Health intelligence in emergencies: which information and why?
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In mid-1999, almost 1.800 million people were living in countries at severe risk of, affected by or emerging from armed conflicts. The “complexity” of these emergencies does not end when a formal cease fire is signed or political elections are held. On the contrary, the transition is a particularly difficult and fragile situation. For instance, in Afghanistan like in other post-conflict countries, there is a patchwork of areas enjoying relative stability and others characterised by violence and insecurity. In this difficult environment, the challenge is to refocus international resources from emergency relief to development aid in order to sustain reconciliation and stability.

In situations of social and political instability, systems for routine information are the first to collapse. A dilemma confronting humanitarian and development actors in Afghanistan and in other unstable countries, is that decisions need to be made in the absence of health intelligence. The first, and most difficult decision concerns which priority health information is needed, and how to monitor trends and support the shift in priorities and resource allocation.

The health sectors in countries in post-conflict situations have some common characteristics. Afghanistan is no exception (see Health in Emergencies issue 13: Countries in Transition). The international community pledged earlier this year in Tokyo to provide resources to rebuild the country. While the Ministry of Health (MoH) has built some credibility, many donors maintain a structural rehabilitation than in investing for systems development and capacity building. Surveys and assessments tend to reflect this bias.

NGOs most often need information for short-term relief-type projects. They will look for information that provides baseline values for programmatic indicators. Several NGOs in Afghanistan undertook household surveys, often of good quality, but limited to the project’s catchment area. Most program interventions are of too short a duration to demonstrate public health impact (i.e. change in mortality and morbidity), too local to benefit a large part of the population, or pilot projects too expensive to be scaled up to regional or national scale.

International agencies, like UNICEF, WHO, UNFPA and others are more interested in epidemiological data and proxy indicators that reflect possible change in morbidity and mortality (e.g. vaccination coverage, service statistics, etc.). The information looked for is often more dictated by the global indicators of the agency than by the information gaps in the country. The immediate importance of the results of mortality surveys seems more directed towards creating a shock effect in the international community with dismal figures, than providing new insights into disease specific mortality.

In a country like Afghanistan, with no real health infrastructure, with probably more than 60% of the population unable to access the most basic health services, one already knows that women and children are the most vulnerable group, prone to diseases that are largely preventable and easily treated with unsophisticated means. For children those are the vaccine preventable diseases, acute respiratory infections, and diarrheal diseases. For women, pregnancy and childbirth related problems take a heavy toll. For both groups, specific conditions will be exacerbated by chronic malnutrition and micro-nutrient deficiencies. For all of these problems, interventions with proven effectiveness exist. While program managers will want exact baselines to measure impact, a government does not necessarily need exact proportions to know that these are priorities to be addressed.

The Ministry of Health (MoH) is the prime stakeholder in this situation and is interested in information, relating to a medium term plan for equitable health service provision and financing.
Health information in emergencies: an overview of critical issues

The recent OCHA Symposium on Best Practices in Humanitarian Information Exchange concluded that the greatest challenge is “creating a culture of information sharing that promotes the systematic collection, use and free flow of data, information and ideas, facilitates informed decision-making and builds trust and commitments among stakeholders”. The conclusion is so general that few would object to it. However, reality is more complex. First, information and decisions in humanitarian assistance are politically charged and involve difficult compromises. Second, collecting and using information in an effective way is difficult. This is particularly so in emergencies.

Does information support decision-making? Good information is a necessary prerequisite to, but not a guarantee of, rational decision-making. It is assumed that accurate, timely and relevant data are gathered, processed and transmitted to decision makers, who then choose the “best” options. Uncertainty, complexity and competing pressures, however, disprove this linear model. The modern theories of decision making stress that only in an ideal world does information translate automatically into “sound” decisions. Decision making involves political and personal values: “priority setting is ultimately concerned with power relations and value judgements”, and “any choice of output indicator as a basis for decision-making, necessarily incorporates value judgements”.

In a heated environment with many players and conflicting interests, a neutral use of information is impossible and decision-making can become messy. All humanitarian crises are political and the decision for an agency to engage is mainly based on political grounds as well as on contextual information. Mortality or morbidity indicators alone do not trigger action. They will be critical in guiding operations, monitoring the performance and in deciding when it is time to shift from an emergency to an ordinary modus operandi. Furthermore, uncertainty and instability are common features of crisis, and it is difficult to factor them in decision making.

Types of uncertainty:

- Variation: cost, time and performance levels vary randomly, but in a predictable range
- Foreseen uncertainty: a few known factors will influence the project, but in unpredictable ways
- Unforeseen uncertainty: one or more major influence factors cannot be predicted
- Chaos: unforeseen events completely invalidate the project’s target, planning and approach

De Meyer A., Loch CH and Pich MT, 2002

Information can also be deliberately non-used: a frequent strategy in difficult contexts. Furthermore, the first requirement for an early warning indicator to be of any value is for it to be discussed by decision-makers. But how realistically can a government in crisis be asked to discuss its mistakes or its own eventual demise?
We can conclude, therefore, with Sen\textsuperscript{4} that informational exclusions are as important as information for making judgements and that depending on the theory of ethics/justice that we (implicitly or explicitly) adopt, we will use one selected informational base and exclude another.

Paralysis by Analysis is a special case of non decision-making, due to the perceived lack of information\textsuperscript{5}. It results from a desire for perfection but it can block necessary action. For example, where it is known that malaria is a major problem, estimating incidence rates does not need to be a precondition for anti-malaria activities. The opposite end of the spectrum is Extinction by Instinct\textsuperscript{6}: pressures to act or “field experience”, force decisions with no systematic analysis, like undertaking a rapid field assessment without obtaining previous security clearance. In a crisis, it is usually the latter mechanism that prevails: “action is always ahead of understanding”\textsuperscript{7}. Sometimes, both mechanisms coexist; for example donors and NGOs take action while the national authorities decide to wait, or the opposite happens. Different perceptions of urgency, different biases and/or available resources and/or technical capacity can explain this lack of synchronisation.

Too little data or too much? In emergencies, the information base is generally weak and fragmented across different players; access and communication are difficult, and the collection and analysis of data clash with other priorities. Some say that the strongest indicator of a crisis is the lack of information, often in spite of a wealth of unused data. Even in a chronic emergency like Afghanistan, health data, although incomplete, of variable quality and scattered among different players, were available. However, the capacity to compile them from different sources, judge their accuracy and make sense of them in a comprehensive way\textsuperscript{8} seemed missing.

Others contend that often the problem is not the lack of data, but their excess\textsuperscript{3}. Even where “easy” process indicators are available and appropriate\textsuperscript{9}, expensive epidemiological data is collected and analysed to measure the health impact of programmes. Lists of notifiable diseases are often redundant, a “laundry list of most diseases known to mankind”\textsuperscript{10}. For example, the Health Information and management system in Afghanistan, now under review, includes more than 30 diseases.

“Data do not speak for themselves”\textsuperscript{11}. They must be selected, processed and put into context to become intelligible and useful. The designers of information systems often disregard the fact that many decision-makers are generalists, for whom health information is useful only if it is simple and complements information from other sectors. Only if there is an intersectoral frame of reference, can decision-makers understand both the needs in the field and each organization’s capacities and then effectively coordinate with the partners.

How disaggregated should the information be? A crucial aspect confronting the designer of an information system is the level of aggregation of data at the different steps of the path linking the producer to the different users: the right information should be transmitted to the right manager in the right amount and at the right time. This implies that management structure, data needs and flow must be analysed before designing any information system.

It is common wisdom that information should be as disaggregated as possible, and therefore analysed and used close to where it is collected and action is needed. Decisions that are taken far away from where the emergency unfolds are prone to errors, also because contextual factors are missed. Aggregate information can hide the impact of the emergency on particular areas or groups, or obscure inequalities in the response. Further, the time for transmission of data from the periphery to the centre can imply that response (e.g. to an outbreak) is implemented too late. On the other side, information at local level is useful only if capacities for decision and action are decentralised. Furthermore, the end user who sits in a western capital, and is requested to make macro decisions on the allocation of resources, only needs aggregated information.

Timely or accurate information? In most emergencies, timeliness must take precedence over accuracy, and life-saving decisions are taken on the basis of incomplete data. In fact, the opportunity costs incurred in improving information before taking urgent action are high as the graph shows.

An opportunity cost would be to delay the implementation of and activity which could save lives just to improve accuracy of data which already indicates a health problem. Also accuracy has a different weight in emergencies. Lack of technical skills and/or security conditions often impose the use of quick and dirty information. In unstable situations, precise...
estimates can be a waste, “little more than an exercise in the quantification of misery.”\textsuperscript{13} : populations move, an outbreak can flare up, the access to food can decrease, and the situation on the ground may change by the time the findings of a survey are available. Provided that no strong biases are introduced, findings from rapid assessments, which may not satisfy an epidemiologist, are acceptable for a health manager under pressure. They can, at least, help decide that more investigation is needed. “Precise quantification of incidence or prevalence rates rarely influences the choice of programmes offered by the health services”\textsuperscript{14}.

Does information support coordination? Another piece of common wisdom is that good information helps coordination, and that good coordination improves information-sharing. One of the most-used definitions of coordination includes information management: “coordination is the systematic use of policy instruments to deliver humanitarian assistance in a cohesive and effective manner. Such instruments include strategic planning, gathering data and managing information.”\textsuperscript{15}

However, information use and coordination are processes that are subordinate to the goal of achieving necessary changes.\textsuperscript{16} They should not be regarded as positive outcomes per se. In Afghanistan, it was observed that “rather than information ‘sharing’, there has been much information ‘airing’ in which news of projects, problems or opinions are spoken but nothing is systematically done with the information, either in terms of collection, analysis, dissemination or action”\textsuperscript{17}. Coordination meetings can easily turn into political fora where no decision is taken, but simply information is used to provide its “owner” with a power position.\textsuperscript{18} In other cases, operational agencies, which are used to rely on standard procedures, may not see the added value of using and sharing information, and prefer to operate “by the(ir) book” (e.g. establishing therapeutic feeding programmes, without waiting for evidence of malnutrition).

Conclusions

There are no universal prescriptions for improving information management in emergencies, because information needs and capacity to use it vary from one crisis to another. There are, however, a few general hints that can help guide action and avoid frequent mistakes.

The lack of information is the best “piece of information” for making decisions in an emergency. The manager, at least, knows that (s)he has to investigate further, use all the sources, and all the available local intelligence. If the issue or the geographical area on which no information is available are important, (s)he knows that something is wrong.

“Brand”, bad data should be not be used. In the scarcity of data, indicators attributable to an authoritative source are often used and reused, even if it they are known to be flawed or of little use. Uncritical use of brand sources can lead to the decision of not looking for more useful information.

Information does not come for free, particularly in a crisis. The features of the information that is being sought (quality, relevance, completeness, timeliness, accuracy) need to be related to the use of this information, the capacity of the decision makers to use it and the resources that are in place for implementing those decisions. Restructuring information systems is a medium/long-term endeavour that should not divert energies from more pressing priorities. Too often, newcomers start new data gathering schemes, bypassing existing systems. Instead, squeezing value from existing data can often provide better returns.

Data out of context cannot produce information. Knowledge of local context is critical to interpret data and produce information. Historical trends, seasonal variations, specific early warning signs are all important for understanding health data and producing good intelligence.

Non-use and quality of information: a chicken and egg problem which has a solution. Only using the information, triangulating it with other sources, checking its internal consistency and comparing it with other standards allows the identification of patterns of weaknesses in data, and the opportunity to improve it. Too often not using the information because it is of low quality is a comfortable excuse for not probing it. Dismissing available information as unreliable and useless can become a self-fulfilling prophecy: sooner or later this information will become useless.

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Endnotes

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\textsuperscript{17} Bower H, 2002
\textsuperscript{18} Green A, 1999
The WHO Health System Framework: can it help in complex emergencies?

Countries in complex emergency or in transition are extreme examples of different and co-existing realities: a leopard skin of areas, some relatively secure, well-serviced and well-known, others in total disarray and/or inaccessible. Health information is fragmented and rarely presented in a systematic way. Especially scarce is information on how well the health systems function and what resources exist to improve their performance. Very little can be consolidated in a meaningful picture of the country’s overall health status and health systems. When available, this information is usually limited to describing how these systems were structured and how they performed before the crisis.

The start of health sector recovery is a good time for member countries to take a step back and consider what strategies are more appropriate and cost-effective in different settings to collect information useful to decision makers. This requires in the first instance addressing the following questions:

- What information already exists and how useful is it?
- What do decision-makers really need to know to make health policy decisions that lead to better health and health system performance?
- Which are the available techniques for minimizing the effort and cost of filling important information gaps?
- How can findings be more effectively communicated to decision-makers and to the public. What factors enhance the chances of their use?

When planning for reconstruction and recovery, decision-makers need to quantify the differences in health system performance before and after an emergency, identify factors that influence it and articulate the most appropriate policies. There are considerably fewer systems-wide approaches that can be used to inform more strategic decisions.

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The knowledge-driven model of decision-making

Adapted from Van Lohuizen, 1986
Health Intelligence in Emergencies

Health intelligence can be described as embracing two major chapters of activities:

- a) to identify, collect, integrate, analyse, and synthesize information on the conditions under which health problems occur and how they can be prevented
- b) to monitor events in the world and detect situations where preventative measures should be implemented.

The first activity seeks to build a “knowledge base” on why and under what conditions health problems occur and how they can be prevented. The second looks for the occurrence of these conditions in the world so that preventative measures can be put in place. The former consists mostly of literature reviews, formal analyses and expert consultation; the latter implies the establishment of early warning systems.

Both activities call for organized, systematic, formal mechanisms of identifying, collecting, analysing, and disseminating data. While these formal mechanisms are often described as the “health intelligence system” there is an additional, frequently more important but less well recognized source of health intelligence - the informal sources of information that often develop around the formal mechanisms.

One important informal source that can develop around a formal mechanism are the authors identified in formal literature searches; they can frequently provide broader expertise. A second informal source includes the participants in early warning systems who may have access to information outside of their formal responsibilities therein.

In both cases, sources that are part of a formal mechanism provide information outside of the formal mechanisms. How can such informal sources be leveraged?

One method is to actively seek and involve informal sources - formalize the informal. A mechanism can be established for contacting authors of publications, evaluating their potential contributions, and involving them in health intelligence; in essence establishing a network of experts for future consultation.

The participants need to be briefed as broadly as possible regarding the goals and scope of the health intelligence activity and on collaboration mechanisms. These can include formal consultations, participation in health intelligence unit activities - reviews, analyses, etc. - and periodic information on relevant activities and events. The main emphasis is on maintaining contact with the sources so that if relevant information comes to light the participants will be more likely to share.

For participants in formal early warning systems, an understanding of the scope and goals of the health intelligence activity that is broader than their formal responsibilities is important. They will also need mechanisms for reporting data that are outside of the normal channels and the authority to do so. On the receiving end, there must be mechanisms for processing data received outside the formal system - what to do, who to contact, what to pass on.

Information received through informal sources, while often crucial, arrives in an ad hoc fashion. It is important that the mechanisms for dealing with it be as simple, clear and “light” as possible. The intent is to cast as broad and “sensitive” a network of informal sources rather than establish rigorous and “specific” system. The emphasis would be on briefs on unexpected information rather than detailed confirmation of existing states of affairs. At the receiving end, the follow-up should be on evaluation and synthesis rather than analysis. While informal reports can lead directly to action, more frequently they will trigger further assessment and investigation.

Perhaps the most important features for leveraging informal sources is for key people to know that the intelligence unit: a) is interested and b) will use the information. The interest can be promoted through the early warning networks and the scientific/technical community. The previous use of the information can be demonstrated by acting on information received outside of

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If one takes a consistent preventative approach, health intelligence should look at what keeps people alive and healthy, rather than focus on what makes them sick.

Analysing Disrupted Health Sectors

In the wake of complex emergencies, when it comes to plan for health recovery, big mistakes are frequent and valuable opportunities are missed.

WHO’s departments of Emergency and Humanitarian Action and Health Financing and Stewardship are working on a manual of how to carry out a review of a disrupted health sector, for reconstruction purposes. Dimensions to be studied include the general country context, health status and needs, and a detailed review of the health sector including: evolution, actors, structure, inputs, delivery processes/management systems, outputs, trends, policies, underlying patterns and priorities for action.

The manual is intended for public health professionals with some field experience. It will be practical and action-oriented. It will discuss in detail how to collect, clean, validate, compile and make sense of data, using real-life examples, discussing common patterns and pitfalls of analysis. The manual will include exercises, annotated essential references, a glossary of definitions, concepts and indicators and examples of health sector profiles.

Tables with figures will provide terms of comparison for various war-torn environments.

Work has started and is expected to continue during the first half of 2003. Field testing is foreseen during the second half of the year.

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Why surveillance of risk factors of non-communicable diseases?

The risk factors of today are the diseases of tomorrow. The goal of Non-Communicable Disease (NCD) surveillance is to monitor emerging patterns and trends in major non communicable diseases, and to measure effectiveness of prevention interventions. Governments need up-to-date NCD information for analysis, planning and evaluating policies, preventive programs and health services. Many developing countries are seeking guidance in establishing surveillance. WHO proposes to collect and report information on some key NCD risk factors which are linked to many chronic conditions. All of these risk factors are modifiable.

Filling the gaps in NCD risk factor surveillance: The WHO STEPwise approach

WHO has developed standardised materials and methods for NCD risk factor surveillance to allow countries to fill in the information gaps identified.

STEPS is the WHO recommended NCD surveillance tool. It offers one common approach to defining core variables for surveys with the goal of achieving data compatibility over time within and between countries. STEPS offers an entry point for low- and middle-income countries to get started in NCD activities. It is a simplified 3 step approach providing standardized materials and methods as part of technical collaboration with countries, especially those that lack resources. Once step 1 is in place, countries can build upon it.

Aggregate data on core risk factors will contribute to the WHO Global NCD InfoBase, currently under development. This database is a resource that will hold up-to-date, country-level, risk-factor data for each of the 192 WHO member states. Summary profiles of available country-level data will be updated continuously and published at regular intervals. The first SuRF Report (Surveillance of Risk Factors) is due at the end of 2002.

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A surveillance system for communicable diseases

Emergency situations require simple, reactive systems for monitoring key indicators such as mortality and major epidemic-prone diseases. These systems, developed during the emergency should evolve into a national surveillance/early warning system when the situation permits. During the last four years, the WHO/CSR team Lyon, has collaborated with various partners to establish early warning systems in several complex emergencies. In 1999, Albania faced a severe economic and social crisis. From March to June, 442,000 Kosovar refugees arrived in Albania. More than half of them were hosted with Albanian families, the rest being settled in camps and collective centres. The national surveillance system, which included 73 diseases, was unprepared to face this situation. An emergency system was set up to detect and control potential outbreaks among refugees.

The events under surveillance were those that constituted a hazard for outbreaks in the context of a refugee crisis (diarrhoeas, acute respiratory infection (ARI), scabies, measles and meningitis). Every week health units caring for refugees reported to the district epidemiologist new cases and deaths on a standard form which was transmitted to the National Institute of Public Health (IPH) in Tirana.

Standard analyses included computation of indicators such as numbers of cases and deaths per week, number of units reporting, and number of districts reporting. The IPH prepared weekly reports including a summary of the consultations for the week, the proportional morbidity, and specific comments. After the detection of suspected cases of measles, an accelerated immunisation campaign was carried out among Kosovar and Albanian children in Kukes and Has districts.

Clusters of suspected cases of diarrhoea with blood, hepatitis, and measles were detected in specific refugee settlements. Active case finding and visits to the field were conducted to assess the situation and to take appropriate control measures. The high sensitivity of the syndrome-based surveillance system led to several false alerts, but the system was designed to facilitate early warning. Medical staff found the system acceptable because of its simplicity: only diseases with the potential for producing epidemics with high morbidity and mortality were monitored.

The development of epidemiologic instruments based on a syndrome approach led the WHO/CSR Lyon programme to establish early warning systems in several complex emergencies. These systems, developed during the emergency, should evolve into a national surveillance/early warning system when the situation permits. In Iraq, WHO/CSR Lyon is presently working to set up an early warning system, with the existing national surveillance system. The system is focusing primarily on epidemic and emerging infection surveillance, but can easily evolve into a comprehensive early warning system.

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Collective violence and health: available information

One of the groundbreaking aspects of the World Health Organization’s World report on violence and health is that it draws together both the available findings, and data sources of relevance to all forms of violence. Beyond this, it organizes these findings into a common ecological framework allowing one to consider both the prevention and the roots of violence within this framework.

What follows below are comments relating to data sources and findings of relevance to one form of violence, namely, collective violence. Collective violence is defined within the World report on violence and health as ‘the instrumental use of violence by people who identify themselves as members of a group - whether this group is transitory or has a more permanent identity - against another group or set of individuals, in order to achieve political, economic or social objectives’.

The central problem with commenting on the public health burden of collective violence is the lack of reliable data. National reporting systems and assistance organisations in settings affected by collective violence are one source of information. They are complemented internationally by research institutes and organisations which gather data on conflicts, reported torture or human rights abuses. A range of research institutes collect and analyse data on the impact of conflicts and violence. The Stockholm International Peace Research Institute (SIPRI), has annual reports on the impact of conflicts, and the Correlates of War Project of the University of Michigan is a well-known source on conflicts from the 19th century to the present day.

Other data (e.g. on torture and human rights abuses) are gathered by national human rights agencies and international NGOs: African rights, Amnesty International and Human Rights Watch; in the Netherlands, the interdisciplinary research programme on root causes of human rights violations monitors deaths and other outcomes of abuses worldwide.

The validity of such data is imprecise. Most poor countries lack reliable health registration systems, making it particularly difficult to determine the proportions of deaths, disease and disability that are related to conflicts. In addition, complex emergencies invariably disrupt existing surveillance and information systems. These caveats do not mean that one can say nothing about the global public health burden arising from collective violence, only that one needs to interpret available information with caution. Indeed, an increasingly rich body of literature examining both causes and consequences of collective violence is emerging and efforts have gone to considerable lengths to account for deficiencies in available data sets.

Direct effects. It is perhaps best to consider these effects as either arising directly or indirectly as a result of violence. In terms of direct health effects, the World Health Report 2001 estimated that conflicts accounted for over 310,000 deaths during 2000 with over half of these occurring in sub-Saharan Africa. Men aged 15–44 accounted for well over a third of mortality. While estimation is difficult, it is likely that non-fatal injuries related to conflict are substantial. A good source of primary data in this area is of course with the Military. Casualties among armed forces are recorded according to prescribed procedures and are likely to be fairly accurate. A review spanning the 20th century found that the ratio of people wounded to those killed during conflicts range from 1.9 to 13.0 with an average of around 3 people wounded for every individual killed. The 1990 Global Burden of Disease estimated non-fatal outcomes attributable to conflict represented approximately the same global health burden as fires and half that of road traffic injuries.

Indirect effects. A wide variety of indirect effects arise from the disruptive social changes accompanying collective violence. Collective violence typically creates population displacement, disrupts social infrastructure such as health care systems and halts food production and distribution networks. Frequently, systems and infrastructures that are critical for the survival of civilian populations (lifelines) are specifically targeted in conflicts through attacks on health workers, and destruction of food and water distribution complexes. Research in these settings has shown a significant reduction in indicators such as vaccination status which accompany collective violence.

While it is difficult to estimate with precision the burden of health effects that are attributable to these changes, available evidence suggests they are substantial. Crude mortality rates in displaced populations have been reported at 5 to 12 times above baseline rates, and were substantially higher among those fleeing the Rwandan genocide who arrived in Goma. The primary causes of death in these circumstances include communicable diseases and malnutrition. But over and above morbidity and mortality related to communicable disease and malnutrition, a broad range of other health outcomes have been documented in populations exposed to collective violence, including sequelae in the domains of psychosocial, disability and reproductive health. The risk of HIV/AIDS in Africa is thought to have increased considerably as a result of civil wars.

It also seems reasonable to expect that these indirect health effects would not be limited to the period during which violence is occurring. A recent statistical assessment using cross sectional data indicates that the total disability adjusted life years lost in 1999 due to the indirect effects of collective violence occurring between 1991 and 1997 was about the same as the number lost through direct effects of collective violence in 1999.

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Global Outbreak Alert and Response Network

WHO continuously monitors disease outbreaks through the Global Outbreak Alert and Response Network. This Network was formally launched in April 2000 and links over 72 existing networks and institutions around the world, many of which are equipped to diagnose unusual agents and handle dangerous pathogens. It provides an operational framework to link the expertise and skills needed to keep the international community constantly alert to the threat of outbreaks and ready to respond.

The Network has four main tasks:

1. Epidemic intelligence and detection.
   - Raw intelligence gleaned from all formal and informal sources is converted into meaningful intelligence by the WHO Outbreak Alert and Response Team, which determines whether a reported disease event constitutes a cause for international concern. Each weekday morning, the team meets to review incoming reports and rumours, assess their epidemiological significance and decide on the actions needed. A detailed report on suspected and verified outbreaks is distributed electronically at the end of the day to a limited number of WHO staff around the world. The combined system for detection and verification is powerful, wide-ranging and highly efficient. From July 1998 to August 2001, WHO verified 578 outbreaks in 132 countries. (Please see “Disease Outbreak News” available on the WHO web site at www.who.int).

2. Outbreak verification.
   - Raw intelligence gleaned from all formal and informal sources is converted into meaningful intelligence by the WHO Outbreak Alert and Response Team, which determines whether a reported disease event constitutes a cause for international concern. Each weekday morning, the team meets to review incoming reports and rumours, assess their epidemiological significance and decide on the actions needed. A detailed report on suspected and verified outbreaks is distributed electronically at the end of the day to a limited number of WHO staff around the world. The combined system for detection and verification is powerful, wide-ranging and highly efficient. From July 1998 to August 2001, WHO verified 578 outbreaks in 132 countries. (Please see “Disease Outbreak News” available on the WHO web site at www.who.int).

3. Real time alert.
   - A network of electronically-interconnected WHO member countries (192), disease experts, institutions, agencies, and laboratories is kept constantly informed of rumoured and confirmed outbreaks. In addition, WHO maintains and regularly updates an Outbreak Verification List, which provides a detailed status report on all currently verified outbreaks. WHO also posts situation reports on verified outbreaks on its web site. (Please see “Disease Outbreak News” available on the WHO web site at www.who.int).

4. Rapid response.
   - When the Outbreak Alert and Response Team determines that an international response is needed to contain an outbreak, partners in the global Network provide specific support, including on-the-spot investigations, confirmation of diagnosis, handling of dangerous (biosafety level IV) pathogens, case detection, patient management, containment, and provision of logistics in the form of staff and supplies. Investigative teams are prepared to arrive at an outbreak site within 24 hours. Since early 2000, WHO and the Network have launched effective international responses to outbreaks in Afghanistan, Bangladesh, Cote d’Ivoire, Egypt, Ethiopia, Gabon, Kosovo, Saudi Arabia, Sierra Leone, Sudan, Uganda and Yemenn. For further information please contact M. Ryan at ryanm@who.int

Surveys in emergencies: the use of mortality and nutrition indicators

The measurement of mortality and wasting has been used extensively for assessing the severity of an emergency, identifying needs, prioritising interventions, monitoring the impact and for advocacy purposes. There are several advantages in the use of the two indicators: they provide a concise picture of the status of a community, standard methods exist for collecting data, the surveys are relatively quick and inexpensive, data analysis is made easy by standard software packages and the interpretation is straightforward due to the existence of internationally accepted cut-offs and threshold levels. There are, however, limitations. They include a limited validity and reliability due to sampling techniques and the susceptibility to selection and information biases. Another constraint is the limited generalizability of the findings of a survey. The area where a survey is conducted may be chosen because it is safe enough for health workers to undertake the survey. This may imply that access to food, services, etc. is better. Sometimes an area is chosen because more information is available. But information is often associated with better overall conditions. On the contrary, an area may be chosen because it is known to be more severely affected. In this case the health status will be worse than in areas on the edge of the emergency.

Another problem has to do with the volatility which characterises most emergencies. While anthropometric data provide a static picture of the present nutritional situation (i.e. they are a cross-sectional, point prevalence estimate), mortality data are usually collected retrospectively and, therefore, represent an estimate of a past risk. As this is a dynamic measure, the outcome may have either improved, remained stable or worsened. This can create problems in the interpretation of mortality: in an emergency changes in the determinants and mortality experience can be quick. From the response point of view, once the results of the survey become available, it may be too late for implementing effective interventions.

For further information please contact A. Colombo at colomboa@who.int
Health Intelligence in Emergencies

Rapid health assessments in emergencies: an epidemic\(^1\) of methods?

Since the EPI cluster method was developed by WHO in 1981, a number of rapid techniques have been developed for health measurement and programming. Their rationale, to obtain quick information, and the need to overcome some of the shortcomings of traditional epidemiology in the field, have been promptly recognised as particularly relevant in emergencies\(^2\). WHO published in 1990 a booklet on rapid health assessment (RHA)\(^3\), which contains standardised protocols, that are disaster-specific and flexible (they can be adapted to local information needs). The protocols identify early warning events that can accelerate the recognition of an emergency and the information needs. The protocols identify early warning events that can accelerate the recognition of an emergency and the information needs. Since then, instruments for RHA have proliferated, with UN agencies and NGOs developing their own protocols and tools (i.e. UNHCR, IFRC, MSF, UNICEF, OFDA, etc.). The multiplicity of techniques for RHA (see table below) and of data-gathering and reporting tools is justified by different information needs relating to: the type of disaster, the target beneficiaries, the local conditions in which agencies operate (security, access, etc), the composition of the assessment team and its technical skills mix, etc.

As a result, however, the comparability of findings from different assessments in the same area suffers, as well as consolidating them into a broader picture. Also, reaching an early consensus between different agencies on what critical information to collect and how, often requires time-consuming negotiations and compromises. There can be also political pressures to disprove the emergency or underestimate its impact (e.g. when a cholera epidemic is suspected) or, conversely, to inflate the figures of victims or the extent of damage (e.g. to obtain more aid), which can influence where and how the needs assessment is carried out and how widely its findings are circulated. The overarching difficulty is, however, methodological and intrinsic to the RHA goal. The need for quick information and the difficult field conditions prevent using formal epidemiological techniques: validity and precision must be sacrificed for sake of speed, simplicity and cost\(^4\). In order to compensate these losses, RHAs have to rely on extensive use of triangulation of different sources, combination of qualitative and quantitative methods and utilisation of proxy indicators. The limitations of RHA need to be carefully considered when data are interpreted and filtered back to decision-makers: the dangers of erroneous conclusions can delay or even block the response when it is badly needed or, conversely, can result in waste of precious resources\(^5\). Training in RHA is only a partial solution for overcoming these risks: making sense of poor data in the chaos of an emergency requires field experience and local knowledge of the context for identifying trusty sources and interpreting findings. This does not detract from the advantages of making available standard protocols and templates, like the one available at the WHO/ EHA website (www.who.int/disasters/sitrep.cfm), which aims at helping field data gathering and reporting in a quick and standardized way. Other efforts in this sense are under way: WHO is in the final stage of producing two manuals (An Introduction to Management in Emergencies and an Emergency Manual for the Wester Pacific Region), which extensively cover RHA in emergencies.

For further information (including complete list of references) please contact A. Colombo at colomboa@who.int

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**Endnotes**

2. Guha-Sapir D, 1991
3. WHO, 1990 revised in 1999
5. Collins S, 2001

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<table>
<thead>
<tr>
<th>Type</th>
<th>When</th>
<th>What</th>
<th>How</th>
</tr>
</thead>
</table>
| Rapid reconnaissance | Immediately after a disaster: as soon as it is possible to enter the area | A quick, preliminary inspection of the disaster area                     | • Satellite imagery  
|                    |                                            |                                                                       | • Overflights  
|                    |                                            |                                                                       | • Mapping  
|                    |                                            |                                                                       | • Drive/walk through  
| Rapid Health Assessments | As soon as it is possible to do some work in the area to the area | A quick collection of information to confirm the emergency, measure the impact, identify health needs and guide response | • Visual inspection  
|                    |                                            |                                                                       | • Consultation of medical records  
|                    |                                            |                                                                       | • Interview of key informants  
|                    |                                            |                                                                       | • Rapid surveys (MUAC, etc)  
| Surveys            | When the situation stabilises and response has been activated | A detailed study in which information is systematically collected in a sample of population (morbidity, mortality, nutrition, KAP) | • Sampling (random)  
|                    |                                            |                                                                       | • Interviews and/or measurements  

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**Notes:**

- RHA: the rapid but structured collection of information to determine the impact of an event, identify the basic needs of the population that require immediate response, and define the aspects and the areas on which more detailed investigations should focus. Both objective and subjective information is considered.

- Ockwell, 2002
Do biases matter in emergencies?

Validity: the degree to which a measurement measures what it purports to measure

Precision: the quality of being sharply defined or stated (ibidem); the ability of a measurement to give a very similar result with repeated measurements of the same thing

Losses in precision are not an important issue in Rapid Health Assessments (RHA), where the main objective is to determine if there is an emergency and a response is urgently required: imprecise estimates do not change a course of action. Validity, instead, is crucial for guiding action. In fact, biases, that affect the validity of an assessment/study, may result in wrong decisions: at the worst, avoidable deaths or suffering, at the best waste of resources.

RHAs seldom use random sampling techniques; therefore, they are particularly susceptible to biases. On the other side, being predominantly descriptive (i.e. not aiming to draw causal inferences) they are protected from other biases that affect analytical studies. A bias that is particularly relevant to assessments in emergencies is the survival bias, which occurs when the crisis is so grave that no one remains alive or meets the eligibility criteria to be included in a survey. It has been alleged to play a role in underestimating the mortality in Somali refugee camps in late 1980’s and, more recently, it was accounted for in the IRC mortality studies in eastern Democratic Republic of Congo. Dealing with biases is first of all a matter of being aware of them when planning the assessment, collecting the data and interpreting the findings. The literature on bias is extensive; detailed catalogues of the kinds of bias that may be encountered are provided by Sackett and Choi and Pak. A selected choice of the most relevant types of biases in emergency assessments, derived from the above sources, is presented in the following section.

Epidemiological surveillance in disasters: a new PAHO publication

This guide responds to a need in the countries of the Latin American region and the Caribbean to provide guidelines and directives to improve epidemiological surveillance in disaster situations, especially at the local level. The objectives of the booklet are to orient the readers on the basic information needs for epidemiological surveillance in disasters and to facilitate the empowerment of local health authorities.

The book is a practical tool; open, flexible and dynamic. It will be enriched with new experiences both from national and local level, to ensure more efficient control and reduction of the negative effects from disasters.

Currently available in Spanish only, with the title Vigilancia epidemiológica Sanitaria en situaciones de desastre, Guía para el nivel local, the book can be obtained through WHO/PAHO at disasters-publications@paho.org

Selected biases

- detection bias: caused by errors in methods of ascertainment, diagnosis or verification of cases
- generalisation bias: caused by errors in generalising study results to people outside the study
- migrator bias: migrants may differ systematically from residents of an area (e.g. IDPS, refugees when compared to residents)
- proxy respondent bias: for deceased cases, soliciting information from proxies (e.g. family members) may result in differential data accuracy (e.g. in verbal autopsies)
- referral filter bias: due to referral from primary to secondary/tertiary care, the concentration of rare and/or more severe cases may increase (e.g. most severe cases of malnutrition in specialised hospitals)
- wrong sample size bias: too small samples can prove nothing; too large samples can prove anything

For further information and complete list of references, please contact A. Colombo at colomboa@who.int

Endnotes

1. Last J, 2001
3. Last, see 1
4. Sackett DL. Bias in analytical research; Journal of Chronic Diseases, vol 32, 51-63, 1979

Different information for different purposes

Complex emergencies are difficult and politically loaded contexts, where updated and thoroughly consistent information is essential for local, regional and global use. Clearance procedures and delegations of authority must be established to guarantee timeliness, accuracy and consistency. Different purposes require different characteristics of information. In general, and with a lot of salt:

1. Information “for action” must be swift and compelling. On www.who.int/disasters, WHO proposes a template and instructions for assessment/situation reports. Each country head of station/programme must have sufficient delegation of authority to clear and immediately circulate the situation report among sister agencies in the field, and to regional and HQ offices.
2. Information “for services and image” must be swift and technically accurate; procedures must be arranged between field and HQ (regional offices where this applies) in order to clear press releases, programme briefs and technical fact sheets in a timely manner and respecting all areas of competencies.
3. Information for “resources” must be timely, accurate and comprehensive; a routine must be in place for monthly progress reports to be produced at field level and shared with HQ (regional offices where this applies) and donors.
The Geographic Information Support Team (GIST)

The UN inter-agency Geographic Information Support Team (GIST) has worked cooperatively since 1997, and has been instrumental in promoting the use of geographic data standards and GIS technology in the collection and exchange of operational information in support of humanitarian relief. The GIST is a group of technical experts that includes geographic information focal points with humanitarian responsibilities.

The GIST seeks to enhance the use of geographic information from the side of humanitarian agencies and donors by:

• Improving information flow and presentation
• Providing a forum for geographic and geo-referenced information and data exchange
• Developing and promoting the use of techniques and standards to enhance data and information coordination.

The overall objective of the initiative is to improve emergency preparedness and response. The GIST promotes the use of simple, common standards in collecting and reporting humanitarian related information – a concept known as SHARE (Structured Humanitarian Assistance Reporting).

The GIST has facilitated unprecedented cooperation in the face of humanitarian emergencies. In late 1999 and early 2000, the GIST work in Kosovo was recognized as having a significant role in supporting the collection, coordination and exchange of information to strengthen humanitarian assistance. More recently, the GIST was the major actor in collecting data, and satellite imagery to assist in the relief efforts in Afghanistan, Goma and the Democratic Republic of Congo.

With the technical support of the GIST and generous donor assistance several Humanitarian Information Centers (HICs) have been established in critical regions of the world (i.e. Afghanistan, occupied Palestinian territories, Goma, Eritrea, and Sierra Leone).

With support from GIST members, Regional Resource Centers (RRC’s) continue to be developed. These offices, with a more permanent and regional scope, focus their activities on data for preparedness and rapid response. The GIST currently supports the Data Exchange Platform for the Horn of Africa (DEPHA), the Sierra Leone Information Centre (SLIS, covering the Manu River Union) and the Southern Africa Humanitarian Information Service (SAHIMS).

The GIST has a web site that contains public information regarding its activities and a data exchange platform. Data are available to anyone with Internet access.

GIST is also focusing on the development of standard deployment procedures for the HIC’s as well as the production of several guidelines for field operations. The topics for these guidelines include:

• Use of remote sensing in humanitarian operations
• Humanitarian Information Centres (HIC)
• The use of common standards - position and sectoral codes
• Use of GIS for disaster response, a practical guide

These initiatives for information management and the related operational concerns have led to greater realization of the importance of information for humanitarian preparedness and response. The informal and highly practical manner in which the GIST operates allows for frank discussions, clearly developed goals, and operational results.

For further information please contact P. Recalde at recalde@un.org

Information to ensure the safety of field staff: The UN Approach

Information on the security situation in all countries in which the United Nations operates is collected and disseminated by the Office of the United Nations Security Coordinator (UNSECOORD). In each country, the situation is assessed by a Security Management Team. The Designated Official for security, usually the Resident Coordinator, chairs the Security Management Team whose members include the representatives of the UN system agencies. The Team is best placed to assess the security situation at country level and it is supported by the UN Field Security Coordination Officer: there are some 100 of them posted worldwide. The UN grades the security situation along a scale of five levels or “phases”. The Designated Official for security has the authority to declare phases one (precautionary) and two (restricted movement). If the situation requires it, the Designated Official may recommend declaration of phases three (relocation), four (emergency operations) and five (evacuation), but it is the Secretary-General who ultimately makes the decision to declare these higher phases.

A monthly travel advisory, published by UNSECOORD, informs all agency security focal points and Designated Officials of any changes in the situation. Within WHO, updates are sent to staff in Headquarters and to the security focal points in the regional offices.

In order to enhance knowledge of the current and prospective security situation in countries, UNSECOORD conducts periodic security assessment missions to countries. UN system organizations are invited to participate in these missions and the reports are made available to agency security focal points and the local Security Management Team.

Information on security phases is for internal use – its purpose being to enable the UN system organizations to effectively manage security and safety of staff. The security focal point in WHO is the Director, Security Coordination.

For further information please contact M. Dam at damm@who.int

“When it comes to living in an environment of deteriorating social service delivery systems which ultimately result in catastrophes, people’s tolerance levels tend to increase to accept more episodes and interpret them as normal. The longer the situation continues the higher the tolerance level and the less likely another incident or event will be interpreted as dangerous enough to trigger a response.”

Dr. Rooy C. and Shawl T., 1996
Humanitarian Information Centers

In humanitarian crisis, centralized information management can facilitate everybody’s task and end the isolation in which different actors often work. In the past years Humanitarian Information Centers (HICs) have become a favoured approach to resolving information management problems in the field. In the same way as “coordination” and “information management” are umbrella terms for a range of activities, a “Humanitarian Information Centre” is an umbrella for implementing those activities. Most of the HICs are interagency in nature; a HIC is normally a convergence of many needs, not a single-issue office and this seems to be one of the keys to its success.

The concept of HIC was not developed in isolation but in close liaison with UN agencies, donors, private sector partners and civil society; all those who are interested in information management in emergencies as well as during the reconstruction and rehabilitation stages. The HIC is by definition a non-permanent fixture: its role is to provide quick and critical surge capacity to the UN country team and humanitarian community. National and regional information systems exist in most countries where HICs are set up; the HIC will use, complement and reinforce the information products available with them. Once the emergency is over, the human and technical capacities developed by the HIC, relevant equipment, etc. are shifted to local institutions.

As with any other humanitarian intervention, a needs assessment is carried out before the HIC is set in place. An overall assessment of the informational needs looks at the working environment, catalogues the existing information resources and analyses the capacities of humanitarian actors. As a general rule, the HIC will be most useful in operational environments characterized by:

- Rapid change
- Multiple humanitarian actors with a high turnover in staff
- Poor or degraded communications infrastructure
- Limited prior exposure to humanitarian relief

The HIC will be evaluated on a number of levels, including information needs in the community, quality of service provided to customers, resource management, services and products, coordination with other organizations, and marketing of the work of the HIC. This range of concerns highlights the fact that, while a HIC is a coherent entity, its work is inextricably linked to the work of others and can only be judged in the context of how well it serves the needs of others.

For further information please contact P. Recalde at recaldep@un.org

Health information: a glossary

- Catchment area: the geographical area from which the users of a particular health facility are drawn and to which the health information refers
- Coverage: a measure of the extent to which the services rendered cover the potential need for these services in a community
- Data: raw material -facts & figures, registered but not analysed
- Decision Support Systems: systems which call for, order and promote deliberation and analysis directly relevant to management tasks where complexity and uncertainty make it difficult to arrive at a reasoned response
- Geographical Information Systems (GIS): systems for capturing, storing, checking, integrating, analysing and displaying data about the earth that is spatially referenced (usually they include a geo-referenced database and appropriate application systems)
- “Extinction by Instinct”: decisions made with no systematic analysis due to pressures to act or wrong assumptions
- (Health) Information Systems: a set of components and procedures organized with the objective of generating information which will improve (health care) management decisions at all levels of the (health) systems
- Indicator: an indirect measure of an event/condition; variable that indicates or shows a given situation, and thus can be used to measure change; a way of seeing the big picture by looking at a small piece of it. Proxy: indicator of something which is, by its complex nature, inherently un measurable
- Information: analysed data, presented in a form that allows decision-making, exists only if it is transmitted and received
- Intelligence: processes and products that lead to understanding and making decisions in any given context
- Knowledge: information in context and for action. Something that all organisations possess and use to varying degrees. Its content can range from explicit knowledge, which can generally be expressed in the form of rules for decision making, to tacit or intuitive knowledge, which is expressed through decision making and the exercise of judgement (absorption of the information, comparison with previous mental models, elaboration, understanding)
- Management Information System: a system that provides specific information support to the decision-making process at each level of the organization
- Metadata: “data about data”, the background information which describes the content, context, structure, quality, source and other characteristics of data
- Models: representations - abstractions from reality - of real processes, events, structures, expressed as systems of logical/mathematical relationships between variables
- “Paralysis by analysis”: non decision-making due to the apparent lack of sufficiently accurate information
- Surveillance: systematic ongoing collection, collation and analysis of data and the timely dissemination of information to those who need to know, so that action can be taken
- Survey: a study in which information is systematically collected, but in which the experimental method is not used

For further information (including complete list of references) please contact A. Colombo at colomboa@whoint
Public health professionals often face the dilemma “Is there enough health information to guide the decision making process?” or “Is there too much or too little data?” and “How best to use data?”

In WHO Office for the Eastern Mediterranean Region (EMRO) these are daily questions, especially as complex emergencies are high on the agenda. The region counts five major, chronic crises in Afghanistan, Sudan, Iraq, the occupied Palestine territory and Somalia. Over the past decade natural disasters have also affected other countries: e.g. earthquakes in Egypt and Iran and floods in Iran and Syria. In these environments, the scarcity of health information represents a major challenge. Health information systems are very “thin on the ground”. They can often be weak, sometimes altogether absent and lacking functionality to clearly identify population needs. Baseline data are often nonexistent or out-dated. Even the registration of vital events is a luxury in parts of Afghanistan, Somalia and Sudan. More in general, limited human and institutional resources hinder data analysis and “brain drain” entails a continuing loss of institutional memory in countries which are more vulnerable to crises.

These factors push EMRO to look into new strategic approaches for health intelligence. Priority programs like Polio Eradication, Roll Back Malaria and Stop TB, can maintain field presence in complex emergencies, thanks to the efforts of local and national authorities, WHO and health partners. Through these initiatives and partnerships, WHO and Ministries of Health can enhance field surveillance and operational monitoring for disease control. Success stories have been reported in Afghanistan and Somalia, where the Polio surveillance system also monitors measles and provides alerts in the case of outbreaks. By extending surveillance to neonatal tetanus, EPI coverage can also be assessed.

EMRO also bolsters health intelligence by becoming directly involved in wider mechanisms for inter-sectoral coordination at country level. For instance, the UN has been establishing Humanitarian Information Centers (HIC) in many emergencies with the objective to facilitate information exchange among the various stakeholders. WHO is part of the HIC and benefits from its products.

In Afghanistan, a health geographic information system was developed by WHO working with the Afghanistan Management Information System (AMIS). This system enables health sector partners to visualize health trends over a geographical area. Similarly, in the occupied Palestine territory, WHO has established with its partners a health operations room (Health Inforum) to address the need for health and humanitarian information.

The changing dynamics of the Eastern Mediterranean Region requires data collection/analysis systems that address the “real time” needs of populations living under difficult circumstances; systems that build upon existing national surveillance as well as rapid assessment techniques carried out at field level. Only then we can sufficiently answer the above-mentioned dilemmas.

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Health information exchange in the occupied Palestinian territory

Over the last months, the emergency situation in the Palestinian territories has further deteriorated, mainly in the West Bank where the impact of the conflict has been most severe (Jenin, Nablus). This resulted in a dramatic shift in most programmes towards a humanitarian focus. One initiative, endorsed by the Local Aid Coordination Committee was to create emergency "operations rooms" for health, shelter, water, food, electricity, and psychosocial trauma.

WHO was requested to assume responsibility for the health operations room, while the Italian Cooperation plays a leading role in the health sector. Health Inforum, (previously HART) aims to strengthen coordination in support of the Palestinian health authorities and other partners, by collecting and sharing accurate, detailed and up-to-date health information about the humanitarian situation and the emergency response.

The main services delivered by Health Inforum are:

- Regular reporting on the current humanitarian health situation and the ongoing emergency response;
- Networking to link Palestinian and international stakeholders and service providers;
- Making available resources and reference materials on best practice in emergencies;
- Providing health information for action-oriented decision-making, through information collection, synthesis and analysis, dissemination and feedback;
- Catalysing action in the health sector through the facilitation of coordination meetings and processes.

There is a consensus that Health Inforum activities have been successful in linking the emergency with the long term approach and supporting an effective coordination between the MoH and other partners including donors, health service providers, major supply transporters, etc. Thanks to its services, Health is widely viewed as the most active and well-coordinated sector in the Palestinian territories. Health Inforum serves the information needs of the health community in the emergency phase and beyond. It is a sustainable, long-term support for health policy, planning and action in the Palestinian territories.

For further information please contact A. Manenti at manentia@who.int or access the Health Inforum web site at http://hart.itcoop-jer.org

Integrating different surveillance systems

The Integrated Disease Surveillance and Response (IDSR) (www.cdc.gov/idsr) is a strategy of the African Regional office of WHO that aims to improve the availability and use of surveillance and laboratory data to control priority infectious diseases that are the leading causes of death, disability and illness in Africa. The strategy is intended to improve the ability of districts to detect and respond to outbreaks of priority infectious diseases with available and effective interventions.

Surveillance is not limited to communicable diseases: many countries are monitoring nutrition, HIV/AIDS, etc. The Southern Africa Humanitarian Crisis shows how important the availability of key health data is for informing decisions and improving coordination for relief. Since maintaining effective surveillance systems is time-consuming and costly, avoiding duplication between different components becomes crucial. In Malawi, at district level, reporting of unusual cases or deaths according to standard case definitions is part of IDSR. This is a continuous process. Nutritional surveillance has two components: one is

www.who.int/disasters
The disaster development continuum: analysis of the causal chain and use of information

**Early Warning of communicable diseases in emergencies: an experience from Sudan**

Within the context of OLS (Operation Lifeline Sudan), WHO collaborates with UNICEF and more than 40 NGOs, operating an Early Warning and Response Network (EWARN) in south Sudan. EWARN is based on 21 teams, supported by community leaders and linked by radios, and a network of laboratories staffed by 29 technicians. Laboratory quality control is assured by the African Medical and Research Foundation (AMREF) and the Kenya Medical Research Institute. The system benefits from the experience, structure and means of the Polio Eradication programme. The surveillance system covers the following diseases/syndromes: diarrhoea (acute bloody or watery), measles, acute flaccid paralysis, suspected meningitis, relapsing fever, suspected malaria and haemorrhagic fever. Training is an important component of the programme: over the last 3 years, 175 health workers have been trained in clinical and laboratory aspects of outbreaks, 446 have been briefed on the programme and more than 200 community members have been trained for supporting the EWARN staff.

In 2002, 40 rumours of outbreaks were reported, of which 40 per cent were confirmed as false alarms. In 33% of reported outbreaks, response was ensured in less than one week, in 23% between 1-2 weeks and in the remaining cases in more than 2 weeks.

A review, undertaken in 2001, concluded that EWARN, by improving early detection of outbreaks and rapid response, provides a valuable service to the population as well to the partner agencies operating in south Sudan.

For further information please contact A. Sow at abdou.sow@who.isun.org

Measuring humanitarian needs in the Southern Africa crisis

Most humanitarian crises are defined as such because of the severity of the situation in terms of excess mortality and morbidity, increased levels of malnutrition, and/or human rights violations. This evidence base combined with that of insufficient national capacity to cope with these demands, then triggers and guides international humanitarian responses. The crisis in southern Africa is different because the response seems to have been determined by a prediction of significant food shortages to come, rather than by the gravity of the situation at the time of the assessment. The food aid seems to have prevented the situation from getting out of control.

Analyses of underlying causes and compounding factors, for example in Malawi and Zimbabwe, were available early this year. HIV/AIDS was mentioned in the first appeals as an important factor increasing vulnerabilities and undermining coping capacities of societies and families. Figures of less than 40% access to health services and alarm about this percentage decreasing further (even while morbidity was expected to increase), was already available to decision makers.

However the predominant response was, and continues to be filling the predicted food deficit. The international community is slow in addressing the underlying causes or taking a longer term perspective. It is widely acknowledged that food is also a priority to people living with HIV/AIDS, enabling them to live longer and to be less susceptible to diseases. This then allows them to work longer, raise their children, and avoid other coping mechanisms (e.g. prostitution) which increase the risk of the spread of HIV. Considering that HIV/AIDS will be a serious undermining factor in the coming decades, the approach through which families achieve their food security and remain healthy for as long as possible, requires more sustained and multi-sectoral solutions.

To address this from the health sector, both development and humanitarian actors need to come together and design a robust strategy that will provide for adequate strengthening of the health system. The low and decreasing access to basic health services, or the low coverage capacity of the nutritional rehabilitation units, already fall far short of the SPHERE standards. Although this may not qualify as a sudden crisis, it can be seen as a development failure. Treatment of ‘normal’ morbidity is already undermined, while additionally there is the increasing disease burden due to opportunistic infection among people living with HIV/AIDS. The recent report from the Commission on Macroeconomics and Health indicates that resources required to adequately strengthen the health system are substantially greater than what is currently available.

WHO is supporting an ODI study on needs assessment practice and its influence on resource allocation. A WHO staff member was recently seconded to the team that went to look into the southern Africa crisis. The full case study report is expected during the coming weeks.

For further information, please contact A. Griekspoort at greekspoor@who.int
Tools for assessment
Assessing levels of risk for extreme events, their impact on health care delivery systems and health status and the priorities for recovery and reconstruction are critical for guiding emergency preparedness, response and reconstruction. Various tools are used by the Ministries of Health and agencies involved in humanitarian assistance. A synoptic analysis of these tools would be helpful for improving their standardisation, the comparability of their results and facilitating coordination of humanitarian actions.

WHO/EHA is developing a catalogue of available tools for information management. This catalogue includes:
1. Tools for mitigation and preparedness
2. Standard operational procedures for readiness and crisis management
3. Reconstruction

The matrix below aims to help identify the main focus, determinants, indicators and available tools for assessment before, during and after an emergency.

The assessment of the determinants and impact of emergencies on health is the subject of an international conference that WHO is in the process of organising for 2003 (see Health in Emergencies: issue 14). Any feedback to the matrix and catalogue, and more in general to this issue of Health in Emergencies will help to develop the conference agenda and address participant concerns and interests.

For further information please contact A. Loretti at loretti@who.int

Assessments along the Life Cycle of Emergencies

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<th>WHAT are we assessing ?</th>
<th>DETERMINANTS</th>
<th>INDICATORS</th>
<th>INSTRUMENTS</th>
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<tr>
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<td>The Needs for Survival :</td>
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<td></td>
<td>➞ Priority health needs</td>
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<td>• Interfering hazards</td>
<td>• UN Development Assistance Framework (UNDASF) and Common Humanitarian Action Plan (CHAP)</td>
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<td>• Level and degree of integration (“co-ordination”) of external capacities</td>
<td>• Hazard assessment</td>
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<td></td>
<td>The Performance of Relief:</td>
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<td>➞ Relevance of objectives</td>
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<td>➞ Fulfillment of objectives</td>
<td>• Population movements</td>
<td>• Various sets of Health data</td>
<td>• Consolidated Appeal process (CAP)</td>
</tr>
<tr>
<td></td>
<td>➞ Cost-effectiveness</td>
<td>• Levels of local/national capacities</td>
<td>• Notification of epidemics</td>
<td>• Menu of health indicators for humanitarian coordination</td>
</tr>
<tr>
<td></td>
<td>➞ Impact, Connectedness &amp; Sustainability</td>
<td>• Levels of international interest and capacities</td>
<td>• Coverage by activity</td>
<td>• Local Planning techniques</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>The Feasibility and Sustainability of Recovery</td>
<td>• Level and degree of integration (“co-ordination”) of external capacities</td>
<td>• Cost by activity</td>
<td>• WHO Core Commitments in Emergencies</td>
</tr>
<tr>
<td>Recovery</td>
<td>➞ State of Health care delivery systems.</td>
<td>• Geopolitics and global economy</td>
<td>• Investment and recurrent costs</td>
<td>• Humanitarian Supply Management System (SUMA)</td>
</tr>
<tr>
<td>Reconstruction</td>
<td>➞ State of complementary systems.</td>
<td>• Media coverage</td>
<td>• Pledges versus requirements</td>
<td>• Logistic support System (LSF)</td>
</tr>
<tr>
<td>Prevention</td>
<td>➞ Donors’ attitudes</td>
<td>• Flow and quality of external resources</td>
<td>• Guidelines for “Assessment for Health Recovery” (work in progress with WHO/EHA)</td>
<td>• WHO Health System framework</td>
</tr>
</tbody>
</table>
**HEALTH IN EMERGENCIES**

**Monitoring vital needs in an emergency**

The ultimate goal of humanitarian assistance is to reduce the burden of *avoidable* death and illness in a population affected by an emergency, through life-saving interventions. The key word is “avoidable” due to the situation, which implies that an emergency generally results in extra morbidity/mortality in comparison to the “normal” (background levels) of ill-health. Relief interventions aim to reduce or prevent this excess burden, while developmental actions target the underlying, normal, ill-health. This is to emphasize that the excess morbidity, disability and mortality are due not only to the lack of essential public health/medical actions, but mainly to the shortage of essential goods (water, food, shelter, security, etc) for meeting vital needs, as well as to the inability to mitigate the effects of the determinants (biological, social, political, or economic).

Since most emergencies impact on all aspects of a community (social and economic), health interventions not linked with other interventions can, in the long run, fail to meet health needs, not least to achieve the ultimate humanitarian goal. As a bare minimum, relief agencies need access, security (both for them and for their beneficiaries), resources and capacities to deliver an effective humanitarian assistance taking into account the various stakeholders in an area. Verifying which information related to all vital needs is available is the first step for identifying gaps, deciding how best to fill them and programming relief interventions. The following menu can help address this issue.

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### Menu of health information for monitoring the needs and for coordination of activities

**Health District / Region of …………………..**  **Date…………..**

<table>
<thead>
<tr>
<th>1. Vital needs</th>
<th>Essential and complementary data</th>
<th>Available?</th>
<th>How often?</th>
<th>From where?</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVERVIEW</td>
<td>• N. of population</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• …</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1.1. SECURITY</td>
<td>• N. of victims of deliberate violence (new cases)</td>
<td></td>
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<td></td>
<td>• …</td>
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<tr>
<td>1.2. WATER</td>
<td>• N. of cases of diarrhoea</td>
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<td></td>
<td>• …</td>
<td></td>
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<tr>
<td>1.3. FOOD</td>
<td>• N. of cases of wasting and stunting</td>
<td></td>
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<td></td>
<td>• …</td>
<td></td>
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<tr>
<td>1.4. SHELTER &amp; SANITATION</td>
<td>• Shelters/environment conditions</td>
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<tr>
<td></td>
<td>• …</td>
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<tr>
<td>1.5. SOAP, BUCKETS AND PANS</td>
<td>• N. of cases of diarrhoea</td>
<td></td>
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<td></td>
<td>• …</td>
<td></td>
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<tr>
<td>1.6. HEALTH CARE</td>
<td>• State of infrastructures and equipment</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• State of supply of drugs and material</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• State of personnel</td>
<td></td>
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<tr>
<td></td>
<td>• N. of outpatients</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• N. of immunizations per antigen and age-group</td>
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<td></td>
<td>• N. of MCH activities</td>
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<tr>
<td></td>
<td>• N. of cases of measles, cholera, dysentery and meningitis</td>
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<tr>
<td></td>
<td>• State of strategic stocks for epidemics</td>
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<tr>
<td></td>
<td>• N. of cases of ARI, malaria and STDs</td>
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<td></td>
<td>• N. of cases of tuberculosis under treatment</td>
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<tr>
<td></td>
<td>• Availability of condoms</td>
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<tr>
<td></td>
<td>• Referral system: state of functioning and accessibility</td>
<td></td>
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<tr>
<td>2. SUPPORT ACTIVITIES</td>
<td></td>
<td></td>
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<tr>
<td>2.1. INFORMATION</td>
<td>• Functioning of epidemiological and nutritional surveillance systems</td>
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<td></td>
<td>• …</td>
<td></td>
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<tr>
<td>2.2. LOGISTICS &amp; COMMUNICATION</td>
<td>• State of reception, distribution and storage system of medical</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>materials</td>
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<td></td>
<td>• …</td>
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<tr>
<td>2.3. COORDINATION</td>
<td>• Periodicity of coordination meetings</td>
<td></td>
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<td></td>
<td>• …</td>
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<tr>
<td>2.4. TRAINING</td>
<td>• Training activities organised by the health centres or the agencies</td>
<td></td>
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<td></td>
<td>• …</td>
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<td></td>
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<tr>
<td>2.5. RESOURCE MOBILISATION</td>
<td>• List of health projects submitted for financing</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• …</td>
<td></td>
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</tbody>
</table>

*NOTE: For the complete menu of indicators please contact A. Loretti at lorettia@who.int*
Sudan: from a complex emergency to a complex peace

Since independence in 1956, Sudan has known longer periods of war than peace. Natural disasters are common: droughts are cyclical, and floods are recurrent. Overall, the health status is poor, as the available health indicators and the vulnerability to epidemics show. War has drained resources away from social infrastructure. The human capital has been decapitated. Coping mechanisms of the population have been stretched to the limits. The consequences have been dramatic: some two million people have died because of the conflict. The country has the largest population of IDPs – an estimated four million - in the world. The health sector has limited resources, both human and financial, to respond to the needs.

There are, however, signs of hope. Since 1999 the country is exporting oil. The recent peace protocol signed in Machakos in July and the truce agreed on October 15th have generated new optimism. Diplomatic pressures on both parties to reach a settlement are mounting. With prospects of peace, the return of millions of IDPs and refugees to their home areas and an increased influx of aid to help address humanitarian needs, rehabilitation needs, and sustain reconciliation are no longer a dream. The new context of peace will bring opportunities, in terms of security and peace dividend. At the same time, the transition will present enormous challenges. With peace, hidden humanitarian needs of those populations that are presently inaccessible will emerge. Demands and expectations will rise also for longer-terms needs, such as those related to the rehabilitation of social sectors, in both Government and opposition areas.

Acknowledging lessons learned in other transitional contexts, which point to the need for enhancing preparedness, WHO has started developing a post-conflict strategic framework. This process aims to improve WHO’s performance, making its agenda more consistent with needs, through a re-alignment of priorities and re-allocation of resources.

For further details see: www.who.int/disasters/repo/8301.pdf
For further information please contact A. Colombo at colomboa@who.int

SUMA Lumba: Victory to SUMA

The SUpply MAnagement training held in Gambia closed with African voices singing. UNICEF organized the second Regional Supply Logistic Workshop in Gambia from 27 October to 1 November. The 46 participants represented 25 countries from West and Central Africa as well as delegates from UNICEF Copenhagen. The objective of the workshop was to improve capacity in planning and management of emergency supplies.

UNICEF had invited experts from FUNDESUMA to provide a three day training course on SUMA. This inter-regional collaboration is part of Logistic Support System, an Inter-Agency initiative between different UN agencies including OCHA, WFP, UNICEF, PAHO and WHO.

The participants concluded that the Warehouse module is very useful for every day use, and that the program is good but training is needed at country level. The song SUMA Lumba (Victory to SUMA) spontaneously sang as a thank you to the trainers, indicated the enthusiasm of the participants after their first contact with SUMA.

For further information please contact E. Pluut at pluute@who.int

H.E.L.P. in Japan 2003

Health Emergencies in Large Population is a course comprised of two modules focusing on public health activities international humanitarian law, human rights and the ethical responsibilities of health professionals. It will be offered in Japan for the first time from March 10 - 28.

For further information please visit the web site at: www.jrckich.ac.jp/-japanhelp/index.htm

Health Library for Disasters - 2003 Version


Participating agencies include UNAIDS, UNHCR, UNICEF, the ICRC, the SPHERE Project, and ODI. New publications range from Public Health and Chemical Incidents to Clinical Management of Survivors of Rape.

Some of the new features of the HELID 2003 are:

• Self-copy feature for transfer of the CD-ROM to a hard disk
• Each book can be extracted to a zip-file.
• When “open”, each book will identify the languages in which it is available (i.e. English, French and Spanish)

WHO also aims to increase the user friendliness of the CD-ROM based on feedback from the field.

For more information please contact: E. Pluut at pluute@who.int

SUMA to be available in Russian

A Russian expert worked with FUNDESUMA Costa Rica at the translation of the SUpply MAnagement (SUMA) into Russian. This Cyrillic translation of SUMA will include the software, the practice manuals as well as the users manuals of the Central, Field Unit and Warehouse module.

In addition the Logistical Management of Emergency Supplies (MISE) manual will be available in Cyrillic early in 2003.

For more information please contact: fundesuma@racsa.co.cr
If you are interested in receiving Health In Emergencies electronically or adding your organisation to our mailing list, please contact eha@who.int

Season's Greetings from the Department of Emergency and Humanitarian Action