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**EUROPEAN  
TECHNICAL CONFERENCE  
ON FOOD-BORNE INFECTIONS  
AND INTOXICATIONS**

**Geneva, 16-21 February 1959**

**Report**

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EUROPEAN TECHNICAL CONFERENCE ON  
FOOD-BORNE INFECTIONS AND INTOXICATIONS

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# **EUROPEAN TECHNICAL CONFERENCE ON FOOD-BORNE INFECTIONS AND INTOXICATIONS**

## **Report**

The European Technical Conference on Food-borne Infections and Intoxications met in Geneva from 16 to 21 February 1959.

The Conference was opened on behalf of the Director of the Regional Office for Europe of the World Health Organization, Dr P. van de Calseyde, by Dr B. Cvjetanovic who said that the purpose of the meeting was to review present knowledge of food-borne diseases in Europe and to recommend measures for their notification, investigation, and prevention.

Dr Halina Wior, Professor G. D'Alessandro and Professor A. Jepsen were elected Co-Chairmen. Dr D. A. A. Mossel was elected Rapporteur.

### **1. PUBLIC HEALTH ASPECTS OF FOOD-BORNE DISEASES IN EUROPE**

In the past decade, several factors have contributed to the increasing necessity for preventing and dealing with outbreaks of food-borne disease. Amongst these factors, centralization of food production, distribution and consumption on a mass scale, and increased import and export of foods have played an important role. Furthermore, increased international traffic, especially tourist travel, creates public health problems, among which the possible adverse effects food-poisoning could have on the economics of the countries concerned must be considered. It is therefore essential that both preventive and control measures for food-borne diseases be improved. For this purpose, both national and international efforts are necessary.

In the following report, the problems raised will be dealt with from two aspects: epidemiological procedures for the investigation of food-borne disease outbreaks, and preventive and control measures which might be adopted by health authorities.

## 2. DEFINITION AND CLASSIFICATION OF FOOD-BORNE INFECTIONS AND INTOXICATIONS

Food-borne diseases can be defined as those diseases which, with present knowledge and methods, can be traced (a) to a specific food, substance in the food, or dish which has been contaminated by noxious organisms or substances, or (b) to a particular food-producing or food-dispensing establishment where a contamination has occurred.

Food-borne infections and intoxications include diseases which in some instances may be transmitted by food and those which are usually conveyed by food. Whether a given disease is likely to be transmitted by food or not, may depend on local food habits in addition to economic, cultural, and hygienic factors. Any given environment may thus have its own typical group of food-borne diseases partially determined by such factors.

The following list of diseases is suggested as a guide to the classification and reporting of food-borne disease. This list is confined to the principal well-defined diseases which, in accordance with the definition given above, can be traced by epidemiological methods to food. Many diseases known to be food-borne are not included in this primary list because of the difficulty of pin-pointing a particular source or incident, or because of their relatively rare occurrence; a few such diseases, however, are indicated in parenthesis.

### A. Food-borne infections

#### 1. Bacterial

Typhoid fever (040)<sup>1</sup>

Paratyphoid fever (041)

Other *Salmonella* infections including aertrycke infection (042.0)

Diphtheria (055)

Bacillary dysentery (shigellosis) (045)

Streptococcal sore throat (051) and scarlet fever (050)

(Anthrax (062), brucellosis (044), tuberculosis (001-019), tularaemia (059))

#### 2. Viral and rickettsial

Infectious hepatitis (092)

(Foot-and-mouth disease (096.6))

Q fever (108)

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<sup>1</sup> The figures in parenthesis are the code numbers in *International Statistical Classification of Diseases, Injuries and Causes of Death* (see Annex 3)

3. *Protozoal*  
Amoebic dysentery (046)
4. *Zooparasitical*  
Taeniasis and diphyllbothriasis (126), trichiniasis (128)  
(Oxyuriasis (130.1), ascariasis (130.0), fascioliasis and opisthorchiasis (124.2), hydatidosis (125))
- B. *Food-borne intoxications of bacterial origin*  
Botulism (049.1)  
Staphylococcal enterotoxin food poisoning (049.0)
- C. *Food-borne disease from heavy contamination with certain bacteria*  
*Clostridium perfringens* (*Cl. welchii*), *B. cereus*, streptococci (049.2)
- D. *Food-borne diseases of uncertain etiology*  
*Escherichae*, *Proteus*, *Pseudomonas*, etc.
- E. *Food-borne intoxications due to chemical poisons*  
The cause should be stated where determined, e.g., fish and plant toxins (N960), inorganic and organic chemical compounds (N964-N967), radioactive substances.
- F. *Food-borne diseases of undetermined etiology*

### 3. NOTIFICATION AND REPORTING

The chapter of the *International Classification of Diseases (Detailed List)*<sup>1</sup> relating to "infectious diseases commonly arising in intestinal tract" (040-049) does not include all food-borne diseases, some of which are covered by items placed elsewhere in the Classification, such as tularaemia (059), infectious hepatitis (092), hydatid diseases (125), trichiniasis (128), gastro-enteritis and colitis (age four weeks and over) (571), and poisoning by noxious foodstuffs (N960-E879). Obviously, national legislation relating to notification of cases which might be of food-borne origin varies from country to country. Furthermore, while most countries require notification by medical practitioners of specific conditions such as typhoid fever, paratyphoid, bacillary dysentery, etc., several do not place an obligation on the medical practitioner to notify "food poisoning" (049).<sup>2</sup>

<sup>1</sup> See Annex 3

<sup>2</sup> In the present report "food poisoning" is used as a general term to include food-borne infections such as salmonellosis and intoxications.

The collecting of statistical data on incidents of food-borne diseases and their cause, and the reporting of these data by national authorities in such a way that the cause and magnitude of such diseases could be defined with the greatest possible accuracy would facilitate the introduction of more efficient measures for the control of these diseases by the country concerned and by international agencies. It is therefore recommended that health administrations should analyse reported diseases in all cases where the food-borne character is either obvious or suspected, and report them as a group according to the list on pages 4 and 5.

In some cases, the physician or medical officer attending a patient or patients suffering from food poisoning can obtain information indicative of the etiology of the condition or even definite particulars of the food concerned. In other cases, particularly those diagnosed in hospital and those having a long incubation period (e.g., typhoid or paratyphoid), it is not always possible for the clinical diagnoses to be supplemented by an indication of the probable or possible food origin of the disease.

It is therefore recommended that, in addition to the routine publication, among notifications of communicable diseases, of data on diseases commonly arising in the intestinal tract, national health administrations should publish at least yearly a supplementary report relating to food-borne diseases. This should be based on the above-mentioned notifications and on the results of epidemiological and bacteriological investigations carried out in connexion with these diseases.

These special reports should contain for each disease the number of cases notified, the number of such cases investigated, and the number of those investigated in which the food origin was definitely ascertained or at least found probable. The proportions between these figures would provide a rough estimate of the amount of food-borne disease in the country concerned.

However, in order to provide a true picture of the epidemiology and a more precise knowledge of food-borne diseases, the special reports should contain, in addition, information on the total number of incidents<sup>1</sup> observed, covering as far as possible :

- (a) circumstances (community banquets, meals in restaurants, home outbreaks, etc) ;
- (b) size (total numbers of persons affected in relation to those at risk) ;
- (c) food concerned (meat, milk, fish, eggs, etc., specifying the particular form) ;

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<sup>1</sup> An incident can represent a family or other outbreak or a single (sporadic) case (see Annex 1)

(d) sources of contamination of the said food (animal origin, human case or carrier, faecal contamination, failure of pasteurization or processing plant, etc.);

(e) specific bacterial, viral, or parasitic agent isolated by laboratory examination.

It is further suggested that, in addition to a tabular presentation of these outbreaks, the special reports should contain details of some specific outbreaks selected on account of their typical character or their unusual features.

In the statistics of notification of food-borne diseases, as of other communicable and parasitic diseases, it is desirable to record, separately, clear-cut clinical cases as distinct from positive laboratory findings.

It would be easy to make this distinction if health administrations were to record separately cases notified by physicians and those verified by epidemiological and laboratory investigations. The latter should include specimens originating in other persons, e.g., sub-clinical cases found among contacts of an individual case and latent infections or infestations, in order to obtain an idea of the prevalence and importance of the condition.

Collation of national reports at the international level would facilitate international collaboration in the investigation and control of food-borne diseases.

#### 4. EPIDEMIOLOGICAL INVESTIGATIONS

From the point of view of preventive medicine, more information is needed on the well-established etiological role of foods in many diseases. An effort should therefore be made to profit as fully as possible from the investigations which the epidemiologist has in any case to make in the event of an outbreak of food-borne disease.

A primary requirement in epidemiology is the thorough questioning of patients and others who may have been exposed to the same source of infection. Next comes the collection of samples of the foods which might have been the cause of the disease, in order both to avoid more people falling sick and to aid the laboratory in detecting the real cause of the disease. For the latter purpose, it is essential that adequate samples of suspected foods or good ingredients be sent as quickly as possible to the laboratory. It is obvious that the physicians carrying out the epidemiological investigation should receive some guidance as to how to sample correctly.

Special investigations, limited in scope, may help to provide more precise information on the epidemiology of food-borne diseases. Such investigations would require closer studies than is normally the case with routine investigations.

*Methodological aspects*

The microbiologist must be given full information relating to the outbreak. This information can only be supplied by those conducting the investigation.

It seems advisable to try to standardize the diagnostic methods used in each country and to attempt to draft recommended methods for use at the international level.

These methods cannot be laid down in any permanent form but should rather be flexible, so that they can be modified according to the results obtained in bacteriological research.

The work already done by the Expert Committee on Public Health Laboratory Methods<sup>1</sup> with regard to the study of methods for the detection, enumeration and identification of organisms of pathogenic significance in biological materials will be useful in this field.

*Requirements for designated laboratories*

It is essential that all examinations of clinical material from patients affected, and of incriminated foodstuffs, be made in accordance with the methods recommended for that material and be performed in a well-equipped laboratory staffed with competent personnel.

Before designating a laboratory for this work, the agency concerned should make certain that the buildings, equipment, and other physical conditions are adequate for the proper functioning of the laboratory, that the personnel is competent, and that the laboratory is under the direction of a person qualified in the examination of clinical materials and foodstuffs.

## 5. CONTROL MEASURES

The two major factors which contribute to the production of clean and safe food should be considered separately. First, every effort should be made to prevent the contamination of foods, at any stage of their production, from human or animal sources. Secondly, the organisms which, in spite of all precautions, may contaminate the food should not be allowed to proliferate to a level sufficient to cause clinical symptoms.

*Control of primary sources of food*

In the past, attention has been focussed particularly on milk, water, ice-cream, and meat. In addition, there are other food commodities which may need treatment to preclude any health risk for the consumer because

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<sup>1</sup> *Wld Hlth Org. techn. Rep. Ser.*, 1957, 128

it is not always possible to eliminate the source of contamination. Such foods include meat products, eggs and egg products, fish and shellfish, vegetables, and fruits, particularly soft fruits likely to be contaminated with soil.

It is further stressed that the presence of any basic food ingredients, such as egg products or meat, containing *Salmonella*, may be dangerous in a food establishment, not only through the consumption of the finished product but also through the risk of transferring the contamination to other foodstuffs which will not receive further heat treatment before consumption.

The medical and veterinary public health services should co-operate to trace the sources of infections, e.g., when salmonellosis is suspected to have been caused by foodstuffs.

When the food concerned is an imported product, the country of origin should be informed so that investigations may be carried out. Meanwhile, measures to prevent the spread of the infected material should be taken.

#### *Premises*

An important means of preventing food-borne disease is the appropriate construction and supervision of premises in which food is prepared, stored, manufactured, or presented for sale. The same applies to all vehicles used for the transport of food (see also "Food Hygiene", fourth report of the Expert Committee on Environmental Sanitation<sup>1</sup>).

#### *Food handlers*

On the subject of the examination of food-handlers, the points of view expressed in the first report of the Joint FAO/WHO Expert Committee on Meat Hygiene<sup>2</sup> and in the first report of the Joint FAO/WHO Expert Committee on Milk Hygiene<sup>3</sup> are accepted. They can be summarized as follows :

Regular bacteriological examination of food handlers does not necessarily ensure freedom from dangerous pathogens. Indeed, these examinations may give a sense of false security. Nevertheless, in countries where infectious diseases, such as enteric fevers (typhoid, paratyphoid, shigellosis) are prevalent, the risk of food-handlers spreading infection might be lessened if they were always employed in the same occupation, and if periodic examinations were performed. In such countries, new applicants could be examined clinically and bacteriologically before they are employed, and at regular intervals afterwards. This examination should include :

- (1) a medical history to determine past infections, with special reference to dysentery, typhoid and paratyphoid fevers, venereal diseases and skin diseases ;
- (2) blood serology (for example, for typhoid) and bacteriological examination of stools and urine.

<sup>1</sup> *Wld Hlth Org. techn. Rep. Ser.*, 1956, **104**

<sup>2</sup> *Wld Hlth Org. techn. Rep. Ser.*, 1955, **99**

<sup>3</sup> *Wld Hlth Org. techn. Rep. Ser.*, 1957, **124**

Emphasis should also be placed upon the necessity of food-handlers immediately reporting to the proprietor or manager if they are suffering from sore throat, discharging wounds, sores or discharging ears, or from diarrhoea or vomiting. Such persons should not be allowed to resume work until they are known not to be harbouring dangerous pathogens. These instructions should apply to both regular and casual employees.

In addition, periodic bacteriological and serological examination as a part of a general health examination is to be recommended for personnel whose tasks present special health hazards, e.g., the staff of hospital and nursery kitchens, cooks and food-handlers responsible for the preparation of particularly susceptible foodstuffs.

If, in any of the cases referred to above, enteropathogenic organisms are found, the carrier should not be allowed to work with foodstuffs until proved to be free from infection. This applies equally to carriers harbouring strains of other pathogenic micro-organisms (staphylococci, streptococci, *Corynebacterium diphtheriae*) and known to be definitely associated with a specific outbreak of food-borne disease.

The finding of *Salmonellae* in a high proportion of personnel in a food establishment may indicate a focus of infection (food or animal) in the establishment. This requires immediate investigation to control further spread of the organism in the environment or amongst the staff.

#### *Health education*

The aim of education is to reach all ranks of worker in the food-handling industry with a view to improving their practices and stimulating in them a sense of the great importance of the job they do.

The educational work should be carefully planned in stages and should be co-ordinated with the epidemiological studies and legislative proposals right from the beginning, as the need for agreement between these three aspects cannot be over-estimated.

At the outset of a good hygiene campaign it is worthwhile spending some time preparing the public health personnel and the medical practitioners in the content and methods of the education proposed. It is important to accomplish this before approaching the food trade, as it is these professional people who are mainly responsible for giving information, conducting discussions and answering questions.

In the second stage, it is usually worth while calling together employers and managers and explaining to them the general theory and purpose of the work. The problems may then be put to the traders and their advice and help sought in raising standards of food hygiene. Care should be taken to give such meetings as much prestige as possible. Having gained the goodwill of the management, the approach to the workers in the industry is facilitated.

In educating food-handlers, small group discussions with demonstrations in their place of work are very effective ; they are generally little impressed with the mass media of communication but greatly appreciate the trouble taken by the health authorities to meet them in such smaller gatherings.

There are many other ways in which education in food hygiene may be presented to the food-handler. For instance, special schools can be set up to teach hospital, school, or hotel catering staffs ; technical institutes and clean-food guilds can run courses for food-handlers ; and teaching can also be supplied by correspondence courses.

When work is well under way with the trade, the education can be extended to the general public.

#### *Laboratory examination of foods for hygienic purposes*

Although it may be difficult to safeguard the production of perishable foods by regular sampling and examination only, it is equally true that the preventive measures against food-borne disease outlined in previous sections of this report require regular checking by microbiological examination of the products concerned. Moreover, chemical and bacteriological techniques may be valuable for controlling operational procedures and food premises from the sanitary point of view.

In order to assess the value of the results of bacteriological examination of batches of food, there should be recognized bacteriological standards. Although there are many difficulties associated with the development of such standards, the time may be approaching when international standards can be formulated. It would therefore be desirable to attempt to standardize, or at least state clearly, the methods used for enumeration of all organisms and for identification of bacteria of public health significance in foods within a given country.

This task should be carried out at the international level with a view to facilitating the food trade between countries. Fellowships might be provided in order to make possible this international study of methods of bacteriological examination of foods with a view to the provision of standards.

#### *International collaboration in the control of perishable foodstuffs and prevention of food-borne disease*

International collaboration is advisable to prevent the large-scale spread of food-borne diseases.

To limit the spread of contaminated material throughout many countries and the possible dangers of salmonella types becoming endemic in countries where they have hitherto been unknown, international dissemination of information on bacteriological conditions of foods intended for both

human and animal consumption is useful. Data already collected in many countries would provide the basic material for this work. If dangerously contaminated material is detected, the country of origin should be informed as early as possible so that the source of contamination may be investigated.

Another possible field of international collaboration would be assistance by international agencies in the establishment of centres for the education of health workers required to teach food-handling personnel, where suitable national facilities do not already exist.

## 6. OTHER MATTERS

Amongst other matters raised, it was recognized that the use of antibiotics in animal feeding, as food preservatives, and in therapy has attracted interest. As these applications may lead to the development of antibiotic-resistant strains of *Salmonella* and other bacteria of public health significance, the formation of a study group to consider this subject may well be justified.

## 7. RECOMMENDATIONS

### 7.1 *The physician*

7.1.1 The attending physician should report without delay to the local public health service the number and identity of persons affected and people at risk, stating their age and occupation.

7.1.2 The attending physician should briefly indicate the symptoms, with special reference to the date and hour of onset, the clinical features and their severity. Wherever possible, he should also indicate the incubation period.

7.1.3 The attending physician should, at the same time, report all food-stuffs eaten by those affected which might possibly be connected with the disease.

7.1.4 The attending physician must secure clinical specimens, especially vomit and faeces. When warranted by circumstances, it is recommended that a blood sample, taken aseptically, should also be secured. This is imperative in the case of suspected botulism. This material must be forwarded without delay to the designated laboratory, preferably under cool conditions.

7.1.5 Wherever possible, the attending physician should secure any food left over and keep it cool or send it without delay to the designated laboratory, again preferably under cool conditions. Preferably, he should indicate the conditions under which the food specimens have been kept before sampling.

## 7.2 *The public health services*

7.2.1 The public health services should supply all physicians with a summary of the predominant clinical symptoms of food-borne diseases (see Annex 2).

7.2.2 The public health services should promote the spread of information to physicians with regard to proper methods of treatment and follow-up necessary to effect a complete cure.

7.2.3 If adequate laboratory facilities for the investigation of food-borne diseases are not available, such facilities should be provided.

7.2.4 On receiving a report of an outbreak of a food-borne disease, the public health service should immediately begin an investigation into the extent of the outbreak and its cause.

7.2.5 For this purpose, it should contact the designated laboratory immediately and should indicate the examinations to be carried out.

7.2.6 The service should take all the necessary measures to bring the outbreak under control and to prevent its further spread.

7.2.7 At the end of the investigation, the public health service should provide the central health authority with a complete report on the incident.

## 7.3 *Designated laboratories*

7.3.1 The designated laboratories receiving the clinical specimens and food samples should investigate them, using methods found adequate for each type of material to be examined.

7.3.2 The results of all laboratory examinations should be reported without delay to the public health service directing the investigation.

7.3.3 The designated laboratories should retain any food samples until the public health service informs them that the investigations are completed.

## 7.4 *National measures*

7.4.1 Establishment of national regulations concerning the examination of foodstuffs and the reporting and control of food-borne diseases are recommended. These may be supplemented by recommended laboratory procedures which should be revised in accordance with the constant development of knowledge.

7.4.2 Approval of premises and buildings under construction intended for food-handling establishments, and the licensing of such establishments are considered important.

7.4.3 Where legal regulations governing food-handling activities and measures enforceable under licensing requirements do not exist, it is

highly desirable that provisions be introduced, based primarily on the public health hazards involved. For the administration and enforcement of such regulations, a qualified staff and adequate organization are necessary.

7.4.4 The authorities should—in accordance with the recommendations put forward in the fourth report of the Expert Committee on Environmental Sanitation<sup>1</sup>—take all steps necessary to avoid the dangerous contamination at source of all foodstuffs which may be consumed in the raw state. Methods of microbiological examination should be applied, combined with treatment of the food if a method is available.

7.4.5 Arrangements should be made for health education in food hygiene to be incorporated in the central measures taken to control food-borne diseases.

7.4.6 It is desirable that the central authorities should actively encourage local health authorities to arrange in-service training of their staff in the education of the public in food hygiene.

7.4.7 The existence of a national food control system equipped with an adequate laboratory service for hygienic and microbiological evaluation of food is considered an essential part of preventive measures. A close relationship should be maintained between this service and the public health services, if they are not under the same authority, in order to apply the epidemiological findings to the supervision of food-handling activities.

7.4.8 The extension of the postgraduate training of specialists in food hygiene and food microbiology is a pressing need. Such training, although primarily national, should wherever necessary or useful be extended to the international level.

7.4.9 The co-operation of medical, veterinary, agricultural and other services is encouraged as being essential for the achievement of adequate investigation and control of food-borne disease.

#### 7.5 *International measures*

7.5.1 Arrangements should be made for the multilateral exchange of information between health services within the countries of the WHO European Region, especially with regard to the discovery of new basic sources of dissemination of *Salmonella* by human or animal food products.

7.5.2 At an international level, WHO could usefully undertake the compilation of data concerning food-borne diseases and disseminate such data to governments and agencies concerned.

7.5.3 A study of approved methods of laboratory investigation of foods should be initiated with a view to making recommendations in this field.

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<sup>1</sup> *Wld Hlth Org. techn. Rep. Ser.*, 1956, 104

7.5.4 International agencies could assist in the training of specialists in food examination and control, food microbiology and epidemiology of food-borne diseases, either by awarding fellowships or organizing national and international courses.

7.5.5 Valuable aid may be given by making available consultants for countries which may be in need of this form of assistance.

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**Annex 1**

**MODEL FORM FOR REPORTING INCIDENTS  
OF FOOD-BORNE DISEASE**

	No. of incidents			No. of cases		
	Family outbreaks	Other outbreaks	Single cases	Notified	Otherwise ascertained	Total
Agent identified *						
Agent not identified						
Totals						

\* To be classified according to the list of food-borne diseases on pages 4 and 5 of this report.

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## Annex 2

**PRINCIPAL FEATURES OF THE SEVERAL TYPES OF FOOD  
POISONING IN ORDER OF APPROXIMATE INCUBATION PERIOD,  
WITH MAIN SYMPTOMS \***

Agent	Ingestion/onset	Main symptoms
Chemical (irritant)	Short – 10 minutes to 2 hours	Nausea, abdominal pain, then vomiting and diarrhoea
Staphylococci	1-6 hours	Salivation, nausea, vomiting, abdominal pain, prostration and sub-normal temperature
<i>Salmonellae</i>	12-24 hours	Abdominal pain, diarrhoea, vomiting and fever
<i>Cl. welchii</i>	8-22 hours	Abdominal pain and diarrhoea
"Non-specific" bacteria	3-18 hours	Diarrhoea, abdominal pain, vomiting
<i>Cl. botulinum</i>	12-36 hours	Change of voice, diplopia, ptosis. Cranial nerve palsies. Obstinate constipation
Chemical (neurotoxic)	(i) Early (ii) 10-12 days	(i) Early muscular paresis (e.g., sodium fluoride) (ii) Delayed, flaccid paralysis (e.g., orthotricresyl phosphate, an oily fluid sometimes mistaken for edible oil)
Trichinosis	2-28 days, 9 days average	Oedema of the eyelids and face, swelling and pain of muscles, eosinophilia; in severe cases hyperpyrexia and diarrhoea

\* This summary is based on Appendix B of "Food Poisoning" (Medical Memorandum 188 issued by the Ministry of Health, London), supplemented by a description of the clinical features of trichinosis.

**Annex 3****REFERENCES****A. References quoted in the Report**

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**B. Documents prepared for the Conference**

- EURO-178/4 Food-borne infections and intoxications in Europe, by Dr. H. P. R. Seeliger
- EURO-178/5 Prevalence of food-borne infections and intoxications in Europe, by Dr H. P. R. Seeliger
- EURO-178/6 Some aspects of the control of intestinal diseases, by Dr R. Buttiaux
- EURO-178/7 The investigation of food poisoning, by Dr W. C. Cockburn
- EURO-178/8 Clinical aspects of food-borne diseases—diagnostic and therapeutic problems, by Professor F. Mihaljevic
- EURO-178/9 Public health aspects of food-borne infections and intoxications, by Dr Halina Wior
- EURO-178/11 Some notes on the regulation of food-handling establishments by licensing and inspection, by Mr J. O. Buxell
- EURO-178/12 Some data on the incidence of food-borne diseases in the Netherlands 1950-1958, by Dr D. A. A. Mossel
- EURO-178/13 On the incidence of food-borne infections and intoxications in Italy in the years 1952-1956, by Professor G. D'Alessandro
- EURO-178/14 Incidence of food-borne infections and intoxications in Greece, by Dr J. Papavassiliou
- EURO-178/15 Infections and intoxications, Ministry of Health, Poland
- EURO-178/16 Food-borne diseases in Denmark, by Professor A. Jepsen

**C. Other documents**

EURO-85.2/6 Epidemiology of food-borne diseases with special reference to England and Wales, by Dr W. C. Cockburn

EURO-85.2/19 Topical problems and recent advances in food control, by Professor A. Jepsen

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