WHO Global Strategy for Food Safety

Safer food for better health

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Summary

The Fifty-third World Health Assembly, in resolution WHA53.15, requested the Director-General to put in place a global strategy for surveillance of foodborne diseases and to initiate a range of other activities on food safety and health. Since then WHO has organized a strategy planning meeting on food safety (Geneva, 20-22 February 2001). Following further consultation with Member States, WHO has drawn up a global food safety strategy, including surveillance, as outlined in this document.

Global food safety concerns

Microbiological hazards and the foodborne diseases they cause are an increasingly important public health problem. In many countries significant increases have been reported over the past few decades in the incidence of diseases caused by microorganisms transmitted mainly by food, such as *Salmonella* spp. and *Campylobacter* spp. New, serious hazards have emerged in the food chain, such as enterohaemorrhagic *Escherichia coli* and bovine spongiform encephalopathy.

Chemical hazards remain a significant source of foodborne illness. Chemical contaminants in food include natural toxicants, such as mycotoxins and marine toxins, environmental contaminants, such as mercury and lead, and naturally occurring substances in plants. Food additives, micronutrients, pesticides and veterinary drugs are deliberately used in the food chain; however, assurance must first be obtained that all such uses are safe.

Although traditional approaches have proved largely successful, risk assessment now needs also to take account of susceptible populations, combined low-level exposure to several chemicals, endocrine effects, and effects on development of the fetal neural system. More data on food intake and on the concentrations of contaminants in food are needed, in particular in developing countries, in order to permit assessment and management of these risks, including setting of national and international standards.

New technologies, such as genetic engineering, irradiation of food, and modified-atmosphere packaging, can improve food production and food safety. However, the potential risks associated with application should be objectively and rigorously assessed well before these technologies are widely introduced. The basis for risk assessment should be communicated effectively, so that the public can be involved at the early stages of the process. Assessment should be based on internationally agreed principles and should be integrated with consideration of other factors, such as health benefits, socioeconomic factors, ethical issues and environmental considerations.

Building capacity in food safety is essential in most countries, especially developing ones. Both positive and negative experiences from countries with well-developed food safety systems could be used as a means to improve systems globally. Foodborne disease has a significant impact not only on health but also on development. Moreover, globalization of the food trade and development of international food standards have raised awareness of the interaction between food safety and export potential for developing countries.

Putting food safety on the political agenda is the first step in reducing foodborne illness; however, even with this step in place, many developing countries lack the technical expertise and financial resources to implement food safety policies. Support from donors for capacity building in order both to protect health and to improve food trade, would help to build up a framework for sustainable development.

WHO Global Strategy for Food Safety

Goal
To reduce the health and social burden of foodborne disease.

Methods
The goal will be achieved through three principal lines of action:

- advocating and supporting the development of risk-based, sustainable, integrated food safety systems;

- devising science-based measures along the entire food production chain that will prevent exposure to unacceptable levels of microbiological agents and chemicals in food;

- assessing and managing foodborne risks and communicating information, in cooperation with other sectors and partners.

Approaches
Surveillance of foodborne diseases. Surveillance is the basis for the formulation of national strategies to reduce food-related risks. Detailed and accurate knowledge about the nature and level of foodborne diseases is a prerequisite for action to lower these levels. Therefore, the present paucity of reliable data on foodborne diseases in most countries is a major impediment for evidence-based interventions. A surveillance system employing sentinel sites and regional and international laboratory networks would be a major improvement in most regions. In addition, internationally agreed methods are needed for surveying foodborne diseases and linking them to food contamination on the basis of risk. This requires an interdisciplinary approach that includes all sectors dealing with foodborne diseases and food safety in both the health and agriculture sectors.

It is essential for Member States to be committed to strengthening systems for surveillance of foodborne diseases. WHO will facilitate the strengthening of systems based on laboratory and epidemiological findings and of their linkages to programmes for monitoring food contamination. WHO and its collaborating centres will promote key sentinel sites both in developing countries and globally for surveillance of foodborne diseases.

Better risk assessment. WHO, in collaboration with FAO, will develop tools for appropriate risk assessment. With the help of these tools, joint WHO/FAO expert groups will compile information on chemicals and microorganisms in food and their link to foodborne disease. Such assessments can serve as the basis for setting international standards and guidelines, and for national food regulations or other initiatives. The provision of tools and information will permit the effective transfer of risk-assessment technology and data between countries, including developing countries.

The developing discipline of microbiological risk assessment provides a tool to set priorities for future interventions. Effective management of microbiological hazards is enhanced through the use of preventive approaches, such as the Hazard Analysis and Critical Control Point (HACCP) system, which is a tool for process control of points critical for preventing hazards in food. Use of these new tools, suitably adapted for developing countries, should be advocated in order to improve public health through the reduction of microbiological hazards in food and their associated diseases.

Safety of new technologies. WHO will promote a holistic approach to the production and safe use of foods derived from new methods of production, including genetic engineering. This approach is supported by a framework for evaluation that includes safety considerations, health benefits, environmental effects, and socioeconomic consequences. The framework provides a basis for internationally agreed methods and guidelines for evaluating the safety of new technologies and guidance for Member States in framing policies on the use of foods and food ingredients derived by new technologies.

Public health in the Codex Alimentarius. WHO will work to ensure that consumer health concerns are reflected in the priorities of the Codex Alimentarius Commission. In this regard, WHO is promoting a thorough review and optimization of the work of the Commission. In general, WHO seeks greater involvement of the health sector in the development of Codex standards, guidelines and recommendations. WHO will support the effective participation of developing countries in the work of the Commission.

Risk communication. The results of risk analyses should be communicated in a readily understandable form. WHO will support the development of methods for fostering dialogue among, and participation of, stakeholders, including consumers, in the communication process. Methods for assessing the effects of risk communication should be evaluated. In line with the methodology so developed, WHO will produce food safety publications and other products for targeted audiences.

International cooperation. WHO will work for the establishment of an international coordination group on food safety to ensure a consistent, effective approach to food safety. This group should be geared to coordinating at country level activities on food safety undertaken by international bodies. WHO will support Member States in introducing health concerns into considerations on the globalization of food trade.

Capacity building. WHO will formulate regional food safety strategies on the basis of the WHO global food safety strategy and of specific regional needs such as technical support, educational tools and training. Donor support will be needed to prioritize food safety in public health in developing countries. A network of WHO collaborating centres will be established in order to further capacity building.

Foreword

Food safety: a public health priority

Foodborne disease takes a major toll on health. Thousands of millions of people fall ill and many die as a result of eating unsafe food. Deeply concerned by this, the Fifty-third World Health Assembly (May, 2000) adopted a resolution calling upon the World Health Organization (WHO) and its Member States to recognize food safety as an essential public health function. The resolution also called on WHO to develop a Global Strategy for reducing the burden of foodborne disease.

The availability of safe food improves the health of people and is a basic human right. Safe food contributes to health and productivity and provides an effective platform for development and poverty alleviation. People are becoming increasingly concerned about the health risks posed by microbial pathogens and potentially hazardous chemicals in food. Up to one-third of the populations of developed countries are affected by foodborne illness each year, and the problem is likely to be even more widespread in developing countries. The poor are the most susceptible to ill-health. Food and waterborne diarrhoeal diseases, for example, are leading causes of illness and death in less developed countries, killing an estimated 2.2 million people annually, most of whom are children. Diarrhoea is the most common symptom of foodborne illness, but other serious consequences include kidney and liver failure, brain and neural disorders, and death. The debilitating long-term complications of foodborne disease include reactive arthritis and paralysis.

Trends in global food production, processing, distribution and preparation present new challenges to food safety. Food grown in one country can now be transported and consumed halfway across the world. People demand a wider variety of foods than in the past; they want foods that are not in season and often eat away from home. Institutionalizing children in schools and childcare facilities and a growing number of elderly persons in hospitals and nursing homes means that food for many is prepared by a few and can therefore be the source of major foodborne disease outbreaks. Greater life expectancy and increasing numbers of immunocompromised people mean a larger vulnerable population for whom unsafe food is often an even more serious threat.

WHO and its Member States have responded to these new challenges by recognizing that protecting food safety is an essential public health function. Food safety must be addressed along the entire food chain by measures based on sound scientific information at both national and international levels. WHO's capacity to assess the risks posed by chemical and microbiological hazards and by new food-related technologies must be enhanced. New methods are needed for evaluating and reducing the burden of foodborne disease. Food safety strategies can be implemented only by countries that have an adequate capacity to do so, and WHO will continue to assist Member States in establishing and updating that capacity.

WHO is committed to achieving better health for all people and recognizes food safety as a global public health priority. The strategy outlined in this document defines a strengthened role for WHO in food safety, suggests the approaches to be taken to reduce the risks posed by microbial and chemical hazards in food, and provides a roadmap for making the world's food safer. As food safety affects the entire community, all stakeholders must be involved. Thus, effective implementation of this strategy will require strengthened partnerships between international organizations involved in food safety as well as between agencies at the national level.

Why is food safety an essential public health issue?

Serious outbreaks of foodborne disease have been documented on every continent in the past decade, illustrating both the public health and social significance of these diseases. Consumers everywhere view foodborne disease outbreaks with ever-increasing concern. Outbreaks are likely, however, to be only the most visible aspect of a much broader, more persistent problem. Foodborne diseases most seriously affect children, pregnant women, the elderly and people already affected by other diseases. Foodborne diseases not only significantly affect people's health and well-being, but they also have economic consequences for individuals, families, communities, businesses and countries. These diseases impose a substantial burden on health-care systems and markedly reduce economic productivity. Poor people tend to live from day to day, and loss of income due to foodborne illness perpetuates the cycle of poverty.

New challenges to food safety

The integration and consolidation of agricultural and food industries and the globalization of the food trade are changing the patterns of food production and distribution. These conditions are creating an environment in which both known and new foodborne diseases can become prevalent. Food and feed are distributed over far greater distances than before, creating the conditions necessary for widespread outbreaks of foodborne illness. In a recent crisis, more than 1500 farms in Europe received dioxin-contaminated feed from a single source over a two-week period. Food produced from animals given this contaminated fodder found its way onto every continent within weeks. The effects of exposure to dioxin from this source on public health may become known only after years of investigation. The international spread of meat and bonemeal prepared from cattle affected by bovine spongiform encephalitis (BSE) needs no further description. The full economic consequences of such incidents and the anxiety raised among consumers are still being assessed.

Other factors account for the emergence of food safety as a public health issue. Increasing urbanization leads to greater requirements for transport, storage and preparation of food. Increasing wealth, an urban lifestyle and sometimes a lack of facilities mean that people eat much of their food away from home. In developing countries, food is often prepared by street vendors. In developed countries, up to 50% of the food budget may be spent on food prepared outside the home. All these changes lead to situations in which a single source of contamination can have widespread, even global consequences. Developing countries in particular are experiencing rapid changes in their health and social environments, and the strains on their limited resources are compounded by expanding urbanization, increasing dependence on stored foods and insufficient access to safe water and facilities for safe food preparation.