

Possible illnesses: assessing the health impacts of the Chad Pipeline Project

Lori Leonard¹

Abstract Health impact assessments associated with large-scale infrastructure projects, such as the Chad–Cameroon Petroleum Development and Pipeline Project, monitor pre-existing conditions and new diseases associated with particular industries or changes in social organization. This paper suggests that illness self-reports constitute a complementary set of benchmarks to measure the health impacts of these projects, and presents data gathered in ongoing household and health service surveys in Ngalaba, a village near a major oilfield in Chad. In an initial 16-week period of weekly data collection, 363 people reported few of the clinically chronic or asymptomatic conditions expected according to health transition theory, and the overall level of illness reporting was low. Illnesses often were described by symptoms or lay diagnoses. Health care practitioners were consulted rarely; when they were, resources for diagnosis and treatment were limited. Clinically acute, short-duration illnesses (e.g. parasitic infections, toothaches, or hernias) were experienced as chronic conditions and were reported week after week. The low levels of illness reporting and lack of clinically chronic conditions are not taken to mean that rural Chadians are healthy. Rather, the patterns of morbidity reflect a particular local ecology in which health services are organized and care dispensed in ways that limit the possibilities for illness in terms of types of illnesses that can be diagnosed and reported, forms illnesses take, and ways in which illnesses are experienced. Illness self-reports are useful adjuncts to “harder” biological measures in HIAs, particularly in the context of large-scale infrastructure projects with explicit development goals. Rather than providing data on the extent to which harm has been mitigated by corporate, state, and donor activities, self-reports show the possibilities of illness in local contexts.

Keywords Chronic disease/epidemiology; Self disclosure; Data collection/methods; Chemical industry; Health status; Risk assessment/methods; Health services accessibility; Health care surveys; Health surveys; Chad (*source: MeSH, NLM*).

Mots clés Maladie chronique/épidémiologie; Ouverture personnelle; Collecte données/méthodes; Industrie chimique; Etat sanitaire; Evaluation risque/méthodes; Accessibilité service santé; Enquête système de santé; Enquête santé; Tchad (*source: MeSH, INSERM*).

Palabras clave Enfermedad crónica/epidemiología; Autorrevelación; Recolección de datos/métodos; Industria química; Estado de salud; Medición de riesgo/métodos; Accesibilidad a los servicios de salud; Encuestas de atención de la salud; Encuestas epidemiológicas; Chad (*fuentes: DeCS, BIREME*).

الكلمات المفتاحية: مرض مزمن، إبيديميولوجيات المرض المزمن، الكشف الذاتي، جمع المعطيات، طرق جمع المعطيات، صناعة الكيماويات، الوضع الصحي، تقييم الأخطار، طرق تقييم الأخطار، إتاحة الخدمات الصحية، مسوحات الرعاية الصحية، مسوحات صحية، تشاد (المصدر: رؤوس الموضوعات الطبية، المكتب الإقليمي لشرق المتوسط).

Bulletin of the World Health Organization 2003;81:427-433.

Voir page 432 le résumé en français. En la página 432 figura un resumen en español.

يمكن الاطلاع على الملخص بالعربية على الصفحة ٤٣٣.

Introduction

Health impact assessments carried out in the wake of large-scale infrastructure projects — such as the construction of dams, mines, roadways, or oilfields — typically are designed to evaluate disruptions to the local ecology that manifest as cases of clinical disease. The job of epidemiological surveillance systems is to monitor fluctuations in the levels of pre-existing conditions and the introduction and spread of new pathogens that are likely to be associated with certain types of industries or with particular changes in social organization.

Self-reports of illness from local communities are an important complement to the indicators adopted by the governments of Chad and Cameroon, the World Bank Group, and ExxonMobil as measures of the project's impact on health. The data presented here are illness self-reports from surveys conducted with households in Ngalaba — a village adjacent to an oilfield under construction in southern Chad. These data

were collected as part of an ongoing longitudinal study to examine the impact of the pipeline project on the health of local populations.

This paper argues that self-reported illnesses and measures of clinical disease or injury index different aspects of social experience and that both have a role in health impact assessment (HIA). It also engages the debate on the value of illness self-reports for public health policy and practice that perhaps is best summarized in a series of exchanges between Arthur Kleinman and Amartya Sen (1–3). Unlike most HIAs, our study aims neither to estimate the prevalence and incidence of specific diseases that might be exacerbated by the pipeline project nor to examine how particular epidemiological profiles change over time by tracking the rise or fall of a set of health problems common in Chad. These kinds of data are captured, however imperfectly, in a variety of other sources (4–6). Moreover, the government's pledge to invest a substantial proportion of the revenues from oil into the health sector

¹ Assistant Professor, Department of International Health, The Johns Hopkins School of Public Health, Baltimore, Maryland 21205, USA (email: lleonard@jhsph.edu). Ref. No. 03-002899

makes impractical the use of a randomized, experimental design in which health outcomes in a community impacted by the pipeline project are compared with those in an untouched “control” site.

Instead, our research aims to investigate the conditions that produce particular snapshots of health or that make certain illnesses and experiences of illness possible. The kinds of illnesses that these households report and the way those illnesses unfold over time reflect both limits and possibilities. The scarcity of health service resources that has led to the particular organization of care that we see in rural Chad imposes limits on the kinds of diagnoses that can be made. These limits are not just technical matters that stem from lack of equipment, medicines, or know-how — although material resources obviously are important. The structure of care also imposes limits on the ways illnesses can be imagined, on the language available with which to describe particular conditions, and on the way illnesses are experienced. It is thus the possibility of illness — as a condition and as an experience — that the pipeline project affords, rather than the extent to which potential harms have been mitigated by corporate, state, and donor planning, that is the focus of our research.

Things called illnesses

As part of our study, we conduct weekly household surveys for 16 consecutive weeks each year (followed by monthly surveys) to document the illnesses that household members experience and the therapeutic regimens they follow. The methods for this study were adapted from a set of questionnaires developed by the Institute for Socio-Economic Research on Development and Democracy for a longitudinal study of household decision-making around health in Delhi, India (7). The use of consecutive weekly surveys allows us to track the course of reported illnesses and to see how, when, and to what effect decisions about therapies are taken. Weekly, rather than less frequent, reporting is also a means of capturing minor or transitory illnesses that can be forgotten or under-reported, especially relative to major health problems, given longer recall periods. Local interviewers visit households on a weekly basis and ask whether any household member has been sick during the previous week. When an illness is reported, information is obtained about the episode, such as symptoms, whether and what type of practitioner was consulted, the reasons for not consulting a practitioner, the types and quantities of medications taken by prescription or self-medication, the numbers of work or school days missed, and the funds expended on care.

We began work in Ngalaba in December 2001. The 40 households that we follow were chosen from a total of 170 and are dispersed geographically throughout the village. Sampling was conducted in a manner equivalent to knocking on every *n*th door; however, given the organization of dwellings, the process is better described as one that covered the geographical space of the village. As part of a baseline survey, household members were enumerated and standard sociodemographic information was collected (Table 1). We also gathered information about migration, chronic health problems, sources of drinking water, toilet facilities, assets, agricultural production, food sufficiency, and access to health care facilities.

In our first 16-week period of weekly data collection, 201 illnesses were reported. Table 2 is not an exhaustive record of these illnesses, but lists the 10 categories of illness most commonly referenced in reports about household members. Infectious diseases and the sequelae of taxing physical labour are foregrounded clearly in the table, whereas chronic illnesses noticeably are absent. Parasitic infections and gastrointestinal problems accounted for more than one-fifth of all reported illness episodes. Backaches, arthritis, and fatigue (collected under the general term “aches and pains”) made up the next largest constellation of conditions. Although these illness categories could be formulated differently — for example, headaches could be subsumed under the “aches and pains” category rather than standing alone — the point here is that chronic diseases made almost no appearance among the list of common conditions. Even when less common ailments are considered, virtually no trace is seen of the types of conditions and incidents — heart disease, cerebrovascular diseases, and road traffic accidents — that have been projected to replace infectious diseases as the leading sources of disease burden by 2020 and that already are responsible for the preponderance of death and disability in low-income countries (8). The illness profile that emerges from these reports thus runs counter to most writing on health transition, which highlights the growing burden of non-communicable diseases in developing countries.

The ways in which self-reported illnesses are articulated by household members suggests a lack of exposure to health services. Most of the illness categories in Table 2 are agglomerations of different self-reports. The entry on parasitic infections and gastrointestinal problems, for example, regroups complaints such as worms, amoebas, dysentery, diarrhoea, soft stools, stomach ache, and swollen stomach. Individual illness reports that were folded into this and some of the other categories listed in Table 2 were often expressed as symptoms, such as “soft stools” or “swollen stomach”. Alternatively, they were reported as lay diagnoses — “worms” or “amoebas”. A health care practitioner was consulted in only 49 (24%) of the 201 episodes of illness, and in only 35 (17%) cases did the respondent report that the illness was diagnosed by a health care practitioner. In most cases, illnesses were diagnosed by the person who was ill or, in the case of children, by another family member.

Different classification systems for self-reported illnesses have been developed on the basis of reviews of community and household morbidity surveys. WHO’s schema encompasses four categories of self-reports (Box 1): the first two categories are common in the reports from Ngalaba. Murray and Chen distinguish symptomatic conditions, conditions that may be both self-perceived and observed, from conditions that are only self-perceived (but not observable) and asymptomatic conditions, those that can only be observed and measured through professional, clinical, or laboratory assessments such as chest X-rays, blood tests, and computed tomography scans (10). Murray suggested that reported levels of the latter conditions — such as hypertension, mild diabetes mellitus, and silent myocardial ischaemia — in resource-constrained countries may be used to indicate access to health services (11).

Although not shown in Table 2, 201 cases of illness were reported by 103 individuals. This means that most of the household members (220/363; 61%) reported no illnesses

Table 1. Descriptive data for households surveyed weekly in Ngalaba

Variable	No.
Total households	40
Total household members	363
Average household size	9
Children aged <5 years	73 (20) ^a
Female-headed households	9 (22.5)
Households that reported annual food shortages	37 (92.5)

^a Values in parentheses are percentages.

Table 2. The 10 most common categories of illnesses in 201 cases reported in weekly household surveys in Ngalaba

Type of illness	No. of cases reported ^a
Parasitic infections or gastrointestinal problems	43 (21)
Aches and pains	17 (9)
Colds	17 (9)
Malaria	15 (8)
Toothaches	14 (7)
Flu	13 (7)
Infections (conjunctivitis, ear infections, etc.)	13 (7)
Respiratory problems	13 (7)
Headaches	11 (6)
Injuries	8 (4)

^a Values in parentheses are percentages.

during the 16-week data collection period. In addition to the virtual absence of chronic, asymptomatic conditions, how can we explain this low overall level of illness reporting? Instead of suggesting that rural Chadians — whose average life expectancy of 50 years is among the lowest in the world — are healthy, our data can be interpreted as further evidence of the absence of a functioning health system and of the absorption of conditions that under different circumstances might command attention and acquire diagnostic labels (12) into the experience of everyday life. Viewing the data in a comparative context lends support to this argument. As part of a study of the sustainability of health in families under stress, these data were viewed alongside data collected from 40 families in an urban neighborhood in Delhi, India by Veena and Ranendra Das and their research team at the Institute for Socio-Economic Research on Development and Democracy (13–14). Families in this neighbourhood in Delhi reported more than four times as many acute episodes of illness (860) as the families in rural Chad, even though the survey population in Chad was substantially larger (363 vs 270). Moreover, a much lower proportion of household members in the Delhi site reported no illnesses at all (11% versus 61%) (15).

Box 1. Four categories of self-reports (9)

1. Symptoms reported without interpretation.
2. Illnesses that have been interpreted within the social context and have received a lay diagnosis.
3. Symptoms that have been previously diagnosed through a clinical interview or examination and then reported by the individual.
4. Conditions for which the professional diagnosis has been misunderstood or misreported by the individual.

Taken together, the dearth of chronic illnesses, the ways that illnesses are recognized and articulated, and the low levels of illness reported tell us something about the possibilities (and limits) of illness in rural Chad. The data from our household surveys cannot be fully explained by simple arguments about uninformed or poorly-educated survey respondents. The morbidity patterns that emerge from our surveys, and that are thrown into greater relief through the use of a comparative frame, reflect the way the health system in Chad is structured and the inaccessibility of that system to rural residents.

Illness reporting and the structure of care in rural Chad

As a complement to data collected with households, we inventory the resources and services available at local health care facilities and conduct interviews with health care practitioners, which include questions about their training, common health problems in the locality, and methods used to diagnose and treat a defined set of conditions. Despite substantial donor aid, per capita spending on health in Chad is about one-third of the amount the World Bank estimates is needed to cover the cost of basic primary care (16). Chronic shortages of health care providers, particularly outside the capital, mean that the patient to practitioner ratio is approximately seven times that recommended by WHO (17). The provision of basic primary care has been a priority of the Ministry of Health since the early 1990s. Yet, by 2002, only 407/657 (62%) planned health centres were functional; most of these were run by private groups and approximately 20% of the population had no access to health services. Sixteen of the 25 health centres (64%) in the oil-producing region are functional, which closely mirrors the national level of health care coverage.

The health centre nearest to Ngalaba is nine kilometres away, and was cited by all but one of the households in our study as the place they would go for the treatment of small wounds, a difficult delivery, and vaccinations. Few households said they would use the health centre for injections ($n = 9$) or cases of malaria ($n = 18$) or diarrhoea ($n = 19$), which were acquired or treated at home or by practitioners in the village. The health centre that serves Ngalaba covers an estimated population of 16 876 — a figure significantly higher than the norm of 10 000 established as part of national health policy. The centre is run by a Protestant mission organization and is managed by a nurse with five years of on-the-job training from medical missionaries. In accordance with national health policy, the health centre provides a basic package of primary care services. Patients presenting with other conditions or with complications are referred to the

district hospital, which is 20 kilometres from our study locality. None of the households in Ngalaba sought care at the district hospital during the 16-week data collection period.

In fact, relative to the number of households that cited the health centre as the place where they would seek care, few individuals (less than one-quarter of those who fell ill during the 16-week period) consulted any practitioner at all. A lack of money was the primary reason given for not consulting a practitioner. Consultation fees at the health centre are 300 *franc de la Communauté financière de l'Afrique* (FCFA; approximately US\$ 0.50) per person per visit, and health centre staff, who are unpaid, make their living from these fees and from mark-ups on pharmaceutical products acquired via the public health system at subsidized prices.

Over the 16-week period of data collection, the total revenues generated by the households varied from US\$ 10 to US\$ 1100. The household with the lowest reported revenues consisted of a 77-year-old man and his 76-year-old wife; their income was derived exclusively from the sporadic sale of small quantities of peanuts, sorghum, and gumbo. This couple relied on hired labour to plant and harvest their crops and, because of their inability to hire adequate help, they reported chronic food shortages and days during which food was simply not available. At the other end of the spectrum was a household that comprised 11 members: a 36-year-old man, his two wives (both in their 20s) and eight children aged from <1 year to 11 years. The co-wives generated much of the household's income through the sale of onions and *beignets*; agricultural products (peanuts and sorghum) were also sold, but in this case by the sack rather than smaller units. No food shortages were reported; indeed, the family reported that, on average, two to three meals were served every day. If we assume that this 16-week period is representative of the entire year, the per capita annual income for members of this family would be roughly US\$ 300, which is slightly higher than the national average of US\$ 230.

As the illustrations that follow suggest, however, differences in production capabilities and household revenues have little impact on access to care or on the way that illnesses are experienced. In the low-revenue household, the 77-year-old man reported being ill in each week of the survey except for week 7. In the baseline survey, he reported chronic gastritis and hypertension (he was the only person in this locality to report either "tension" or "gastritis"); as the weeks passed, his self-diagnoses changed slightly, but generally centered around these long-standing complaints or symptoms, which, from a clinical perspective, would be largely consonant with them. In 16 weeks, he consulted a practitioner only once — in the 10th week of our survey — despite ongoing, active symptoms. That same week, the interviewer wrote, in a note entered in the "commentary" section of our weekly survey form, that the man reported "no sign of cure" despite a visit to the health centre and a significant outlay of cash (300 FCFA for a consultation and 3200 FCFA for medications prescribed during the course of that visit). Indeed, his reports of "gastritis" and a "visual anomaly" continued unabated throughout the 16-week period. The lack of money was the most frequent reason given by this man and his wife for not seeking care in the other weeks of the survey. In fact, the household spent money on health in only three of the 16 weeks. In the two weeks when medication was taken without consulting a practitioner — in both cases because the condition had become severe —

household expenditure on health was substantially less than in the week when a practitioner was consulted.

More illness episodes were reported in the highest-revenue household than in the lowest-revenue household. One wife in the highest-revenue household reported dental caries in three consecutive weeks, while the other wife suffered from "worms" — a condition she reported in 12 of the 16 weeks of the survey. Neither woman consulted a practitioner: the wife with dental caries reported that the condition did not need the intervention of a health care provider and the wife with worms that her condition was chronic. Illnesses were also reported for three of the eight children over this period, including cases of asthma, parasitic infections (in two different children), and sore throat. The child with two illnesses had a stomach parasites and a sore throat. Only the case of the sore throat, which prevented the child from eating or drinking, prompted a visit to a practitioner.

Our data suggest that contact with the health services, in addition to being rare, has little impact on the ways that household members report and experience illnesses. Practitioners at the health centre conduct physical exams that allow them to document observable conditions, but are rarely able to diagnose the underlying causes of the presenting symptoms, much less detect asymptomatic conditions. The equipment available in the health centre consists of a scale, stethoscope, thermometer, blood pressure cuff, laryngoscope, orthoscope, and microscope. The health statistics gathered by this and other health centres and reported to the district level on a quarterly basis reflect these diagnostic limitations. Conditions are often registered and reported in the form of symptoms. Probable cases of sexually transmitted diseases, for example, are recorded under the rubrics "vaginal discharge" and "genital ulceration", and estimates of the incidence of sexually transmitted diseases are derived by counting the entries in these categories.

The therapeutic regimens that follow from these diagnostic procedures are necessarily best-guess efforts that often result in over-prescribing, inappropriate prescribing and use of pharmaceuticals, and, in many instances, continued symptoms. The 77-year old man with self-reported gastritis and visual problems received prescriptions for metronidazole and co-trimoxazole — antibiotics used for different types of infections of the gastrointestinal tract; he took each for a period of five days, although neither brought an end to his complaint. He was also prescribed vitamin B complex for the same five-day period. The inability of the health system to properly diagnose and treat even common illnesses contributes to the final portion of the picture that emerges from our weekly surveys in Ngalaba — that household members report prolonged episodes of normally acute and treatable conditions.

Experience of chronicity

The way that household members' illnesses unfold over time is not shown in Table 2 or by a listing of reported illnesses and the frequency with which they occur. Most illnesses reported over the 16-week period were clinically acute conditions that, given adequate medical attention, would be illnesses of relatively short duration. Yet, ailments like parasitic infections, toothaches, and hernias frequently take on the form of chronic problems and reappear week after week in our survey logs. Table 3 provides a graphic representation of this for one

Table 3. Illness reporting for a single household in Ngalaba over 16-week reporting period

Household member	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
01 (31-year old male farmer)	Backache	Headache		Back/headache	Headache			Back/headache		Headache						
02 (wife of 01; housewife)	Worms, headache															
03 (7-year-old eldest son)	Malaria														Malaria	
04 (4-year-old son)																
05 (2-year-old daughter)	Cold															
06 (Infant son aged <1 year)	Distended stomach	Infection of the spleen		Distended stomach	Distended stomach, flu	Distended stomach	Distended stomach, pain in penis	Distended stomach	Distended stomach, dysentery	Distended stomach	Distended stomach, flu	Distended stomach	Distended stomach, flu	Distended stomach	Distended stomach	Distended stomach
07 (12-year-old brother of 01)	Dental caries															

household, which has seven members, listed by their identification numbers along the vertical axis. Only one household member, a 4-year old boy, reported no illnesses over the 16-week study period. Four of the seven family members reported sick every week or nearly every week of the survey.

Table 4 indicates the use of any kind of health care practitioner by two members of this household. The 31-year old man consulted a practitioner only once during the 16-week period, despite persistent backaches and headaches that made him dizzy and that made bending over, standing up, and sitting down difficult. In the other weeks, including weeks when he self-medicated (with analgesics and a variety of different types of antibiotics) and could not work because of head and back pain, he did not consult a practitioner either because he had no money or because he thought that his condition was a chronic one for which little could be done. For the conditions affecting his infant son, a practitioner was consulted on two different occasions. Yet, the family reported that no exams were conducted at either practitioner visit, and, despite the use of a combination of analgesics, powerful antibiotics, and antimalarial drugs on multiple occasions, the infant's distended stomach appeared as a recurrent complaint with no resolution.

HIAs and possible illnesses

Our household surveys provide a set of benchmarks against which to assess the impact of the pipeline project on population health. The picture that emerges from the illness reports gathered in the course of our first wave of data collection runs counter to much of the literature on the health transition and to common sense expectations about the state of health of a rural population with inadequate food supplies and a lack of access to clean water and basic primary health care. Yet, the low levels of illness reporting and the absences of asymptomatic and truly chronic conditions that are the hallmark of the health transition are not reflections of an idyllic, pre-modern, rural existence. The chronic nature of usually clinically acute conditions and comparisons with low-income populations in other parts of the world belie such an image and instead reveal the failure of a health system and the lack of possibility of diagnosing, naming, or recognizing particular illnesses as such, as well as of experiencing illnesses in particular ways. Whether and how the pipeline project will have an impact on this picture of health remains uncertain, but it is vitally important to assess its impact.

The indicators of health and illness that emerge from household survey data of the kind reported here are not

Table 4. Actions taken in weeks when an illness was reported for household members 01 and 06

Actions taken	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Household member 01																
Ill household member missed work	×			×	×											
Another household member missed work					×											
Consulted practitioner	×															
Took medications	×			×	×											
Spent money on health care	×			×	×											
Household member 06																
Missed work																
Household member missed work				×			×			×				×		
Consulted practitioner				×			×									
Took medications				×	×		×			×				×		
Spent money on health care				×	×		×			×				×		

captured by the monitoring mechanisms associated with traditional HIAs. Rates of a defined set of conditions — that include, among others, respiratory diseases, sexually transmitted diseases, malaria, occupational exposures, and accidents and injuries — are tracked as part of the environmental management plan implemented in the context of the pipeline project (18). Actions taken to monitor and contain such threats are focused largely on the workforce and on workplace conditions, and they seek to shield populations in the oil-producing region from harm through the promotion of worker health. Our research suggests the need for a shift in the focus of traditional HIAs to extend them beyond their implied logic of “no harm done”. This is particularly relevant in the present case, given the project’s explicit development goals. The use of illness self-reports gathered in the context of household surveys is one way to shift these boundaries and to explore whether and how the pipeline project makes illness possible. ■

Acknowledgements

This study was supported by grants from the Center for a Livable Future at the Johns Hopkins University and a New

Century Scholars Award from the J. William Fulbright Foundation and the Center for the International Exchange of Scholars. The work was conducted with the collaboration of the Groupe de Recherches Alternatives et de Monitoring du Projet Pétrole/Tchad-Cameroun based in N’Djamena, Chad. Veena Das, Ranendra Kumar Das, and the team of researchers at the Institute for Socio-Economic Research on Development and Democracy developed the questionnaires for longitudinal data collection, which were adapted for use in this study. I am indebted to them and to Siba Grovogui for helpful comments on an earlier draft of this paper. Many of the ideas in this paper grew out of conversations held in the context of a comparative study of the sustainability of health in families under stress in Chad, India, and the United States that we conducted and presented as part of a research seminar sponsored by the Center for a Livable Future. I am particularly indebted to the families in Ngalaba who have been so welcoming, even during this time of great uncertainty, and who have graciously agreed to continue to be a part of this work.

Conflicts of interest: none declared.

Résumé

Risque de maladie et évaluation de l’impact sanitaire du projet d’oléoduc au Tchad

Les évaluations de l’impact sanitaire des projets d’infrastructure de grande échelle, comme le projet d’exploitation pétrolière et d’oléoduc Tchad-Cameroun, analysent la situation préexistante et surveillent les nouvelles maladies associées à des contextes industriels particuliers ou des modifications de l’organisation sociale. L’article indique que la description de leur état de santé par les sujets est un complément d’information intéressant à la mesure des impacts sanitaires de ces projets et rend compte des données recueillies dans les enquêtes en cours dans les foyers et les services de santé à Ngalaba, un village proche d’un champ de pétrole important au Tchad. Pendant la période initiale de 16 semaines où les données ont été recueillies chaque semaine, 363 personnes ont signalé un nombre peu élevé de cas par rapport aux affections cliniques chroniques ou asymptomatiques attendues d’après la théorie de la transition sanitaire ; le nombre global de cas de maladie était également faible. Les pathologies étaient souvent décrites d’après leurs symptômes ou désignées par leur nom local. Les personnels de santé ont rarement été consultés et lorsqu’ils l’ont été, les ressources pour le diagnostic et le traitement étaient limitées. Des affections cliniques aiguës et de

courte durée (parasitoses, odontalgies ou hernies) étaient considérées comme des affections chroniques et ont été signalées semaine après semaine. La fréquence peu élevée des cas de maladie rapportés et l’absence d’affections cliniques chroniques ne signifient pas que les populations tchadiennes rurales sont en bonne santé. Le profil de morbidité reflète plutôt une « écologie » locale dans laquelle les services de santé sont organisés et les soins dispensés d’une manière qui limite les possibilités de maladie, en ce qui concerne le type de maladie susceptible d’être diagnostiqué et rapporté, les formes prises par les maladies et la façon dont les maladies sont ressenties. La description de leur état de santé par les sujets est un complément utile des méthodes biologiques plus scientifiques de mesure de l’évaluation des impacts sanitaires, en particulier dans le cadre des projets d’infrastructure à grande échelle comportant manifestation des objectifs de développement. Plutôt que de fournir des données sur l’allègement des dommages par les actions des donateurs, des états et des entreprises, les informations fournies par les personnes sur leur propre santé indiquent les possibilités de maladie dans le contexte local.

Resumen

Posibles expresiones de la morbilidad: evaluación de los impactos sanitarios del proyecto de oleoducto del Chad

Las evaluaciones del impacto sanitario relacionadas con grandes proyectos de infraestructura, como el Proyecto de Desarrollo Petrolífero y Oleoducto Chad-Camerún, analizan las condiciones preexistentes y las nuevas enfermedades asociadas a determinadas industrias o a los cambios de la organización social. En este artículo se señala que las enfermedades referidas por los propios pacientes constituyen un conjunto de referencias complementarias para medir el impacto sanitario de esos proyectos, y se presentan los datos de las encuestas que se están realizando en los hogares y los servicios de salud de Ngalaba, una aldea cercana a un gran campo de petróleo del Chad. En un periodo inicial de 16 semanas de recolección

semanal de datos, 363 personas refirieron en un reducido número de casos algunas de las enfermedades clínicamente crónicas o asintomáticas que eran de prever según la teoría de la transición sanitaria; el nivel general de declaración de enfermedades fue bajo. Las enfermedades se describieron a menudo por sus síntomas o con diagnósticos populares. Raramente se consultaba a los profesionales sanitarios, y cuando así se hacía los recursos diagnósticos y terapéuticos eran escasos. Enfermedades clínicamente agudas y de corta duración, como parasitosis, dolores de muelas o hernias, eran experimentadas como trastornos crónicos y notificadas semana tras semana. Los bajos niveles de notificación de enfermedades y la

ausencia de enfermedades clínicamente crónicas no deben interpretarse como un signo de que los chadianos están sanos. Las pautas de morbilidad reflejan más bien una ecología local peculiar donde las características de la organización de los servicios de salud y de la prestación de asistencia sanitaria limitan la manifestación de la morbilidad desde el punto de vista del tipo de las enfermedades que se pueden diagnosticar y notificar, de la forma que pueden adoptar y de la manera de experimentarlas. Las

declaraciones de los pacientes sobre sus padecimientos son un valioso complemento de las medidas biológicas «duras» en las evaluaciones del impacto sanitario, particularmente en el caso de los grandes proyectos de infraestructura con objetivos de desarrollo explícitos. Más que proporcionar datos sobre la medida en que las actividades de las empresas, el estado y los donantes han mitigado los daños, las declaraciones de los pacientes muestran las posibles expresiones de la morbilidad en los contextos locales.

ملخص

الأمراض المحتملة الحدوث: تقييم التأثير الصحي لمشروع خطوط النفط التشادية

الأمراض الحادة الوجيزة الأمد (مثل العدوى بالطفيليات وآلام الأسنان والفتوق) حالات مزمنة سريريا (إكلينيكيًا)، ولم يبلغ عن حدوثها إلا بعد مرور أسبوع كامل. ولم تعتبر المستويات المنخفضة للإبلاغ عن الأمراض وفقدان الحالات المزمنة سريريا (إكلينيكيًا) دلالة على أن المناطق الريفية من تشاد تتمتع بالصحة، بل إن نماذج المراضة تعكس السمات البيئية المحلية الخاصة والتي تم تنظيم الخدمات الصحية والرعاية الصحية وفقها بطرق تقلل من احتمالات حدوث المرض، وذلك بتبيان أنماط الأمراض التي يمكن تشخيصها والإبلاغ عنها، وأشكال المرض التي يمكن أخذها، والطرق التي يمكن للناس أن يعانون من المرض وفقها. إن الإبلاغ الذاتي عن الأمراض من المكملات المفيدة للإجراءات البيولوجية الأكثر صلابة وموثوقية في تقييم التأثير الصحي، ولاسيما في سياق المشاريع ذات البنى الأساسية الواسعة النطاق وذات الأهداف التنموية الواضحة. إن الإبلاغ الذاتي يوضح إمكانية ظهور المرض في البيئات المحلية، وهو بذلك يختلف عن الحصول على المعطيات التي تصف مدى الضرر الذي يمكن تخفيفه بتنفيذ أنشطة من قبيل المانحين ومن قبيل الدولة ومن قبيل الجميع.

إن تقييم التأثير الصحي يتصاحب مع المشروعات ذات البنية الأساسية الواسعة المجال، مثل مشروع خطوط النفط والتنمية البترولية لتشاد والكاميرون، فيراقب الظروف الموجودة سابقاً والأمراض المستجدة المرافقة لبعض الصناعات أو للتغيرات التي تحدث في المنظومة الاجتماعية. ويقترح هذا المقال أن يشكل الإبلاغ الذاتي عن الأمراض مجموعة تكميلية من العلامات الفارقة التي تقيس التأثير الصحي لهذه المشاريع، كما يعرض هذا المقال المعطيات التي تم تجميعها في مسوحات سكانية مستمرة، ومسوحات حول الخدمات الصحية في نجالابا، وهي قرية تقع قرب حقل بترولي في تشاد. وأثناء المرحلة البدئية لجمع المعطيات والتي استغرقت ١٦ أسبوعاً تم فيها تجميع المعطيات كل أسبوع، أبلغ ٣٦٣ شخصاً عن عدد قليل من الحالات السريرية (الإكلينيكية) المزمنة أو غير المترافقة بالأعراض، وهي حالات متوقعة وفقاً لنظرية التحول الصحي، وقد كان المستوى العام للإبلاغ عن الأمراض منخفضاً، وكثيراً ما كانت الأمراض توصف بأعراضها أو بتشخيصات غير تخصصية، ولم يُسَئَر الأطباء إلا في حالات نادرة، ولم يكن الأطباء مصدرًا للتشخيص أو للمعالجة إلا في حالات محدودة. وقد تم اعتبار

References

- Sen A. Objectivity and position: assessment of health and well-being. In: Chen LC, Kleinman A, Ware N, editors. *Health and social change: an international perspective*. Cambridge (MA): Harvard School of Public Health and Harvard University Press; 1994. p. 115-28.
- Kleinman A. *Writing at the margin: discourse between anthropology and medicine*. Berkeley (CA): University of California Press; 1995.
- Sen A. Health: perception versus observation. *British Medical Journal* 2002;324:860-1.
- Ouagadjio BK, Nodjimadji JN, Ngoniri N, Ngakoutou K, Ignegongba JS, Tokindan O, et al. *Enquete demographique et de sante, Tchad 1996-1997*. [Demographic and health Survey, Chad, 1996-1997.] Calverton (MD): Bureau Central du Recensement and Macro International; 1998. In French.
- Ministère de la Promotion Economique et du Développement. *Enquête par grappes a indicateurs multiples*. [A cluster survey using multiple indicators.] N'Djamena: Ministère de la Promotion Economique et du Développement; 2001. In French.
- Beasley M, Brooker S, Ndinaromtan M, Majjouroum EM, Baboguel M, Djenguinabe E, et al. First nationwide survey of the health of schoolchildren in Chad. *Tropical Medicine and International Health* 2002;7:625-30.
- Addlakha R, Das J, Das S, Das V, Kumar C, Sanchez C. *Weekly morbidity survey documentation*. Delhi: Institute for Socio-Economic Research on Development and Democracy; 2000.
- Murray CJL, Lopez AD. *The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge (MA): Harvard School of Public Health on behalf of the World Health Organization and the World Bank; 1996.
- Sadana R. Measuring reproductive health: review of community-based approaches to assessing morbidity. *Bulletin of the World Health Organization* 2000;78:640-54.
- Murray CJL, Chen LC. Understanding morbidity change. *Population and Development Review* 1992;18:481-503.
- Murray CJL. Epidemiologic and morbidity transitions in India. In: Das Gupta M, Chen LC, Krishnan TN, editors. *Health, poverty and development in India*. Delhi: Oxford University Press; 1996. p. 122-47.
- Johansson SR. The health transition: the cultural inflation of morbidity during the decline of mortality. *Health Transition Review* 1991;1:39-68.
- Das V, Das RK. *Pharmaceuticals in urban ecologies: the register of the local*. Delhi: Institute of Socio-Economic Research on Development and Democracy; 2003.
- Das J, Sanchez-Paramo C. *Short but not sweet: new evidence on short duration morbidities from India*. Delhi: Institute of Socio-Economic Research on Development and Democracy; 2003.
- Das V, Das RK, Leonard L. *The sustainability of health in families under stress: a longitudinal and comparative study. Final report*. Baltimore (MD): Center for a Livable Future; 2002.
- World Bank. *World development report 1993: investing in health*. Washington (DC): World Bank; 1993.
- Groupe Thématique Santé et Pauvreté. *Secteur de santé au Tchad: analyse et perspectives dans le cadre de la stratégie de réduction de la pauvreté*. [The health sector in Chad: analysis and perspectives within the framework of the strategy to reduce poverty.] N'Djamena: Ministère de la Santé; 2002. In French.
- Esso Exploration and Production Chad. *Environmental management plan*. Houston (TA): Esso Exploration and Production Chad; 2000. Available from: URL: http://www.esso Chad.com/Chad/Library/Documentation/Chad_DO_Chad.asp