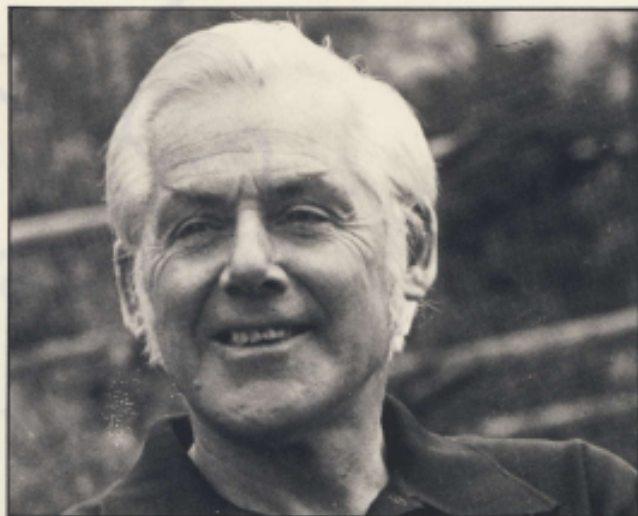# Analysis of primary health services in Umzimkulu

G Ter Haar

Summary

This is a comparative study of the differences in time spent with patients in each consultation at mobile and permanent clinics in a rural primary care service. Travelling times, utilization of nurses' time and acceptance of services by the community are looked at.

Curriculum Vitae

Gerrit Ter Haar graduated as Arts from the University of Utrecht, Holland in 1955. He did a surgical job for one year in The Hague and came to Rietvlei Dutch Reformed Mission Hospital in 1956. Since then he has raised a family there, built up the medical service in the district of Umzimkulu and at Rietvlei Hospital. He spent a year working at McCord Zulu Hospital in 1966 and obtained the DTM & H and the DPH at Wits in 1982 and 1983. He remains an enthusiastic, comprehensive primary care doctor in a rural area.
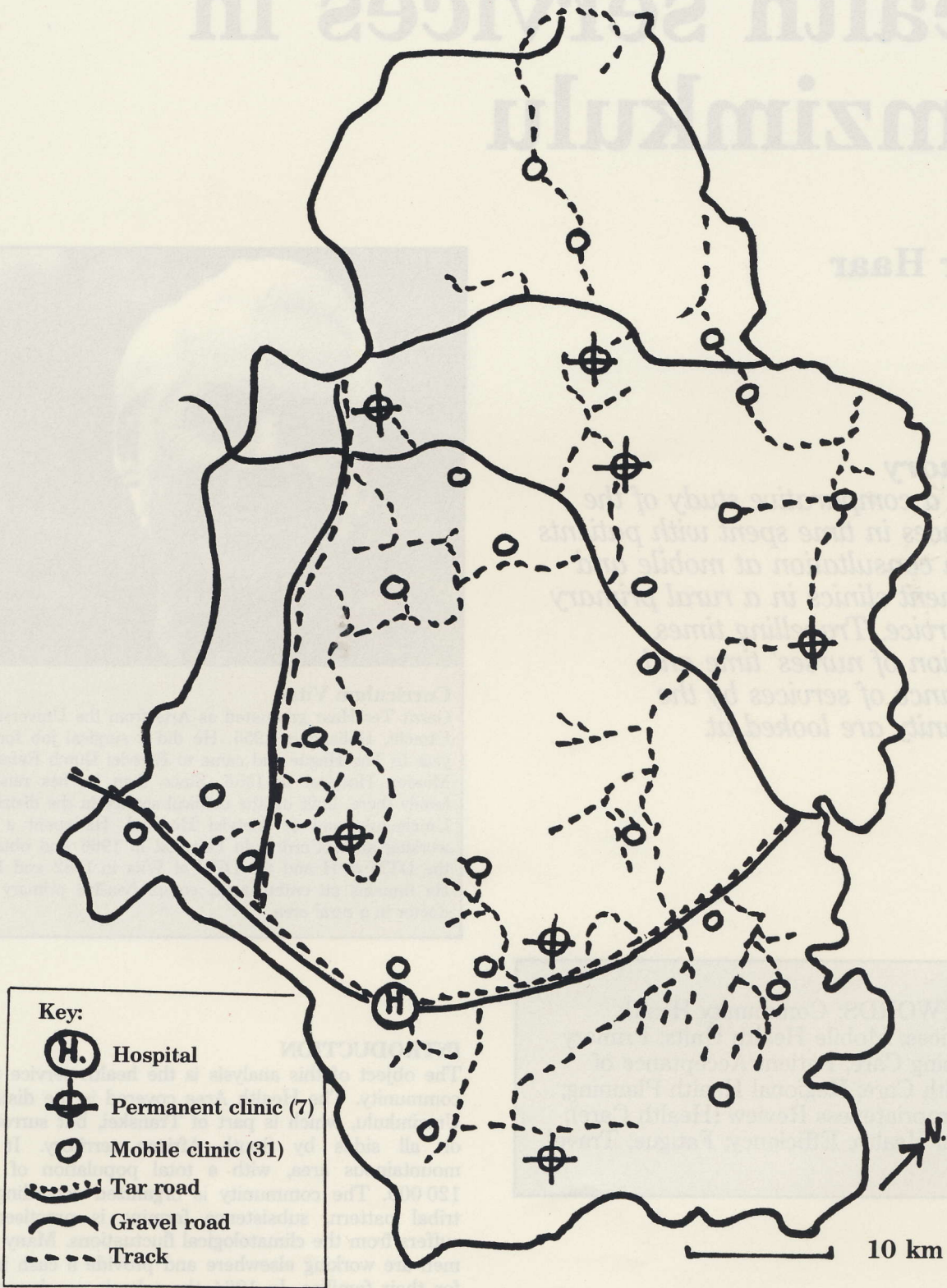
KEYWORDS: Community Health Services; Mobile Health Units; Primary Nursing Care; Patient Acceptance of Health Care; Regional Health Planning; Appropriateness Review (Health Care); Rural Health; Efficiency; Fatigue; Travel.

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INTRODUCTION

The object of this analysis is the health service to the community. The Health Area covered is the district of Umzimkulu, which is part of Transkei, but surrounded on all sides by South African territory. It is a mountainous area, with a total population of about 120 000. The community is organized according to a tribal pattern, subsistence farming is practised and suffers from the climatological fluctuations. Many of the men are working elsewhere and provide a cash income for their families. In 1984 the schools numbered 132, with a total school population of approximately 10 000. The infrastructure is poor, especially in relation to communication, organization and transport. For the members of this community, who live mostly in

MAP OF UMZIMKULU —
showing distribution of permanent and mobile clinics

Key:

- ⊕ Hospital
- ⊕ Permanent clinic (7)
- ○ Mobile clinic (31)
- ······ Tar road
- ⌒⌒⌒ Gravel road
- ------ Track

10 km

N.

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"rehabilitated" * areas and small villages, the dominant problem is **remoteness**: remoteness from service centres (eg health centres).

For the past ten years, Rietvlei Hospital has functioned as a base hospital for this area and has tried to establish a primary health care system by means of two mobile clinic teams, one school nursing team and eight permanent clinics.

The basic **philosophy** of the approach can be summarized in four points:

1. To provide *as much* health care for *as many* people as possible;
2. To prevent the *quantity* of work interfering with the *quality* of care:
3. To utilize the available *resources to the maximum*;
4. To render a type of service which is not only available and accessible, but also *acceptable* to the community.

For the purpose of analysing our success, or failure, in achieving our objectives, we have asked ourselves four questions — which correspond to each of the four points in the philosophy. The answers to these questions are obtained by using measurable data, which is systematically collected by the different team members on a continuous basis and stored in a central place, which we have proudly named our "biostatistical" office.

The **questions** we have asked ourselves are:

1. Which health team can meet the objectives best?
   a) The mobile team .
   b) The permanent clinic team .

2. Which team provides the best possible care?
   a) The number of patients per sister .
   b) The time available per patient .

3. In which team are the human resources used to the maximum?

4. What percentage of the community around a permanent clinic has accepted (utilized) the service?

Primary health care must, per definition, be available and accessible. For the health team, this implies transport from the base hospital to the clinic and back. However, the community members also have to travel from their homes, mostly on foot and often carrying sick members with them. At the clinics they have to wait in queues, anxious about their homes which they had to leave unattended.

Looking at **Question 1**, in order to compare the health care delivery systems (ie the mobile and permanent team), attendance figures have been recorded for the three essential components of the service:

*"Rehabilitation" is used in the meaning of agriculturally reorganised into villages with rotational grazing, separate ploughing lands and basic water supplies.

(a) Antenatal clinic
(b) Under-five clinic
(c) Minor ailments

Other groups of patients, like TB, chronic and psychiatric patients, have been omitted from the analysis for both groups.

The attendance figures at each clinic are transcribed from a standard form onto a graph, reflecting per visit the attendance in each of the above categories, as in Fig 1. A bird's-eye view of a year's activity can be obtained, seasonal patterns emerge showing decreases in attendance at times of ploughing, sowing and reaping. Other intervening factors can be indicated such as weather, vehicle breakdown, funerals or faction fights. The workload of the team members is visible at a glance.

FIG 1
GRAPH SHOWING NUMBER OF PATIENTS SEEN AT NYAKA CLINIC IN RELATION TO SEASONAL EVENTS
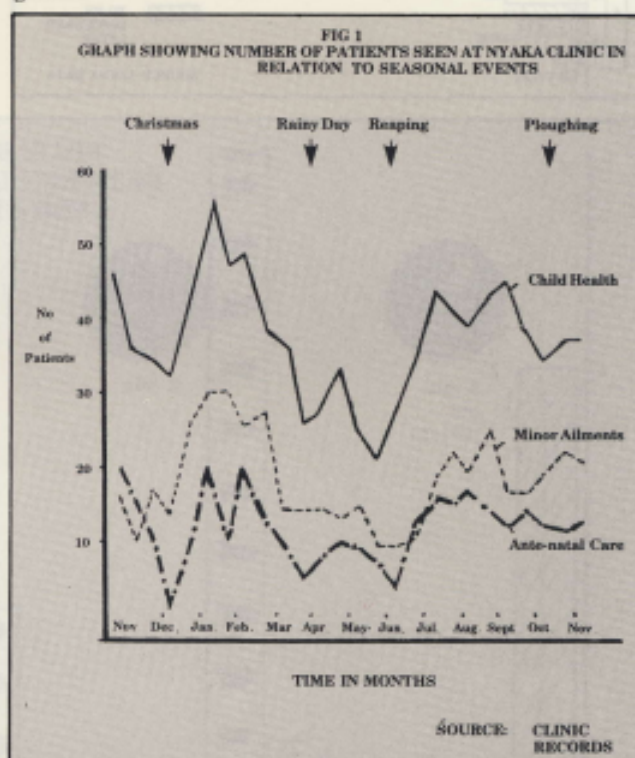
Such a graph is kept for each mobile and permanent clinic point. When the individual clinics are arranged, according to their distance from the base hospital, the following variations are seen: ranging from 7 km (Bombasi) to 132 km (Indawana) Fig 2. It becomes obvious that travelling time of the team must interfere with their working time at each station, more or less, in a normal working day of 8 hours.

Keeping this in mind, we can now look at **Question 2**. Quality of care is difficult to measure, but we have tried to measure two aspects which are basic conditions for quality:

(a) the number of patients seen per sister per day; and
(b) the time available for each individual patient.

THE NUMBER OF PATIENTS SEEN PER SISTER IN THE MOBILE TEAM
Two mobile teams visited thirty different clinic points

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FIGURE 2
BAR-CHART: SHOWING VARIATION IN DISTANCE FROM HOSPITAL TO SERVICE POINT
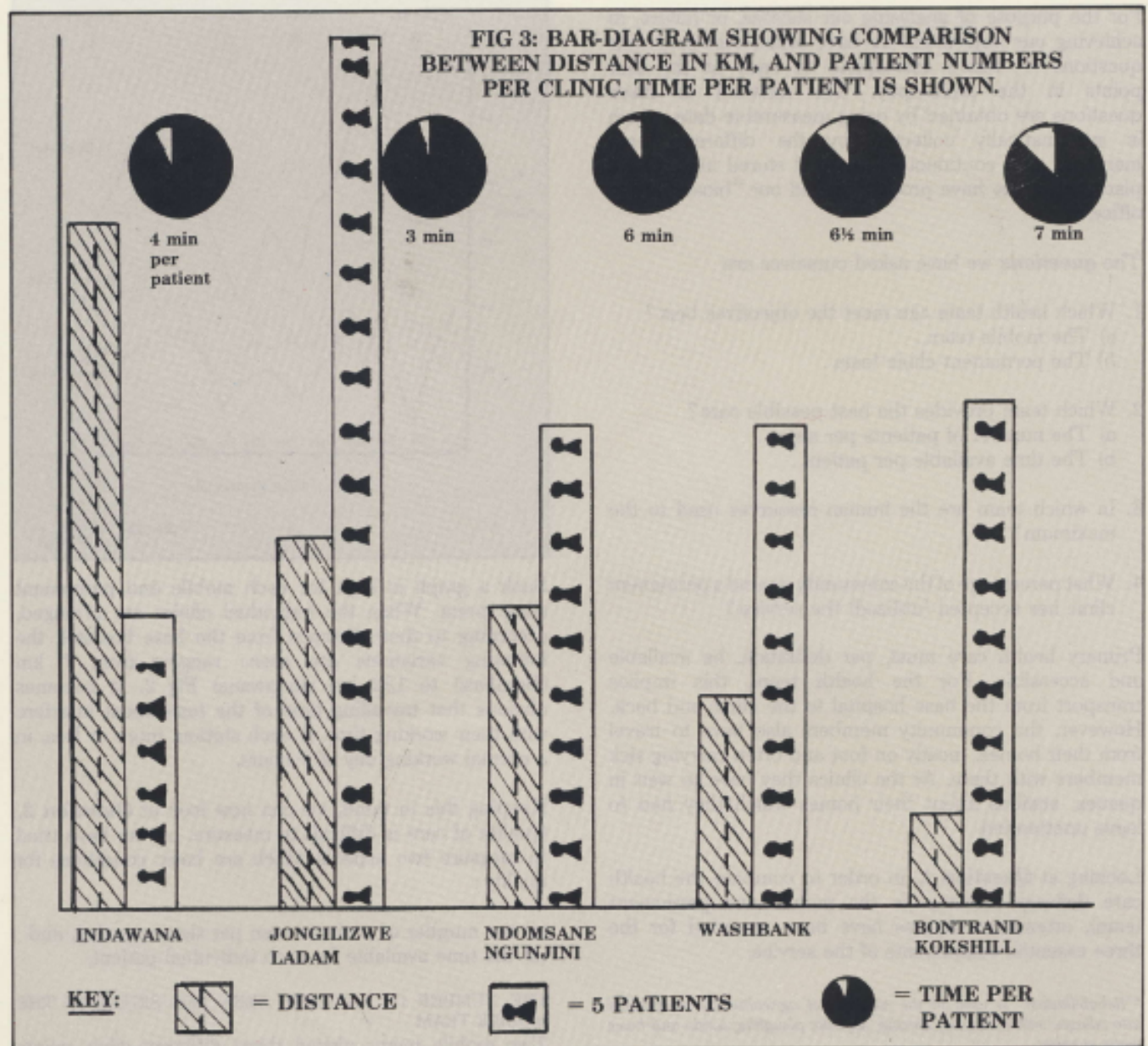
DISTANCE IN KM →
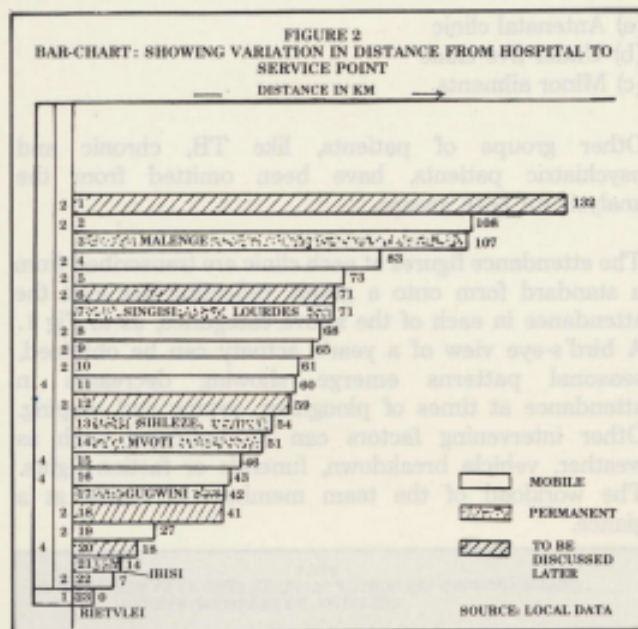
during January 1984 (21 working days) and they saw a total of 3 056 patients. As each team consists of two community sisters, each of them carried an average workload of 36 patients per day (ranging from 20-69). If no replacements for long weekends and overtime are supplied (total of 3 days per sister per month), this average goes up to 42 patients per day.

THE NUMBER OF PATIENTS SEEN PER SISTER IN THE PERMANENT CLINIC TEAM

Eight permanent clinics operated during January 1984, attended by a total of 4 058 patients. Each clinic team consists of two community sisters and, when the average attendance on comparable days are calculated, each sister sees 19 patients per day (ranging from 10-33). No replacements are made for weekends.

TIME PER PATIENT IN THE MOBILE TEAM

Actual working time can be calculated by the addition of preparation, lunch time and travelling time and subtracting it from the 8 hours of a normal working day.

FIG 3: BAR-DIAGRAM SHOWING COMPARISON BETWEEN DISTANCE IN KM, AND PATIENT NUMBERS PER CLINIC. TIME PER PATIENT IS SHOWN.

KEY: [hatched] = DISTANCE   [symbol] = 5 PATIENTS   [pie] = TIME PER PATIENT

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Travelling time is by far the most important and most variable factor. For a selected number of clinics (Nos. 1, 6, 11, 18 and 20) the distance in km was compared with the average number of patients seen per day and illustrated on a vertical bar chart Fig 3. When actual working time was divided by the number of patients, the average available time per patient was obtained. From the comparison, it can be learned that two factors have a negative effect on this patient time, ie
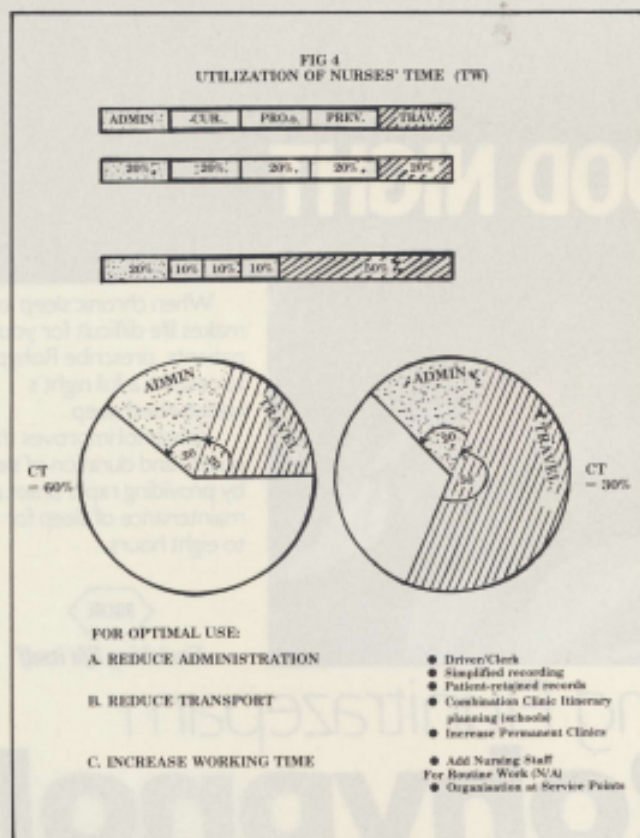
(a) long journeys; and
(b) high patient numbers

In fact, at some places the calculated time per patient was as little as two minutes per patient, and this was confirmed by timing a team for an entire week. If one considers the fact that these two minutes include administration, history-taking, treatment and health education, it goes without saying that the quality of care must, at times, be very low.

TIME PER PATIENT IN THE PERMANENT CLINIC TEAM
As no travelling time for the team members is involved, it is obvious that the time per patient ratio is much more favourable here than it was in the mobile team. Additional positive factors are that the patient can attend the clinic when convenient, as well as the fact that the team members are not tired by hours of travelling on dusty or muddy roads.
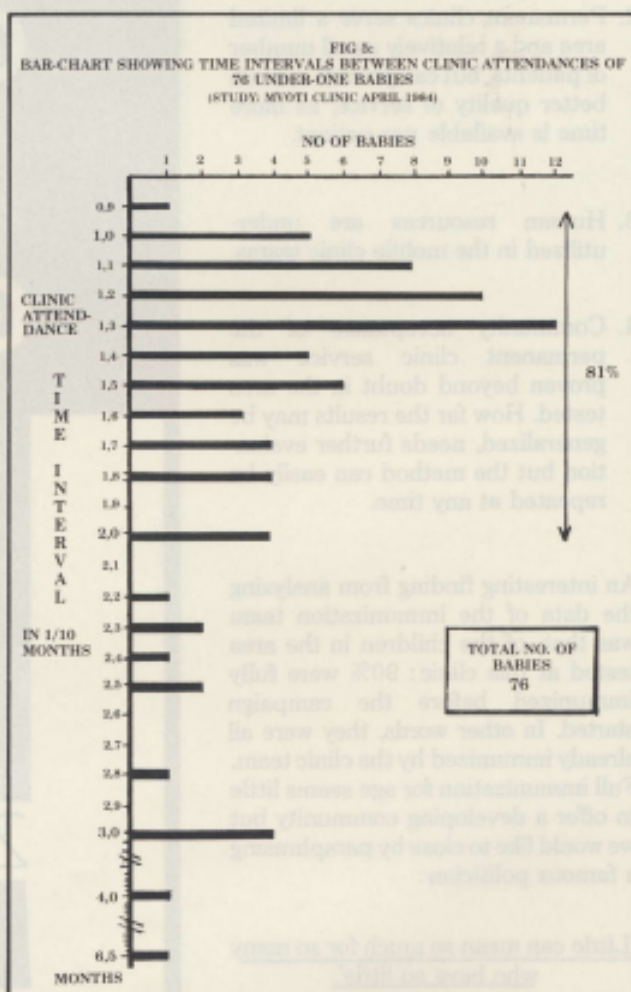
We now come to **Question 3 :** are the human resources used to the maximum in both teams?

FIG 4
UTILIZATION OF NURSES' TIME (TW)

FOR OPTIMAL USE:
A. REDUCE ADMINISTRATION
● Driver/Clerk
● Simplified recording
● Patient-retained records
B. REDUCE TRANSPORT
● Combination Clinic Itinerary planning (schools)
● Increase Permanent Clinics
C. INCREASE WORKING TIME
● Add Nursing Staff
Per Routine Work (N/A)
● Organization at Service Points

Professional nurses are highly trained human resources and a possible use of their time could be represented in the diagram (Fig 4) : equally dividing time between

essential administration, curative, promotive, and preventive work and the unavoidable travelling. However, when travelling time increases from 20% to 50% (as easily happens in the mobile team), the other 50% of the time has to be divided between administrative and clinical tasks (CT). In practice, this means that the promotive and preventive aspects are squeezed out.

This brings us to **Question 4:** what percentage of the community around a clinic has accepted (utilized) the service? Primary health care must be available and accessible, but should also be *acceptable* to the community. This acceptability has been tested at one permanent clinic and could be repeated at other permanent and mobile treatment points if the method is found to be effective. As an instrument of measuring the acceptance, the attendance percentage of all babies born in 1983 in the area served by the clinic and their visit interval at the clinic was chosen. An experienced male nurse, well-known to the community, visited each kraal in the area and tried to find out if a baby had been born in that kraal in 1983 and if they had a baby clinic card. When available, the number of visits on the chart was counted. By dividing the age of the baby in months by the number of visits of that baby, the average attendance interval was calculated Fig 5.

FIG 5c
BAR-CHART SHOWING TIME INTERVALS BETWEEN CLINIC ATTENDANCES OF 76 UNDER-ONE BABIES
(STUDY: MVOTI CLINIC APRIL 1984)

TOTAL NO. OF BABIES
76

The results were:
We visited 415 kraals (total target population) and 84

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babies were counted (20%). Out of these 84 babies, 76 produced a baby clinic card (90%). When a distribution in visit intervals was indicated on a horizontal bar chart, it showed that 81% of those with charts attended the clinic at an average interval ranging from 1 to 2 months.

CONCLUSIONS

What conclusions can be drawn from the information presented? What are the answers to our four questions?

1. Although mobile clinic teams cover a wide area and see many people, the quality of their care is seriously affected by the time available to each patient.

2. Permanent clinics serve a limited area and a relatively small number of patients, but can provide a much better quality of service, as more time is available per patient.

3. Human resources are under-utilized in the mobile clinic teams.

4. Community acceptance of the permanent clinic service was proven beyond doubt in the area tested. How far the results may be generalized, needs further evaluation but the method can easily be repeated at any time.

An interesting finding from analysing the data of the immunization team was that, of the children in the area tested at this clinic: 90% were fully immunized before the campaign started. In other words, they were all already immunized by the clinic team. Full immunization for age seems little to offer a developing community but we would like to close by paraphrasing a famous politician:

'Little can mean so much for so many who have so little'.