Access to healthcare, mortality and violence in Democratic Republic of the Congo

Results of five epidemiological surveys: Kilwa, Inongo, Basankusu, Lubutu, Bunkeya March to May 2005

MEDECINS SANS FRONTIERES

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Our thanks to all who contributed to this report and to the field study.

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EXECUTIVE SUMMARY

CONTEXT

The Democratic Republic of the Congo is today in a transition phase. The signature of the Global and Inclusive Agreement on Transition, in Pretoria on December 16, 2002, the nomination of a National Union government and the presentation of an electoral calendar have rekindled hopes of peace and better tomorrows. However, many eastern regions of the country, from Ituri to Katanga, and including Kivu and Maniema, are still in a state of war[1].

The international community seems agreed in acknowledging that the statistics for DRC are sombre indeed: this country ranks 168th (out of 177 countries) in the United Nations Development Programme's human development index.[2]

DRC holds the sad world record for mother-child mortality with 1,289 deaths per 100,000 live births, which represents a loss each year of 585,000 children[3]. The mortality rates for under-fives are around 213 deaths per 1,000 live births[4]. This means that one in five newborn Congolese children will never reach the age of five years. Among the under-fives, 30% of deaths are caused by malaria, which claims the lives of 300,000 children each year[5].

Over 80% of the Congolese survive on the equivalent of just $0.30 (US dollars) a day. The poverty threshold is estimated by international institutions at $1 per person per day.[6] Most families have barely enough money to feed themselves. Moreover, DRC is also one of the countries with the world's worst food security: 75% of the population are considered to be undernourished, according to the FAO[7]. The Congolese Ministry of Public Health (MPH) puts the overall figure for severe malnutrition at 16% of the population.

Illness is regarded as a tragedy by the families who are worst off; they barely have the means to survive.

At a time when DRC and the international community are working on political transition and economic reconstruction, it is crucial that the dire humanitarian and health situation in which the Congolese population finds itself in **still today** not be overlooked. The situation calls for the deployment of far-reaching policies that are focused on the **immediate needs** of this long-suffering population.

SURVEYS

In early 2005, Médecins Sans Frontières (MSF) repeated a series of surveys following the model used for surveys done in 2001. The new surveys were conducted in five health zones: Kilwa, Inongo, Basankusu, Lubutu and Bunyeka[8]. Three of these zones had previously been surveyed in 2001.

The new surveys focus on **mortality**, **access to healthcare**, **vaccination** and **violence**. Their objective is to depict to the international community the humanitarian

[1] See recent MSF report on Bunia/Ituri: *Democratic Republic of Congo – Nothing New in Ituri: The Violence Continues*, MSF report, August 2005. Available on: http://www.msf.ch
[2] World Report on Human Development 2004, *Cultural libery in today's diverse world,* UNDP 2004
[3] World Bank, *Health Rehabilitation Project*, 2004
[4] The sub-saharan average is 157/1,000 according to UNICEF, *The State of the World's Children*, 2003.
[5] World Bank, op cit.
[6] Strategic framework for poverty reduction in DRC, World Bank, March 2002
[7] Food and Agriculture Organization of the UN: *The state of food insecurity in the world*, 2004
[8] Of these zones, Basankusu and Kilwa are partially supported by MSF. Bunkeya receives aid from a Spanish congregation and the Lubutu and Inongo health zones have no outside assistance.

and health situation in DRC today, and to contribute to the adjustment of MSF programmes.

The retrospective mortality rates, as well as the results relating to access to healthcare, vaccination, violence, and the interaction between all of these parameters, have been estimated using the WHO's two-stage cluster sampling method. Nine hundred households were interviewed in each of the zones.

RESULTS

- **The mortality rates are indicative of a state of emergency in four of the five zones surveyed. In three of the five zones, the health situation is catastrophic.**

Although security has now returned to much of the territory, mortality rates reveal catastrophic health situations. This is true both in areas still experiencing conflict and violence, such as Lubutu (with 3.4 deaths/10,000/day in overall terms and 6.2 for under-fives), as well as in peaceful zones such as Inongo (with 2.2 and 5.5 deaths/10,000/day respectively).

The expected mortality rate is 0.5/10,000/day for the population as a whole, and 1/10,000/day for under-fives.

Nor are the over-fives spared; mortality rates are 1.3 in Inongo, 1.5 in Basankusu and 2.6 in Lubutu, reflecting the neediness and vulnerability of the people there.

The majority of victims of illness suffer and die from infectious diseases common to all sub-Saharan countries, such as malaria, acute respiratory infections and diarrhoea. All of these can be avoided and treated under normal conditions. These diseases are the cause of nearly two-thirds of the deaths reported in Bunkeya and three-quarters in Kilwa.

Malnutrition is most severe where violence is ongoing, such as in Lubutu, where it causes 11% of the mortality, or where the people are highly vulnerable, such as in Inongo and Basankusu, with rates of 9% and 7% respectively.

- **Limited healthcare accessibility**

Total healthcare access[9] in the best of cases is available to one in two of the persons questioned in two out of four zones, and only one in three in Lubutu.

The public health sector, which it is claimed covers the majority of the population, reaches only one in two patients from consultation to complete treatment when it is subsidized in Basankusu[10], or one in six in Lubutu when it is not.

[9] Total healthcare access includes all consultation facilities (private, public, traditional, dispensary) outside the family with accessibility to full treatment (irrespective of the place of treatment).
[10] The results presented in this report apply to the surveyed zones as a whole. For the Basankusu and Kilwa zones, the results cover all the supported zones in only part of the health catchment area. MSF did not specifically set out to survey supported areas as opposed to unsupported ones. In order to obtain comparable data for these areas, full sampling will have to be conducted among the population in both supported and unsupported areas.

In the light of our survey findings and MSF's field experience gained over many years, the main barriers to access to healthcare in DRC are:

- inadequacy or non-existence of healthcare provision
- patients' inability to pay for healthcare
- non-availability of quality medication
- lack of supervision and training of medical personnel
- non-payment of health workers' and officials' salaries
- geographical inaccessibility and non-existence of the communication structures needed for the long distances between patients' homes and the nearest health centre.

According to the families interviewed, cost is a major barrier to access to healthcare, for consultation as well as medicines. This is the case in all the zones surveyed. It is followed by non-availability of medication and the long distances to health structures. The factor of geography was more frequently cited in Equateur.

- **Vaccination: inadequate coverage**

Polio vaccine cover varies from 84% in Bunkeya to 91% in Basankusu and Inongo, whereas the objective for eradicating this disease is 100%. For measles, 75% of the children of Kilwa, Inongo and Lubutu are vaccinated, whereas the minimum coverage threshold is 85%.

- **Violence**

The survey results reveal three distinct contexts. Post-war violence is virtually ongoing in Lubutu. It is sporadic in Kilwa, where there has been an attempted local insurrection and in Bunkeya, which welcomed the displaced from Mitwaba. In Basankusu and Inongo, violence takes the form of social unrest.

In the Lubutu health zone, 72% of the families interviewed said that someone in the family had been a victim of violence. Fifty cases of rape were reported among the 986 families interviewed in Lubutu. The average for families who experienced violence varies between 19% in Bunkeya and 38% in Kilwa in the other two contexts.

In Lubutu and Inongo, mortality rates in families exposed to violence are significantly higher than among those unaffected by it.

IMPLICATIONS

A ongoing crisis

Although peace has now returned to much of the Congolese territory, mortality rates exceed those of the majority of poor countries, as well as of regions and countries at war. In spite of political changes, the mortality figures show no significant improvement. Indeed, the situation in some of the zones surveyed has worsened. The figures indicate a real state of emergency as regards health conditions in four of the five zones covered by the surveys.

The mortality rates observed in Kilwa are 1.8/10,000/day, which is well in excess of emergency thresholds (1/10,000/day).

The situation is catastrophic – a rate of over 2/10,000/day – in the health zones of Lubutu (3.4/10,000/day), Basankusu (2.3/10,000/day) and Inongo (2.2/10,000/day).

The situation of under-fives is in a state of emergency in all the zones surveyed. The situation of over-fives is equally alarming, rating as an emergency in four of the five zones surveyed.

- **In the zones still experiencing violence today, infectious diseases and malnutrition are the deadly allies of violence.**

- **Excess mortality is not confined to the areas of conflict.**

The example of Inongo: spared conflict but mortality worsened

The excess mortality rates in Inongo, a zone situated far from the front and which has never experienced the full brunt of the conflict, are similarly disturbing.

The Inongo health zone is difficult to reach and has never had any external support. There is no denying the effect this has had for, in spite of the absence of combat, mortality rates have risen significantly from 2001 to 2005.

It is vital that this crisis situation be acknowledged and that excess mortality in DRC not be associated solely with the country's ongoing conflict situations. Extreme poverty and hardship are also claiming lives today.

Most Congolese people live in absolute poverty on an average of just $0.30 a day. In the rural areas most of the families are vulnerable and sickness or disease are regarded as a tragedy. Just like four years ago, most of the victims are still dying in silence, while the world's attention is elsewhere.

Grossly inadequate and unaffordable access to healthcare

In terms of healthcare, most of the population finds itself in a wilderness. In the majority of cases, when care is available, the patients cannot afford it. The system in place engenders exclusion from healthcare.

In spite of much goodwill, the public services are seemingly powerless. Supported medical structures are insufficient and often have no resources to meet the needs. This leaves the way open to a private and virtually unregulated sector of traditional healers and itinerant medicine vendors whose services and wares are a mixture of the best and the worst.

Moreover, private (profit-making) sector intervention is for the most part limited to the provision of medicines and not treatment. It also tends to be available only where the population has some purchasing power, namely in towns or in strategic locations such as mining areas.

RECOMMENDATIONS

- **It is crucial that the catastrophic humanitarian plight of a great majority of Congolese be recognized, nearly three years after the signing of the peace accords.**

  This recognition cannot be limited only to zones still in the throes of conflict. There are catastrophic health situations in zones unaffected by fighting.

- **This catastrophic health situation calls for an immediate response centred on the humanitarian needs of the population.**

  In DRC, a dual approach to health matters is needed:

  - provide a speedy and effective response to the current medical needs of the people
  - build an equitable health system for the long term.

- **Free basic healthcare** must be seen as a response that can improve access to essential healthcare in DRC. It must not be rejected on principle, for the sake of development and financial sustainability considerations.

- **Financing of the health sector** in DRC must be regarded as a national and international priority.

To the Congolese government, to the Congolese Ministry of Public Health, to health sector actors, to United Nations agencies, to non-governmental organisations and to other donors in DRC:

All the actors in DRC must take account of the fact that far too many people are still dying in this country. Priorities and modes of intervention must be adapted to address this issue of excess mortality.

To donors in particular:

Donors must continue to respond to the humanitarian needs of the population. Healthcare must be a priority in DRC given the catastrophic health situation.

At national level, there must be fundamental discussion on:

- the choices to be made on health strategy, to the benefit of patients
- the subsidy policies to be implemented to **increase effective healthcare services in rural areas and to remove the financial barrier to patients' access to healthcare in DRC.**

Acronyms and abbreviations

ANR	National information agency
AMV	Anti-measles vaccine
ARI	Acute respiratory infections
CAP	United Nations Consolidated Appeals Process
CDF	Congolese franc
CHZO	Central health zone office
CI	Confidence interval
CIAT	International committee in support of the transition
CMO	Chief medical officer, health zone
EPI	Extended programme for immunization
FAO	Food and Agriculture Organisation of the United Nations
FARDC	Armed forces of the Democratic Republic of the Congo
CMR	Crude mortality rate
CMR<5	Crude mortality rate for under-fives
CMR<5	Crude mortality rate for over-fives
GRH	General referral hospital
HIV-Aids	Human immunodeficiency virus–Acquired immune deficiency syndrome
HMD	Hospital medical director
HZ	Health zone
IRC	International Rescue Committee
MDM	Médecins du Monde
MONUC	United Nations mission in the Democratic Republic of the Congo
MPH	Ministry of Public Health
NGO	Non-governmental organisation
NVD	National vaccination days
OPV	Oral polio vaccine
PCM	Protein-calorific malnutrition
PHC	Primary healthcare
RCD	Congolese Assembly for Democracy
SADC	South African Development Community
UNICEF	United Nations Children's Fund
UN	United Nations
WHO	World Health Organisation

I. INTRODUCTION AND CONTEXT

Following DRC's independence in 1960, 30 years of Mobutist rule brought one of the world's richest countries to the brink of disaster. Faltering decolonisation, the concentration of powers, the break-up of the state, the misappropriation of public funds, the non-distributed exploitation of riches, as well as territorial and ethnic conflicts have all constituted the unstable base of a regime increasingly forsaken by hitherto interested and cooperative Western powers.

This context of a dying regime on the brink of civil war totally collapsed with the impact of the 1994 Rwandan genocide, which led to regional destabilisation with dramatic consequences for the Congolese people. Mobutu's Zaire disappeared to become Democratic Republic of the Congo when in 1996 the AFDL took power following a long march throughout the country alongside the new Rwandan forces, in pursuit of the perpetrators of the genocide and massacring thousands of Rwandan refugees along the way[11].

In 1998, Laurent Désiré Kabila split from the Rwandan and Ugandan backers who had put him into power. Eager to safeguard their interests and presence in DRC, they set up opportunistic alliances with movements hostile to the new dictatorship in Kinshasa. These 'uninvited' alien forces stayed on in DRC for security reasons and to protect themselves against the infiltration of rebel groups hostile to their respective regimes, but also to illegally exploit mining and forestry resources.

This second war contributed to the brutal geographical partitioning of the country along a diagonal line from Equateur to the northwest to Katanga in the southeast. Overnight, it became virtually impossible for the Congolese to cross the front line, and the Kinshasa government, allied with Angola, Zimbabwe and Namibia, member countries of the South African Development Community (SADC), found itself warding off numerous rebellions often supported by Kigali or Kampala.

From 1999 onwards, with stimulus from the international community, a plan to try and resolve the crisis came under discussion at regional level. The stages towards achieving peace were to include a ceasefire, withdrawal of 'uninvited' forces, deployment of a UN peacekeeping mission, disarmament and demobilisation of the various Congolese militia, formation of a reconciliation government and organisation of elections following the transition period.

Joseph Kabila succeeded his father, who was assassinated on January 16, 2001. Under pressure from the international community and fierce social tensions, he revived the peace talks that had come to a standstill.

On December 17, 2002, the Congolese government, the rebellion, civil society and the political class finally signed a peace accord in Pretoria, South Africa. A transitional government, with the backing of the international community through the international committee in support of the transition (CIAT), was established in July 2003 for a two-year period. The national army was regularized with the disarmament of various militia groups, but it continued to be confronted by Congolese or foreign armed groups hostile to the peace process which compromised their power.

[11] June 30, 1998: in a report, the UN accuses Kabila's forces of having "systematically" murdered Rwandan Hutu refugees and Congolese villagers, at times with the support of the Rwandan government, from the autumn of 1996 to spring 1997. The report recommends the setting up of an international tribunal to identify the individuals responsible for the massacres and to evaluate the involvement of Rwandan troops and those of other countries in these killings.

In early 2005, political instability was still perceptible both in the capital, with much distrust among the political classes, and at regional level with hotbeds of tension in Province Orientale and Kivu, as well as secessionist plans in Katanga.

In spite of all this, the level of violence has on the whole subsided significantly, particularly since the establishment of a government that includes the main protagonists of the conflict and the deployment of new units of loyal forces and over 16,000 blue helmets.[12] A more secure climate enabled thousands of displaced persons and refugees to return to their original homes.

Health indicators nevertheless paint a very sad picture, with one child in eight dying at birth and a life expectancy at birth of 45 years. "The collapse of the health sector has led to the re-emergence of rare diseases that had been virtually eradicated. DRC has one of the greatest varieties of infectious diseases, including polio, haemorrhagic fevers, syphilis, chickenpox, whooping cough, measles, meningitis, bronchitis, leprosy and HIV-Aids".[13] The most common illnesses are infectious diseases such as malaria, acute respiratory infections and diarrhoeal diseases.

Today, half of the 400 hospitals and 5,000 health units are run by private institutions, churches and NGOs, while the other half is state-run with no resources and personnel who have no equipment or medical supplies to work with.[14] The public health system is still in total collapse. The government has re-drawn the health zones, bringing their number from 306 to 515 zones; this has made for greater decentralization, but calls for even greater resources which were already lacking. The sheer extent of the territory and non-existence of efficient means of communication isolate a great many health zones, to say nothing of the health catchments areas that can only be reached after a gruelling journey lasting one to three days.

Hospitalized patients have to obtain their own medicines and sometimes even the medical materials needed to treat them. The pharmacies in public medical structures are often empty or at best undersupplied, and patients, if they can afford it, have no choice but to turn to the informal sector, which is costly, unregulated and sometimes dangerous. The fee-charging system in place is simply beyond the means of most Congolese. Demotivated medical staff working for a pittance take their pay from the patients' contributions. This grossly inadequate and costly service is partly to blame for the public sector being abandoned.

The precarious situation of the people – nearly three Congolese in four live in absolute poverty, with no regular supply of food or drinking water – means that nearly two-thirds of the Congolese population is deprived of healthcare for lack of financial resources.[15] At the height of the armed conflict, a joint WHO-UNICEF mission in June 2001 estimated that over 70% of the Congolese population had no access to conventional medical care.[16] Four years on, the Congolese are still victims of three decades of unstable government followed by war, and have yet to reap the benefits of confidence and growth that is slow in coming and not always fairly apportioned.[17] Two years of uncertain transition are keeping part of the population dependent on sparingly dispensed humanitarian aid.

[12] With an investment of over $1bn a year and 16,700 members, MONUC is the UN's largest peace-keeping operation in the world.
[13] DRC *Health and Family Planning Overview*, USAID, July 2002
[14] In 2005, the budget allocated to health is approximately 37bn Congolese francs, about $80m (US dollars) and represents 4.6% of the total budget.
[15] According to the MPH's EPI 2003 macro plan, economic access to essential medicines is 37%. The purchasing power of the Congolese fell throughout the war, as did the rate of exchange of the CDF, which on March 30, 2005 was worth only 0.02% of its launch value in June 1998. It went from 1.2 CDF to 500 CDF to the US dollar.
[16] Joint WHO-UNICEF mission, June 2001
[17] The growth rate in 2004 is reported to be 5.6%, in an economy where the informal sector accounts for two-thirds of activity.

In 2001, Médecins Sans Frontières (MSF) conducted a series of epidemiological surveys in five health zones which showed that mortality in the zones close to the front was well above the emergency threshold, that a prime consequence of the war was a higher incidence of infectious diseases and malnutrition, and that 40% to 70% of the population was deprived of healthcare. The aim of this new series of surveys is to review the situation four years on.

II. OBJECTIVES OF THE SURVEY

The MSF survey had four objectives:

1. To gather reliable data in order to calculate mortality, the percentage of healthcare access and vaccination coverage, and to determine the extent and forms of violence affecting the Congolese civilian populations.

2. To compare the findings with those of the surveys conducted in 2001, in wartime.

3. To give donors and the international community an overview of the horrendous conditions the Congolese people are living under during this transition phase.

4. To contribute to adjusting the programmes of MSF-Belgium and other organisations in the immediate future.

III. METHODOLOGY

The same methodology as that used 2001 was adopted to estimate mortality, healthcare access, vaccination cover and scale of violence.

Geographical location, sampling and interviewing method

For each of the five field surveys conducted in DRC during March to May 2005, the retrospective crude mortality rate (CMR) and results for access to healthcare and scale of violence were estimated using the two-stage cluster sampling method. This is the same approach as the one used by the World Health Organisation (WHO) to estimate vaccination coverage (expanded programme for immunization or EPI).

Five health zones in four provinces were selected with the following criteria:

- Supported or not supported by MSF, or by any other partner within the framework of primary healthcare
- Five zones located in at least four different provinces
- Affected by violence now or in the past, and not affected by violence
- Accessibility in terms of logistics and safety
- Availability of maps and population figures for each health catchment area
- Cooperation of the chief medical officer and local authorities of the zone

The health zones of Kilwa and Bunkeya (in Katanga), Basankusu (in Equateur), Inongo (in Bandundu) and Lubutu (in Maniema) were surveyed between March and May 2005.

Kilwa, Basankusu and Inongo had been part of the 2001 surveys, but following a re-drawing of the health zones by the DRC government in the meantime, these three zones had been slightly modified. The change was made for administrative and political reasons. Formerly divided into 306 health zones, DRC as of early 2004 numbered 515 health zones. It was difficult to obtain details in Kinshasa of all of these changes, which were sometimes ascertained in the field, as in Lubutu. Taking into account the logistics resources available and the relations with the local health authorities, each zone was selected with great care.

Basankusu is a health zone partially supported by MSF-Belgium, with a fixed charge of 20 francs ($0.04 as at April 15, 2005) giving access to a consultation and medication in the supported structures of the general hospital health centres. The size of this zone had been reduced, with part of the area in the north now regrouped around the new central office of Djombo. The 2001 and 2005 surveys covered these same health catchment areas.

Kilwa is also a zone that has partial MSF-Belgium support, with a fixed charge of 50 francs ($0.10). Under the new zoning plan, the areas in the south are now part of the Kasenga health zone. As in Basankusu, the surveys were conducted in the same health catchment areas.

Inongo, a zone not supported by MSF except in emergency situations, had seen some of the areas west of the lake regrouped around the new central office in Banzow Moke. Here, however, the 2005 survey was confined to the newly-partitioned areas for logistic and administrative reasons. The Banzow Moke zone is landlocked, like several outlying areas of Inongo.

Lubutu was a zone temporarily supported by MSF-Belgium from 1999 to 2001. It had also had its geographical area reduced and its southern section partitioned off and regrouped around an additional central office situated in Obokote. The survey was confined to the current zone of Lubutu.

The fifth health zone selected had originally been Kabalo, in Katanga. However, our teams were not able to go there for safety reasons. Bunkeya was therefore chosen. This new health zone, served by a Spanish congregation of Carmelite sisters, was formerly part of the health catchment area of Kapolowe. Five thousand people originally from the territory of Mitwaba had been displaced to Bunkeya in April 2005 following conflict between local militia and the army. At the time of the survey, half of these displaced persons had begun making their way back. The surveys focused on the route linking Bunkeya to Kyubo, the last accessible village. Part of the population surveyed was in the Bunkeya health zone, the other in the Mufunga Sampwe zone. The clusters were selected on the basis of population figures collected locally, and which overlap two health zones: Bunkeya and Mufunga-Sampwe.

The demographic figures by zone, divided into health catchments areas[18], were communicated to us by the local health authorities and tally with the results of the 2003 NVDs in the case of Kilwa, and with the result of the health surveys for the CHZO/WHO 2004 micro-planning for Inongo and Lubutu. The figures used for Basankusu were those taken from the MSF-Belgium measles vaccination campaign in September 2004. For Bunkeya, the population figures were obtained from the CHZO.

The number of clusters for each health catchment area was calculated as a proportion of their population (WHO method). The specific location of the clusters in each health catchment area locality (village, hamlet) was then selected at random.

Once the specific sites had been identified, the survey teams determined the centre of the village, hamlet or neighbourhood, and selected a direction at random. A count was then made of the houses in this direction within the grid, and a number selected at random to determine the first house from which surveying could commence. The second house selected was the next nearest and so on.

In Kilwa and Lubutu, knowing that we were in the planting season, it was sometimes difficult finding the families at home as the farming population would leave early to work

[18] Each health catchment area is supposed to have one health centre (a ratio of 1 to approximately 5,000-10,000 inhabitants).

in the fields. Where they could not be told about the survey in time, the teams spent the night on location and awaited the people's return to interview them the next morning.

An average of three teams of four researchers were selected locally according to their general ability and knowledge of the area and local languages. These teams were given training on the methodology and procedures used, and then tested. After that they were assessed by at least three supervisors overseen by a coordinator. The questionnaire they were given had 23 closed or semi-open questions set out in four parts (mortality, access to healthcare, vaccination and violence), which had also been tested beforehand.

Unlike the surveys on mortality and violence, where the whole family constituted the unit of observation, the questions on access to healthcare applied to only one member suffering illness, and those concerning vaccination to only one child aged between nine months and five years. In the first case, the survey took into account the most recent episode of illness. In the second, the child was selected at random.

The retrospective period covered the months from the start of the year, for questions relating to mortality and healthcare access, and these same months plus the whole of 2004 for the questions relating to violence.

Sample size calculation and analysis

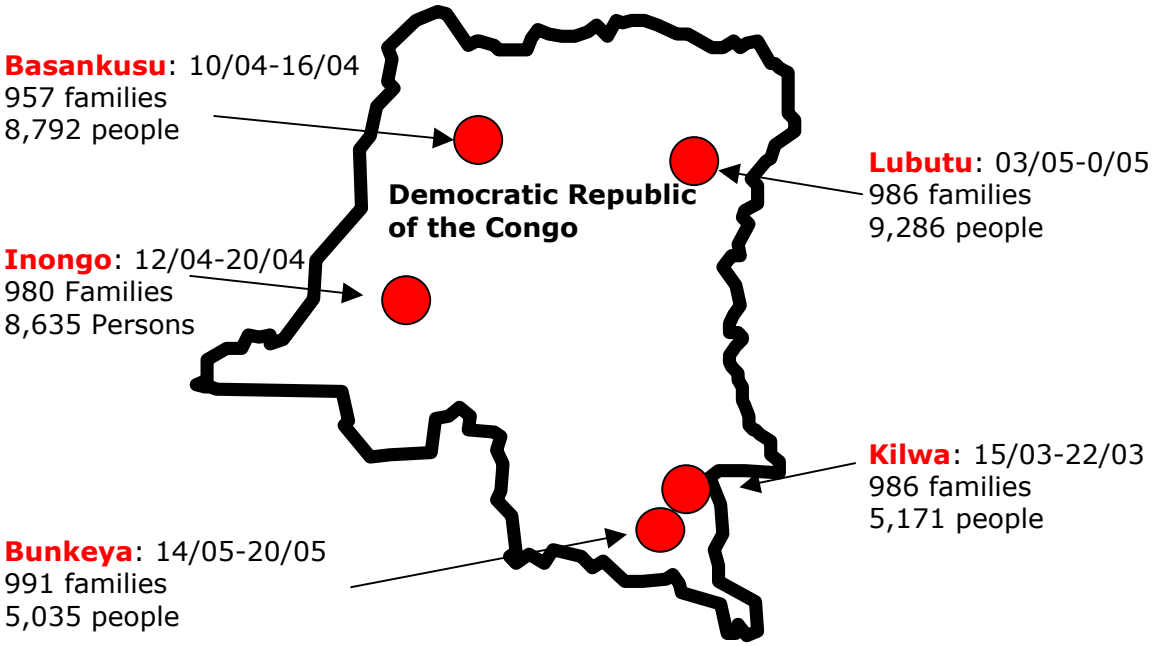
The sample size was calculated on the basis of a percentage of expected deaths and on the hypothesis of a tripling of mortality in the zones surveyed, i.e. 1.5/10,000/day. For a confidence interval of ± 0.4/10,000/day and cluster effect of between 3 and 4, a sample was calculated for between 4,731 and 6,308 persons. Where the average of persons per family was between 5 and 7, our sample had to be 900 families, namely 30 clusters of 30 families.

The retrospective period considered for the mortality and access to healthcare survey commenced on January 1, 2005 up to the time of the survey, and therefore spanned two to four months depending on the zone. The retrospective period for the survey on violence and displacement was longer, commencing on January 1, 2004 up to the time of the survey in 2005.

For the purposes of the survey, a family unit was defined as 'persons sleeping and eating under the same roof at least three days a week'. Depending on the type of housing and social conventions, the family could include brothers, sisters, their immediate families, second and nth wife in cases of polygamy, a young cousin or adopted orphan.

The data were entered on a daily and/or weekly basis into the Epi Info 6.04 fr programme and verified upon the return of the field supervisors. The analysis was done in Brussels. **Given the sampling method used, the results will not be extrapolated over a larger area, but will nevertheless give an indication of the situation elsewhere.**

Timeframe of surveys and number of families surveyed



IV. RESULTS OF INDIVIDUAL SURVEYS

This chapter has five sections, covering the results on mortality, access to healthcare, vaccination, violence, and the cross-analysis of these results.

1. MORTALITY

The Crude Mortality Rate (CMR) for a stable population in developing countries is estimated at around 0.5/10,000/day (for industrialized countries, this rate is approximately 0.3/10,000/day). A CMR of more than 1/10,000/day indicates a state of emergency. The situation is deemed to be catastrophic when this rate exceeds 2/10,000/day.

For under-fives, the normal rate is 1/10,000/day and a state of emergency is reached when the rate exceeds 2/10,000/day. The situation is deemed to be catastrophic when the rate exceeds 4/10,000/day.

For the population aged five and over, the normal, emergency and catastrophe rates are 0.4, 0.8 and 1.6/10,000/day respectively.

The retrospective period relating to questions on mortality covered the months elapsing between the start of the year 2005 and the day of the survey. It therefore spanned 2.5 months in Kilwa and 4.5 months in Bunkeya.

The findings are derived from calculations based on the families' responses and are therefore subjective. Interviewees were asked to respond according to their knowledge of the causes of death. When they were unable to reply, the researcher - in most cases not a member of the medical corps[19] - would list a series of diseases without mentioning the

[19]Current members of the MPH health staff were omitted from the researchers' selection to avoid them influencing people's responses.

symptoms. The more scientific verbal autopsy[20] method could not be applied for lack of time and resources.

This section includes:

a. Individual results by zone
- a review of the mortality rates for all zones covered in the 2005 survey;
- comparisons of the 2001 and 2005 results for the three zones covered by the two surveys;
- identification of the causes of mortality.

b. Comparisons with variables impacting on mortality
- urban/rural environment
- supported/unsupported zones
- resident/displaced persons.

c. Summaries of retrospective mortality and causes for all zones as a whole.

[20] The 'verbal autopsy' method involves collecting data on the illness preceding death using a pre-defined list of easily-recognized symptoms and noting their presence or absence each time.

a. Individual results by zone[21]

Kilwa (Katanga province)

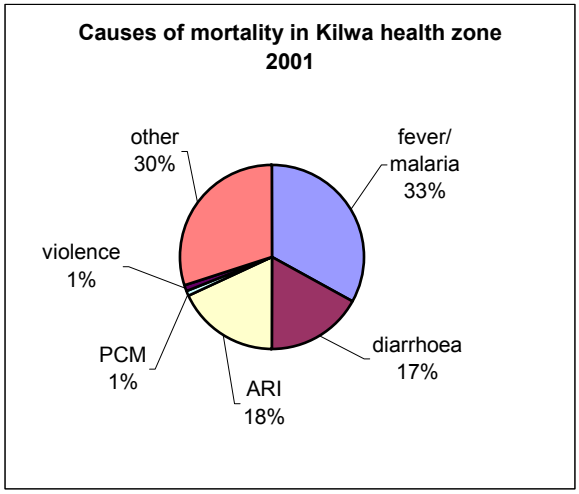
Families questioned	:	925
Total population of the zone	:	248,964
Sample population	:	5.171
% of under-fives sampled	:	26%

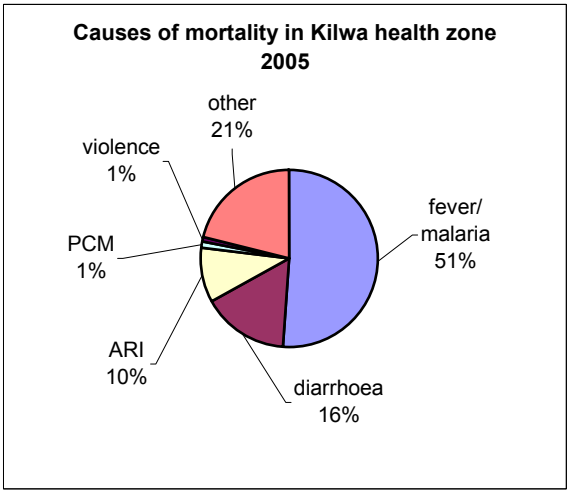
CMR 01/01/05 – 18/03/05	**:**	**1.8 [1.4-2.2] >** 1.1 [0.8-1.3] in 2001
Mortality rates for under-fives	**:**	**4.4 [3.1-5.6] >** 3.1 [2.3-3.8] in 2001
Mortality rates for over-fives	**:**	**0.9 [0.5-1.2] >** 0.4 [0.3-0.6] in 2001

The crude mortality rate in the Kilwa zone indicates an emergency. The situation of under-fives is characteristic of a disaster. Mortality indicators have worsened compared to 2001.

However, a reduction of 50% was noted in the number of families with deaths between 2001 (14.1%) and 2005 (6.9%), which would seem to indicate that deaths in 2005 were concentrated in vulnerable families (in terms of poverty and distance from medical structures) probably more exposed to infections.

Comparison of causes of mortality between 2001 and 2005





84% of the causes of mortality reported by the families in 2005 are associated with infectious diseases. This percentage was around 75% in 2001.

Malaria, the main cause of mortality, rose from one third to over half of the deaths between 2001 and 2005.[22] For under-fives, malaria was mentioned as the deadliest disease by 64% of the families questioned.

For under-fives, the most deadly diseases mentioned by the families were malaria and acute respiratory infections, each representing 20% of the responses.

Death by violence was cited in relation to one person in Kilwa in 2005.

[21] The results presented cover all the zones as a whole, and not the areas supported by MSF. For the zones of Basankusu and Kilwa, the comparison of supported and unsupported areas shows no significant difference between them in terms of mortality, given the loss of statistical power due to the size of the sample taken in these health catchment areas.

[22] Nevertheless, MSF's introduction of Paracheck (a quick screening test for malaria) in supported structures over a year ago has resulted in a symptomatic prevalence of 33% being translated into a laboratory prevalence of 15% to 20%.

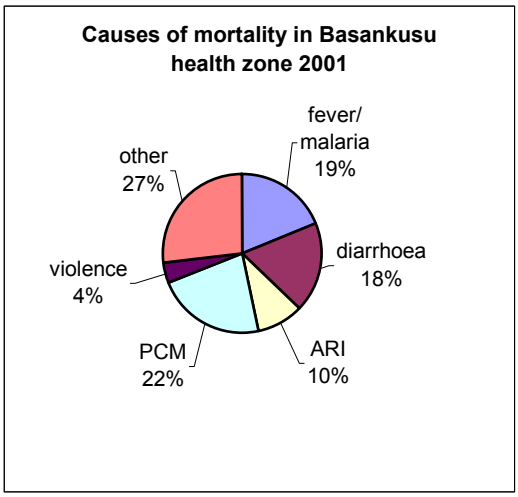
Basankusu (Equateur province)

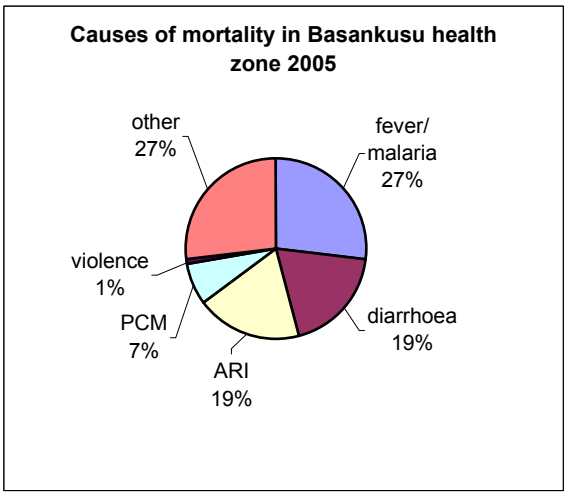
Families questioned : 957
Total population of the zone : 222,751
Sample population : 8,792
% of under-fives sampled : 23%

CMR 01/01/05 – 13/04/05 : 2.3 [1.9-2.8] < (2.7 [2.3-3.1] in 2001)
Mortality rates for under-fives : 4.8 [3.5-6.0] < (6.6 [5.3-7.9] in 2001)
Mortality rates for over-fives : 1.5 [1.2-1.9] > (1.4 [1.1-1.7] in 2001)

Despite a decrease in absolute terms compared with 2001, particularly for under-fives, mortality remains high and is still a catastrophic situation.

Comparison of causes of mortality between 2001 and 2005





The two war-related causes of mortality in 2001 – malnutrition and violence – declined sharply in 2005, although cases of malnutrition still persist as shown in the figures for the town of Basankusu.

For the under-fives, the most deadly diseases mentioned by the families questioned are malaria, with 36% of responses, diarrhoea 24%, acute respiratory infections 14%, and malnutrition 10%.

Among over-fives, the main cause of mortality is acute respiratory infections which recur in 22% of the responses of families questioned. Malaria is given as the cause of death in 16% of cases.

By comparison with the 2001 figures, we noted a reduction in family size from 12.6 to 9.2 persons. This is explained by the return of many displaced persons who found shelter with family members near their place of origin.

Death by violence was cited in relation to two people in 2005.

Inongo (Bandundu province)

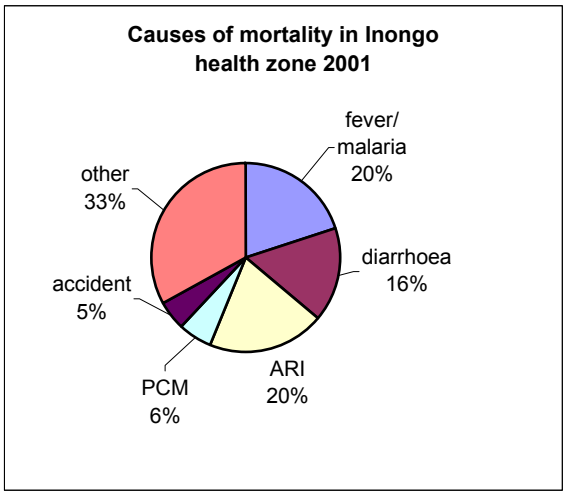
Families questioned	: 980
Total population of the zone	: 110,254
Sample population	: 8,635
% of under-fives sampled	: 22%

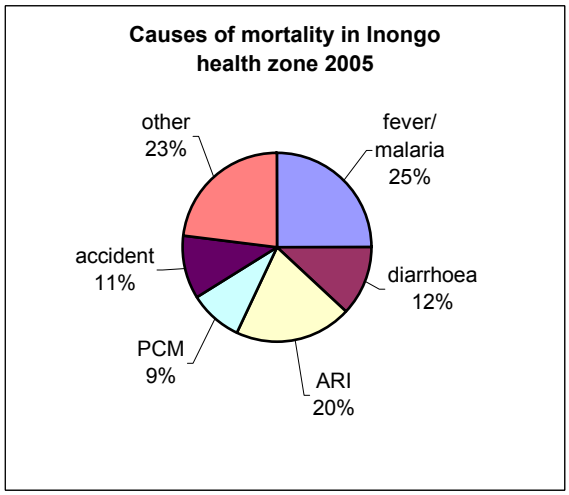
TBM 01/01/05 – 15/04/05 : 2.2 [1.8-2.6] > 0.4 [0.3-0.5] in 2001
Mortality rates for under-fives : 5.5 [4.4-6.6] > 1.0 [0.7-1.4] in 2001
Mortality rates for over-fives : 1.3 [0.9-1.6] > 0.2 [0.1-0.4] in 2001

In the Inongo health zone, the situation in terms of mortality has clearly deteriorated since 2001. These figures for the first three months of 2005 are so high that the situation qualifies as a catastrophe.

The number of families with at least one death rose from 7.9% with a CI [5.7-10.1] in 2001 to 13.9% CI [11.0-16.7] in 2005.

Comparison of causes of mortality between 2001 and 2005





The incidence of malaria, as the prime cause of mortality is considerably higher. On the increase also are accidents, particularly due to drowning, which more than doubled between 2001 and 2005, with 15 reported cases in just three months[23].

Another sign of a worsening situation is malnutrition, given as the cause of mortality in 9% of responses by the families interviewed. It is higher among children, representing 13% of the deaths reported.

For under-fives, malaria is cited by the families as the prime cause of mortality with 38% of the responses, followed by ARI with 19% and diarrhoea with 15%.

Among the over-fives, ARIs are the prime cause of mortality reported in 20% of the families' responses.

[23] Lake Maï Dombe (dark waters) is known for its changeable conditions, especially late in the year. On November 25, 2003, a whaling boat collided with a canoe, killing over 200 people. Members of the MSF emergency pool had great difficulty rescuing the injured due to bad weather and the lake's high swell.

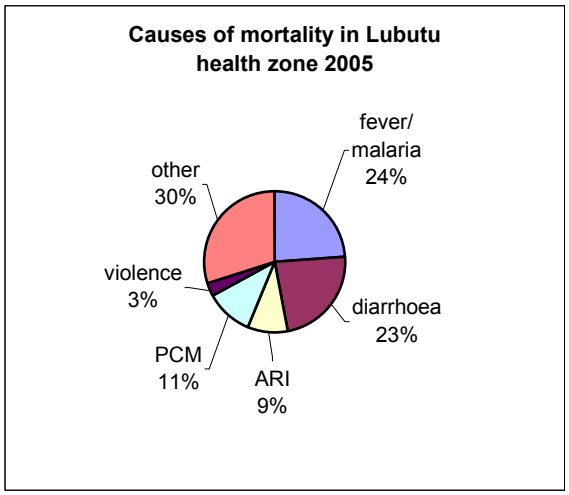
Lubutu (Maniema province)

Families questioned	: 986
Total population of zone	: 103,693
Sample population	: 9,286
% of under-fives sampled	: 20%

CMR 01/01/05 – 06/05/05 : 3.4 [3.0-3.8]
Mortality rates for under-fives : 6.2 [5.2-7.3]
Mortality rates for over-fives : 2.6 [2.2-2.9]

Mortality rates in Lubutu are the highest observed in this series of surveys and qualify the situation as catastrophic. These figures are comparable to those for Basankusu in 2001.

These very high rates reflect an unstable situation characterized by the presence of numerous often uncontrolled armed groups, the exploitation of many precious metal mines and the involuntary movements of populations fleeing to safety.



The high incidence of malnutrition as a cause of mortality, 11%, reflects the difficulty of accessing land and food for numerous families, displaced or not, which are not able to farm or harvest crops that are taken by force by the armed groups.

3% of violence-related death represent 12 persons, two of whom were children.

Lubutu has many areas prone to cholera, dysentery and measles, as well as episodes of malnutrition leading to a number of interventions by MSF's emergency pool.

Among under-fives, the deadliest diseases are malaria, with 41% of cases within the families interviewed, diarrhoea 18% and malnutrition 12%.

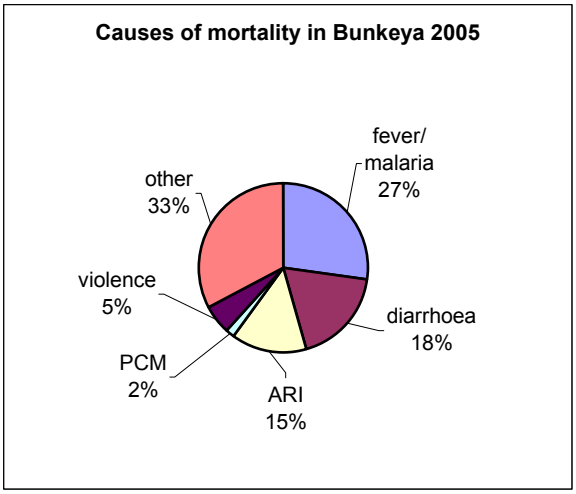
Diarrhoeal disorders claim the largest number of lives among the over-fives, representing 27% of the responses among the families interviewed.

Bunkeya (Katanga province)

Families questioned : 991
Total population of the zone : 50,065
Sample population : 5,035
% of under-fives sampled : 22%

CMR 01/01/05 – 17/05/05 : 0.8 [0.6-1.0]
Mortality rates for under-fives : 2.3 [1.6-3.0]
Mortality rates for over-fives : 0.4 [0.1-0.5]

The high mortality among under-fives suggests an emergency and contributes to raising overall mortality. The rates for over-fives tally with the expected rates.



For under-fives, the causes of mortality given by the families interviewed are malaria in one quarter of the responses, acute respiratory infections in one-fifth of responses, and diarrhoeal diseases in 17%.

For over-fives, malaria is the main cause of mortality cited by the families in 30% of cases, followed by diarrhoeal diseases in 20% and violence in third place with 10%.

In terms of violence, Bunkeya in early 2005 suffered the secondary consequences of insecurity in Mitwaba situated to the north, where a Mayi-Mayi[24] faction inflicted reprisals on the population following the arrest of their leader.

5% of violence-related deaths represent three persons, including one child.

[24] The Swahili expression 'mayi-mayi' literally means 'water-water' and refers to magical practices and beliefs which involve spraying warriors with 'holy' water to make them invulnerable to enemy missiles. Popular local folklore has it that water is the ultimate protection against curses and spells. This expression is proclaimed by many militia in the east of DRC combating the occupant or availing themselves of it to engage in wrongful acts and organized crime.

b. Comparisons with variables impacting on mortality

- *Mortality comparison between urban and rural zones*

Throughout the zones visited the differences in mortality reported during the surveys for urban and rural zones are not statistically significant.

In 2001, this geographical parameter was studied only in the Basankusu health zone and showed a favourable situation in urban areas. This difference was no longer significant in 2005.

- *Mortality comparison between supported and unsupported zones*

This distinction is relevant in three of the five zones: Kilwa and Basankusu supported by MSF, and Bunkeya where the Carmelites sisters are in the zone's main town.

MSF support consists in providing technical assistance and supplying medication. Its efforts are concentrated in the more densely populated health catchment areas. A flat fee – 20 francs ($0.04) in Basankusu and 50 francs ($0.10) in Kilwa – gives access to a consultation and medicines.

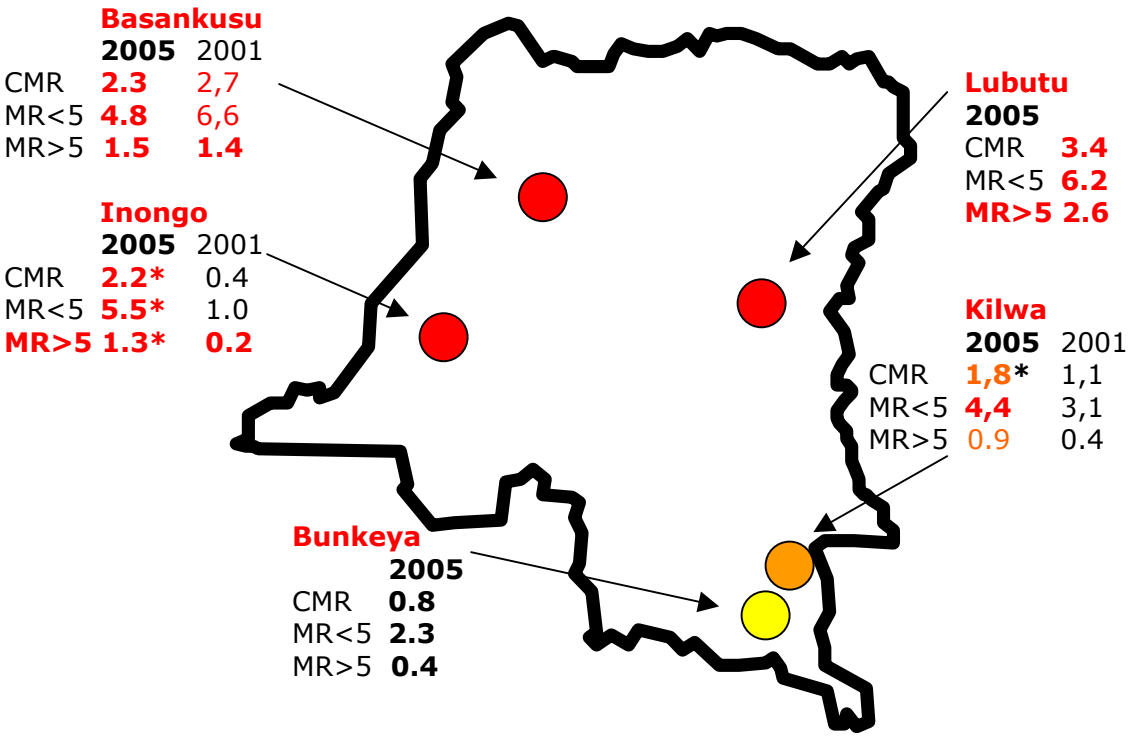
For all these zones, there is no statistically significant difference between the mortality rates in supported and unsupported health catchment areas.

- *Comparison between local residents and displaced persons*

This distinction could be made in the Bunkeya zone which welcomed those displaced from Mitwaba. The difference is not significant, with a rate of 1.3 [0.0-2.6] among the displaced and 0.7 [0.5-0.9] for residents.

c. Summaries for all zones as a whole

Retrospective mortality in 10,000/day



* statistically significant difference between 2001 and 2005

CMR: normal
MR<5: emergency

CMR: emergency
CMR<5 catastrophe

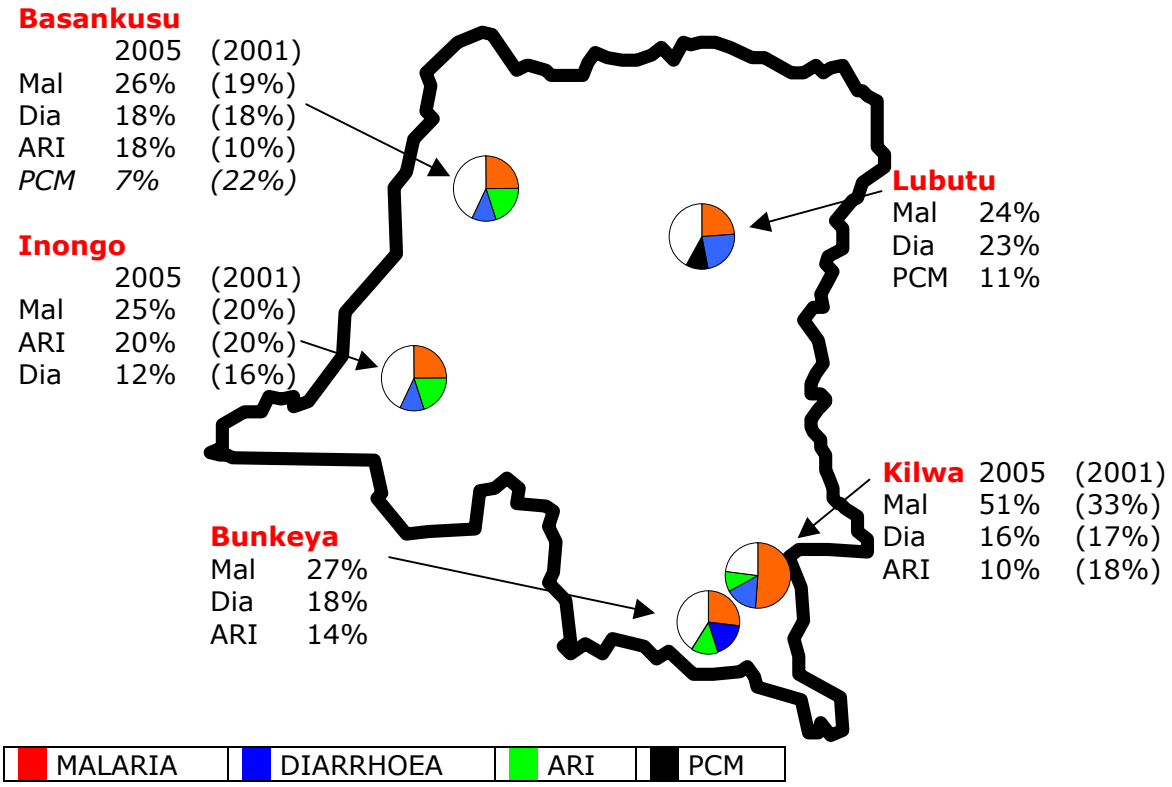
CMR: catastrophe
MR<5: catastrophe

Overall, we have four emergency situations, and indeed a health catastrophe for the population as a whole. For under-fives, the situation qualifies as an emergency in all of the zones; in four of these zones, mortality is indicative of a health catastrophe.

In comparison with the three zones already surveyed in 2001, the situation appears to have improved in only one zone: Basankusu[25]. Mortality has risen in Kilwa and particularly in Inongo.

[25] Mortality rates in Basankusu have not, however, improved significantly.

The three main causes of mortality



Overall, infectious diseases account for nearly two-thirds of the deaths reported in Bunkeya and three-quarters of those in Kilwa.

Malaria is the deadliest of diseases, followed, depending on the zones, by diarrhoeal diseases and acute respiratory infections, or again protein-calorific malnutrition in the case of Lubutu.

2. ACCESS TO HEALTHCARE

This section sets out first and foremost to clarify what is meant by access to healthcare by explaining the therapeutic route of the patient. We will then identify the families with sick members and select the one with the most recent episode of illness if there are several. Finally, we will follow the various stages for some of these patients, from consultation through to their obtaining all of the medicines prescribed, our categorisation of access to healthcare, whether satisfactory or not satisfactory.

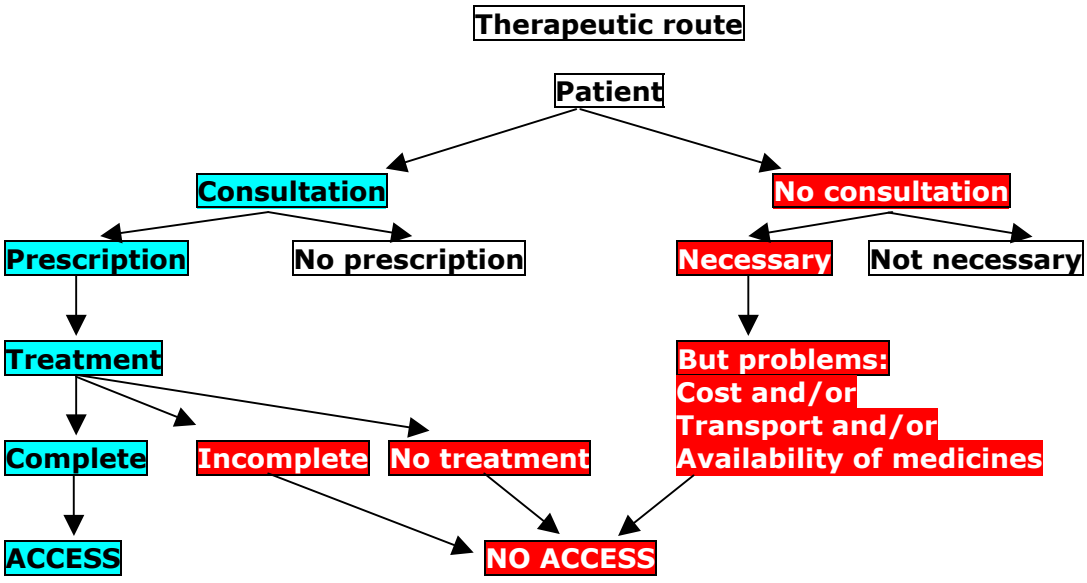
The survey results will be presented zone by zone, compared with the 2001 results for the relevant zones. Then they will be compared overall for the 2005 survey.

a. The therapeutic route

To determine the accessibility or non-accessibility to healthcare, we have followed the therapeutic route also used in the first series of surveys. This diagram identifies the stages that determine if the patient finally had access to treatment or not. For patients as a whole this process involves different types of access, defined as follows:

- 'Total' access includes all consultations outside the family (private, public, traditional, dispensary) resulting in access to comprehensive treatment (irrespective of place of treatment);
- MPH access includes patients who attend a consultation in a public structure, irrespective of the place of treatment;
- MPH access same place refers to patients who attend consultations and receive treatment within the same public medical structure;
- Private access means those who consult a doctor or nurse privately and receive comprehensive treatment.

In 2001, the calculations were based on total access and have been readjusted to the different types of access to establish a comparison with 2005.

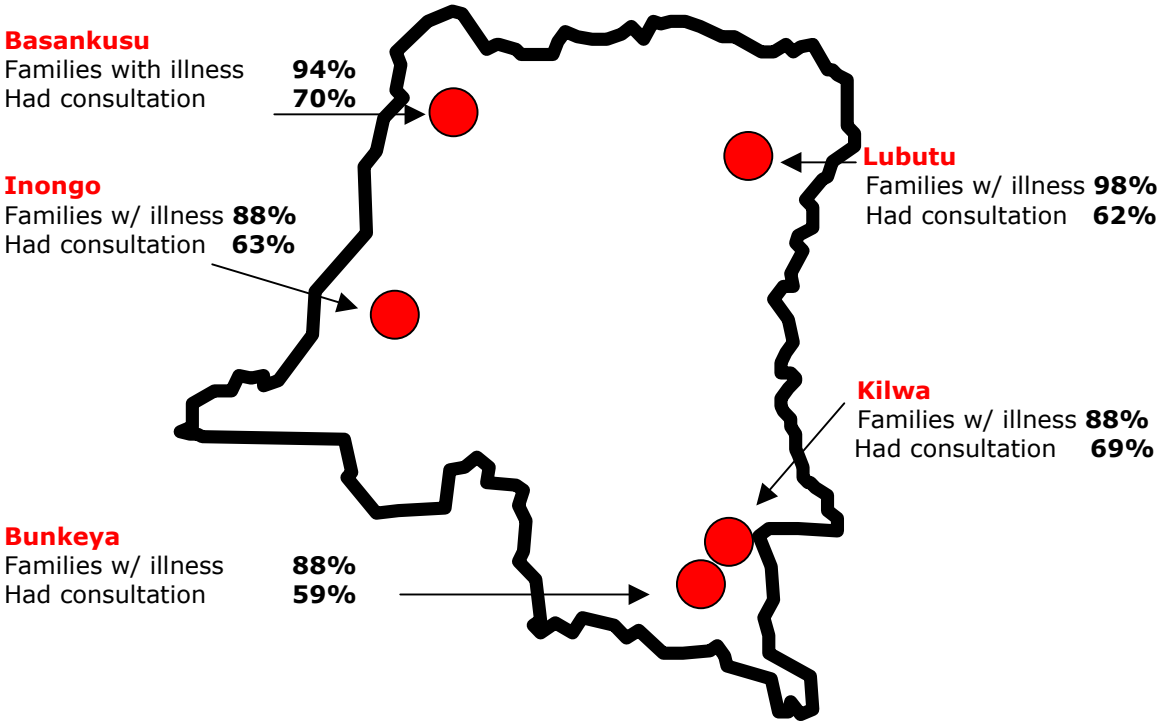


In the first category, on the left, we grouped the persons who, having had a consultation in a medical structure, received comprehensive treatment (access to healthcare). In the second, we grouped those who did not have a consultation, although they felt it was necessary, with those who did not receive treatment or only partial treatment (no access to healthcare).

A medical structure is defined as a health centre or a public or private hospital. Consultations, prescriptions or any other type of treatment from traditional practitioners, witch doctors or churches are regarded as alternative and informal structures. These are taken into consideration to calculate 'total' access. The MPH, responsible for the public health of its citizens, is considered the reference structure.

Families with sick family members and consultations

Depending on the zone, between 88% and 98% of the families interviewed reported having had at least one episode of illness during the first three or four months of the year. Where there were several sick members of a family, only the most recent episode of illness was taken into consideration. Between 59% and 70% of these patients said they had had a consultation.



These percentages for patients who manage to consult outside the family give an insight into an important variable; taking the first step to treatment of an illness. Nearly one third of patients in Basankusu and Kilwa and two out of five patients in Bunkeya do not take this step.

The second stage involves looking at who they consult, if they are prescribed medicines, if they manage to obtain all of these medicines, cost of treatment and finally, seeing whether or not they were satisfied with the treatment they received.

b. Individual results by zones

Kilwa

Of the 925 families interviewed, 811, or 87.7%, declared that they had had at least one person sick in their family during the first 75 days of 2005. After identifying the most recent sick person, a total of 255, or 31.4%, said they had not consulted anyone outside the family.

The reasons given for not attending a consultation were:

A	Reasons given for non-consultation (n=255)*	#	%	CI
1	**Consultation too expensive**	150	**58.8%**	[44.6-73.0]
2	**Medicines too expensive**	74	**29.0%**	[15.2-42.8]
3	No confidence in the medical personnel	7	2.7%	[0.6-4.6]
4	Feeling that consultation was not necessary	27	10.6%	[4.2-16.9]
5	Problem of transport/distances	33	12.9%	[5.6-20.3]
6	Problem of safety	0		
7	No medical personnel in the nearest structure	23	9.0%	[0-23.6]
8	No medicines	25	9.8%	[0-23.6]
9	Self-medication	60	23.5%	[10.6-36.4]
10	Other	10	3.9%	[0-7.8]

* Several responses were possible.

MSF supports more than half of the zone with a flat-fee system of 50 francs ($0.10), yet the barrier of cost is the main reason for non-consultation throughout the zone.

B	If yes, who did you consult? (n=556)	#	%	CI
1	**Doctor or nurse at a public or church-run public health centre**	266	**47.8%**	[37.3-58.4]
2	Hospital doctor or nurse	114	20.5%	[10.7-30.3]
3	Private doctor or nurse	105	18.9%	[8.8-28.9]
4	Traditional medicine (healer)	26	4.7%	[2.3-7]
5	Pharmacist	45	8.1%	[3.6-12.6]

Of the two-thirds (68,6%) of patients consulting someone outside the family, over 68% (68.3%) used public health structures (hospital or health centre).

Of the 556 patients who had consulted, 93.2% were prescribed medication. Of these:

- 79.7% were able to obtain all of the medicines prescribed.
- 20.3% said they could not get any treatment at all, or only partial treatment.

The reasons given were:

C	Reasons given for not receiving medicines	#	%	CI

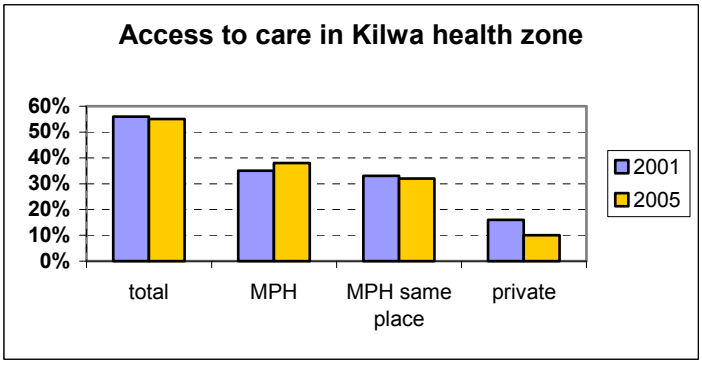
Owing to the delay in obtaining the updated questionnaires, we do not have enough data for this zone to analyse the reasons given in this case.

D	Where did you get the medicines? (n=513)	#	%	CI
1	**Health centre**	305	**59.5%**	[48.9-70.0]
2	Hospital	63	12.3%	[5.4-19.1]
3	Commercial pharmacy	79	15.4%	[9.7-21.1]
4	Market	7	1.4%	[0-3.7]
5	Other	59	11.5%	[4.3-18.7]

Over two-thirds of the medicines were obtained in public structures, especially in health centres, some supported by MSF.

There are many options for obtaining medicines. Several private pharmacies in Kilwa stock drugs imported from neighbouring Zambia. A fairly limited market has started to develop in the area around the Dikulushi copper and coltan mine with its workers and their families as well as some higher-ups as customers.

Comparison of access to healthcare 2001-2005



This table shows the various types of access to healthcare in the Kilwa health zone according to the findings of the 2001 and 2005 surveys.

Compared with the 2001 findings, there has generally been little change in terms of access to healthcare four years on. MSF support appears to be yielding fairly limited results throughout the zone. In our 2005 sample, we noted no difference between supported and unsupported health catchment areas in terms of access.

Basankusu

Of the 957 families interviewed, 901, or 94.1%, declared that they had had at least one person sick in their family during the first three months of 2005. After identifying the most recent sick person, a total of 275, or 30.5%, said they had not consulted anyone outside the family. The reasons given for not attending a consultation were:

A	Reasons given for non-consultation (n=275)*	#	%	CI
1	**Consultation too expensive**	96	**34.9%**	[19.3-50.5]
2	**Medicines too expensive**	126	**45.8%**	[31.9-59.7]
3	No confidence in the medical personnel	13	4.7%	[0-9.5]
4	Feeling that consultation was not necessary	25	9.1%	[3.6-14.6]
5	**Problem of transport/distances**	109	**39.6%**	[21.3-57.9]
6	Problem of safety	0		
7	No medical personnel in the nearest structure	3	1.1%	[0-3.2]
8	No medicines	44	16.0%	[3.3-28.6]
9	**Self-medication**	109	**39.6%**	[30.1-49.2]
10	Other	14	5.1%	[0-11.2]

* Several responses were possible.

For the zone as a whole, the main reason given for non-consultation is financial, relating to the high cost of medicines.

Distance is also a major obstacle in the very heart of the equatorial forest. Roads are often impassable in all seasons and ownership of a means of transport, canoe or bicycle, is very limited. Very often the family will only decide to take patients to a health structure when their condition is already critical. Self-medication is consequently a highly-developed phenomenon in rural areas of DRC.

Looking at the consultation results for the zone's supported and unsupported areas separately, the differences are significant. In supported areas, 82% of patients had consulted during the last episode of sickness, while only 56% had done so in the unsupported areas. Of the patients not having consulted outside the family, in supported areas, only 5% of them mentioned the cost of the consultation, and 7% the cost of medicines, whereas these figures are 47% and 63% respectively in supported areas.

B	If yes, who was consulted? (n=626)	#	%	CI
1	**Doctor or nurse at a public or church-run public health centre**	408	**65.2%**	[51.4-78.9]
2	**Hospital doctor or nurse**	168	**26.8%**	[13.4-40.9]
3	Private doctor or nurse	40	6.4%	[2.8-10]
4	Traditional medicine (healer)	9	1.4%	[0.5-2.4]
5	Pharmacist	1	0.2%	[0-0.5]

Of the 70% (626/901) having consulted outside their family, nearly two-thirds went to a public health centre, and over one quarter to a hospital.

Of the 626 patients who had consulted, 99.2% were prescribed medication. Of these:

- 73.9%, were able to obtain all the medicines prescribed.
- 26.1% had received no treatment at all or only partial treatment.

The reasons given were:

C	Reasons given for not receiving medicines (n=159)*	#	%	CI
1	**Medicines too expensive**	56	**34.8%**	[17.4-52.2]
2	Problems of distance/transport	10	6.2%	[1.0-11.4]
3	**Medicines not available**	107	**66.5%**	[50.4-82.5]
4	Other	2	1.2%	[0-2.9]

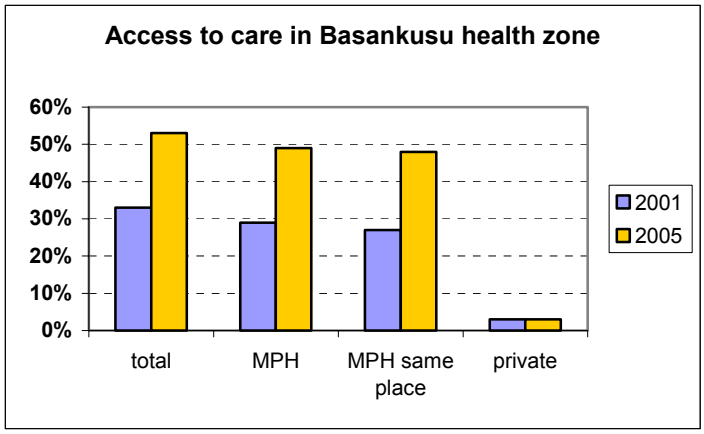
***** No medicines or incomplete treatment. Several responses were possible.

Among the reasons already given for non-availability, the high cost of medicines is another explanation for why they had not been obtained. In the supported areas of the zone only, fewer than 10% of the patients not having obtained full treatment said it because of cost. In the unsupported areas of the zone, nearly 50% of the patients who did not received complete treatment said it was for cost reasons. These differences are significant.

D	Where did you get the medicines? (n=601)	#	%	CI
1	**Health centre**	382	**63.6%**	[40.0-77.2]
2	**Hospital**	159	**26.5%**	[13.3-39.6]
3	Commercial pharmacy	22	3.7%	[0.7-6.6]
4	Market	22	3.7%	[0.7-6.6]
5	Other	16	2.7%	[0.9-4.4]

Virtually all of the medicines had been obtained in public structures.

Comparison of access to healthcare 2001-2005



The improvement in accessibility of healthcare was statistically significant between 2001, when it had been effective for one third of the patients interviewed, and in 2005, when was effective for half of them.

It is more apparent in urban zones, with three quarters of the patients having access as opposed to half of the patients in rural areas.

It is also higher in MSF-supported areas, with three quarters of patients having access, against one third in unsupported areas. A statistically significant increase is to be noted in 2005 in the number of patients receiving comprehensive treatment as compared to 2001.

The level of access nevertheless remains insufficient to have a statistically significant impact on mortality.

Inongo

Of the 980 families interviewed, 905, or 92,3%, reported having had at least one person sick during the first 105 days of the year. After identifying the most recent sick person, a total of 333, or 36.8%, declared not having consulted outside the family.

The reasons given for non-consultation were:

A	Reasons given for non-consultation (n=333)*	#	%	CI
1	**Consultation too expensive**	**156**	**53.1%**	[41.1-65.1]
2	**Medicines too expensive**	**136**	**40.8%**	[30.5-51.4]
3	No confidence in the medical personnel	6	1.8%	[0.5-3.1]
4	**Feeling that consultation was not necessary**	92	**27.6%**	[19.2-36.0]
5	Problem of transport/distances	14	4.2%	[0-9.9]
6	Problem of safety	0		
7	No medical personnel in the nearest structure	25	7.5%	[0-17.9]
8	No medicines	21	6.3%	[2.5-10.1]
9	**Self-medication**	**151**	**45.3%**	[30.9-59.7]
10	Other	14	4.2%	

* Several responses were possible.

Cost and self-medication are the two most frequently given reasons for non-consultation. More than half of the patients said they could not afford to attend a consultation.

B	If yes, who was consulted? (n=572)	#	%	CI
1	**Doctor or nurse at a public or church-run public health centre**	**415**	**72,6%**	**[62,8-82,3]**
2	Hospital doctor or nurse	67	11,7%	[6,0-17,4]
3	Private doctor or nurse	80	14,0%	[5,4-22,5]
4	Traditional medicine (healer)	9	1,6%	[0,4-2,7]
5	Pharmacist	1	0,2%	[0-0,5]

Over four-fifths of the patients consult a public or church-run structure, while 14% look to the private sector.

Of the 572 patients who consulted, 90% were prescribed medication. Of these:
- 72.6% were able to obtain all of the medication.
- 27.4% who were prescribed treatment said that they had not obtained full treatment or only partial treatment.

The reasons given were:

C	Reasons given for not receiving medicines (n=167)*	#	%	CI
1	**Medicines too expensive**	70	**49.6%**	[35.3-64.0]
2	Problems of distance/transport	5	3.5%	[0.3-6.7]
3	**Medicines not available**	87	**61.7%**	[49.1-74.3]
4	Other	5	3.5%	[0.6-6.5]

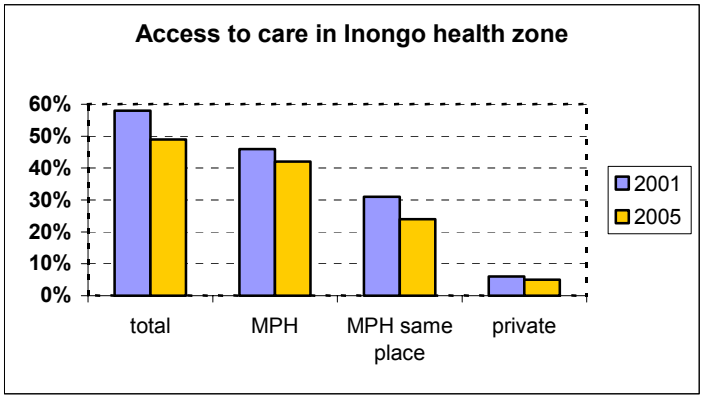
***** No medicines or incomplete treatment. Several responses were possible.

For the majority of patients who had not received full treatment or only partial treatment, the main reason given was non-availability and the high cost of medication.

D	Where did you get the medicines? (n=479)	#	%	CI
1	**Health centre**	192	**40.1%**	[30.5-49.7]
2	Hospital	20	4.2%	[1.4-7.0]
3	**Commercial pharmacy**	189	**39.5%**	[28.9-50.1]
4	Market	69	14.4%	[8.0-20.9]
5	Other	9	1.9%	[0.3-3.4]

Less than half the patients had obtained their treatment in a public structure. The pharmacies of the hospital and health centres visited during the survey were practically empty. Private alternatives are much sought-after in Inongo, as over half of the families questioned said that they had treated their sick with medicines originating from this sector.

Comparison of access to healthcare 2001–2005



Compared with the results of the 2001 survey in Inongo, there is a slight decrease in access to healthcare. The percentage for non-consultation has risen significantly, from 13.7% to 31.9%. The same is true for the proportion of medicines obtained outside the public health sector, which increased from 17.4% to 42%.

Lubutu

Of the 986 families questioned, 966, or 98%, declared having had at least one person sick during the first three months of the year. After identifying the most recent sick person, a total of 366, or 37.9%, said they had not consulted outside the family.

The reasons given for this non-consultation were:

A	Reasons given for non-consultation (n=366)*	#	%	CI
1	**Consultation too expensive**	312	**85.2%**	[79.0-91.5]
2	**Medicines too expensive**	283	**77.3%**	[68.7-85.9]
3	No confidence in the medical personnel	8	2.2%	[0-4.5]
4	Feeling that consultation was not necessary	9	2.5%	[0.8-4.1]
5	Problem of transport/distances	4	1.1%	[0-2.4]
6	Problem of safety	3	0.8%	[0-1.7]
7	No medical personnel in the nearest structure	5	1.4%	[0-3.0]
8	No medicines	74	20.2%	[11.2-29.2]
9	**Self-medication**	104	**28.4%**	[19.2-37.6]
10	Other	18	4.9%	[1.4-8.4]

* Several responses were possible.

Cost is the main barrier in the majority of cases surveyed. Self-medication is also highly present in this context, where healthcare is inadequate and too expensive.

B	If yes, who was consulted? (n=600)	#	%	IC
1	**Doctor or nurse at a public or church-run public health centre**	437	**72.8%**	[62.2-83.5]
2	Hospital doctor or nurse	124	20.7%	[11.6-29.7]
3	Private doctor or nurse	30	5.0%	[2.1-7.8]
4	Traditional medicine (healer)	3	0.5%	[0-0.1]
5	Pharmacist	6	1.0%	[0.1-2.1]

Virtually all the consultations took place in public health structures. The central health zone office (CHZO) has no partners for primary healthcare. The prevailing insecurity and problems of access are the main obstacles for any external consultation.

Of the 600 patients consulted, 97.5% were prescribed medication. Of these:

- 53.2%, were able to obtain all of the medicines
- 46.8% who had a prescription said they could not obtain full treatment or only partial treatment. This is the highest percentage of the five surveys.

The reasons given were:

C	Reasons given for not receiving medicines (n=274)*	#	%	IC
1	**Medicines too expensive**	258	**94.5%**	[91.4-97.7]
2	Problems of distance/transport	13	4.7%	[1.2-8.2]
3	**Medicines not available**	100	**36.5%**	[23.2-49.7]
4	Other	3	0.3%	[0-1.7]

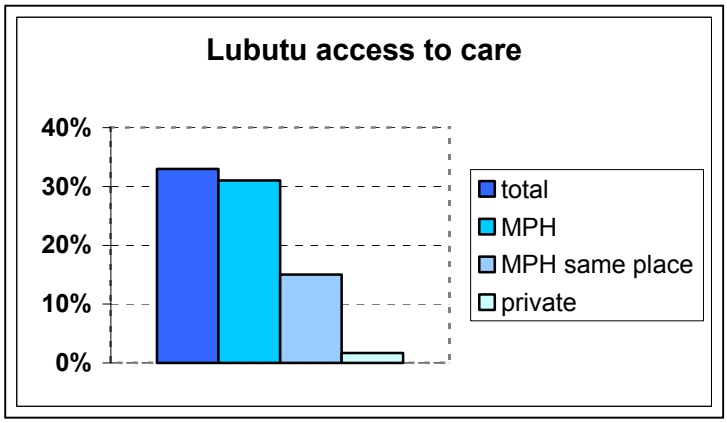
***** No medicines or incomplete treatment. Several responses were possible.

Cost is the main barrier to obtaining medicines, when they are available.

D	Where did you get the medicines? (n=550)	#	%	IC
1	**Health centre**	208	**37.8%**	[29.1-47.3]
2	Hospital	31	5.6%	[2.6-8.7]
3	**Commercial pharmacy**	293	**53.3%**	[45.5-61.1]
4	Market	14	2.5%	[0.8-4.2]
5	Other	4	0.7%	[0-1.8]

Lubutu, like Inongo, is an isolated zone, although a centre of economic activity does exist with several cassiterite and diamond mines exploited in a mafia-like fashion. This activity generates financial resources which are mainly channelled to outsiders. Locally, these resources circulate among a minority which can afford the medicines available in a flourishing market of private pharmacies.

Medicines in the private market are very expensive, mainly because of transport costs, but these are often the only ones 'available' as public pharmacy shelves are empty. Less well-off families often buy incomplete courses of treatment or share. The CHZO, which has other concerns to address, does what it can to control and regulate this thriving market by organizing training sessions for these 'druggists'.



Overall access to healthcare is very poor in the Lubutu health zone. It is primarily concentrated in the public sector as regards consultations, but over one in two patients must obtain medicines privately because the are not available in the public sector.

Bunkeya

Of the 991 families interviewed, 868, or 87.6%, declared having at least one person sick during the first three months of the year. After identifying the most recent case, 356 in total, or 41%, had not consulted outside the family.

The reasons given for this were:

A	Reasons given for non-consultation (n=356)*	#	%	IC
1	**Consultation too expensive**	178	**50.0%**	[39.7-60.2]
2	Medicines too expensive	72	20.2%	[9.8-30.7]
3	No confidence in the medical personnel	2	0.6%	[0-1.3]
4	**Feeling that consultation was not necessary**	89	**25.0%**	[18.1-31.8]
5	Problem of transport/distances	11	3.1%	[1.0-5.1]
6	Problem of safety	4	1.1%	[0.0-2.4]
7	No medical personnel in the nearest structure	18	5.1%	[1.3-8.8]
8	No medicines	10	2.8%	[0.9-4.7]
9	**Self-medication**	211	**59.3%**	[47.6-70.9]
10	Other	10	2.8%	[1.1-4.4]

* Several responses were possible.

Self-medication, coupled with non-affordability, was the primary reason for non-consultation. More than one patient in four (211/868) resorts to this form of treatment.

B	If yes, who was consulted? (n=512)	#	%	IC
1	**Doctor or nurse at a public or church-run public health centre**	195	**38.1%**	[28.7-47.5]
2	**Hospital doctor or nurse**	134	**26.2%**	[16.9-35.4]
3	**Private doctor or nurse**	143	**27.9%**	[15.7-40.1]
4	Traditional medicine (healer)	12	2.3%	[0.6-4.1]
5	Pharmacist	28	5.5%	[1.8-9.1]

Places of consultation are more widespread here than in the other zones. The public sector is extensive, but the private sector also has a large share, of over one quarter of all consultations.

Of the 512 patients who consulted, 99.4% were prescribed medicines. Of these:

- 81.9% were able to obtain all of the medicines
- 18.1% said that they had obtained no treatment, or partial treatment only.

The reasons given are as follows:

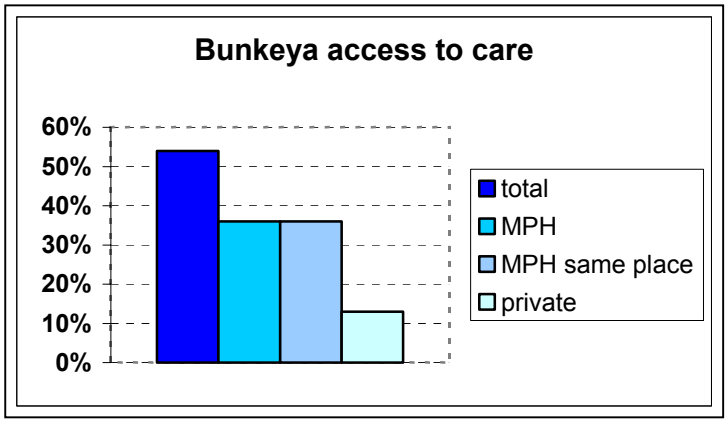
C	Reasons given for not receiving medicines (n=92)*	#	%	IC
1	**Medicines too expensive**	61	**66.3%**	[56.6-76.0]
2	Problems of distance/transport	3	3.3%	[0-6.6]
3	Medicines not available	21	22.8%	[13.4-32.2]
4	Other	9	9.8%	[2.6-17.0]

***** No medicines or incomplete treatment. Several responses were possible.

Cost and the non-availability of medicines are said to be the reasons for obtaining no treatment or only incomplete treatment.

D	Where did you get the medicines? (n=507)	#	%	IC
1	**Health centre**	195	**38.5%**	[29.1-47.3]
2	**Hospital**	133	**26.2%**	[19.1-44.0]
3	**Commercial pharmacy**	160	**31.6%**	[19.1-44.0]
4	Market	6	1.2%	[0.3-2.1]
5	Other	13	2.6%	[0.8-4.4]

In Bunkeya, nearly one-third of the medicines prescribed were purchased in the private sector.

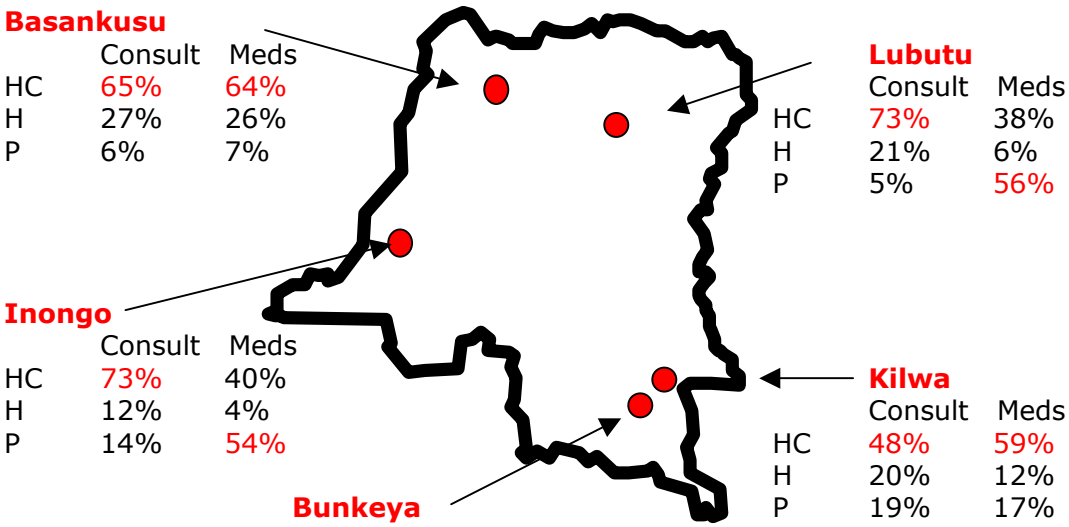


Slightly more than one in two patients has total access to healthcare. Only one in three patients has access to healthcare in the public sector.

c. Comparison of results between zones

Places of consultation and medicines received

This map shows the various places where patients had consultations and those where they obtained medication. Places of consultation and places where medicines are obtained can vary or be the same, depending on the context.



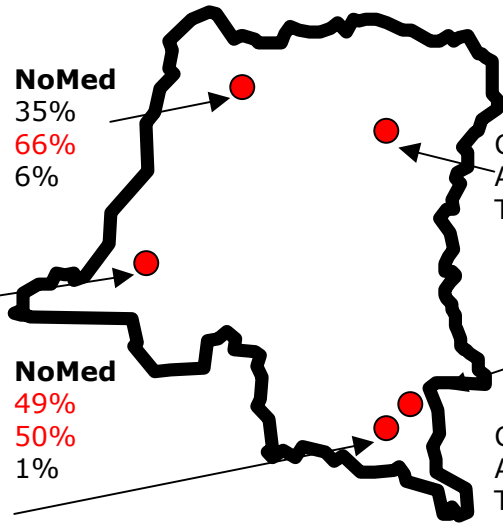
Consult = Consultation
Meds = Medication

HC = health centre
H = hospital
P = private

Most of the consultations took place in public structures: 64% in Bunkeya and 94% in Lubutu.

The majority of medicines were obtained either in public structures in supported zones. This is the case for Basankusu, Kilwa and Bunkeya, with 90%, 71% and 64% respectively, or in private structures in unsupported zones, as in Lubutu and Iongo, with 56% and 54% respectively.

Reasons for non-consultation and for not receiving medicines



Basankusu

	NoConsult	NoMed
Cost	35%	35%
Abs	16%	66%
Trans	40%	6%

Lubutu

	NoConsult	NoMed
Cost	85%	94%
Abs	3%	36%
Trans	3%	5%

Inongo

	NoConsult	NoMed
Cost	53%	49%
Abs	6%	50%
Trans	4%	1%

Kilwa

	NoConsult	NoMed
Cost	59%	ND
Abs	10%	ND
Trans	13%	ND

Bunkeya

	NoConsult	NoMed
Cost	50%	64%
Abs	3%	23%
Trans	3%	3%

NoConsult = *no consultation* *Abs* = *absence*
NoMed = *no medicines* *Trans* = *transport*

The barrier of cost is in all cases, aside from transport in Basankusu, the main reason that people did not have medical consultations or receive medicines.

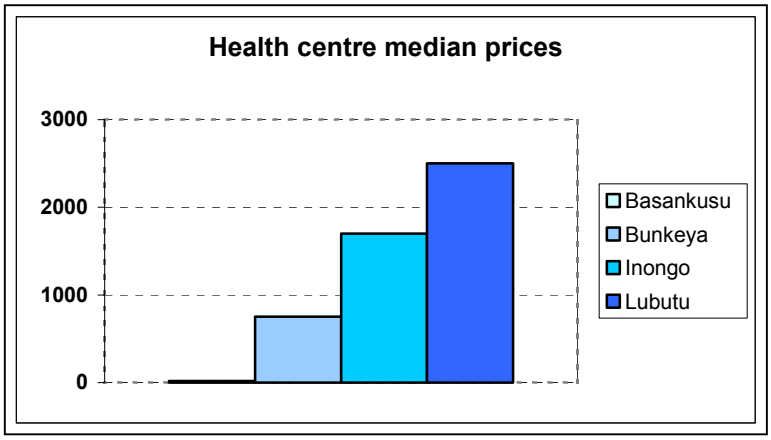
The non-availability of medicines is also one of the reasons for non-accessibility to healthcare. It is more striking in the more remote areas of Basankusu, Inongo and Lubutu. In the latter two, the private sector is trying to overcome the lack of medicines in the public sector, but prices are too high for the majority of patients.

High median prices

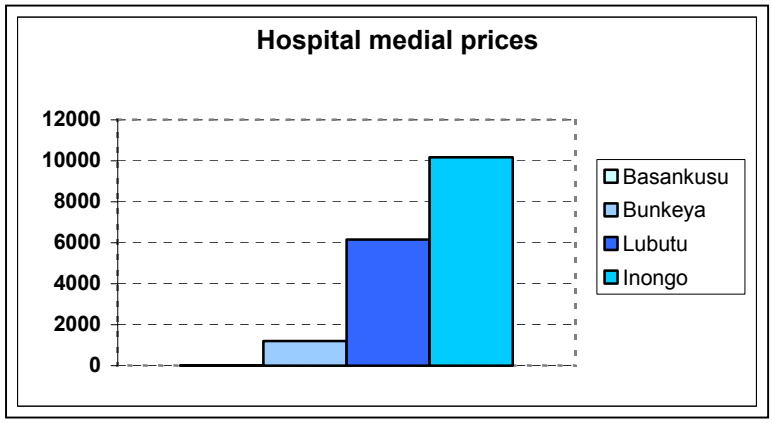
The following findings stem from the answers to the question "How much did you pay for your treatment (consultation+medication)?".[26]

Prices are set out according to the place of consultation and not the place where medicines were obtained. The local currency amount is shown. At the time of the surveys, the exchange rate was 500 Congolese francs to $1 (US dollar).

[26] The question was not askd in Kilwa because of the belated arrival of the last questionnaire update.

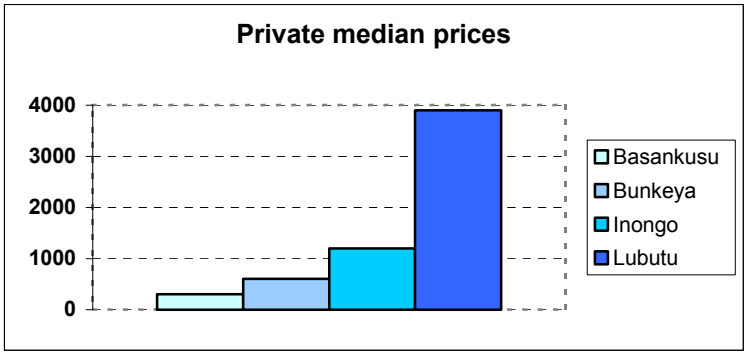


Basankusu hardly registers due to the low flat fee. Prices are highest in unsupported zones, which are more isolated than Lubutu and Inongo. In Lubutu, a zone that receives no subsidies, only one in six patients has access to complete treatment, with charges up to 125 times higher than under the subsidized system in Basankusu.



The responses on the hospital include outside consultations in the dispensary part of the hospital. Inongo and Lubutu are in this case the most expensive.

The hospital of Inongo, although the least functional despite the dynamism and commitment of the HMD, is the most expensive.[27] The hospital of Basankusu charges very low prices for its services.



[27] The GRH of Inongo is a colonial building dating from the early 20th century. Some wards have had to be closed because of the danger of the ceiling collapsing onto the patients. It is undergoing partial renovation with foreign cooperation, but work had not yet begun at the time of the survey.

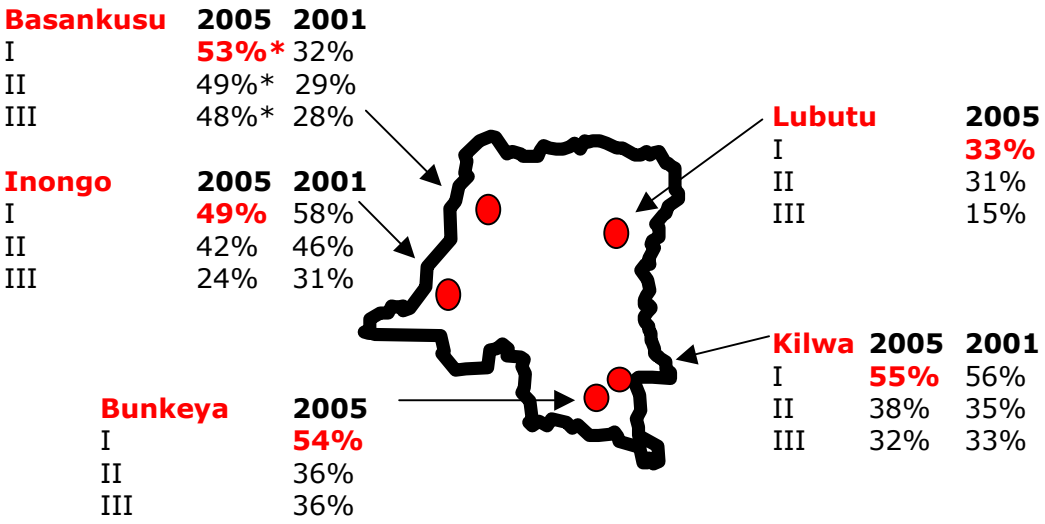
The private healthcare alternative, where it exists, is still far more expensive than the public service in unsubsidized zones.

In Lubutu, many families have spent considerable amounts of money on consultations and treatment – up to $150 for an outcome that was not always satisfactory. The high cost of available medicines does not necessarily correspond to good quality.

Summary of access to healthcare

The following map summarizes:

- 'Total' access – patients who consulted outside the family in either a public or private medical structure, or looked to an alternative solution – is type I access.
- MPH access, which includes all of the patients having consulted a state-run structure, irrespective of the place of treatment, is type II access.
- Access with consultation+medicines within a MPH structure is type III access.



* Significant differences between 2001 and 2005

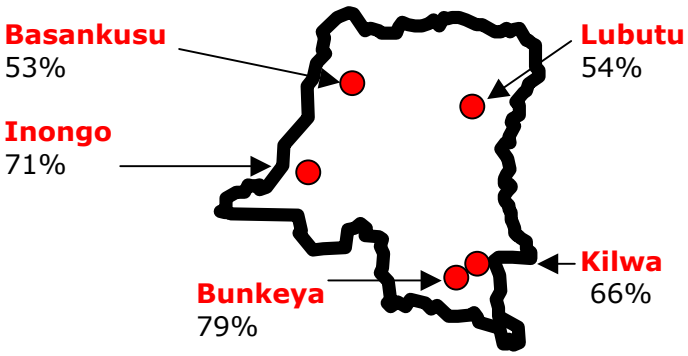
The level of access to healthcare is generally very low given that, with a few exceptions, healthcare is available to only one in two people, in four zones out of five. It is clearly insufficient in Lubutu, where only one person in three is covered.

Total access in the public sector is available to only one in two patients in the best of cases in Basankusu, and one in three in Kilwa and Bunkeya. It is clearly insufficient in unsupported zones; only one in four patients in Inongo and one in six in Lubutu.

Public supply of medication is very clearly lacking in the unsupported zones of Lubutu and Inongo.

Between 2001 and 2005, access had improved in Basankusu, remained unchanged in Kilwa, and decreased in Inongo.

'Satisfied' patients



Though subjective, the responses give an idea of the families' and patients' own appreciation of the care received. These figures are therefore to be viewed with caution.

3. VACCINATION

The wild polio virus was widespread in DRC until 2000. The last known case dates back to December 2000. Since then, the national vaccination days (NVA) have help to stop the spread of the virus.

Measles is endemo-epidemic in DRC. In 2003, there were 44,747 reported cases, 1,182 of which resulted in death. This represents a lethality of 3%[28], an under-estimation since it pertains to reported cases only.

The MPH's extended programme for immunization (EPI) - in partnership with the Global Alliance for Vaccines and Immunization (GAVI) and the World Vaccines Fund – put in place a five-year plan to bring measles, polio and other diseases under control with multi-antigen campaigns in the most sensitive provinces.[29] The children in two of the survey zones benefited from these campaigns: Katanga (Kilwa and Bunkeya) and Maniema (Lubutu).

For the MSF survey, vaccination data were recorded for children aged from 9 to 59 months, in families with at least one child in this age category. To limit the intra-family cluster effect, where several children of this age group are in one family, one child was selected at random. The figures below therefore pertain to only one child per family.

We first present the survey findings for polio and measles, comparing them where feasible with the MPH figures. We then compare the results of the MSF surveys of 2001 and 2005. Finally, we look at the differences that can exist between vaccination and parameters of access to healthcare, geographical cover and violence.

a. Overall results

Polio

The MSF survey results are as follows:

Polio	**Inongo (n=794)**		**Basankusu (n=802)**		**Lubutu (n=775)**		**Bunkeya (n=611)**		**Kilwa (n=660)**	
	%	**CI**	**%**	**CI**	**%**	**CI**	**%**	**CI**	**%**	**CI**
Card*	26.8%	19.8-33.8]	25.4%	[15.8-5.0]	2.6%	[79.3-88.2]	8.5%	[5.2-11.8]	37.0%	[25.5-48.4]
History**	64.0%	[57.1-70.8]	65.3%	[56.3-74.4]	83.7%	[79.3-88.2]	84.9%	[80.5-89.4]	48.2%	[36.9-59.4]
No	9.2%	[6.1-12.3]	9.2%	[3.6-14.8]	**13.7%**	[9.0-18.2]	6.5%	[3.8-9.3]	**14.8%**	[8.7-21.0]

* = Vaccination recorded on a vaccination card
**= No vaccination card, but parents declare verbally that the child has been vaccinated

For the oral polio vaccine (OPV), the MPH's reported results are as follows[30]:

[28] MPH EPI report on the 2004 multi-antigen vaccination campaign, October-November 2004, available from: www.minisanterdc.cd/ressourcesofficielles/docs
[29] Ibid
[30] Ibid

Results of the 2004 multi-antigen campaign for OPV by province

Province	Total HCs	HCs vaccinated and reported	HCs not vaccinated and reported	Target population	Children vaccinated	% children vaccinated by total target pop.
Katanga	17	17	0	592,368	523,456	88.4%
Maniema	12	12	0	224,882	218,102	97.0%

The responses given by the families in Kilwa and Bunkeya (Katanga) tally better with the MPH's reported figures than those of Lubutu (Maniema).

Measles

Measles	**Inongo (n=794)**		**Basankusu (n=802)**		**Lubutu (n=775)**		**Bunkeya (n=611)**		**Kilwa (N=660)**	
	%	**CI**	**%**	**CI**	**%**	**CI**	**%**	**CI**	**%**	**CI**
Card*	21.4%	[14.3-28.5]	30.9%	[24.8-37.0]	1.2%	[0.3-2.0]	32.9%	[28.0-37.8]	32.9%	[22.2-43.6]
History**	54.0%	[46.9-61.1]	59.6%	[53.4-65.8]	74.6%	[67.8-81.3]	57.0%	[52.1-61.8]	41.7%	[31.3-52.0]
No	**24.6%**	[17.1-32.0]	9.5%	[5.7-13.2]	**24.3%**	[17.5-31.0]	**10.1%**	[6.1-14.2]	**25.5%**	[18.0-32.8]

* = Vaccination recorded on a vaccination card
**= No vaccination card, but parents declare verbally that the child has been vaccinated

Vaccine cover, particularly against measles, is insufficient in the Kilwa, Lubutu and Inongo health zones, where a quarter of the children are not vaccinated.

Researchers in Lubutu reported a few cases where families had been offered vaccination cards for cash when they are in fact free of charge.

For the anti-measles vaccine (AMV), the MPH's reported results are as follows[31]:

Results of the 2004 multi-antigen campaign for AMV by province

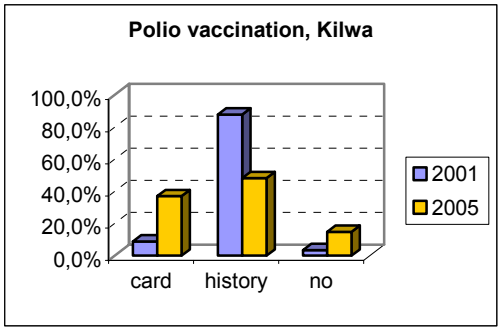
Province	Total HCs P1&P2	Total target	Total vaccinated	CV VAR P1&P2
Katanga	16 & 51	4,346,002	3,784,714	87%
Maniema	12 & 6	755,938	768,987	102%

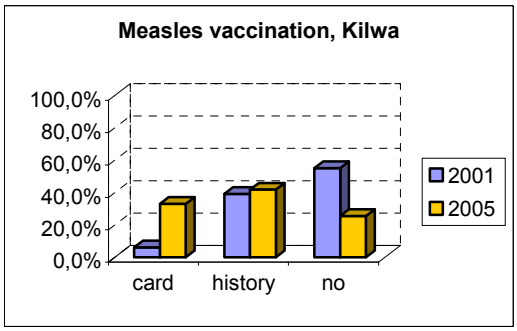
Although the survey results are fairly close to those of the MPH for the Bunkeya zone, there is a sizeable difference for Kilwa and Lubutu. In Maniema, the MPH reports cover to be in excess of 100%, whereas more than a quarter of the families interviewed during the survey declared that they children had not been vaccinated.

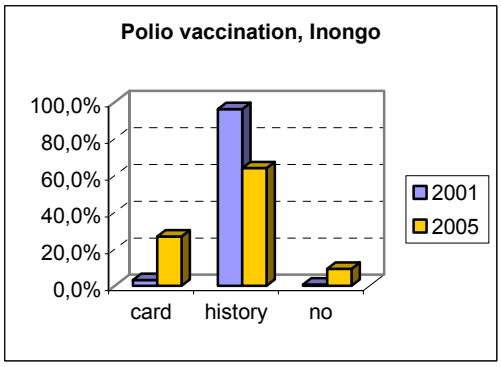
[31] Ibid

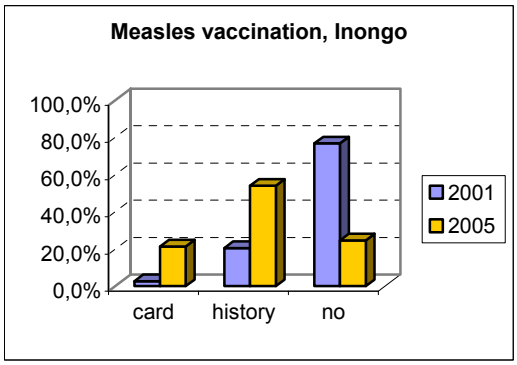
b. Comparison of 2005 and 2001 survey results

POLIO | **MEASLES**

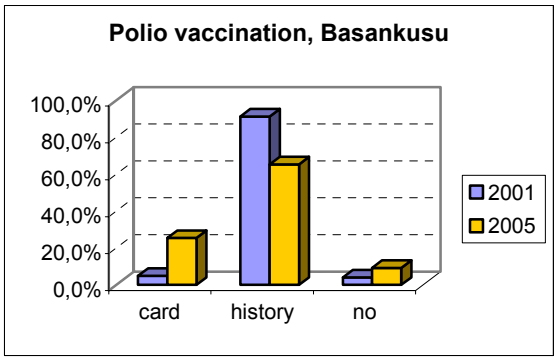








No data on measles for Basankusu in 2001, instead, the survey asked about BCG.



Compared with the findings of the 2001 survey, there was a significant drop in polio vaccine coverage, with the percentage of unvaccinated children falling from 0.7% to 9.2% in Inongo, from 3.4 to 14.8% in Kilwa, and from 4 to 9.2% in Basankusu.

For measles, on the other hand, the trend is reversed. There has been an improvement in vaccine coverage. The percentage of unvaccinated children has gone from 77% to 24.6% in Inongo, from 55% to 25.5% in Kilwa and from 45% to 9.5% in Basankusu.

c. Comparison with variables impacting on vaccination

Distinction between rural and urban areas

The only significant difference between rural and urban areas is in the Bunkeya zones. These figures must however be interpreted with caution as the majority of unvaccinated cases originate from the neighbouring zone of Mufunga.

Bunkeya: Percentage unvaccinated	Urban	Rural
OPV	1.00% [0.0-2.0]	11.60% [8.1-15.0]
AMV	3.10% [0.8-5.3]	16.60% [10.7-22.4]

4. VIOLENCE AND POPULATION DISPLACEMENTS

The level of violence in DRC has decreased since the signing of the global and inclusive peace accord. However, there are a number of unstable pockets mostly situated in the east of the country, and violence of various forms continues throughout the country.

This sections presents the results by zone and then looks at the types of violence.

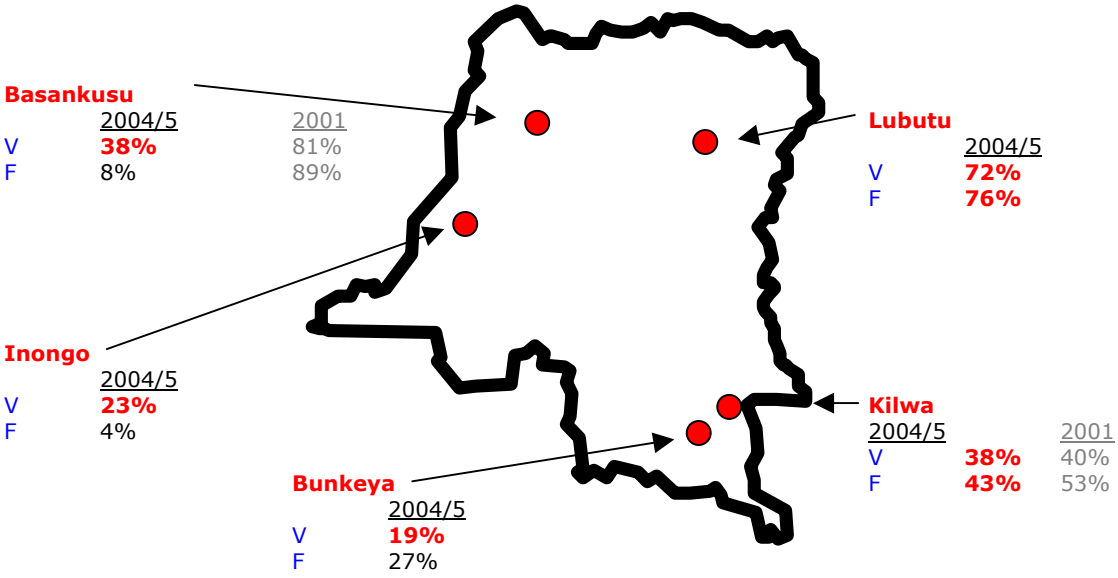
Note

The results shown in this chapter are calculated on the basis of responses to the questionnaire distinguishing the year 2004 in its entirety (12 months) and the beginning of the year 2005, which, depending on the survey period, corresponded to 2.5 months in Kilwa, 3 months in Inongo and Basankusu, 4 months in Lubutu and 4.5 months in Bunkeya. For clarity, the year 2005 is in inverted commas '2005'. The same applies for the full year 2000 and incomplete year '2001'.

a. Individual results by zone

The following map shows the areas and extent of violence and displacements reported by the families interviewed in the five zones. These are overall rates relating to the known violence and displacements in 2004 and/or beginning of 2005.

Victims of violence and those forced to flee to safety

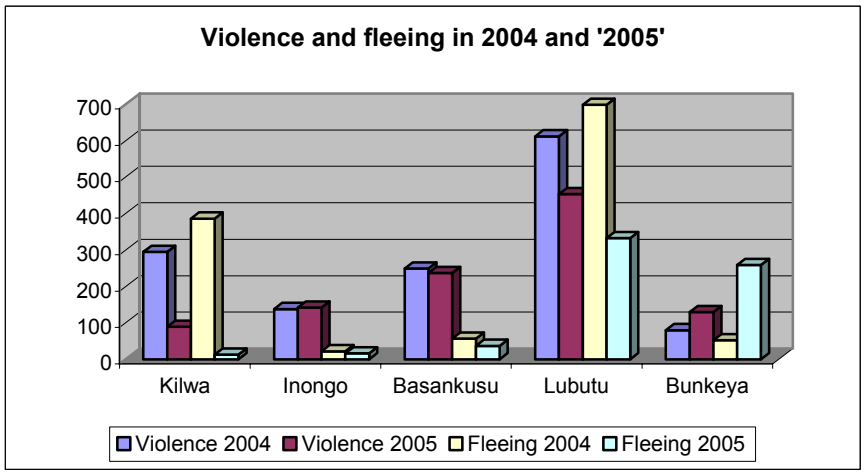


V = Victims of violence
F = Forced to flee

Violence occurred in all the zones in 2004 and 2005. It is mainly linked to the war-like situation in the eastern zones of Lubutu, Bunkeya and Kilwa and with social unrest in the other western health regions of Iongo and Basankusu.

Compared with the 2000-2001 results, the level of violence has clearly decreased in Basankusu due to the end of the conflict, but there has been little change in Kilwa. Lubutu can virtually be compared to Basankusu four years previously. In 2000-2001, there was no survey on violence in Inongo.

The following graph indicates the differences in the volume of violence and displacements between 2004 and early 2005. The trend is to be interpreted with caution owing to the difference in the periods surveyed (one year/three months).



Violence and populations in flight are often related, particularly in Lubutu, Kilwa and Bunkeya. The volume of violence is lower than displacements owing to preventive movements; populations prefer to flee when insecurity is already affecting the area.

Kilwa

Of the 925 families interviewed in the Kilwa zone, 352, or 38.1%, declared that at least one person in their family had been a victim of violence in 2004 and/or 2005. 396 families, or 42.8% had been forced to flee in 2004 and/or 2005 as a result of violence.

A breakdown of types of violence is shown in the following table:

Type of violence* (n=925)	**2004**	**%**	**'2005'**	**%**	**2004 and/or '2005'**	**%**
Theft (food stores)	**218**	23.6%	**43**	4.6%	**244**	26.3%
Arson of homes or fields	**67**	7.2%	11	1.2%	**78**	8.4%
Beatings	6	0.6%	6	0.6%	11	1.2%
Imprisonment with torture	5	0.5%	6	0.6%	10	1.1%
Sexual violence (rape)	3	0.3%	1	0.1%	4	0.4%
Land mines	0	0	0	0	0	0
Shootings	0	0	1	0.1%	1	0.1%
Stabbings	13	1.4%	15	1.6%	23	2.5%
Enlistment under duress	3	0.3%	1	0.1%	4	0.4%

* The data shown above the line in bold refers to violence affecting property. Below the line are types of violence affecting at least one person in the family.

The number of victims of stabbing is abnormally high, with more than a dozen cases reported every year over all the families interviewed.

Comparison of 2000-'2001' with 2004-'2005'

Compared with 2000-'2001', there has been little change in the level of violence in the Kilwa health zone. It is gone from 40.0% to 38.1% for the whole of 2004 and/or '2005'.

On the other hand, the level of violence declined sharply between 2004-2005 in the Kilwa zone. On October 14, 2004, the town of Kilwa fell into the hands of a military group

proclaiming the independence of Katanga. This uprising and the return to order following combat with the army caused a great many people from the town and surrounding areas to flee into the bush. Stability returned in the early part of 2005 since the proportion of those forced to flee decreased, from nearly 50% of the families to a low level.

Basankusu

Of the 956 families interviewed in the Basankusu zone, 359, or 37.5%, declared that at least one person in the family had been a victim of violence in 2004 and/or in 2005. 78, or 8.2%, had been forced to flee in 2004 and/or '2005' as a result of violence.

Types of violence* (n=956)	**2004**	**%**	**'2005'**	**%**	**2004 and/or '2005'**	**%**
Theft (food stores)	**180**	18.8%	**146**	15.3%	**237**	24.8%
Arson of homes or fields	10	1.0%	11	1.2%	21	2.2%
Beatings	**38**	4.0%	28	2.9%	**61**	6.4%
Imprisonment with torture	**33**	3.5%	**22**	2.3%	**51**	5.3%
Sexual abuse (rape)	6	0.6%	2	0.2%	8	0.8%
Land mines	0	0	0	0	0	0
Gunshots	1	0.1%	1	0.1%	2	0.2%
Stabbings	8	0.8%	14	1.5%	21	2.2%
Enlistment under duress	0	0	0	0	0	0

* The data shown above the line in bold refers to violence affecting property. Below the line are types of violence affecting at least one person in the family.

Comparison of 2000-'2001' with 2004-'2005'

The level of violence clearly decreased in Basankusu between 2001 and early 2005, from 84.5% to 38% of the families interviewed. The level of violence is nowhere near what it was during the first survey, when Basankusu was on the front line.

Some sporadic cases of theft and rape are still most often associated with the presence of armed groups. The armed protection forces appear to induce more of a feeling of insecurity than security among the people. This is particularly noticeable near the town Basankusu where the soldiers in civilian clothes regularly come to get their supplies in the fields. Some families have decided to stop farming as they cannot harvest their crops which are providing a source of income to the army.

There have been numerous complaints about the police. The fear of arbitrary arrests and being held to ransom sometimes forces families to flee their homes for a few days.

The lessening violence also has an effect on the proportion of those fleeing which, according to the families' responses, is down from 89% to 8%.

Inongo

Of the 980 families interviewed in the Inongo zone, a total of 229, or 23.4%, declared that at least one person in the family had been a victim of violence in 2004 and/or 2005, and 34, or 3.5%, of the families had been forced to flee in 2004 and/or in "2005" as a result of violence.

Types of violence* (n=980)	2004	%	'2005'	%	2004 and/or '2005'	%
Theft (food stores)	**60**	6.1%	**82**	8.4%	**109**	11.1%
Arson of home or fields	13	1.3%	11	1.1%	22	2.2%
Beatings	**48**	4.9%	**38**	3.9%	**69**	7.0%
Imprisonment with torture	**28**	2.9%	**27**	2.8%	**54**	5.5%
Sexual abuse (rape)	3	0.3%	4	0.4%	7	0.7%
Land mines	0	0	0	0	0	0
Shootings	3	0.3%	1	0.1%	3	0.3%
Stabbings	8	0.8%		1.3%	20	2.0%
Enlistment under duress	5	0.5%	2	0.2%	7	0.7%

* The data shown above the line in bold refers to violence affecting property. Below the line are types of violence affecting at least one person in the family.

The degree of violence in Inongo is relatively low compared to the other health zones surveyed. Numerous complaints about the police were also reported here during the interviews. Social confrontations are particularly violent, with cases of people taking the law into their own hands and lynching of thieves.

Several cases of torture were also reported, as well as discriminatory violence against members of the pygmy ethnic group, particularly women being raped during detention. Some of the culprits have been brought to justice, but arbitrary action tends to have the upper hand.

The low percentage of people fleeing noted above reflects the peaceful atmosphere in this region of DRC, which has been spared in the fighting over the years, due mainly to its isolation.

Lubutu

Of the 986 families interviewed in the Lubutu zone, 712 of them, namely 72.2%, declared that at least one person in their family had been a victim of violence in 2004 or "2005", and 749, namely 76.0%, of the families were forced to flee in 2004 and "2005" as a result of violence.

Types of violence* (n=986)	2004	%	'2005'	%	2004 and/or '2005'	%
Theft (food stores)	**490**	49.7%	**381**	38.6%	**595**	60.0%
Arson of homes or fields	35	3.6%	15	1.5%	**48**	4.9%
Beatings	**84**	8.5%	**54**	5.5%	**115**	11.7%
Imprisonment with torture	**149**	15.1%	**67**	6.8%	**196**	19.9%
Sexual abuse (rape)	**45**	4.6%	5	0.5%	**49**	5.0%
Land mines	6	0.6%	0	0	6	0.6%
Shootings	**21**	2.1%	6	0.6%	26	2.6%
Stabbings	11	1.1%	10	1.0%	21	2.1%
Enlistment under duress	11	1.1%	1	0.1%	12	1.2%

* The data shown above the line in bold refers to violence affecting property. Below the line are types of violence affecting at least one person in the family.

The Lubutu health zone clearly reflects the pattern of ongoing instability in the eastern part of the country. Strategically located at the crossroads of three provinces, Orientale, Maniema and South Kivu, Lubutu suffers both from the presence of several armed and

police forces responding to 'conflicting' commands and the existence of mineral deposits which are enticing to these armed elements and civilians.

The high degree of violence shows the uneasy coexistence between civilians and armed men, in the towns, in the bush and around quarry mines. The number of families experiencing violence was high in 2004, and remains very high in 2005.[32]

Among the types of violence, to be noted is the high number of thefts which are often associated with people fleeing. Nearly half of the families had been victims of theft on one or more occasions in 2004, which percentage decreased to over a third in '2005'. For the period overall, 60% of the families reported having been robbed. The family panics and flees from the home which is searched and raided by soldiers or civilians.

The number of prisoners subject to torture remains abnormally high, with 20% of families reporting a victim.

The number of rapes reported was also very high in 2004. It reflects the situation of women and young girls at the mercy of armed men who systematically rape those they encounter during combat or kidnap their victims and keep them as sex slaves in their camp or in the quarry mines. The list of rapes may not be exhaustive because of confidentiality and the social stigma surrounding the subject, particularly when raised by male researchers.

A few accidents with anti-personnel mines in 2004 were noted during the surveys, particularly to the east of the town of Lubutu. According to testimonies taken, not all of the mines had been uncovered following the departure of the DRC Goma troops. The rains contributed to dislodging them and their were being found too late because of ongoing insecurity in 2005. No incident was reported in the early part of 2005.

The number of persons recruited under duress has fallen sharply, which seems to confirm the process of demilitarisation in 2005.

The percentage of people fleeing, shown earlier, decreased by half between 2004 and early 2005, but remains indicative of instability. With the still strong presence of the army, as well 'combatants' involved in trafficking of all kind, the populations remain alert and ready to take to the road at the first hint of any trouble.

[32] See testimonies at the end of the report.

Bunkeya

Of the 991 families interviewed in the Bunkeya zone, a total of 189, or 19.1%, declared that at least one person in the family had been a victim of violence in 2004 and/or '2005', and 272, or 27.4%, were forced to flee in 2004 and/or '2005' because of violence.

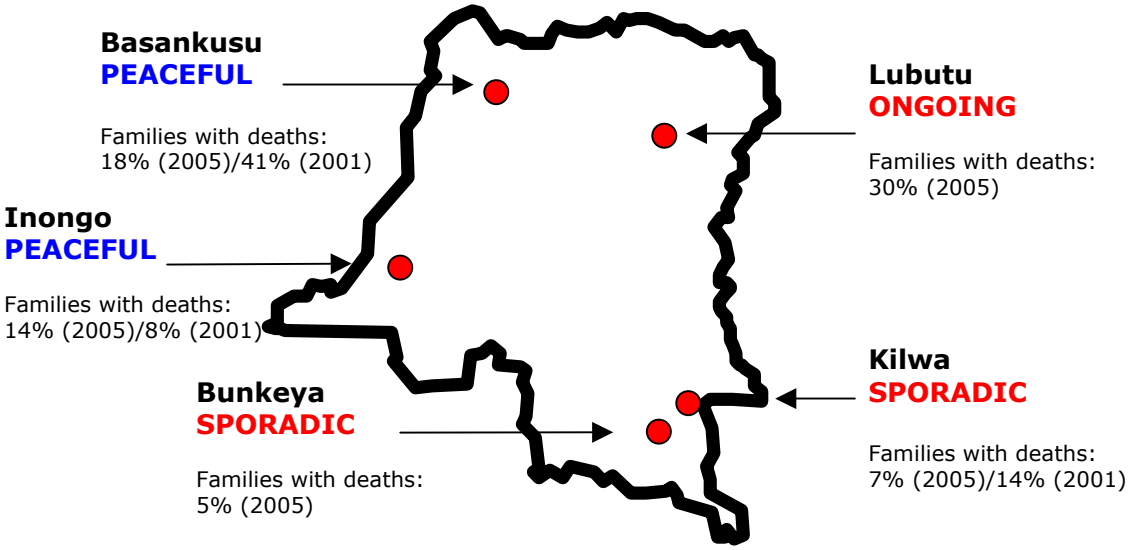
Types of violence* (n=991)	**2004**	**%**	**'2005'**	**%**	**2004 and/or '2005'**	**%**
Theft (food stores)	**47**	4.7%	**106**	10.7%	**138**	13.9%
Arson of homes or fields	16	1.6%	11	1.1%	27	2.7%
Beatings	7	0.7%	6	0.6%	13	1.3%
Imprisonment with torture	3	0.3%	9	0.9%	12	1.2%
Sexual abuse (rape)	0	0	0	0	0	0
Land mines	0	0	0	0	0	0
Shootings	0	0	0	0	0	0
Stabbings	0	0	0	0	0	0
Enlistment under duress	0	0	1	0.1%	1	0.1%

* The data shown above the line in bold refers to violence affecting property. Below the line are types of violence affecting at least one person in the family.

Bunkeya is situated in Katanga to the south of the old front line. The town of Bunkeya lies to the south of a zone somewhat comparable to Lubutu insofar as three armed forced found themselves within the same perimeter at the start of 2005: a battalion of the Armed Forces of the Democratic Republic of Congo (FARDC), Mayi-Mayis, and provincial FARDC reinforcement troops.

The Mayi-Mayi attacks on the villages of Kyubu and Kyalwe in Mitwaba territory to the north of the Bunkeya zone caused numerous populations to flee from their settlement around the parish of Bunkeya, where there is a functioning health centre. The people there spoke of many families still hiding in the forest too frightened to show themselves because they had no clothes. Such attacks and the fears of the people from neighbouring villages account for the sudden increase in displacements and violence en 2005.

b. Types of violence



Although the conflict has stopped, the volume of violence remains high, affecting more than half the families interviewed in the Lubutu zone. The east of the country remains particularly unstable with sporadic outbreaks of violence, as in Bunkeya and Kilwa, or ongoing violence in Lubutu.

Outside the Bunkeya zone, the number of incidents of violence decreased between 2004 and the first months of 2005. However, the year is not yet over.

Periods of intense violence vary from zone to zone, dating back to the conflict (1998-2002) for the zones of Basankusu, Bunkeya, Kilwa, recurring in the latter two zones of Katanga and ongoing in Lubutu since the conflict began. Inongo has been spared the violence of war.

Aside from arson attacks, more frequent in Kilwa than in the other zones with 8% of responses, Lubutu has the highest rates in all other categories of violence, particularly theft with 60% of the families interviewed, torture, 20% and beatings, 12%. Lubutu is also the only zone where incidents involving anti-personnel mines were reported.

Theft is the prime cause of violence, affecting 11% of families in Inongo, 14% in Bunkeya, 25% in Basankusu, 26% in Kilwa, and 60% in Lubutu.

Social unrest, which is difficult to assess in times of conflict, is underlined with the end of fighting and reopening of the civil courts, particularly in Inongo and Basankusu.

5. CROSS-ANALYSIS OF RESULTS BY THE PARAMETERS

In this section we identify the relationships between the various parameters studied, for all zones: mortality, access to healthcare, vaccination and violence.

Mortality/Access to healthcare

In Basankusu, the difference in mortality rates between the populations with access and those with no access, although significant in 2001, is no longer significant 2005.

Generally speaking, mortality increased in the Kilwa and Inongo health zones between 2001 and 2005, but there is no significant difference between the populations with access and those no access for the two periods overall.

In the Lubutu health zone, mortality among over-fives is significantly higher in families with no access to healthcare, with 2.9/10,000/d CI [2.5-3.3], than in those having access, with 1.9 [1.4-2.3].

In Bunkeya, the mortality rate is higher in families with no access to healthcare than in those with access. The difference is virtually double, with 1.3 [0.9-1.7] for families with no access, and 0.6 [0.3-0.8] for families with access. Access to healthcare impacts on mortality for the overall population of only one in four zones, namely Bunkeya[33].

Mortality/Vaccination

In all the surveys, the differences in mortality rates for under-fives are not statistically significant between families that said their children had been vaccinated against measles and polio and those whose children were not vaccinated.

Mortality/Violence

In Kilwa, the difference in mortality between families where at least one person had suffered violence and families with no victims that had been significant in 2001 is no longer significant in 2005.

In Basankusu, the tendency of the impact of violence on mortality is high in both the 2001 and 2005 surveys. In 2005, however, the difference between families with at least one victim and the families with no victim of violence is no longer significant.

CMR/Violence	**Violence**		**No violence**	
	Deaths/ 10,000/d	**CI**	**Deaths/ 10,000/d**	**CI**
CMR 2004/ '2005'	2.9	[2.2-3.5]	1.9	[1.4-2.4]
MR<5 years 2004/'2005'	5.8	[4.0-7.6]	4.1	[2.8-5.1]
CMR 2000/'2001'	2.9	[2.5-3.3]	1.5	[1.1-1.9]
MR<5 years 2000/'2001'	7.0	[5.6-8.4]	3.9	[2.6-5.1]

Still in Basankusu, the families with a victim of beatings have a mortality rate for under-fives of 8.1/10,000/day, whereas those with no victims of this kind have a rate of 4.3/100,000/day. Imprisonment also impacts on the mortality of under-fives for the families affected: the mortality rate for under-fives here is 13.1/10,000/day, whereas it is 4.2/10,000/day among families not having suffered imprisonment.

[33] This is an epidemiological correlation between families having access to healthcare and the mortality rates in these families. The 'access to healthcare' variable was calculated on the basis of data relating to the last episode of illness in the family within the last three months. The mortality variable includes all deaths in the families within the last three months. We have no details concerning the medical contacts of these persons prior to their death and did not therefore examine the direct link between mortality and the treatment received.

In Inongo, mortality is higher in families that have experienced violence than in those who have not. The CMRs are 3.5 [2.9-4.2] and 1.7 [1.4-2.1] respectively. For over-fives, this difference exists also, with rates of 2.4 [1.7-3.0] against 0.9 [0.6-1.2].

In Lubutu, mortality is also higher in families exposed to violence 4.0 [3.4-4.5] than those not affected by it 2.4 [1.8-3.0]. This also checks out for over-fives.

The only type of violence that has a significant impact on mortality is torture, with rates of 3.0/10,000/day for families not having known torture compared to 4.7 for those who had suffered torture.

In Bunkeya, the impact of violence on mortality was not observed. The wave of violence had been recent, and there may be a time lapse before the indirect effects of the violence can be observed.

Access/Vaccination

The only significant difference in terms of percentage of non-vaccination is to be noted in the Inongo zone, with the following results being more favourable for families with access than those with no access to healthcare, for both types of antigens.

Inongo: family with or without access	**OPV**	**AMV**
Families with access	7,1% [1,8-3,6]	19,5% [12,2-26,9]
Families without access	11,6% [7,5-15,8]	31,6% [23,6-35,9]

Access/Violence

Violence has no significant impact on accessibility to healthcare in the Kilwa health zone.

In Basankusu, unlike in 2001, the impact of violence on accessibility to healthcare is not significant.

In Inongo, violence has a strong impact on access to healthcare. A family not having suffered violence has significantly fewer problems with access to healthcare than a family with at least one victim of violence in 2004 and/or early 2005. The rates for access to healthcare are 52.2% [44.6-59.8] and 41.4% [32.9-42.6] respectively. Families with victims of violence in 2004 and 2005 are even more disadvantaged, with a rate of access to healthcare of 29.2% [14.6-43.7].

Finally, in Lubutu and Bunkeya, access is slightly higher, but not significantly, when there has been not exposure to violence.

Vaccination/Violence

There is no significant difference in the percentage of unvaccinated children between families with at least one victim of violence and families with none. The greatest difference is noted in Lubutu.

Lubutu Violence/No violence	**OPV**	**AMV**
Families with violence in 2004 or 2005	15.1% [9.4-20.7]	26.1% [18.2-33.9]
Families with no violence in 2004 or 2005	9.9% [5.9-13.9]	19.4% [13.1-25.7]

V. DISCUSSION

a. Limits of the survey

These surveys were not conducted with the objective of assessing projects supported by MSF-Belgium. The samples were therefore selected on the basis of the population figures for the health zones, rather than those for supported or unsupported areas. Nine hundred households (30 x 30 clusters) were interviewed in each health zone.

Comparing the supported and unsupported areas within the same zone may therefore prove difficult given the reduced number of clusters to be compared and the resulting loss of statistical power. For the purposes of this comparison, we would have had to select a sample of 900 households in MSF-supported zones and a sample of 900 households in unsupported zones. This must be taken into consideration when interpreting the results.

b. Possible biases

Verbal declarations

In virtually all cases, the field surveys were conducted directly between non-medical personnel and the families. As stated in the section on methodology, the more detailed 'verbal autopsy' method could not be applied.

For both morbidity and mortality, the causes as perceived by the family were given. This must be taken into consideration when interpreting the results.

Population figures

Population figures are a delicate matter in DRC. The last scientific census dates back to 1984. Census figures established by agents of the state provide initial basic data. There is, however, no systematic updating and the figures are often difficult to ascertain in the case of population movements.

Accessibility

Most of the surveys were conducted during the rainy season, which made travel and interviews highly dependent on climatic conditions. The clusters were selected at random in all cases, and the surveys were scheduled according to logistic capabilities. Overall, only one previously selected region could not be reached owing to the collapse of a bridge south of Lupembe in the Kilwa health zone. It was substituted by another one selected at random.

Security was an obstacle for the survey in Bunkeya, specifically in the neighbouring zone from which the displaced people originated. The teams only had access to a part of the least isolated zone of Mufunga, the other part being affected by violence and population displacements. The results of the survey conducted in this zone therefore pertain only to the zone covered by the survey.

Imbalance between male/female researchers

Once again this year, the objective of recruiting equal numbers of men and women could not be achieved. Most of those who applied were men. Of the 68 people recruited, only six were women (8%). This low representation of women probably influenced certain responses, particularly those concerning sexual violence. These may therefore be under-estimated in the results. Such topics of discussion can be taboo in rural areas, particularly between persons of the opposite sex or in heavily militarized areas.

Cultural differences

Depending on the region, cultures, ethnic groups and some communities are less inclined than others to talk about their health problems and extreme poverty to 'strangers', even if they are Congolese. Once again, some persons or parents of children who were visibly ill preferring to say that the whole family was in good health to sidestep the question on consultation of people other than medical or paramedical personnel. The numbers of sick people may therefore be slightly under-estimated.

Moreover, it is sometimes difficult or uncomfortable for some families to speak freely in front of anyone from MSF about alternative solutions to the formal sector and recourse to traditional medicine. One cannot therefore preclude that, for interpretation purposes, some families may have likened self-medication to the use of alternative medicine.

Spokesperson for the family

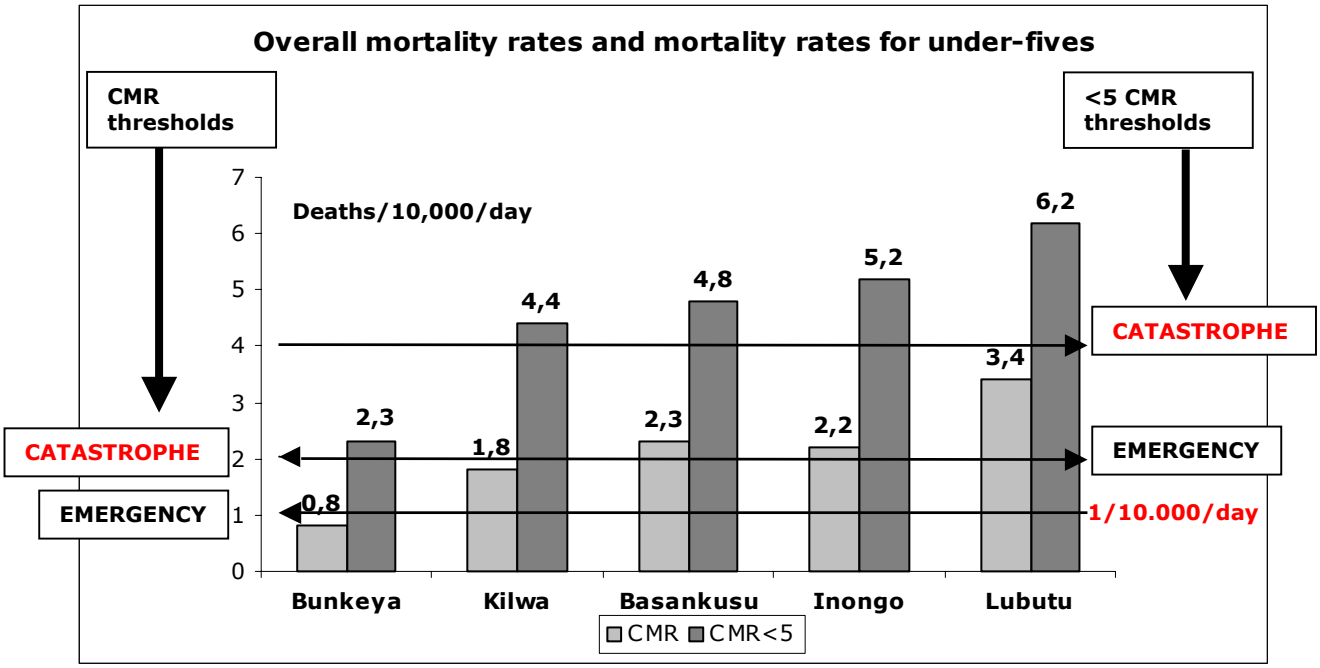
In some villages, we again noted divergent reactions between husband and wife. Husbands were generally less spontaneous and less willing than their wives to talk about the family's problems to strangers, particularly with regard to the health of the children. There were a few questionnaires where the respondent, clearly ill at ease, answered 'no' to practically every question. Out of respect for the families, we never picked up on these contradictions, but this must at times have slanted certain results with an under-estimation of problems, particularly concerning healthcare for the children.

c. Interpretation and discussion of results

Four years after the first series of surveys and two years after the official end of the fighting, it has to be said that the situation in DRC has hardly improved. Indeed, in terms of mortality and access to healthcare, it has even deteriorated. Violence is certainly less intense, but nonetheless ongoing in various forms.

Mortality rates are still as high and indeed worsening

The mortality rates recorded represent a reliable indicator of the gravity of the situation. The survey results in the various zones and their position compared to international thresholds are shown in the following graph.



Crude mortality rates exceed the threshold of 2/10,000/day in three of the five zones surveyed. Ranging from 2.2/10,000/day in Inongo, to 2.3 in Basankusu and 3.4 in Lubutu, they are indicative of a catastrophic situation (out of control). The crude mortality rate is between four and almost seven times higher than the expected rate.

In the Kilwa zone, the rate is 1.8/10,000/day, which, although far lower than for the other zones, is indicative of an emergency.

Mortality in the Bunkeya zone is higher than the expected rate, but it does not exceed the emergency threshold.

Children at greatest risk and excess mortality throughout the population

Children under-five are more exposed to death than adults in all of the health zones surveyed. Mortality rates everywhere are above, and often by a large margin, the emergency threshold of 2/10,000/day. In four of the five zones, they even exceed the health catastrophe thresholds of 4/10,000/day. In Bunkeya, the mortality rate for under-fives is an emergency: 2.3/10,000/day.

In the four other zones, rates of between 4.4 in Kilwa and 6.2/10,000/day in Lubutu exceed the threshold of 4/10,000/day, a quadrupling of the expected mortality rate. In Lubutu, the mortality rate for children is six times higher than the expected rate.

Mortality rates for persons aged five and over are also high. Although less talked about in the literature, this phenomenon has been noted in several emergency situations (see A. Davis) and probably reflects the severity of the crisis.

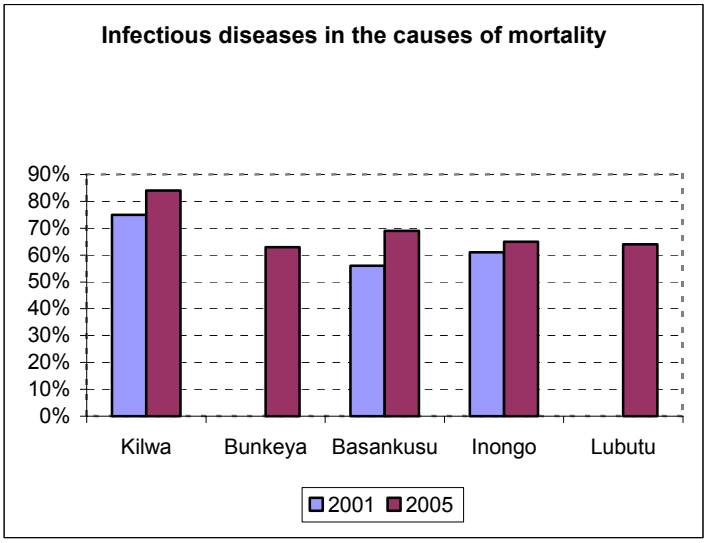
In four of the five zones surveyed, mortality rates for persons aged five and over exceed emergency thresholds.

In Kilwa, the figures are 0.9/10,000/day, 1.3 in Inongo and 1.5 in Basankusu. All exceed the emergency threshold (0.8/10,000/day). The rates observed in Lubutu qualify the situation as catastrophic, with 2.6/10,000/day.

In absolute terms, for all of the zones surveyed (735,700 persons), we estimate that 12,055 persons died over a reference period of 75 days. The expected mortality in the zone (expected rate of 0.5/10,000/day) is 2,759 deaths over this same 75-day period. The excess mortality is therefore 9,296 deaths over this same period for the five zones surveyed, or 124 excess deaths per day as compared to the expected 37 deaths per day.

A majority of victims dying of avoidable infectious diseases

The deadliest diseases noted during the surveys were common infectious diseases such as malaria, diarrhoea and acute respiratory infections, which could have been avoided and treated had some form of decent healthcare been available.



Most of the deaths are not directly linked to violence, but rather to infectious diseases. The proportion of deaths due to infectious diseases varies from 60% in Bunkeya to 84% in Kilwa.

Malaria is the most frequently reported cause of death, accounting for between a quarter and half of the deaths declared. Diarrhoeal diseases account for between 12% and 23%, and acute respiratory infections between 10% and 20%.

In Lubutu, aside from infections, malnutrition is the third cause of mortality, with 11% of cases.

Excess mortality is not confined to areas of conflict

In DRC, it is generally accepted that the zones exposed to violence – generally situated in the east of the country – continue to suffer from excess mortality associated with the situation of instability and insecurity of this part of the territory. The results for Lubutu confirm this. Mortality there is the highest, around seven times the expected rate overall and six times higher for children.

It is nevertheless to be noted that the Inongo zone, which was not directly exposed to conflict and where relatively little violence is reported, has mortality rates of more than four times the expected rate. The situation has even worsened since the end of the war, as the 2001 survey showed significantly lower mortality rates. This zone is in a peaceful and isolated region, but has no external healthcare support whatsoever.

The Kilwa and Basankusu zones have seen a reduction in violence since 2001, but mortality rates remain well in excess of thresholds regarded as normal. A statistically significant improvement in terms of mortality cannot be confirmed.

Relatively unscathed until recently, Bunkeya fell victim to violence in early 2005. Although increasing, mortality rates do not yet show a rise to beyond emergency thresholds as in the other zones. Bunkeya zone could be on a razor's edge, at high risk of deterioration at any new outbreaks of violence or an epidemic.

The impact of mortality on population growth

On the basis of the mortality figures available for the retrospective period, we have extrapolated the mortality rates over a full year according to a number of hypotheses. For each zone, the calculations for the year were made assuming that the mortality situation will either be the same for the remaining period, or that this situation will improve. Our calculations are based on two hypothetical birth rates: 4% and 5%.

For the zones already surveyed in 2001, the calculations were made for both 2001 and 2005. Our conclusions are as follows.

Over the last four years:

- the population of Basankusu probably decreased
- the population of Kilwa remained unchanged at best, or decreased
- the population of Inongo probably remained unchanged.

For the zones not surveyed in 2001:

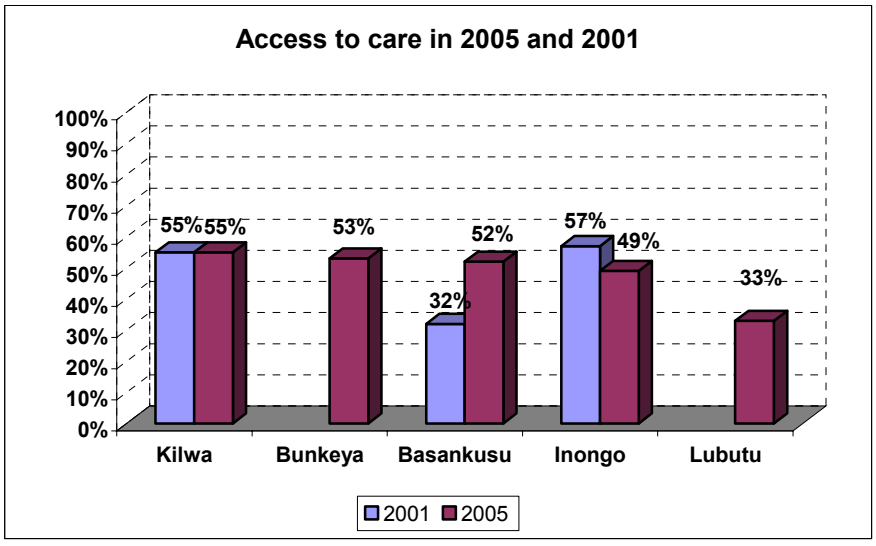
In 2005,

- the population of Lubutu will probably decrease
- the population of Bunkeya will probably increase.

These figures reflect the impact of high mortality rates on population growth.

Curative healthcare is grossly inadequate and inaccessible to the great majority

The following graph shows, for each zone surveyed, the results on access to healthcare. A comparison with the findings of the 2001 survey is also presented where possible. Note that the term 'total access to healthcare', includes all consultations outside the family (private, public, traditional, dispensary, etc.) that results in full treatment.



'Total' access to healthcare is at best available to only one in two people in four of the five zones surveyed, and only one in three in Lubutu.

The results are disappointing in most of the zones, particularly in the Lubutu zone, where one-third of patients reported having received full treatment at the time of their last episode of illness. In the other zones, access to healthcare is around 50%.

- **The financial barrier**

Cost is the first barrier to healthcare, for both the consultation and medicines. The people interviewed often spoke of "lack of money". Besides having to paid for healthcare, people have to be well dressed to be seen in a health centre; money when available will be used to buy clothing that is socially acceptable. In the meantime, people consult the witch doctor, who is nearer and less particular about dress, in exchange for a chicken or some other possession. This 'lack of money' clearly reflects the dire poverty of the population, with most people having the equivalent of just $0.30 per day on average to survive on.

The availability of money is also a factor to be taken into consideration. In a country where economic activity is at a virtual standstill outside the big towns, and where the potential for income-generating activities is very limited, the physical availability of cash is a problem. Economic activity is paid for without cash, for example through barter or non-monetary debts. This demonetization linked to isolation and the currency exchange deficit is not to be underestimated. Money that does not exist cannot circulate.

Surveys conducted in DRC by Médecins du Monde in Tshofa and Malteser/CIF in Kivu[34] confirm that most families have low incomes and cannot pay for healthcare out of a very limited or non-existent budget.

In Tshofa, according to MDM, 92.8% of the households interviewed said they sell possessions to pay for healthcare. A recent study by MSF-Spain and MSF-Holland also revealed the financial burden that the cost of healthcare places on families' budgets[35].

In contrast to this reality, all the formal health structures require patients to make a financial contribution; all medical services must be paid for in cash. Unless they can pay, patients do not have access to healthcare, barring a few exceptions with loans and exemptions which are somewhat theoretical and strictly limited.

Faced with such problems of financial access, few actors in the health sector have subsidized and systematically reduced the charges patients have to pay. Since 1992, MSF put an end to the cost-recovery rationale in supported structures by subsidizing medicines and treatment.

Since the war in 1996, a flat-fee system has been in place, making medical care available at a single fixed rate. Over the years, the tariff to be paid by the patient has several times been reduced. Today, the CHZO charges 20 francs ($0.04). Although the number of people using these structures has risen significantly, experience shows that patients in rural areas do not always have the cash to pay. The exemption mechanism put in place to protect the destitute is also not working.

Throughout a partially-supported zone like Basankusu, global access remains insufficient, with only one in two patients having access to healthcare. In the supported health catchment areas of this zone, the percentage is 72%, 32% in unsupported areas.

However, access to complete treatment in the supported public sector is considerably better than in an unsubsidized zone like Lubutu, where only one in six patients has total access, owing to tariffs that are 125 times higher.

At national level, ways of solving the problem of financial access to basic healthcare have yet to be found. Discussions between supporters of different healthcare and payment systems lead nowhere. Cost-recovery or financial participation arrangements supposedly designed to motivate medical personnel and do away with the feeling of receiving handouts have demonstrated their limits. Offering free medical services that would

[34] See bibliography.
[35] *User Fees in DRC*, MSF-Holland and MSF-Spain, July-August 2005, in print.

provide cover for an optimum number of patients requires additional resources in terms of personnel and supplies.

Strategic options for patient contributions do not only apply to primary healthcare. The cost associated with health problems requiring hospitalization are higher still and beyond the means of most of the population.

The problem is even more acute for patients suffering from chronic illness that require regular and often expensive treatment. A recent study has shown that financial access limits the impact of screening for trypanosomiasis[36]. And payment for treatment of Aids patients is a great worry. There have been national policy discussions on the need to offer ARVs and other crucial treatment free of charge to Aids sufferers.[37] The issue is far from being resolved as many donors are proposing to continue having patients make a financial contribution.

The problem of non-access also arises in epidemics and other emergencies, which occur regularly on in Congo. The experience of the MSF emergency pool, which intervenes in a variety of situations, such as outbreaks of cholera, measles, population displacement and so on, is that it is extremely difficult to secure free medical care as recommended in such situations (WHO, Roll Back Malaria, malaria epidemics).

- **The non-availability of medication**

The non-availability of medicines is also a major barrier. Obtaining medical supplies is always a problem, even in supported zones. Health centre staff have to have a bicycle or a canoe to transport their supplies from the CHZO, and they rarely do.

Public pharmacies are not supplied regularly and when stocks run out, health officials refer patients with prescriptions to private pharmacies or street markets.

Such pharmacists, be they itinerant vendors or shops, are mainly non-professional, salesmen or charlatans offering medicines at high prices, often of dubious quality, harmful to both health and pocket. This alternative to the official circuit is everywhere. Where it is to be found, it is often unaffordable and unreliable, simply cashing in on the state's resignation.

To avoid the depletion of stocks, a regular supply from the source to the more remote health centres is needed. This requires costly transport logistics, especially in forest and lakeside locations.

- **The barrier of distance**

Distance is an obstacle to healthcare access. Roads are often impassable, and means of transport limited and expensive. Uncertainty about the outcome of the journey is also a factor. People can never be sure of finding the right medicine or medical staff when they reach the health centre. Often the trip is undertaken in despair, when it is too late.

Health structures range from a virtually empty and deserted centre in the middle of the bush - where the nursing staff first have to farm the fields to survive and then help out the community when they can – to a private centre in town. This frightens off the poor because it is meant for the better-off. Somewhere in the middle are a few rare reasonably-priced centres or those that are barely ticking over and unaffordable.

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[36] Robays J, Lutumba P, Lubanza S, Kande Betu Ku Mesu V, Van der Stuyft P, Boelaert M, Lefèvre P. *Drug toxicity and financial barriers are the main determinants of low participation of the population in the HAT control program in the Democratic Republic of Congo*. Oral presentation at International Conference for Tropical Medicine and Malaria, Marseille, September 2005.

[37] Reference to press release *Free by five* by Congolese community.

- **Recourse to self-medication and alternative medicine**

Self-medication and consultation of 'traditional' practitioners or evangelical churches, appear to be the most popular alternatives in rural areas more accustomed to these practices and often without any alternative. This parallel market alternates between good and not-so-good, as indeed does the official circuit.

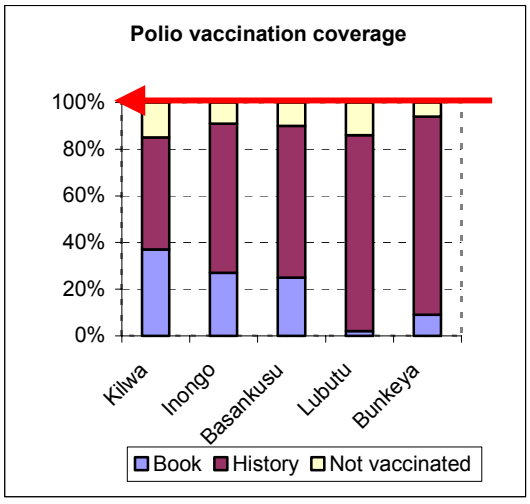
- **A maze-like therapeutic route**

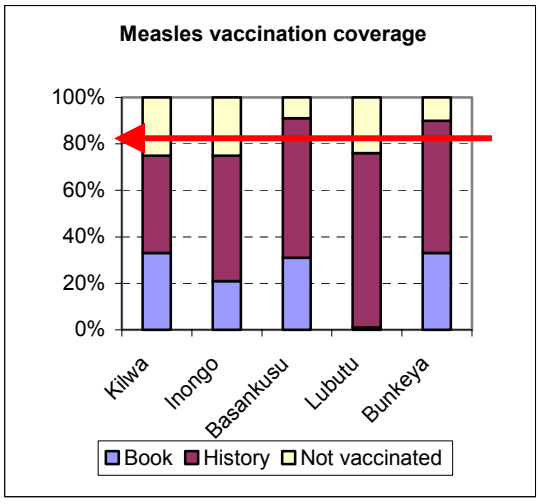
The therapeutic route is something of a lottery, a circuitous venture into the unknown, that can be unforgiving for the weakest. In a family with virtually nothing to live on, sickness is regarded as a punishment or a tragedy. It can often be the final straw in the daily concerns of a family struggling to survive, not to mention schooling for the children.

Faced with an empty dispensary or with no money to get to the health centre, uncertain of finding the treatment they need, many Congolese are dying in silence and this is seen as nothing out of the ordinary.

Incomplete vaccination coverage

The objectives for the two vaccines surveyed are different. In the case of polio, the objective is total eradication of the disease. For measles, it is to vaccinate at least 85% of the children. The following graph compares the findings against the objectives for the vaccine cover of these antigens.





Minimum vaccination thresholds for the eradication of polio (100%) and anti-measles coverage (85%)

Despite the many efforts and resources deployed by various healthcare partners, including MSF in the case of measles, vaccination coverage is far from comprehensive in the zones visited.

Vaccine cover against polio varies from 84% in Bunkeya to 91% in Basankusu and Inongo. These results differ from those advanced by the national programme, which are based on the number of vaccines administered and estimated population figures. The number of unvaccinated children has risen in 2005 compared to the results obtained in the zones surveyed in 2001. The level of non-vaccination is up from 4 % to 9.2% in Basankusu, from 3.4% to 14.8% in Kilwa, and from 0.7 % to 9.2% in Inongo.

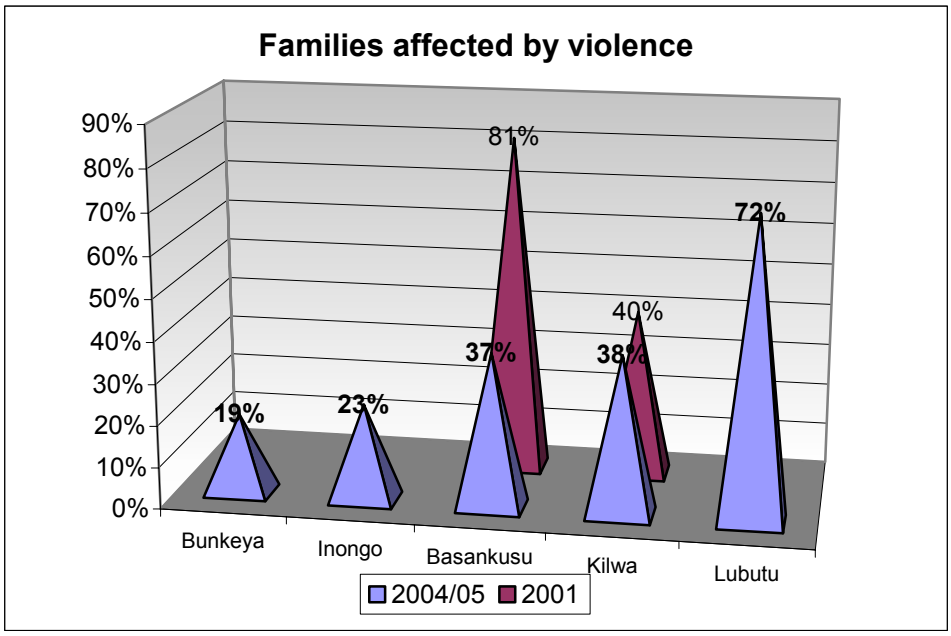
Vaccination coverage against **measles** remains insufficient (less than 85%). In Kilwa, Inongo and Lubutu, one quarter of the children have not been vaccinated. Where poverty and regular measles epidemics are rife, the importance of increased coverage is obvious. Although still insufficient, an increase in coverage since 2001 can be observed in the zones of Inongo, Basankusu and Kilwa.

More often than not, the survey findings corroborate those of the MPH, with the exception of those for Lubutu and Kilwa, where coverage appears to be lower than indicated.

As with medicines, vaccination calls for highly efficient logistics and vast human, technical and financial resources if it is to be regular and effective.

Violence associated with all forms of conflict and civil unrest

The following graph shows the results for each health zone with the proportion of households having been victims of violence in its various forms. A comparison with the 2001 results is possible for Basankusu and Kilwa.



In the east of the country, the situation remains unstable from the territory of Ituri to the north, to Upper Katanga to the south, and across Kivu and Maniema. The findings for Lubutu are testimony to this horrendous reality, with 72% of families having reported being victims of violence in 2004 and/or 2005, and 76% having had to flee their homes to safety during this same period. A climate of virtually permanent violence prevails, with nearly two-thirds of the families telling us they had been robbed at some time or other. Moreover, Lubutu has a very high incidence of sexual violence. 5% of the families interviewed reported one case of rape either in 2004 or during the first four months of 2005. In the survey carried out in the Lubutu health zone, that represents 50 victims![38] This high incidence of sexual violence in early 2005 is in sharp contrast with the total lack of medical care or any other support for these women.

[38] This figure is very probably under-estimated owing to the social stigma surrounding sexvual violence. The fact that most of the researchers were men, certainly did little to create a climate conducive to talking about such delicate subjects.

The zones of Bunkeya and Kilwa experience sporadic outbreaks of violence to a lesser extent, with 19% and 38% respectively of families reporting violent attacks, and 27% to 43% of families forced to flee. Direct and indirect reports, for Bunkeya and Kilwa, tell of the presence of numerous rival armed factions, some allegedly seeking merely to survive, others to uphold a fragile power base.

Inongo and Basankusu are zones that have not been spared by this indicator of instability either: 23% and 37% of families have reportedly been victims of violence. Here, however, the violence is due more to civil disorder, unlike the other three zones.

Poverty, the high number of young people with nothing to do or former militiamen or aides-de-camp with no money or education, the appeal of easy money, the judicial system's incapacity, the starvation wages paid to soldiers and the brutality of some of those supposed to be upholding law and order all contribute to proliferating violent behaviour.

Violence still indirectly claims many lives

The survey in 2001 clearly showed a higher rate of mortality in families whose members had been victims of violence. In the 2005 surveys, this relation between higher mortality and the violence (in all its forms) suffered by the families no longer appears significant. It is, however, very apparent in Lubutu.

In the other zones, the overall effect cannot be demonstrated. This may be due to the lack of statistical power in the zones with a lower mortality, yet there does appear to be a link for all specific forms of violence, like 'beatings' and imprisonment in Inongo.

It is to be noted that mortality here is essentially associated with diseases (except Lubutu, where malnutrition is also prominent) and not violence.

The surveys show that families also suffer indirectly as a result of any of its members having been subject to violence. Incidents of violence can be seen to cause greater instability and vulnerability within the families, which leads to a higher risk of mortality. The imprisonment of a family member, for example, often destabilizes the family as a whole, and in poor families the strongest must try to survive as best they can.

Four years after the first series of surveys and two years after the official end of hostilities, there can be no denying that little has improved. Indeed the situation appears even to have worsened in terms of mortality and access to healthcare. Violence may have lessened in its intensity, but it is still ongoing in many different ways.

VI. CONCLUSIONS AND RECOMMANDATIONS

Dire health conditions in the zones surveyed

In 2001, as war raged in DRC, MSF appealed to the international community to respond to the extreme gravity of the health conditions of the population, as revealed in a series of surveys conducted by our teams in five health zones throughout four provinces of the Congolese territory. The health zones surveyed were Basankusu, Kilwa, Inongo, Lisala and Kimpangu.

In 2005, the findings of our new surveys, **conducted in peace time,** showed an even darker picture of the health situation we had reported four years ago:

- **Mortality rates indicative of a state of emergency in four of the five zones surveyed, and catastrophic rates in three of the zones surveyed**

Although peace has returned to much of the Congolese territory, mortality exceeds not only that of most poor countries, but also that of war-torn regions and countries.

Despite political changes, the mortality figures show no significant improvement. Indeed the situation in some of the zones surveyed has worsened. These mortality figures are indicative of a real state of emergency in four of the five zones surveyed, and qualify as catastrophic in three of the five zones.

The mortality rate observed in Kilwa is 1.8/10,000/day, well above emergency thresholds (1/10,000/day). The situation is catastrophic, with over 2/10,000/day in the health zones of Lubutu (3.4/10,000/day), Basankusu (2.3/10,000/day) and Inongo (2.2/10,000/day).

In absolute figures, for all of the zones surveyed (73,5700 inhabitants), we estimate the number of deaths at 12,060 over a period of 75 days. The expected mortality in the zone (expected rate of 0.5/10,000/day) is 2,760 deaths over this 75-day period. This represents nearly 9,300 excess deaths over this period for all of the zones surveyed. With an expected number of deaths per day of 37, we can conclude that excess mortality per day is 124.

For children under five, the figures indicate an emergency in all of the zones surveyed, exceeding the threshold of 2/10,000/day. For four of these zones, the situation qualifies as catastrophic, above the threshold of 4/10,000/day.

For over-fives, the emergency threshold is also reached in three of the zones surveyed. The situation in Lubutu is catastrophic, with rates five times higher than normal.

- **In the zones where violence is ongoing, infectious diseases and malnutrition are the deadly allies of conflict and violence.**

In the 2001 survey, we had observed a remnant effect of violence on mortality.

In the zones affected by the conflict, excess mortality remained high up to six months or more after the ceasefire. Mortality among families exposed to violence continued being higher than for those unaffected by it.

The effect of violence on mortality manifests itself through the social, psychological and economic instability and insecurity of the entire household. Theft and the loss of belongings make the families even more vulnerable. Such forms of violence affect their survival mechanisms and immunity to disease for a long time. In 2005, violence in various forms is ongoing and is contributing the overall insecurity and neediness. Among

the families interviewed for the surveys, the proportion of victims of violence ranges from one in five families in Bunkeya, to more than two in three families in Lubutu.

Lubutu: violence and mortality are allied

Lubutu is a zone typical of the instability prevailing in the east of the country: 72% of the families there experienced at least one case of violence in 2004 and/or 2005, and 76% of them were forced to flee for safety reasons during this same period. The population continues to pay a very high cost in human terms. Mortality rates within families exposed to violence are significantly higher than among those unaffected by it.

The causes of excess mortality observed are essentially infectious diseases and malnutrition, which are devastating the populations weakened by violence and repeated displacements.

- **Excess mortality is not confined to areas where conflict is ongoing**

Basankusu, an end to conflict but no end to the suffering in sight

The Basankusu health zone, formerly on the front line, has today returned to relative stability. Mortality rates, however, showed no significant decrease between 2001 and 2005 and continue to reflect the dramatic conditions in which the population is having to live. The extreme isolation of this zone, the neediness of its population and the lack of adequate health services in the face of the vastness of the territory, contribute to making life and the struggle to survive very hard. For them the prime concern today is not fleeing from violence but merely surviving.

Inongo: spared by the conflict but with a steadily worsening mortality

The extremely high mortality rates in Inongo, a zone situated far from the front and which has never felt the full brunt of conflict, are equally alarming. The Inongo health zone is difficult to reach and has never had any external aid for healthcare. There is no denying the effect this has had, for in spite of the absence of conflict, mortality rates rose significantly from 2001 to 2005.

It is vital that this crisis situation be acknowledged and that excess mortality in DRC not be associated solely with the ongoing fighting in the country. Extreme poverty and hardship are also claiming lives today.

The majority of the Congolese population lives in dire poverty on the equivalent of $0.30 per person per day on average. In the rural areas, most of the families are vulnerable and sickness and disease are regarded as a tragedy. Just as they were doing four years ago, most of these victims are dying in silence while the world's attention is elsewhere.

Very little access to healthcare for needy populations

In four of the five zones surveyed, **1 in 2 people** had no access to any form of healthcare outside the family at the time of the last episode of illness (50%). This figure rises to more than **2 in 3 people** having no access to healthcare whatsoever in the Lubutu zone (67%).

In the light of our latest survey findings and field experience gained over the years, the main barriers for access to healthcare in DRC are:

- inadequacy or non-existence of healthcare provision
- patients' inability to pay for healthcare
- non-availability of quality medication
- lack of supervision and training of medical personnel
- non-payment of health workers' and officials' salaries
- geographical inaccessibility and non-existence of the communication structures needed for the long distances between where patients live and the nearest health centre.

■ Lack of medical facilities to meet the needs of the population

Medical facilities are either non-existent or inadequate in all of the zones surveyed.

Owing to a lack of structural amenities and financial support, the health sector is left to fend for itself and cannot cope with the needs of the Congolese people.

The quality of the care available is also a problem. Practically abandoned with virtually no resources, medical teams are unable to provide care under decent conditions. During our survey of areas receiving no outside help, our field observers found:

- health structures that were unstaffed or without trained personnel
- health structures with medical personnel, but no equipment or medication
- health catchment areas without any medical structures.

With the public health system thus still unable to respond to the demand for healthcare, the population is often left with no alternative. Where a private (profit-making) alternative exists, it is rarely accessible to the population due to its high cost.

In isolated areas and/or where no alternative exists, the only recourse is to the informal sector, i.e. alternative medicine or self-medication. As this sector is virtually impossible to regulate, those who resort to it often do so at great risk to their health.

➢ A major barrier: financial exclusion

In the zones where there is no outside support, there is a cost-recovery system in place. What patients have to pay in public structures in Inongo and Lubutu the health zones varies between the equivalent of $2.50 and $4.20 for a primary healthcare consultation. These charges can be up to 100 times higher than in supported structures such as in Basankusu.

In these zones, a great many of those questioned said that they were unable to pay for healthcare.

- Those deprived of any form of healthcare account for nearly 40% of the patients interviewed in these two zones and most of them said that cost was the main factor of exclusion.

- Among the patients attending a consultation and receiving a prescription, between 27% and 46% did not obtain the full treatment prescribed. The main reason given was the cost of medicines.

Given that over 80% of the Congolese have just the equivalent of $0.30 per day to live on, the cost of primary health represents an enormous burden on the meagre resources of families.

In the MSF-supported health catchment areas in Basankusu, the charge to patients is 20 francs ($0.04).

In Basankusu, MSF subsidies to public health structures and the steady reduction of the patients' financial participation have succeeded in considerably increasing the number of curative consultations and preventive treatments, and similarly provided better hospital cover. The average cover for MSF-supported structures is between 1 and 2 new cases/inhabitant/year in the zones situated in the province of Equateur, which is considered to be a reasonable result.

In these catchment areas, the exclusion percentage falls to 17% of patients among the families interviewed. Yet in spite of more affordable charges, financial exclusion persists, albeit to a lesser extent.

In the health catchment areas of the Basankusu health zone where there is no outside support, the exclusion percentage is 44%, that is nearly three times higher than in the supported areas of this same zone. Cost is said by patients to be the main reason for exclusion.

These differences demonstrate just how much the financial barrier impacts on access to healthcare, however low the cost may be.

Patients as the main source of primary healthcare funding

At the present time, the health budget which is equivalent on paper to $80m (depending on the stability of the exchange rate, among other things) represents, at best, $1 per inhabitant, while the WHO recommendation for a basic healthcare package is an average of $34/person/year.

In 2004, DRC, regarded as a stable country, was receiving international aid of less than $200m, namely $3 per inhabitant. International calls for funds have only partially been honoured. For the 2005 CAP, less than one quarter of the $185.4m sought had been subject to a response at the time of the survey.

The financial burden of healthcare therefore rests essentially on the population, with a cost-recovery system in force in most of the health zones with no external support. Even in zones with external support, the cost-recovery system is often applied.

Yet all the forms of financial participation in place or proposed, whether the flat-fee system or other cost-sharing options or health insurance funds are inappropriate to the context of the appalling health conditions and emergency needs of the population still being observed today.

Moreover, in DRC, considering the very low level of income in rural areas, the financial support associated with cost recovery remains minimal indeed, and hence ineffective for maintaining health systems in the long term. The human cost of financial participation, on the other hand, is high.

Numerous donors acknowledge the perverse effects of the Congolese cost-recovery system and its impact on access to healthcare. At international level, the negative impact of financial participation on exclusion and impoverishment of the population, to say nothing of the rationality and quality of healthcare, is widely commented on.

In other African countries, moves to provide full subsidies for basic healthcare in Uganda and in South Africa have considerably improved medical cover, particularly for the very poorest, for curative and preventive treatment alike. In other rural regions of Africa,

MSF's experience shows a sharp increase in consultation attendances following the abolition of patient payment and a more extensive geographical attraction. These effects are important for improving health cover, particularly for the vulnerable.[39]

Implications of the survey findings for MSF-Belgium

These survey findings indicate the changes needed to improve the impact of MSF's work. The measures to be taken or stepped up include:

- No longer charging patients the flat fee. Although the amount patients are asked to pay in our projects is considered very low, it is still a barrier for them. **MSF-Belgium will therefore be providing basic healthcare free of charge in the supported structures.** More effort will be put into informing people of this. There will also be close monitoring of how this policy is put into effect.

- More outreach or mobile activities to get to the most vulnerable groups and those who have little or no access to healthcare. There will also have to be a strengthening of reference networks, with practical support for referral patients.

- Addressing the issue of human resources-related constraints in the public structures. The lack of remuneration, supervision and training for MPH personnel poses problems for human resources management. Increasing staff numbers, with additional qualified human resources (on MSF contracts) and closer supervision may be solutions for improving the quality of healthcare.

- Considering the persistent constraints affecting the MPH's health structures generally, there should be a re-evaluation of the benefits and drawbacks of working through the public health system as a whole and in specific health structures.

- Considering the sheer magnitude of the needs to be met, MSF-Belgium is planning an exploratory mission to identify and prioritise medical requirements and to determine the best approach to adopt.

- Considering the high mortality due to malaria, MSF-Belgium will be seeking to further improve access to effective treatment (artemisinin-based combination therapy, or ACT), particularly in remote and difficult-to-reach areas, and stepping up preventive interventions (treated mosquito nets) for vulnerable groups.

- Considering that other health sector actors and donors (World Bank, Coopération Belge, European Union) are preparing to take over support to public health structures in some health zones, MSF-Belgium will be concentrating its efforts on the zones left uncovered. MSF-Belgium will nevertheless be making a special appeal to these participants and contributors to keep the focus on the present-day humanitarian needs and vulnerability of the population.[40]

- The Congo emergency pool[41] will maintain an active presence to ensure rapid response in the event of an epidemic or other health problems.

[39] This is reflected in very concrete options for or against investment in a certain type of health funding. For example, if support is given to community mutual funds, this will serve to channel funds to current users of the health system and the more priviledged households able to afford the subscription charges imposed.
[40] MSF-Belgium will, for instance, be stressing the need for adequate external funding and effective protection of vulnerable groups, to avoid a drop in current levels of access to healthcare.
[41] The 'Congo emergency pool' ('Pool d'urgence Congo' in French, PUC for short) is an MSF team of national and international experts that does initial assessments and front-line response in the event of an epidemic outbreak. The PUC has been active since 1996 and at present has units in the provinces of Kinshasa, Equateur, Katanga and Province Orientale. In 2004, the PUC responded to 45 alert calls, an average of over three interventions a month.

Recommendations

- **It is crucial that national and international actors recognize the catastrophic plight of a great majority of the Congolese people nearly three years after the signing of the peace accords.**

This recognition cannot be limited only to zones still in the throes of conflict. There are catastrophic health situations in zones unaffected by fighting, such as in Inongo health zone, which may be indicative of the situation in other rural areas. Needs in these zones are not being adequately met today. Owing to a lack of preventive measures and effective and accessible healthcare, common infections and epidemics continue to claim lives every day.

- **This catastrophic situation calls for an immediate response centred on the humanitarian needs of the population.**

Any response to the health situation in DRC must first and foremost be geared to meeting the medical needs of the population. Urgent action must be taken to reduce the catastrophic mortality rates. It is imperative that the medical interventions undertaken are the best ones for tackling these mortality rates. And the responses must not come second to concerns about sustainability or long-term development objectives.

Considering the criteria used by the international community, DRC is today in a process of transition as regards international aid, with humanitarian considerations being overshadowed by development issues, and emergency mechanisms having to make way for long-term development objectives. Humanitarian needs continue to exist and the responsibility of meeting them is not dispelled by a change of terminology.

For MSF, the answer is clear-cut: in the rationale of economic development relinquishing consideration for the immediate humanitarian needs of the Congolese people, by making long term public health objectives[42] the sole priority, will not meet the current needs of the population. Any health policy that fails to respond to the extreme conditions of hardship and despair that the majority of the Congolese population is living in today cannot yield conclusive results in terms of access to healthcare and lower mortality.

In DRC, a dual approach to health matters is called for:

- to provide a speedy and effective response to the present-day medical needs of the population
- to build a fair health system for the long term.

- **Free basic healthcare must be seen as an option for improving access to essential healthcare in DRC.**

Free healthcare must not be rejected as a matter of principle for the sake of development and financial sustainability considerations. MSF's experience in DRC shows that even a very low standard charge is not affordable for many patients. This is essentially due to the non-availability of cash, as well as to the subsistence economy in the rural areas of DRC. Reducing patients' financial contributions will not be enough to solve the problem of financial access to healthcare. People still have to have that rare commodity, money, with which to pay. A free healthcare system must be part of an overall framework including sizeable and regular grants to the health system from the state and from the

[42] For example, developing health insurance funds, increasing the population's financial contribution for the sake of the financial sustainability of health structures in DRC and so on.

international community. Motivating health personnel by paying them decent salaries is a key factor for the success of a free health service and access to healthcare.

- **Financing of the health sector in DRC must be regarded as a national and international priority.**

Reducing the mortality rate and improving access to healthcare calls for political will and a larger slice of the budget for health. There must be a national impetus, even though that in itself will not be enough. Even if DRC were to honour the commitments it made in Abuja and allocate 15% of the total state budget to health tomorrow, the amount would cover only one-tenth of the needs, according to WHO calculations on primary healthcare. The difference therefore must be made up by donors.

Health must be made a priority for the international aid that will be supporting the period of reconstruction in DRC. It is vital that adequate funds be made available so that decent and affordable services can be provided. This is particularly crucial for the rural populations who need to benefit from basic healthcare without facing ruin or further debt in order to care for their children. Health workers must be paid a decent wage to avoid health centres being left unstaffed or patients imposed upon by the medical personnel.

To the Congolese government, to the Congolese Ministry of Health, to health sector actors, to United Nations agencies, to NGOs and to donors in DRC:

On the basis of the arguments set out here, all of the actors in DRC must take account of the fact that far too many people are still dying. Priorities and modes of intervention must be modified accordingly.

In zones where conflict is ongoing:

- step up efforts to bring immediate assistance to the populations subjected to violence

- guarantee optimum access to healthcare by providing free medical care to all and by organizing mobile activities. This implies financing the full cost of medication and other supplies, as well as paying medical personnel decent salaries.

In rural zones unaffected by the violence:

- Priority aid must go to the now abandoned regions where excess mortality rates are catastrophic.

- Basic healthcare must be subsidized so that it is available to patients free of charge and that effective assistance is provided.

To donors in particular

Donors must continue to respond to the humanitarian needs of the population. Healthcare must be a priority in DRC given the magnitude of the health crisis.
At national level, there must be fundamental discussion on:

- the choices to be made on health strategy to the benefit of patients;

- the grant and subsidy policies to be implemented to increase operational healthcare services in rural areas and to remove the cost barrier depriving patients access to healthcare in DRC.

VII. TESTIMONIES

The victims' names have been changed.

Lubutu

Alice, 22, tells how she was kidnapped and raped by armed men in a diamond quarry on the territory of Lubutu.
On March 12, 2005, I had gone to sell foufou to make some money for my husband's tuition fees. When I returned at around 11am, we heard gunfire from all around the (diamond) quarry in Tokobika. I was taken away by armed men far into the forest. They raped me and made me be like their wife for two days. On the third day, I managed to escape when they sent me to fetch water from the river. I spent the whole night in the forest and then made my way to the main road to Lubutu at around 2pm.

Bernard, 55, tells how he was shot by the military and how the population then took the law into its own hands.
My name is Bernard, I'm 55 years old. I was in the countryside about three kilometres form Katinga village (Lubutu territory). On the way back, I was accompanied by the group leader. All of a sudden we came across two fairly heavily-armed militia men. They ordered us to go back the way we had come, to accompany them. The group leader did not agree and tried to get the angry soldiers to return to the village instead, saying he had prepared a parcel for them there. They kept insisting to go into the countryside because they said that the villagers had moved all their smaller livestock there. The group leader categorically refused to comply, so one of the soldiers asked his colleague to step back. Then he rushed at me and shot me through the chest. The other soldier shot the group leader at point blank. After I had been shot, I still had some strength left so I leapt up at my attacker, grabbed his weapons and started firing into the air to empty the charger. Hearing all the noise, the villagers came running towards us. They set on the two men with knives and sticks. My attacker was killed instantly while the man who had shot the leader ran off into the forest. His body wasn't found until the next day.

Charles, 40, a police officer, tells how he was attacked by "men in uniform".
I was an OJP (judicial police officer) posted in Elimu, 22km from Lubutu, on the road to Kindu. On January 30, 2005, I had come to make my report to my superiors in Lubutu. So I left the GE (gradé d'élite) back at the post in my place. While I was away, some trouble broke out, everybody started fighting and many people were seriously injured. One of the victims went to file a complaint with the police. My replacement and a few others then went to arrest everybody involved in the incident.

A member of one family thought they were the policemen who had tortured his brother, and he went straight to Lubutu to file charges and made a false statement to the commander of the 911th battalion. The commander then despatched 10 soldiers, armed to the teeth, to Elimu. As I had already returned to the post, I was in my office. The guy who had made the false allegations made the military men order me to arrest only all of the injured. I took them to where all the people were being detained. As if that wasn't enough, the highest-ranking militia man issued orders to arrest me, as well as my deputy and the secretary.

A little later on, the guy who had filed the false charges came and asked for my deputy and the secretary to be released and to bring only me to him. When we reached his house, I was locked up with the other detainees in one of the rooms. After they had drugged the others, they made me come out and wanted to hit me. I asked them why they were doing this to me. They said that the whole case revolved around me.

Then they told me to fetch my daughter who had stayed at home. When I was ready to go, two militia men came with me, and after a while three others followed us. They were bare-chested, very drugged and told their fellow soldiers not to talk to us still armed with their weapons. When I asked them why they were behaving like this towards me, I who was one of their colleagues, one solider started beating me and then the others, too.

As I wanted to fight back, one of them shot me twice, once in the right leg and once in the left arm. It was the villagers who came and carried me here to the hospital. I was in hospital for four months and came out on May 4, 2005. I paid 100,000 francs at the hospital and I am alone with no-one to help me. Now I'm disabled because of a false charge against me.

Delphin, 53, tells how he was injured by a solider and had to leave his bicycle as security for his debt at Lubutu hospital.

I am Mr Delphin and I'm 53 years old. It was in the night of January 10, 2004. I was fast asleep at home when all of a sudden around midnight I was awoken by someone forcing open the door. I shouted "Who's that at this hour?". Whoever was beating at the door ordered me to shut up and open the door. When I resisted and kept on shouting; my visitor stuck the barrel of his gun under the door. It had a bayonet at the end of it. It was only then that I realized they were men in uniform. My wife and I kept calling out, but unfortunately at that hour nobody came to help us.

A little while after that my children started calling to me to ask what was happening. I told them there were soldiers and to stay inside. Then I told them to keep shouting for help. My children still came out and headed towards my house carrying a torch. The soldiers, there were three of them, hid behind the house. When my children came to the door I went out to meet them. I started to tell them how it had all started and while I was talking, the three men came out from where they were hiding and ordered us to sit on the ground. In the dark my children managed to run away and I was left alone at the door with my wife. As I went up to them pleading one of them shot me twice in the legs. I fell to the ground and they just walked away. It was about 50 minutes later that people came and took me first to the village chief and then to the hospital.

I was hospitalized for nearly six-and-a-half months, and my bicycle is still being held as a deposit at the hospital.

Emmanuel, 47, resident in Twabinga (Lubutu) tells how his wife was kidnapped by the Mayi-Mayi.

My wife Marie-Louise, 37 years old, had gone into the forest with some other women from the village to fish by the dam. After walking for four hours, they fell into the hands of the Mayi-Mayi led by Roger Milla, who are based in Silisa. They were all taken away by them, to carry their belongings and made to be their wives. Maman Emilie, managed to escape from her forest keepers after six days and made her way back to the village carrying her six-month-old baby. She had become very thin because of the famine.

Francis, 55, leader of the Pene Osele group, tells how a boy in the village was shot dead by the Mayi-Mayi based in Silisa.

The army was passing through Osele from Lubutu. They were heading for Mundo, a village 10km from Osele in Lubutu territory. They asked me give them four boys to carry their packs to the neighbouring village about three km away. As the boys were returning, they were chased by the Mayi-Mayi. Two of them were injured, one in the back and the other in the thigh. One died the next day after being left all night without any help because the villagers had run off when they heard the gunfire.

Gabrielle, 43, tells how her 12-year-old daughter was raped by a soldier.
I live in Osele. The army was coming from Mundo, a village 25km from Lubutu. They had reached Amikili, 16km from Lubutu, when one of them, who was called Lakisa Ba Yuma, dragged my daughter behind the house and took her virginity while another one stood guard. To this day, there has been no reparation for the harm done. The soldier was transferred somewhere else to hush up the whole thing.

Hortense, 32, tells how she was a victim of violence in the village of Sungi, in the district of Bitule (Lubutu).
We were going to the fields, me and my little brothers, to harvest the rice. We were busy working so we didn't see a group of the negative force (Mayi-Mayi) appearing. They surrounded us then took us into the forest where they sexually abused me for 10 days.

Immaculée, 29, tells how she was captured by the Mayi-Mayi during a confrontation between the army and the Mayi-Mayi near the forest of Maiko.
I was going along the route to Mundo (25km to the north of Lubutu) to get some provisions. I stopped in the village of Utiambole where I stayed seven days waiting for the hunters to come from the forest. I did not know this area wasn't safe and just happened to see some men in uniform appear in the village. After five hours, the army in Lubutu was informed and they sent 20 men. When the fighting broke out, I was taken hostage by the Mayi-Mayi and they did as they pleased with me.

Joëlle, 15, victim of rape near Okoku
I was at my uncles' place in Okoku on the Lubutu-Bukavu road when fighting broke out between the army and the Simbas (Mayi-Mayi). I ran off in what I thought was a good direction to hide. I was found in the middle of the forest by some soldiers who sexually abused me with such force that I ended up sick.

Khadija, 25, was raped on the way to the fields in Lubutu by three armed men from Goma.
I was coming back from the forest where I had gone to get provisions. When I got to the big road I ran into three soldiers from the RDC-Goma militia around 6pm. They asked me to put my basket down and dragged me about 10 metres from the road. I was powerless and there was nobody to help me. They pushed me aside and one of them threw me on the ground and they took turns to "bed" me.

Léonard, 60, a resident on Oleka (Lubutu), tells of his arbitrary imprisonment and the rape of his two daughters.
I was falsely accused of conspiring with the combatants, arrested, tried and taken to the public prosecutor's office in Punia. Five months later I was released. As a result of the beatings I got, I am now disabled and incapacitated.

My two daughters suffered sexual violence. They were taken away by the Mayi-Mayi for three weeks to a diamond quarry in the middle of the forest. They managed to escape and get back to the village and were in very bad shape.

Marc, 43, tells how he was crippled by the Mayi-Mayi at his home in Mundo.
It was March 2005, in the days of the troubles with the Mayi-Mayi who came to burn down our village in Mundo. It was two in the afternoon and I was here at home not saying anything to them. The Mayi-Mayi soldier asked me twice in a loud voice "Who are you?" and without waiting he shot me and the bullet hit my right hand. Then he pointed his gun at my right thigh. Hearing the gunshots, all the villagers ran off into the forest.

It was about eight in the evening when my brothers came looking for me. They found me in a heap, not even able to stand up. They took me to the health centre in Mundo. When we arrived there was nobody, the nurse wasn't there. The treatment started the next day and since then I have been incapacitated.

Basankusu

***A mother of seven children in Ntomba, Bongilima, tells of her hardship*.**
I have seven children and my husband left me with the responsibility of looking after the whole family. We all live in one room and we don't even have cooking utensils or tools to work in the fields. Nobody in the house goes to school. The nearest MSF-supported health centre is 30km away. The nearest health centre does not have any medicines and the CCP[43] health centre costs too much. If the children get sick, we stay at home and wait for it to pass.

Maman Noëlle, 42, from Bokala tells of her ordeal at the hands of the army.
It was March 2000. I was going to work the land. There I met four soldiers. They asked me to give them my machete. I refused so they jumped on me. I told them I was five months pregnant but they said they didn't care. They raped me. As I was running away I fell and because of that day I lost the baby I was carrying.

Three residents of Lofoma, Mbiliona and Loolo tell how their children died because they had no medical treatment.
We live in [the health catchment area of] Lofoma, in the village of Bakuku. In March 2005, two children got sick. We had no money so we stayed at home. After a few days our first child died. Then we decided to go to Baringa, 60km away, because there you pay only 20 francs. Our child is still in hospital there.

We live in the village of Mbiliona where the health centre is not working, and the nearest MSF-supported centre is over 40km away. Our child got sick in February 2005. He was six weeks old and had a respiratory infection. A man selling medicines came to the village and asked us for 600 francs for three doses of an injectable treatment. My husband and I tried to find all the money we could, which was only 300 francs. The man told us that was only enough for a single dose. Our child died a few days later.

We live in the village of Loolo, 52km from Waka. Our five-year-old had diarrhoea and we decided to use our own medicine because there is no health centre we could afford nearby. As the situation got worse, we decided to go to Waka, where we thought we might get treatment. When we arrived there after a long journey, our child was dehydrated and they had no IV drips available so our child died.

Testimony of a family whose son died as a result of police brutality.
Our son was 22. One day this year, armed and drunken police arrested a group of people from the village. Several civilians were then beaten and injured. After some confusion and discussions, the policemen shot into the crowd and ended up killed our son. One of the drunken policemen stayed around after the incident and the people beat him to death.

Then police from Basankusu were sent to bring back the criminals. This group raided and tortured and so the people ran away for a while.

A father from Bosso Gba tells of the rape of his teenage daughter.
In February 2004, deserters looking for rations arrived in Bosso Gba and made the people given them a good quality rations and lots of it. When the people couldn't, they decided to take their pigs and kill them. The whole village was in a panic and the people fled. Our 13-year daughter who was coming back from school was in the undergrowth and they captured her to rape her. Our daughter has not been to see a doctor or nurse since that happened.

[43] Compagnie Commerciale des Plantations

Bunkeya and Mfunga Sampwe

A father, 40, explains why he left the village of Kyalwe with his whole family and went to Key Kipanga where they could be safe.
It was on March 10, one morning around 5 o'clock, the Mayi-Mayi arrived in the village looking for government agents who they said were bothering the people. As soon as they arrived they caught a tax collector who could not get away. They hacked him to pieces in front of my eyes. They cut off his arms, his feet and his genitals then took him to their HQ. When I saw that, for the first time since I was born, I gathered what was necessary and my family. We decided to leave the village of Kyalwe to come and live here in Key and I don't want to go back even if we are very poor.

Olivier, 50, resident of Busafwa, talks about discrimination in healthcare.
I have a wife. Since I brought her to my house she has not had any children. But every time she is sick. I went to the Kyubo health centre where they found an ovarian cyst. The nurse there gave some preliminary treatment and told me to go to the hospital. I preferred to take her to Kannada for treatment. On the way there we met some people and they told me that the doctor in Kannada only treated people from the Kansenia health zone. But we went there anyway to see if what the others said was true. So I ask myself, can there be limits for taking care of sick people?

Pétronille, a teacher in Kyubo Mamba, talks about how she fled.
On Sunday, April 10, 2005 at four in the morning, the Mayi-Mayi announced their presence with chanting and whistle blasts and explosions. Then we saw smoke rising and the houses burning where the police and administrative offices were. The Mayi-Mayi then rounded up all the people in front of a house by the side of the road and asked us to point out which ones were the police and their wives. We told them there were none and they left. When they searched the bags of a merchant the Mayi-Mayi found a paper signed by the postmaster. They said to the man that he was the postmaster's secretary. After that they tied him up and started beating him with sticks and saying in dialect: "today you are going to die". Then they made us go to Musabila, a village 2km beyond the river. While we were heading towards Musabila, the Mayi-Mayi dragged the merchant to the place where a soldier had been killed and then shot him in the head and just left him there.

In Musabila, we saw the Mayi-Mayi coming back carrying things they had taken from our houses. They made us leave the doors of our houses open. They asked us women to go back to our houses and told the men to help them carry the things they had stolen.

When we returned to Mamba, we found three bodies: the merchant, a policeman and a prisoner from Katala. We did not have time to make some porridge to fortify ourselves before setting off on the long trek to Bunkeya. Nobody stayed the night in the village. It took us four days to get to Bunkeya and we had taken nothing with us. We are here in Bunkeya because some people took us in.

An elderly woman stopped her treatment at the Mamba health centre where she was under observation. She fled with her nurse to Kalwa, 50km away.
I am 65 years old. It was nearly the middle of April. I was a patient at the Mamba health centre and very early in the morning a man shouted through the door telling us to come out. When we did, I saw Mayi-Mayi with guns everywhere. They made us cry out in joy as a greeting to them. Everybody did because they were afraid to be shot. One of them said "We are looking especially for policemen, their wives, agents of the NIA[44] and all government agents. You must point them out to us". We were all frozen with fear.

[44] Agence nationale de renseignements, or national information agency

The Mayi-Mayi then forced us to leave the village. That's when they stayed to raid all the houses and burn some of them. They forced the people to carry the things and told us to go back to Mamba when their mission was over. They left us with nothing, they even took the equipment from the health centre. That's why my nurse took me and we walked all the way to Kalwa to escape.

Testimony of a resident of Mumbolo, a village 54km from Kyubo, in the direction of Mitwaba.

I live in Mumbolo and it was around 10 o'clock on a day in early April 2005 when a group of Mayi-Mayi came into the village crying out "kabemba koni", their ritual chant. They said they were looking for soldiers and government agents. They burnt down three houses and then they left.

On May 1 they came back again. This time they ran into the army already stationed around the village. It was around 9 o'clock when fierce fighting broke out. Two Mayi-Mayi were lying dead and there were lots of injured people everywhere. The soldiers told us to go and look at the two Mayi-Mayi lying on the ground so that we could see it wasn't true that 'the Mayi-Mayi never die from a bullet'. That was when people started leaving our village in droves. The next morning, one exhausted and famished Mayi-Mayi came out of the bush with his two children (boys less than 8 years old) to give himself up to the army. They murdered him with his two sons and we buried him near the village.

When I saw all this, I took my wife and my four children very early in the morning to go to Kyubo. We got as far as here, Toyota, where life is very hard but I do not plan to go back home to Mumbolo just now. I will wait until things are quiet again.

A teacher from Kyalwe tells of how her father was killed by the Mayi-Mayi.

I normally live in Kyalwe with all my family. I am a teacher. I am deeply affected by my father's death and I do not plan to go back home.

My father was an ANR agent. It was the beginning of April, the 2nd or 3rd, of this year, 2005. We were sitting in the village mourning after a funeral. All of a sudden 20 Mayi-Mayi surrounded us and one of them pointed at my father. It was him they were looking for. They tied his arms and legs and with a piece of wood, one at the front and one at the back, they carried him off strung up like a piece of meat. In their custom, when they catch somebody and carry them like that it's because they're going to eat them.

It was about 3 o'clock when they took him off to Mototo, their base, 3km from Kyalwe. That's how my father disappeared. We didn't get to bury him. That's why I took my whole family here to Toyota and I am looking to go further away for the rest of my life.

Quentin, 48, married and father of 10 children, talks about his experiences since 2004 in Kyubo Mamba.

We have really suffered here since 2004. For me, we have fled twice. In 2004, a unit of soldiers went to Musabila looking for bicycles for themselves. They found a young man who refused to hand over his bicycle. A soldier shot him and without hesitation shot his friend as he tried to go to his friend lying dead on the ground. When this soldier ran off, the crowd was in uproar and chased the other soldiers all the way to Mamba where one soldier was stoned to death and another one seriously injured. That's the first time we ran away afraid the soldiers would come after us.

In 2005, on April 11, the Mayi-Mayi surrounded our village of Mamba at 4 o'clock in the morning. They rounded us all up and took us to the chief's house. They told us not to take anything and to leave the doors open. Me, in my house they took a bicycle, a radio and clothes for all of us. They raided all the houses, as well as the health centre. We are living by the grace of god and I am discouraged. I prefer to go to live somewhere else because of the danger and misery.

Régine, a resident of Mamba, tells how her sister died when they fled.
It was Sunday April 11 around 5 o'clock in the morning. While I was still in bed, I heard cries and chanting like the scouts do. After I opened my door to see what was going on, I saw people outside with spears, arrows and some had rifles. One of them forced me to get out of the house and go to the chief's and leave the door open. He pointed his gun at me. I came out just with my children because my husband was away. When we were assembled at the chief's, they forced us to cross the Lufira to join the others in Musabila. After, when their mission was over, they passed by Musabila and took away our things on bicycles and told us to return to Mamba because they had finished with us.

I found my house empty, so I had to leave. I took my five children and my little sister who was pregnant. We headed off towards Dikulwe, 55km from Mamba. We had walked for three days. Because life was so hard for us, we had to go to Toyota where we knew some people. That's where my sister had her baby. She died the same day because of heavy bleeding. There was no nurse to help us. The people helped me to take the body to Mamba where we buried her. My mother is looking after the baby who is still alive.

ANNEXES

Annex 1

Various rates of access to healthcare, by health zone

2005	Kilwa	Basankusu	Inongo	LUBUTU	BUNKEYA
TOTAL ACCESS	55.4% (47.5-63.2)	52.6% (43.0-62.2)	49.5% (42.6-56.3)	33.0% (26.9-39.1)	53.7% (45.0-62.5)
NO CONSULT	30.6% (25.2-35.9)	28.8% (21.0-36.5)	31.9% (26.4-37.3)	37.9% (32.8-42.9)	34.4% (27.3-41.5)
INCOMPLETE TT (part meds+ no meds)	14.1% (9.0-19.1) (13.4+0.7)	18.5% (14.0-23.0) (16.6+2.0)	18.7% (14.3-23.0) (13.9+4.8)	29.1% (24.1-34.0) (25.5+3.6)	11.9% (7.5-16.2)
MPH ACCESS	38.4% (29.8-46.9)	48.6% (38.6-58.6)	41.8% (34.6-49.1)	31.0% (25.1-36.9)	36.0% (27.1-44.9)
NO CONSULT	29.7% (24.5-34.9)	28.7% (21.0-36.4)	30.5% (25.4-35.6)	37.7% (32.7-42.7)	34.3% (27.3-41.3)
INCOMPLETE TT+ OTHER PLACES (part meds+ no meds+ other places)	31.9% (25.0-38.8) (8.5+0.5+22.9)	22.7% (17.7-27.7) (15.0+1.9+5.7)	27.7% (21.8-33.6) (11.9+4.4+11.4)	31.3%(26,5-36,0) (24.1+3.1+4.1)	29.7% (19,8-39,6) (5.9+0.3+23.5)
MPH ACCESS SAME PLACE	non-MPH meds: 1.7%	non-MPH meds: 1.4%	non-MPH meds: 42%	Non-MPH meds: 46.3%	non-MPH meds: 0%
1	37.8% (29.1-46.4)	47.9% (38.1-57.7)	24.2% (17.5-31.0)	16.7% (12.4-21.0)	36.0% (27.1-44.9)
2	32.4% (24.7-40.1)	47.8% (38.0-57.6)	24.0% (17.3-30.8)	15.0% (10.8-19.2)	35.9% (27.0-44.8)
PRIVATE ACCESS	10.3% (3.9-16.7)	3.0% (1.1-4.9)	4.9% (2.2-7.6)	1.7% (0.5-2.8)	13.4% (5.9-20.8)

Annex 2

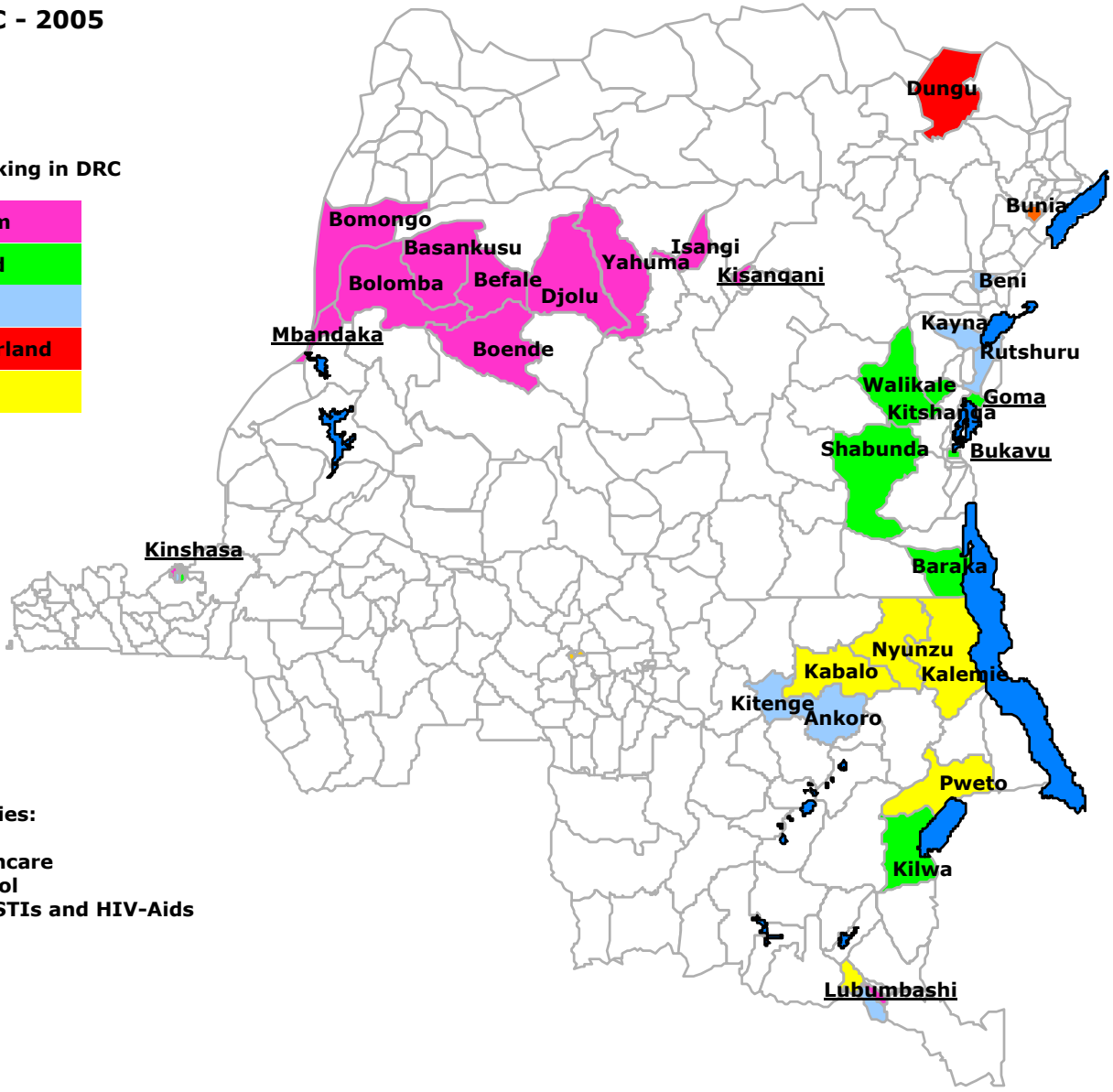
MSF in DRC in 2005

No.	Section	Budget in millions of euro	International staff	National staff
1	MSF Belgium	10	65	500
2	MSF Spain	2.65	31	86
3	MSF France	5	39	636
4	MSF Holland	5.1	40	312
5	MSF Switzerland	4.9	38	600
	Total	**27.65**	**213**	**2,134**

MSF in DRC - 2005

Sections working in DRC

- **MSF Belgium**
- **MSF Holland**
- **MSF France**
- **MSF Switzerland**
- **MSF Spain**



Types of activities:

- **Primary healthcare**
- **Emergency pool**
- **Treatment of STIs and HIV-Aids**
- **Nutrition**
- **THA**

Annex 3

Calendar of surveys and teams of researchers

Calendar of surveys

Kilwa	15 to 22 March 2005 (8 days)
Inongo	12 to 19 April 2005 (8 days)
Basankusu	10 to 16 April 2005 (7 days)
Lubutu	3 to 9 May 2005 (7 days)
Bunkeya	14 to 20 May 2005 (7 days)

KILWA

No.	Name	Function
1	Benoît Ngandwe Mwansa	Supervisor
2	Kafwimbi Pierre Cardin	Supervisor
3	Jean Pierre Kapya Matanda	Supervisor
4	Jean Claude Kabeya	Supervisor
5	Kalonda Seya Hélène	Interviewer
6	Kapya Pdombwe Marthe	Interviewer
7	Didier Mukalay Mukunda	Interviewer
8	Kabash Mathani Paulin	Interviewer
9	Musa Mwemenwa	Interviewer
10	Kimpinde Kizyala	Interviewer
11	Muzinga Nkulu	Interviewer
12	Robert Muonga Mwape	Interviewer
13	Mwanda Lupiya alias Lu	Interviewer

INONGO

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3	Bongo Imana	Supervisor
4	Manza Iyeli Emmanuel	Supervisor
5	Gabriel Mangi Mpolekaka	Interviewer
6	Justin Ntanga Wanga Boongo	Interviewer
7	Michel Belonga Nseiloko	Interviewer
8	Marcellin Maa Kanda	Interviewer
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BUNKEYA

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3	Pascal Kalonda Kayamba	Supervisor
4	Kibengele Ndolo	Interviewer
5	Mukula Kabinda	Interviewer
6	Henry Kadingwila	Interviewer
7	Mushikwa Pélagie	Interviewer
8	Kilufya André	Interviewer
9	Matafu Jean Claude	Interviewer
10	Kapwaye René	Interviewer
11	Kapapa Rafael	Interviewer
12	Olivier Ntonkonshi	Interviewer
13	Isaac Majondo	Interviewer
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BASANKUSU

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4	Anne Marie	Supervisor
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6	Jacquie Bacongo	Interviewer
7	Désiré Itsindja	Interviewer
8	Efong Joseph	Interviewer
9	Jean Pierre Yambyaka	Interviewer
10	Jean Claude Bombito	Interviewer
11	Patrick Paty	Interviewer
12	Lofukya André	Interviewer
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14	Sylvain Masenge	Interviewer
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LUBUTU

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3	Mwelwa Mukelo	Supervisor
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6	Haizuru Kandolo Augustin	Interviewer
7	Kwangazi Kakulo Edo	Interviewer
8	François Ilumba	Interviewer
9	Kasambula Emedi	Interviewer
10	Mantinti Milabyo Joseph	Interviewer
11	Matalimbo Abenga Valère	Interviewer
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Annex 4

Questionnaire on mortality, access to healthcare, vaccination and violence

Zone	
Date of survey	/ /2005

Cluster:	
Family:	

I. MORTALITY

1. What is the total number of persons living in the household*?
**Persons living in the same household: persons who sleep and eat under the same roof at least 3 days a week.*

Total n° of persons living in household:	

2. Breakdown by age categories:

< 5 years		> 5 years	

3. Have one or more members of your family died since the beginning of this year 2005? (since 01/01/2005)

YES		NO	

4. If yes,

N° of deaths under 5 years old:	
N° of deaths 5 years old and over:	

5. Description of deaths:

	Age (in years)	Cause ¤
1st death		
2nd		
3rd		
4th		
5th		

¤ Causes of death:
1. Diarrhoea
2. Respiratory infections/pneumonia,…
3. Fever/malaria
4. Violence
5. Malnutrition
6. Other (specify):

Cluster:	
Family:	

II. ACCESS TO HEALTHCARE

6. Have one or more members of your family* been sick since the beginning of this year 2005? (since 01/01/2005)
**Family: persons sleeping and eating under the same roof at least 3 days a week.*

YES		NO	

- *If several persons sick, take the most recent*
- *If no persons sick, go to part III (Vaccination)*

7. This person is:

Age:	

8. Did this sick person have a consultation?

YES		NO	

- *If no, go to question 9*
- *If yes, go to question 10*

9. If no, why was there no consultation*?
** Listen to the answer(s) (several responses possible), note them down and circle the main one. Then go to chapter III on page 4*

1. consultation too expensive	
2. medicines too expensive	
3. no confidence in medical personnel (not same language, ethic group or other)	
4. feeling that consultation was not necessary (felt illness not serious)	
5. problems transport/distances	
6. problem of safety	
7. No medical personnel in the nearest health structure	
8. No medicines	
9. Self-medication	
10. Other	

10. If yes, who did the consultation*?
**Only one answer possible, only the first consultation*

1. doctor or nurse public or church-run health centre	
2. hospital doctor or nurse	
3. private doctor or nurse	
4. traditional medicine (healer)	
5. pharmacist	

Were medicines prescribed?

YES		NO	

- *If yes, go to question 12*
- *If no, go to part III (Vaccination)*

Did you obtain the medicines?

YES		NO		Some	

- *If yes, go to question 14*
- *If no, go to question 13 then go to part III*
- *If "some" go to questions 13 and 14*

13. Why did you not obtain medicines*?
**Several responses are possible. Mark with a cross. Circle the main one.*

1. too expensive	
2. problems of distance/transport	
3. medicines not available	
4. other	

14. Where did you obtain the medicines*?
**Only one response possible (mark with a cross)*

1. health centre	
2. hospital	
3. commercial pharmacy	
4. market	
5. other	

15. Did you pay for the medicines prescribed?

YES		NO	

16. How much did you pay for treatment (total consultation + medicines)?

17. Was the medical treatment effective?

YES		NO	

Cluster:	
Family:	

III. VACCINATION

18. Do you have children aged between 9 months and 5 years (height under 120cm)?

YES		NO	

- *If more than one child, select at random. If no children go to part IV (Violence)*

19. Has the child been vaccinated against polio (oral drops)?

Vaccination book stating polio	
Positive history	
NO	

20. Has the child been vaccinated against measles?

Vaccination book stating measles	
Positive history	
NO	

IV. VIOLENCE

21. Have any of your family been victims of violence?

In 2004?		*Circle the answers*	In 2005?	
YES	NO		YES	NO

22. If yes, what kind of violence?*
**List the different types of violence. Several responses are possible. Circle the answers.*

Types of violence	In 2004	In 2005
Theft (food stores)	YES NO	YES NO
Arson in homes or fields	YES NO	YES NO
Beatings	YES NO	YES NO
Imprisonment	YES NO	YES NO
Imprisonment with torture	YES NO	YES NO
Sexual abuse (rape)	YES NO	YES NO
Landmines	YES NO	YES NO
Shootings	YES NO	YES NO
Stabbings	YES NO	YES NO
Enlistment under duress (combat)	YES NO	YES NO

23. Have you had to flee or to move away to find safety?

In 2004?		*Circle the answers*	In 2005?	
YES	NO		YES	NO

Annex 5

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