

Monitoring health in the war-affected areas of the former Yugoslavia, 1992-1993

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In October 1992 the World Health Organization (WHO) set up a health monitoring programme in the former Yugoslavia to obtain information on communicable disease upon which to base decisions about medical aid requirements. This paper covers the first year of the programme (October 1992-October 1993) and details the steps taken to set it up. Information was sought from personal contacts, 'ad hoc' sources (United Nations agencies and non-governmental organizations) and the health authorities of the regions of former Yugoslavia. An attempt was made to establish a sentinel monitoring system to provide routine data to allow health predictions to be made. A bulletin was produced to disseminate surveillance results and health advice. The system obtained sufficient data (mostly from 'ad hoc' sources) for WHO to take informed decisions about medical aid but the sentinel system was not established successfully.

Key words: World Health Organization, former Yugoslavia, surveillance, communicable disease, war

In the health emergencies which usually attend disasters, effective use of aid is essential. A surveillance system producing relevant, accurate, timely, representative and easily analysed data¹ can provide the information needed to set priorities (e.g. allocation of medical supplies, identification of target populations), to monitor progress towards the achievement of predetermined objectives (mortality reduction, vaccination coverage) and to modify existing plans and programmes.¹ The early detection of increases in the incidence of infectious diseases can allow action to be taken to prevent epidemics.² This paper summarizes the design, setting up and operation of a health monitoring system in the war-affected areas of the former Yugoslavia in 1992-1993, designed to meet these needs. A sufficiently good picture of communicable disease in the area was obtained for the World Health Organization (WHO) to be able to maintain its aid programme, but data could rarely be obtained regularly from individual sites. (Few detailed data are even now available for that period from those parts of the former Yugoslavia affected by the war, despite a restructuring of the local surveillance system.)³ As a result of the work reported here, a different approach was taken in the second year of

the health monitoring project and more detailed data obtained.³

THE WAR AND THE UNITED NATIONS

War broke out in the former Yugoslavia at the end of June 1991 with a brief conflict between the Slovenians and the Yugoslav National Army. That was followed by a period of full scale war between the Croats and Serbs who were living in territories claimed by Croatia. This ended early in 1992 in an uneasy truce, when the United Nations (UN) Security Council approved the deployment of an international peace keeping force (the United Nations Protection Force, UNPROFOR) in 4 disputed areas which were declared United Nations Protected Areas (UNPAs, *figure 1a*). Full-scale fighting broke out in Bosnia-Herzegovina at the end of May 1992. An additional UN Force (UNPROFOR 2) was deployed to protect the aid effort in that area. (For greater detail see Vuori 1996).⁴ By the middle of 1992 more than 3.5 million of the original population of the former Yugoslavia (23.7 million) had become displaced persons (forced to leave their homes but remained within the borders of their home state) or refugees (had to cross an internationally recognized border). Thousands of others who remained in their homes needed aid. Many became largely dependent on aid agencies for food and medical supplies.⁵ Most of the refugees and displaced persons were not in refugee camps, but lived with host families in the countries that made up the former republic (e.g. 75% of those in Croatia, 95% of those in Serbia and approximately 90% in Bosnia).⁵

HEALTH SERVICES OF THE FORMER YUGOSLAVIA

Before the war there was a comprehensive health service with a primary care network based on polyclinics ('Domovi Zdravlja', DZs), the core health care units in muni-

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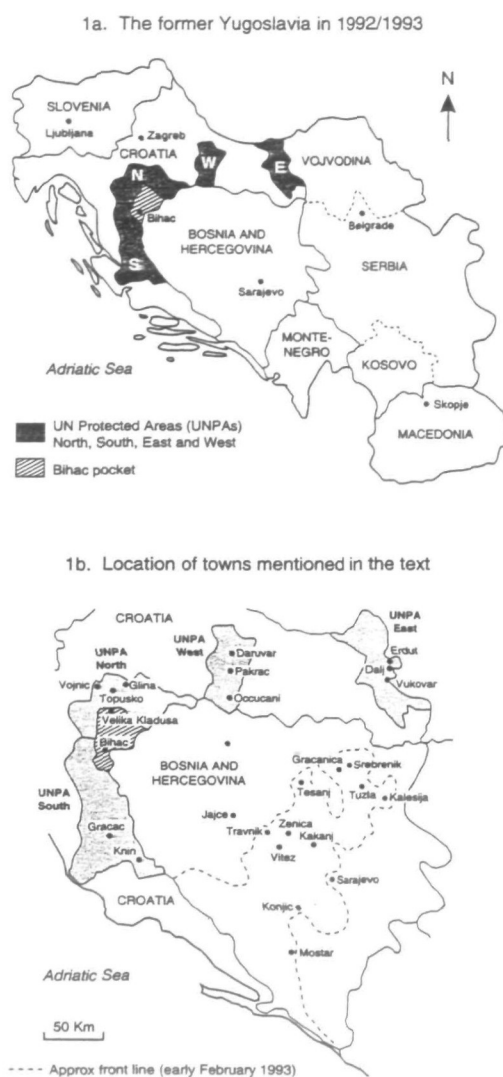


Figure 1a The former Yugoslavia in 1992/1993
1b Locations of towns mentioned in the text

icipalities of 50,000 to 200,000 people. (Municipalities, the basic units of local government, comprise urban centres, most with varying amounts of surrounding countryside.) Each DZ had several associated smaller primary health care units called 'Ambulantas', often in outlying villages or suburbs. In addition to their clinical functions DZs undertook public health work and kept the medical records for their municipality, population data (numbers of births and deaths, information about causes of death) usually being kept separately by the municipal civic offices. During the war, some DZs developed in-patient facilities or were converted into war hospitals. In many areas the population served by a DZ was increased by an influx of refugees or displaced persons or depleted through emigration. In some parts of the war-affected areas, where access to the DZs became difficult or impossible (particularly Sarajevo), 'Ambulantas' became the main primary health care units.

An excellent system for collecting data on communicable diseases existed in the former Yugoslavia. Reporting was

compulsory and returns good. After the outbreak of war this system continued to operate, with varying degrees of efficiency, in many of the republics. In areas directly affected by the war, it rapidly broke down and, whilst data were frequently being collected locally, they were not being collated, analysed and shared.⁶

POTENTIAL FOR EPIDEMICS

The war led to disruption of health services, damage to power, water, and waste disposal systems and to severe food shortages in some areas.⁷⁻¹² Many dwellings were damaged and winters in the area are often extremely cold. The population was under severe psychological stress. Comprehensive childhood vaccination programmes, achieving high levels of cover before the war¹³ (approximately 95%), broke down, falling to 25-40% in some areas. Economic sanctions imposed by the UN restricted the flow of medical supplies and seriously affected the health services of Serbia and Montenegro and areas dependent on Serbia for supplies (Kosovo, the former Yugoslav Republic of Macedonia, the Serbian controlled parts of Croatia and Bosnia-Herzegovina; *figure 1a and 1b*).¹⁴ All these factors increased the likelihood of serious morbidity and mortality due to infectious diseases in the war- and sanctions-affected areas and this risk increased steadily as the war progressed. Endemic diseases included typhoid fever and hepatitis A (in particular parts of central Bosnia and Croatia), respiratory disease (rates were high in central Bosnia before the war due largely to poverty, high levels of industrial pollution and extensive cigarette smoking) and tuberculosis (rates of infection in the former Yugoslavia were amongst the highest in Europe, in particular in parts of Bosnia).^{13,15} Louse-borne typhus (due to *Rickettsia prowazekii*) occurred in Bosnia-Herzegovina until after the Second World War and cases of Brill-Zinsser disease (recrudescence typhus) and relapsing fever (due to *Borrelia recurrentis*, also louse-borne), were reported up to the outbreak of the current war. Several zoonoses, including Brucellosis, rabies, Lyme disease and rodent-borne infections such as leptospirosis (Weil's Disease), haemorrhagic fever with renal syndrome (HFRS), tularaemia and murine typhus were endemic or had occasionally been reported in the war-affected areas.

THE WORLD HEALTH ORGANIZATION

The WHO set up an office in Zagreb in the summer of 1992 to provide public health advice to the United Nations High Commission for Refugees (UNHCR), the leading UN aid agency in the former Yugoslavia and to help coordinate the activities of other medical aid agencies in the war-affected areas. Subsequently its activities expanded to encompass the provision of medical supplies, the determination of future medical aid needs and the facilitation of information sharing between local and international health care workers (see Vuori 1996⁴ for further details). To fulfil these objectives and activities information was needed about what diseases were occurring, the location and the number of people affected and the amount and type of aid needed. To obtain this in-

formation the WHO set up a monitoring project in October 1992. Data on health problems, such as nutrition, mental health and rehabilitation of trauma victims, were being collected by other WHO teams but the project described here, although primarily designed to collect data on communicable diseases, was officially known as the 'Health Monitoring Project' and is referred to as such in this paper.

THE WHO HEALTH MONITORING PROJECT

Aims

- To monitor health in areas where the previously existing surveillance systems were no longer operating or were not functioning properly (Bosnia-Herzegovina and the UNPAs) and to supplement the functioning monitoring systems in the other parts of the former Yugoslavia.
- To assess medical aid requirements.
- To act as a health information exchange system where normal communications had broken down.
- To disseminate health advice and the results produced by the surveillance system.

Resources

The health monitoring team (based in Zagreb) consisted of 1 international staff member (epidemiologist) who was in charge of the programme and undertook the field work (T.D.H. and subsequently S.D.), 1 local (medical) staff member (M.B.), and 1 secretary. Interpreters were hired as required. Some funds for the project came from the British Overseas Development Administration (ODA) but most came from the general funds available to the WHO area office in Zagreb (the WHO operation in the former Yugoslavia was funded entirely by extra-budgetary voluntary donations). The team was provided with a vehicle and appropriate protective clothing and communications equipment. Computing facilities, stationery, etc., came from the general supplies available to the Zagreb office.

Sources of health data

Four different sources were approached for health data:

■ Personal contact

Visits to the war-affected areas by WHO staff led to contacts with local health care professionals who were asked to provide early warning of major problems.

■ Ad hoc sources of information

Three main groups of organizations and people were involved in the aid work.

i) the UN and European Community agencies [e.g. UNPROFOR, the United Nations Military Observers (UNMO), the UN Civil Police (UNCIVPOL, whose task was to ensure even handed policing in the UNPAs), the UNHCR, the UN Children's Fund (UNICEF) and the EC Monitoring Missions (ECMM, who acted as cease-fire monitors and mediators)];

ii) the International Committee of the Red Cross (ICRC) and local Red Cross Agencies;

iii) other non-governmental organizations (NGOs).

These and many other organizations were asked to supply the WHO with any information on disease outbreaks or other medical problems encountered in the course of their work. The UNCIVPOL were asked to include answers to the following questions in their weekly situation reports.

i) Do you know of any problems due to disease in your area?

ii) Are you aware of any unusual number of deaths in your area in the last week and if so what was the cause?

iii) Do the health facilities in your area have any particular problems?

■ Government health agencies

Links were established with the health services of the internationally recognized governments of the republics and informal contacts were made with the unrecognized but *de facto* health authorities of territories that had fallen under Serb control. All these authorities maintained health records as far as possible. Some set up additional information links (e.g. the radio network set up by Croatia to collect information about war casualties).

■ Sentinel monitoring sites

The first 3 systems of data collection were designed to provide a reasonably wide geographical coverage, but could not provide regular reports with denominators so that trends could be assessed and health problems preempted. A sentinel monitoring scheme was designed to meet those needs. This was a health-service based reporting system centred on selected DZs, the staff of which were asked to supply information on a weekly basis using a simple form (*table 1*) which was produced in English, Croatian and Serbian.

In addition to the form itself each sentinel site was supplied with some additional material when first visited. This comprised i) instructions for using the form, ii) a page to be used to describe the site (nature of facility, location, access, etc.), iii) clinical definitions for the reportable disorders and iv) advice on treatment of the infections listed in the form and on appropriate public health responses needed to prevent or control outbreaks of these infections (based on WHO guidelines).

The sites were selected so as to give as wide a coverage of the war-affected areas (including the UNPAs) as possible and so as to be close to regional offices of the UNHCR with their satellite communication facilities. The sites chosen initially were Daruvar (UNPA West), Erdut (UNPA East), Gracac (UNPA South), Mostar (Herzegovina), Sarajevo and Vitez (Bosnia), Topusko (UNPA North) and Velika Kladusa (Bihac Pocket) (*figure 1a, 1b*).

Dissemination of information and results.

Information about outbreaks or other serious problems identified by the scheme (and health warnings) was disseminated rapidly by telephone, fax or radio. A health bulletin, 'The Health Monitor for the War Affected Populations of Former Yugoslavia' (the 'Health Monitor') was produced in English, Croatian and Serbian. This contained surveillance results and advice about problems identified by the system. It was not produced regularly, issues being prepared as needed. Approximately 250 copies

were produced in each language on each print run, additional copies being printed if required. The circulation included health ministries (of the republics), public health institutes, embassies and consulates, UN and EC agencies, the ICRC and local Red Cross agencies, NGOs, the sentinel sites and the press (via the WHO press office). In addition *ad hoc* deliveries were made by WHO and NGO staff in the field to hospitals, DZs, 'Ambulantas', local doctors and UN and NGO offices. Eight editions were produced between November 1992 and September 1993 (table 2).

RESULTS

Input

■ *Ad hoc* data

Most of the information obtained by the unit during its first year fell into this category. Of the different information sources, personal contacts were helpful when they were first approached but provided little information thereafter. Sources such as aid agencies and UN personnel provided much information about outbreaks and, for most of the time, were the only sources of information about

health problems in the less accessible parts of Bosnia. Many fewer aid agencies were working in the UNPAs than in Bosnia and the UNCIVPOL situation reports were for some time the only regular (if limited) source of information about health in these areas (particularly in UNPAs East and South where access was difficult).

Contact with government health agencies led to variable results. Reports were received intermittently from public health institutes in Croatia and Serbia and from the Bosnian authorities in Sarajevo. Some information was supplied by the Bosnian Serb medical authorities in Banja Luka (Bosnia).

No major epidemics were reported to the WHO during the first year of operation of the monitoring system but several outbreaks were recorded (particularly of typhoid fever and hepatitis A). The general picture throughout the war- and sanctions-affected areas was of a slow decline in health with an increased incidence of a number of infections. These included diseases of childhood, water- and food-borne infections, other diarrhoeal illness [hepatitis A, enterocolitis (ICD 9) and dysentery] and ectoparasites (scabies and lice – particularly head lice – were the only communicable agents which were seriously out of control in the war-affected areas).

There were reports of respiratory tract infections throughout the winter of 1992–1993 but no evidence of outbreaks. Cases of pneumonia were reported, particularly amongst older people but there was no sudden increase of reports of such cases (nor of deaths of older persons) from any area.

■ Sentinel sites.

Medical personnel from Glina and Vojnic (UNPA North), Mostar (Hercegovina), Occucani and Pakrac (UNPA West), Sarajevo, Travnik and Zenica (Bosnia) and Velika Kladusa (Bihac Pocket) (figure 1) initially

Table 1 Questions included in the sentinel site form

Identifier data	
Name and location of the reporting site	
Date of the report	
Period when the data were collected	
Name and position of the individual reporting	
Name and type of facility	
Health services data	
Number of patients seen during the reporting period (by sex and by age classes (years): <5, 5–14, 15–59, ≥60)	
Number of patients referred to another health facility for trauma or medical reasons	
Changes in the nature of the health care facility (e.g. type of services offered and installation of in-patient services)	
Demographic data	
Total population served by the facility	
Resident population and refugee/displaced population served by the facility (by age classes as in the section on health services data)	
Number of live births since the last report	
Morbidity data	
Vaccine preventable diseases (measles, pertussis, diphtheria and poliomyelitis)	
Respiratory infections (pneumonia and influenza)	
Diseases transmitted by food and water (diarrhoea, typhoid and hepatitis A)	
Diseases associated with overcrowding and poor nutrition (meningococcal disease and tuberculosis)	
Ectoparasitic infections and associated disease (scabies, head lice, body lice and typhus)	
Two nutritional conditions (pre-tibial oedema and scurvy)	
Trauma	
Other conditions (to be specified by the person filling in the form)	
Mortality data	
Age and sex of those dying	
Five causal classifications: communicable disease, maternal/obstetric, hypothermia, trauma and other	

Table 2 Items included in the first 8 issues of the Health Monitor

1	November 1992	Request for information on health and nutrition and advice on vaccinations
2	November 1992	Water-borne infection and health warning (typhoid)
3	December 1992	Results of monitoring and scurvy and rabies
4	January 1993	Survival at low temperatures, lice and disease
5	March 1993	Brucellosis, tuberculosis, mental health services and vaccinations
6	May 1993	Rodents and rodent-borne disease, hepatitis A-update and scabies
7	September 1993	Rehabilitation of war injured, nutrition monitoring and disease surveillance results (information from Macedonia, Montenegro and Kosovo)
8	September 1993	Disease surveillance results (tuberculosis and diarrhoeal illness), hepatitis A-update and rabies-update

agreed to provide data regularly. Contact was also made with the staff of health facilities in Gracanica, Kakanj, Kalesija, Konjic, Srebrenik and Tuzla (all in Bosnia), Knin (UNPA South) and Vukovar (UNPA East).

Data were received intermittently from all the sites (in some instances, only summaries of several months' data were supplied) except Occucani which reported weekly from January to June 1993 (although no significant events were reported during this period).

Output

Eight editions of the 'Health Monitor' were produced between November 1992 and September 1993. These contained the results of the surveillance work together with advisory material based on these results (table 2). Several health warnings were put out by fax, telephone and post to embassies and consulates, UN and EC agencies, NGOs, the ICRC and local Red Cross agencies, the health ministries of the republics and the press. These included a warning about water-borne disease following reports of outbreaks of typhoid and hepatitis A and about rabies following reports of cases in the war-affected areas. The WHO offices in Zagreb and Belgrade were required to advise the WHO European Regional Office (Copenhagen) on priorities and the information provided by the unit played an important role in this process. It was also essential in the formulation of requests to donors for financial support and for specific aid requirements. In addition, the unit provided much of the data needed for informed decision making at the weekly meeting between the WHO and NGOs which was held to discuss aid requirements and distribution strategies. On the basis of information gathered by the unit a number of consultants were employed to examine particular problems in greater detail. For example, following reports of a serious outbreak of hepatitis A in the Bihac pocket, a consultant water engineer was sent out to advise on methods of improving water purification and spent a week in the area, accompanied by staff from the unit. The unit was also deeply involved in a project to resupply microbiology laboratories in the area so as to improve diagnostic services.

DISCUSSION

A remarkable feature of the health situation during the first 2 years of the war in former Yugoslavia was the degree to which the local medical services, with assistance from aid agencies, limited the number and the size of outbreaks of communicable disease and prevented major epidemics. Local records indicate that the proportion of deaths due to war-related injury during that period was far higher than has usually been recorded in civil wars, in which disease is usually the greatest cause of mortality and morbidity.¹⁶

Although disease surveillance systems have been set up following natural disasters and in wars, these have not been a common component of relief programmes.¹⁷ Those established in areas affected by wars have been in developing countries and either in refugee camps¹⁸ or in areas where there were no existing surveillance systems and

where medical services were, at best, sparse. The situation in former Yugoslavia was very different, the comprehensive disease surveillance systems of the former republic still existing but having been disrupted to varying extents in many of the war-affected areas. Surveillance data were being collected but were not readily available to the aid agencies, nor were they being shared locally or nationally and there was a need for a system to overcome these problems.

The results obtained from the 4 arms of the health monitoring programme varied. Information was obtained from personal contacts when they were first approached but little thereafter, however many of these were in areas where communication was difficult or where contact was lost due to changes in the pattern of the fighting. Contact with government agencies was difficult and misunderstandings limited the flow of information. Some local government agencies were reluctant to part with some types of information, such as the number of ill or wounded individuals treated in a particular period, either because of a perceived possible military value or because higher authority forbade release. All these factors meant that the information received by the unit had to be treated with caution.

In order to compare affected areas and to predict possible widespread disease problems, data on infections should ideally be calculated as population-based rates. This requires regular reporting from identified sites and it was for this reason that attempts were made to establish a sentinel site system. This system never became properly established and the hope that the routine data necessary to monitor time trends would be obtained was not fulfilled. For the most part the results obtained by the system fell into the *ad hoc* category. There were several reasons for this including communications problems, difficulties of access, reluctance to report on the part of local medical staff and lack of resources for the project.

A great deal of work was involved in recruiting sentinel sites. Not all those originally chosen proved suitable when visited or were willing to assist. Those which provided data had to be visited at least 3 times before results were forthcoming. Occucani, which was close to Zagreb, was visited at least once a week by UN staff. In central Bosnia, where several days' travel was required just to reach the area and return, regular visits were impossible and even if visits were planned they were frequently aborted by outbreaks of fighting. The postal and telephone services in the war-affected areas were not functioning and the original intention was that surveillance data should be transmitted via the UNHCR satellite communications system. However, even though the UNHCR offices were usually close to the sentinel site, the local staff were understandably reluctant to give up any of their very limited spare time in taking data to these offices. Collection of the data had therefore to be undertaken by WHO staff or designated individuals from other agencies and this was often impossible to do regularly.

Lack of resources hampered the sentinel site programme. From October 1992 to July 1993 there was only 1 inter-

national member of the health monitoring team who was the only one who could cover the whole area and there was no such member from July to October 1993. WHO colleagues and staff of other agencies were most helpful, but the need for repeat visits to each site required the continued presence of WHO staff in an area or else designated (and remunerated) local staff. For much of the first year of the project the WHO had resident field officers only in Split and Sarajevo. Offices were subsequently opened in Zenica, Tuzla and Skopje.

Despite the lack of routine information from this type of source and despite the difficulties in applying rigorous sampling standards to the information that was obtained, the monitoring programme successfully built and maintained a reasonably detailed picture of the communicable disease situation in the war-affected areas. Information about most of the outbreaks recorded was received within 1 week; no large outbreaks were discovered weeks after the event (although undoubtedly many small outbreaks and clusters of disease were not detected) suggesting that the information gathering system, for all its *ad hoc* nature, worked effectively. The numbers affected by individual outbreaks were rarely known but a sufficient idea of the order of magnitude was usually available so that approximately the right amount of aid could be sent. Although sentinel data were not available to allow early detection of widespread outbreaks, the majority of outbreaks that actually occurred were localized and might well not have been detected by that type of system. As an example of the working of the system, the occurrence and approximate size (approximately 35 cases) of a typhoid outbreak which followed the fall of Jajce at the end of October 1992, was rapidly reported to the unit by aid workers in the area, allowing the WHO and other agencies to supply local doctors with chloramphenicol.

Of equal value was the absence of reports of some diseases. There was an expectation that the elderly would be particularly vulnerable to the extreme conditions and lack of food and outbreaks of pneumonia with large numbers of deaths were predicted. In the event, whilst there probably was an increase of deaths among the elderly, there was no evidence of a catastrophic increase, either in the reports from the UNCIVPOL or in those from local health officials.

The unit had an important predictive function. Searches of the literature on disasters and of the extensive health records maintained by the Yugoslavian Government before the republic became fragmented, made it possible to make predictions about what diseases could occur and therefore allow precautions to be taken. In addition, a special watch was kept for indications that such infections were occurring. For example, there was an expectation that diarrhoeal infections could cause problems, particularly for children. As a result, the WHO pre-positioned stocks of rehydration fluids and of a special medical kit designed to meet this type of emergency, at a number of centres around the country and was able to meet several such outbreaks effectively. Epidemics of louse-borne typhus had occurred in the area in the past and there were

regular reports of cases of Brill-Zinsser disease. This, together with the very large numbers of refugees with lice, highlighted the possibility of a typhus epidemic. Work by the unit, in consultation with medical entomologists from the UK (including a 2 week visit to sites throughout the war-affected areas), led to the development of a plan to combat such an outbreak, together with the placement of insecticide dusts and applicators at several sites in the area. There were several false alarms about typhus outbreaks occasioned by the fact that the word for typhus and typhoid is the same in the local language, and the unit was able to investigate and clarify these reports.

When routine data became available again late in 1993 and in 1994³ it became clear that the earlier broad view of the communicable disease situation in the war-affected areas obtained by the unit had been reasonably accurate. Dissemination of information was a key part of the programme. The items covered in the 'Health Monitor' were selected as the result of the monitoring programme, on the basis of discussions with local medical personnel and as a result of problems identified by WHO and NGO staff. The 'Health Monitor' was widely distributed, although distribution in the war-affected areas was limited by problems of access and resource limitations. Communication with recipients suggested that it was well received and it was known to have proved useful to aid workers as a source of information and for the health warnings that it contained.

This was one of the first attempts to set up an emergency health surveillance programme in a civil war in a developed country with a first-class medical system. Several lessons were learned.

- Adequate staff are essential if good data are to be obtained. This includes staff at base to analyse data and disseminate results and staff in the field. Field officers, who get to know their area and the staff of local health facilities, are an essential part of such a surveillance system.
- Great efforts must be made to create links with existing monitoring systems and to make an emergency system an integral part of local monitoring.
- Regular visits to health facilities are required if sufficient data are to be obtained for good predictions to be made and to build relationships with local staff.
- When international staff leave, adequate time must be given for them to introduce their replacements to the staff of the various facilities.
- Information flow must be a two-way process.

Was this programme a realistic option in this situation? Toole et al.¹² (p.1195) suggested that war and public health tend to be incompatible because the destructive nature of warfare prevents or inhibits the provision of adequate food and shelter, of clean water and sanitation and vaccination programmes. They pointed out that "in Bosnia Hercegovina epidemiology can be practised safely and reliably in very few areas hence the traditional documentation, monitoring and evaluation elements of disease prevention may be ineffective". Armenian¹⁹ (p.30), however, considered that epidemiological

action in wartime is possible but that "compromises must be made about scientific rigour and scrutiny because the immediate objective is service to the people in the fastest and most effective way". The experiences of the WHO Health Monitoring Team in the former Yugoslavia during 1992 and the first half of 1993 agree with the former and support the latter. Complex public health programmes and the detailed information-gathering possible in peacetime were not feasible but it was possible to gather information and to use this to formulate advice and supply appropriate medical aid.

The sentinel monitoring programme ended in June 1993 when the international staff involved left the former Yugoslavia. New international staff were appointed in October 1993 with the re-establishment of epidemiological reporting as one of their terms of reference. Although severe fighting was continuing at that time throughout much of Bosnia, considerable efforts were being made, away from the front lines, to re-establish the social infrastructure. The WHO decided not to revive the sentinel system but to use the 3 international staff available to support the rehabilitation of the pre-existing local epidemiological reporting services, the new WHO programme being a key part of this process,^{3,20} but the work put into the earlier programme was not wasted. The contacts made and the information about the health services that had been gathered were of great importance in the successful establishment of the new system.

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