Health Tracking for Improved Humanitarian Performance

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Abbreviations:
CE-DAT = Complex Emergencies Database
CPA = Coalition Provisional Authority
DHS = Demographic and Morality Surveys
ENA = emergency needs assessment
FEWSNET = Famine Early Warning System Network
FIVIMS = Food Insecurity and Vulnerability Information and Mapping Systems
GIEWS = Global Information and Early Warning System
HIC = Humanitarian Information Centers
IPC = Integrated Food Security and Humanitarian Phase Classification
MICS = Multiple Indicator Cluster Survey
NFA = Needs Assessment Framework
NGO = non-governmental organization
OCHA (UNOCHA) = United Nations Office for the Coordination of Humanitarian Affairs
SCN = Standing Committee on Nutrition
SMART = Standardized Monitoring and Assessment of Relief and Transitions
UNICEF = United Nations Children's Fund
USAID = United States Agency for International Development
VAM = vulnerability and mapping
WFP = World Food Programme

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Abstract

Presently, there is no shortage of methods for collecting data on populations requiring assistance from humanitarian health interventions. However, utilizing a working group, the authors of this paper have looked at these methods through a critical lens and found that there is need for improvement upon existing systems of data collection and analysis. The authors concluded that efforts to standardize the methods of data collection are needed to achieve universal uniformity, and that more funding should be allocated to analyze the data collected.

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Introduction

The health status of a population is highly sensitive to human system shocks such as natural hazards, conflicts, and other human-made threats. Mortality, malnutrition, and elevated levels of morbidity remain key indicators for assessing humanitarian needs and for monitoring the effectiveness of humanitarian interventions. One reason for this is that health indicators reflect biological changes in people, and therefore, can be assessed and understood across populations and contexts. This is in contrast to other aspects of human security, whose measurement and interpretation are more context-specific. The call for accurate and comparable information about the health status of populations affected by crises has been made by numerous field studies and donor agencies. Most analyses of available information on health in humanitarian settings have characterized the information as fragmented, lacking in standardization, not sufficiently geographically representative, or inaccurate.[1] At the same time, public response frequently continues to be driven by the media, most recently demonstrated by the "CNN Effect" or the "Save the Darfur Puppy" syndromes, or by the effects on public policy of continuous and instantaneous news coverage.[2] However, numerous scholars have demonstrated the likely bias in media information, and international media reports associated with disasters also have been shown to be strongly biased.[3–6]

A Working Group was established to examine the problem of health tracking in humanitarian settings. This analysis utilizes the deliberations of the Working Group, together with a synthesis of literature, to propose ways to improve health monitoring in humanitarian settings. The analysis is composed of four sections: (1) current humanitarian monitoring initiatives and major gaps; (2) key principles of sustainable and effective health monitoring; (3) frameworks and indicators for health tracking; and (4) steps needed to improve health tracking.

Acronym	SMART	Sphere Project	OCHA/NAF	CE-DAT	SCN	FIVIMS	HICS	GIEWS	FEWSNET	IPC	PCNA	WFP VAM/ENA/EPR
Name	Standardized Monitoring and Assessment of Relief and Transitions	Not an acronym	Needs Assessment Framework	Complex Emergencies Data Base	Standing Committee on Nutrition of the UN System	Food Insecurity and Vulnerability Information and Mapping Systems	Humanitarian Information Centers	Global Information and Early Warning Systems	Famine Early Warning System Network	Integrated Food Security and Humanitarian Phase Classification	Post-Conflict Needs Assessments	World Food Programme Vulnerability and Mapping/Emergency Needs Assessment/ Emergency Preparedness and Response
Primary Sponsor(s)	Funded by USAID, CIDA	Hosted by Red Cross and Red Crescent Societies	UN Office for the Coordination of Humanitarian Affairs	Centre for Research on the Epidemiology of Disasters (CRED), Université Catholique de Louvain (UCL) Funded by US and UK governments	UN Organizations	Interagency Working Group (IAWG) of 3 agencies	OCHA, under direction from IASC	FAO and member agencies	USAID	FAO, WFP, and others	World Bank	WFP
Focus	Standardize best practice for assessment of nutrition, mortality, and livelihoods in humanitarian crises	Standards ofperformance indicators, developed in a handbook to promote agency accountability in health care, food, nutrition, water, sanitation, and shelter	Links needs assessment to planning and resource mobilization to create consolidated UN appeals process and Common Humanitarian Action Plan (CHAP), including health and other sectors	Online, publicly accessible databased; compilation of quantitative and qualitative information from numerous credible sources, focused on health outcomes	Issues reports on Nutrition Information in Crisis Situations (RNSIS), advocacy and analysis, including mortality and nutrition	Improves data and use in selected countries, international database and information exchange network, specifically emphasizes food security and nutrition	Country-level platforms for information exchange and dissemination,mapping and coordination, broad-based multi-sectoral data	Analysis of food insecurity and humanitarian emergencies using a risk and vulnerability assessment	Analysis and reporting of food insecurity and humanitarian emergencies using a risk and vulnerability framework	Framework for integrating data to assess vulnerability and needs, combines health status and food security into a humanitarian emergency classification system	Assessment tools for post-conflict countries, intersectoral, used for recovery plan development, includes all key sectors	Primary data collection and analysis of food insecurity/vulnerability and food needs, typically at a country level
Collects primary data on health and nutrition	Yes	No	No	No	No	Limited	No	No	Limited	No	No	Yes
Approach	Specialist authors and consensus building mainly with NGOs	Consensus-built standards through broad, ongoing consultation	UN agency led by assessment specialist	Draws together disaster databases, most of which are from NGOs	Interagency focus of UN and NGOs	Promoting and sharing research and improved information systems among agencies and governments	UN agency led by assessment specialist	Data monitoring analysis from surveys, remote monitoring	Analysis and reporting of secondary data from crisis-prone countries/areas	Uses a template for integrating data at the national level w ith subnational analyses	UN/WB agency-led assessment and sectoral specialist	Extensive collection of field data
Periodicity	Irregular; depending on need	Does not do data collection or assessments	Once a year, cross sectional	Continuous	Irregular and annual reports	Irregular	In-country continuous presence when established	Bi-annual and irregular	Continuous	Does not do data collection or assessments	Irregular	Periodic
Main Users	NGOs Academics	NGOs Donors	UN Agencies Donors	US Government Donors	UN Agencies	UN Agencies	UN Agencies Donors NGOs	UN Agencies	USAID Donors	UN Agencies Food Aid Agencies	World Bank	WFP Agencies working in WFP-served countries
Started	2002	1997	1993	2002	1977	1997	Late 1990s	1975	1985	2002	2003	1995
Public Access to Data	Intended	No	Partial	Partial (aggregate)	Partial	Partial	Yes	Yes	Limited	Not yet defined	No	Public access to reports

Table 1—Illustrative relevant initiatives (CIDA = Canadian International Development Agency; FAO = Food and Agriculture organization; IASC = Inter-Agency Standing Committee; NGO = non-governmental organization; OCHA = Office for the Coordination of Humanitarian Affairs; UK = United Kingdom; USAID = United States Agency for International Development; WFP = World Food Programme)

Current Humanitarian Assessment and Monitoring Initiatives

Eleven illustrative initiatives that aim to strengthen the base of humanitarian information, including at least some health measures, are listed in Table 1. Six of these are United Nations-inspired efforts, and have been led by other donors such as the United States Agency for International Development (USAID), universities, and the Sphere Project, a voluntary collective of non-profit organizations. The initiatives have five distinct emphases:

1. *Standardizing indicators and methods for data collection (SMART, Sphere, and FIVIMS)*—The Sphere Project has identified key indicators, both process and outcome, that should be collected by field agencies in each of five sectors of humanitarian response. In this way, Sphere establishes normative guidance for the types of information that agencies are encouraged to gather. The Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS) focuses specifically on the conceptualization and definition of food insecurity and vulnerability. The World Food Programme's Vulnerability and Mapping/Emergency Needs Assessment (VAM/ENA) group has formulated specific instruments and metrics for measuring food insecurity and vulnerability. The Standardized Monitoring and Assessment of Relief and Transitions (SMART) program is a USAID-spearheaded program aimed at developing standard measurement protocols and tools for mortality, malnutrition, and food insecurity assessment. It also envisions a capacity-development component to training and technically supporting field personnel.
2. *Primary data collection (WFP/VAM/ENA, SMART, and to a lesser extent FEWSNET, GIEWS, and FIVIMS)*—The WFP/VAM and emergency needs assessment (ENA) conduct numerous household food insecurity/vulnerability surveys that frequently contain information on health and nutrition. Their data model consists of comprehensive pre-crisis or initial baseline surveys, rapid emergency needs assessment surveys, and follow up surveys. Qualitative data focused on the context of a crisis, food insecurity, and livelihood dynamics also are collected.
3. *Frameworks for data collection and analysis (OCHA/NAF, IPC, and Post Conflict Need Assessment (PCNA))*—The OCHA Needs Assessment Framework (NAF) is a work in progress to guide the collection and collation of information to guide the Consolidated Appeal process. The Integrated Food Security and Humanitarian Phase Classification (ICP) is a tool that can be used for summarizing human distress in order to rank and compare humanitarian situations in absolute terms using geospatial, analytical techniques and various analytical templates;
4. *Analyzing and synthesizing data from countries or regions (GIEWS, FEWSNET, SCN, CE-DAT, IPC, and SMART)*—The Global Information and Early Warning System (GIEWS) and the Famine Early Warning System Network (FEWSNET) regularly report on food insecurity/vulnerability for selected countries or regions, such as the Horn of Africa and Southern Africa. In addition, these initiatives frequently prepare special analytical products dealing with hot spots of humanitarian concern at a sub-national or supra-national level. The Standing Committee on Nutrition (SCN) also reports typically at a country level, but also may focus on specific displacement/refugee camps. The IPC was developed in Somalia at the country level and can be applied to any scale. Hotspots are identified and analyzed in more detail. The SMART focuses on disaster-affected areas; and
5. *Data stores for maps and other databases (HIC and CE-DAT)*—OCHA's Humanitarian Information and its field-based Humanitarian Information Centers (HICs) are among the most prominent archiving and geospatial database management efforts. The Web-based ReliefWeb has served the humanitarian community with updated situated reports and contextual information for several years.

In the field, the HICs are a one-stop shop for relevant and geo-referenced data, map products, and technical assistance. In addition, there are >50 electronic databases, virtual networks, initiatives, and systems used for data collection, forecasting, early warning, and assessments during crises. Among these, the most important sources are the Multiple Indicator Cluster Survey-United Nations Children's Fund (MICS-UNICEF), national censuses, Demographic and Mortality Surveys (DHS), UN agency, and World Bank databases. These large-scale household survey programs typically assess the health and nutrition status at the national level, though disaggregation to secondary administrative levels often is possible. The UNICEF MICS especially has been applied to countries affected by complex emergencies or disasters due to natural hazards.

There are three striking features of the existing initiatives. First, there is a strong donor-UN orientation of the information. The WFP, PIC, SMART, and HIC's service information needs of field agencies. Other initiatives focus primarily on donor needs. Second, there is a lack of emphasis on building field capacity to strengthen primary data collection. Standardized Monitoring and Assessment of Relief and Transitions has planned for capacity building work; however, little funding has been made available for such undertakings. None of the other initiatives have any significant resources for capacity building. Recent evaluations of food security assessment initiatives show that assessments either are not budgeted or under-budgeted in humanitarian work.[7-8] Lastly, with the exception of MICS and DHS, there is minimal tracking of health status outcomes, and it is sometimes absent all together. Standardized Monitoring and Assessment of Relief and Transitions emphasizes the collection of two indicators: (1) nutritional wasting; and (2) crude death rates. The WFP stresses collection of nutritional anthropometry and common morbidity for its baseline surveys, but not routinely in emergency needs assessment work. Only recently, the FEWSNET began to include health and nutrition data in its food insecurity and humanitarian analyses. The complex emergencies database (CE-DAT) stresses only crude death rates. No initiative currently is funded to support ongoing monitoring of measures of health and nutrition.

Thus, most existing initiatives were judged to be "supply-side" in orientation. They focus on gathering indicators with little contextual information, little explanation, and little effort to identify the meaning and interpretation of the information produced. These current efforts to make sense of secondary data sources fall short of donor and agency needs. A US Government Accountability Office review of mortality estimates for the Darfur crisis concluded that none of the various estimates demonstrated a high level of accuracy.[1] Agency managers who were users of information systems currently available indicated that the data often were collected on too small of a geographic scale and contained insufficient information about the nature and causes of the crisis to be useful for identifying appropriate responses.

Perhaps the most striking finding is the virtual absence of primary data collection programs for systematically tracking health and nutrition. This problem is compounded by the absence of systematic attempts to strengthen the capacity of field organizations to collect and analyze those data needed for humanitarian actions. As a result, there is a disconnect between the supply of information and what the decision-makers at headquarters and in the field actually need. Currently available information was frequently characterized as unreliable, lacking in credibility, not in a format that easily allowed decision-makers to make informed judgments about appropriate responses, and, most frequently, not available in time to decide where and how to dedicate funds. As one participant put it, "We are frustrated with the current situation. We will make decisions with or without needed information and most frequently it is without this information."

Key Uses and Principles for Tracking

The workshop served as a qualitative inquiry, deciding that "data for decision-making" should meet the needs of program managers and stakeholders rather than the managers and technicians who design information systems. At the beginning of a crisis, decision-makers must know how severe the crisis is, how many people are affected, the major ways in which people are affected, and where to find the victims. In addition, decision-makers want to be directed to possible response options. Working Group participants identified the need to distinguish information needs at the global or headquarters level from those at the field level. These needs are distinct, and discussions about tracking often confuse the two. While headquarters requires standardized result "indicators" for accountability, including measures of health and nutrition consistently assessed over time, other information is required to determine interventions and how these should be delivered by field managers.

There was general agreement among the participants that health tracking efforts should be designed so that they satisfy the following humanitarian policy information priorities:

1. *Focus on near real-time delivery of decision-friendly information*—Tracking and measurement initiatives must emphasize the goal of getting the right information to the right people at the right time to inform humanitarian action. Information products will contain both standardized quantitative information as well as contextualized and frequently qualitative information. The IPC initiative provides one example of a template that integrates field observations into decision-oriented report templates. Health-related information is a critical component of humanitarian assessment, early warning, and humanitarian assessment results monitoring;
2. *Identify and monitor only a small set of standardized indicators that are consistently and reliably measured over time*—The Working Group was particularly emphatic about the need to avoid the proliferation of monitoring indicators. A general conclusion was that standardized measurement was appropriate for biological status, such as nutritional status and death, but less so for indications of behavioral aspects of humanitarian emergencies. Agreement was reached about the importance of measuring mortality and malnutrition in a consistent way and the need to monitor achievement of the Sphere Standards of Care; though the group recognized that measurements and program priorities will differ dramatically according to context. This may argue against standardized measurement. Some members of the group felt that a humanitarian household survey instrument program with core indicators is worth further deliberation;
3. *Address program evaluation as well as assessment/monitoring needs*—The working group unanimously agreed that indicator tracking must be built into a broader quest for impact evaluation, and that tracking initiatives should be developed with an eye toward evaluation;
4. *Include financial data for cost-related analyses*—In addition to impact assessment, the Working Group advocated for more routine and consistent reporting of financial data on humanitarian programs. Ultimately, this would improve the efficiency of resource allocation; and
5. *Include analyses of both intended and unintended, and positive and negative effects*—The Bolton *et al* analysis highlights another problem in that tracking efforts must anticipate unintended consequences of humanitarian action as well as negative effects.[9]

Frameworks and Indicators

The Group strongly favored a decision-support orientation to health tracking and not a proscriptive or blueprint approach. Health status measures are key humanitarian outcomes that reflect the severity of human suffering. Measures that reflect the access of affected population to the *Sphere Minimum Standards of Care in Disaster Response* also are important, as well as are the key contextual determinants of the fulfillment and sustainment of basic needs.[10] Humanitarians at both the headquarters and field level demand such information. However, the nature and dynamics of humanitarian emergencies challenges the notion of a meaningful set of standardized indicators that can be compared across humanitarian settings. Instead, measurement on mortality and malnutrition should unquestionably be prioritized, while other measures might be prioritized and measured according to context. For example, the nature and risk of epidemic outbreaks (e.g., malaria) differ according to geography: chronic diseases

and their complications are a greater consideration in Eastern Europe and more developed countries. While the Group endorsed the importance of monitoring achievement of Sphere Standards, it felt that more work was required to determine if a parsimonious short list of indicators might be identified to do this. Immunization and nutrition assessment coverage were suggested as possible candidates.

It is easy to create a long list of possible indicators, but their operationalization likely would reinforce the "supply-side" dilemma. It is more important to review and recommend principles under which many possible indicators should be reviewed for inclusion. The best indicators are relevant for: (1) quality of life and survivability; (2) sensitive to change over time; (3) available for comparable areas, and (ideally) have a baseline so that changes can be tracked; and (4) reflect differences among relevant social groups, thus, capable of highlighting inequities and vulnerabilities. Further, an ideal indicator will be easy to measure accurately on a routine basis and amenable to checks from special data collection exercises. Finally, an ideal indicator will have "face validity", e.g., it will be easy to communicate the nature of the crisis and hard to misrepresent it to the public at large with this data. Only a small set of health indicators come close to this set of ideal criteria. Nutritional status and mortality typifies this level of absolute and universal meaning.

However, even these indicators have limitations. For example, undernutrition among children (the usual referent group) may not reflect humanitarian stress in a timely fashion. When income declined by more than 50% in the former Yugoslavia, conditions still were good enough that nutritional indicators failed to show a health deficit in the general population.[11] Indeed, as a response to the shortages, the prevalence of obesity increased in some groups. This example illustrates that indicators alone can mean little unless there is context analysis to accompany the data. In this case, it was not children but elderly men who were particularly affected by the crisis. The crisis was not apparent until photos of men, looking like survivors of the Nazi concentration camps, were published around the world. Even then, the focus only was on those in detention centers, and neglected that millions of other displaced people suffered for years below the radar. Visual images often are more compelling, but less illuminating than a small number of well-collected indicators of health and nutrition.

Enumeration techniques also have a dramatic effect on the quality of indicator data. This calls for standardized techniques where possible and full disclosure of definitions and methods where indicators are more contextual. Again, a few examples illustrate the importance of this conclusion. The government of Iraq throughout the 1990s pretended to count the number of children that died as a result of economic sanctions, listing all children who died in hospitals as sanctions-related.[12] Local Indian officials listed more immunizations than were actually provided from a single vial, since when opened for one dose, a vial can provide up to 20 doses. This resulted in a series of unexpected outbreaks of measles.[13] How to define and enumerate the internally displaced in Colombia remains under strong debate, as those who were forced to move more than a decade ago remain on some displaced lists, while many of those have now reestablished their lives in new communities. Those raising funds for Colombia, however, frequently report it to be a country facing a massive internal displacement crisis, though many of these displaced individuals look different than the internally displaced in more intense focal crises.[14]

Priority must be placed on the measurement of health status outcome measures, but most indicators collected routinely by NGOs for management purposes track program activities rather than outcomes. For example, following the 2003 invasion of Iraq, the Coalition Provisional Authority (CPA) published hundreds of pages of their accomplishments, and all summarized the number of things done. It was not until a year after the CPA was dissolved that any population-based monitoring in the health system was initiated. This was the product of UN organization initiatives rather than Iraqi government or Coalition advisors. Tracking the supply of goods to a population to which organizations can respond can easily become a self-fulfilling process, where those who provide water (or food, or immunizations) continually justify a need for more of their specialty. This contributes to the divide between relief and development, as relief is heavily oriented to providing goods and services to a largely passive, high need population.

Evaluation, a function performed routinely by development projects, is almost non-existent in humanitarian field settings. It occasionally is done *post hoc* by multi-donor efforts (e.g., after the massive displacement of Rwandans in 1994; and after the Southeast Asian Tsunami in 2004–2005). However, the absence of evaluation as a routine activity of field organizations was viewed to be a major constraint to quality humanitarian programs by all stakeholder groups. Tracking outputs as opposed to assessing intended and unintended effects on target populations, is a common finding. In this issue, Bolton *et al* have articulated the importance and relevance of assessing unintended consequences of humanitarian interventions building upon the important works of Mary B. Anderson and her colleagues.[9,15]

Health status information cannot be usefully interpreted without information about community resiliency and capacity. Resilience reflects the resources, skills, and strengths that people depend on apart from whatever goods and services are provided by relief organizations. These factors often are invisible to such organizations, yet, usually are the source of the majority of resources that people have, even in times of hardship. In several evaluations, it was found that non-humanitarian system resources provided more than 80% of the support for areas in need (including local purchases, extended family transfers, and investments). Moreover, external resources enter a cultural environment in which habits and ideas about who should be assisted and how they should be assisted are greatly influential. The move to cash-based assistance is partly a response to the recognition that normal market relations and regional productive and distributive capacity can be far more efficient at supplying needed goods in a timely and efficient way.[16] A focus on the functions of local resources can help bridge the gap between humanitarian and development programs with a progressive focus on moving from

external assistance to local autonomy and productive capacity. This information typically is too contextualized to be amenable to standardized indicators, with the possible exception of market information. Currently, great effort is being invested in the measurement and use of market information in humanitarian settings. However, it is critical that it be linked to such standard indicators to make sense of the context in which resources are mobilized and utilized.

As a set of nutritional measures, anthropometry can be used extensively. Measuring children, in particular, depends on biologically understood measures that are easily communicated in numbers and images, though the inclusion of adults will increase the robustness of the measures. While many things can cause measurable nutritional deficit, an effective intervention strategy quickly can be reflected in improved nutritional status. Mild and moderate malnutrition is not a rare event, particularly in children, making it possible for a small sample to provide a stable estimate of contributions of the wider population of interest. It is not difficult to learn to measure heights, weights, and inquire about ages in a standardized manner. Good serial surveys are increasingly available, making it possible to monitor changes in the population.

Another outcome of interest is mortality. Because death is a rare event, sample size requirements to measure mortality and its fluctuations are necessarily larger. In addition, the collection of accurate data is more difficult. However, mortality assessment among affected populations is of critical public interest, and it has been demonstrated that it can be done even in highly insecure environments.[17]

Today, the quality of reporting for mortality and nutritional indicators in areas of crisis is markedly improved compared to a decade ago. Most impressive is the collection of mortality data in places like Eastern Congo, Sudan, Ethiopia, and Iraq. Nutritional status data are being widely collected by all large NGOs. It now is an opportune time to support the standardized measurement and reporting of these widely adopted indicators.

Processes

Donors are demanding better accountability that is presented in simple, but compelling ways. At the same time, agencies also should be funded to undertake these assessments and required analytical activities, such as evaluating and measuring program effectiveness. Lack of funding for these analytical activities was identified as one of the greatest constraints to achievement of effective health tracking. Most often, donors expect implementing agencies to self-finance assessments and other analytical work. This is an unrealistic expectation cited to be a major cause of the relatively poor quality of humanitarian health information.

Field agencies should be more effectively coordinated to address their capacity needs. The Sphere Project is one such model, as is the CORE Group, an alliance of NGOs undertaking child survival programming. Self-organizing initiatives have had good success in attracting donor resources.

Strong emphasis also should be placed on strengthening coordination of information activities among field agencies in areas of crisis. For key indicators, agencies should develop operative indicators and train field staff together. Coordination for the timing and geographic dispersion of surveys examining a core group of indicators will greatly improve the interpretability of the data. Similarly, qualitative information on the social dynamics of affected people's lives is needed to draw more useful implications from the data collected. When this level of interpretation is possible, it finally will become possible to test, evaluate, and improve the impact of programs to relieve suffering among these groups.

A forum for frequent refinement and careful review of the health indicators that must be collected from the populations affected by crisis is necessary. This should be coordinated with an initiative to broadly coordinate information needs across the humanitarian information spectrum. The UN's Inter-Agency Standing Committee (IASC) cluster groups were discussed as venues for such work. There remained debate within the working group, however, whether a non-UN based and more inclusive forum would be preferable.

Universities can become more actively engaged in the effort to improve the information base for humanitarian work. As gatekeepers of credentialing, as well as the production of humanitarian policy and technical leadership development, universities can enter into a cooperative engagement to standardize basic training in humanitarian health assessment and evaluation. The development of a graduate accreditation body might assist this process. The development of a university-development agency collaborative for health humanitarian information also could improve capacity to collect and analyze information. The widespread familiarity of field staff with emergent information and communications capacity makes possible further development of standardized university-based training. Also, e-learning is a prominent feature of capacity development programs worldwide, and can be utilized to make these programs more widely available.

Conclusions

While data abound, information and knowledge are scarce. Decision-makers at the global and field levels have expressed frustration with the continued lack of decision-support to humanitarian action. Health information is a central element to humanitarian action, as health indicators provide the only currently available candidate indicators for comparative analysis of humanitarian emergencies and their management. The Working Group concluded that standardized templates and interpretive tools were needed, a few standardized measures were both feasible and essential, and other contextual information will be required to support the analytical needs of humanitarians in the field and at headquarters. Donors, universities, and field agencies all must play a part in the solution. The age of information and communications technologies offers unique opportunities to aggressively address capacity needs.

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