Health status of hostel dwellers

Part IV. Immunisation of children

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Summary

The immunisation status of children (0 - 5 years) living in the Zones, an urban migrant council-built hostel in Langa, was investigated to examine the effect of migrant labour and related to this, the effect of circular or oscillating migration between Cape Town and the eastern Cape (Transkei/Ciskei) on access to this preventive health care measure. 'Road-to-Health' cards were available for 69,4% of subjects — 78,8% for those born in Cape Town and 50,8% for those born in Transkei. Immunisation of 'Road-to-Health' card holders ranged from 71,8% to 95%. The range dropped to 41 - 79,1% if it was assumed that children without 'Road-to-Health' cards (i.e. without positive proof of immunisation) had not been immunised. Children born in Cape Town have a significantly higher immunisation coverage than children born elsewhere (Transkei accounted for 82,7% of these children). Immunisations administered in Cape Town numbered 80,6%, while 62,6% of subjects were born in Cape Town. In Transkei, payment is required for immunisation, in Cape Town it is free. By implication, cost appeared to be an important reason for low coverage in Transkei. The findings of this study suggested that hostel migrant children who had access to the Cape Town health services through working parents had better immunisation coverage than children at the home-base who seldom or never reached the city.

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Universally, routine immunisation of children against tuberculosis, diphtheria, whooping cough, tetanus, poliomyelitis and measles is an important preventive health care strategy.[1] In southern Africa, recent studies have suggested that immunisation coverage of children tends to be uneven.[2-6] In Cape Town a survey[2,3] at Site C, Khayelitsha, found that immunisation coverage of children born in, and recently arrived from, Transkei was poorer than that for children born in Cape Town. In Transkei immunisation coverage tends to be generally poorer.[7] In the light of these trends, immunisation strategies, with social awareness playing a key role, are being urgently investigated.[2] This study looked at the effects of migrant labour and the related circular migration on immunisation coverage of children 0 - 5 years. The study was carried out among the children of 'the Zones', an urban migrant council-built hostel complex in Langa, outside Cape Town.

The hostels provide temporary accommodation for the migrant worker and his/her dependants in Cape Town for the period of a work contract. Cape Town draws the majority of its migrant labour force from Transkei/Ciskei in the eastern Cape. Oscillation between home and workplace continues.

Despite the lifting of the Pass Laws in 1985 and the suspension of the stringent influx control policy that operated in the western Cape, many controls on permanent urban residence, such as lack of accommodation, remain.

The oscillating lifestyle of the migrant results in uneven access to health care. Cape Town relative to the eastern Cape is well supplied with both curative and preventive services, and health care, geographically, is conveniently available.

The Zones, where this study was carried out, is one of four council-built migrant hostel complexes in Langa. Council-built hostels in Cape Town are also found in Guguletu and Nyanga. A zone is the equivalent of a 'street'. Before 1976 all the accommodation in the 26 zones was available to hostel dwellers. Since then, approximately 16 zones have been appropriated for township residents and converted into family housing. The 10 zones at present available to the hostel dwellers are numbers 1, 2, 17, 18, 19, 20, 23, 24, 25 and 26. Sections of zones 1, 2 and 17 are for township use.

Selecting a geographical area for the study of a mobile population is problematic.[8,9] Geographical definitions do not address the mobility of the population. Findings refer merely to those people in the particular place at the particular time of the survey. Their usefulness in the study of mobile populations is limited, unless the selection of the geographical area is based on previous in-depth investigations.

The reasons for selecting the Zones as the study population were, because in an earlier study,[10-13] the Zones provided the crucial geographical reference area for the interpretation of findings in the hostel migrant situation. All hostel children are at risk for the diseases of poverty in the face of the material and physical impoverishment of the hostel environment. In this situation of generalised impoverishment, the Zones are particularly poor. In the Zones, the overcrowding (average bed occupancy rate 2,7)[14] is highest among the hostels; at 32% the unemployment is highest;[11] and tuberculosis notifications at 2 667,9/100 000 are highest.[11] But hostel children, including those of the Zones, have access to Cape Town through working adults and, related to this, direct access to migrant cash incomes. They are less at risk than the children in the broader migrant population divided across Cape Town and Transkei/Ciskei.

Subjects and methods

This investigation of the immunisation status of the children of the zones was carried out at the same time as an investigation of their nutritional status. Permission to carry out the child health status survey was obtained from the executive of the Western Cape Hostel Dwellers Association (HDA) with whom the research team had worked previously. The aim of the research — to provide data to be used for improved health care for children — was explained to the HDA.

The survey was carried out in March 1990. Timing of surveys in a migrant labour situation is important. Movement patterns vary on the basis of age, gender and time of year. The male workers return to the hostels in early January after the December holidays. The women and children start returning from the middle of February. The weather is suitable in March, before the winter rains. The survey was carried out

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largely out of doors, space in the hostels, especially in 'the Zones', being severely limited.

The study aimed for an 100% sample of the Zone children for clinical reasons. All children apparently in need of health care, including updating of immunisations, were referred to the local health services. These services were approached before the survey for their co-operation. To establish the numbers of children in the Zones, a physical count of those between 0 and 5 years was carried out immediately before the survey (5 - 9 March 1990). The area was mapped and rooms numbered. Children were counted by age, by room number, and by zone. The physical count also provided the opportunity for the research team to introduce themselves to the residents of the Zones and explain the research.

The research team included the hostel nursing sister, a nurse/social anthropologist, and part-time research assistants, 1 male and 1 female. With the exception of the nurse/social anthropologist, all were fluent in English and Xhosa. Pre-fieldwork training was carried out over 3 days before the survey. It covered practise in interviewing, familiarising the research team with 'Road-to-Health' cards and immunisation schedules, and training in measuring of height and weight.

The survey was carried out zone-by-zone. The zones were selected randomly. A conveniently situated 'room' in each section of a zone was requested from the residents and used for the interviews. Interviews were conducted in Xhosa with the aid of a questionnaire. The questionnaire asked for the following information on immunisation status: identification data (such as name, date of birth, sex, address in Cape Town and eastern Cape, mother's name); place and institution of birth; regular clinic attended; whether payment is required for immunisation; and whether the 'Road-to-Health' card was available. Immunisation status was recorded according to the 'Road-to-Health' card. Reasons for missed immunisation were elicited.

The routine schedule on which the immunisation status of the children was calculated was as follows: antituberculosis (BCG) is given post-delivery up to 6 weeks of age; and immunisation against diphtheria (D), whooping cough (W), tetanus (T) and poliomyelitis (P) is given at 3 months (DWTP3), 4½ months (DWTP4), 6 months (DWTP6) and 18 months (DWTP18). Routine immunisation against measles (M) at 9 months has recently been rescheduled to 6 months (for this study immunisation at 6 months or 9 months was taken as first M immunisation received). At 5 years, the pre-school DTP and BCG booster (DTB) are given.

The pre-survey count estimated that 812 children between 0 and 5 years were living in the zones. However, 853 children were surveyed. Immunisation status was calculated on the basis of these children.

The response rate for this survey was 105%. The response rate reflects the fluidity of a migrant population as well as the research design. The physical count before the survey created an awareness of the project. The zone by zone survey was convenient for the mothers. Using a 'room' in a zone created an informal interview situation. The fluidity of this population was evident during the 'follow-up' when the research team returned to interview children who were missed during the initial survey. Mothers and children were continuing to arrive by the day. All additional children who were brought forward by their mothers during the 'follow-up' were interviewed.

Results

Table I shows that 69,4% of subjects had 'Road-to-Health' cards available and that availability of the card decreased with age, especially after 24 months. Table II shows that the percentage of subjects with cards available varied depending on the place of birth, with subjects born in Transkei having poor availability compared with the rest. Of the sample, 62,2% were born in Cape Town (Table II) and there was a disproportionately low number of children in the 6 - 12-month-old category.

TABLE I. CHILDREN OF THE ZONES, BY AGE AND 'ROAD-TO-HEALTH' CARD AVAILABLE

Age (mo.)	No. of children	%	Card	%
0 - 5,99	120	14,07	112	93,33
6 - 11,99	112	13,13	98	87,50
12 - 23,99	171	20,05	145	84,80
24 - 47,99	228	26,73	138	60,53
48 - 71,99	196	22,98	85	43,37
>72	20	2,34	12	60,00
No age given	6	0,70	2	33,33
Total	853	100,00	592	69,40

Immunisation status

For children with 'Road-to-Health' cards immunisation ranged between 71,8% (DWT at 18 months; Table III) and 95% (BCG; Table III). The χ^2 test with Yates' correction was used to compare immunisation proportions of those born in Cape Town with those born elsewhere. Only eligible subjects (i.e. those old enough to qualify for immunisation) were included in the calculations. Children who did not have a 'Road-to-Health' card (261) and those (6) for whom the age was unknown were excluded. With the exception of M immunisation and DT booster children born in Cape Town had a significantly higher rate of immunisation (Table IV).

TABLE II. PROFILE OF THE SAMPLE BY PLACE OF BIRTH, AND 'ROAD-TO-HEALTH' CARD AVAILABLE

Birth place	Card available	%	No card available	%	Total	%
Cape Town	421	78,84	113	21,16	534	62,60
Transkei	134	50,76	130	49,24	264	30,95
Ciskei	20	83,33	4	16,67	24	2,81
Other	16	66,76	8	33,33	24	2,81
Port Elizabeth	0	0	4	100,00	4	0,47
Unknown	1	33,33	2	66,67	3	0,35
Total	592	69,40	261	30,60	853	99,99

TABLE III. IMMUNISATION STATUS BY PLACE OF BIRTH FOR 'ROAD-TO-HEALTH' CARD HOLDERS

			CT born		Born elsewhere				
Vaccination	No. in sample	% vaccinated	No.	% vaccinated	No.	% vaccinated	χ^2	df	*P* value
BCG	**590**	**95,0**	**420**	**99,3**	**170**	**84,7**	**51,97**	**1**	**<0,001**
DWTP3	**521**	**95,4**	**353**	**97,2**	**168**	**91,7**	**6,64**	**1**	**<0,005**
DWTP4	**499**	**89,2**	**335**	**92,8**	**164**	**81,7**	**13,00**	**1**	**<0,001**
DWTP6	**460**	**85,9**	**306**	**89,5**	**154**	**78,6**	**9,28**	**1**	**<0,005**
DWTP18	**294**	**71,8**	**185**	**78,9**	**109**	**59,6**	**11,66**	**1**	**<0,001**
DTB	**36**	**88,9**	**19**	**84,2**	**17**	**94,1**	**0,17**	**1**	**NS**
M	**450**	**92,4**	**296**	**93,9**	**154**	**89,6**	**2,11**	**1**	**NS**

DTB = preschool booster at 5 years; NS = not statistically significant.

TABLE IV. POSITIVE PROOF OF IMMUNISATION BY PLACE OF BIRTH — 'ROAD-TO-HEALTH' CARD HOLDERS AND NON-HOLDERS

			CT born		Born elsewhere	
Vaccination	No. in sample	% vaccinated	No.	% vaccinated	No.	% vaccinated
BCG	**846**	**66,3**	**528**	**79,0**	**315**	**45,4**
DWTP3	**776**	**64,1**	**460**	**74,6**	**313**	**48,9**
DWTP4	**752**	**59,2**	**441**	**70,5**	**308**	**43,2**
DWTP6	**706**	**56,0**	**406**	**67,5**	**297**	**40,4**
DWTP18	**515**	**41,0**	**270**	**54,1**	**243**	**26,8**
DTB	**41**	**79,1**	**21**	**76,2**	**20**	**80,0**
M	**688**	**60,5**	**390**	**71,3**	**295**	**46,4**

For 3 children place of birth was unknown but they were included to calculate immunisation for the whole sample but 6 children were excluded because age was unknown.

Positive proof of immunisation ranged between 41,0% (DWT at 18 months) and 79,1% (DT booster). For children born in Cape Town immunisation ranged between 54,1% (DWT at 18 months) and 79% (BCG). For those born elsewhere immunisation was considerably lower (range 26,8 (DWT at 18 months) — 48,9% (DWT at 3 months) — 80% (DT booster)).

Place of immunisation

Cape Town clinics, particularly those in Langa, administered 80,6% of the immunisations for these children (78,6% of BCG; 79,6% of DWT and P at 3 months; 80,1% of DWT and P at 4½ months; 80,6% of DWT and P at 6 months; 81,2% of DWT and P at 18 months; 84,4% of DWT pre-school booster; and 84,9% of M). Of the immunisations given elsewhere (19,4%), 78,6% were received in Transkei.

Reasons for missed immunisation

The reasons why immunisations were missed were elicited. 'New cards' accounted for 27,9% of immunisations not recorded. New 'Road-to-Health' cards are issued to replace the original, when it is not available. Immunisations, which the child may have received up to the time of the issue, are not recorded. New cards do not necessarily mean that the child has not been immunised. For instance, for children born in Cape Town, 'new cards' accounted for all cases of BCG not recorded. While the BCG scar may be positive clinical proof of BCG immunisation, it was the policy of this project to use 'Road-to-Health' card records only. However, since these children were born at a maternity obstetric unit or hospital it is probable that BCG was given. Thus BCG coverage for children born in Cape Town would be 100%. In Transkei home deliveries account for 72,72% of missed BCG.

In 19,23% of cases the reason was 'delayed schedule'. An immunisation schedule may be delayed because the child was delivered at home or immunisations were 'out of stock' (vaccine out of stock at Transkei clinics accounted for 3,85% of missed vaccine) or failure of the mobile clinic service to arrive on the appointed day. Delayed schedule, like 'new cards', did not mean that the immunisations were not being received. The children who are out of the routine schedule have 'return dates'.

In 14,42% of cases mothers claimed that the immunisation was 'just overdue' but not missed. These mothers were aware of their return dates. They appeared to plan their visits to Cape Town to coincide with clinic visits. 'Social reasons' pertain to Transkei and account for 13,46% of missed immunisations. Examples of social reasons include the cost of transport and cost of clinic visit; distance of the clinic from place of residence and sickness; and mother was in town and child-minder did not know to take the child. The 'don't know' category comprised 12,5% of reasons. These included not knowing because of the repondent's relationship to the child; mothers not being informed of the return date; or not being informed about immunisation. In 8,65% of cases the child was ill at the time and was not taken for immunisation.

Discussion

Despite the oscillating lifestyle of this migrant labour situation, the majority of the children studied were born in Cape Town.[2,3] Mothers preferred to have their children delivered in Cape

Town, where services are considered accessible and good. In Cape Town convenient access to a hospital or obstetric unit ensures almost 100% neonatal immunisation for these hostel children born in this city.

'Road-to-Health' cards were available for 69,4% of the sample, which is remarkably similar to findings (69,4%) for a recent survey in Site C.[3] The percentage of children without cards increased at 2 years of age. Since the majority of early immunisations (up to 18 months) are complete at this age, there is less need to bring the cards on visits to Cape Town.

A considerable number of the children born in Transkei did not have 'Road-to-Health' cards. This could be partly explained by the greater number of home deliveries in Transkei, where cards are sometimes out of stock. But most importantly, mothers report that they are required to 'pay' for the cards in Transkei. This is not the case elsewhere, even in Ciskei. And for children born in Ciskei, although numbers were small, 83,3% had cards.

Immunisation coverage for the children with cards compares favourably with recent surveys.[3-5] Immunisation coverage was significantly higher for children born in Cape Town,[2,3] with the exception of M and the pre-school booster. No significant difference in M coverage by place of birth may be a reflection of the recent M immunisation campaign in Cape Town,[2] coupled with access to Cape Town through working parents — 84,9% of M immunisations are administered in Cape Town. Access to the city may also explain the pre-school booster findings — 84,4% of pre-school boosters are administered in Cape Town.

Immunisation coverage is usually estimated using 'Road-to-Health' cards.[2-5] However, if it is assumed that the children without cards were not immunised then the rate of coverage drops, particularly for the children born out of Cape Town.

Cost may be an important reason for missed immunisation. While immunisation is offered free-of-charge in Cape Town and elsewhere, payment is required in Transkei, where immunisation coverage is poor. There appears to be no definite policy on payment. Payments vary from R4 per year to R2 for a card to R2 a clinic visit to 50c per visit. That mothers who have access to Cape Town will use the free services was evident in the number of immunisations administered here. The percentage of immunisations done in Cape Town (80,6%) was higher than the percentage of children born here (62,6%). The percentage of immunisation done in Transkei (15,3%) was lower than the percentage of children born there (30,9%).

Additional reasons include the fact that services are not always conveniently available in the eastern Cape region. Transport is costly, mobile clinic services are unreliable and vaccine and other supplies, such as cards, are reported to be out of stock.

All these factors explain why Cape Town-born children, who have access to this city's health care services, have a significantly higher immunisation cover than those born elsewhere. They suggest strategies that may be employed to improve immunisation coverage, especially in Transkei where children who seldom, if ever, visit Cape Town (and were therefore not included in the study) have an even lower immunisation rate than hostel migrant children born outside Cape Town.

The children who did not have access to the city were severely disadvantaged with regard to immunisation as a basic preventive health care measure. Findings on 'Road-to-Health' card holders show that free, reliable and geographically accessible services and a clear understanding of the immunisation schedule make a difference to immunisation coverage.

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