



An untapped resource: community based epidemiologists for environmental health

May Yacoob and Linda M. Whiteford

SUMMARY: *The following article promotes active community participation whereby peri-urban neighbourhood residents monitor environmental health conditions. An effective and sustainable community based environmental assessment and management programme relies on such participation. The authors suggest a combination of methodologies to incorporate community members in the definition of their environment, the diagnosis of local health problems, the determination of appropriate remediation strategies, and the monitoring of environmental health conditions in their community.*

Dr. May Yacoob is Technical Director for Community Participation including social and behavioural aspects of the Environmental Health Project, previously known as the WASH project. Dr. Yacoob has worked with this project since 1986. Dr. Linda Whiteford is currently an Associate Professor of Anthropology at the University of South Florida with over 15 years experience in dealing with international health issues.

Address: Environmental Health Project, 1611 N Kent Street, Room 1001, Arlington VA 22209-2111, USA. Tel: (1) 703 243 8200; fax: (1) 703 243 9004.

I. INTRODUCTION

ENVIRONMENTAL HEALTH CONDITIONS – and particularly the health risks – of the peri-urban poor can be traced to the transmission routes of pathogens in common, everyday activities. Clues to disease transmission can be found by asking such simple questions as where do people sleep, what do they eat and drink, and how do they dispose of their waste? Changes in these fundamental human behaviours can only be made at the household and neighbourhood level as no national government or donor agency has sufficient resources to sustain the effort required to change these conditions.

This article focuses on ways to develop effective and sustainable community based environmental management to improve the health status of peri-urban residents. The underlying assumptions are as follows:

- Disease is a biological condition. But it exists within a human and social context.
- Community concerns and perceptions of disease risk are legitimate and should not be discounted.
- Members of the community and outside technical assistance teams are committed to collaborative research and analysis to ensure that skills are developed locally at all levels.

We will attempt to explain why local perceptions of the causes and prevention of disease are significant in any technical assistance programme aimed at reducing environmental health risks. (An example of local definition and treatment is given in Box 1). We believe that local residents are the best authorities on local beliefs, behaviours and cultural practices; therefore, they should define, in collaboration with biomedically trained personnel, environmental health problems and assist in the development of management plans. This article includes various methods available to incorporate local community members into the process. Drawing on field experiences, we will outline the effectiveness of this approach and its contribution to sustainable programming at the community level.

Box 1: “*La Diarrhée des Blancs*” – “White People’s Diarrhoea”

A study conducted in Burkina Faso showed that mothers recognized the term *konobolí* as “running stomach”, a condition they frequently saw in their children. *Konobolí* was not regarded as an illness to be treated in itself but was defined more often as a symptom from another illness. The classification of diseases with which diarrhoea was associated showed it to be related to their locally perceived causes. Some cases were attributed to a mother not giving her child proper care, or to a woman having sexual relations while pregnant, or other causes such as cold weather during breast-feeding. Each attributed cause produced a different type of diarrhoea and, therefore, was treated differently. For instance, researchers found a new category of diarrhoea called *la diarrhée des blancs* caused by worms or parasites. Its treatment was always referred to the hospital.

Community knowledge is very useful in finding the linkages between an illness and its causality, from the point of view of the person with the illness. Those suffering will feel they are understood, since local community workers will recognize the attributed causes. In addition, the attribution of causality is frequently relevant and can be used as an entry point for behaviour change efforts.

SOURCE: Kanki B., V. Curtis and E. Traore (1991), “From belief to behaviour: diarrhoea and hygiene practices in Burkina Faso”, in draft, London School of Hygiene and Tropical Medicine, London.

The definition of an epidemiologist is an individual interested in the occurrence of disease and its distribution in time, place and persons. An epidemiologist looks at whether there has been an increase or decrease in disease over the years, whether one geographical area has a higher frequency of a disease than another, and whether the characteristics of persons with a particular disease or condition are distinguishable.

This article uses the term “native epidemiologists” to mean those individuals who are trained in the community rather than in formal educational or public health institutions, or in national ministries of health. As such, they provide community based data and expertise and serve as a conduit between the local community and the national and international biomedical community. The use of native or indigenous epidemiologists is proposed for two important reasons:

- Field-level activities of data collection and reporting are done by people within the community.
- Epidemiological data helps to define the disease by understanding the nature of illness from the point of view of those affected by it. Understanding how people think of illness, where they believe it comes from, what they do about it, who might take care of the different symptomatic manifestations of the illness, and why people treat the symptoms the way they do are all important factors. Community based health surveillance is more accurate (than surveillance by “outside experts” because it comes from a foundation of local knowledge, experience, and traditions.

One may wonder if it is naive or optimistic to expect socially and economically disenfranchised peri-urban dwellers to monitor epidemiological trends. Epidemiology, as a science, is viewed as being value-free and immune to the influence of special interests. Therefore, involving the public would undo the scientific process.⁽¹⁾

Separation of the social and biomedical aspects of disease has prevented technicians from seeking information from those who have contracted a disease. Biomedically, disease is a biological fact, identified through tests and the knowledge of the practitioner. Medical knowledge has unfolded in a linear fashion towards a comprehensive and accurate understanding of reality.⁽²⁾

To illustrate the importance of belief in present day medicine, one might examine the treatment of malaria by health workers. The disease category of “fever” tends to be a very common symptom frequently treated with prophylaxes believed to cure the symptom. Generally, in the South, whenever people present themselves to clinics or health posts with “fever”, a presumptive treatment is provided and a blood sample is taken for verification. Yet, by the time the symptom is verified, the time lag can be two weeks to one month or, as is usually the case in Southern countries, the results for the test never show up. During that time, the symptom of “fever” may have either been temporarily cured, may be showing additional symptoms, or the individual may have died. Health providers rarely discuss with patients the subtleties of the various symptoms causing fever from malaria versus that from other possible diseases. Fever is not the disease but, in practice, it is treated as such. While fever is no doubt a metabolic disorder which involves complex biochemical parameters, it often takes on a symbolic meaning. Dispensing chloroquine is an act of faith rather than a purely scientific decision.⁽³⁾

1. Capra, F. (1982), *The Turning Point: Science, Society and the Rising Culture*, Fontana, London.

2. Jones, Kelyvne and Moon Graham (1987), *Health, Disease and Society*, Routledge Kegan Paul, New York.

3. Ramakrishna, J., W.R. Brieger and J.D. Adeniyi (1988-1989), “Treatment of malaria and febrile convulsions: an educational diagnosis of Yoruba beliefs”, *International Quarterly of Community Health Education*, Vol.9, No.4, pages 305-319.

4. Brieger, W.R. (1991), *A Farm Market Based System for Detecting Guinea Worm Endemic Villages*, dissertation submitted to the Department of International Health, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore, USA.

Experience to date has proved that the poor and the disenfranchised can be trained to monitor environmental health conditions. Mothers' groups have been used to identify and report the number of cases of a disease to district level health offices. Guinea worm surveillance in very remote areas of Nigeria was carried out by local chiefs.⁽⁴⁾ These experiences attest to the fact that local people have a vested interest in, and deep knowledge of, their surroundings, allowing them to be effective community surveillance workers.

Box 2: The Multi-factorial Nature of Disease

Notes taken from a focus group discussion held in the village of Ajagusi, once known as the "grandmother" of guinea worm in Asa, provide the following views:

"When a mother is neat, good-looking, wears good clothes, eats good food, does everything expected of her, she looks healthier and has enough time to cater to the child, therefore the child, too, looks healthier than before. We believe that we are healthier than before because there is no guinea worm in our community."

The mothers claimed that since the introduction of the borehole and the elimination of guinea worm, the time taken to perform essential domestic and child-care tasks during the dry season, which coincides with the guinea worm season, had been reduced from seven to three hours a day. This left them more time to spend with their children and to engage in economic activities.

Guinea worm disease among young mothers affects their health and ability to care for their children. Although the burden of child-care is spread over the network of family and friends, the disease ultimately impoverishes the whole community. The value of qualitative study is that it reveals these linkages and the multi-factorial nature of the problem of endemic disease in a community.

SOURCE: Brieger, W.R. (1991), *A Farm Market Based System for Detecting Guinea Worm Endemic Villages*, dissertation submitted to the Department of International Health, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore, USA.

II. HOW DISEASE ETIOLOGY ENSURES PROCESSES FOR SUSTAINABLE ACTION

THE DANGER IN knowledge, attitude, practice (KAP) surveys is the expectation of a specific response to a specific named condition. Such surveys gloss over differences and, as a result, information is lost. The bland and often artificially skewed information that remains all too often is what is used as baseline

5. Early, E.A. (1982), "The logic of well being: therapeutic narratives in Cairo, Egypt", *Social Science and Medicine* Vol.16.

data. The following example illustrates why it is useful to ask questions about local perceptions of symptoms rather than to rely on general information gathered on an illness.⁽⁵⁾

Local knowledge identifies the appropriate institutions and personnel for behaviour change programmes. Sustainable environmental risk management programmes must include community-level institutions and personnel that the community trusts. These traditional organizations are vital to a culture, yet governments and ministries of health do not necessarily direct implementing organizations towards them. By studying local knowledge, creating cognitive maps and relying on native epidemiologists, one can identify where people would go to treat specific symptoms. The first step is to interview the individuals that people turn to for treatment and to identify community based resources.

Women's societies associated with birthing and child care, for example, are usually a source of support and information. Sometimes such organizations are secret societies. Because sorcery is common in tightly-knit village communities, institutions of the elders responsible for mediating with the supernatural are another source. Religious entities also provide a range of services and are another important resource to learn local etiologies. These are some examples of valuable local resources. **Local perceptions can identify appropriate traditional gender roles for health care and resource management.**

III. IDENTIFYING THE MOST APPROPRIATE NATIVE EPIDEMIOLOGISTS

a. Men and Women

BECAUSE THE ROLES men and women have in health care and illness prevention change during the course of their lives, age, as well as gender, is a significant variable in understanding and identifying decision makers and their choices. Patterns also vary to reflect the culture, so it is important to learn who is responsible for the household water, what household measures are taken to prevent diseases in each area, and what remedies are used for each disease category.

Not considering the importance of locally perceived gender roles can render technical assistance useless. In a study addressing the problem of trachoma, one donor agency chose to focus exclusively on the women of the household in a particular community. Their efforts did not change the community's conception or behaviour because, although it was the women who washed the children's faces (an activity that prevents trachoma), it was the men who decided whether or not this was to be done.⁽⁶⁾

b. Community Standing / Respect

When identifying epidemiologists at the community level, one should choose those with the greatest interest in, and responsibility for, the area. They might be mothers or other family mem-

6. McCauley, Ann P., Mathew Lynch, Moses Pounds and Sheila West (1990), "Changing water use patterns in a water-poor area: lessons for trachoma intervention project", *Social Science and Medicine* Vol.31, No.11, pages 1233-1238.

Box 3: "A las Casadas no nos dan Oportunidades" – Married Women are not given Job Opportunities

Women from *el Comité del Pueblo* who had worked in industry before they were married told of how, once they were married, they were asked to leave their jobs. This is because industries rarely want the additional expense of pre-natal and obstetric care. Because marriage does not eliminate a woman's need for income, she is often forced into the informal and unregulated job market. "La casada tiene necesidades." Women sell cosmetics, stockings, flowers and food on the street. They are exposed to the constant assault of dust and wind, to traffic if they sell on the side (or medians) of the road, and to thieves. "La vida de las mujeres es muy dura" they said, ("Women's lives are very hard").

bers whose children have died, are at risk, or are sick due to exposure to adverse environmental conditions. Such people emerge from within communities. As one begins, by holding focus group meetings, individuals emerge who tend to have more interest in specific conditions. Subsequent to the focus group meetings, in-depth interviews and observations with such individuals can provide the beginning of training in local epidemiology. To cite an example, it would be a waste of resources to train young girls who are unemployed to be those with primary responsibility for surveillance because they do not, as yet, have the same degree of vested interest and experience as older women do; nor would they have the standing. On the other hand, if one of the primary sources of contamination of food is the market place, then vendors might be the best choice for native epidemiologists.

c. Impact of Illness

Learning locally based models of risk and disease etiologies makes it possible to map out how to sequence disease treatments, who should be the primary conduit for new information, and what the culturally appropriate ways would be to remedy the situation. For instance, one might ask which symptoms are treated in the home, which by pharmacists, by the local health unit, by a religious person, or by a hospital physician. As an example, because women have fewer monetary resources, they may be likely to use home remedies more often and for longer periods than men. One might also find that people use different strategies depending on who is sick, how severe the illness is, and how dependent the family is on the sick person.⁽⁷⁾ The perception of the environmental risk also varies, not only by culture but by gender and socio-economic status as well.

Nationality, ethnicity and occupation also affect the ways in which people define illness. In one example, women working in various positions in the peri-urban areas around Quito, Ecua-

7. Whiteford, Linda (1980), "Mexican-American women as innovators" in Melville, M. (editor) (1980), *Twice a Minority: Mexican-American Women*, Mosby Press, St. Louis, Mo. USA, pages 109-128.

8. Whiteford, Linda (1993), "Women's voices heard in Ecuador health risk assessment", *Voices from the City, Peri-Urban News* Vol.3., WASH Project, Arlington, USA, September.

9. See reference 8.

10. Arcia, Gustavo, Eugene Brantly, Robert Hetes, Barry Levy, Clydette Powell, Jose Suarez, and Linda Whiteford (1993), *Environmental Health Assessment: A Case Study Conducted in the City of Quito and the County of Pedro Moncayo, Pichincha Province, Ecuador*, WASH Field Report No.301, WASH Project, Arlington, USA.

11. MacCormack, Carol P. (1988), "Health and the social power of women," *Social Science and Medicine* Vol.26.

12. Zeityln, S. and F. Islam (1991), "The use of soap and water in two Bangladeshi communities: implications for transmission of diarrhea", *Reviews of Infectious Diseases* Supplement 4: S259-264.

dor, complained of frequent chronic bladder infections.⁽⁸⁾ North American male physicians and biomedical health workers attributed this problem to the possibility of multiple sexual partners because of the women's socio-economic group. When the women were interviewed, they provided a different insight.

Following their pregnancies, these women were forced out of their jobs. Their only alternative was to work in the informal sector where they could bring their children to work.⁽⁹⁾ Because the markets and roadsides have no toilet facilities for women, they went all day without urinating which made them more vulnerable to bladder infections.⁽¹⁰⁾ Other sources have verified that urinals and public toilets in markets are for men only. In this case, the women could clearly articulate the factors surrounding their health problems but they did not have the means to implement the remedy – a public latrine construction programme.⁽¹¹⁾ The biomedical community needed the personal accounts of the women themselves – their social and economic conditions – to analyze and address the problem.

Once the symptoms are matched to a disease, the behaviours people describe as the cause then need to be investigated. This is best done through questioning and observation. Communities in Bangladesh, for example, were surveyed regarding illnesses from "drinking water". Most people responded that they only used hand pumped water for drinking. Observation, however, showed that they used contaminated water for cooking, washing vegetables and filling baby bottles, activities technically not considered as "drinking" the water.⁽¹²⁾

Box 4: "La Vida misma Nos va Enseñando" – "Life Teaches Us"

"Life teaches us" said a woman whose husband is disabled with Parkinson's disease. She, and other women in el Comité Del Pueblo, recounted their efforts to safeguard their families from accidents, disease and disability. Those without piped water buy used metal drums from industries and paint them with an anti-corrosive. They use these drums to store their water for drinking, cleaning and washing. However, storage is the least of their water problems; acquiring the water is more difficult. If one is fortunate and does not live too far off the main street, the water tanker that drives through the community may come by. But the water is expensive and not necessarily uncontaminated.

IV. TYPES OF DATA TO BE COLLECTED AND METHODOLOGIES TO BE USED

THERE ARE A number of contexts within which donor and implementing agencies can use local perceptions and beliefs to evaluate health risks. Community and neighbourhood risk assessment studies show that although the presence

13. See reference 10; also Kottak C.P., and Costa A.C. "Ecological Awareness, Environmental Action, and International Conservation Strategy", *Human Organization* Vol.52, No.4, pages 335-343.

of an actual health hazard increases risk, perception of the risk does not arise **inevitably** through a rational cost-benefit analysis.⁽¹³⁾ Local beliefs and understanding of risk are couched within cultural, political and economic contexts. Peoples' perceptions of the diseases associated with those risks are also shaped by the media and other factors, such as population movements.

One approach used in development projects is to strengthen the capabilities of service managers of municipalities who serve the peri-urban poor. Often, service agencies focus on solid waste collection, testing of market food and market sanitation, etc. Unfortunately, staff are not trained to carry on a dialogue with neighbourhood residents or to identify data from neighbourhoods to determine the types of services people need at a particular point in time. To have a beneficial health impact, the delivery of any services to the peri-urban poor requires an ability to listen to the perceptions of illnesses of community people themselves.

Box 5: "Son los Niños que Sufren" – "It is the Children who Suffer"

"It is the children who suffer" when the women must leave them when they go to work. Women in Carapungo described leaving their children for the entire day while they worked as maids, laundresses or took care of other children. Wives must help their husbands provide money for the family - "Una mano lava la otra" ("one hand washes the other") - and often this means that the children are left alone. Sometimes nine-year olds are responsible for one-year and two-year olds. "When the nine-year old is in school, I take the babies with me when I work selling in the street. When he is out of school, he watches them."

Some diseases, such as cholera in Latin American countries, have become endemic. Whilst the primary transmission routes have been identified, the disease (in this case cholera) has persisted. This persistence has called for an understanding of high-risk behaviour, for a defining of interventions that are specific to a neighbourhood, and for a monitoring of any changes in the prevalence of the disease before it becomes widespread.

To monitor the disease and collect data from communities, the following activities have helped initiate a dialogue with neighbourhoods:

1. Begin by identifying the community's environmental conditions: developing a community map illustrates the major community resources (such as water, garbage collection points and hospitals or clinics). It is useful to have community members locate additional sources affecting the environment (such as dumps, markets, public toilets and bath houses).

Mapping is most effective when carried out with different community groups such as women caretakers of households with young children, men, elders (male and female) and youth. Each group, depending on the length of time in the community and

the resources it uses, will tend to identify various environmental conditions. The creation of composite maps by various groups will provide an inventory of all the resources. It will also provide an opportunity for discussion across community groups.

2. Use government data on critical environmental risks, or epidemiological studies conducted by the technical team's medical epidemiologist to describe the symptoms: community health providers can provide the local names for each of the symptoms identified. Although a biomedical term will be used to describe these symptoms, the local terms are more useful in discussions with community groups. Data collection in the community to identify the prevalence rate should use the local names. The vernacular use of these terms will, in fact, facilitate the collection of data by community people. The community or health workers can then locate where people with such symptoms live and work. This information is then verified by observation to determine the accuracy of symptoms to the relevant disease.

3. Cross-check the cause of the illness from the community's point of view: the next step is to investigate the cause of a disease by searching for associations between aspects of the physical and social environment and the disease. This cross-check must include the community's perceptions of the cause. Health workers can glean from community members' views, why the disease is occurring and under what conditions. The insights gained from the community might lead to a different intervention than that determined by the biomedical community. Both views need to be understood, acknowledged and implemented in the process of defining and sequencing interventions.

4. Show a video of an illness to help elicit information: this method might be useful in cases resulting from industrial pollutants. For a number of reasons, it seems very hard for people to accept industrial pollutants as health risks. The primary impact of industrial pollutants tends to be on the peri-urban poor who, in turn, depend for their livelihood on these industries. Because of this economic linkage, people frequently deny the impact of industrial pollutants. Furthermore, the diseases of industrial pollution are relatively new and unfamiliar to people. Identifying symptoms that people have not commonly met before usually cannot be done through discussions alone. Videos can provide a better way of introducing the topic. Since communities' economic well-being is at stake (in addition to health), remedial/preventive actions need to be stressed, along with discussions with plant managers for the enforcement of preventive measures.

Again, in gathering data, surveys need to obtain from viewers the local name for the illness and its perceived cause. Individuals can note any cases they have seen and identify where the people live. It is particularly important to find out where people would go to treat such illnesses, what they pay for treatments, and if the illness varies with the seasons.

5. Define environmental conditions and have the community describe the symptoms associated with each of these conditions: the definition of environmental conditions associ-

ated with specific symptoms is not an easy or straightforward task. It is a complex step that requires negotiation between the scientific community and governments on the one side and neighbourhoods and communities on the other. The best case scenario is one in which varying peoples' outrage at specific high-risk health conditions coincide. This scenario, however, does not always occur.

In a case in Ecuador, community people were able to provide the behavioural explanation for high faecal contamination of market food which, in turn, explained high rates of enteric diseases. In this example, the scientific community and market women agreed on interventions that would reduce the incidence of the disease. In other cases, the perceptions of environmental risk differ; the use of particular pottery for cooking, for example, is often not considered an environmental condition tied to health symptoms. A dialogue between health assessors and community residents would bring about a better understanding of the relationship between practices and health status or risk. In another example, two different methods for reducing the incidence of diarrhoeal disease were used. The staff from the Ministry of Health and the ministry responsible for water and sanitation determined that hand-washing was an important behaviour to promote. When ministry staff observed daily household activities, they were appalled to find out that people used rainwater for drinking and, as part of routine hygiene behaviour, emptied the rainwater containers every month and painted them with lead based paint. The issue of lead-poisoning was much more urgent than hand-washing. As a result of this information, teams from both ministries worked together to change this behaviour, providing explanations for some of the neurological diseases found in the communities.

6. Outline the various symptoms; then ask individuals to describe modes of transmission and associate the symptoms with its conditions: these two steps help to explain the areas of environmental conditions that people might attribute to the disease. Most important here is that project staff and the community learn from one another. Such a relationship is vital in establishing that people's knowledge and experiences are valid.

7. Track impacts: the traditional biomedical approach suggests that when causality is determined and interventions are implemented, the result must be an improvement in health or environmental conditions. In reality, it rarely works this way. One possible reason is that people living in poverty are rarely interested in government statistics related to environmental health conditions. The best indicators to use for health tracking are those identified by community people themselves. What impacts are tracked and how these indicators are used are two important and inter-related issues.

As Box 2 shows, women care about contracting a disease that affects their ability to make money in the marketplace and their ability to care for their children. Allowing people to define what impacts them the most will serve as a better motivator for change, first, because people are more likely to take action when the situation is one they want to change, and second, because peo-

14. Brown L.D. and E. Hurtado (1992), *Development of a Behavior-based Monitoring System for the Health Education Component of the Rural Water and Health Project, CARE-Guatemala*, WASH Field Report No.364, WASH Project, Arlington, Va., USA; also Brown L.D., E. Hurtado and S. Esrey (1993), *Follow-on Assessment of a Behavior-based Monitoring System for the Health Education Component of the Rural Water and Health Project*, WASH Field Report No.385, WASH Project, Arlington, VA, USA.

15. Priscoli, Jerome D. (1993), "Public involvement: conflict management and dispute resolution in water resources and environmental decision making", *Water Nepal* Vol.3, No.2-3, pages 43-57.

16. Zeitlyn, S. and F. Islam (1991), "The use of soap and water in two Bangladesh communities: implications for the transmission of diarrhea" in *Reviews of Infectious Diseases* Supplement 4: S259-64; see also Boot, M. and S. Cairncross (1993), *Action Speaks*, International Reference Center, The Hague.

17. Jenkins C. (1990), *Methodological Issues in the Measurement of Hygiene and Sanitation Related Behavior*, Institute of Medical Research, Papua New Guinea.

18. Hardoy, J.E., D. Mitlin, and D. Satterthwaite (1992), *Environmental Problems in Third World Cities*, Earthscan Publications Ltd., London.

19. Whiteford, Linda (1994), "The ethnecology of dengue fever", *Medical Anthropology Quarterly* (in press).

ple will be more willing to track monitoring indicators and will feel responsible for achieving the anticipated results.

Behavioural indicators have also been used very effectively by community people. In a rural water and sanitation project in Guatemala, high-risk behaviours were identified and pictorial representation of those behaviours was agreed upon.⁽¹⁴⁾ Community representatives were appointed who used a checklist to monitor households regarding these behaviours. These indicators were reviewed on a monthly basis by district/provincial staff who, in turn, were able to focus their attention on the specific households where healthy behaviours were not practised. This approach sought to address the specific reasons for certain households' inability to practice specific behaviours.

8. Negotiate an environmental health agenda: this process is not without risks. As communities become more involved in the decision-making, the likelihood for conflicting views and political agendas increases. People who manage donor projects have to be not only technically competent but politically realistic because they deal in such grey areas. Decisions need to be based on the interests and values of the people rather than dictated by politics.⁽¹⁵⁾

V. METHODOLOGICAL CONSIDERATIONS FOR DEVELOPING COMMUNITY LEVEL CAPABILITIES

AS THE STEPS outlined above show, the public health community is recognizing the value of anthropological methods in studying behaviour related to communicable diseases. While such methods frequently have been used to describe disease related beliefs and treatments, they have not been directly applied to epidemiological investigations.⁽¹⁶⁾

The study of the behavioural aspects of the transmission of communicable diseases requires that the analytic and the descriptive units of behaviour be directly commensurate with those of epidemiology. At the very least, anthropological and epidemiological descriptions must refer to the same individuals at the same time, period and place.⁽¹⁷⁾

Understanding local conceptions of disease etiology is an important building-block in the development of behaviour change programmes. To empower communities to make the changes needed to improve their health, implementing agencies need to have a clear understanding of the culture and how it defines health and illness, as well as identify those who traditionally have been responsible for this aspect of life.

Programmes to reduce the incidence of diarrhoea - the major environmental health issue of the peri-urban poor - require that people alter the way they do things, at times changing centuries-old ways of interacting with their environment.⁽¹⁸⁾ Behaviour change programmes encourage people to change some of their fundamental daily activities - the ways they sleep, eat, defecate or use and store common resources such as water.⁽¹⁹⁾

Unfortunately, hygiene education programmes often assume a point of view of narrow scientific cause and effect. For exam-

20. Yacoob, M., B. Braddy, and L. Edwards (1992), *Rethinking Sanitation: Adding Behavioral Change to the Project Mix*, WASH Technical Report No.72, WASH Project, Arlington, VA, USA.

ple, sanitation improvement programmes frequently advocate latrine construction and handwashing. Thus, hygiene behaviour programmes have often prescribed pre-determined practices within predetermined structures.⁽²⁰⁾ Such practices prove ineffective because they don't reflect local knowledge. Rarely do baseline studies focus on what people already practice or believe. By taking this approach, implementing agencies miss learning why people are reluctant to adopt certain behaviours.

VI. CONCLUSION

ENVIRONMENTAL HEALTH CONDITIONS of the peri-urban poor can be traced to the transmission routes of pathogens deeply embedded in such fundamental areas as where people sleep and what they eat and drink. No donor agency has sufficient resources to sustain the effort required to change these conditions. Therefore, community based actions, supported by responsible public sector institutions, are critical in this process. This is especially true since behaviours vary from one city to another and from one culture to another. Furthermore, as changes in the patterns of epidemics have shown, the pathogens, the host and its environment are constantly changing. The ultimate objective of developing the capability of community based epidemiologists is to build the capability at the local level to monitor these changes and seek the appropriate actions in a timely manner.

In conclusion, native epidemiology has an important role in community based health risk assessment and management. To increase the participation and ownership of the community in monitoring environmental health conditions, a community based methodology incorporates traditional epidemiological techniques that the local community practices. In other words, the knowledge and experience of community people are woven into the surveillance of environmental health conditions.