

ASSESSMENT OF QUALITY OF CARE OF SICK UNDER-FIVE CHILDREN IN REFERRAL HOSPITALS IN ETHIOPIA

Sirak Hailu, MD¹, Solomon Emyu, MD/MPH², Fisseha Mamo, MPH³, Tolawaq Kejela MD⁴

ABSTRACT

Background: About 10-20% of sick children presenting to a primary care facility require referral to hospital for inpatient care. Improvement of the quality of pediatric referral care has a major contribution to the child survival efforts by ensuring the continuum of care and averting mortality.

Objective: To assess the quality of care for children in selected referral hospitals based on the minimum standards derived from the "WHO Pocket book of Hospital Care for Children, 2005" and thereby to initiate pediatric referral care quality improvement process in the country.

Methods: A qualitative assessment of pediatric referral care was conducted in 8 hospitals selected by convenient sampling, January – July 2008. A team composed of experienced pediatricians and health officer used an adapted WHO hospital assessment tool to assess the quality of triage, emergency care and case management practices & hospital infrastructure and support services.

Results: None of these hospitals were practicing the standard triaging process by assessing children immediately on arrival for emergency and priority signs. All of them were not appropriately organized and fully equipped to handle pediatric emergencies effectively. Overall, the case management of common neonatal and childhood illnesses was not optimal. Generally, there was shortage of some essential drugs and lack of materials such as nasal prongs, infant and child size bag & masks, nebulizers, heaters and oxygen concentrators. Hygienic facilities were below the expected standard. Staff were not trained in ETAT (Emergency Triage Assessment and Treatment) and there were no protocols for pediatric referral care. There was no clearly designated high dependency area where very sick children receive highest attention and no special rooms for providing appropriate neonatal care in majority of the hospitals. The overall case fatality rate was 11% (10-16%) but first 24 hours mortality could not be determined due to problems with the recording system.

Conclusions: The quality of pediatric referral care needs serious attention and coordinated efforts utilizing the opportunity of the national hospital management initiative and the BPR (Business Process Re-engineering) to institutionalize ETAT and standards of hospital care for children. This has to be complemented with availing of appropriate job aids, essential supplies and equipments, and improvement of health worker skills through training, clinical mentoring and regular supportive supervision.

¹ WHO/Ethiopia, ² WHO/Ethiopia, ³ FMOH/Addis Ababa, ⁴ Medical Faculty/AAU,

INTRODUCTION

The Ethiopian health service delivery system is organized as a four-tier system, characterized by a Primary Health Care Unit (PHCU) – 1st tier, then the district hospital – 2nd tier, zonal hospital – 3rd tier and specialized hospital- 4th tier. Services given at each level of these tiers have a crucial role in averting the morbidity and mortality burden of children and contributing a lot to the achievement of healthy society. In relation to this, Ethiopia has developed a comprehensive national child survival strategy, which is part of the national HSDP-3, and is implementing the IMNCI approach at a wide scale at health facility and community levels. Currently the national IMNCI coverage of the country at Health Center levels is about 60%. These interventions at a community and frontline health facilities (PHCU) levels are very important to address the majority of the health problems of children and also to make the services close and easily available to the society.

The IMCI/IMNCI strategy seeks to strengthen prevention and care for children through appropriate community and household care, primary care, referral

Early assessment and prioritization for management of sick children attending a health service are critical to achieving good health outcomes. Experience of Malawi in implementing ETAT showed a reduction of total inpatient mortality from 10-18% (median 12.4%) to 6-8% (median 5.7%) over a 2 year period (2001-

OBJECTIVES & METHODOLOGY

The objective of this study was to assess the quality of care for children in selected referral hospitals based on the minimum standards derived from the “WHO Pocket book of Hospital Care for Children, 2005” and to initiate pediatric referral care quality improvement process by identifying key areas that need immediate and long term action.

Eight hospitals (Adama, Ambo, Bishoftu, Debre Birhan, Dessie, Yekatit 12, Yirgalem and Zewditu hospitals); one district, six zonal and one regional referral hospital, were included in the assessment using convenient sampling. The main criterion used for including a hospital was having functional pediatrics outpatient and inpatient services. WHO’s generic assessment tool, “**Assessment of the quality of care for children in hospitals**”, was

practices, and care at the first-level hospital. On the basis of current guidelines, it has been estimated that 10% to 20% of sick children who present for primary care (i.e., the most severely ill) require referral to a first referral or district hospital. The quality of care provided in these hospitals is likely therefore to have a major impact on the health and lives of millions of children each year.

It is estimated that 40-60% of deaths at the referral hospitals occurs in the first 24 hours of admission. Many of these deaths could be prevented if very sick children are identified soon after their arrival in the health facility, and treatment is started immediately. The Emergency Triage Assessment and Treatment (ETAT) tool is designed to enable health workers triage all sick children when they arrive at a health facility, into those with emergency signs, with priority signs, or non-urgent cases. It also enable them to provide emergency treatment for life-threatening conditions. The standards of care of the ETAT guidelines correspond to the minimum standards that should be maintained even in small hospitals and where resources are limited.

2003) and deaths within 24 hours of admission from 36% to 12.5%.

This survey tries to assess the current situation of the quality of pediatric care in selected government hospitals.

adapted and used for data collection. Adaptation of the tool was done by practicing pediatricians, general practitioners and nurses and it was pretested during a five days national orientation workshop on pediatric referral care.

The assessment tool had 12 major sections: General hospital information, Hospital layout and structure, Hospital support systems (drugs, equipment and laboratory), Emergency care, Pediatric wards (layout, facilities, staff, supplies & equipments), Case management in the ward (Cough or difficult breathing, Diarrhoea, Fever conditions, Malnutrition, HIV/AIDS), Supportive care & nutrition, Monitoring of patients, Neonatal Care (layout and staff, Routine neonatal care and Sick newborn care), Paediatric surgery and rehabilitation, Hospital administration and Access to hospital.

The adapted assessment tool was used to collect information from all hospitals, January to July 2008. Data was collected by two teams each composed of a pediatrician and a health officer who were trained and also involved in the adaptation of the data collection tool. Four different methods of data collection were used namely; hospital visit, case management observations, records review and interviews of caretakers and providers which took two full days for assessing each hospital. **Hospital visit:** Direct observation of the hospital layout and structure, OPD attendance, admission rates, availability of essential drugs, availability of diagnostic and therapeutic equipments were made. Areas of doubt were clarified

Each major assessment section consisted of a number of standards and each standard was qualified by several detailed criteria. Thus, each of the 12 sections of the assessment tool was scored based on the standards and the criteria to meet these standards. The standards are the minimum requirements for good quality of care for children as defined by the WHO "Pocket book of Hospital Care for Children, 2005". The detailed criteria of each standard were rated/scored based on the need for improvement as "good" or "need to be improved", where "Good" means the criteria is similar to the Finally, a total summary evaluation score for complete assessment of all sections was marked in the summary evaluation sheet. The total summary score can assist in monitoring hospital improvements over time and to make also inter-hospital comparisons to some extent.

RESULTS

General hospital information

All surveyed hospitals had isolated pediatrics OPD and ward except Bishoftu hospital whose pediatric inpatient room was part of the adult medical ward. Separate pediatric waiting area and archive rooms were found in only 3 and 2 hospitals respectively. Six of the 8 hospitals had separate room for admitting paediatric infectious cases while only 3 had separate

Electricity and running water were available in all hospitals even though most of the hand washing and toilet facilities were non-functional in half of the

by interviews. **Case observations:** The care for admitted children to the hospital was observed without interference from the assessors. This is complemented by discussion of the cases with staff, review of the case records and monitoring charts, and interviewing the caretakers. **Records review:** Assessors obtain information on the quality of care for admitted and recently discharged patients by checking records. If there are not sufficient patients for direct case observations, assessors reviewed at least 3-5 records for each clinical problem. **Interviews:** Assessors conducted interviews with hospital staff and caretakers to gain some idea of their perception of care for children in the hospitals.

standard, and "To be improved" means the component is below the expectation of the WHO standard and needs improvement. A summary score from 5 to 1 was awarded at the end of each section whereby 5 indicates "Good" practice complying with standards of care while scores from 4 to 1 indicate practices "To be improved" (4 = Little improvement, 3 = Some improvement, 2 = Considerable/Significant improvement is needed to reach standards of care, and 1 = Services not provided, totally inadequate care or potentially life-threatening practices).

At the end of each hospital visit, assessors met with hospital administration and staff for a debriefing and to identify priority actions for improvement of the hospital services.

room for admitting newborns. In 6 hospitals, children with surgical conditions were admitted in the general pediatric ward. None of the hospitals had a clearly designated high dependency area or room where very sick children are cared for and receive closest attention.

hospitals. Five hospitals had backup power supply. All hospitals had appropriate sharp disposal boxes.

The pediatric service in these hospitals caters for children up to the age of 14 years. Based on available data for the period July 2006 to June 2007, there were on average 29 (range 12-66) children seen in the Paediatric OPD with about 5 admissions per day (range 1-9). The two commonest causes of OPD attendance and admission were severe pneumonia and diarrhoea with severe dehydration or dysentery. The mean bed capacity of the assessed hospitals was 39 (range 11-68) and the average bed occupancy rate was 58% (range 31% in Zewditu & 90% in Ambo). Children under 5 account for 64% of admissions to the pediatric wards. Based on available data from 5 hospitals, the average daily emergency patient load was 7 and the average all cause mortality in under fives was 11% (10-16%).

Hospital support systems (drugs, equipments and laboratory)

As shown in Tables 1 & 2, the availability of emergency drugs and equipments in the emergency area and the wards was inadequate. Drugs like parenteral Phenobarbitone (long acting anticonvulsant) were non-existent and those drugs that were available were often not immediately accessible. Only 3 hospitals had ambu bags (big mask) in the emergency area and the wards while infant size masks, nasal prongs and nebulizers were totally absent. Oxygen concentrator and heat sources were found in only one hospital. However, all hospitals had good laboratory facilities to perform the five basic laboratory tests for managing emergencies (RBS, blood film, HGB, CSF microscopy and blood group and cross match) even though results were delivered timely in half of the hospitals. Bilirubin and other chemistries were being done in 5 while culture facilities were available in only 2 hospitals.

Table 1: Availability of Essential Drugs

No		Emergency area	Ward	Pharmacy/store
	Drugs			
1	Glucose 40% i.v.	5 (63%)	6 (75%)	7 (88%)
2	Glucose 5% i.v.	6 (75%)	7 (88%)	8 (100%)
3	Normal saline i.v.	6 (75%)	6 (75%)	7 (88%)
4	Ringer's lactate i.v.	8 (100%)	7 (88%)	8 (100%)
5	Epinephrine (Adrenaline) s.c.	8 (100%)	7 (88%)	7 (88%)
6	Corticosteroids i.v. or p.o.	6 (75%)	5 (63%)	7 (88%)
7	Furosemide i.v.	5 (63%)	5 (63%)	5 (63%)
8	Diazepam i.m., i.v.	5 (63%)	5 (63%)	5 (63%)
9	Phenobarbital i.m., i.v.	0 (0%)	0 (0%)	0 (0%)
10	Paracetamol	6 (75%)	6 (75%)	8 (100%)
11	Ampicillin inj.	6 (75%)	4 (50%)	7 (88%)
12	Benzyl penicillin	5 (63%)	5 (63%)	7 (88%)
13	Cloxacillin	5 (63%)	5 (63%)	6 (75%)
14	3rd generation Cephalosporins	3 (38%)	4 (50%)	5 (63%)
15	Chloramphenicol	3 (38%)	3 (38%)	4 (50%)
16	Gentamicin	5 (63%)	5 (63%)	6 (75%)
17	*All anti-malaria drugs	4 (50%)	4 (50%)	8 (100%)
18	Digoxin	3 (50%)	4 (50%)	6 (75%)
19	F75 milk	2 (25%)	6 (75%)	6 (75%)
20	F100 milk	3 (50%)	7 (88%)	7 (88%)
21	Ready to Use Therapeutic Food	2 (25%)	5 (63%)	6 (75%)
22	Vitamin K i.m. injection	0 (0%)	0 (0%)	3 (38%)
23	ORS	6 (75%)	7 (88%)	8 (100%)

Table 2: Availability of essential Equipments & supplies

No	Equipments	Emergency area	Ward	Pharmacy/ store
1	Resuscitation table/area	5 (63%)	2 (25%)	3 (38%)
2	Torch	4 (50%)	4 (50%)	4 (50%)
3	Otoscope	5 (63%)	6 (75%)	6 (75%)
4	Scales for children	7 (88%)	8 (100%)	7 (88%)
5	Stethoscopes	7 (88%)	7 (88%)	8 (100%)
6	Thermometers	8 (100%)	8 (100%)	7 (88%)
7	Heat source	1 (13%)	2 (25%)	0 (0%)
8	Lumbar puncture set	5 (63%)	6 (75%)	3 (38%)
9	Oxygen source:	7 (88%)	7 (88%)	4 (50%)
	oxygen cylinder	7 (88%)	7 (88%)	4 (50%)
	oxygen concentrator	1 (13%)	1 (13%)	0 (0%)
	central supply	0 (0%)	0 (0%)	0 (0%)
10	Flow-meters for oxygen?	7 (88%)	7 (88%)	5 (63%)
11	Equipment for the administration of oxygen?	7 (88%)	7 (88%)	6 (75%)
	nasal prongs	0 (0%)	0 (0%)	0 (0%)
	catheters	7 (88%)	7 (88%)	6 (75%)
	Masks	0 (0%)	1 (13%)	0 (0%)
12	Self inflating bags for resuscitation	3 (38%)	3 (38%)	2 (25%)
13	Masks			
	infant size	0 (0%)	0 (0%)	0 (0%)
	child size	3 (38%)	4 (50%)	2 (25%)
	adult size	1 (13%)	1 (13%)	0 (0%)
14	Butterflies and/or cannulas of paediatric size	7 (88%)	7 (88%)	7 (88%)
15	NG-tubes, paediatric size	4 (50%)	7 (88%)	7 (88%)
16	Suction equipment	5 (63%)	7 (88%)	6 (75%)
17	Nebulisers for administration of Salbutamol	0 (0%)	0 (0%)	0 (0%)

Emergency care

Most of the surveyed hospitals (5/8) were not appropriately organized, fully staffed and equipped to handle pediatric emergencies effectively. Most of these hospitals were not practicing the standard triage process by assessing children immediately on arrival for emergency or priority signs before administrative procedures. However, three hospitals, two of them implementing the new hospital improvement initiative, had assigned qualified nurses

at the reception to facilitate smooth patient flow and prioritization of the management of emergency cases. Even in these three hospitals the triaging and management of emergency cases was not up to the expected standards of ETAT. None of the staff working in the OPD and emergency areas had been trained in ETAT and there was lack of job aids and standard protocol for pediatric referral care (Table 3).

Table 3: Summary of grading of the emergency setup in the hospitals

No	Standards and criteria	Good	To be improved
1	Children are assessed for severity/ priority signs (triaged) immediately on arrival as per the ETAT standard	0 (0%)	8 (100%)
2	Patients do not have to wait for their turn, registration, payment etc. before a first assessment is done and action taken.	0 (0%)	8 (100%)
3	A wall chart or job aid for identifying children by severity of condition is located in the emergency admissions area.	0 (0%)	8 (100%)
Drugs, equipment and supplies			
4	Essential drugs for emergency conditions (anticonvulsants, glucose, iv fluids) are always available and free of charge to the family	0 (0%)	8 (100%)
5	Essential lab tests (glucose, Hb or PCV) are available and results are obtained timely	4 (50%)	4 (50%)
6	Essential equipment (needles and syringes, naso-gastric tubes, oxygen equipment, self-inflating resuscitation bags with masks of different sizes, nebulisers or spacers) is available	0 (0%)	8 (100%)
Staffing			
7	A qualified staff member is designated to carry out triage.	3 (38%)	5 (63%)
8	A health professional is available without delay to manage children determined to have an emergency condition.	3 (38%)	5 (63%)
Case management			
9	Staff doing triage is trained in the ETAT guidelines and can implement them appropriately when the emergency room gets busy during peak hours	0 (0%)	8 (100%)
10	Staff is skilled in the management of common emergency conditions and starts treatment without delay: Management of convulsions, lethargy, severe respiratory distress, shock and severe dehydration.	0 (0%)	8 (100%)

Pediatrics ward

Table 4 summarizes the status of the 8 hospitals against the WHO standards and criteria for pediatric wards.

Table 4: Standard's for children ward

No	Standards and criteria	Good	To be improved
1	Children are seen in OPD only by the designated health professional in the designated room/area.	6/7 (86%)	1/7 (14%)
Closest attention for the most seriously ill			
2	The most seriously ill children are cared for in a section where they receive closest attention.	0 (0%)	8 (100%)
Separate ward for children.			
4	Children are kept in a separate ward or separate area of a ward.	7 (88%)	1 (13%)
5	Severely ill children are kept apart from adults in wards such as for infectious diseases or intensive care.	4 (50%)	4 (50%)
6	Children with surgical conditions are at least kept in a separate room, with staff aware of the special needs for children such as feeding and warmth.	3 (38%)	5 (63%)
7	Arrangements are made to meet these needs.	1 (13%)	7 (88%)
8	In cold climates, the ward has an efficient and safe heat source.	0 (0%)	8 (100%)
Separate room for sick neonates with mothers			
9	Sick new-borns are kept separate from healthy babies.	3 (38%)	5 (63%)
10	Mothers of sick new-borns are rooming in with their babies, and have adequate facilities.	0 (0%)	8 (100%)
Hygiene and accident prevention			
11	Staff has access to hand washing facilities The ward is kept clean and dangerous items are inaccessible for children	3 (38%)	5 (63%)
12	Sharps are disposed of in a special container preventing accidents	8 (100%)	0 (0%)
Hygienic and sufficient services facilitate the stay of mother and child			
13	There are sufficient and adequate toilets which are easily accessible	0 (0%)	8 (100%)
14	Mothers have access to running water and to an appropriate space, near the ward, to wash themselves and their child.	0 (0%)	8 (100%)
15	Mothers have access to a washing facility, in order to wash her and her child's clothes.	0 (0%)	8 (100%)
16	Patients are kept in a bed/cot with a clean mattress.	4 (50%)	4 (50%)
17	Patients receive bed sheets	6 (75%)	2 (25%)

Case management practices

Overall, the case management of common childhood problems including pneumonia, diarrhea, fever conditions and malnutrition was not optimal in almost all hospitals.

Pneumonia was diagnosed and its severity correctly classified more or less based on diagnostic signs in 2 hospitals. Similarly, appropriate use of antibiotics and oxygen was observed in a third of the hospitals (3/8). Patient monitoring and supportive care were inadequate in all hospitals. None of the hospitals had nebulizers for inhalation therapy.

Correct assessment of dehydration was documented in half of the hospitals and the monitoring and management of dehydration was inadequate in almost all hospitals. Inappropriate use of antibiotics for diarrhea was observed and supportive care especially feeding was inadequate.

All the necessary guidelines and tools were in place for counseling, diagnosing and staging of paediatric HIV and for the treatment and monitoring of antiretroviral therapy. There were well trained staff who were regularly mentored and most of the HIV

Supportive care and nutrition

Although breastfeeding was encouraged, none of the hospitals provide appropriate routine pediatric diet for children. Misuse of intravenous fluids was common including in children with severe acute malnutrition.

Monitoring of patients

All admitted children were assessed by a doctor at admission and majority of them were re-evaluated about once a day during working days and upon consultation during weekends. A qualified nurse was available 24 hours per day in the children's wards in all hospitals and a medical doctor in 6 of them. Nutritional status was assessed at admission using weight for age in most hospitals. All patients had individual charts, vital sign and medication sheets, but the case histories, progress notes and the other

In the majority of cases, differential diagnosis of fever was not considered exhaustively and investigations were incomplete. In some instances planned LP tests were not done and patients were treated empirically. Inappropriate choice and administration of antibiotics was observed and documentation of patient progress and treatment given was not up to the standard in almost all hospitals. Overall, patient records and monitoring charts were poorly recorded.

Most of the hospitals had the dietary supplies needed for the management of severe malnutrition. Even though routine antibiotics were given for malnourished children as per the national guideline, feeding was not given according to the recommended schedule especially at night. Prevention and management of other complications like dehydration and hypothermia was inadequate. None of the surveyed hospitals had rooms with heaters for malnourished children. Monitoring of patients and recording of progress was poor in the majority of cases.

services were conducted in line with the national standard especially at the outpatient level. However, inpatient management of some opportunistic infections and the supportive care of these patients need improvement.

Multiple antibiotics were often prescribed some times for longer durations. Screened blood was used in all hospitals but the indications for its use and the administration procedure needs improvement.

monitoring charts were not properly and regularly recorded in the majority of cases both by physicians and nurses. There was no designated area where very ill children receive highest attention. Except for the Severe Acute Malnutrition Chart, there were no standardized monitoring charts consisting of all relevant parameters which could simplify patient monitoring.

Neonatal care

Early and exclusive breastfeeding, skin to skin contact and proper thermal protection was not practiced adequately in almost all hospitals. Eye and Vitamin K prophylaxis and immunizations were given routinely in only 2 hospitals. Neonatal resuscitation flow chart was available in only one hospital.

Overall, only three hospitals had a separate room for sick newborn babies with bed capacity ranging from 3 to 17. In the other 5 hospitals neonates were kept in the general pediatric ward or the maternity room. Only

one hospital was well staffed and equipped (heaters, oxygen sources, phototherapy and suction machines, resuscitation materials and other supplies) to closely monitor seriously ill newborns with 24 hour availability of skilled nursing staff. However, rooming-in and hygienic facilities for mothers were inadequate in all hospitals. As shown on Table 5, the case management of common neonatal problems is inadequate and needs strong effort to improve the situation.

Table 5: Sick newborn case management summary table

No		Good	To be improved
1	Neonatal sepsis is appropriately diagnosed.	2/6 (33%)	4/6 (67%)
2	Neonatal sepsis is appropriately treated.	1/6 (17%)	4/6 (67%)
3	Specific feeding needs of sick young infants and those with low birth weight, are met.	1/6 (17%)	5/6 (83%)
4	Jaundice is adequately recognized and managed.	1/6 (17%)	5/6 (83%)

Pediatric surgery & rehabilitation

Of the 8 hospitals surveyed, one (Ambo Hospital) was not doing any major surgery for children. In 6 of the hospitals, children with surgical conditions were admitted in the general pediatric ward. Pre- and post-operative starving was kept to a minimum in the majority of the hospitals which perform major surgery. Overall, frequent post-operative monitoring of vital signs and the readiness for resuscitation was inadequate in nearly half of the hospitals. Only one hospital had basic rehabilitation facilities.

Economic and transportation barriers were serious concerns for all the care takers interviewed and most of them had tried traditional medicine before seeking care from providers. Caretakers were not satisfied with the communication from providers regarding the problems of their sick children, explanations about ward procedures and the treatments and follow-up details. Almost all care takers indicated that the

Hospital administration & access to hospital

Nationally, there were no pediatric treatment guidelines for referral hospitals and none of the hospitals practice pediatric death audits. Availability of essential drugs and equipment that are basic for provision of quality pediatric emergency and inpatient services are inadequate in almost all of the hospitals surveyed. However, the handling of available drugs including the stock management was good and old drugs were used first.

condition of the toilet and washing facilities was very poor.

Summary

The following table and figures 1 & 2 show the summarized score by major sections of the assessment and by facility. Table 6 is a summary sheet showing the details of the summary scores of the 8 hospitals in the different service areas.

Table 6: Details of summary score of the 8 hospitals in the different service areas

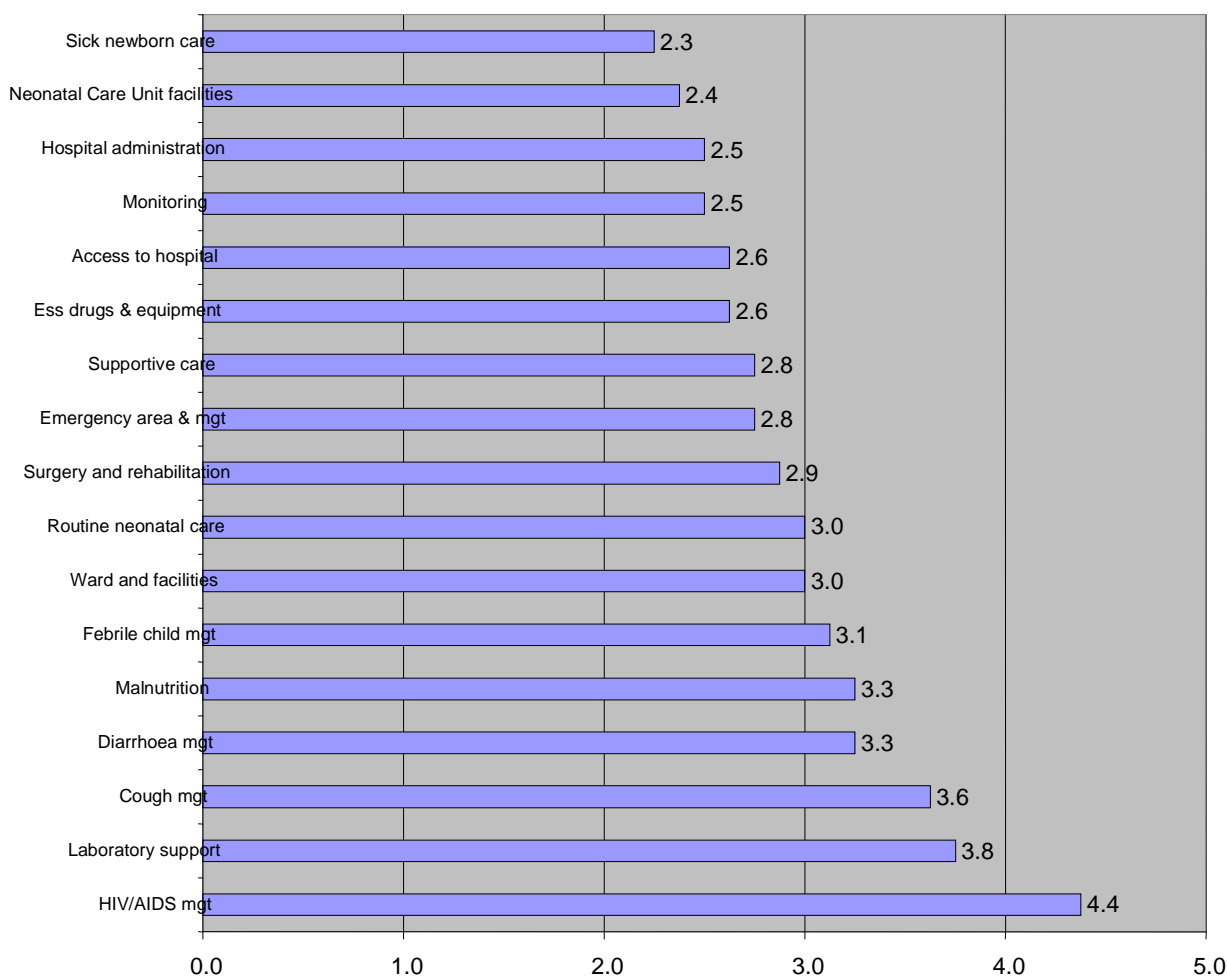
No	Summary score of different service areas	Good	To be improved			
		5	4	3	2	1
1	Essential drugs, supplies and equipment **			5	3	
2	Laboratory support		6	2		
3	Emergency area and management			6	2	
4	Children's ward and facilities			8		
5	Cough or difficult breathing child management	2	1	5		
6	Diarrhoea patient management		2	6		
7	Febrile child management		2	5	1	
8	Malnourished child management	1		7		
9	Management of child with HIV/AIDS	3	5			
10	Summary score of supportive care			6	2	
11	Summary score in monitoring			4	4	
12	Routine neonatal care service		1	6	1	
13	Neonatal Care Unit facilities		1	1	6	
14	Case management and sick newborn care		1		7	
15	Paediatric surgery and rehabilitation		2	4	1	1
16	Summary score hospital administration			4	4	
17	Summary score access to hospital			5	3	
Total score = 405		30	84	222	68	1
Hospital summary score = total score / 8*17		2.98				

NB: - ** = Five of 8 hospitals had a summary score of 3 out of 5, while 3 hospitals has a summary score of 2 out of 5 for emergency drugs, supplies and equipment section.

Similarly, Figure 1 shows average scoring of the quality of the different pediatric care services in the 8 hospitals out of a maximum score of 5. As it can be seen clearly from the figure, there are marked variations in quality of the different pediatric

care/services rendered. The quality of care given to children with HIV/AIDS is relatively in far better condition compared to services given to neonates, scores of 4.4 and 2.3 out of 5 respectively.

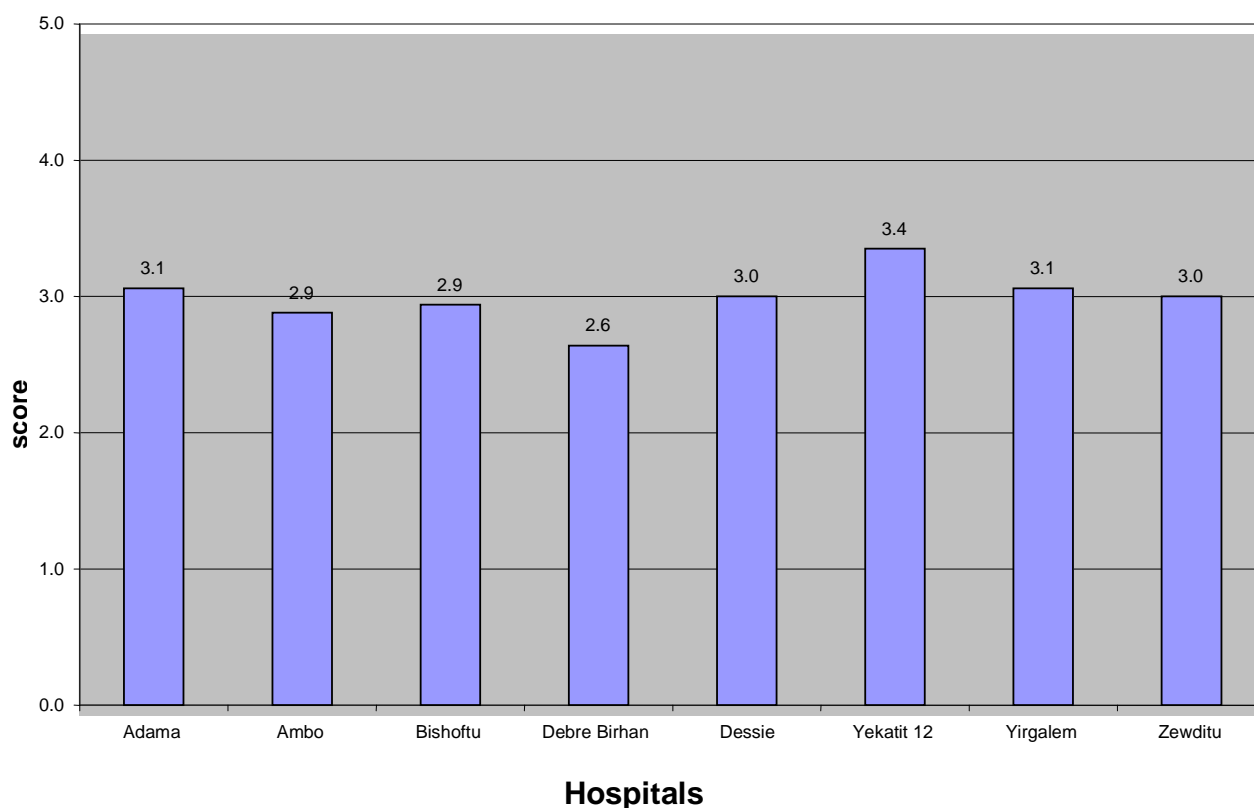
Figure 1: Average summary score of the different pediatric care services out of a maximum score of 5



As shown in Figure 2 below, the hospitals' quality of care total summary score ranged from 2.6 to 3.44 out of 5 with an average of 2.98 (~3.0) which indicates that all hospitals need substantial actions for improvement to reach defined standards. This figure

also shows the difference in the performance of the eight hospitals.

Figure 2: Total summary score of the 8 hospitals, out of a total score of 5



CONCLUSIONS AND RECOMMENDATIONS

This assessment has the following limitations. First, sampling of the hospitals was by convenience; majority of them being zonal hospitals the results may not fully reflect the situation in the more peripheral district hospitals. Second, the study was largely observational and assessments were in part based on the judgments of the observers. Besides, the quality of available hospital statistics was inadequate to disaggregate patient load at OPD, emergency and admission levels by appropriate age categories (0-28 days, 1-12 months, 1-5 years and ≥ 5 years). The statistics problem definitely under-estimates the reported hospital mortality rate. Similarly, it was impossible to determine the mortality rate within the first 24 hours of admission which is a very sensitive indicator of the quality of emergency care in any hospital setting.

Despite the potential limitations, this study provides some basic information about the status of pediatric hospital care that could guide the national efforts in improving the quality of referral care for children.

The overall case fatality rate of 11% (10-16%) in this survey was comparable to that reported from Zambia (12-15.8%) and Kenya (4-15%) but the possibility of under-reporting is there.

All of the surveyed hospitals were not appropriately organized and fully equipped to handle pediatric emergencies effectively. None of these hospitals were practicing the standard triaging process by assessing children immediately on arrival for emergency and priority signs & the overall management of emergency cases was not up to the expected standards of ETAT.

In the majority of the surveyed hospitals (5/8), there were no separate pediatric waiting areas which are

essential for the proper implementation of ETAT. Even though the current quality improvement process through the hospital BPR initiative is a very good opportunity for the overall improvement of hospital care for children, the centralized triaging mechanism that keeps patients of all age groups together in one waiting area is not conducive for the effective implementation of the ETAT standards.

Generally, there was lack of some essential drugs and materials such as nasal prongs, infant and child size bag & masks, nebulizers, heaters and oxygen concentrators. The total absence of long acting parenteral anti-convulsants poses serious shortcoming in the management of pediatric neurologic emergencies.

In almost all hospitals, there was no clearly designated and properly arranged/equipped high dependency area where very sick children receive highest attention. Majority of the hospitals (5/8) do not have any special arrangement and facilities for providing appropriate neonatal care.

Hygienic facilities were below the expected standard in majority of the hospitals and none of the hospitals provide appropriate routine pediatric diet for children.

Overall, the case management of common neonatal and childhood illnesses was not optimal. None of the hospital staff had been trained in ETAT and there were no job aids or protocols for pediatric referral care which could partly contribute to the problems observed in the case management.

In summary, the quality of pediatric referral care needs serious attention and coordinated systematic improvement effort using the opportunity of the national hospital management initiative and the BPR process to institutionalize ETAT and standards of hospital care for children. This has to be complemented with availing of appropriate job aids, essential supplies and equipment, and improvement of health worker skills through training, clinical mentoring and regular supportive supervision.

RECOMMENDATIONS

1. The ETAT standards should be incorporated into the Ethiopian Hospital Management Initiative blue print and the BPR documents by the FMOH to ensure its systematic implementation.
2. National plan of action should be developed for systematic and phased implementation of ETAT in referral hospitals.
3. Staff should be trained in ETAT through in-service courses & ETAT should also be introduced into the pre-service teaching to ensure its sustainability.
4. National pediatric referral care protocol & job aids should be availed in all hospitals
5. Coordinated efforts and more resources needed for availing essential drugs, supplies and equipments in all hospitals.
6. All hospitals should have arrangements/rooms for the care of sick neonates, high-dependency areas for critically sick children and isolation rooms for infectious cases.
7. Efforts should be made to improve the hygienic facilities & the quality of routine hospital diet for children.
8. The recording and reporting system in the hospitals need to be improved and pediatric data should be disaggregated by appropriate age categories.
9. Mechanisms for regular supportive supervision and mentoring needed to achieve sustained improvement in the quality of pediatric referral care.
10. The Ethiopian Pediatric Society, the Medical teaching institutions, WHO, UNICEF and other partners should support the quality improvement process.

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