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African countries propose a regional oral health strategy: The Dakar Report from 1998

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It is clear that the African region faces a number of serious oral diseases, either because of their high prevalence or because of the severe tissue damage or death that can occur. Previous approaches to oral health in Africa have failed to recognise the epidemiological priorities of the region or to identify reliable and appropriate strategies to assess them. Efforts have consisted of an unplanned, *ad hoc* and spasmodic evolution of curative oral health services. This document focuses on the most severe oral problems that people have to live with like noma, oral cancer and the oral consequences of HIV/AIDS infection. It proposes a strategy for assisting member states and partners to identify priorities and interventions at various levels of the health system, particularly at the district level. The strategy aims at strengthening the capacity of countries to improve community oral health by effectively using proven interventions to address specific oral health needs. The strategy identifies five main 'programmatic areas', including (i) the development of national oral health strategies and implementation plans, (ii) integration of oral health in other programmes, (iii) delivery of effective and safe oral health services, (iv) regional approach to education and training for oral health, and (v) development of effective oral health management information systems. Many of the programmatic areas share similar characteristics described as a 'strategic orientation'. These strategic orientations give effect to the concepts of advocacy, equity, quality, partnership, operational research, communication and capacity building. The WHO Regional Committee for Africa (RC) is invited to review the proposed oral health strategy for the African region for the period 1999–2008 and provide an orientation for the improvement of oral health in member states in the region.
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Introduction

Oral health describes the well being of the oral cavity, including the dentition and its supporting structures and tissues. It is the absence of disease and the optimal functioning of the mouth and its tissues, in a manner that preserves the highest level of self-esteem.

Oral diseases affect all human beings irrespective of location, country, nationality, race or colour. In the African region there is a disproportionate amount of oral disease, which has grave and often fatal consequences, some of which seems to be growing in prevalence as a result of the massive social disruption on the continent. Although many oral diseases are not always life threatening, they too are important public health problems because of their high prevalence, public demand and their impact on individuals and society in terms of pain, discomfort, social and functional limitations and handicap, and the effect on the quality of life. In addition, the financial impact on the individual and community is very high.

Because oral health is so fundamentally influenced by many of the same environmental factors that influence general health, an effective oral health policy or programme must address both the generic and the specific influences on oral health. This may occur through:

- Support for generic programmes that are effective in reducing poverty and promoting equity in the region.
- Support for generic programmes which are effective in providing clean water, proper sanitation and durable housing for all.
- Participation in health promotion and education programmes to control tobacco and alcohol use and promote correct nutritional practices including prudent use of sugar.

The following strategy is a tool for assisting member states and their partners to more systematically identify priorities and plan viable programmes, particularly at the district level. It aims to strengthen the capacity of countries to improve community oral health by effectively matching proven interventions to specific oral health needs. The implications of this are, that the

region needs a substantial and fundamental reshaping of the oral health policy process, and the way in which countries research, rank and respond to prevailing oral health needs. This, in turn, will require countries to refocus the education and training of the personnel required to address these new demands on the oral health system.

Justification and policy basis

There is a compelling need to review existing strategies and develop a comprehensive strategic framework to support countries, considering that:

- Previous approaches to oral health in Africa have failed to recognize the epidemiological priorities of the region or to identify reliable and appropriate strategies to address them.
- Sixteen of the 46 countries (30%) within the region have a national oral health plan. Very few have made any progress towards implementation and none have evaluated what has been done, which strongly suggests that such plans are fundamentally flawed or too ambitious.
- Efforts have consisted of an unplanned, ad hoc and spasmodic evolution of curative oral health services. Production of the kind of personnel demanded by this approach has led to African countries creating institutions where students in the oral health sciences receive training in sophisticated, inappropriate forms of oral health care, while in others little or no training at all is available.
- Oral health care in the region is almost entirely curative and directed towards combating one main problem (dental caries). The increasing prevalence of severe oral diseases such as noma, oral cancer, the oral manifestations of HIV infection and trauma have been omitted from both public and private care systems in the region and also from oral health personnel educational programmes. These conditions increasingly have the greatest morbidity and mortality of all oral conditions in the region.

The important contribution of oral health to general community health and well-being has been highlighted in resolutions adopted at the World Health Assembly (WHA) and regional committees (RC) namely:

- Resolution WHA36.14(1983), which called on member states to follow available health strategies when developing their national oral health strategies.
- Resolution AFR/RC24/R9 (1974), which requested the WHO Regional Director for Africa to provide for the establishment of dental advisory services within the Regional Office.
- Resolution AFR/RC30/R4 (1980) called on Member States of the African Region to integrate oral health into primary health care programmes.
- Resolution AFR/RC44/R13 (1994), which called on Member States to formulate a comprehensive national oral health policy and plan based on primary health care (PHC) and develop appropriate training programmes for oral health care workers at all levels particularly at the district level.

The Conference of Heads of Dental Health Services in the African Region (1969) and Regional Experts Committee on Oral Health (1978) recommended the establishment of oral health services based on the public health approach. Various international conferences on oral health and other related initiatives have also endorsed the need for a comprehensive approach to oral health.

Oral health priorities

Dental caries and periodontal disease have historically been considered the most important oral health problems around the world, however in African countries, these appear to be neither as common nor of the same order of severity as in the developed world. The oral health profile of Africa today is very different from that perceived previously. This profile of oral disease is not homogeneous across Africa so, oral diseases known to exist in each community need to be individually assessed in terms of the basic epidemiological criteria of prevalence and severity illustrated in Appendix 1. This is a prerequisite for the meaningful ranking of community needs and the development of intervention programmes with which to address them.

It is clear that the African region faces the urgent need to address a number of very serious oral conditions, either because of their high prevalence or because of the severe damage or death that can arise.

Priority problems

Cancrum oris (noma) and acute necrotizing ulcerative gingivitis (ANUG) with which it is known to be associated, is still common among children in Africa. The most recently available annual incidence figure for noma is 20 cases per 100 000. About 90% of these children die without receiving any care. With increasing poverty and many children being malnourished or undernourished with compromised immune systems, the prevalence of conditions such as noma is likely to increase. The prevalence of oral cancer is also on the increase in Africa. Annual incidence rates for oral and pharyngeal cancer is estimated at 25 cases per 100 000 in developing countries. Rapid urbanization and increasing utilization of tobacco and alcohol, is considered to greatly increase the incidence of oral precancer and cancer. The highest prevalence of infections by HIV and AIDS is found in Africa. Studies have shown that oral manifestations of HIV/AIDS are very widespread, and most commonly include fungal infections, necrotizing gingivitis or oral hairy leucoplakia. National surveys and smaller studies in Africa have shown the prevalence of dental caries to be quite low but subject to substantial regional variation. Most of this (90%) remains untreated.

Other problems

A number of other prominent oral health problems are encountered in the African region. It is strongly

recommended that they do not form the basis of country-specific policy and planning processes, unless it can be clearly established using epidemiological criteria or other appropriate indicators of community impact, that they are local oral health priorities.

Maxillo-facial trauma has increased as a result of interpersonal violence, motor vehicle accidents and war. Chronic destructive periodontal disease is known to occur in a small proportion of most populations, regardless of location or socioeconomic status. Harmful practices such as the removal of tooth germs of deciduous canines, extraction of upper and lower anterior teeth and the trimming or sharpening of upper anterior teeth, continue to occur. Fluorosis is common in certain parts of Africa such as the Rift Valley area. Malnutrition is known to increase the likelihood of fluorosis in children. Edentulism, congenital malformations and benign tumors occur but little prevalence data is available.

The African region also faces an acute lack of recent, reliable and comparable data and the relative absence of processes for converting data into information for planning.

Determinants of oral health problems in Africa

Both the context and the nature of the oral health problems encountered in Africa are different from those reported from more affluent parts of the world. Success for African oral health policies or programmes can only be achieved if the determinants of oral disease in this Region are specifically identified, ranked and addressed in this context. Poverty is perhaps the most prominent characteristic of this context.

Poverty is an important determinant of health and ill-health. The prevalence of oral diseases closely mimics prevailing levels of social deprivation. In a continent where the majority of the population is desperately poor, preventable dental diseases such as noma and oral cancer are rife. High levels of bottle feeding in the urban parts of the region have been associated with high rates of baby bottle tooth decay. Increasing urbanization has also been shown to lead to observable increases in the prevalence of oral disease. Greater access to alcohol is associated with higher levels of interpersonal trauma and oral cancer.

The presence of widespread poverty and underdevelopment in Africa means that communities are increasingly exposed to all the major environmental determinants of oral disease.

By adopting a predominantly western model of oral health care, African health systems have failed to address these important determinants of oral health. Instead, oral health systems are characterized by their predominance of dentists, most of whom are in private practice in urban settings. Where either public or private oral health services do function, they are treatment oriented, mainly providing for the relief of pain and sepsis and occasionally other curative forms of care.

Development needs

It is clear from this analysis of oral health in the African context, that a successful approach to oral health in the region needs to take account of African circumstances to effectively address the real determinants of oral disease. Countries in the region can draw upon this strategy to ensure the policies they prepare:

i. Will address the priority oral health needs of their communities (Appendix 1);
ii. Are affordable to their country or community;
iii. Will fit in with existing approaches and structures of their health system, particularly the Primary Health Care Approach and District Health Systems;
iv. Will be effective;
v. Can be easily evaluated; and
vi. Are flexible enough to adapt to changing needs and circumstances.

The regional oral health strategy

Long-term vision

Within the next 25 years, all people of the region should enjoy improved levels of oral health and function through a significant reduction of all oral diseases and conditions that are prevalent in the region, equitable access to cost-effective quality oral health care and adoption of healthy lifestyles.

Guiding principles

The effective implementation and sustainability of this strategy will be guided by the following principles:

- Give a high priority to promotion of oral health and prevention of oral diseases.
- Focus oral health interventions on the district and its communities with particular emphasis on children, those responsible for their care and other vulnerable groups.
- Only use interventions which have proven efficacy (Appendix 1).
- Integrate oral health programmes across all appropriate sectors.
- Enlist the participation of communities in oral health activities that affect them.

Strategic framework

Strategic objectives and country targets

It is expected that by 2008, all countries of the African region will have:

- Developed national oral health strategies and implementation plans focusing on the district and community levels.
- Integrated oral health activities in other health and related programmes and institutions (maternal and child health, nutrition, schools, water-related programmes).
- Strengthened their health facilities with appropriate oral health technologies, methods, equipment and human resources.
- Integrated training in essential oral health skills in the curricula of a wide range of health personnel and others who have taken on the responsibility for oral health promotion.

- Set-up effective oral health management information systems.
- Begun to carry out essential research on oral health priority problems and needs.

Regional objective
Assist countries in developing and implementing oral health strategies and plans that will ensure equitable and universal access to quality oral health measures through the district health system.

Priority programmatic areas
Based on these oral health priorities, the following programmatic areas have been identified.

Development of national oral health strategies and implementation plans
The main objective here is to guide countries through the process of National, Provincial and District oral health policy development. It provides for the establishment of clear roles between the different levels, the substance of policy (strategy selection and planning), its implementation mechanisms and its evaluation.

Integration of oral health in other programmes
This particularly refers to the strategies that need to cross-disciplinary and sectoral boundaries. It may include oral health care for vulnerable groups, training teachers in basic oral health skills, the delivery of fluoride through water supplies, rinsing programmes or other methods or defluoridating water in areas where fluorosis is endemic.

Delivery of effective and safe oral health services
This programmatic area aims to ensure access to good quality oral health care strategies and services. It requires the tailoring of district services to meet specific local needs. The establishment of effective infection control measures and the choice of appropriate technology and personnel for each level of care will help ensure the quality of such services.

Regional approach to education and training for oral health
The creation of uniform curricula for all training institutions in the region may be neither useful nor possible, but the sharing of common approaches to oral health education, collaboration on research of value to the region, the exchange of expertise, programme experiences and many other elements within the education process, has great potential to strengthen all the other oral health initiatives in the region.

Development of effective oral health management information systems
This involves the establishment of measures for the coordination of data collection and analysis for planning, management and evaluation of oral health services from district to national level.

Strategic orientations
Each of the programmatic areas identified above will include a number of specific activities or issues that will need to be tackled. Some of these share similar characteristics or objectives and can therefore be described together as a strategic orientation. These Strategic Orientations are described below, but more information on the relationship between these two entities is in the implementation matrix (Appendix 2).

Advocacy and social mobilization
Implementation of the strategic orientations must be sustained through continued advocacy for oral health. This will involve using social marketing and participatory methods to mobilize support from policy makers, political and community leaders, training institutions, NGOs, professional associations, business and social groups and industry.

Information, education and communication
Appropriate information should be provided to individuals, families and communities for the promotion of healthy oral health behaviour and lifestyles.

Equity and quality of oral health measures or services
This is perhaps the most important core principle that needs to be given effect across all aspects of country oral health programmes and policies. Equity with respect to the opportunity to achieve optimum oral health, equal access to the oral health care services communities need, or an equitable share of oral health resources in any form, are just some of the areas that policy must deliver. The quality of oral health measures, from preventive to curative care and health promotion, needs to be ensured in terms of safety, efficiency, efficacy and appropriateness.

Capacity building
This will involve development of human resources through appropriate training and re-training programmes related to the main oral health problems identified earlier. Training needs and processes should be coordinated and standardized as far as possible, and draw upon the combined expertise and resources of the region as a whole. A common approach to human resource development in the region would facilitate this.

Promotion of operational research
In order to strengthen research capacity and promote relevant research that responds to the oral health needs of communities, a research culture should be developed within national oral health programmes and the findings widely disseminated and used for planning purposes.

Partners and stakeholders
The active participation of communities in the development of oral health education, and health promotion initiatives, is essential. Different stakeholders need to be identified and engaged for the different activities and the different levels in the health system.

Implementation framework
At country level
The district remains the location with the greatest potential for successful integration of oral health programme planning and implementation with other health and development programmes. The implementation matrix (Appendix 2) illustrates a framework for planning priority interventions.

At intercountry and regional level
Mechanisms to secure the exchange of experiences in implementing oral health policy need to be established between countries in the region, in the spirit of technical cooperation among developing countries. Maximum use will be made of the expertise and resources of WHO collaborating centres for oral health particularly in the areas of capacity building and research promotion.

In collaboration with international partners, WHO will provide technical support to member countries in the:

- Development of comparable national data systems on oral health and disease trends for use in planning, including the identification of suitable indicators with which to evaluate progress.
- Development of effective interventions for the promotion of oral health.
- Development of national oral health strategies and implementation plans.
- Estimation of personnel needs and the development of suitable training programmes for the effective delivery of oral health programmes.

Partnerships
Partners who can assist the process should be identified as early as possible. A wide network of interested parties must be established at country level to facilitate implementation of the strategy and mobilization of resources.

The district health management team has the primary responsibility for implementing the programmes, strategies and interventions. It is here that interaction and partnership between community interest groups, health and development workers occurs in order to successfully operationalize district oral health plans. Districts will also benefit from the sharing of information, experiences and problems with one another and from collaborating in programmes of mutual interest to them.

Partners that may be engaged at the national level include professional associations, commerce, industry, dental, medical and allied professions, NGOs, aid agencies, WHO and other UN agencies. The national level must ensure that good communication occurs between all levels of the health system and various partners. It should therefore be well equipped to facilitate partnerships and collaboration.

Managerial framework

Resource mobilization
Financial resources
Mobilization of internal and external resources is essential for the execution of national oral health programmes. Oral health programmes should be adjusted to the funds that are actually available. The oral health sector should also set aside a share of the general health care budget allocated to fund integrated health programmes and activities in which oral health is a component. Ministries of health and NGOs will be encouraged to mobilize extra-budgetary funds for oral health. Other cost-sharing initiatives must also be explored to support oral health interventions.

Human and institutional resources
At country level, government needs to support the training of adequate numbers of appropriate personnel to support the delivery of oral health strategies it has selected. Negotiations with training institutions, government and other stakeholders to establish appropriate post structures, career paths and job descriptions etc. for staffing the public health services responsible for these strategies, will be necessary. At regional level, WHO will facilitate the training of experts who can provide technical support to the oral health policy process and assist in the monitoring and evaluation of programmes. These experts will also support the development of country research capacities in collaboration with the International Association for Dental Research (African Divisions), International Dental Federation, Commonwealth Dental Association, and Aide Odontologique Internationale and others.

Material resources
All efforts should be made internally and externally to generate funding for oral health programmes. Development and acquisition of appropriate and robust equipment that suits the African environment should be promoted. Whilst bulk purchases of equipment and supplies should be undertaken where appropriate, more efficient ways of making available low cost toothpastes, toothbrushes, chewing sticks and other items should also be explored.

Coordination
The setting up of coordination mechanisms among partners is crucial for the implementation of the oral health strategy. Emphasis should be placed on the coordination of activities instead of structures and extend well beyond the mere sharing of information. When a regional or provincial level exists in a country, it has the responsibility for providing support to district health activities and the coordination of programmes that extend across district boundaries. It provides the link between district and national levels of activity. It can help districts with coordination of tender processes, information collection and analysis activities, planning processes and resource allocation. The national level is primarily responsible for coordination, as opposed to programme or service delivery and must be properly equipped for this role. Existing subregional development organizations should also be involved in coordination effort. At the regional level, implementation will be coordinated by the Division of Health Protection and Promotion in collaboration with existing WHO structures and governing bodies.

Monitoring and evaluation

Monitoring

It will be important to monitor *the process* of negotiating acceptance, adoption and dissemination of this strategy by WHO structures, country chief dental officers and their respective ministers of health, after which it must reach the provincial or district structures responsible for its implementation. This process must be monitored against the proposed time frame. After this, it will be important to monitor *outcome* indicators that reflect the extent to which the strategies and priority programmatic areas have been responded to and implemented. The indicators to be assessed include the country targets selected.

Evaluation

WHO has a particularly important role in facilitating the implementation process as well as monitoring and evaluating the progress of this strategy. Periodic reviews and evaluations will be undertaken and regular reports will be made available in accordance with WHO resolutions.

Conclusion

This document has set out a process that WHO plans to follow to assist countries improve and sustain the oral health of their communities. It provides technical and managerial orientations that countries can use to streamline oral health services to efficiently and effectively deliver interventions that are affordable and match the oral health needs of the community. This strategy represents a new approach that has the potential to fundamentally improve community oral health in the African region.

Post-script

This strategy was subsequently endorsed by the WHO AFRO Ministers of Health meeting in Harare, 2 September 1998.

Appendix 1 An epidemiological basis for ranking oral health needs and priorities

Dental caries and periodontal disease have been considered to be the main global oral health problems. In the developing countries of Africa, these are neither as common nor of the same order of severity as in the developed world. By applying three simple epidemiological criteria a very different ranking of oral conditions becomes evident.

Oral disease	*Prevalence*	*Morbidity*	*Mortality*
Noma	High	High	High
Oral HIV	High	High	High
Oral cancer	Medium	High	High
Orofacial trauma	Very high	Medium	Medium
Congenital abnormalities	High	Medium	Medium
Harmful practices	High	Medium	Medium
Chronic periodontal disease	Medium	Low	Low
Fluorosis	Medium	Low	Low
Dental caries	Medium	Medium	Low
Benign oral tumours	Low	Medium	Low
Edentulism	Low	Medium	Low

Examples of a matrix for selecting the best oral health intervention measures (IM)

The tables below are constructed using an indicator of oral disease prevalence or severity, and an estimate of the resources available to provide 'intervention measures'. The most appropriate intervention measures for each oral condition are listed alongside. Each country or district can construct these to match local circumstances. Appropriate indicators to monitor progress with each intervention and disease outcome, should be added to this.

	Resources			
Dental caries	*Low*	*Medium*	*High*	
DMFT >2.6	IM2	IM3	IM3	IM1 OH education; tooth extraction for patients presenting with pulpitis IM2 IM 1 + advocacy and social mobilization for fluoride supplementation using an appropriate level of technology within an agreed regional protocol for water fluoridation, school-based fluoride rinsing, toothpaste, salt fluoridation IM3 IM 2 + fissure sealants, atraumatic restorative technique, preventive resin restorations, simple endodontic therapy for patients presenting with pulpitis of anterior teeth and extraction of posterior teeth with pulpitis
DMFT 1.1–2.6	IM2	IM2	IM2	
DMFT <1.1	IM1	IM1	IM1	

	Resources			
Noma	*Low*	*Medium*	*High*	
ANUG in infants	IM1	IM1	IM1	IM1 Immunization, nutrition, education, feeding schemes (short term), oral cleaning, chlorhexidine mouthwash during acute infectious diseases. Development of a local protocol for the acute phase of noma IM2 IM1 + reconstructive surgery using a local protocol that is resource based
Existence of noma	IM1	IM1	IM2	

	Resources			
Oral HIV	*Low*	*Medium*	*High*	
Existence of HIV	IM1	IM2	IM2	IM1 Advocacy and support for the health system's response to the HIV pandemic; universal infection control, prevention of oral lesions in HIV positive patients with chlorhexidine, development of a local protocol for all oral health workers which is resource based IM2 IM1 + specific treatment of oral mucosal lesions

Note: The DMFT is the sum of the average number of decayed, missing and filled teeth per person in a population.
IM1, IM2 and IM3 are the incremental levels of intervention needed to address the specific oral problem being addressed. These may change as new evidence on intervention efficacy emerges.

Appendix 2 Implementation matrix

Priority programmatic areas	*Strategic orientations*					
	Advocacy and social mobilization	*Information, education and communication*	*Equity and quality of oral health measures*	*Capacity building*	*Research*	*Partners and stakeholders*
(1) Formulation of national policy, plans and legislation	All strategies require social mobilization. Lower level strategies (IM1) need to be strongly emphasized	Disseminate and explain the policies to all levels of the system	Prioritize needs of the most vulnerable	Ensure institutional capacity for education and training	Identify and research areas where current data is poor	Establish partnerships with stakeholders (industry, academics, private sector, trade unions, CBOs, NGOs, political and religious organizations, international agencies)
	Carry out policy analysis and strengthen policy process	Ensure policies are informed by district needs	Ensure allocation of resources on this basis (including education and personnel)	Strengthen research and managerial capacity	Assist operational research at all levels (including the OH educational process)	
		Monitor and evaluate process and outcomes	Increase collaboration for regional education and training	Assist the development of protocols for each strategy	Develop a better oral health survey system	
(2) Integration of oral health within health and other programmes	Raise awareness that oral health arises from the same conditions as general health	Disseminate information on the determinants of oral health and disease	Expand oral health services within district health services	Education of district health personnel in recognition, diagnosis and management of oral conditions	Support operational research on the provision of integrated oral health activities	Principal partners include the health disciplines (especially mother and child care workers), adjunct personnel and their organizations and others
	Lobby food and agriculture, tobacco/alcohol road safety and other policies	Ensure this information is addressed in policy matters across all sectors and disciplines	Ensure adequate infrastructure for this		Promote research into the effectiveness of education and training for integrated services	
	Integrate oral health with maternal and child health		Include oral health materials and drugs as part of the essential drug list			
(3) Safe and effective delivery of oral health services	Infrastructure for safe, effective delivery of district oral health care	Universal infection control and the need to adhere to evidence-based interventions	Ensure allocation of appropriate resources and infrastructure based on need and vulnerability	Ensure training of all district personnel in universal infection control	Promote only data collection relevant to analysis of processes and strategies	Principal partners are the community served, other levels of the system, training institution
	Mobilize community partners for oral health		Ensure systematic maintenance of equipment and technology	Provide trained maintenance personnel		
	Identify and expand all possible resources			Ensure adequate stock control measures		

Priority programmatic areas	*Strategic orientations*					
	Advocacy and social mobilization	*Information, education and communication*	*Equity and quality of oral health measures*	*Capacity building*	*Research*	*Partners and stakeholders*
(4) Regional approach to educating personnel for oral health	A common approach to education and training of personnel for oral health	Inform relevant role players of advantages of a regional approach	Assess number, type and distribution of training institutions required	Ensure education and training is related to the needs and strategies set out above	Devise measures to determine if education programmes are effective, appropriate	Partners include all training institutions Departments of Education and Health, Chief Dental Officers and other public oral health personnel in the region
	A system of common entry based on regional needs		Ensure the optimal use of existing institutions	Combine expertise to develop good protocols for individual strategies	Assess geographic distribution of graduates	
	Training of more auxiliaries					
(5) Oral health management information system	Collection of data that will inform planning, monitoring and evaluation at each level	Continually assess and define information that will inform planning process	Ensure appropriately trained personnel at each level	Develop capacity to collect, collate, analyse and interpret data at all levels	Determine a minimum data set	These include communities, training institutions and anyone involved in the data collection or analysis process
		Communicate the need to collect and use this data to health workers	Ensure relevant information is collected and utilized locally Ensure coordination of information at all levels	Develop computer skills where necessary	Assess relevance of data collected	