The Quality Chicken People

ALLEN'S HATCHERY, INC.

126 NORTH SHIPLEY STREET
SEAFORD, DELAWARE 19973-3100
TEL (302) 629-9163 · FAX (302) 629-0514

98D 52 '00 FEB 16 A10:35

February 10, 2000

Dockets Management Branch (HFA-305)
Food and Drug Administration
5630 Fishers Lane, Room 1061
Rockville, MD 20852

RE: DOCKET NUMBER 98D - 0969

Dear Sir/Madam:

I am in complete agreement with the comments filed by the National Chicken Council and the Association of Veterinarians in Broiler Production. It would be redundant for me to restate the points in their letter.

Sincerely,

G. Thomas Holder

G. Thomas Holder, DVM
Director of Avian Health
ALLEN'S HATCHERY, INC.

Enclosure (1)

98D-0969

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NATIONAL CHICKEN COUNCIL
1015 FIFTEENTH STREET NW, SUITE 930
WASHINGTON, DC 20005-2605
PHONE: 202-296-2622
FAX: 202-293-4005

9853 '00 FEB 16 A10:35

February 9, 2000

Dockets Management Branch (HFA-305)
Food and Drug Administration
5630 Fishers Lane, Room 1061
Rockville, MD 20852

Re: Docket Number 98D-0969

Dear Sir/madam:

The National Chicken Council (NCC) is the national trade association representing the producer/processors of over 95 percent of the broiler chickens consumed in the United States. The Association of Veterinarians in Broiler Production is the professional association consisting of practicing veterinarians who provide health care to the broiler industry. Together we offer the following comments regarding the Center for Veterinary Medicine's draft risk assessment model, Docket Number 98D-0969.

1. One of our primary concerns with this risk assessment model is that FDA-CVM did not assess the risk of the development of fluoroquinolone resistant *Campylobacter* (FQRC) as a consequence of the use of fluoroquinolone (FQ) antibiotics as a label approved treatment for *E. coli* infection during broiler production.

   (a) The innate resistance level of poultry derived *Campylobacter* isolates to fluoroquinolone antibiotics was not determined nor was an increase in FQRC levels demonstrated. No data was presented to show that FQRC levels in poultry isolates had increased since 1995, the year fluoroquinolones were approved for use in poultry in the United States. Page 4.3 used one limited study from 1998 to estimate the prevalence of FQRC isolates from broiler carcasses. This study consisted of only 159 *C. jejuni* samples collected during a short window of time (October to December). Apparently, no data was available on the FQRC level prior to 1998 or prior to the approval date for fluoroquinolones in poultry in the U.S. Without data, it is impossible to state that fluoroquinolone use in poultry has resulted in increased FQRC isolation rates in chickens.

(b) The assumption that the measured increase in FQRC infections in humans over the past several years is largely or completely due to FQ use in poultry is not supported by the fact that only 1.1% of all the broilers produced in the U.S. in the 2 ½ years between August, 1995, and February, 1998 (1998 National Chicken Council Survey) were exposed to FQ treatment during the production cycle. In addition, no information was provided showing greater or more frequent FQ use in different parts of the country or geographic clustering of cases associated with high FQ use levels in broiler production in the same area where product is sold and consumed. This model assumes that the entire 51.4 pounds of boneless broiler food disappearance per capita had an equal probability of being exposed to FQ during the production cycle and had an equal probability of being contaminated with FQRC at a mean rate of 11.8% (page 4.4). This is not supported by the use pattern for fluoroquinolones in the broiler industry. An aspect of the model that was not addressed that could well be related to the increase in FQRC infections in humans over the past several years is use patterns of these drugs by physicians.

2. Another primary concern with this risk assessment model is that it failed to examine one of the most fundamental assumptions of this proposed cause and effect relationship – the transmission of these FQRC organisms from broilers to humans through the food chain.

(a) The primary assumption that all *Campylobacter* infections in humans result from exposure to *Campylobacter* contaminated chicken products and that all FQRC are caused by FQ use in broiler production is unsubstantiated. This risk assessment essentially models total human health impact assuming that all FQRC are derived from poultry consumption. Therefore, **if** all FQRC infections come from consuming poultry, **then** the impact on human health in 1998 was 5000 people infected with FQRC and experiencing a longer illness when treated with a fluoroquinolone. This underlying assumption that all campylobacteriosis results from consuming chicken meat has never been proven or even well supported by independent research data. Retrospective epidemiological analyses of *Campylobacter* infections suggests that consumption of poultry is a risk factor, but so are consumption of raw milk, turkey meat, lamb, beef, pork, salad vegetables, mushrooms, ground water, having occupational contact with livestock or their feces, and living with dogs and cats, etc. In addition, humans can be asymptomatic carriers of *Campylobacter*.

(b) It is customary in the United States to consume poultry meat fully cooked or well done (160°F). This type of product is not eaten rare or even slightly undercooked on purpose. Cooking is an extremely

effective method of reducing bacterial levels at least 2 logs. *Campylobacter* are very fragile bacteria and are extremely sensitive to temperatures above 140°F.

(c) If *Campylobacter* infections are associated with the consumption of raw or under-cooked poultry, one would expect to see higher rates of human illness in areas where more raw product is handled by the consumer. In addition, following the same logic, poultry plant workers should have the highest potential for exposure and, therefore, the highest level of FQRC infections. There is no evidence to suggest that either of these scenarios has occurred.

(d) This risk assessment does not factor in the bacterial load reductions achieved through antimicrobial interventions commonly used during processing. Interventions such as trisodium phosphate washes and chlorination of chiller and rinse water have been shown to be extremely effective in reducing *Campylobacter* levels on chicken carcasses.

3. This risk assessment overestimates the number of people at risk for a FQRC infection due to consuming poultry because:

(a) The assessment assumed an equal probability of exposure to FQRC contaminated raw chicken meat for every man, woman, and child in the U.S. This assumption is not supported by the way chicken meat was consumed in the U.S in 1998. A significant proportion (41%) of the chicken meat sold in 1998 was further processed. Food service accounted for 45% of broiler meat pounds sold and fast food constituted 40% of that. These products are usually sold in bulk, often frozen, to food service or fast food restaurants where the individual portion is ready to be dropped into a fryer or onto a grill and cooked until well done. This type of product does not exude significant amounts of chicken blood or juices that could potentially cause cross-contamination in the restaurant. An increasingly smaller proportion of broiler meat is purchased at retail and handled in a consumer's kitchen. In 1988, 77% of chicken product was sold as a whole bird or cut-up parts at the retail level. In 1998, only 59% were sold that way (USDA data).

(b) The assessment assumed an equal probability of exposure of broiler meat to FQ during production (see #1) which is not consistent with the amount of FQ used in broiler production nor with the way it is used.

(c) The assessment assumed an equal probability of developing campylobacteriosis for every person in the U.S. This assumption is not supported by clinical data showing that *Campylobacter* infections

primarily occur in the young, old, and immunocompromised. Healthy, young to late middle aged adults, and those that have developed immunity to *Campylobacter* infections comprise the majority of the U. S. population.

4. The statement that 99% of *Campylobacter* cases are sporadic in nature implies that campylobacteriosis occurs in individual people randomly. Intuitively, this presentation is not consistent with the contention that *Campylobacter* infections occur as a result of cross-contamination of other foods with juices from raw poultry in the kitchen. If cross-contamination during food preparation is the mechanism for transmission of the organism from meat to humans, the expected pattern of cases would present as an outbreak among several individuals exposed to the same food product rather than as a sporadic case involving one person at a time. There are many sources of *Campylobacter* infections other than chicken meat and some of these could more logically account for the sporadic nature of these cases. The following articles are examples of case reports where outbreaks of *Campylobacter* infections were attributed to cross-contamination or mishandling of food.

   (a) Center for Disease Control. Outbreak of *Campylobacter* enteritis associated with cross-contamination of food – Oklahoma, 1996. CDC 47(7): np. 1998.

   (b) Layton, M.C., S.G. Calliste, T.M. Gomez, C. Patton, and S. Brooks. A mixed foodborne outbreak with *Salmonella heidelberg* and *Campylobacter jejuni* in a nursing home. Infection Control and Hospital Epidemiology 18(2):115-121. 1997.

   (c) Murphy, O. J., Gray, S. Gordon, and A.J. Bint. An outbreak of *Campylobacter* food poisoning in a health care setting. Journal of Hospital Infection 30(3):225-228. 1995.

5. In our opinion, Table I.1 on page I-6 of the risk assessment model is unclear and lends itself to misinterpretation. It appears to demonstrate an increasing probability of a person "experiencing an effect associated with resistant campylobacteriosis" as the level of medical care sought increases. On pages 2.2 and 2.3, there is a discussion on how the proportion of persons with *Campylobacter* enteric illness seeking medical care was estimated. It states that the level of care sought is dictated by the severity of the infection. "Factors that were most important in influencing the decision to seek care were fever, vomiting, 'how sick they felt', stomach cramps, reporting blood in the stool, and duration of diarrhea." The description of the table on I-6 explains that the probability column gives "an estimate of the probability that an individual will experience an effect associated with resistant campylobacteriosis." The table was constructed

by changing the denominator when calculating the odds a person will experience a FQRC infection, i.e., total U.S. population (OR 1:61,093), persons with campylobacteriosis (OR 1:521), persons with campylobacteriosis seeking care (OR 1:63), and persons with campylobacteriosis seeking care and prescribed antibiotics (OR 1:32).

No where in this risk assessment document or in the searchable scientific literature are there any data showing an association between fluoroquinolone resistance in *Campylobacter* and clinical virulence or pathogenicity. The table on I-6 shows that as a person seeks a higher level of care, purportedly because of more severe clinical symptoms, the odds of the causative *Campylobacter* organism being fluoroquinolone resistant increases from 1:61,093 in the general population to 1:32 in those seeking care and being prescribed antibiotics.

Unless one can prove that the severity of *Campylobacter* disease is linked to level of fluoroquinolone resistance, this table grossly overestimates the risk of "experiencing an effect associated with resistant campylobacteriosis" as level of care sought increases. If 13% of *Campylobacter* isolates are FQ resistant and resistance is not linked to virulence or pathogenicity, then the odds of contracting a resistant *Campylobacter* infection are the same whether an individual sought care or not. The odds of contracting a resistant infection cannot be compounded by the odds of experiencing fever, bloody diarrhea, or vomiting because they are independent variables. All that can be claimed is that the odds of experiencing a treatment failure increase as the level of fluoroquinolone resistance increases.

Respectfully submitted,

Stephen Pretanik
Director of Science & Technology
National Chicken Council

Kenneth Opengart, DVM
President
Assoc. of Vet. in Broiler Production

Allen's

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