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The quality of child health services offered at primary health care clinics in Johannesburg

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Appendix H

Quality of care offered to children attending primary health care clinics in Johannesburg, South Africa

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Appendix H

Abstract (250 words)

Objective:

To assess the quality of child health services provided at primary health care (PHC) facilities in Johannesburg.

Design:

Cross-sectional, observational study conducted over a two-month period at 16 PHC clinics. A researcher-developed structured checklist, based on national guidelines and protocols, was utilised.

Results:

A total of 141 sick child and 149 well child visits were observed. Caregivers experienced long waiting times (mean [SD] of 135±72 minutes). Health professionals were experienced and well-trained. Despite this, many routine examination procedures were poorly performed, with an adequate diagnosis established in only 77% of consultations. Triage and attention to danger signs was poor. An antibiotic was prescribed for almost half (46%) of the children - its use was unwarranted in one-thirds of instances. Health promotion activities (such as growth monitoring) were consistently ignored during sick child visits. The mother or child's HIV status was seldom considered or investigated. Growth monitoring and nutritional counselling at well child visits was generally inadequate with not one of 11 children qualifying for food supplementation receiving it. The majority of facilities were adequately equipped and well-stocked with drugs.

Conclusion:

The poor quality of PHC offered to children in the richest city in Africa is a sad indictment of the inability of health service providers in the city to meaningfully

address children's health needs. Nothing short of a deliberate and radical restructuring in the way that health care is organised for children, with clearly defined and monitored standard clinical practice routines, is likely to significantly change the status quo.

Appendix H

Introduction:

Both primary health care (PHC) and the health of young children are popular focus areas for international organisations, heads of states, politicians, policy-makers and health professionals alike. Many boisterously extol the virtues of spotlighting attention on these two topics in any national or health sector priority-setting exercise and they are the subject of innumerable policy statements and plans. Likewise, the South African national health department has regularly espoused its intention to prioritise these two areas, and most provincial and local authorities have followed suit. Indeed free primary health for young children was one of the first decrees of Nelson Mandela, on ascending to the presidency in 1994 and free primary care services was extended to the whole population by 1996.

While the national health department has undoubtedly prioritised primary health care, particular in its fiscal decisions, the evidence that this strategy has borne success is limited. Most gains lie within the infrastructural domain such as the number of new clinics built or upgraded (approximately 3000 since 1994),[1] rather than in improvements in the quality of care or, more importantly, reduced morbidity and mortality. An important global intervention to address young child mortality, the Integrated Management of Childhood Illness (IMCI) strategy was introduced in 1998 in South Africa. Again, while resources have been directed at implementing the intervention, with over 7600 health professionals currently trained to deliver the strategy (Personal communication: Clara Mathosa, IMCI Coordinator, National Department of Health, December 2006), the evidence that this has translated to greatly improved child health care delivery around the country is sadly lacking.

Appendix H

Johannesburg is the wealthiest city in Africa and is also advantaged in its supply of health professionals compared to the rest of the country and continent. The care provided to children in this city would be expected to be superior and could serve as a useful indicator of the kind of care that could potentially be offered to children living in less advantaged settings throughout South and southern Africa. This study was undertaken to describe the quality of health care offered to children attending primary health care clinics in Johannesburg, South Africa.

Appendix H

Methods

This was a cross-sectional, observational study conducted over a two-month period (October-November 2005) at 16 primary health care settings in the Johannesburg metropolitan area - four community health centres (CHC) and 12 ordinary PHC clinics.

The Johannesburg metropolitan area is divided into 11 regions, served by 109 fixed clinics; 75 belong to the local authority (Johannesburg Metropolitan health department) and 23 to the provincial authority (Gauteng Provincial health department); while two are run by non-governmental organisations (NGOs). Eleven of the clinics are CHCs - nine are shared by the provincial and local authority and two are run by NGOs. The two health authorities provide similar PHC services to the same target population but their responsibility and accountability mechanisms differ. Child PHC services offered in the city are therefore fragmented.

The study population consisted of all public PHC clinics within the Johannesburg metropolitan area that offered child health services. The study sample consisted of four CHCs and 12 ordinary PHC clinics. The sample therefore included 16% of the study population. While all CHCs were eligible for study inclusion, only 88 ordinary PHC clinics that managed 40 or more patients per day qualified for the study (to ensure adequate access to participants). Ordinary PHC clinics were first stratified into local and provincial authority clinics. Thereafter, nine local authority and three provincial clinics were randomly selected (clinics coded and numbers pulled from a box), to approximately represent their relative service proportions.

Appendix H

A researcher-developed structured checklist, based mainly on national guidelines and protocols (e.g. Essential Drug List, National standard guidelines for primary care, IMCI guidelines) was utilised. It included observations of clinical encounters (sick and well child visits); assessment of clinic facilities, infrastructure, supplies and equipment (related to child services); a review of personnel, in-service activities and training, and services provided by clinics; and a review of clinic registers and records. A single clinic evaluation was completed in 1-2 days, depending on how busy the clinic was.

Only clinical encounters involving children younger than 13 years were observed. Encounters were selected on a convenience basis. The primary researcher (KT), a paediatrician, joined the health professional being observed and selected the session for inclusion as the child/caregiver entered the consultation room. Health professionals were advised as to the broad aim of the study, but not the specific objectives. Consultations were observed in the mornings - the busiest period of the day at clinics. A minimum of two and a maximum of 20 well baby visits were observed at any individual clinic. A minimum of five and maximum of 16 was set for sick child consultations at any one clinic. The number of health professionals assessed at any individual clinic was pre-set to a minimum of two and a maximum of five.

Ethical approval was obtained from the Committee for Research on Human Subjects (Medical) at the University of Witwatersrand as well as from the local and provincial health authorities. Clinics were informed of the visit 2-3 days prior to the visit. Consent was obtained from facility managers and from the individual health workers

that were being observed. Caregivers verbally consented to the consultation to be observed.

Data were entered onto Microsoft Excel spreadsheets (Microsoft Corporation, Seattle), and then imported into Statistica statistical software version 6.0 (Statsoft, USA). Parametric, continuous variables are described using means and standard deviations (SD). Standard statistical tests (such as chi-square and t-tests) were used when appropriate. A p value of <0.05 was considered to be statistically significant.

Appendix H

Results

There were a mean of 4.2 professional nurses at each ordinary PHC, while CHCs had a mean of 44.5 professional nurses per clinic. Half of the clinics had at least one health professional attending solely to children. All the CHCs and a third of the ordinary PHCs had the service of a doctor (full- or part-time). Seventy-five percent of clinics had an IMCI trained individual; 13% of all professional nurses in the service were IMCI trained. Ordinary PHCs attended to a mean of 40 and CHCs to a mean of 76 children per day.

Sick child care visits

Observation of sick child clinical encounters occurred at 14 of the 16 clinics, as two local health authority clinics only provided well child services. A total of 141 sick child encounters were observed. This involved 23 staff all of whom were professional nurses with a mean (SD) of 17.5±10.1 years of experience since qualification. The majority (83%) had undergone primary care training while 13 (57%) were IMCI trained. Eight of the 12 ordinary PHCs and all four of the CHCs had IMCI trained staff. Most (82%) patients were younger than 5 years, the cut-off age for using the IMCI approach. Three-quarters (76%) were brought to the clinic by their mother.

Caregivers waited between 6 to 383 minutes before being seen, with a mean (SD) waiting time of 135±72 minutes (two and one-quarter hours) and a median of 124 minutes. At one clinic, caregivers waited nearly the whole day, only to be turned away at 16h00 without being seen by any health worker. There were three basic

Appendix H

consultation methods used by nurses: a “traditional” primary health care approach (19 nurses, 111 consultations), the IMCI approach (3 nurses, 22 consultation), and a traditional combined with IMCI approach (1 nurse, 8 consultations). Only three clinics had a nurse practicing IMCI despite 12 clinics having trained staff. The mean (SD) duration of a consultation was 11.2±6.1 minutes (median 9 minutes; range 2-38 minutes). There was no statistical difference in the length of traditional and IMCI consultations (10.1±4.5 vs. 10.8±5.8 minutes, p=0.55).

The presence of danger signs, as defined by IMCI, was sought in less than a quarter of encounters with no difference between IMCI and non-IMCI practitioners. Although history taking related to the main presenting symptom(s) was satisfactory in most (85%) instances, it was less so for related symptoms and for past medical history (75% and 93% were classified as ‘poor’, respectively). Immunisation status was checked in 46% of children. Only 80% of children were weighed. The Road to Health Card was requested in just two-thirds (67%) of young child encounters, with few (28%) weighed children having their weights plotted on the card.

Only 40% of children were adequately undressed. Many aspects of examination were poorly, or not, performed when warranted, such as the assessment of pallor, respiratory rate, bulging fontanelle and neck stiffness (Table 1). The diagnosis of HIV was infrequently considered and when signs were sought, the clinical examination was usually inadequate. The final diagnosis was considered appropriate in three-quarter (77%) of all encounters, less than adequate in 16% and incorrect in 7% of instances.

Appendix H

Almost one-half of the children (46%) received antibiotics, although only two-thirds of these prescriptions were deemed necessary by the researcher. While both the dosage and frequency of antibiotic administration were adequately explained in the 97% of consultations, in less than half (48%) of encounters was the duration of antibiotic use communicated to the caregiver. No medication was prescribed in only 10% of encounters.

Referral was regarded as being necessary in 13 (9%) encounters; 12 children (92%) were referred. Three children required immediate intravenous line insertion; however, this procedure was not performed in any of the three instances. Oxygen was offered to one of two children requiring it, while only one of four children requiring nebulisation received it. Of the four children qualifying for food supplementation based on their recorded growth patterns, only one received it.

Counselling on the current condition was satisfactorily provided in only a third (31%) of encounters. Counselling on prevention (20%), home management (28%), follow-up plans (22%) and danger signs to suggest immediate return (2%) were all poorly performed. The child's growth was discussed with the caretaker in few (12%) consultations. Nutritional advice was seldom offered, even for children who were failing to thrive. Maternal health issues were discussed and addressed in 10% of encounters.

The HIV positive status of the infant or the mother was established in seven (5%) consultations - the results appearing in the Road to health card in four instances. In the majority (89%) of encounters, caregivers were not asked about their HIV status.

Appendix H

Voluntary HIV testing and counselling (VCT) was offered to just one caregiver. Two of seven children definitely requiring cotrimoxazole prophylaxis were not prescribed the antibiotic. The need for antiretroviral therapy was not considered in any child.

Well child visits

Fourteen of the sixteen clinics were involved in the observation of well child clinical encounters as two provincial health authority clinics only provided sick child services. A total of 149 well baby encounters were observed. The median age of children was 7 months (range 1-60 months). Sixteen professional nurses were assessed, with a mean (SD) of 16.9±9.1 years of experience since qualification.

Mean (SD) waiting times were 118±81 minutes (range: 5-363 minutes). The mean duration of a consultation was 8.2±4.8 minutes (median: 7 minutes, range: 2-30 minutes). Most (88%) children were brought by their mother. The Road to health cards was requested at every consultation; 99% of children were weighed. Most (88%) weights were correctly plotted and 94% were correctly interpreted. The child's growth was discussed with the caregiver in 29% of instances. Fourteen children with growth failure required nutritional counselling; appropriate advice was offered to five (36%) caregivers. Eleven children qualified for food supplementation, but none received any. None of the five children identified by the researcher as requiring a referral to a social worker for a grant were offered this advice. A single child requiring referral to hospital was sent there.

Appendix H

Immunisations were offered to all eligible recipients, vitamin A to 64% and deworming to 4% of eligible children. Only 14% of vaccine recipients received advice about possible adverse effects. Six of the nine identified and eligible HIV positive or exposed children (67%) received cotrimoxazole. Age appropriate milestones were asked in a quarter (26%) of encounters, mainly guided by the clinic 'blue card', and any form of developmental assessment completed in 14% of consultations. Vision and hearing screening were rarely performed.

Clinic services

Twelve clinics (75%) operated from Monday to Friday, while two CHCs and one ordinary PHC operated on a Saturday. One clinic only functioned on two days per week. The maternal and child related services offered by clinics is shown in table 2. The gaping lack of chronic care services (such as for asthma or mental health) is obvious. While the cleanliness of the clinic grounds, rooms and linen was not a concern, the state of public toilets was less than satisfactory in 80% of clinics. All clinics had tap water and a telephone. One clinic did not have electricity for the duration of the researcher's visit, although it had a connection. Half of the clinics had a working computer available

The availability of essential paediatric equipment was as follows: nebulisers (88%), paediatric resuscitation masks (82%), dextrostix (81%) and Laerdel resuscitation bags (69%). Peak flow meters were available in less than two-thirds of clinics, while 19% had phototherapy units. The majority of clinics had syringes and needles,

although only one clinic had paediatric-sized nasogastric tubes (for rehydration). Seven (44%) of clinics had an oral rehydration therapy corner; 10 (63%) had both a litre container and cups available for mixing oral rehydration solution (ORS) and 13 (82%) had ORS sachets. All but one of the 14 clinics had a working refrigerator, although vaccines were appropriately stored in only 79% of clinics. While drug availability was generally very good, none of the clinics had some EDL listed drugs such as cloxacillin, nalidixic acid and Vitamin A 50 000 IU; and ceftriaxone and purified protein derivative (PPD) were only available at 44% and 25% of clinics respectively. The availability of training manuals and guidelines is shown in table 3.

One-half of the clinics were able to transport extremely sick children to the referral centre by ambulance. Communication with the referral centre was almost exclusively through referral letters, except for one clinic which also routinely telephoned the centre.

Appendix H

Discussion

The quality of child heath services for sick children offered at clinics in Johannesburg, South Africa is disappointingly poor. The main areas of concern are the long waiting hours; poorly skilled staff despite years of clinical experience and good exposure to training (e.g. unfocussed consultations; poor history taking, examination and communication skills, limited identification of children with HIV; over-prescription of antibiotics); poor triage and management of emergencies; and limited practice of child health promotion activities. The separation of preventive and curative care still continues, with negative health consequences.

It is clearly negligent for staff not to check the respiratory rate in children with respiratory symptoms, to ignore assessment of skin turgor in children with diarrhoea or vomiting and to fail to assess for a bulging fontanelle or neck stiffness in a child with suspected meningitis. Establishing whether this situation is the result of a lack of knowledge or understanding, excessive workloads, or if this simply reflects a "can't be bothered" attitude was outside the scope of this study. It is disconcerting that less than a third of IMCI trained nurses were practicing this method of consultation.

There was inadequate attention paid to routine health promotion and prevention activities such as growth monitoring and promotion, immunisation, vitamin A supplementation and developmental assessment. Food supplementation was unavailable for children who were failing to thrive, despite this being a key feature of the National Integrated Nutrition Programme. While the Johannesburg metropolitan

health service has supervisors regularly visiting all clinics in the area, it is obvious that they are monitoring a limited number of activities, are not focussing on quality of care issues and are therefore failing to adequately influence child health service delivery.

Issues related to structure should not be entirely ignored as this is an important aspect of quality of care. In this study, basic amenities were available but emergency equipment such as resuscitation apparatus were lacking at some clinics. Not all clinics had oral rehydration therapy corners and some less frequently prescribed EDL drugs were unavailable. Guidelines were variably available. Again, all of this may reflect inattention by clinic managers to fundamental responsibilities or, more likely, a lack of clear direction from their service managers about how to address these recognised deficiencies.

While damning, the Johannesburg health service may take solace from the fact that the situation reported here is not too dissimilar to that which exists in most local and many poorly resourced settings globally. Long waiting times at PHC services is a worldwide problem, with waiting times between 2 and 5 hours for public facilities being described in El Salvador, for example.[2] Danger signs are poorly assessed during sick child encounters even if staff are IMCI trained.[3;4] Over-prescription and abuse of antibiotics in the treatment of acute childhood illnesses is a global issue, leading to widespread antibiotic resistance.[5] For instance, at PHC clinics in Botswana; antibiotics were inappropriately prescribed for 79% of non-pneumonia cases,[5] while in a district in Bangladesh, over half of the prescriptions were unnecessary.[6] In Cape Town, South Africa; counselling given to caregivers remained poor even after IMCI

training.[3] Similarly, IMCI training of staff did not change caregivers understanding of the medication prescribed or when to return to the health facility.[3]

The study has various limitations. It would have helped to increase the number of clinics and include smaller clinics with less than 40 patients per day to improve generalisability. Observed performance may not be routine performance as health workers may have modified their behaviour while being observed; although it is likely that this was a positive bias (i.e. health worker's real performance may be even worse than reported here). Similarly, informing clinics about the impending visit may have afforded them the opportunity to update records, improve stocks and supplies and ensure that equipment was functional. The researcher, being a paediatrician, may have set unrealistically high standards when evaluating the observed clinical assessments and treatment. However, this was minimised by using standard South African guidelines as the evaluation benchmark. Finally, as consultations were conducted in as many as five different South African languages, the interpretation by the researcher of the quality of counselling and advice may have been suboptimal as she was comfortable but not fluent in all these languages.

How does the health service best respond to the study findings? A focused attention on establishing norms and standards for the delivery of child health care services in the City of Johannesburg is required. The impression obtained from this study is of a range of activities occurring at clinics that are dependent on the idiosyncrasies of individual clinics (e.g. staffing, enthusiasm, management style) rather than on a well-structured health service. As a minimum, each child health worker needs to have clear expectations of the required standard of any individual clinical

consultation. This will also enable greater accountability for the (lack of) delivery of adequate services to children. A consensus on the structure and mechanisms whereby child care will be provided by the City needs to be established to address issues highlighted in Box 1.

More effective supervision and routine, regular evaluation of child health services are needed. We would recommend the awarding of a “child friendly service” score to every clinic on a 6-monthly basis, based on an easy-to-perform scoring system (that could easily be developed). Clinics scoring poorly would be offered incentives to improve, while those scoring highly could be rewarded.

In conclusion, it is clear that many children attending PHC clinic in Johannesburg are not receiving the health care they require and deserve. This appears to be more the result of the lack of quality control mechanisms and the limited abilities and commitment of health professionals rather than any inherent funding, training or infrastructural limitations. Nothing short of a deliberate and radical overhaul in the way that health care is organised for children in the city, with clearly defined and monitored standard clinical practice routines, is likely to significantly change the status quo.

Appendix H

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Authors have no conflict of interests to declare.

Appendix H

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Appendix H

Tables and Figures

Table 1. Adequacy of clinical examination of sick children and associated actions (N=141)

Sign	Assessment warranted No. (%)	Satisfactory No. (%)	Less than adequate No. (%)	Poor or not done No. (%)
Clinical Examination				
Temperature	141	118 (84)	2 (2)	21 (15)
Pallor	141	13 (9)	1 (1)	127 (90)
Throat examination	122	75 (61)	22 (18)	25 (21)
Ear examination	113	60 (53)	2 (2)	51 (45)
Respiratory rate	107	8 (7)	20 (19)	79 (74)
Chest auscultation	105	56 (53)	16 (15)	33 (31)
Sunken eyes	28	24 (86)	0 (0)	4 (14)
Skin turgor	27	8 (30)	0 (0)	19 (70)
Abdominal examination	9	2 (22)	4 (44)	3 (33)
Perineal examination	7	5 (71)	0 (0)	2 (29)
Bulging fontanelle	6	0 (0)	0 (0)	6 (100)
Neck stiffness <18 months old	6	2 (33)	0 (0)	4 (66)
Neck stiffness >18 months old	2	1 (50)	0 (0)	1 (50)
Associated activities				
Examination of urine (dipstix)	3	1 (33)	0 (0)	2 (66)
Oral rehydration solution administration	22	5 (23)	1 (4)	16 (73)

Appendix H

Table 2. Maternal and child services offered at PHC clinics (n=16)

Service provided	**Number (%) (n = 16)**
HIV Counselling	16 (100)
TB DOTS	15 (94)
Curative care	14 (88)
Immunisation	14 (88)
Community support groups	13 (81)
Family planning	13 (81)
Post-natal care	7 (44)
AIDS home-based care	6 (38)
Rehabilitation	5 (31)
Antenatal care	4 (25)
Midwife obstetric unit	3 (19)
Chronic care (asthma)	1 (6)
Mental health	1 (6)

DOTS= Directly observed therapy - short course

Appendix H

Table 3. Availability and accessibility of protocols and guidelines at clinics (n=16)

Guideline	**Available at clinic** **No. (%)**	**Accessible in consulting rooms** **No. (%)**
National tuberculosis control programme guidelines	15 (94)	15 (94)
SB – Primary clinical care manual	13 (81)	13 (81)
Standard treatment guidelines and EDL lists	13 (81)	13 (81)
Handouts for Vitamin A training and protocol	11 (69)	11 (69)
IMCI chart booklets	10 (63)	10 (63)
Management of HIV infection in children: guidelines for clinics and hospitals	9 (56)	8 (50)
National antiretroviral HIV guidelines	2 (13)	2 (13)
Policy guidelines for growth monitoring and promotion	2 (13)	0 (0)

Appendix H

Box 1. Key questions related to child health care delivery requiring policy consensus by the City of Johannesburg.

- Should children have separate queues from adults?
- Should a dedicated staff member (with basic paediatric skills) care for children whenever possible (at least in larger clinics and CHCs)?
- What are the basic paediatric skills required by health professionals caring for children at the PHC level?
- Is the IMCI approach the preferred strategy for clinical consultations?
- Should promotive and sick care services be combined?
- How can standardised recording of clinical encounters be facilitated? (e.g. by use of the Road to Health Card, standardised consultation sheets [e.g. IMCI sheet], out-patient cards)
- Can referral mechanisms be streamlined and standardised? (e.g. communication links, referral forms, transport mechanisms)
- What are standard, minimum equipment needs at every child health centre, including emergency equipment?