The model poultry ordinance as it now stands deals only with the general enforcement and sanitary provisions. A part dealing with inspection is to come.

Development of a Poultry Ordinance

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THE Public Health Service has developed a model poultry ordinance for voluntary consideration by State and local agencies which are conducting or planning inspection and sanitation activities regulating the processing, storage, transportation, and sale of poultry and poultry products. Why and how was the ordinance developed? What is its potential value?

Background

The poultry industry has doubled in size since 1940. In 1953, it was the third largest source of gross farm income, representing 12.1 percent of the total. The value of poultry and poultry products, including eggs, was almost $4 billion at the farm level and $6 billion at the retail level. Per capita consumption of poultry meat reached 34.4 pounds.

A radical change in buying habits and merchandising methods has accompanied this tremendous growth. The consumer seldom sees the live bird to evaluate its health. Processing has progressed from on-the-spot slaughter, observed by the customer, to production line methods. The product may be stored for extended periods, shipped long distances, and consumed far from the point of origin. This mass processing and distribution has presented new problems in meeting standards of consumer expectancy and of public health.

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Diseased Poultry

Noteworthy progress has been made in the prevention and treatment of poultry diseases, yet a substantial number of diseased birds are marketed. Entire flocks may be sent to slaughter in an attempt at salvage when disease outbreaks appear. The production of large commercial flocks in crowded facilities and concentrated areas heighten the possibility of the dissemination of disease, as shown currently by the high rate of respiratory diseases in areas of concentrated broiler production. The number of pounds of poultry condemned by the Poultry Inspection Branch, Department of Agriculture, as unfit for human consumption ranged from 4,075,121 in 1951 to 6,960,529 in 1954 (table 1).

In the poultry processing industry, as in other industries, the advent of mass production operations has brought increased occupational health problems. During recent years, scattered outbreaks of psittacosis among employees of poultry-processing establishments emphasized the necessity for adequate ante-mortem and post-mortem inspection of poultry, high standards of sanitation, and special protective measures in reducing possibilities of employees' becoming infected while at work. A transmissible disease may assume increased public

Table 1. Summary of post-mortem examination of poultry, Department of Agriculture, 1951–1954 [1]

Item	1951		1952		1953		1954	
	Number of plants under inspection							
	189 (Oct. 15)		221 (Oct. 13)		235 (Oct. 1)		257 (Oct. 1)	
Weight (pounds):								
Inspected	694, 530, 135		902, 907, 357		1, 003, 841, 374		1, 139, 703, 950	
Certified	690, 455, 014		897, 141, 239		997, 811, 515		1, 132, 743, 421	
Condemned	4, 075, 121		5, 766, 118		6, 029, 859		6, 960, 529	
Percent condemned	. 58		. 639		. 60		. 61	
	Carcasses condemned							
	Number	*Percent*	*Number*	*Percent*	*Number*	*Percent*	*Number*	*Percent*
Tuberculosis	241, 417	19. 97	266, 910	17. 043	230, 777	12. 52	177, 291	9. 24
Emaciation	37, 054	3. 07	45, 561	2. 909	43, 840	2. 38	29, 938	1. 55
Septicemia and toxemia	290, 550	24. 03	400, 610	25. 581	573, 591	31. 11	634, 386	32. 97
Leucosis	138, 114	11. 42	167, 786	10. 714	152, 046	8. 25	154, 923	8. 05
Tumors	101, 792	8. 42	123, 011	7. 854	96, 323	5. 23	122, 202	6. 35
Inflammatory processes	200, 194	16. 56	329, 953	21. 069	524, 547	28. 45	591, 270	30. 73
Parasites	1, 409	. 12	3, 976	. 254	2, 385	. 13	1, 450	. 08
Gout	803	. 07	1, 626	. 104	2, 065	. 11	777	. 04
Bruises	42, 238	3. 50	54, 637	3. 489	62, 056	3. 37	56, 068	2. 91
Contamination	37, 994	3. 14	58, 297	3. 723	53, 587	2. 91	60, 622	3. 15
Decomposition	87, 100	7. 21	65, 633	4. 191	33, 637	1. 82	24, 481	1. 27
Cadaver	13, 031	1. 08	24, 748	1. 580	34, 132	1. 85	34, 808	1. 81
Overscald	11, 256	. 93	12, 457	. 795	17, 820	. 97	13, 136	. 68
Other causes	5, 825	. 48	10, 872	. 694	16, 640	. 90	22, 596	1. 17
Total	1, 208, 777	100. 00	1, 566, 067	100. 000	1, 843, 446	100. 00	1, 923, 948	100. 00

[1] Adapted from annual summaries prepared by the Poultry Division, Agricultural Marketing Service.

health significance through a previously unknown strain of the infective organism, through the adaptation of a known strain into a form more highly virulent to man, or through certain conditions which enhance the transmissibility of the disease from the animal host to man or from man to animal (*1*).

Insanitary Conditions

The 1950 annual report of the Food and Drug Administration stated: "In the meat and poultry projects, major attention from a filth standpoint was given to poultry that was decomposed or contaminated by fecal matter in washing and scalding tanks."

Quoting from the report for 1951: "Poultry ranks third in the number of filth and decomposition charges. When meat prices increased, many inexperienced operators entered the field of poultry production. More than three times as many seizures of unfit birds were made as in the previous year. The main causes of complaints were contamination by fecal matter, preparation under unsanitary conditions and diseased, improperly dressed birds."

And the 1952 report said: "There was continued pressure to improve the sanitary handling of poultry in dressing plants and eliminate traffic in diseased birds. Plants visited ranged from "pot scalders" to assembly line establishments dressing 600,00 pounds of broilers in a 24-hour day. Conditions varied from excellent to repulsive, regardless of size or type of equipment. About 200,000 pounds were seized."

Foodborne Outbreaks

The types of *Salmonella* that frequently cause foodborne illness in man are commonly found in poultry. Furthermore, although in many instances the poultry probably is not the original source of the organisms, processed poultry, poultry products, or poultry dishes, such as pies, salads, "dinners," are frequently contaminated with Arizona paracolons, staphy-

lococci, or other organisms associated with foodborne outbreaks .

Feig's analysis of food infections and food poisonings in man shows poultry to be one of the common vehicles incriminated in foodborne outbreaks caused by food other than milk (*2*). Of such foodborne outbreaks reported by the States to the Public Health Service, the percentage of cases associated with poultry and poultry dishes has been relatively high since 1945 (table 2).

Dauer stated in his summary of disease outbreaks (*3*) : "Poultry and eggs were far more important than milk or water as sources or vehicles of infection. . . . These reports very clearly indicate that fowls and eggs constitute a large reservoir of infection, and they emphasize the need for more effective methods to prevent transmission of infection to man." In the 1953 summary (*4*), Dauer and Sylvester reported that in one-third of the outbreaks caused by *Salmonella*, chicken or turkey was found to be the vehicle of infection. Of the total of 209 waterborne and foodborne outbreaks, involving 10,730 cases reported by the States in 1953, 65 outbreaks (31.1 percent), involving 4,696 of the cases (43.7 percent), were associated with poultry. These percentages are based on reports from the National Office of Vital Statistics.

In foodborne outbreaks, epidemiological studies are often incomplete. Yet, it has been shown from the number of cases reported that, unless adequate preventive measures are continuously effected, poultry or poultry products may serve as a source or vehicle of infection (*5–7*). For this as well as for other reasons, health authorities have recognized the need for poultry inspection services and for adequate sanitation and refrigeration in the processing and subsequent handling of poultry and poultry products (*8, 9*).

State and Local Problems

The Food and Drug Administration regularly examines poultry shipped interstate and inspects the plants of origin. Furthermore, approximately 25 percent of the poultry processed in this country originates in establishments voluntarily operating under the poultry inspection service of the Department of Agriculture. Nevertheless, it is estimated that approximately 70 percent of the poultry processed is not inspected by either the FDA or the Department of Agriculture. . This is due, in part, to limitations on funds available for the purpose under the FDA programs and to the fact that inspection by the Department of Agriculture is not mandatory for all poultry shipped interstate. Furthermore, more than half of the poultry consumed in the United States is sold within the States in which it is processed and is not necessarily subject to these Federal programs.

Consequently, extensive problems remain for State or local control. Some jurisdictions have recently revised or adopted regulations. In a few instances, the mere variety of proposed regulations has threatened the industry with trade barriers. Other jurisdictions are aware of the need for uniform action and have requested guidance, including a suggested ordinance, from the Public Health Service. Added to these requests from health officials were the recommendations in 1952 of the Conference of State and Territorial Health Officers and of the United States Livestock Sanitary Association that a model ordinance be developed to aid the States in strengthening their poultry sanita-

Table 2. Number and percentage of cases associated with poultry and poultry dishes from total of cases in foodborne outbreaks (attributed to all foods other than milk and milk products) [1]

Year	Total cases reported	Associated with poultry	
		Number	Percent of total
10-year total	97, 485	31, 832	32. 6
1945	11, 465	1, 994	16. 5
1946	11, 702	5, 039	43. 0
1947	11, 218	3, 229	28. 7
1948	9, 127	2, 682	29. 3
1949	8, 237	2, 843	34. 5
1950	10, 096	2, 581	25. 5
1951	7, 194	2, 995	41. 6
1952	6, 828	3, 150	46. 1
1953	9, 914	4, 696	47. 3
1954	11, 704	2, 623	22. 4

[1] As reported by the States to the Public Health Service.

tion programs. That same year the Institute of American Poultry Industries offered to assist the Public Health Service in the development of such an ordinance.

The Ordinance

The Public Health Service poultry ordinance has been developed as a joint project of the Milk and Food Program, Division of Sanitary Engineering Services, in Washington and the Veterinary Section, Epidemiology Branch, Communicable Disease Center, in Atlanta.

Field studies were conducted, and existing State and local regulations and programs were reviewed. Following completion of a first study draft of the general enforcement and sanitation provisions of the ordinance, a Public Health-Poultry Industry Liaison Committee has acted as an advisory group in its further development. This liaison committee is composed of seven members from the Public Health Service and State and municipal health departments and an equal number of members from the Institute of American Poultry Industries. The committee outlined three broad objectives:

1. Poultry should be handled only in clean establishments in a clean manner.
2. Only wholesome poultry should be offered to the consumer.
3. All trade barriers not based on sound public health principles should be avoided.

A study draft of the general enforcement and sanitation provisions of the ordinance was distributed for review and comment to major organizations of the poultry industry, to State and local agencies, and to many National organizations composed of health officials or related professional personnel.

Representatives of the Department of Agriculture, the Food and Drug Administration, and the Department of Defense were consulted at frequent intervals. They reviewed the study drafts and offered many helpful suggestions for revisions. Substantial agreement was reached on all general enforcement and sanitation requirements of the ordinance, and they were published in April 1955 as the Poultry Ordinance, 1955 edition (Public Health Service Publication No. 444).

Provisions dealing with ante-mortem and post-mortem inspection of poultry have been developed in draft form and submitted in a similar manner to the industry and to many interested agencies and groups for review and comment. These provisions are to be completed during this fiscal year.

Basis of Provisions

The provisions of the ordinance are based on the following considerations:

1. Diseased poultry may be a source or reservoir of diseases transmissible to man, including salmonellosis, erysipelas (causing erysipeloid in man), Newcastle disease, psittacosis, and various dermatoses.
2. Body discharges and dust from live poultry may be a source of pathogenic organisms, including those of the colon and paracolon types.
3. Insects may contaminate foods with etiological agents which may cause diseases such as typhoid fever, bacillary dysentery, and paratyphoid fever.
4. Rodents may contaminate water and food with hair, feces, and urine. Particularly noteworthy is the fact that *Leptospira icterohaemorrhagiae* excreted in the urine of wild rats has been reported as a principal cause of leptospiral infections in man. Rodents may be carriers of salmonellosis, lymphocytic choriomeningitis, tapeworms, and protozoans.
5. Poultry-processing wastes contain those organisms found in the body discharges of poultry, such as the *Salmonella* and other colon and paracolon types.
6. Sewage, if not properly disposed of, may be a direct or indirect source of contamination of foods with pathogenic organisms causing such diseases as bacillary dysentery, typhoid fever, and paratyphoid fever.
7. Water and ice not known to be safe may contain those species of organisms which cause such diseases as bacillary dysentery, leptospirosis, typhoid fever, and paratyphoid fever.
8. Infected employees may transmit diseases directly to fellow employees. They may contaminate foods with the causative organisms of such diseases as bacillary dysentery, salmonellosis, typhoid fever, paratyphoid fever, tuberculosis, and staphylococcal and streptococcal infections.

9. Extraneous materials in foods may cause physical injury to the consumer or be a source of contamination; rodenticides, insecticides, and various chemicals may be poisonous to man if consumed.

10. Proper refrigeration is necessary to prevent growth of micro-organisms and production of toxins in poultry and poultry products.

11. Food products offered for sale should be plainly identified and labeled with no misrepresentation.

12. The standards of consumer expectancy for foods, have, in effect, been delineated by Congress in the definitions of adulteration and misbranding as contained in the Federal Food, Drug, and Cosmetic Act; whether at the Federal, State, or local level, food-control regulations should be designed to obtain compliance with these standards.

Potential Values

The full value of the Public Health Service poultry ordinance will not be determined until it has been adopted, or at least used as a guide, by several State or local agencies as a basis for their poultry regulatory programs.

Experience in State and local milk sanitation activities has shown that the value of regulatory programs affecting food is greatly improved by a uniformity, within many jurisdictions, of requirements and enforcement procedures. This is not an interstate problem only. Uniformity of regulations and acceptance of products between local jurisdictions within a State can often be just as important to those concerned as is the case with products shipped from one State to another. There is ample reason to believe that adequate, uniform poultry regulatory programs will be of benefit to the poultry industry, the consumers, and the enforcement agencies concerned.

Such uniform programs will assist the industry in maintaining the gains of recent years and in making further progress through wide distribution of an ever greater variety of products. They will help to assure acceptance of products by the regulatory officials and by the consumers of other jurisdictions, making possible the competition which is essential for an expanding industry.

Industry members will be relieved of the expense and uncertainty of attempting to conform to conflicting requirements within the various jurisdictions where they may wish to distribute their products and will profit from increased sales in the communities where all poultry and poultry products offered for sale are consistently of high sanitary quality.

Employees' increased pride in their duties and their place of employment will contribute to increased efficiency and better products, resulting in better public relations. There will be less employee turnover, and the expense of training inexperienced personnel will be reduced.

Consumers in affected jurisdictions will receive the inestimable benefit of improved health protection and the assurance that products purchased meet standards of consumer expectancy. They will buy and enjoy with confidence the poultry and poultry products offered for sale in their community. While traveling on business or vacation trips through other jurisdictions having comparable requirements and enforcement procedures, they will have similar confidence in the wholesomeness of poultry dishes served to them en route.

It is significant, also, that uniform regulations and acceptance of products from other jurisdictions contribute to the variety of nutritious and appetizing foods available at competitive prices. Such variety and prices are directly essential to the health and happiness of the average consumer.

Regulatory agencies will benefit from the active cooperation of the poultry industry. This cooperation will be forthcoming only when the regulations are uniform, reasonable, and consistently enforced.

Widespread uniformity of regulations will help resolve the difficult, and sometimes costly, problems which face the regulatory agency in deciding whether to permit the sale of food products from other jurisdictions.

These safeguards for the health and interest of employees and consumers will be recognized and will result in respect and support of the regulatory agencies.

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(8) Brandly, P. J.: Poultry inspection as part of the public health program. J. Am. Vet. M. A. 112: 10–17, January 1948.
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technical publications

VD Fact Sheet

Public Health Service Publication No. 341. December 1955. 21 pages; 15 tables.

Basic statistics on various aspects of the venereal disease control problem have been compiled to provide a handy source of information for those persons interested in public health and venereal disease problems.

In tabular form are estimated annual costs of uncontrolled syphilis, reported mortality and insanity due to syphilis in continental United States, and cases of syphilis and gonorrhea reported to the Public Health Service. Analysis of syphilis morbidity by age, results of penicillin therapy in the treatment of congenital syphilis and secondary syphilis as well as results of health department case-finding activities are also included.

Explanatory text accompanies the tables. Information is current as of the date of publication and supersedes any previously published data.

The Child With Rheumatic Fever

Children's Bureau Folder No. 42. 1955. 13 pages. 10 cents.

The most recent folder in the Children's Bureau series, addressed to parents and covering conditions that cripple, or may cripple children, emphasizes the preventive value of early diagnosis and treatment of a strep throat—a condition which usually precedes an attack of rheumatic fever. It describes the role played by such medicines as penicillin and the sulfa drugs in combating the infection.

Only a doctor can determine when a child has a strep throat, the folder points out. Listed are signs the parents should call to the doctor's attention.

The folder covers the care of the child who already has rheumatic fever and makes suggestions that will help in keeping him content during the important, and often lengthy, convalescent period.

Reading on Cancer. An Annotated Bibliography

Public Health Service Publication No. 457. 1955. 16 pages. 15 cents.

Books, pamphlets, reports, and articles in popular periodicals and professional journals are included in this 1955 bibliography on cancer, prepared by members of the Cancer Reports Section of the National Cancer Institute. Major emphasis is given to information from nontechnical sources, and, for the most part, the references are not more than 5 years old. Only material in the English language is included.

A section entitled "Related Reading" lists references on such subjects as atomic energy, medical research, popular science, and science-health career opportunities. There are also references in the field of geriatrics, preventive and psychosomatic medicine, and medical history and biography. After each entry, the letter "E," "M," or "D" appears in parentheses showing whether the material is "easy reading," "moderately difficult," or "difficult." All the entries are annotated, and a topical index is included.

Booklists provide bibliographies of professional material for detailed study of specific aspects of cancer, and sources of cancer information are given.

This section carries announcements of all new Public Health Service publications and of selected new publications on health topics prepared by other Federal Government agencies.

Publications for which prices are quoted are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Orders should be accompanied by cash, check, or money order and should fully identify the publication. Public Health Service publications which do not carry price quotations, as well as single sample copies of those for which prices are shown, can be obtained without charge from the Public Inquiries Branch, Public Health Service, Washington 25, D. C.

The Public Health Service does not supply publications issued by other agencies.