may be weighed against its risk (6,55,56). In addition to the debate about updating the Delaney Clause, questions are being raised regarding whether specific additives should be banned if proven harmful for only a few people, and whether food manufacturers can produce acceptable products using smaller quantities of additives (6). Although the majority of food additives pose no significant hazard with usual use, the safety of approved food additives is reviewed periodically (11d).

Unintentional Additives

Unintentional additives or unavoidable contaminants in food that are of concern include mycotoxins, antibiotic residues, and chemical contaminants such as pesticide residues.

Mycotoxins, which are toxic substances produced by molds under certain environmental conditions, have threatened human health for centuries (1,57,58). Many, but not all, molds that form on foods can produce myco-

to. Although there are many mycotoxins, aflatoxins are the best known and of greatest concern because of their toxicity and potential carcinogenicity (57). Foods most susceptible to aflatoxin contamination in the United States are peanuts, corn, and cottonseed after they are harvested and stored (57). Although aflatoxins are of natural origin, the FDA considers them added, although unavoidable, contaminants (57). There is no direct evidence of mycotoxin involvement in foodborne disease in humans, but there is considerable indirect evidence (57,58). The FDA therefore has set practical limits or action levels for aflatoxins in foods and animal feed (57). Moreover, most U.S. food processors are even stricter than the FDA in monitoring aflatoxins in food ingredients and finished products (57). To protect against mycotoxin contamination consumers should prevent the growth of mold on foods by properly storing and using foods within a reasonable length of time (57). If mold does develop, it is best to remove it before contamination is minimal, especially in relation to other environmental hazards. However, the amounts and kinds of mycotoxins in our food supply continue to be evaluated (57,58).

Antibiotic residues per se in animal foods generally are of little concern (6). In fact, the law requires producers to wait a specified time after administering antibiotics to animals to treat disease before animals are slaughtered or before eggs or milk are used as food (19). To ensure compliance with this law, the USDA, as part of its national residue program, routinely monitors animal foods for antibiotic residues (15,19,59,60). The use of low levels of antibiotics in animal feed, however, theoretically could promote the development of antibiotic-resistant bacteria which might cause disease in humans (6,28-30,50-67). Since the early 1950s, many livestock and poultry producers have added subtherapeutic doses of antibiotics such as penicillin and tetracycline to animal feed to increase growth rates, control the spread of disease, and produce meat at lower prices (6,60,64,66). The concern is that following prolonged exposure to these antibiotics, traditional bacteria in animals will be suppressed at the expense of new resistant strains that eventually will contribute to serious diseases especially in individuals already taking antibiotics for these illnesses (28,61,66). Recently, researchers from the Centers for Disease Control have implicated hamburger meat as the source of antibiotic resistant *Salmonella newport* in two separate incidences of *Salmonella* infections (61,67). In both cases *Salmonella newport* was traced to farm animals receiving subtherapeutic levels of antibiotics (61,67). It is noteworthy that many of the individuals who developed salmonellosis had been taking antibiotics for other medical problems (61,67).

While some scientists and consumers have called for a ban on the use of subtherapeutic levels of antibiotics in animal feed, others disagree (59,60,64-66). Opponents claim that the evidence is insufficient to quantify the risk to humans and that discontinuing subclinical antibiotic use in animals would have a negative economic impact

(60). The health consequences of subtherapeutic levels of antibiotics in animal feed continue to be debated among public health officials, the scientific community and the media.

Modern technology with its use of pest control substances, particularly halogenated hydrocarbon pesticides, and other industrial chemicals is responsible for the abundance and variety of our food supply. Yet, this same technology is blamed for adding unwanted chemicals to our environment, and in particular, to our food (1). Although chemical contaminants can be added inadvertently to the food supply, regulatory controls in terms of permitted levels in foods minimize human exposure (6,11e). The Environmental Protection Agency (EPA), for example, must approve all pesticides before they are sold in the United States. Also, tolerance levels are established for allowable pesticide residues in food (6,11e). In general, these are 100 times below the level considered to be harmful (6,11e). The FDA, under its pesticide monitoring program, collects and samples food nationwide for pesticide residues and other chemical contaminants, if the maximum allowable levels are exceeded, regulatory action is taken and the food is removed from the marketplace. Food and agricultural industries work closely with federal, state, and local regulatory agencies to minimize and/or eliminate chemical contamination of food. Nevertheless, irresponsible or accidental use of chemicals has led to some isolated incidents (11e,68,69). Although the general public regards chemicals as a major cause of food-related illnesses, our Nation's food supply is very safe, particularly from a chemical standpoint (4). It is obvious, however, that the benefits of modern technology are not without some degree of risk (1).

ACKNOWLEDGEMENTS

National Dairy Council assumes the responsibility for this publication. However, we would like to acknowledge the help and suggestions of the following reviewers in its preparation: D.L. Archer, Ph.D., Director, Division of Microbiology, Center for Food Safety and Applied Nutrition, Food and Drug Administration, Washington, D.C.; M.P. Doyle, Ph.D., Associate Professor, Department of Food Microbiology and Toxicology, Food Research Institute, University of Wisconsin, Madison, WI; and C.H. White, Ph.D., Professor, Department of Dairy Science, Mississippi State University, MS. The *Dairy Council Digest* is written and edited by Lois D. McBean, M.S., R.D.

References

1. Kroger, M., and J.S. Smith. *Food Technol.*38:62, 1984.
2. Newberne, P.M., and M.W. Coñner. *Cancer* 58:1851, 1986.
3. Gravani, R.B. *Dairy & Food Sanitation* 7:20, 1987.
4. U.S. Department of Health and Human Services, Public Health Service, Food and Drug Administration. *PMO Grade A Pasteurized Milk Ordinance*. Washington, DC: U.S. Government Printing Office, 1985.

5. McNutt, K.W., M.E. Powers, and A.E. Sloan. *Food Technol.* 40:72, 1986.
6. National Restaurant Association. *Current Issues Report. A Restaurateur's Guide to Consumer Food Safety Concerns.* Washington, DC: National Restaurant Association, 1985.
7. Hall, R.L. *Nutr. & Cancer* 1:27, 1979.
8. Lecos, C.W., and S.A. Miller. *FDA Consumer* 20:24, 1986.
9. Hall, R.L. In: *Proceedings of the XIII International Congress of Nutrition.* T.G. Taylor and N.K. Jenkins (Eds). London: John Libbey, 1986, p. 816.
10. Institute of Food Technologists Expert Panel on Food Safety and Nutrition. *Food Technol.* 40:49, 1986.
11. Roberts, H.R. (Ed). *Food Safety.* New York: A Wiley-Interscience Publication, 1981, a) Doull-p. 295; b) Roberts-p. 1; c) Marth-p. 15; d) Roberts-p. 239; e) Munro and Charbonneau-p. 141.
12. Food Marketing Institute. *Trends. Consumer Attitudes and the Supermarket.* Washington, DC: Food Marketing Institute, 1986.
13. Kramer, C.S., and K.P. Penner. *National Food Rev.* 33:21, 1986.
14. Burbee, C.R., and C.S. Kramer. *National Food Rev.* 33:17, 1986.
15. Rados, B., and G. Guest. *FDA Consumer* 20:20, 1986.
16. Albrecht, J.J. *Food Technol.* 40:122, 1986.
17. Kolbye, A.C., Jr., E.M. Foster, and S.C. Crocco. *Food Technol.* 39:29R, 1985.
18. Whitney, E.N., and L.K. DeBruyne. *Nutr. Forum* 2:44, 1985.
19. Hagstad, H.V., and W.T. Hubbert. *Food Quality Control. Foods of Animal Origin.* Ames, Iowa. The Iowa State University Press, 1986.
20. Archer, D.L. *J. Food Protection* 48:538, 1985.
21. Doyle, D.P. *Ann. Rev. Nutr.* 5:25, 1985.
22. Hauschild, A.H.W., and F.L. Bryan. *J. Food Protection* 43:435, 1980.
23. Subcommittee on Microbiological Criteria, Committee on Food Protection, Food and Nutrition Board, National Research Council. *An Evaluation of the Role of Microbiological Criteria for Foods and Food Ingredients.* Washington, DC: National Academy Press, 1985.
24. Archer, D.L., and J.E. Kvenberg. *J. Food Protection* 48:887, 1985.
25. United States Department of Agriculture, Food Safety and Inspection Service. *Food-borne Bacterial Poisoning.* January 1985.
26. Institute of Food Technologist Symposium. *Food Technol.* 40:16, 1986.
27. Morris, C.E. *Food Engineering* 59:64, 1986.
28. Cohen, M.L. and R.V. Tauxe. *Science* 234:964, 1986.
29. Sun, M. *Science* 228:829, 1985.
30. Tacket, C.O., L.B. Dominguez, H.J. Fisher, and M.L. Cohen. *JAMA* 253:2058, 1985.
31. Lecos, C. *FDA Consumer* 20:18, 1986.
32. Chia, J.K., J.B. Clark, C.A. Ryan, and M. Pollack. *N. Engl. J. Med.* 315:239, 1986.
33. Bartlett, J.C. *N. Engl. J. Med.* 315:254, 1986.
34. Kornblatt, A.N., T. Barrett, G.K. Morris, and F.E. Tosh. *Am. J. Epidemiol.* 122:884, 1985.
35. Klein, B.S., J.M. Vergeront, M.J. Blaser, P. Edmonds, D.J. Brenner, D. Janssen, and J.P. Davis. *JAMA* 255:361, 1986.
36. Blaser, M.J., E. Sazie, and L.P. Williams, Jr. *JAMA* 257:43, 1987.
37. Palumbo, S.A. *J. Food Protection* 49:1003, 1986.
38. Doyle, M.P. *Listeria monocytogenes*-a pathogen of renewed interest. Presented at the Food Research Institute 1984 Annual Spring Meeting. University of Wisconsin. May, 1984.
39. Doyle, M.P. In: *Listeria Conference.* Sponsored by Chicago Dairy Technology Society and Wisconsin (S.E.) Dairy Technology Society. Wisconsin: University of Wisconsin. 1986, p. 4.
40. Fleming, D.W., S.L. Cochi, K.L. MacDonald, J. Brondum, P.S. Hayes, B.D. Plikaytis, M.B. Holmes, A. Audurier, C.V. Broome, and A.L. Reingold. *N. Engl. J. Med.* 312:404, 1985.
41. Barza, M.N. *Engl. J. Med.* 312:438, 1985.
42. Schleich, W.F., III. *Arch. Intern. Med.* 146:459, 1986.
43. Twedt, R.M. (Division of Microbiology/Food and Drug Administration). Thermal resistance of *Listeria* in milk. Presented at the Food Research Institute 1984 Annual Spring Meeting. University of Wisconsin. May, 1984.
44. Donnelly, C.W., and E.H. Briggs. *J. Food Protection* 49:994, 1986.
45. Kornacki, J.L., and E.H. Marth. *J. Food Protection* 45:1051, 1982.
46. Hutt, P. "The Basis and Purpose of Government Regulation of Adulteration and Misbranding of Food." *Food Safety Where are We?* U.S. Senate Committee on Agriculture, Nutrition and Forestry, 1979, p. 256-281.
47. Miller, S.A., and R.J. Scheuplein. Food safety: the state of the art. Paper presented by Dr. Robert Scheuplein at the Chicago Editors Conference, August 22, 1985.
48. Committee on Communicable Diseases Affecting Man, Food Subcommittee, International Association of Milk, Food and Environmental Sanitarians, Inc. *Procedures to Investigate Food-borne Illness.* 4th ed. Ames, Iowa: International Association of Milk, Food and Environmental Sanitarians, Inc., 1987.
49. Potter, M.E., A.F. Kaufman, P.A. Blake, and R.A. Feldman. *JAMA* 252:2050, 1984.
50. Osterholm, M.T., K.L. MacDonald, K.E. White, J.G. Wells, J.S. Spika, M.E. Potter, J.C. Forfang, R.M. Sorenson, P.T. Milloy, and P.A. Blake. *JAMA* 256:484, 1986.
51. Blaser, M.J. *JAMA* 256:510, 1986.
52. Lecos, C.W. *Dairy and Food Sanitation* 6:240, 1986.
53. Kozak, J.J. *Dairy and Food Sanitation* 6:184, 1986.
54. Lecos, C. *FDA Consumer* 18:23, 1984.
55. Taylor, D.L. *Food Engineering* 56:16, 1984.
56. Glaser, L. *National Food Rev.* 35:36, 1986.
57. A Scientific Status Summary by the Institute of Food Technologists' Expert Panel on Food Safety and Nutrition. *Food Technol.* 40:59, 1986.
58. Bullerman, L.B. *J. Food Protection* 42:65, 1979.
59. Council for Agricultural Science and Technology *Antibiotics in Animal Feed* Report No. 88. Ames, Iowa, 1981.
60. Meister, K.A., and R.A. Greenberg. *Antibiotics in Animal Feed: A Threat to Human Health?* The American Council on Science and Health, 1983.
61. Holmberg, S.D., M.T. Osterholm, K.A. Senger, and M.L. Cohen. *N. Engl. J. Med.* 311:617, 1984.
62. Sun, M. *Science* 266:30, 1984.
63. Sun, M. *Science* 226:144, 1984.
64. Levy, S.B. *N. Engl. J. Med.* 311:663, 1984.
65. Council for Agricultural Science and Technology. *Antibiotics for animals.* Comments from CAST. March, 1985.
66. Burbee, C.R., R. Green, and M. Matsumoto. *Am. J. Agricult. Econ.* 67:966, 1985.
67. Spika, J.S., S.H. Waterman, and G.W. Soo Hoo, *et al.* *N. Engl. J. Med.* 316:565, 1987.
68. Sawhney, B.L., and L. Hankin. *J. Food Protection* 68:442, 1985.
69. Fries, G.F. *CRC Critical Rev. Toxicol.* 16:105, 1985.



INTERNATIONAL
ICE CREAM
ASSOCIATION

February 24, 1989

House Committee on Agriculture
and Small Business
State Capitol
Topeka, KS 66612

To the Members of the Committee:

The following is submitted by the International Ice Cream Association (IICA) in order to express our concerns regarding House Bill No. 2293 which relates to the preparation and sale of ice cream in food service establishments.

The International Ice Cream Association is the national trade association representing over 200 manufacturers and distributors of ice cream and frozen desserts and with members in all fifty states.

We wish to state our opposition to this bill because we believe it demonstrates a lack of concern for food safety and the public health and provides a mechanism for the improper handling of food ingredients in an environment ill-suited for the preparation of safe and wholesome frozen desserts. In particular, we are concerned about the lack of safeguards regarding the proper pasteurization of any ice cream or frozen dessert mix manufactured in food service establishments under the auspices of the proposed bill.

We believe the language of this bill is sufficiently vague so as to permit a scenario in which a food service establishment operator could freeze an inadequately pasteurized ice cream mix and offer it for sale to the public. Since the unspecific language in lines 48 and 49 of the proposed bill merely states that the final mix is required to be "cooked," there is no guarantee that the prepared mix will be held at a proper time and temperature to ensure the destruction of any pathogenic bacteria which may be present. Pre-pasteurized dairy ingredients could be subjected to post-pasteurization contamination when combined with non-dairy (and therefore, non-pasteurized) ingredients prior to freezing.

In addition, we feel not all food service kitchens are adequately designed to ensure that no cross-contamination will occur between pasteurized dairy products and uncooked foods such as meat, poultry, and vegetables. Potential contamination from the environment is a major focus of any credible quality assurance/product safety program.

E. LINWOOD TIPTON
PRESIDENT

888 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20006

202/296-4250 FAX 202/331-7820

SRL/ACW
2-27-89
Attachment 5

In light of these serious shortcomings, it is our view that House Bill 2293 should not be enacted by the Kansas Legislature.

The International Ice Cream Association appreciates the opportunity to comment on this important issue and hopes that the concerns expressed here will be given due consideration during the forthcoming deliberations on the bill.

Respectfully submitted,
International Ice Cream Association

Thomas M. Balmer

Thomas M. Balmer
Manager, Special Projects

STATE OF KANSAS



DEPARTMENT OF HEALTH AND ENVIRONMENT

Forbes Field

Topeka, Kansas 66620-0001

Phone (913) 296-1500

Mike Hayden, *Governor*

Stanley C. Grant, Ph.D., *Secretary*

Gary K. Hulett, Ph.D., *Under Secretary*

TESTIMONY PRESENTED TO

SENATE PUBLIC HEALTH AND WELFARE COMMITTEE

BY

THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

Senate Bill 196

Senate Bill 196 amends K.S.A. 65-720(a) pertaining to the manufacture of ice cream. This law is enforced by the Kansas State Board of Agriculture. Senate Bill 196 would allow the manufacture of ice cream from a co-mingling of pasteurized ingredients rather than from a mix pasteurized as a whole. Such mixes may contain raw eggs that can be a source of pathogenic bacteria.

The KDHE recommends close adherence to the Pasteurized Milk Ordinance as a means of providing the greatest assurance for the public's health.

Presented by

Stephen N. Paige, Director
Bureau of Food, Drug and Lodging
February 27, 1989

TESTIMONY TO
SENATE PUBLIC HEALTH AND WELFARE COMMITTEE
ON BEHALF OF THE KANSAS ASSOCIATION FOR
MARRIAGE AND FAMILY THERAPY
PRESENTED BY RONALD R. HEIN
RE: SENATE BILL 257
FEBRUARY 27, 1989

Mr. Chairman, members of the committee:

My name is Ron Hein and I am legislative counsel for the Kansas Association for Marriage and Family Therapy. This association represents individuals with masters degrees or PhDs in marriage and family therapy.

Marriage and family therapy is a distinct profession evolving from two distinct developments in psychotherapy, marriage counseling, which emerged in the 1920s, and family therapy which began to come into its own in the 1950s. These fields formally merged in 1970 as the American Association of Marriage and Family Counselors, which was changed to the American Association for Marriage and Family Therapy in 1978. Also in 1978, the Commission on accreditation for marriage and therapy education was recognized by the U.S. Department of Health, Education and Welfare (currently U.S. Department of Health and Human Services) as the official agency designated to establish standards for certification of training programs in the field of marriage and family therapy. The Division of Eligibility and agency evaluation which submitted its report to the advisory committee at that time found that marriage and family therapy is "a distinct, integrated discipline."

In September, 1987, the Kansas Association for Marriage and Family Therapy applied for credentialing pursuant to the Kansas act providing for credentialing of health care professionals. The final report and recommendations of the technical committee recommended registration as the appropriate level of credentialing for marriage and family therapists in order to identify for the public appropriately trained MFTs and to provide victims of sexual exploitation a recourse mechanism against the unethical MFT. The technical committee further found that all of the statutory criteria on the need for

*SP&NW
2-27-89
Attachment?*

Page Two
Ron Hein
February 27, 1989

credentialing as set up by the Kansas legislature were met if the Association were to accept a change in the definition of the scope of practice. The technical committee further found that a need for credentialing exists, and approved the application.

Subsequently, the Secretary of Health and Environment ruled, and I quote, "I concur with the technical committee that all statutory criteria are met." The Secretary, despite finding that all the statutory criteria for credentialing had been met, then went on to recommend that the application for credentialing be denied. The Secretary then went on to recommend that the legislature consider enacting legislation similar to the Minnesota client protection system to offer the public protection from sexual exploitation by psychotherapists. It was due to this ruling by the Secretary that the KAMFT previously requested of this committee introduction of two bills, one calling for the registration of marriage and family therapists, and the other establishing an act similar to the Minnesota client protection act.

It is especially interesting that the Minnesota client protection act endorsed by the Secretary licenses marriage and family therapists. Eighteen states already license or register marriage and family therapists.

This bill would provide for the registration of marriage and family therapists, subject to the regulations provided by the Behavioral Sciences Board.

I have with me today several members of the Association who would like to provide additional information in support of this legislation.

Thank you very much for permitting me to testify this morning, and I would be happy to yield to any questions.

TESTIMONY TO
SENATE PUBLIC HEALTH AND WELFARE COMMITTEE
RE: SENATE BILL 257
BY: CANDYCE S. RUSSELL, Ph.D.
Professor, Human Development and Family Studies
Kanssa State University
FEBRUARY 27, 1989

I'm presenting this testimony in support of credentialing for Marriage and Family Therapists, specifically to describe the training for Marriage and Family Therapy in Kansas.

Five institutions in Kansas offer training in Marriage and Family Therapy (MFT):

1. Kansas State University (MS and Ph.D)
2. The Menninger Foundation (certificate)
3. Friends University (MS)
4. Wichita State University (specialist degree)
5. Pittsburgh State University (area of emphasis)

The program at Kansas State is accredited by the Commisson on Accreditation for Marriage and Family Therapy Education. This is the accrediting organization designated by the U.S. Department of Health, Education and Welfare to accredit programs which train marriage and family therapists.

The educational qualifications for MFTs include the completion of a master's or doctoral degree in MFT from a regionally accredited institution, or an equivalent course of study and degree as defined by the Board of the American Association for Marriage and Family Therapy (AAMFT).

The curriculum provides a background in normal human and family development, assessment of dysfunctional behavior and family patterns, treatment of the individual within the family, research, ethics and professional studies. At AAMFT approved programs, a minimum of 500 hours of supervised clinical practice. These clinical hours are supervised at a ratio of 5 cases to at least 1 hour of supervision. Much of this supervision involves direct observation of the student's therapy from behind a one-way mirror or via videotape.

Upon completion of the degree, the student must complete an additional 500 hours of supervised clinical practice and 100 hours of supervision in order to qualify for full clinical membership in the American Association for Marriage and Family Therapy.

Senate Bill 257 allows for the registration of marriage and family therapists who have completed both the academic and supervised clinical practice requirements described above.

SP44W
2-27-89
Attachment 8

Marital and Family Therapy Standard Curriculum

Areas of Study	Minimum No. Required Courses	Semester Hours	Quarter Hours
I THEORETICAL FOUNDATIONS OF MARITAL AND FAMILY THERAPY	1-3	3-9	4-12
II ASSESSMENT AND TREATMENT IN MARITAL AND FAMILY THERAPY	4-5	12-15	16-20
III HUMAN DEVELOPMENT AND FAMILY STUDIES	2-4	6-12	8-16
IV ETHICS AND PROFESSIONAL STUDIES	1	3	4
V RESEARCH	1	3	4
VI SUPERVISED CLINICAL PRACTICE	12 successive months	9	12
VII ELECTIVE	1	3	4
TOTAL		<u>45</u>	<u>60</u>

Christian Science Committee on Publication For Kansas

820 Quincy Suite K
Topeka, Kansas 66612

Office Phone
913/233-7483

February 27, 1989

To: Senate Committee on Public Health and Welfare

Re: Senate Bill 258

It is requested that "Christian Science practitioner(s)" be added to the list of those exempted by lines 27-38 from the definition of "mental health service provider."

It surely is not the intent of the bill's sponsors to include Christian Science practitioners in its provisions. However, the treatment they provide might, in some instances, be considered to fit within the definition of "mental health services," causing them to be included inadvertently in the group of providers covered by the bill.

I will be glad to work with your staff in finding suitable placement for the proposed amendment to avoid altering the intent of the bill.



Keith R. Landis
Committee on Publication
for Kansas

SPH/cw
2-27-89
Attachment 9

STATE OF KANSAS



DEPARTMENT OF HEALTH AND ENVIRONMENT

Forbes Field

Topeka, Kansas 66620-0001

Phone (913) 296-1500

Mike Hayden, *Governor*

Stanley C. Grant, Ph.D., *Secretary*

Gary K. Hulett, Ph.D., *Under Secretary*

TESTIMONY PRESENTED TO

THE SENATE PUBLIC HEALTH AND WELFARE COMMITTEE

by

THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

Senate Bill 258

Background

The issue of mental health care providers sexually exploiting clients was brought to the attention of the Secretary of the Department of Health and Environment during the 1985 review of the credentialing request of professional counselors and again in the 1988 review of the marriage and family therapists' (MFTs) credentialing application. In the 1985 review, the Secretary stated that the department was not ready to make recommendations on how to deal with the issue of sexual exploitation. As you have heard from previous testimony in regard to the 1988 review of the MFTs' application, the Secretary did make recommendations on actions to consider on addressing sexual exploitation. The Secretary recommended that the legislature consider initiatives taken in Minnesota which included:

- 1 Changing the criminal law to make it unlawful for a mental health provider to sexually exploit a client;
- 2 Changing the civil law to allow victims of sexual exploitation to sue for damages received due to incidents;
- 3 Requiring mental health providers to distribute to clients prior to treatment educational material (a "client bill of rights") which should include a statement that sexual intimacy is never appropriate and should be reported; and
- 4 Establishing a regulatory body to oversee the unlicensed/unregistered mental health provider.

This bill only deals with two of the four initiatives taken in Minnesota. Senate Bill 258 does not change the civil and criminal laws. In order to comprehensively address the problem, all four initiatives need to be in place. For this reason we do not support the bill.

Recognizing there is merit in the concept of the bill, we would still make the following suggestions to the bill as written. We recommend that the bill be corrected in that it currently defines sexual intimacy as appropriate when classified by the therapist as standard medical practice. We know of no situation where sexual intimacy with a patient would be considered "standard medical practice." We suggest that language be added to the "client bill of rights" that addresses the issue of sexual exploitation in a more direct and concise manner: change the name from a "client bill of rights" to a disclosure statement and require both licensed/registered and unlicensed/unregistered therapists to distribute the information prior to treatment.

The issue of sexual exploitation of clients by state regulated and nonregulated health care professionals will continue to surface until actions have been taken to resolve the major concerns associated with the problem. The issue will definitely continue to emerge with each credentialing application to be reviewed by the department and each bill proposal from therapy-oriented groups, such as MFTs, seeking state registration or licensure. The problem of sexual exploitation merits consideration and actions by the state to protect the public and correct the currently inadequate recourse systems. However, the answer is not to register or license all the various mental health groups.

Department's Position

The department does not support Senate Bill 258 but does support the concept of the bill. The department recommends a legislative interim study that focuses on the four initiatives taken in Minnesota.

Presented by: Richard Morrissey, Director
Bureau of Adult and Child Care
Kansas Department of Health and Environment
February 27, 1989