

# Community health survey of Oukasie, 1987

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## Summary

A series of surveys were conducted at the request of the community of Oukasie to determine certain public health information in the township, a peri-urban black community. This article describes two of these surveys. The first, a census and partial demographic survey, showed that the total black population was around 6 300 with a mean household occupancy of 4.1. Some of the estimated vital statistics calculated were an infant mortality rate of 36.6/1 000, a crude birth rate of 28.0/1 000, a crude death rate of 6.5/1 000, and a general fertility rate of 99.3/1 000.

The second survey into the nutritional and immunisation status of children aged under 5 years showed that 20% of children were underweight and nearly half were incompletely immunised at 1 year of age.

These studies, involving local community and student volunteers, were rapidly and inexpensively done and provide basic public health information.

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Oukasie is a black township near Brits some 50 km west of Pretoria. It is approximately 2,2 km × 300 m in extent and is situated 2 km from the centre of Brits and about 4 km from the industrial area. It was established in 1928.

A series of surveys were initiated at the request of the residents of Oukasie after the disestablishment of the township under the provisions of section 37, Black Communities Development Act, 1984 (as amended). This section provides that the Minister of Constitutional Development and Planning may disestablish a township such as Oukasie, 'whenever it appears to him that the conditions under which people living in a development area . . . are such that unless such development area . . . is altered or disestablished, the health or safety of the public generally or of any group of persons may be endangered'.

A team of community health experts and sociologists were commissioned to conduct these surveys to investigate the public health implications of the existing situation at Oukasie and of the disestablishment. Five surveys were carried out.

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These were a community census and collection of certain demographic data, a survey into the immunisation and nutritional status of children, a survey of the environmental status, a survey of socio-economic status and a survey of certain diseases, medical facilities and health services. This article describes the first two surveys, viz. those relating to the community census and demographic data and to the immunisation and nutritional status of children.

The purpose of the community census was to ascertain the total population of Oukasie as well as certain vital statistics such as the crude birth rate (CBR), crude death rate (CDR) and infant mortality rate (IMR). This census also served as the sampling frame for the subsequent surveys.

The purpose of the second survey was to give an indication of the health status of the community. Children's health is accepted world-wide as one of the most important indicators of the health of a community, and nutritional status and immunisation status are two of the most important indicators of children's health.<sup>1</sup>

## Methods

### Census survey

For the community census 20 residents from the community, largely scholars who were fluent in both written and spoken English as well as the local vernacular, were chosen by the Brits Action Committee (BAC) to be interviewers in the census survey. The BAC is a well-known, highly regarded community organisation in Oukasie<sup>2</sup> and because of this the interviewers had the respect of the community.

These interviewers were given three training sessions by the principal authors. During these sessions the purposes of the survey and the use of the questionnaire were explained. The questionnaire was piloted and slightly modified. One such modification concerned the issue of who should serve as the respondent. In the pilot session, this was assumed to be the oldest woman living in the household, but it was found more appropriate to phrase this as 'the woman of the house'.

During the week before this census was conducted the interviewers, working in pairs, enumerated every household in Oukasie. A household was defined as a discrete structure in which people were living and sleeping. This enumeration was done by the interviewers walking through the township plot by plot. Each household was given a unique identification number before the interview took place. One exception to this was the approximately 70 households where coloured people live. They declined to participate because they thought they would be moved to another part of Brits and possibly felt removed from the struggle of the black residents to stay. They were excluded from the study.

The interview was conducted over a weekend to increase the chances of finding somebody at home. The township, on the basis of the enumeration, was divided into 10 roughly equal sections. Each interview team was given a list of the household numbers in its section. The interviewers were fully briefed as to the demeanour they should adopt towards the residents of Oukasie during the survey. Nobody was to be coerced to participate and all those who did participate were to be assured that all results were confidential and that only pooled

results would be presented in the written report. The interviewers were also briefed to tell the residents the reasons for the survey.

### Health status survey

A simple random sample of 200 households — stratified with respect to construction of dwelling, size of household and owner or tenant status of the household — was drawn from the initial census survey of all the households in Oukasie. Within each of these three broad categories two sub-strata were used. There were thus a total of eight strata and the sample size was proportional to the size of the stratum.

Before this health status survey each of the 20 volunteers from the community, who had conducted the initial census, were given a list of 10 of the respondent households selected in the sample. They notified the families of the approximate time the interview would occur, so that the mother of the house could be present as well as all the children aged under 5 years.

The survey took place on 2 days over a weekend and each household was visited by a team of three comprising of a community member (one of the 20 volunteers), a professional market research interviewer, who conducted the socio-economic survey, and a medical student from the University of Witwatersrand. The data for the health survey were gathered by the student. Each student had been trained in measurement techniques and was equipped with a calibrated bathroom scale and tape measure. Before the survey each student measured three known weights and heights in order to standardise technique and reduce inter-observer variability. Although bathroom scales have their limitations, if properly calibrated and not used for many weighings they are accurate enough for surveys of this nature (M. Bac — personal communication).

All the children aged under 5 years in the 200 households in the survey were identified by the professional social researcher. This was done after the listing of the names, sex and ages of every member of the household. The parents or guardians of the children were informed of the purpose of the study and were assured that individual identity would be confidential.

Each child under the age of 5 years was weighed and measured according to the standard methodology of the World Health Organisation.<sup>3</sup> The weights and heights of these children were compared with the reference values of the WHO.<sup>4</sup> These were based on the values of the National Center for Health Statistics in the USA, according to which weights and heights two standard deviations below the median values were considered to be abnormal. These values (i.e. two standard deviations below the median values) correspond very closely with the 3rd percentile values which have often been quoted.<sup>5</sup>

Data relating to immunisation status were recorded on a standard form. This was done after the community member of the team had asked each respondent for the immunisation/growth card of the under-5 children. The medical student recorded the dates of the immunisations from these cards, oral evidence of immunisation being ignored for the purpose of this assessment. It is therefore likely that the results reflect the worst possible immunisation status of the community.

The data were double-punched into a personal computer and analysed by the principal researcher.

There were a number of potential biases in these surveys. The census survey employed multiple interviewers, with the possible consequence of interviewer variability. Respondents having to recall events such as births and deaths over the previous year could have been problematic. The use of local residents could also have introduced a bias in that they may, consciously or subconsciously, have wanted to influence the results. However, because the questionnaire was short and straightforward, because the events were of such a major

nature and because the community was very supportive of the survey, it is likely that the data obtained are reliable. This assumption of reliability was strengthened by the findings of the socio-economic survey,<sup>2</sup> which obtained very similar figures for the proportion of plot-holders versus tenants and brick versus tin houses. Because of time and logistical constraints no checks on the reliability and validity of the health status survey were incorporated into the methodology.

### Results

The initial enumeration of the township resulted in 1601 structures being numbered. It was found that 84 of these were not inhabited dwellings but were shops, churches, schools or — in most instances — abandoned dwellings. These were excluded from the survey. Respondents were found in 1414 (93%) of the remaining 1517 households. The non-responders consisted mainly of households where people were away on holiday or for the weekend. Only 4 households refused to participate.

Most of the dwellings, 959 (68%), were made predominantly of tin, but a substantial number, 455 (32%), were made predominantly of brick. Household heads who were plot-holders numbered 576 (41%), while tenants numbered 837 (59%).

There was an average occupancy of 4.1 per household and by extrapolation this gave a point estimate of the black population of Oukasie at around 6270. There were 1650 fertile women in the dwellings, giving an average of 1.2 fertile women per dwelling. These women had given birth to 164 babies during the year preceding the survey. From these figures a point general fertility rate (GFR) of 99.3/1000 was obtained.

During the year before the survey there had been 38 deaths in the community; of those who died 6 were infants under 1 year of age, giving the following point estimates: IMR 36.6/1000; CBR 28.0/1000; and CDR 6.5/1000.

Selective recall bias for deaths as opposed to births could have resulted in an underestimation of the IMR and CDR.

The age distribution of the population of Oukasie is shown in Fig. 1. Other demographic data were obtained in the socio-economic survey.

In the health status survey 137 children under the age of 5 years were identified. Eleven of these children were not available at the time of the study and information was obtained for 126 (92%). Of these children 71 (56%) were boys and 55 (44%) were girls.

The same percentage (20%) of boys and girls were found to be below the normal range of weight for age. However, 36% of the children were below the normal range of height for age, with considerably more boys (42%) than girls (29%) falling into this category.

Table I indicates that nearly half the children were inadequately immunised at 1 year of age. Confidence intervals were not computed.

### Discussion

These surveys demonstrate that essential public health information can be obtained quickly and cheaply through involving the local community. If the purpose of the study is important to the local community, as it was in this case, they become willing and active participants in the research process. The active participation of the community and their detailed knowledge of local geography ensured that the response rate was extremely high, and locating the houses drawn in the sample was made much easier.

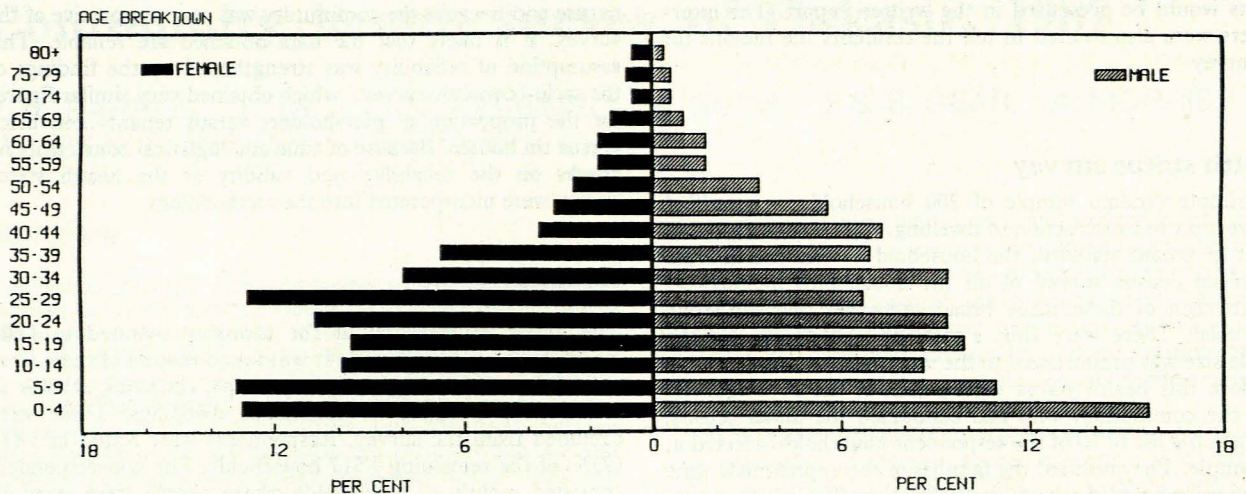


Fig. 1. Age analysis of Oukasie population.

TABLE I. IMMUNISATION STATUS OF CHILDREN AGED UNDER 5 YEARS IN OUKASIE

	No. of children immunised	No. of children eligible for immunisation*	Eligible children fully immunised (%)
BCG	91	126	72
DPT, polio 1	88	121	73
DPT, polio 2	74	114	65
DPT, polio 3	64	113	57
Measles	56	107	52
DPT, polio 4	31	85	36

\* Eligibility is based on the number of children who are at up to 2 months above the age recommended for the particular immunisation. The formula for these calculations is as follows: BCG — all children over 3 months eligible; DPT and polio 1,2,3 and 4 — all children older than 5 months, 7 months, 8 months and 20 months respectively; measles — all children 11 months and older. DPT = diphtheria, pertussis and tetanus.

Other surveys of black urban and per-urban populations are compared to those found in Oukasie. The average household occupancy of 4,1 in Oukasie is less than that found in KwaZulu (7,4) and Mamre (5,3).<sup>6,7</sup> The estimated IMR of 36,6/1 000 is below the national estimate<sup>8</sup> of 54,6/1 000 for blacks and also below that for blacks in the Western Cape Regional Services Council area of Cape Town in 1987 (51,5/1 000).<sup>9</sup>

The figure of 20% below the normal range of weight for age in Oukasie can be compared with figures of 36% in urban KwaZulu<sup>6</sup> and 14% in Khayelitsha near Cape Town,<sup>10</sup> while the 36% below the normal range of height for age can be compared with 47% in Khayelitsha.<sup>10</sup>

The downward trend of immunisation coverage with subsequent doses in Oukasie is consistent with the pattern seen in South Africa as a whole.<sup>11</sup> In absolute terms, although immunisation coverage in Oukasie is not good and falls far short of the immunisation targets set by UNICEF,<sup>12</sup> it is in line with that found in other black communities. For example, in KwaZulu<sup>6</sup> 33% of children were immunised against measles compared with 52% in Oukasie. This figure of 52% is the same as that for blacks in the southern Transvaal generally.<sup>11</sup>

The above figures show that some key health indicators in Oukasie compare well with those for other black communities in South Africa. The township is small and well established, with evidence of strong kinship links<sup>2</sup> and consequent supportive relationships within and between family units. It is likely that these factors facilitate the provision of material care, and this is reflected in the health indicators and demographic data.

The public health information obtained by this research indicates that there is room for improvement on a primary health care level in Oukasie. It also indicates that it is unlikely that the health status of Oukasie is such that it would endanger the health of the public any more than other peri-urban black settlements. With the national housing deficit as large as it is, and with so many people living in squalid informal shacks and settlements, it does not make economic sense to move people and break down existing housing stock.

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