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THE PHOLELA HEALTH CENTRE

A PROGRESS REPORT *

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The origin and early development of this Centre, which was the first Health Centre to be established by the Union Health Department, has been described by Gear,³ by Kark and Kark⁴ and by Kark.^{5,7,9} Following the Report of the National Health Services Commission in 1944, the government decided to establish Health Centres in various parts of South Africa. Pholela was considered a useful pilot project in this new service. Medical Officers and other staff appointed to the various newly created Health Centres were first sent to Pholela to gain experience in Health Centre practice and to study the methods evolved there. At the same time it was realized that Pholela could not remain the only teaching and investigation base in a service to be provided for various types of community in South Africa. As a result the Pholela Centre became the rural section of an Institute of Family and Community Health which was established with headquarters in Durban.^{1,2,9} Established in April 1940, it is the oldest section of the Institute. After 11 years of work a further report of progress will be of interest.

THE NATURE AND EXTENT OF THE SERVICE

The essential features which have developed include care of the sick and prevention of illness by the doctor and nurse, associated with a programme of health education carried out by specially trained 'health assistants' acting under the direction of the doctor. The result has been a very closely integrated curative, preventive and promotive health service in which there is an ever increasing appreciation of the community's health needs and an understanding of the various families served. During the past year the Centre has been fortunate in having a dentist on the staff; the preventive and curative service has thus been expanded to include this most important aspect of health care.

* The References will be published at the end of the concluding part of this paper.

The Health Centre's practice consists of a general service and a more defined family health and medical care programme.

1. *The General Service.* This is available to all who wish to use it regardless of their domicile. It includes out-patient treatment of the sick and special sessions for the care of the expectant mother and the mother with her baby. However, many patients who come to the Health Centre from neighbouring magisterial districts are encouraged to see the district surgeons and other medical practitioners in their immediate neighbourhood.

In addition, Health Centre staff are often asked to assist in the control of outbreaks of epidemic diseases in neighbouring districts.

2. *The Family Health and Medical Care Programme.* This relatively intensive service was started in 1942, including 130 families with a total population of a little less than 900 persons. By gradually extending the area of this service the Centre now provides a family health and medical care programme for a population of some 8,500 people in the district of Pholela.

THE RESPONSIBILITIES OF THE VARIOUS MEMBERS OF THE STAFF

1. *The Medical Officers.* Each doctor on the staff is responsible for between 400 and 500 families living in a defined area. Thus each doctor, in addition to the general out-patient service, is responsible for between 2,500 to 3,500 people included in the programme. His functions in respect of these families include:

(a) The treatment of the sick at the Health Centre and, where necessary, in their own homes.

(b) Preventive services, of which the foundation is the periodic health examination.

(c) The direction of the nursing service and health education programme that is carried out by the nurses and health assistants working with their families.

2. *The Nurse.* Like the doctors, each nurse is con-

cerned with both curative and preventive aspects of nursing in the families she serves. The main orientation of the preventive nursing service is towards the care of the expectant mother, midwifery, and the care of the mother and her baby. Special sessions for expectant mothers and mothers with their babies are organized at the Health Centre and at suitably located homes in the district.

3. *Health Assistants.* Their main function is health education. By means of home visiting, group discussion and practical demonstration, an intensive educational programme for better health is carried out. The major aim is to stimulate the people so to modify their own way of life as to lead to better standards of health. This persistent personal health education of men, women and children is directed towards the following objects:

(a) Reduction of the high incidence of preventable communicable diseases by explaining the nature of these diseases and their spread. Improvement in the home and its environs, more especially in respect of the sanitary disposal of refuse by the making of compost, the construction and use of pit latrines, the protection of food stored in the home, the protection of water supplies and improvements in the structure of the huts built by the people. This programme of improved environmental hygiene is associated with one directed towards raising the standards of personal hygiene.

(b) Improvement in the state of nutrition through improvement in the diet. This involves increased knowledge in regard to the relationship between diet and health in general as well as in regard to the special needs of different age groups and the expectant and nursing mother.

(c) An appreciation of the value of periodic health examinations and the need for treatment of disease in its early stages. This requires fundamental education as to the meaning of health and the nature of various diseases. The people's own concepts have to be carefully studied in a programme of this kind and their own experience related to the various aspects of health and disease which are discussed.

While the health education programme is presented in simple form, it requires considerable skill and patience and to this end the specially trained health assistants are directed by the medical officers in charge of the Health Centre practice.

In this way a clinical and preventive service provided by family doctors and nurses is integrated with a promotive service carried out by health assistants trained as community health educators. More specialized services (provided by the dentist, and special laboratory diagnostic facilities) considerably enhance the scope of work of the Health Centre.

During the course of a year the Health Centre has some 26,000 attendances for curative and preventive care; in addition some 14,000 home visits are carried out.

SOME IMPORTANT FEATURES OF THE SERVICE

The very common occurrence of various communicable diseases and the extent of chronic malnutrition, associated with frequent episodes of acute nutritional failure, inevitably resulted in considerable attention to these problems in the Centre's programme. Maladjusted and unhappy relationships with emotional tension and neurotic conflicts are major features of the various illnesses believed to be due to witchcraft. Clinical practice and health education require an understanding of these processes if the needs of the people are to be met by the Health Centre.

1. *The Control of Communicable Diseases.* Preventable communicable diseases are among the most important causes of ill health and death in the Pholela community. Among the more common diseases are syphilis and tuberculosis, typhoid fever and dysentery, typhus fever, smallpox, diphtheria, measles, whooping cough, and skin infections, viz. scabies and impetigo contagiosa.

(a) *Epidemics.* Serious epidemics of typhoid, typhus, smallpox and diphtheria are by no means uncommon, and the Health Centre has assisted in the control of outbreaks of these diseases in the neighbouring areas of Himeville, Richmond, Ixopo, Impendhle and the Swartkops Native Reserve area of the Pietermaritzburg district.

In the early days of its existence (before the creation of a family health and medical care programme) several major epidemics occurred in the immediate vicinity of the Health Centre. The development of a family health and medical care service to the people living in a defined area has had interesting results in this regard. As previously stated, the defined area which was begun in 1942 with less than 1,000 people has steadily expanded to a very much wider area in which some 8,500 people are now included.

Since the introduction of this combined preventive and curative service no epidemic of various major communicable diseases, such as typhoid and typhus fever, smallpox and diphtheria, has occurred in the expanding defined area. On the other hand, the Health Centre has been called upon on an average 3-4 times each year to assist in the control of such epidemics in areas as far as 50-60 miles away from the Centre itself.

In order to keep this defined area free of outbreaks of these diseases, the people are given instruction about these diseases, and methods of their prevention. Strenuous efforts on the part of the health assistants to interest the families in improved home and environmental cleanliness and in personal cleanliness have met with a good deal of success over the years. Over 150 families now have compost pits in which their household refuse is deposited, and some 100 to 120 families have co-operated in buying material to protect their water supplies. The labour for this purpose is provided by the people themselves; the Health Centre, having stimulated the desire, then provides the necessary technical advice. In this way also a number of pit latrines have been built and improved methods of food storage introduced. The progress is slow but each year the momentum increases.

People are encouraged to be vaccinated and immunized as part of their routine care by the Centre, and all huts are regularly dusted with DDT powder to kill lice. For the last few years this routine dusting has been carried out by the families themselves.

The efficacy of this programme is indicated by the frequency with which families served by the Health Centre have been exposed to infection without a local epidemic resulting. Patients suffering from typhus, typhoid fever or diphtheria have come to live in homes in this area, in order to get treatment from the Health Centre. In no case has there been any spread of the disease. The health assistant has not only proved a most useful health educator but, by his knowledge of the community, has been able to report on the arrival of a sick person to a

particular home. This has led to early recognition of such cases by the medical officers and medical aids, with consequent early treatment and preventive measures.

(b) *Scabies and Impetigo*. When the Health Centre first commenced work, scabies and impetigo, while seldom causes of death, were major causes of ill health in this community. A minority of homes were without one or both of these diseases, and in infants and children the condition was often generalized and very severe. Records for 1942 show that 17 per cent of patients attending the Health Centre were grossly infected, while 82 per cent of school children examined had either scabies or impetigo.

Initially attempts were made to control this disease by treating all the school children. After a year of intensive effort the results were not satisfactory, as most of children became re-infected at home. Home treatment, both curative and preventive, was then instituted. This involved education on the role of personal cleanliness in the prevention of the disease, and persuasion of the whole family of an infected case to undergo treatment.

As a result of this programme carried out over the years, only 3.6 per cent of patients attending the Centre in 1950 were found to be infected (the infection usually being of a mild nature) and 7.8 per cent of school children examined had either scabies or impetigo. Severe generalized scabies with superimposed impetigo is now not seen in school children and babies of this area.

(c) *Syphilis*. It is difficult to give an exact figure for the incidence of syphilis in this community, as most male migrant labourers do not attend the Centre on their brief visits home from town. The Health Centre figures indicating an incidence of between 85 and 100 cases per 1,000 population are probably an understatement of the true state of affairs.

Because of the common occurrence of the disease in the community, and more especially its very high incidence in expectant mothers and babies,⁸ attempts to raise the standard of health of the people have included an intensive educational programme related to the early treatment and prevention of syphilis.

Early diagnosis of infection and case finding is an essential part of this programme, and the Wassermann test is routine in all health examinations. Of more importance in the control of the disease is the extent to which infected persons and their immediate contacts appreciate the need for full and adequate treatment. To achieve this, doctors and nurses spend much time explaining the nature of the disease and the need for treatment to individual patients. At the same time a community health education programme is carried out, in which the spread of the disease, its effects on the child, and its natural history are discussed. This education has always to take into consideration prevailing concepts of the people in regard to the disease and the relationship of these concepts to culturally accepted theories on etiology and methods of spread of illness. Where such thought processes are in direct conflict with the ideas of modern scientific medicine, and are likely to impede efforts to control the spread of the disease, great patience and tact has to be exercised by the educator in an effort to bring such concepts more into line with modern ideas. The

programme is likely to be more successful when commonly accepted attitudes towards illness and specific concepts concerning the particular disease are intimately understood.

In this way a more enlightened public opinion is being developed so that not only is an increasing use being made of the health examination service offered, but patients diagnosed as having syphilis also co-operate very well in the necessary treatment. Here it is important to mention a feature of the family service. There are no special disease clinics, with the result that patients who have syphilis are not segregated at special sessions. They attend the Health Centre with others and the treatment of these syphilitics is included as part of a programme directed towards improving their health. The health education of the community by health assistants associated with that of the individual case by the doctor and nurse, can be seen in the very good response of patients to the treatment advised.

The treatment for cases of congenital, primary and secondary syphilis, as well as for syphilis in expectant mothers, has been for an initial course of Penicillin (6,000,000 units, consisting of 600,000 units daily of Procaine Penicillin with Aluminium Monostearate in oil), followed by arsenic and bismuth therapy (5 courses of 8 injections each, given weekly). The response of 55 patients advised to undergo this course of Penicillin treatment is shown in Table I.

TABLE I: RESPONSE OF PEOPLE TO PENICILLIN THERAPY

No. of Injections (600,000 Units per day)	Males		Females		Total	
	No.	%	No.	%	No.	%
10	11	61.1	25	67.6	36	65.5
9	1	5.6	3	8.1	4	7.3
8	—	—	3	8.1	3	5.5
7	—	—	—	—	—	—
6	—	—	—	—	—	—
5	2	11.1	2	5.4	4	7.3
4	1	5.6	2	5.4	3	5.5
3	1	5.6	—	—	1	1.8
2	2	11.1	1	2.7	3	5.5
1	—	—	1	2.7	1	1.8
0	—	—	—	—	—	—
Total ..	18	100.0	37	100.0	55	100.0

Thus 65% of the patients advised to have daily Penicillin injections, completed their course in spite of the long distances they had to walk over mountainous country, while a further 16% had 8 or more injections. Over 80% of these patients therefore received 4,800,000 units of Penicillin or more.

The attendances for the further arsenic and bismuth injections are, as might be expected, a good deal more irregular, but the majority of the patients received 16-24 injections of arsenic and bismuth following their Penicillin treatment.

Despite the continued re-introduction of active infection by migrant labourers on their return home, there has been a marked drop in the frequency with which new cases of syphilis are diagnosed. In 1945, 347 new cases of syphilis were diagnosed in persons who came from homes included in the family service, which at that time involved a defined area with a population of a little less than 6,000. By 1950, the defined area in which the family health and medical care programme was applied had expanded to include some 7,500 persons. Nevertheless, during the course of the year the number of new cases diagnosed was considerably less than that of 1945, viz. 176 new cases.

(d) *Tuberculosis*. Tuberculosis is a serious public health problem in this community. In a survey carried out in one section of the district, consisting of 150 homes, no fewer than 26 (17.3 per cent) were found in which there was, or had recently been, an active case of tuberculosis. The known case incidence in the defined family service area is 15.7 per 1,000 population. This figure is probably an understatement; in the absence of X-ray facilities at the Centre, the majority of cases are diagnosed by the finding of positive sputum or a positive tuberculin reaction in babies, supplemented by radiological findings in a limited number of cases. Furthermore in 1950, 10.6 per cent of the known causes of death were due to tuberculosis.

The Health Centre's programme in controlling the spread of the disease may best be discussed under 2 headings:

- i. The care of the adult 'positive spitter'.
- ii. The care of primary tuberculosis in infants and children.

i. *The Adult*. As soon as a diagnosis of active pulmonary tuberculosis is made, the patient and his family are met by the doctor and nurse concerned and the nature of the disease is discussed. This talk is aided by the use of the microscope and posters. Attempts are made to get agreement to hospitalization (either in Springfield Hospital, Durban, 100 miles away, or at a Mission hospital 40-50 miles away). If hospitalization is refused, as it often is, the patient and his family are then shown how isolation can best be maintained in the home. The sleeping arrangements, disposal of sputum and ventilation of the hut are discussed, and arrangements made for regular attendance at the Health Centre of all other members of the family. In addition, attempts are made

to improve the diet of the patient and regular supplements of dried skim milk powder and vitaminized oil are made available. More recently PAS has been introduced in the treatment of suitable cases.

ii. *The Infant and Child*. The main approach consists of attempts to remove the child from the active source of infection and to improve his nutritional state.

The intimate knowledge that the Health Centre has of these families often facilitates the placement of such children with relatives away from the active source of infection. If the patient's condition warrants it, an initial period in hospital is advocated.

The family is then urged to take advantage of the Health Centre's nutrition programme to improve the dietary resources of the home. Regular attendance at the Centre ensures, among other things, regular therapeutic supplements of dried skim milk powder, vitaminized oil and vegetables from the Health Centre demonstration garden.

Integrated with this case work is the education of the total community, by the health assistants, of the nature of the disease, the methods of prevention and treatment in adults and in children. The role of good diet, fresh air and isolation of active spitters is particularly stressed.

In association with Dr. B. A. Dormer, of the Department's tuberculosis service, plans are being carried forward to establish a tuberculosis settlement at the Health Centre. This, together with the community health education programme, will reduce the tremendous resistance that exists at present towards hospitalization of patients so many miles away from home.

This resistance is influenced by the belief that the symptoms of cough with blood-stained sputum and loss of weight, result from poisoning by an ill-wisher and can be cured only by a witchdoctor (inyanga), while a diagnosis of 'tuberculosis' carries with it a death sentence. In addition to this widespread belief, the very poor nutritional state of the people facilitates the spread of the disease as does the inward flow of new cases returning from the towns.

It can therefore be appreciated that control of tuberculosis is at present dependent upon the nutritional state of the people being vastly improved, mainly through soil conservation (a national problem) the reduction of the numbers of migrant labourers (another national problem) the provision of adequate diagnostic and isolation facilities, and the education of the community about the nature of the disease and methods of prevention and treatment.

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2. *The Nutrition Programme*. Adequate nutrition is never the concern of a health service only. In a community such as that of Pholela it is an agricultural and general economic problem as well as the concern of sociologists and health workers.

The Health Centre's programme is thus a contribution to what should be a broadly based community development plan, and it is in this light that the following

description of the Health Centre's nutrition work must be read.

Clinical nutrition studies have revealed that over 80% of the population exhibits obvious and often gross stigmata of malnutrition. Dietary surveys have indicated that the diet is on the whole monotonous, often insufficient in amount and always lacking in milk and milk products, animal tissues, fresh vegetables and fruit. Even in the best

season of the year (late summer) from 50-65% of the families are without any cows in milk, while during the dry winter months approximately 90% of the families have no milk at all. In the early days of the Health Centre this resulted in the relatively frequent occurrences of such gross instances of nutritional failure as classical pellagra in adults and infantile pellagra (malignant malnutrition, kwashiorkor) in children.⁶

The Health Centre has concentrated on attempting to improve the knowledge of the people in the relationship of diet to health and to increase the home resources of the families. In addition, special programmes for the mother and infant and for children were developed.

(a) *The Family.* By home visits and group education people have gradually begun to realize the importance of diet in health. This teaching has been associated with attempts to encourage families to start their own home vegetable gardens, and to modify some of the food taboos.

Various methods have been used to increase the consumption of vegetables, e.g. the establishment of a demonstration vegetable garden at the Health Centre, from which vegetables are prescribed for patients; the establishment of a daily market (run by the people themselves aided by members of the Health Centre) at which surplus vegetables can be bought and sold; various cooking demonstrations using vegetables, and the creation of a very successful seed-buying co-operative society. In addition, periodic vegetable garden competitions have created a great deal of interest in gardens. In all these endeavours close co-operation with the Native Affairs Department through its local Agricultural Officer and Demonstrator has been maintained. In addition, once the desire for a vegetable garden has been awakened, full use is then made of the technical knowledge of the Agricultural Demonstrator. The results of this programme have been very encouraging.

In January and February 1941, of 145 homes surveyed, except for pumpkins (63 homes) and potatoes (45 homes) which were fairly common, only 5 homes had any green vegetables (beans and/or cabbage). In addition 5 homes had sugar cane, 4 had melons (*bece*) and 2 had sweet potatoes; 37 homes (25.5%) had no vegetables at all.

In the same months of 1950, of 917 homes surveyed 722 had vegetable gardens and more than 25 varieties of vegetables were being grown. These included potatoes (383 homes), pumpkin (341 homes), tomatoes (125 homes), beans (192 homes), cabbage (141 homes), carrots (97 homes), turnips (91 homes) as well as lettuce, peas, onions, cauliflower, spinach, beetroot, kale and many other varieties of vegetables.

(b) *The Mother and Infant.* Expectant and nursing mothers with their infants have been singled out by the Health Centre as the groups most in need of an improved diet. At the ante-natal sessions expectant mothers learn what particular foods are necessary for their own health and that of the unborn child. Special cooking demonstrations show them how to prepare these foods. When necessary, therapeutic supplements of dried skimmed milk powder, vitaminized oil, iodized salt and vegetables are prescribed. The attendances at these sessions have risen from a negligible number in 1942 to 90% of the pregnant women in the area in 1950.

Facilities are now available for women to be delivered

at the Health Centre. They are encouraged to come and live in huts on the Health Centre property about a week before term, bringing with them an attendant, their own blankets and cooking utensils and their family if necessary. After being delivered they spend a further week at the Health Centre, and the period before and after delivery is utilized in further intensive education and demonstrations on the feeding and care of the mother and the new-born baby. Thereafter mothers are encouraged to bring their babies regularly to the weekly mother-and-baby sessions. Here they meet their own doctor and nurse again. The periodic health examination of mother and child is an intrinsic element of this essentially educational service. Demonstrations on infant feeding supplement the education given each case and, as 80% of all mothers with babies attend these sessions, the general pattern of infant feeding is changing markedly in this area. Fewer women are introducing mealies (in the form of *incumbe*) into the diet of the neonatal infant, as was the custom, and by the time babies are 8-12 months old most of them are on a more varied diet than was the case when the Health Centre began its work in the area. The most significant change has been the increased appreciation of the value of foods other than the mealie. Hence a variety of vegetables, eggs, milk (when available) and cereals other than mealies are now commonly used in infant feeding. Breast feeding remains the foundation on which these other foods are introduced.

While the nutritional state of these children is still not good, particularly after weaning, the Centre now attends to a very much more limited number of children in acute nutritional failure, such as infantile pellagra (kwashiorkor). The number of cases of this syndrome now seen by the Centre does not exceed 10-12 per year. In the early days of the Centre's establishment this number of cases might be seen in 1-2 weeks during the main season of occurrence.

Should expectant or lactating mothers or infants become ill, they are treated by the same doctor and nurse who have been attending them at the ante-natal and mother-and-baby sessions. The efficiency of this service has also been markedly increased by the recent authority to admit a limited number of ill babies to huts on the Health Centre property, as is done for pregnant women at term.

As far as the pre-school and school children are concerned, the Health Centre has developed various approaches to improvement of their nutritional state. Supplementing the family health education programme are special sessions at the Health Centre for children of pre-school age when they are introduced to various foods through play and specially prepared meals. The Health Centre staff is also associated with the government school meal plan. A special committee, consisting of the head teachers of several schools and the medical officer in charge of the Health Centre, organizes a combined school meal service for these schools. Not only has it been possible to improve the diet of the school children in this way, but the meal and the school vegetable gardens have also proved important as educational situations in which the children learn the value of various foods.

Periodic health examinations of the children has allowed for further discussion with the children and their parents about their needs for better nutrition and growth. Analysis of the material from such studies has also formed the

basis of various community nutrition surveys and the health education programme based on these findings.

3. *The Changing Mortality Rates.* The encouraging response of the people to the Health Centre's nutrition programme and the results of its efforts to control communicable diseases (discussed above) would be expected to influence the mortality rate of the community involved.

One of the difficulties in assessing the mortality rates in Pholela is the lack of comparable findings in other Native Reserves of the country. The maintenance of an accurate census of each family served by the Centre, with a system of birth and death registration, has enabled the Centre to measure various changes in the community, not the least important of which is that of mortality. We have previously referred to the way in which the family service was expanded from the time it was first introduced. It is necessary to refer to this expansion in more detail.

The family service which began in 1942, included an area in which there were 130 homes with a population of 887. After a year the defined family service area was expanded to include an additional 5 groups of geographically defined homes, making a total of 425 homes and 2,937 people. Of this number, 909 were people living in the area first incorporated, the remaining 2,028 people belonging to the new homes. In the years that followed the area of service was expanded in a similar way, although with each succeeding year the relative number of newly incorporated homes decreased. These facts are important when considering the changing mortality rates because the indices of the newly incorporated areas are likely to affect adversely the total picture. Table II indicates the mortality rate for the population included in the defined family service area in the years 1942-1950. The very high mortality rate found in the small group of

ing year the death rate in this group was 20.9, whereas that of the additional 2,028 people included in the family service in 1943 was very little different, namely 21.7.

The relatively static period in the mortality rate between the years 1943 to 1948 requires further discussion. Apart from the year 1945, in which the rate reached the figure of 28.35, the widest difference was that between 21.29 (1946) and 22.38 (1944). The factors which might explain this period of little change include the rapid expansion of the family service in the earlier years. In 1943, the area was expanded to include more than 3 times the number of 1942; by 1945 it was almost 7 times the size of the initial group of families, and more than double that of 1943. After 1945 the additional number of people included each year was very limited, the total increase being from 5,926 in 1945 to 7,481 in 1950. Improvements which were taking place in the community were thus probably masked in the earlier period by the large increase in the size of the population, which was included in the family health and medical care programme. This is evidenced by the figures available for the group of families included in the first year of the family service. During the years 1942-1946 the death-rate figures were as follows:—

1942	—	38.33
1943	—	20.90
1944	—	18.07
1945	—	15.55
1946	—	13.11

Of importance in this respect is the same encouraging trend in mortality reduction that has become manifest for the very much larger community of 7,481, included in the family service area by 1950.

Infant Mortality. One of the most important influences on the reduction in the general mortality has been that of a marked diminution in the infant mortality rate (Table III). In considering the findings presented in this Table it is of importance to remember that figures for each year include the new areas added in that particular year. In the absence of a defined control area of measurement these added areas assist in 2 important assessments which are required. The first is that of a measure of the extent to which the reduction in the infant mortality can be ascribed to the presence of the Health Centre. The second, and perhaps more important assessment required, is whether the particular kind of programme carried out by the Health Centre has made a contribution.

In Table IV we have analysed the records of 5 areas during the first year in which the particular group of families was incorporated in the family service. These records were available for the years 1942-1944 and 1950-1951. The differences in the infant mortality rate between each of these 'new' areas is not significant. Testing this further by combining the findings in the added areas of 1942-1944 inclusive and comparing them with those of 1950 and 1951 combined, the difference found is not significant. It may well be that this is due to the limited population and hence the limited number of births with which the infant mortality index is measured.

Comparison of Infant Mortality in 'New' Areas with those Incorporated in the Service for Longer Periods (i.e. 'Old' Areas). Comparison between Tables III and IV indicates that 'new' area infant mortality rates are con-

TABLE II: THE CRUDE MORTALITY RATE (1942-1950)

Year Ending	Mid-year Population in Family Service Area	Deaths Recorded	Crude Mortality Rate per 1,000 Population
31 December 1942	887	34	38.33
31 December 1943	2,937	63	21.45
31 December 1944	5,184	116	22.38
31 December 1945	5,926	168	28.35
31 December 1946	5,919	126	21.29
30 June 1948 ..	6,524	140	21.46
30 June 1949 ..	6,622	127	19.18
30 June 1950 ..	7,481	102	13.63

families in the year 1942 may possibly be a true reflection of the state of affairs in the Pholela area at the time, but this cannot be assumed from this limited population study. In fact, it appears that the year 1942 was a particularly bad one in this particular neighbourhood. In the follow-

TABLE III: THE INFANT MORTALITY RATE (1942-1950)

Year Ending	No. of Live Births Recorded	No. of Deaths of Infants Under 1 Year of Age	Infant Mortality Rate %	No. of Deaths in Neonatal Infants	Neonatal Mortality Rate %
31 December 1942 ..	40	11	27.50	3	7.50
31 December 1943 ..	110	27	24.55	10	9.09
31 December 1944 ..	194	37	19.07	10	5.16
31 December 1945 ..	232	49	21.12	13	5.60
31 December 1946 ..	258	40	15.50	15	5.81
30 June 1948	275	36	13.09	13	4.73
30 June 1949	296	38	12.83	11	4.04
30 June 1950	269	31	11.52	11	4.09
30 June 1951	368	37	10.06	15	4.08

TABLE IV: INFANT MORTALITY FOUND DURING FIRST YEAR IN WHICH PARTICULAR GROUP OF FAMILIES INCORPORATED IN FAMILY SERVICE

	Number of Live Births	Number of Infant Deaths	Infant Mortality %	Comparison of 'New' Areas included in First 3 Years with those of Last 2 Years	
				Infant Mortality %	Difference
					S.E. of Difference
New Area 1942	40	11	27.50	} 25.63	6.76
New Area 1943	81	23	28.40		
New Area 1944	78	17	21.79		
New Area 1950	19	4	21.05	} 18.87	6.20
New Area 1951	34	6	17.65		
Total of 5 Groups of Families during their First Year in Family Service	252	61	24.20		Not significant

sistently higher than those for the total family service area in each year. Comparing the total infant mortality in the 'new' areas with those in the 'older' areas in the same 5 periods, we find that there were 61 deaths in infants 0-12 months of a total 252 live births in the 5 'new' groups. The corresponding figures for the 'old' areas were 82 infant deaths of 729 live births. Table V indicates the infant mortality of each group, the difference being significant:

TABLE V

	'New' Families	'Old' Families
Infant Mortality (expressed as a Percentage of Live Births)	24.20 (S.E.2.70)	11.25 (S.E.1.17)

Difference Between 'Old' and 'New': 12.95 %
S.E. of Difference: 2.94
Difference: 12.95 - 2.94 = 9.99
S.E. of Difference: 2.94

The superiority of the 'old' areas which is demonstrated here was already becoming apparent in the early years, as is evidenced in Table VI:—

TABLE VI

	1942-44 'New' Families	1943-44 'Old' Families
Number of Live Births ..	199	145
Number of Infant Deaths ..	51	24
Infant Mortality (Expressed as a Percentage of Live Births)	25.63 (S.E.3.09)	16.55 (S.E.3.08)

Difference Between 'Old' and 'New': 9.08 %
S.E. of Difference: 4.37
Difference: 9.08 - 4.37 = 4.71
S.E. of Difference: 4.37

It seems likely that the reduction in infant mortality noted in Table III is related to the existence of the Health Centre.

The second question posed above, whether the particular kind of programme carried out by the Health Centre has influenced this trend, is also partly answered by this analysis. In discussing this question it is necessary to review the differences between the service provided to those persons included in the defined family service area and that which is available for those not yet included in the family service.

The essential difference is that which exists between the neighbourhood family health and medical care programme on the one hand, with that which may best be called a polyclinic service. Table VII is a summary of the main similarities and difference between these 2 kinds of service provided by the Health Centre.

It is thus seen that all services at the Centre itself are available to those in the family service as well as to others not included. The main difference between the service received by the patients is not to be found in specific technical aspects of diagnosis and therapy. It is essentially in the nature of the relationship which exists between doctor and nurse on the one hand, and the patient on the other. The family doctor and nurse have a very much keener appreciation of the needs of individual patients from homes included in their family health and medical care programme, than of those whose families are

otherwise unknown to them. The patient, too, develops a different relationship with a family doctor or nurse from that with one who is not so favourably situated, e.g. doctors and nurses in hospital outpatient departments, polyclinics, and general practitioners other than those who are at the same time family doctors. It is this feature that distinguishes the care given to the 2 groups of patients at the Health Centre itself.

The outstanding difference between the 2 groups in respect of the services provided in their homes or in the immediate neighbourhood of their homes is that which has been referred to as health education in the above summary. This programme, carried out by specially trained personnel, is an integral part of the neighbourhood family service and is not provided for other areas, except in exceptional circumstances, e.g. when the Health Centre is asked to assist in the control of an epidemic. Another, but very much more recent difference, is that of the neighbourhood sessions for the care of the mother and baby conducted by nurses. These sessions are at present held in homes within the family service areas, although mothers not living in these areas are welcome to attend and have done so.

In the light of this brief review we can now discuss the findings of Table IV and our analysis of difference in infant mortality between 'new' and 'old' families. Since 1940 all the families considered in this analysis have had free access to all facilities of the service which have

TABLE VII

	'Neighbourhood' Family Service	'Polyclinic' Service
1. Facilities Available at the Health Centre Itself—		
General Curative Service	+	+
Antenatal } Midwifery } Postnatal } Infant care }	+	+
Immunization and Vaccination } Smallpox } Enteric } Diphtheria } Whooping Cough }	+	+
Periodic Health Examination of Persons Other Than Mother and Baby	+	± (limited number of School Children)
General Health Education of Those Attending Centre for Health or Medical Care	+	+
2. In the Home and Neighbourhood—		
General Curative Service	+	± (limited to emergencies and epidemic control)
Control of Epidemic Diseases Outbreaks	± (outbreaks of severe epidemic diseases are very rare)	+
Health Education—in the Home and in Neighbourhood Group Discussion. (Carried Out by Health Assistants Trained as Health Educators)	+	—
Neighbourhood Sub-Centres for Mother and Infant Care. (Carried Out by Nurses Who Have Had Additional Training in Family Nursing)	+	± (see Text)

been gradually developed at the Centre itself. After incorporation in the scope of the family service they have continued using these facilities, but a change has taken place in their own homes. This change is due to the health education programme carried out by health assistants. By this programme the emphasis of the service is modified from what is done for patients to what the family or community does for itself, assisted by the Health Centre staff. The interest of the community has been developed slowly with the result that an increasing number of families is participating actively in improving standards of health. This is a distinctive feature of the family service.

DISCUSSION

While the progress towards better health which has been achieved by the people in association with the Health Centre's programme has been most encouraging, there are aspects of life in Pholela which militate against the attainment of health. These include important adverse influences on which the Health Centre service in itself has little effect. Among the most significant is the accelerated soil erosion which is obvious to the most unskilled observer, and the system of migrant labour whereby a very large proportion of able-bodied men spend a large part of their lives working in the towns while their homes remain in Pholela. The effects of these 2 related phenomena have been studied in some detail, more especially in their relation to the health of the community. It is not proposed to present the details of these findings in the present discussion but it is necessary to indicate the more immediate results.

Soil erosion and migrant labour have resulted in:—

- (a) Failure to produce sufficient food for the needs of the community, with evidence of gross malnutrition in plant and animal life as well as in the people.
- (b) An instability in family life and maladjustment in family relationships, associated with a high incidence of emotional disturbances in which witchcraft has a significant role in this community.
- (c) The continuous introduction of fresh foci of infection by those returning from work in the towns. A high incidence of tuberculosis and syphilis is maintained by this process.

Malnutrition, maladjustment and diseases like tuberculosis and syphilis, are features in the vast majority of patients who seek medical care at the Health Centre. By means of its clinical and health education programme the Centre has been able to make a significant contribution to improved family health. However, the fact that these diseases are so closely related to soil erosion and migrant labour indicates the need for a broader programme of development. A family health and medical care service of the kind described in this progress report should be a feature of this development plan, functioning in close liaison with other services concerned with the general welfare of the community. It would seem that the effective liaison of such a health service with services concerned with agricultural improvements, soil conservation, industry

and education offers an opportunity for improving the health of the people, for increasing the productivity of the area and at the same time conserving the soil for future generations.

SUMMARY

1. A progress report of the Pholela Health Centre has been presented, including a further review of the aims, methods and extent of the service which has been developed.

2. This Health Centre has now been incorporated as the rural ('Native Reserve') project of the Institute of Family and Community Health established by the Union Health Department in December 1945.

3. A team of family doctors and a dentist, functioning together with family nurses and specially trained health educators, provides a combined curative and preventive service within the framework of a neighbourhood family health and medical care programme.

4. The team is assisted by the provision of clinical laboratory side-room and health-recording facilities, for which special personnel have been trained.

5. This type of 'general practice' is discussed in relation to some of the more important needs of the community, and the results achieved during the past 10 years. Among the more important changes noted are:—

- (a) The increasing interest and active co-operation of the people in the project, demonstrated by improvements effected in their own homes.
- (b) The marked reduction in the occurrence of cases of gross nutritional failure, e.g. pellagra and kwashiorkor, associated with changing dietary habits more especially in the feeding of infants.
- (c) The absence of any epidemic of typhoid fever, typhus fever, smallpox and diphtheria, in the area over the last 8 years in spite of repeated outbreaks of these diseases in the surrounding areas and the occasional introduction of single cases of these diseases from town or other affected areas.
- (d) A steady decrease in crude mortality and infant mortality rates, the significance of which is discussed in some detail.

6. Reference is made to some of the more important adverse influences on the health of the community, e.g. soil erosion and migrant labour. The need for a broad development plan and the relationship of the Health Centre service to this plan is mentioned.

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